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**REPORT ON CONSOLIDATION  
IN THE FINANCIAL SECTOR**

**January 2001**

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# **Introduction and summary of findings and policy implications**

## **1. Introduction**

The ongoing consolidation of financial institutions is one of the most notable contemporary features of the financial landscape both within and across many industrial countries. In recognition of this fact, and its potential implications for public policy in a variety of areas, in September 1999 Finance Ministers and central bank Governors of the Group of Ten asked their Deputies to conduct a study of financial consolidation and its potential effects. This Report presents the results of that study.

To conduct the study, a Working Party was established under the auspices of finance ministry and central bank deputies of the Group of Ten.<sup>1</sup> From the beginning, it was recognised that the subject matter was substantial and that there was a need to utilise expertise from a wide range of sources. Thus, the Working Party was organised into six Task Forces, each of which was charged with addressing a key aspect of financial consolidation and its potential effects. These Task Forces addressed the patterns of financial consolidation observed in the 11 G10 nations plus Australia and Spain (the study nations), the causes of consolidation, and the potential effects of consolidation on financial risk, monetary policy, financial institution efficiency, competition and credit flows, and payment and settlement systems.

The Working Party sought to employ a broad definition of financial services, but also to limit the work's scope to manageable proportions. Thus, the definition of the financial services industry used here includes commercial banking, investment banking, insurance and, in some cases, asset management. Most other types of financial activity, such as exchanges and specialty finance, are excluded.

When attempting to understand and interpret this Report's findings and implications, it is critical to keep some general principles in mind. First, a core objective of the study is to identify the potential impacts of consolidation, not to judge whether consolidation in combination with other developments has led to a net change in, say, financial risk or the competitive environment. In practice, isolating such "partial" effects is extremely difficult. Consolidation is only one of several powerful forces causing change in the financial system, and each of these forces affects and is affected by the others. Nevertheless, a systematic attempt to focus on the possible effects of consolidation has, in the Working Party's judgement, significant value added.

Second, it is well known that international comparisons are inherently difficult for many reasons. The current study certainly suffers from this complexity, and the study is organised along national lines in a number of places for precisely this reason.<sup>2</sup> Still, financial consolidation

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<sup>1</sup> The Working Party was chaired by Roger W Ferguson, Jr, Vice-Chairman of the Board of Governors of the Federal Reserve System. The Working Party comprised finance ministry and central bank staff from Australia, Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Spain, Sweden, Switzerland, the United Kingdom and the United States, and representatives from the Bank for International Settlements, the European Central Bank, the European Commission, the International Monetary Fund and the Organisation for Economic Co-operation and Development.

<sup>2</sup> In some cases international comparisons have become easier over time. For example, creation of the euro has facilitated comparisons among the member states.

and its close cousin financial globalisation are phenomena that cut across national boundaries in many dimensions. Thus, international comparisons are imperative, and a second core objective of the study is to identify common (but not necessarily identical or equally important) patterns, causes, and implications across the study nations.

Although it was not the Working Party's intention to develop specific policy recommendations, an important objective was to identify key areas in which financial consolidation supports the need for new or continued, and in some cases accelerated, policy development. These areas are discussed in some detail in this chapter and in the separate chapters written by the individual Task Forces.

Lastly, as indicated above, the study adopted a broad definition of financial services. However, as a practical matter, the predominant portion of existing research and to a great extent the available data are focused on the banking industry in all the study nations. Thus, the study is more bank-centric than was originally intended. This emphasis may not be too distorting because, as discussed below, most merger and acquisition activity in the financial sector during the 1990s involved banking firms. Nevertheless, one of the conclusions of the study is that in some cases more research and data collection would be helpful for non-bank financial service firms and markets. The remainder of this chapter proceeds as follows. Section 2 presents a brief listing of the study's key findings and policy implications. Little effort is made here to explain the reasoning and evidence behind the findings and implications identified by the Working Party. Section 3 is a more extended discussion of findings and policy implications that also summarises the analysis behind the Working Party's conclusions.

## **2. Key findings and policy implications**

The study's most important findings and their policy implications, organised by topic, may be listed briefly.

### **Findings**

#### ***Patterns***

(1) There was a high level of merger and acquisition (M&A) activity in the 1990s among financial firms in the 13 countries studied. In addition, the level of activity increased over time, with a noticeable acceleration in consolidation activity in the last three years of the decade. As a result, a significant number of large, and in some cases increasingly complex, financial institutions have been created.

(2) Most mergers and acquisitions involved firms competing in the same segment of the financial services industry and the same country, with domestic mergers involving firms in different segments the second most common type of transaction.

(3) Cross-border M&As were less frequent, especially those involving firms in different industry segments. However, cross-border activity was relatively strong at insurance companies and in joint ventures and strategic alliances outside the United States.

(4) Most M&A activity during the 1990s in the financial sector involved banking firms. Acquisitions of banking firms accounted for 60% of all financial mergers and 70% of the value of those mergers.

(5) The number of joint ventures and strategic alliances increased over the 1990s, with especially large increases in the last two years.

(6) The number of banking firms decreased in almost every country during the decade and the concentration of the banking industry, as measured by the percentage of a country's deposits controlled by the largest banks, tended to increase. If other banking activity, such as off-balance

sheet activities, were included in the size measure, the increase in banking concentration would be even greater.

(7) The structure of banking industries continues to differ greatly across countries, ranging from very unconcentrated in a few nations (the United States and Germany) to highly concentrated in about half of the nations in the study (Australia, Belgium, Canada, France, the Netherlands and Sweden).

(8) There are no consistent patterns across countries in changes in the number of insurance firms or concentration in the insurance industry during the 1990s. Also, patterns often differed for life and non-life insurance companies in the same country.

(9) Many specific activities of the securities industry, such as underwriting, are dominated by a small number of leading institutions. It is unclear, however, whether this pattern changed much over the 1990s.

(10) Over-the-counter (OTC) derivatives markets grew dramatically in the 1990s, with notional value quadrupling between 1992 and 1999. Concentration measures in worldwide derivatives markets were at modest levels at the end of the decade.

### ***Causes***

(1) According to the practitioners interviewed, the primary motives for financial consolidation are cost savings and revenue enhancements.

(2) The most important forces encouraging consolidation are improvements in information technology, financial deregulation, globalisation of financial and real markets, and increased shareholder pressure for financial performance. With respect to globalisation, the euro has accelerated the speed of financial market integration in Europe and encourages cross-border activity, partly through consolidation.

(3) Important factors discouraging consolidation are diverse domestic regulatory regimes and corporate and national cultural differences.

(4) Consolidation is likely to continue, but the likelihood of specific future scenarios is impossible to assess with confidence. Possible scenarios, none of which are mutually exclusive, include (a) continuation of the current trend towards globally active universal financial service providers; (b) the emergence of more functionally specialised financial firms within a given segment of the financial industry; and (c) continued consolidation, but a more radical form of specialisation through the gradual “deconstruction” of the supply chain via the outsourcing of certain activities (eg internet services) to both financial and non-financial third parties.

### ***Financial risk***

(1) The potential effects of financial consolidation on the risk of individual institutions are mixed, the net result is impossible to generalise, and thus a case by case assessment is required. The one area where consolidation seems most likely to reduce firm risk is the potential for (especially geographic) diversification gains. Even here, risk reduction is not assured, as the realisation of potential gains is always dependent upon the actual portfolio held. After consolidation some firms shift towards riskier asset portfolios, and other risks, such as operating risks and managerial complexities, may increase. More broadly, there is no guarantee that cost savings or efficiency gains will be realised.

(2) Systemic financial risk is most likely to be transmitted to the real economy through the wholesale activities of financial institutions and markets, including payment and settlement systems.

(3) In part because the net impact of consolidation on individual firm risk is unclear, the net impact of consolidation on systemic risk is also uncertain. However, it seems likely that if a large and complex banking organisation became impaired, then consolidation and any attendant

complexity may have, other things being equal, increased the probability that the “work-out” or “wind-down” of such an organisation would be difficult and could be disorderly. Because such firms are the ones most likely to be associated with systemic risk, this aspect of consolidation has most likely increased the probability that a work-out could have broad implications.

(4) Another critical element in evaluating the potential for consolidation to affect systemic risk is assessing the extent of interdependencies among large and complex financial organisations. A high degree of interdependency would suggest the potential for systemic risks.

(5) Evidence suggests that interdependencies between large and complex banking organisations have increased over the last decade in the United States and Japan, and are beginning to do so in Europe. Although a causal link has not been established, these increases are positively correlated with measures of consolidation. Areas of increased interdependency that are most associated with consolidation include interbank loans, market activities such as OTC derivatives, and payment and settlement systems.

(6) Partly as a result of consolidation, non-bank financial institutions, not just banks, have the potential to be sources of systemic risk.

(7) Consolidation also appears to be increasing the possibility that even a medium-sized foreign bank (or perhaps a non-bank financial institution) from a large nation would be a potential source of instability to a relatively small host country. The possibility of loss of domestic ownership of a small nation’s major banks has, other things being equal, also increased.

(8) It appears that consolidation, and especially any resulting increase in firms’ complexity, has had an ambiguous effect on the potential for market discipline to control the risk-taking of large and complex financial institutions. On the one hand, increased disclosures have probably improved firm transparency and encouraged market discipline. On the other hand, increased complexity has made assessment of a firm’s financial condition more difficult, and firms’ increased size has the potential to augment moral hazard problems.

(9) Consolidation may encourage the further development of capital markets, especially in Japan, with potential benefits for financial stability.

### ***Monetary policy***

(1) The potential effects of consolidation on the implementation of monetary policy depend on whether consolidation has an impact on the market for central bank balances or the market(s) used by the central bank to adjust the supply of such balances. Consolidation could reduce competition in these markets, increasing the cost of liquidity for some firms and impeding the arbitrage of interest rates between markets. In addition, consolidation could affect the performance of the markets if the resulting large financial firms behave differently from their smaller predecessors.

(2) Virtually all central banks in the study nations suggest that the impact of consolidation on these markets has so far been minimal, and consolidation is not expected to be a significant concern in the foreseeable future, although in some cases it may prompt minor changes in aspects of policy implementation.

(3) Financial consolidation may also alter the channels through which the monetary transmission mechanism links monetary policy actions to the rest of the economy. The “monetary channel” concerns the transmission of interest rates across financial markets by arbitrage along the yield curve and across financial products. The “bank lending channel” operates through the supply of bank loans to borrowers without direct access to financial markets. The “balance sheet channel” operates through the effect of monetary policy on the value of collateral, and thus on the availability of credit to those requiring collateral to obtain funds.



- (4) According to central banks and the few empirical studies, there is little evidence that consolidation has significantly affected any of these channels.
- (5) Central banks have not identified significant effects of consolidation on the volatility or liquidity of financial markets, nor do they think it has substantially complicated interpretation of movements in indicator variables such as monetary aggregates.
- (6) Consolidation has encouraged the development of very large and complex financial firms, and this trend is expected to continue. In the event of financial difficulties at such firms, central banks would need to consider carefully the appropriate provision of emergency liquidity, as well as whether and for how long the stance of monetary policy should be adjusted in the light of the possible macroeconomic impact of such difficulties.

### ***Efficiency, competition and credit flows***

- (1) Evidence suggests that only relatively small banks could generally become more efficient from an increase in size. However, changes in technology and market structure might affect scale and scope economies in the future. For deals consummated over the last decade, there is some evidence of efficiency improvement, especially on the revenue side. Mergers and acquisitions typically seem to transfer wealth from the shareholders of the bidder to those of the target.
- (2) In the securities industry, research based on US data suggests that economies of scale exist, but mainly among smaller firms. Economies of scope do not appear to be generally important in the securities industry.
- (3) As with commercial banks, smaller insurance companies could probably reduce their costs by taking advantage of potential economies of scale. However, the limited evidence available and the rapid changes anticipated in the future make it difficult to assess the potential efficiency gains from insurance consolidations.
- (4) Research results and views of industry participants regarding the potential for efficiency gains from consolidation may differ because: (a) participants may not look at cost reductions or revenue enhancements relative to peer group trends; (b) participants may focus on absolute cost savings rather than on measures of efficiency; (c) research results are for the typical merger, while some consolidations do result in efficiency gains; and (d) past consolidations may have suffered from restrictive regulations that may not hold in the future.
- (5) The effects of consolidation on competition depend on the demand and supply conditions in the relevant economic markets, including the size of any barriers to entry by new firms.
- (6) For retail banking products, evidence on both the demand and supply side suggests that markets for a number of key products are geographically local. Research generally finds that higher concentration in banking markets may lead to less favourable conditions for consumers, especially in markets for small business loans, retail deposits and payment services. Results are, however, weaker for the 1990s than for the previous decade.
- (7) Markets for wholesale banking products, investment banking services, money markets and foreign exchange trading, derivatives, and asset management are normally national or international in scope. However, evidence suggests that investment banks may be exerting some degree of market power.
- (8) Geographic markets for most insurance activities appear to be national (statewide in the United States). In recent years, the insurance market has generally become more competitive, although the extent of competition seems to vary significantly across products and countries.
- (9) It seems clear that barriers to entry have decreased with the deregulation and globalisation of financial markets.

(10) The continued evolution of electronic finance could expand greatly, or even eliminate, existing geographic limits of financial markets and lower entry barriers, thereby altering the potential effects of consolidation. However, the potential benefits of electronic finance should not be exaggerated. For example, electronic finance may also reduce competition because of an increase in customer switching costs.

(11) Statistical studies of the effect of consolidation of banks on small business lending are available for only a couple of countries (Italy and the United States). These studies suggest that banks reduce the percentage of their portfolio invested in small business loans after consolidation. What is relevant, however, is the effect of consolidation on the total availability of credit to small business and whether it is associated with more accurate pricing of risk. Studies using US data find that other banks and new entrants tend to offset the reduction in the supply of credit to small businesses by the consolidating banks. Similar results hold for Italy, where only a shift away from the worst borrowers is detected.

(12) New technologies, such as credit scoring models, may have somewhat encouraged small business lending, and thus offset to some degree the tendency of larger banks to lend to larger customers. However, the benefits to date seem quite limited. In addition, technology will not necessarily reduce the cost, and may increase the relative cost, of processing the information typically used in relationship lending, thus disadvantaging borrowers who do not, for example, qualify for a sufficiently high credit score.

### ***Payment and settlement systems***

(1) Consolidation has led to a greater concentration of payment and settlement flows among fewer parties within the financial sector. Interbank transactions may increasingly become in-house transactions.

(2) Because of the significant economies of scale in electronic payment technologies, the large institutions resulting from consolidation may be better able to invest in new, often costly technologies, and to decrease unit costs by capturing economies of scale.

(3) Emerging global firms that participate in multiple systems are pressuring the operators of payment and settlement systems to enhance their systems, sometimes through consolidation.

(4) A reduction in the number of institutions providing payment and settlement services below a certain level might result in higher prices and lower incentives for innovation. Consolidation among systems, however, may decrease, increase or have no effect on competition from the customer's point of view. The competitive effects of system consolidation largely depend on the combination of such factors as the governance structure of the surviving system, access criteria, market demand for downstream services, and economies of scale.

(5) The risk implications of the consolidation of payment and settlement systems are complex. On the one hand, consolidation may help to improve the effectiveness of institutions' credit and liquidity risk controls. On the other hand, consolidation may lead to a significant shift of risk from settlement systems to customer banks and third-party service providers. In addition, it may lead to a greater proportion of on-us large-value payments, which may raise questions about the certainty of final settlement and the systemic implications of the concentration of payments within a few banks. For example, if a major payment processor were to fail or were not able to process payment orders, systemic risks could arise. These developments have also led to some convergence of risk considerations between payment and settlement system overseers and traditional bank safety and soundness authorities.

(6) The emergence of multinational institutions and specialised service providers with involvement in several payment and settlement systems in different countries, as well as the increasing liquidity interdependence of different systems, further serves to accentuate the potential role of payment and settlement systems in the transmission of contagion effects.

(7) At the interbank systems infrastructure level, central banks have made major efforts over the past decades to reduce and contain systemic risk by operating and promoting real-time gross settlement systems, and by insisting on effective risk control measures in net settlement systems. To the extent that these efforts have increased the robustness of interbank systems' risk controls, they should help to dampen and contain any contagion effects being transmitted through the payment system.

### **Policy implications**

The Working Party has identified a variety of areas that could benefit from continued policy development involving financial risk, monetary policy, competition and credit flows, and payment and settlement systems.

### ***Financial risk***

Existing policies and procedures appear adequate to contain individual firm and systemic risks both now and in the intermediate term. However, the current study is quite supportive of continued policy development on the following topics.

- (1) Both crisis prevention and crisis management could be improved by additional communication and cooperation among central banks, finance ministries, and the range of other financial supervisors, both domestically and internationally.
- (2) Important components of improved crisis prevention and management are effective and efficient policies and operating procedures for acting promptly to deter and resolve a potential crisis. A central element here, particularly in the light of consolidation's contribution to the creation of very large and complex financial organisations, is how to act in ways that minimise moral hazard.
- (3) Crisis management and the moral hazard incentives associated with large and complex financial institutions could be eased considerably by augmented contingency planning for working out a troubled large and complex financial institution in an orderly way.
- (4) The probabilities of both an individual firm experiencing severe financial difficulties and of a systemic crisis could be lowered by more effective risk-based supervision of financial institutions. A critical component of these efforts should be risk-based capital standards that are tied more closely to economic risk.
- (5) Both crisis prevention and crisis management could be enhanced by clearer understanding of how best to deal with non-bank financial institutions, including the treatment of non-bank entities that are part of a financial conglomerate that includes a bank.
- (6) Improved market discipline has the potential to decrease the probabilities of individual firm and systemic crises. A number of strategies for improving market discipline seem potentially promising, including augmented disclosures, improved risk management, stronger incentives for risk control by owners and managers, and improved accounting conventions.
- (7) Assessment of the likelihood of a systemic crisis, and the understanding of its potential implications, could be improved by the collection and analysis of data that are better targeted on such concerns. The monitoring and evaluation of individual firm data, both traditional (or improved) accounting and market data, in combination with data on firms' interdependencies, financial markets, and domestic and international macroeconomic variables, might yield valuable insights into risks posed by interdependencies and possibly improve early warning systems.

### ***Monetary policy***

Although financial sector consolidation appears to have neither impeded the implementation of monetary policy nor altered significantly the transmission mechanism of monetary policy, three areas of policy interest should be highlighted.

- (1) Central banks can be reasonably confident when setting monetary policy that frequent reviews of the data allow them to take account of most changes in the relationship between their target interest rates and developments in financial markets and the real economy, even if the reasons for the changes are unclear. However, identifying those reasons may help establish how persistent those changes are likely to be.
- (2) It would be prudent for central banks to remain alert to the implications of any reduction in the competitiveness of the key financial markets involved in monetary policy implementation that might be caused by future consolidation.
- (3) Similarly, central banks ought to bear in mind that financial consolidation may, over time, change the way in which the bank lending and the balance sheet channels of the monetary policy transmission mechanism work.

### ***Competition and credit flows***

- (1) Policymakers should carefully examine claims of substantial efficiency gains by financial institutions proposing major consolidations, especially in cases where a merger could raise significant issues of market power.
- (2) The impact of consolidation on competition can be assessed only by using empirically supported definitions of the relevant product and geographic markets. Such empirical support should be updated regularly.
- (3) The impact of technological changes on competition could be more powerful for households than for small firms, because standardised techniques such as credit scoring models are more suited to households.
- (4) To increase competition in an environment that is reducing significantly the number of providers of financial services, consideration could be given to reducing obstacles to the mobility of customers across financial service providers.
- (5) To the extent that consolidation may harm small business lending, the problems faced by small firms might be alleviated if alternative sources of finance to traditional bank lending are developed.
- (6) Cross-industry competition may benefit consumers by encouraging competition on existing and new products.
- (7) Effective antitrust policy implementation needs data on market shares, prices and quantities in key financial services and products. Financial institutions already provide some of the relevant data. However, it would be helpful to enrich the available information, especially at the firm level.

### ***Payment and settlement systems***

- (1) Because of consolidation, central bank oversight of interbank payment systems is becoming more closely linked with traditional bank safety and soundness supervision at the individual firm level. Increasing cooperation and communication between banking supervisors and payment system overseers may be necessary both domestically and cross-border.
- (2) At the current time, it does not appear that consolidation has adversely affected competition in the provision of payment and securities settlement services. It may be advisable, however, for government authorities to continue to monitor competition in the payment system as short-term effects of consolidation may not be indicative of longer-term effects.

(3) In specific cases, public authorities may want to consider removing potential obstacles to consolidation if such action would enable the market to develop initiatives aimed at reducing risks and enhancing efficiency in the field of payment and securities settlement.

(4) With regard to risk management, central banks and bank supervisors should carefully monitor the impact of consolidation on the payment and settlement business, and should define safety standards when appropriate. In particular, central banks, in conjunction with bank supervisors, may need to consider various approaches, possibly including standards, that could be used to limit potential liquidity, credit, and operational risks stemming from concentrated payment flows through a few very large players participating in payment systems. With regard to major payment systems, the Core Principles for Systemically Important Payment Systems now provide a key set of evaluative standards for the relevant authorities.

### **3. Extended summary**

#### **Patterns**

Firms can combine with each other in a number of ways. The most common approaches are mergers and acquisitions (M&As), which combine independent firms under common control, and joint ventures and strategic alliances, which enhance inter-firm cooperation without combining separate entities. Patterns in the number and total value of mergers, acquisitions, joint ventures and strategic alliances among financial institutions are examined during the 1990s in the 13 countries covered by this study. The structures of the banking, insurance and securities industries are then described to illustrate some of the effects of this consolidation, and other factors.

#### ***Patterns in transaction activity***

Mergers and acquisitions are considered separately from joint ventures and strategic alliances. In some cases, trends in consolidation are similar across all of the study nations. In other cases, there are substantial differences in the experiences of individual countries.<sup>3</sup>

#### ***Broad patterns in merger and acquisition activity***

(1) There was a high level of M&A activity in the 1990s among financial firms in the 13 countries studied. In addition, the level of activity increased over time, with a noticeable acceleration in consolidation activity in the last three years of the decade. The annual number of deals increased threefold during the 1990s and the total value of deals increased almost tenfold in the 13 reference countries considered as a whole. As a result, a significant number of large, and in some cases increasingly complex, financial institutions have been created.

(2) The average value of M&A transactions increased substantially during the last few years of the 1990s. This increase was widespread across the study nations.

(3) Most M&A activity during the 1990s in the financial sector involved banking firms. Acquisitions of banking firms accounted for 60% of all financial mergers and 70% of the value of those mergers in the study nations.

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<sup>3</sup> M&A activity is examined separately using either the target or the acquiring firm as the classifying criterion. Results are most often quite similar using either criterion, and the findings summarised here are, unless noted otherwise, based on results using the target firm. In addition, although the data used are the best available, the classification of transactions within industries and countries can sometimes be problematic and information on the value of transactions is not known in many cases.

- (4) Most mergers and acquisitions involved firms competing in the same segment of the financial services industry and the same country, with domestic mergers involving firms in different segments of the overall industry the second most common type of transaction.
- (5) Cross-border M&As were less frequent, especially those involving firms in different industry segments.
- (6) Most domestic mergers involved banking organisations, but cross-border deals were roughly evenly divided between banks and insurance firms.
- (7) All types of M&As, whether within one country or cross-border and whether within one industry segment or across segments, increased in frequency and value during the 1990s.
- (8) Overall, financial firms in the 13 countries studied were net acquirers. That is, in the aggregate, firms in these countries acquired financial firms in the rest of the world more often than firms in the rest of the world acquired firms in the study nations.

#### *Merger and acquisition patterns in individual regions and countries*

- (9) Using a variety of measures, the United States accounted for about 55% of M&A activity during the 1990s, in part due to its historically large number of relatively small financial firms. However, it is also the case that many very large US banking firms expanded their geographic footprint by acquiring other very large banks, especially in the later part of the decade.
- (10) The overall level of M&A activity as a percentage of GDP varied across countries, from relatively high levels in Belgium, Switzerland, the United Kingdom and the United States to relatively low levels in Canada, Germany and Japan.
- (11) Trends in the number and size of M&As over time varied across countries. France, the Netherlands and Switzerland showed little growth in the number of deals over the 1990s, while Japan showed a very rapid increase in the number of transactions at the end of the decade. Regarding average value, the end of the decade showed Belgium and Switzerland with particularly large increases.
- (12) Financial firms in Japan and the United States tended to focus more on domestic M&As, while other countries, notably Belgium, were more heavily involved in cross-border deals. In large part because of legal restrictions, deals across industry segments were relatively less prevalent in Japan and the United States than in other countries.
- (13) In the United States, financial mergers were more heavily concentrated in banking, while Australia, Canada, the Netherlands and the United Kingdom had a greater proportion of M&As in the insurance, securities and other segments of the financial industry.
- (14) In Europe, roughly two thirds of M&A activity, as measured by the value of the European firm acquired, occurred during the decade's last three years.
- (15) In Europe, there were a number of relatively large cross-border acquisitions of insurance firms. Many domestic acquisitions of European insurance companies were by firms in other segments of the financial industry.

#### *Joint ventures and strategic alliances*

- (16) The number of joint ventures and strategic alliances increased over the 1990s, with especially large increases in the last two years.
- (17) US firms accounted for nearly half of all joint ventures and strategic alliances, and these were overwhelmingly domestic arrangements.
- (18) In the other 12 countries overall, cross-border joint ventures and strategic alliances were more common than domestic deals, a strikingly different result than for M&As.

### ***Patterns in the structure of the financial sector***

International comparisons of industry structures are very difficult because of differences in definitions and measurement across countries. Nevertheless, some broad similarities and differences in industry structures can be distinguished.

- (1) The importance of the banking and insurance industries, as measured by the ratio of industry assets to GDP, tended to increase during the 1990s in the study nations, especially in Europe.
- (2) The number of banking firms in each country tended to decrease during the decade and the concentration of the banking industry, as measured by the percentage of a country's deposits controlled by the largest banks, tended to increase. If other banking activity, such as off-balance sheet activities, were included in the size measure, the increase in banking concentration would be even greater.
- (3) The structure of banking industries continues to differ greatly across countries, ranging from very unconcentrated in a few nations (the United States and Germany) to highly concentrated in about half of the nations in the study (Australia, Belgium, Canada, France, the Netherlands and Sweden).
- (4) The increase in the concentration of the banking industry during the 1990s was relatively great in Belgium, Canada, Italy and the United States and relatively small in Japan and the United Kingdom.
- (5) There are no consistent patterns across countries in changes in the number of insurance firms or concentration in the insurance industry during the 1990s. Also, structural patterns often differed for life and non-life insurance companies in the same country.
- (6) Many specific activities of the securities industry, such as underwriting, are dominated by a small number of leading institutions. It is unclear, however, whether this pattern changed much over the 1990s.
- (7) Over-the-counter derivatives markets grew dramatically in the 1990s, with notional value quadrupling between 1992 and 1999. Concentration measures in worldwide derivatives markets were at modest levels at the end of the decade.

### **Fundamental causes**

The fundamental causes of consolidation are examined using the extensive body of research literature and interviews conducted by Task Force members with 45 selected industry participants and experts from the study nations. Interviewees were asked for their opinions based on a common interview guide.<sup>4</sup>

The analysis distinguishes between motives for consolidation and the environmental factors that influence the form and pace of consolidation. In practice, motives and environmental factors are intertwined, but analysis is facilitated by treating each separately. Environmental factors are divided into two categories: those encouraging and those discouraging financial consolidation.

### ***Motives for consolidation***

Both motives and environmental factors vary over time, across countries, across industry segments, and even across lines of business within a segment. In the interviews, these various dimensions were explored and the contrast in the responses across categories was indeed substantial. Nevertheless, some common themes emerge.

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<sup>4</sup> Summaries of each country's interview responses are presented in an annex to Chapter II of the full report.

### *Cost savings*

(1) Mergers and acquisitions can lead to reductions in costs for a variety of reasons. The existing research literature, which focuses on cost savings attributable to economies of scale, economies of scope, or more efficient allocation of resources, fails to find much evidence suggesting that cost savings constitute an important outcome of mergers and acquisitions.

(2) A large majority of interviewees pointed to economies of scale as a very important motivating factor for consolidations involving firms that operate within the same country and the same industry segment. They viewed economies of scope as a moderately important factor underlying cross-segment M&As. Reasons for the differences between research results and the views of practitioners are discussed in the section on Efficiency, Competition and Credit Flows, below.

### *Revenue enhancement*

(3) Consolidation can lead to increased revenues through its effects on firm size, firm scope (through either product or geographic diversification), or market power. Research suggests that mergers may provide some opportunities for revenue enhancement either from efficiency gains or from increased market power.

(4) Interviewees indicated that revenue enhancement due to increased size was a moderately important factor motivating domestic within-segment mergers, while revenue enhancement due to increased product diversity was a moderately to very important factor underlying domestic cross-segment mergers. Revenue enhancement was also viewed as a fairly important motivator for cross-border consolidation.

### *Other motives*

(5) Other potential motives for consolidation include risk reduction, change in organisational focus and managerial empire building. Interviewees viewed all of these factors as at most slightly important.

### ***Environmental factors encouraging consolidation***

Research and interviews have revealed a number of important factors encouraging consolidation among financial service providers.

#### *Improvements in information technology*

(1) New technological developments have encouraged consolidation because of their high fixed costs and the need to spread these costs across a large customer base. At the same time, dramatic improvements in the speed and quality of communications and information processing have made it possible for financial service providers to offer a broader array of products and services to larger numbers of clients over wider geographic areas than had been feasible in the past.

(2) Interviewees perceived technological advances to be a moderately to very important force encouraging consolidation in the financial services industry.

#### *Deregulation*

(3) Over the past 20 years, many governments have removed important legal and regulatory barriers to financial industry consolidation. The removal of these barriers has opened the way for increased M&As, both within and across national boundaries and both within and across financial industry segments.

(4) The majority of interviewees ranked deregulation as an important factor encouraging consolidation.



### *Globalisation*

(5) Globalisation is, in many respects, a by-product of technological change and deregulation. Its influence as a factor encouraging consolidation has been strongest among firms engaged in the provision of wholesale financial services, highlighting the importance of the expansion of capital markets. As non-financial firms expand the geographic scope of their operations, they expect their financial service providers to be able to meet their changing needs, which may also encourage consolidation.

### *Shareholder pressures*

(6) Increased competition has helped to squeeze profit margins, resulting in shareholder pressure to improve performance. Importantly, shareholders have gained power relative to other stakeholders in recent years. This development is expected to continue, as it is the result of a structural move towards the institutionalisation of savings.

(7) The interplay of all of these factors has put increased pressure on financial institutions to improve profitability. Consolidation has in many cases seemed an attractive way to accomplish this objective.

### *The euro*

(8) Although the impact of the euro on financial sector consolidation in Europe is still difficult to assess, there are reasons to believe that the euro is stimulating consolidation in Europe. These reasons relate primarily to the euro-induced changes in financial markets in Europe, which provide new opportunities for realising economies of scale and revenue enhancement through consolidation.

(9) The euro has not significantly influenced consolidation in countries outside Europe.

### ***Environmental factors discouraging consolidation***

Two key factors continue to discourage financial consolidation: regulation and cultural differences.

#### *Regulation*

(1) Deregulation has played an important role in encouraging consolidation among financial service providers over the past two decades. However, remaining legal and regulatory restrictions (eg competition policies and policies limiting foreign ownership of financial institutions) and differences in regulations across countries (eg capital standards) continue to discourage some types of consolidations, especially those that involve cross-border activity.

(2) Interviewees frequently cited legal and regulatory constraints as an important impediment to mergers and acquisitions.

#### *Cultural differences*

(3) Cultural differences, which include different corporate cultures and corporate governance regimes, as well as differences in language or national customs, appear to be important impediments to consolidation, especially on the cross-border and cross-product levels.

(4) Regulation and cultural differences can have particularly strong deterrent effects on hostile takeovers of financial institutions. In addition, the existence of strong information asymmetries between potential acquirers and potential targets in appraising illiquid financial assets probably discourages hostile takeovers.

### ***Future trends***

On balance, financial consolidation is likely to continue. At least three reasonable and not mutually exclusive scenarios can be distinguished, and the future balance among these possibilities is impossible to project with any reasonable degree of confidence.

(1) Continuation of the current trend towards globally active universal financial service providers. Under this scenario, M&As both within segments of the financial industry and across segments would continue, as well as between financial and non-financial entities (where permitted by law).

(2) Continued consolidation resulting in functionally specialised financial firms. Under this scenario, firms would become more specialised as they grow in part through mergers of firms within a given segment of the financial industry, combined with the spinning-off of non-core lines of business.

(3) Continued consolidation along with a gradual "deconstruction" of the supply chain of financial services. In this scenario, in some ways a more extreme form of scenario (2), firms specialise in the production of particular components of financial services or in the distribution to end users of products obtained from specialised producers (eg internet services) either within or outside the traditional financial services industry.

As the costs of merging rise, particularly between large entities, looser forms of consolidation, such as strategic alliances or joint ventures, may become attractive alternatives within the context of any of these scenarios.

### **Financial risk**

Financial consolidation can affect the risk both of individual financial institutions and of a systemic financial crisis. Thus, both types of risk are analysed below. Because different nations, or sometimes geographic groupings of nations, can have very distinct economic characteristics, risk is analysed separately for the United States, Europe and Japan.<sup>5</sup> The discussion focuses on the effects of consolidation on financial risk that are judged to be common across the regions, effects that are relatively concentrated in a particular region, and the implications of both for policy development.

#### ***Common effects in the United States, Europe and Japan***

Although the evaluation of financial risk for each of the three geographic regions used a common analytical framework, authors were given wide latitude to pursue their topics from the perspectives most appropriate for their area. Interestingly, this approach identified a large number of common themes across the nations in the three regions regarding the potential effects of financial consolidation on financial risk. These include:

(1) The potential effects of financial consolidation on the risk of individual financial institutions are mixed, and the net result impossible to generalise. Indeed, the analysis strongly indicates that, when it comes to evaluating individual firm risk, a case by case assessment is required. The one area where consolidation seems most likely to reduce firm risk is the potential for diversification gains, although even here the possibilities are complex. For example, diversification gains seem likely to accrue from consolidation across regions of a given nation and from consolidation across national borders. Although such gains are most likely to arise due to asset diversification across geographies, some gains may also derive from geographic diversification on the liabilities side of the balance sheet. In addition, diversification gains may result from consolidation across financial products and services, although research suggests the

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5 An annex to Chapter III considers the potential impacts of consolidation on managing systemic risk in Canada.

potential benefits may be fairly limited. On the other hand, after consolidation some firms shift towards riskier asset portfolios, and consolidation may increase operating risks and managerial complexities. For example, organisational diseconomies may occur as financial institutions become larger and more complex if senior management teams stray far from their areas of core competency. More broadly, there is no guarantee that cost savings or efficiency gains will be realised.

(2) Economic shocks that have the potential to become systemic financial risk events are most likely to be transmitted to the real sector through the wholesale activities of financial institutions and markets, including payment and settlement systems.<sup>6</sup> Largely because of deposit insurance, retail deposit runs and traditional flights to currency are highly unlikely, and in fact have not occurred in the regions studied since World War II. However, the costs of a systemic crisis are likely to be borne by a broad range of economic agents.

(3) In part because the net impact of consolidation on individual firm risk is unclear, the net impact of consolidation on systemic risk is also uncertain. However, it seems likely that if a large and complex banking organisation became impaired, then consolidation and any attendant complexity may have, other things being equal, increased the probability that the work-out or wind-down of such an organisation would be difficult and could be disorderly. Because such firms are the ones most likely to be associated with systemic risk, this aspect of consolidation has most likely increased the probability that a wind-down could have broad implications.

Important reasons for this effect include disparate supervisory and bankruptcy policies and procedures both within and across national borders, complex corporate structures and risk management practices that cut across different legal entities within the same organisation, and the increased importance of market-sensitive activities such as OTC derivatives and foreign exchange transactions. In addition, the larger firms that result, in part, from consolidation have a tendency either to participate in or to otherwise rely more heavily on “market” instruments. Because market prices can sometimes change quite rapidly, the potential speed of such a firm’s financial decline has risen. This increased speed, combined with the greater complexity of firms caused in substantial degree by consolidation, could make timely detection of the nature of a financial problem more difficult, and could complicate distinguishing a liquidity problem from a solvency problem at individual institutions.

The importance of this concern is illustrated by the fact that probably the most complex large banking organisation wound down in the United States was the Bank of New England Corp. Its USD 23.0 billion in total assets (USD 27.6 billion in 1999 dollars) in January 1991 when it was taken over by the government pale in comparison to the total assets of the largest contemporary US firms, which can be on the order of USD 700 billion.

(4) Evidence suggests that interdependencies between large and complex financial institutions have increased over the last decade in the United States and Japan, and are beginning to do so in Europe. Importantly, although a causal linkage has not been established, these increases are positively correlated with measures of consolidation. Increased interdependencies are consistent with the view that systemic risk may have increased, because they suggest that a common shock would tend to be transmitted to many firms. A variety of evidence is presented which attempts to measure changes in total, direct and indirect interdependencies between firms. The evidence suggests that the areas of increased interdependency that are most associated with consolidation include interbank loan exposures, market activities such as exposures in OTC derivatives, and (as discussed below) payment and settlement systems.

(5) Partly as a result of consolidation, banks are not the only potential sources of and transmission mechanisms for financial instability. The general blurring of differences among

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<sup>6</sup> Payment and settlement issues are considered separately in the relevant section below.

commercial banks, investment banks, insurance companies and other types of financial intermediaries and the substantial rise in the importance of market activities strongly suggest that some non-bank financial institutions and markets could also be sources and transmission mechanisms. In addition, the consolidation of an increasingly wide range of financial activities within large and complex organisations that include banking units points to an increased risk of contagion effects running from the non-bank to the commercial bank parts of the same organisation.

(6) Consolidation also appears to be increasing the possibility that even a medium-sized foreign bank (or perhaps a non-bank financial institution) from a large nation would be a potential source of instability to a relatively small host country. The possibility of loss of domestic ownership of a small nation's major banks has, other things being equal, also increased. In addition, partly through cross-border consolidation there has been an increase in the role within the international financial system of institutions with operations in a number of jurisdictions. These developments raise the issues of: (a) how much further national crisis prevention and management policies may need to converge; (b) the extent to which policies may need to be assessed in an international rather than a domestic context; and (c) potential complications in crisis resolution due to the absence of cost-sharing arrangements across countries.

(7) It appears that consolidation, and especially any resulting increased complexity of financial institutions, have to some extent increased both the demand by market participants for and the supply by institutions of information regarding a firm's financial condition. The resulting rise in disclosures has probably improved firm transparency and encouraged market discipline, thus lowering individual firm risk and perhaps increasing financial stability. However, the increased complexity of firms has also made them more opaque, their increased size has the potential to augment moral hazard, and thus the net effects on firm transparency and market discipline are unclear. Indeed, there appears to be considerable room for improvement in disclosures.

### ***Important asymmetries of effects***

In addition to important common themes, a number of key diversities were identified across countries and regions. These diversities sometimes derive substantially from consolidation, and in some cases complicate evaluation of consolidation effects. Moreover, it is important to understand that the differences are primarily a matter of degree, and generally do not reflect stark asymmetries of effects. For example, although European firms have to date played a relatively prominent role in cross-border consolidation, cross-border deals, and the issues resulting therefrom, are clearly relevant in all the study nations.

### ***United States***

(1) The relatively strong desire of the United States to limit the federal safety net to insured depository institutions, and its relative lack of experience with financial conglomerates, raise a number of difficult issues that derive in part from the resulting complex corporate structure of growing and consolidating large US financial institutions. Important issues that derive in some degree from consolidation include the extent of supervision that should be applied to the various legal entities within a single organisation, the division of labour among "functional" supervisors, how best to manage the wind-down of a large and complex organisation, and a relatively high level of concern with operational risks.

(2) Market activities tend to play a considerably greater role in the total activities of US financial institutions than they play in continental European and Japanese financial institutions. Although increased reliance on markets and market activities are likely to be, in a broad sense, risk-reducing, such activities can introduce new risk considerations that may become systemic in certain situations. For example, as discussed above, the speed of a firm's deterioration could be accelerated. Partly in response to such considerations, disclosure practices in the United

States appear to be considerably more extensive than are those in either Europe or Japan. Finally, the long period of macroeconomic stability in the United States has not provided a strong test of reforms begun in the early 1990s that were designed to limit the safety net and encourage market discipline.

### *Europe*

(3) As in other G10 countries, systemic events are likely to remain primarily national concerns in Europe over the near future. However, the euro has accelerated the speed of financial market integration and is encouraging cross-border activity by financial institutions, partly through consolidation. Therefore, if cross-border interdependencies grow rapidly across European countries, the probability that a banking crisis in one country will affect the banking systems of other countries is likely to be higher in the future. The current framework of harmonised directives across EU countries and the arrangements in place for extensive bilateral and multilateral cooperation, such as the Banking Advisory Committee, the Banking Supervisory Committee and the Groupe de Contact, provide a comprehensive framework for the management of banking crises. Still, European national authorities should increase the harmonisation of their policies and the coordination of actions taken in the prevention and management of crises, along the lines suggested recently by the European Union Economic and Financial Committee in its Brouwer Report (2000).

(4) Because of the number of sovereign nations involved, the cross-national problems that usually arise in all nations when merging institutions try to integrate across national borders tend to be more immediate and relatively intense in Europe. Such difficulties can derive from, for example, differences in national law and custom. These complexities are in addition to the standard problems that often appear from efforts to combine different corporate cultures. In both cases, integration complexities can affect the risk profiles of the firms involved.

### *Japan*

(5) To date, the rather limited consolidation among large financial institutions in Japan has been driven primarily by two imperatives: the need to manage and resolve the ongoing financial crisis, and the Big Bang deregulation reforms. Thus, key issues revolve around crisis management, crisis prevention and the desire to encourage market discipline. In addition, despite the relatively small amount of consolidation among large financial institutions so far, additional consolidation is anticipated.

(6) In Japan, the need to manage a financial crisis that involves, among others, some of the largest financial institutions in the nation has required considerable flexibility in administration of the safety net. For example, explicit government guarantees of financial institution liabilities have been much more extensive in Japan than in other G10 nations in recent years. Looking forward, and as consolidation proceeds, it is expected that competitive forces as well as market discipline will play much greater roles in maintaining the strength and stability of the financial system.

(7) Consolidation may encourage the development of capital markets in Japan, with potential benefits for improved financial stability. For example, as consolidating (and competitively pressed) financial institutions are forced to concentrate more on maximising return on equity, some former borrowers may need to seek funding from other sources, including the capital markets. In addition, in order to reduce risk, consolidating firms are likely to need to shrink their balance sheets through other devices, including the securitisation of assets and the sale of portions of their often extensive holdings of corporate stock. Both actions would further stimulate capital market development.

(8) With respect to the possible effects of consolidation on individual firm risk in Japan, two additional points are noteworthy. First, the potential for risk reduction through the geographic diversification of assets seems quite limited *within* Japan. However, the potential for risk reduction via the diversification of liabilities, including the acquisition of relatively stable

core deposits, appears to be much greater. Second, the ongoing expansion of the co-ownership of banking and commercial firms in Japan may lead to the creation of “platform risk”, whereby a bank is physically dependent on the platform (eg a supermarket) of the commercial business.

### ***Policy implications***

Existing policies and procedures appear adequate to contain individual firm and systemic risks both now and in the intermediate term. However, the analyses presented are quite supportive of the need for continued policy development in a number of areas. The Working Party is aware that a large number of policy initiatives are under way in a variety of forums. The intention here is to reinforce those that, from the point of view of the effects of consolidation on financial risk, appear to be the most important, and to suggest some new directions or areas needing expanded attention.

The areas worthy of further policy development cut across a number of interdependent dimensions. These include crisis prevention and crisis management, public and private actions, including the appropriate use of taxpayer versus private funds, supervisory and market discipline, and trading off public actions and moral hazard. In the judgement of the Working Party, the most important areas in need of ongoing policy development are:

(1) Both crisis prevention and crisis management could be improved by additional communication and cooperation among central banks, finance ministries and financial (both bank and non-bank) supervisors, both domestically and internationally. Such efforts are particularly important given the extent of current and expected cross-sector and cross-border consolidation in the financial services industry. Specific areas where improvements could yield significant net benefits are discussed below.

(2) Important components of improved crisis prevention and management are effective and efficient policies and operating procedures for acting promptly to deter and resolve a potential crisis. A central element here, particularly in the light of consolidation’s contribution to the creation of very large and complex financial organisations, is how to act in ways that minimise moral hazard. Policies implemented in recent years in a number of nations designed to encourage prompt intervention by supervisors in a troubled institution appear to have promise, but have yet to be tested in a major crisis. Although all nations studied are sensitive to the need to minimise moral hazard incentives, perspectives differ depending in part on a nation’s current situation and experience with crisis management.

(3) Crisis management could be eased considerably by augmented contingency planning for working out a troubled large and complex financial institution in an orderly way. The most effective approach will probably involve efforts by both the public and private sectors, and possibly both within and across borders. Areas where clear understanding is critical include: (a) the administration of bankruptcy laws and conventions; (b) the coordination of supervisory policies, especially early intervention, within and across borders; (c) the treatment of OTC derivatives, foreign exchange, and other “market” activities in distress situations; (d) the roles and responsibilities of management and boards of directors; and (e) administration of the lender of last resort function.

(4) The probabilities both of an individual firm experiencing severe financial difficulties and of a systemic crisis could be lowered by more effective risk-based supervision of financial institutions. In addition to the large number of initiatives under way, the results of this study highlight the importance of timely monitoring and surveillance. With regard to monitoring and surveillance, the increasing importance of cross-border operations and market activities suggests an augmented need to evaluate risk developments at not only the individual institution level, but also at the overall market level or, put differently, from a “systems” perspective (see point 9 below).

(5) A critical element of improved risk-based supervision is risk-based capital standards that are tied more closely to economic risk. Capital standards provide an anchor for virtually all

other supervisory and regulatory actions, and can support and improve both supervisory and market discipline. For example, early intervention policies triggered by more accurate capital standards could prove to be important in crisis prevention.

(6) If taxpayer funds are needed to manage and resolve a crisis, as seems likely given the increasing size and complexity of financial institutions, increasing cross-border consolidation may require the development of cost-sharing arrangements among governments, and additional policies and procedures to minimise moral hazard incentives.

(7) Both crisis prevention and crisis management could be enhanced by clearer understanding of how best to deal with non-bank financial institutions, including the treatment of non-bank entities that are part of a financial conglomerate that includes a bank. It should be acknowledged that the scale and level of financial market participation of a number of non-bank financial institutions in some countries are sufficient to make their impairment a potentially systemic event. How best to resolve the resulting and inevitable tension between protecting financial stability and inducing moral hazard is difficult to determine, but an issue that policymakers should address.

(8) Improved market discipline also has the potential to decrease the probabilities of individual firm and systemic crises, although markets can sometimes react quite rapidly, thereby forcing supervisors' actions and introducing complexities that might not otherwise occur. In any event, the size and complexity of consolidating financial institutions support, and may well require, the use of market discipline as a complement to supervisory discipline. Effective market discipline requires clear incentive structures both within institutions and among other market participants. A number of strategies for improving market discipline seem potentially promising for financial institutions in all of the nations studied, and include augmented disclosures, improved risk management, stronger incentives for risk control by owners and managers, and improved accounting conventions.

(9) Assessment of the likelihood of a systemic crisis, and the understanding of its potential implications, could be improved by the collection and analysis of data that are better targeted on such concerns. Although the precise links between financial institutions and markets that are most likely to augment systemic risks are uncertain, and indeed somewhat unique to a given crisis, the analysis suggests that consolidation has probably increased interdependencies among firms and raised the probability that markets will play an important role in a future crisis. Thus, the monitoring and evaluation of individual firm data, both traditional (or improved) accounting and market data, in combination with data on firms' interdependencies, financial markets, and domestic and international macroeconomic variables, might yield valuable insights into risks posed by interdependencies and possibly improve early warning systems. At a minimum, it would seem prudent to evaluate whether central banks, finance ministries and other financial supervisors are collecting and evaluating data at both the domestic and international levels that are appropriately targeted on future possibilities.

### **Monetary policy**

The behaviour of financial firms and markets influences the environment in which monetary policy decisions are made, how they are put into practice, and how they are transmitted to output and prices. Thus, if consolidation causes changes in the behaviour of financial intermediaries or the operation of financial markets, it could have implications for the conduct of monetary policy. As with other topics evaluated in this study, it is difficult, particularly looking at data within a single country, to disentangle the effects, if any, of consolidation from those of globalisation, technical innovation, deregulation, and other factors affecting the behaviour of financial intermediaries.

### ***Effects on the implementation of policy***

Whether consolidation affects the implementation of monetary policy depends on whether it has impacts on the market for central bank balances, or the market(s) used by the central bank to adjust the supply of such balances. Consolidation may affect such markets in two ways.

(1) First, consolidation may reduce the degree of competition in the relevant markets. Reduced competition might cause liquidity to be more costly for those participants with less market power, and hence impede the arbitrage of interest rates between the market targeted by the central bank and other financial markets. Decreased competition might also lead to higher volatility in very short-term interest rates, if consolidation allowed firms to exercise their increased market power only from time to time, depending on market conditions.

(2) Second, consolidation could affect the performance of these markets because the resulting large financial firms behave differently from their smaller predecessors. For example, by internalising what had previously been interbank transactions, consolidation could reduce the liquidity of the market for central bank reserves, making it less efficient at reallocating balances across institutions and increasing market volatility.

(3) Virtually all central bank responses to a Task Force questionnaire suggest that the impact of consolidation on the operation of these markets has so far been minimal, and it is not expected to be a significant concern in the future. In practice, the structures of the market for central bank balances and the markets used for monetary policy operations differ widely across countries. In most countries, consolidation has reduced the number of participants in these markets. However, even in those countries with relatively few participants, the relevant markets appear to be partially contestable. That is, the market power of participants is constrained to some degree by the possibility that new firms could enter the market. In addition, the euro has encouraged development of European money and capital markets, thus making the number of participants in a particular nation's markets less relevant. Finally, the central bank's position as a monopoly supplier of central bank liquidity gives it countervailing power and allows it to adjust operational arrangements as it sees fit.

(4) Nevertheless, central banks reported that possible reactions to increased consolidation in the future might include more careful monitoring of operations, stricter assessment and management of counterparty risk, and efforts to encourage the participation of more counterparties (eg changing eligibility criteria).

### ***Effects on the monetary transmission mechanism***

Financial sector consolidation may also alter the monetary transmission mechanism that links central bank decisions and operations to the rest of the economy. This mechanism works via various channels.

#### ***The monetary channel***

(1) The "monetary channel" concerns the transmission of interest rates across financial markets by arbitrage along the yield curve and across financial products (ie the "pass-through" of changes in the interest rate targeted by the central bank to other rates, including bank lending and deposit rates).

If consolidation leads to greater concentration among financial intermediaries, that could lead to higher and perhaps more variable margins between borrowing and lending rates. It could also influence the lags in the monetary transmission mechanism (eg reduce them if bigger firms can process more information more rapidly or increase them if bigger firms are more able to exploit customer inertia when official rates change).

(2) Many other factors also affect the pass-through in practice, such as the introduction of new technologies by financial intermediaries, the development of new financial instruments, the reduction in barriers to entry in some financial markets, and the greater integration of capital



markets across countries. Even if consolidation does affect the transmission mechanism, central banks would over time be able to adjust their policy settings appropriately in response to observed changes in pass-through without needing to identify the precise reasons for those changes – if necessary, by trial and error – particularly if the pace of consolidation is gradual compared with central banks’ decision cycles.

(3) Empirical evidence about the effect of consolidation on pass-through is scarce and inconclusive. Some evidence suggests that consolidation may have led to margins being higher than they would otherwise have been. One cross-country study concluded that barriers to entry – but not market concentration as such – may slow down interest rate adjustments.

(4) The responses of central banks to the Task Force’s survey generally indicated that consolidation by itself had not had an important influence on pass-through, although some noted that the speed of pass-through had increased for various reasons, possibly including consolidation. Some European central banks thought that consolidation would increase the degree and speed of pass-through to administered rates in the future. Several respondents noted that other factors – especially globalisation and increases in competition in more integrated markets – had probably more than offset the possible adverse effects of consolidation on the level of competition in financial markets.

#### *Bank lending and balance sheet channels*

Consolidation could also affect the transmission mechanism by influencing other possible channels of monetary policy.

(5) These channels include: the “bank lending” channel, which operates through the impact of policy changes on the supply of bank loans to borrowers without direct access to financial markets; and the “balance sheet” channel, which operates through the effect of monetary policy on the value of collateral, and so on the availability of credit to those requiring collateral to obtain funds.

(6) In principle, consolidation could influence both of these alternative channels. Indeed, there is some suggestive cross-country evidence that differences in the structure of countries’ financial sectors can help to explain differences in the strength of the effects of monetary policy. However, some research has cast doubt on the empirical importance of these channels of policy, and direct effects of consolidation have been difficult to identify.

(7) There is some evidence that larger banks find it easier than smaller banks to fund loans in periods of tight monetary policy, so consolidation might reduce the importance of the bank lending channel, and hence the impact of any given change in the interest rate targeted by the central bank.

(8) Central bankers did not report such an effect, generally noting either that this channel was not particularly important in their country or that its importance was difficult to assess.

(9) Similarly, if consolidation influences the need for borrowers to post collateral, it could influence the balance sheet channel, although the sign of the theoretical relationship is not clear. The empirical evidence is also ambiguous, and so it is not surprising that central banks reported that changes in the importance of this channel have not been a major consideration.

#### *Other possible effects*

Financial sector consolidation could also affect the setting in which monetary policy is determined.

(1) For example, cross-border consolidation is likely to have increased the potential for shocks in one country to affect financial firms and markets in another.

(2) A reduction in the number of firms participating in financial markets could reduce market liquidity and depth and perhaps boost market volatility.

(3) Consolidation could also reduce the resilience of markets during times of stress, either because shocks were transmitted across firms and markets more rapidly or to a greater degree than had been the case, or because financial firms became less willing or able to act to cushion the impact of shocks on borrowers and markets.

(4) However, central banks did not report significant effects of consolidation on the volatility or liquidity of financial markets.

(5) Nor did they think that consolidation had made it significantly more difficult to interpret movements in indicator variables such as monetary aggregates.

(6) Consolidation has encouraged the development of very large and complex financial institutions, and this trend is expected to continue. Such institutions could pose increased challenges to central banks in their lender of last resort and monetary policy roles. In the event of financial difficulties at such firms, central banks would need to consider carefully the appropriate provision of emergency liquidity, as well as whether the stance of monetary policy should be adjusted in the light of the possible macroeconomic impact of the difficulties. However, central bankers did not believe that consolidation increased the likelihood that policy would be unduly influenced by firm-specific concerns.

### ***Conclusions and policy implications***

(1) So far, financial sector consolidation does not appear to have impeded the implementation of monetary policy or altered significantly the transmission mechanism of monetary policy.

(2) Central bankers reported that they had not noticed any effect of consolidation on the distributional impact of monetary policy (eg households vs firms or large firms vs small ones). This is consistent with the lack of evidence of significant changes in the monetary transmission mechanism.

(3) Research targeted on further refining theories of the monetary transmission mechanism could help to clarify what effects might appear in the future.

(4) Central banks can be reasonably confident when setting monetary policy that frequent reviews of the data allow them to take account of most changes in the relationship between their target interest rates and developments in the rest of the economy, even if the reasons for the changes are unclear. However, identifying those reasons may help establish how persistent those changes are likely to be.

(5) Nonetheless, it would be prudent for central banks to bear in mind the possible implications of any reductions in the competitiveness of the key financial markets involved in the implementation of policy, as well as the potential changes in the role of the bank lending and balance sheet channels of monetary policy transmission that might be brought about by future financial sector consolidation.

### **Efficiency, competition and credit flows**

Foreign ministries, central banks and financial supervisors are frequently concerned about the potential impacts of financial consolidation on the efficiency of financial institutions, the degree of competition in the markets for financial services, and on credit flows to small and medium-sized enterprises.

#### ***Efficiency***

Efficiency is a broad concept that can be applied to many dimensions of a firm's activity. A narrow definition takes size and technology as given, and focuses on measuring managerial efficiency (the optimisation of existing resources) by analysing how production factors are combined. A more comprehensive definition also considers economies of scale and scope, both

of which vary with technologies, regulations and consumers' tastes. Efficiency gains can be gauged with the help of the stock market performance of the merging institutions; consolidation creates value if the sum of the market valuations of the bidder and the target increases.

### *Commercial banks*

When comparing cost and revenue structures, it should be remembered that in countries with a heavily bank-oriented financial system the banking industry may evolve differently than in countries where securities markets are prominent. In countries with well developed financial markets, banks provide many services in addition to loans and deposits; they have better opportunities to tailor their risk profile, both on- and off-balance sheet. Furthermore, differences in regulation mean that, while in some countries commercial and investment banks are (or have in the past been) separated, in others they can operate jointly as universal banks and even have cross-shareholdings with industrial companies. These differences hamper international comparisons. All these warnings notwithstanding, the banking industries in the countries studied share some structural features that emerge from a careful analysis.

(1) Evidence suggests that only relatively small banks could generally become more efficient from an increase in size. However, changes in technology and market structure might affect scale and scope economies in the future. In addition, the direct evidence on how M&As affect banks' performance is mixed. In general, more efficient banks acquire relatively inefficient banks, but there is little evidence of subsequent cost reduction. For deals consummated over the last decade, there is some evidence of improvement, especially on the revenue side. The gains, however, are probably not as large as those anticipated by practitioners.

(2) The main finding of studies that examine share prices around the time that a merger is announced is that, on average, total shareholder value is not affected by the announcement of the deal. On average, the bidder suffers a loss that offsets the gains of the target. Put differently, M&As seem typically to transfer wealth from the shareholders of the bidder to those of the target.

### *Other financial institutions*

(3) For the securities industry, results based on US data indicate that economies of scale exist, but mainly among smaller firms; larger firms demonstrate scale diseconomies. Similarly, research suggests that smaller specialty firms tend to exhibit modest economies of scope while large multi-product firms exhibit modest diseconomies of scope. In general, however, economies of scope do not appear to be important in the securities industry. These results suggest that there is room for both diversified and specialty firms, as long as they are above minimum efficient scale.

(4) Economies of scale in the asset management industry are significant only up to a relatively small size threshold. The evidence is slightly more favourable for scope economies. Such findings are consistent with recent developments in the industry, in which asset management services are often distributed jointly with other financial products in order to reap the benefits from cross-selling.

(5) As is the case for commercial banks, smaller insurance companies could probably reduce their costs by taking advantage of potential economies of scale. However, the benefits are likely to disappear after a threshold that is well below the size of the largest firms. The existence of economies of scope with other financial institutions is unclear. The insurance industry is still very fragmented because of regulation and the specificity of some of its products. The dispersion of efficiency levels that results from these barriers to entry could probably be reduced if better managed firms acquired weaker ones, but the limited evidence available for the past and the rapid changes expected in the future make it difficult to assess the potential efficiency gains from M&As.

### *Views of practitioners versus results of research*

Research on the ex post results of M&As seems to contradict most of the motivations given by practitioners for consolidation, which are largely related to issues of economies of scale and scope and to improvements in management quality. However, to a certain extent this puzzle might be only apparent because:

- (6) practitioners may consider cost reductions or revenue increases per se to be a success, without also taking into account industry trends as a benchmark;
- (7) practitioners may focus on absolute cost savings rather than on efficiency measures that compare costs to assets;
- (8) while research finds no improvements on average, some institutions improve efficiency and some do not. Given the inside knowledge of their firm and the arm's-length knowledge of competitors, managers might be justified in believing that their institution might be among the ones that would benefit from a merger or acquisition; and
- (9) deals done in the past might have suffered from stricter regulation (eg labour laws) that prevented firms involved in M&As from reaping all the benefits of the deal. Such regulations may not exist in the future.

### ***Competition***

The effects of consolidation on competition depend on the demand and supply conditions in the relevant economic markets, including the size of any barriers to entry by new firms.

### *Market definition*

- (1) On the demand side, markets for a number of key retail bank products appear to be primarily local. In empirical research, local markets are usually approximated by areas such as provinces, rural counties, cantons or metropolitan areas. In the United States, this assumption is supported by survey evidence indicating that both households and small businesses overwhelmingly procure banking services from suppliers located within a few miles of the customer; it is still rare to deal with institutions that can be reached only via the telephone or the internet. Despite the development of electronic banking and other advances, in Europe transport costs are still significant, and entry into foreign markets requires opening or acquiring a network of branches.
- (2) There is also evidence on the supply side that some banking markets are local. The number of bank branches in most countries continues to increase despite a consolidation process that has reduced the number of independent banking organisations and statutory changes that have largely removed legal constraints on bank geographic expansion. This indicates that firms continue to feel the need for a local presence.
- (3) Wholesale banking products generally have markets that are national or international in scope. In much of continental Europe, bond markets that tended to be national have expanded with the adoption of the euro; cross-border competition should also increase for services like correspondent banking. The geographic scope of markets is also national or international for investment banking services, money market trading, foreign exchange trading, derivatives trading and asset management.
- (4) Geographic markets for most insurance activities appear to be national (statewide for the United States), although the barriers to entering geographic markets might be low relative to the barriers to entering different product lines.

### *Barriers to entry in financial markets*

There are three main types of barriers to entry in financial markets: (a) regulatory barriers, including specific subsidies or public guarantees; (b) entry barriers due to differences in firms' costs, especially those that arise when entry requires significant sunk costs, such as the necessity

to set up a network of branches; and (c) relatively inelastic customer demand, which may exist if costs of switching among financial service providers are large.

(5) It seems clear that regulatory barriers to entry have decreased with the deregulation and globalisation of financial markets. Introduction of the euro has reduced barriers to entry into some European markets.

(6) The impact of technology, driven in part by consolidation, is uncertain. On the one hand, technology might increase some fixed costs, including advertising expenses, and it might contribute to locking consumers in with their existing suppliers by increasing switching costs for customers. On the other hand, technology might expand the geographic limits of markets, thus enhancing competition from firms located in other areas.

#### *Consolidation and prices*

(7) Research using both European and US data generally finds that higher concentration in banking markets may lead to less favourable conditions for consumers. Studies using US data indicate the existence of market power in some markets for small business loans, retail deposits and payment services, although results are weaker for the 1990s than for the previous decade.

Studies that examine directly the pricing strategies of merging institutions support the view that M&As may influence market prices. Studies in the United States, Italy and Switzerland find that in-market concentrations have the potential to cause a reduction in deposit interest rates or an increase in loan rates.

(8) On balance, evidence suggests that investment banks may be exerting some degree of market power. Moreover, the importance of reputation and of the placing power of underwriters may create a barrier to entry that is likely to survive even the technological developments foreseeable in the near future. Therefore, in-market consolidation among large firms could affect negatively their consumers.

The investment banking industry is highly internationalised, as the largest firms are chartered in many different countries. However, the market is highly concentrated: a small group of firms dominates each segment. For example, the market share of equity underwriting of the five largest firms is above 50% both in the United States and in Europe. Nonetheless, there is little research available on the degree of competition in the investment banking sector.

In Italy, a thorough examination by the antitrust authorities concluded that, even though the market for investment banking was dominated by a small number of firms, there was no evidence of abuses. In contrast, studies of US securities markets found evidence of anticompetitive pricing and procompetitive effects of entry.

(9) In the last few years, the insurance markets in the nations studied have generally become more competitive, although the extent of competition seems to vary significantly from product to product and from country to country. Research on US insurance markets finds higher prices in more concentrated markets.

#### *The potential impact of technology on competition*

(10) The continued evolution of the internet and other forms of electronic commerce could have major implications for the definition of geographic markets, thereby altering the potential effects of consolidation. Although electronic finance is not yet widespread, forecasts suggest rapid growth in the near future. If financial services can be purchased or supplied effectively by electronic means without the need for physical branch offices, geographic limits to market expansion may disappear, increasing competition from firms located in other areas. Developments in electronic technology could also reduce entry barriers by reducing search costs for consumers.

(11) The development of e-finance may also reduce, rather than increase, competition. Financial institutions are increasingly operating in multiple sectors, partly in an attempt to sell

bundles of products to customers. Due to technological progress, these bundles may become more and more customised for a large number of consumers. As a result, switching costs may rise, especially if suppliers provide enough products to justify “one-stop shopping” strategies. Finally, new ways of distributing financial services may be created which could only be exploited by vertical consolidation of financial institutions with non-financial partners such as telecom and media enterprises.

(12) The short- and medium-term benefits of e-finance, however, should not be exaggerated. Electronic banking does not reduce information costs for products where the bank has to rely on information about local markets. Furthermore, new entrants may be forced to back up their internet entry with significant advertising outlays before they can effectively compete. For some high-value, infrequently purchased products, customers may demand more than online contracts, however personalised. Generally speaking, consumers currently do not seem to view internet banking as a substitute for banking with an institution that has physical branches. Also, at the moment, the necessary legal framework is incomplete for internet commerce, in particular with regard to consumer protection and money laundering.

### *Credit flows*

Small and medium-sized enterprises (SMEs) make a substantial contribution to the economies of the nations studied. For example, in 1996, on average, they accounted for 66% of total employment in Europe and more than 50% of the labour force in Canada and the United States. SMEs are also prominent in Japan. Currently, SMEs are highly dependent on banks, particularly in Europe.

In many countries, consolidation in the banking system has involved a large number of small banks. The reduction in the number of these institutions may affect the availability of credit to small firms. When consolidation occurs, the larger bank resulting from the merger is able to expand its lending capacity with respect to larger borrowers and it may restructure its portfolio, discontinuing credit relationships with smaller borrowers. To the extent that credit relationships between banks and small businesses are characterised by a greater degree of information asymmetries, small firms could face difficulties in finding credit from other sources.

### *Consolidation and credit rationing*

(1) Statistical studies of the effect of consolidation of banks on small business lending are available for only a couple of countries (Italy and the United States). These studies suggest that banks reduce the percentage of their portfolio invested in small business loans after consolidation.

(2) However, the impact of M&As on small business lending depends crucially on the motivations of the deal and on the type of banks involved. Moreover, what is relevant is the effect on the total availability of credit to small borrowers and whether it is associated with more accurate pricing of risk. In the United States, studies that have examined the effect of M&As on small business lending by other banks in the same local markets found that other banks and new entrants tend to offset the reduction in the supply of credit to small firms by the consolidating banks. In Italy, consolidating banks tend to shift away from the worst borrowers.

### *Potential impact of technology on small business lending*

(3) Credit scoring models, currently used mostly by large banks, will benefit mainly “transaction-type” loans, which, like credit card loans, do not need much information-intensive credit evaluation. Thus, some of the potentially negative effects of consolidation, such as a reduction in credit availability by banks involved in M&As, may be partially offset by such innovations. However, benefits to date seem quite limited. In addition, technology will not necessarily reduce the cost, and indeed may increase the relative cost, of processing the information typical of relationship lending, harming small borrowers who do not, for example, qualify for a sufficiently high credit score.

### ***Policy implications***

In the judgement of the Working Party, the most important policy implications of consolidation for efficiency, competition and credit flows are:

- (1) Policymakers should carefully examine claims of substantial efficiency improvements by financial institutions proposing major consolidations, especially in cases in which a merger could raise significant issues of market power.
- (2) The impact of consolidation on competition can only be assessed by using empirically supported definitions of the relevant product and geographic markets. Because financial markets are constantly changing, these definitions have to be scrutinised regularly, also taking into account the differential impact on different classes of consumers, such as households and small firms.
- (3) The impact of technological changes could be more powerful for households than for small firms, because standardised techniques such as credit scoring models are more suited to the former. The analysis of relevant markets for antitrust purposes should take into account changes due to technological forces in the geographic and the product dimensions as well as changes in demand.
- (4) In order to increase competition in an environment that is reducing significantly the number of providers of financial services, consideration could be given in some nations to removing obstacles to the mobility of customers across financial service providers. This could be done, for example, through greater transparency regarding products and prices, or by simplifying the process of changing providers. Better flows of information between customers and financial institutions could also decrease the asymmetric information problems between small firms and banks and limit the probability of credit rationing.
- (5) To the extent that consolidation may harm small business lending, the problems faced by small firms in funding their projects might be alleviated if alternative sources of finance, in terms of both providers and products, are developed. This could be encouraged by, for example, fostering the development of equity markets or decreasing the costs of being listed on an exchange. Such measures, together with actions already taken, may foster the development of financial markets, particularly equity markets. Alternative sources of finance may become more available as costs of information generation and storage decrease, especially in Europe and Japan. Policies that encourage transparency and promote awareness of financial markets would probably be helpful in this respect.
- (6) Cross-industry competition may benefit consumers by encouraging competition on existing and new products. Eliminating policies that limit cross-industry competition generally would have a beneficial effect.
- (7) Effective antitrust policy implementation needs data on market shares, prices and volumes of activity in key financial services and products. The financial services industry already regularly provides some of the relevant data; however, it would be helpful to enrich the available information, especially at the firm level. The burden of these added reporting requirements should be minimised; authorities should explore ways to encourage financial institutions to contribute the needed data on an ongoing basis and authorities should focus on collecting data only in areas where consolidation is likely to have significant effects, such as small business lending and retail branch banking services. In general, it is important to consider what kind of information should be readily available so that the potential impacts of proposed M&As can be quickly assessed.

### **Payment and settlement systems**

The ongoing consolidation of the financial industry is affecting the market infrastructures for payment and securities settlement, as well as banks' internal systems and procedures for payment and back office activities. At the global level, correspondent banking and the global

custody businesses are becoming more concentrated among a smaller number of large market players. At the domestic level, banks are increasingly outsourcing payment and settlement activities to “processing factories” – transaction banks and non-bank service providers. On the demand side, users of payment and settlement services are increasingly calling for more efficient payment and securities processing. Consequently, they are often the main driving force behind a greater harmonisation of interbank systems and consolidation of systems within and across borders.

### *Effects of consolidation*

Consolidation affects the efficiency of payment and securities settlement processes, the degree of competition between banks and between market infrastructures, and the level of financial and operational risk. It also has implications for central banks’ approach to oversight of the payment system. The complexity of the consolidation processes taking place within the financial industry, however, makes it impossible to categorise clearly the net effects as either positive or negative.

#### *Efficiency*

- (1) Consolidation has led to a greater concentration of payment and settlement flows among fewer parties within the financial sector. Indeed, consolidation tends to lead to the emergence of very large financial institutions and non-bank service providers that specialise in providing a wide range of payment and settlement services to third parties. Interbank transactions may increasingly become in-house transactions, which do not involve external exchanges of payment messages and hence tend to be cheaper to process.
- (2) Because of the significant economies of scale in electronic payments technologies, the large institutions resulting from consolidation may be better able to invest in new, often costly technologies, and to decrease unit costs by capturing economies of scale.
- (3) Due to their specific business needs, the emerging global firms are pressuring the operators of payment and securities settlement systems to enhance their systems, reduce overall processing redundancies through consolidation of systems, and to increase efficiency and reduce costs to users. In this connection, operators of payment and securities settlement systems may face increasing demands for remote access capabilities and for a wider range of eligible collateral that can be used across a variety of systems. Remote access and broader collateral, however, involve complex policy and legal considerations that require further analysis.

#### *Competition*

- (1) The overall effects of consolidation on competition in the provision of payment services are likely to vary according to the type of consolidation being considered (eg consolidation of financial institutions or of market infrastructures), the definition of the market (ie local, national or global), the market’s degree of competitiveness, the extent of existing market concentration, and the legal and policy framework governing competition.
- (2) On one level, a reduction in the number of institutions providing payment and securities settlement activities beyond a certain limit might result in increased prices for settlement services and lower incentives for innovation. To the extent that large players have sunk costs in a particular clearing technology, an established customer base with switching costs, and market power, they may actively discourage or slow the movement to more efficient technologies or processes for clearing. On the other hand, large institutions may be more capable and willing to invest in better risk management systems and form alliances with other clearers to clear payments and securities more efficiently. Whether any such efficiency gains are passed on to customers is open to debate.
- (3) On another level, consolidation among payment and settlement systems may also affect competition, but the effects may vary depending on the model used. Three policy views



of system consolidation exist in the literature – a competing network model, a public utility model, and a model for promoting intra-network competition. The competitive effects of system consolidation under each of these models largely depend on such factors as the governance structure of the surviving system, access criteria, market demand for downstream services, and economies of scale. For example, under an intra-network competition model, shared automated teller machine (ATM) networks may reduce competition at the network level, but simultaneously enhance competition among banks by allowing small and large banks to offer ATM services on an equal basis at a similar number of locations. The ownership structure and the governance of a specific system are crucial points in this respect. To the extent that one or a few large participants dominate the network's decisions, access, efficiency and innovation may be affected, possibly to the detriment of other participants or would-be participants.

(4) Apart from these considerations, policymakers should be aware that competition is a dynamic process where effects observed over the short term might not be indicative of competition effects over the longer term.

### *Risk*

The payment system risk implications of financial consolidation are complex.

(1) On the one hand, consolidation may help to improve the effectiveness of institutions' credit and liquidity risk controls. For example, increased concentration of payment flows may reduce liquidity tensions due to the greater degree of offset between payments received and payments sent by individual participants.

(2) On the other hand, consolidation (especially through specialisation and outsourcing) may lead to a significant shift of risk from settlement systems to customer banks and third-party service providers. Moreover, consolidation may lead to a greater proportion of on-us large-value payments, which may raise questions about the certainty of final settlement and the concentration of payments within a few banks.

(3) To the extent that institutional and system consolidations result in a greater concentration of payment flows, potential effects of an operational problem may increase. For example, if a major payment processor were to fail or were no longer able to process payment orders, serious repercussions might arise, not only for the liquidity situation of individual market participants that would not receive expected incoming funds, but also for the money, capital and foreign exchange markets in general.

(4) The emergence of multinational institutions and specialised service providers with involvement in several payment and securities settlement systems in different countries, as well as the increasing liquidity interdependence of different systems, further serve to accentuate the potential role of payment and settlement systems in the transmission of contagion effects.

(5) In order to properly manage these risks, banks need to have well developed risk control mechanisms in place to monitor service providers and the service relationship that is applicable to intraday and overnight credit, liquidity and operational exposures.

(6) At the interbank systems infrastructure level, central banks have made major efforts over the past decades to reduce and contain systemic risk by operating and promoting real-time gross settlement systems, and by insisting on the implementation of risk control measures in net settlement systems. To the extent that these efforts have increased the robustness of interbank systems' risk controls, interbank systems should help to dampen and contain any contagion effects being transmitted through the payment system.

### *Policy implications*

The key policy implications identified by the Working Party are:

(1) Because of consolidation, central bank oversight of interbank payment systems is becoming more closely linked with traditional bank safety and soundness supervision at the

individual firm level. Increasing cooperation and communication between banking supervisors and payment system overseers may be necessary both domestically and cross-border.

(2) At the current time, it does not appear that consolidation has adversely affected competition in the provision of payment and securities settlement services. It may be advisable, however, for government authorities to continue to monitor competition in the payment system as short-term effects of consolidation may not be indicative of longer-term effects.

(3) In specific cases, public authorities may want to consider removing potential obstacles to consolidation if such action would enable the market to develop initiatives aimed at reducing risks and enhancing efficiency in the field of payment and securities settlement.

(4) With regard to risk management, central banks and bank supervisors should carefully monitor the impact of consolidation on the payment and settlement business, and should define safety standards when appropriate. In particular, central banks, in conjunction with bank supervisors, may need to consider various approaches, possibly including standards, that could be used to limit potential liquidity, credit and operational risks stemming from concentrated payment flows through a few very large players participating in payment systems. With regard to major payment systems, the Core Principles for Systemically Important Payment Systems now provide a key set of evaluative standards for the relevant authorities.

# **Chapter I**

## **Patterns of consolidation**

### **1. Introduction**

This chapter provides a comprehensive overview of the patterns of consolidation in the financial services sector during the 1990s. The main focus is on three important groups of financial institutions: depository institutions (banks), insurance companies and securities firms. Thirteen countries – those in the G10 plus Spain and Australia – are included in the study. As a supplementary discussion, Annex I.1 describes securities exchanges in the United States, Japan and Europe and any associated consolidation.

Several methods of consolidation are discussed in the chapter, including mergers, acquisitions, joint ventures and strategic alliances. These transaction types are defined and quantitative data presented and discussed. In addition, data on the condition, performance, structure and concentration of each country's commercial banking and insurance industries are presented to highlight patterns, particularly those associated with consolidation. Concentration of certain financial activities on a global basis is also examined to assess the importance of the world's largest financial firms.

The chapter is organised as follows: Section 2 discusses several of the methods that are used by firms to consolidate. Section 3 presents extensive data and discussion of merger and acquisition activity. More limited data and discussion on joint ventures and strategic alliances are also provided. Section 4 focuses on the structure of the financial services industry and has three main parts. First, the banking and insurance industries of each country are discussed. Second, some basic international comparisons are made. Third, the global role of banking and securities leaders is examined. The chapter ends with a brief conclusion.

### **2. Methods of consolidation**

In general terms, consolidation of the financial services sector involves the resources of the industry becoming more tightly controlled, either because the number of key firms is smaller or the rivalry between firms is reduced. Consolidation may result from combinations of existing firms, growth among leading firms, or industry exit of weaker institutions. This chapter focuses primarily on the first of these causes.

There are several alternatives for firms combining with each other. Each has its strengths and weaknesses and may be particularly appropriate in certain situations. Section 3 presents data on two classes of methods: (1) mergers and acquisitions and (2) joint ventures and strategic alliances.

The primary methods of consolidation employed by firms are mergers and acquisitions. With both of these methods, two formerly independent firms become commonly controlled. Throughout this chapter, the terms merger and acquisition are used interchangeably to refer to transactions involving the combination of two independent firms to form one or more commonly controlled entities. The distinction between a merger and an acquisition is somewhat vague. A merger is often defined as a transaction where one entity is combined with another so that at least one initial entity loses its distinct identity. Thus, full integration of the two firms takes place and control over a single entity can easily be exercised. An acquisition is often

classified as a transaction where one firm purchases a controlling stake of another firm without combining the assets of the firms involved. Relative to acquisitions, mergers provide a greater level of control, because there is only one corporate entity to manage. Acquisitions are most appropriate when there are operational, geographic or legal reasons to maintain separate corporate structures.

Mergers and acquisitions are also sometimes distinguished by defining mergers as transactions involving two firms that are of essentially equal size, while acquisitions are transactions where one party clearly obtains control of another. A partial, or non-controlling, acquisition is similar to an acquisition of a controlling interest, except that, as the name implies, the acquiring firm does not establish control. Such deals encourage cooperation between potential rivals, because they establish a common interest among the firms. Partial acquisitions may also serve as a first step for firms before engaging in more complete consolidations of control.

Joint ventures and strategic alliances enable firms to work together without either firm relinquishing control of its own operations and activities. Strategic alliances are partnerships between independent firms that involve the creation of tangible or intangible assets. The level of collaboration is often fairly low and focused on a well-defined set of activities, services or products. Strategic alliances may be most appropriate for the exchange of technical information and sophisticated knowledge or when there are legal, regulatory or cultural constraints making a more thorough collaboration difficult or illegal. Moreover, relative to mergers and acquisitions, strategic alliances generally involve lower formation and dissolution costs. Like partial acquisitions, strategic alliances may enhance cooperation among firms or serve as a first step towards a merger or acquisition.

A joint venture, which may be viewed as a type of strategic alliance, occurs when two or more independent firms form and jointly control a different entity, which is created to pursue a specific objective. This new entity typically draws on the strengths of each partner. Joint ventures facilitate consolidation, because they enable firms to develop strong ties. Joint ventures may also serve as a precursor to more comprehensive consolidation such as mergers.

### **3. Patterns in transaction activity**

In this section, patterns in mergers and acquisitions and patterns in joint ventures and strategic alliances are examined over the 1990s for deals involving financial firms. The data were obtained from Securities Data Company (SDC), which attempts to collect information on all transactions involving large and medium-sized firms. With the mergers and acquisitions (M&A) data, the analysis only includes those deals in which both of the participating firms were from the financial sector. With joint ventures and strategic alliance data, only deals where the shared business arrangement is classified as financial in nature are included.

Constructing transactions data that are accurate, comprehensive and comparable across countries is inherently difficult, and although SDC appears to have done a good job, there are likely to be differences in the availability of data across countries that could influence reported figures. In addition, it is highly likely that at least some deals include firms with improperly classified industries or countries.<sup>7</sup>

In the M&A data, financial firms are classified as operating in one of three industries: banking, insurance or securities/other. Investment banks are classified as securities firms. The announcement date is used to determine when the transaction took place. Only deals that were completed or still pending as of May 2000 were included; all cancelled deals were excluded.

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<sup>7</sup> As a result of improper classifications and other issues associated with obtaining accurate and consistent data, some of the figures reported in the tables in Annex A exhibit minor inconsistencies.

The number of M&A deals, total deal value and average deal value are reported in the tables in Data Annex A for a variety of groupings based on the country and industry of the participants in each year of the 1990s, as well as for the entire decade.<sup>8</sup>

Joint venture and strategic alliance data are not as comprehensive as M&A data. The annual and decade total number of deals in each country is reported, as is the breakdown between cross-border and within-border deals. Cross-border agreements are defined as those deals in which the firms sponsoring the joint venture or strategic alliance were not all located in the same country. Therefore, within-border transactions involve sponsoring firms that were all from a single country. The distinction between cross- and within-border agreements is based solely on the location of the firms sponsoring the venture. Therefore, the tables present no information regarding the country of the venture itself relative to the country of the sponsoring firms.

A more detailed description of the source of the transactions data, as well as the definitions, screens and classifications that are used, is provided in Data Annex A. The annex also presents transactions tables. Table A.1 presents global figures on M&A activity between 1990 and 1999. Tables A.2 to A.4 provide aggregate figures for the North American, Pacific Rim, and European countries included in the study, and Tables A.5 to A.17 provide separate data for each of those countries. The number of joint ventures and strategic alliances is reported in Table A.18. It is important to note that the data collected by SDC are not comprehensive or free of errors. However, most large deals are included and the data should provide an excellent foundation for analysing patterns in transactions.

## **Mergers and acquisitions**

Mergers and acquisitions are methods of consolidation where a change in control takes place through a transfer of ownership. These two methods, which are not distinguished from each other in this chapter, strongly bind the participating firms and can have a substantial effect on economic structure. For purposes of the tables and discussion, M&A activity is defined as occurring when ownership by one financial firm of another goes from less than 50% to more than 50%. Such a change generally results in an unambiguous transfer of corporate control.

### ***Broad global patterns***

SDC reports that in the 1990s there were more than 7,300 deals in which a financial firm in one of the 13 countries included in this study was acquired by another financial firm (Table A.1). The value of these deals was roughly USD 1.6 trillion.<sup>9</sup> Over the same period, financial firms in these countries made roughly 7,600 acquisitions with a similar estimated value. The differences between the two sets of figures are attributable to cross-border deals involving a firm in a country not included in this study and a firm in a country that is included.<sup>10</sup>

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<sup>8</sup> Value is not always released by participating firms. Therefore, average value, which is total value divided by the number of deals with a reported value, does not always equal total value divided by the total number of deals.

<sup>9</sup> Deal value is a somewhat ambiguous term as SDC obtains its estimates from announcements available from public sources. In the case of share exchanges, the deal value is based on the market price of shares. In the case of a merger of equals, the transaction value is calculated as the value of shares that are exchanged. Values are also not based on a consistent date relative to the merger process, as the recorded transaction value may vary during the period between announcement and consummation of a deal as information becomes available or deal terms are changed during post-announcement negotiations. The value is reported in nominal terms, so changes over time are influenced at least somewhat by inflation.

<sup>10</sup> In some deals, a firm in one of the 13 countries purchased a firm located outside the group of 13, and in other deals, a firm from elsewhere made an acquisition in one of the 13. The former would only be included when deals are classified by acquirer. Likewise, the latter would only be included when classification is based on the target. Deals involving two firms from the 13 reference countries are included regardless of whether deals are classified by target or acquirer.

The level of M&A activity involving financial firms increased during the 1990s, with strong growth both in the number and in the average value of M&A transactions. In the last three years of the decade, there were nearly 900 transactions annually involving the acquisition of a financial company in one of the 13 reference countries. These deals were associated with an estimated total value of almost USD 400 billion per year. These levels represent a nearly threefold increase in the number of deals observed in 1990 and roughly a tenfold increase in total value per year. Similar patterns exist among deals in which the acquirer was a financial firm in one of the 13 countries under examination. The increase in activity between 1990 and 1999 may be somewhat exaggerated, because the SDC database excluded deals with a reported value below USD 1 million before 1992.

The rapid growth in total M&A transaction value was accompanied by an increase in the estimated size of the average transaction, which was roughly similar to the growth of the market value of financial sector stocks over the same period. In the last three years of the decade, there was a dramatic rise in the number of and value associated with large M&A deals. This pattern is demonstrated in Table I.1, which reports the annual number and aggregate value of mergers and acquisitions that involved a financial firm in one of the 13 countries as the target and that had a reported value of at least USD 1 billion.

Table I.1  
**Financial sector mergers and acquisitions with value greater than USD 1 billion**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Number	8	10	6	11	14	23	21	49	58	46
Value (USD bn)	26.5	22.1	12.4	39.7	23.7	113.0	59.0	233.0	431.0	291.0

Source: Thomson Financial, SDC Platinum.

Most of the M&A activity during the decade involved banking firms. About 60% of deals involved the acquisition of a banking organisation. Securities/other firms were targets in about a quarter of deals, and acquisitions of insurance firms only constituted about 15% of transactions. Interestingly, banking deals accounted for about 70% of the value of all deals, while securities/other acquisitions comprised only about 11%.<sup>11</sup>

### *Global patterns by same/different countries and industries*

To further examine patterns for different types of M&A activity, deals are placed into one of four groups based on whether the transactions involved firms in the same or different countries and industries. The first group examined comprises domestic, same-industry deals. The data clearly indicate that most of the M&A consolidation activity in the financial services sector during the 1990s involved firms operating in the same industry and from the same country (Table A.1). Such transactions accounted for more than 70% of total activity measured in terms of both the number of deals and the value of deals. The prevalence of same-country, same-industry activity may reflect regulatory constraints in some countries prohibiting cross-border and cross-industry mergers.

Because domestic, same-industry deals are so prevalent, observed patterns of consolidation are generally not strongly influenced by whether deals are classified by the country and industry of

<sup>11</sup> When deals are classified by the industry of the acquirer, the results are similar.

the acquirer or of the target. Therefore, most of the discussion in this chapter regarding patterns of M&A activity focuses on deals classified by target. However, distinctions between results based on target and acquirer classifications are noted when they are important.

The average value of domestic, same-industry transactions was much greater in the latter half of the decade than in the first half. The average deal value was under USD 150 million for the period up to 1994 and jumped to USD 500 million between 1995 and 1999. Transaction value was especially large at the end of the decade, averaging about USD 800 million over the last two years.

The banking industry represented by far the largest share of domestic, same-industry M&A activity. Approximately 68% of all deals and 78% of the value of such deals involved a bank being acquired. A landmark year for domestic banking mergers was 1995, when the average value of transactions quadrupled compared to the previous two years. The average value of bank M&A transactions generally increased throughout the second half of the decade.

The second type of domestic deal involves firms that operated in the same country and different industries. Although these deals were the second most common type of transaction, they only accounted for about 15% of all deals, whether measured by number or value. There was a fairly steady increase in the overall number of deals throughout the decade. In terms of the value of transactions, 1998 was a year of very large deals. The aggregate deal value during that year was nearly USD 110 billion, about half of the 10-year total, and the average value exceeded USD 1.3 billion. These deals often resulted in the creation or substantial growth of large, complex banking organisations.

As with the case of domestic, same-industry transactions, mergers with banks as targets represented the most common type of deal as measured by value. However, securities firms were more important than observed in the case of domestic, same-industry transactions. Average values for domestic, cross-industry deals with targets from each industry were comparable to the average levels for similar domestic, same-industry deals, with the exception of the insurance industry, where same-industry deals were larger on average.

Cross-border, same-industry deals are examined next. When deals are classified by the country and industry of the acquirer, there are about 250 more deals than when deals are classified by target. This discrepancy indicates that, in the aggregate, firms located in the 13 reference countries were net acquirers of firms in their own industry. In other words, firms in the 13 countries acquired more same-industry firms in countries not in the study than were purchased by firms in those non-study countries.

During the 1990s, the total value of acquisitions of firms located in reference countries by foreign firms operating in the same industry amounted to about USD 140 billion, a figure that corresponds to nearly 10% of the total transactions in the financial sector over the period. Such activity grew throughout the decade. Nevertheless, the impact of various impediments to cross-border consolidation, including economic, operational and regulatory barriers, is evidenced by the large differences in the level of domestic and cross-border activities in all three industries.

A particularly striking contrast between domestic and cross-border consolidation involving same-industry firms was the relative importance of different industries. In particular, insurance firms were frequently involved in buying foreign rivals, as the acquisition of insurance companies accounted for about 40% of all deals and nearly half of total transaction value. In contrast, banking deals, which were very prevalent in domestic consolidation, accounted for only about one third of the number and value of all cross-border, same-industry activity. Insurance transactions were prevalent throughout the period under review, but were particularly important after 1997.

Finally, the least common type of deal was cross-industry, cross-border consolidation. There were only about 250 such M&A transactions with a target from a country included in the study and roughly 330 such deals with an acquirer from one of the 13 countries. The average transaction in this category typically involved a lower value than deals with firms that shared a

country, industry or both. Similarly to all other categories of consolidation, cross-border and cross-industry deals became both more frequent and larger during the second half of the 1990s, especially in the last three years of the decade. International, cross-border deals helped facilitate the creation and growth of large and complex financial institutions.

As with the international, same-industry transactions, financial firms in the 13 countries were acquirers more frequently and for more value outside their domestic country than they were targets of foreign firms. There were also important differences in the industry composition of deals in which the firms from the reference countries were the targets and those where they were the acquirers. When a firm from one of the 13 countries was acquired, it was commonly a bank (57% of total value) or, to a lesser extent, a securities/other firm (25%). In contrast, overseas acquisitions by firms in one of the 13 countries often involved a purchase by a securities/other firm (48%) or insurance company (33%).

### *Patterns in individual regions and countries*

Even though some general patterns are evident on a global level, a number of differences in the patterns of M&A activity in various countries existed in the 1990s (Tables A.5 - A.17). The relative importance of M&A activity, as measured by total deal value over the decade divided by GDP over the period, differed substantially across countries. In Germany, Japan and Canada, this measure was less than 0.5%, whereas in Switzerland, Belgium, the United States and the United Kingdom, it exceeded 1% regardless of whether deals are classified by target or acquirer.

Countries also differed in the extent to which their firms engaged in international mergers. In the United States and Japan, almost all deals involved two firms from the home country. In contrast, when one of the firms was located in Belgium, half of all deals, accounting for about 40% of all value, involved an international transaction. Classifying by target or acquirer generally makes little difference in the relative importance of foreign and domestic deals, except in the case of the Netherlands. Dutch firms made some large overseas acquisitions that raised their cross-border figures when deals are classified by acquirer relative to when deals are classified by target.

Although there were differences across countries in the relative amount of activity within and across industries, those differences tended to be smaller than those observed within and across borders. In Japan, Spain and the United States, a large amount of M&A activity involved firms operating in the same industry.<sup>12</sup> Among the countries with firms that engaged in a lot of cross-industry activity was Belgium, which also had firms that engaged in a lot of cross-border deals.

The particular industries in which targets and acquirers operated varied by country. In the United States, targets and acquirers were frequently banks, a finding that is consistent with domestic banking deals being highly prevalent in the United States. In other countries, such as Australia, Canada, the Netherlands and the United Kingdom, banking deals were not nearly as common. In Japan, almost half of all deals involved firms in the securities/other industry, but these deals were very small and accounted for very little value. In contrast, the banking industry accounted for about half of all deals, yet virtually all of the value of deals.

Although countries generally exhibited similar patterns in M&A activity, there were substantial differences in patterns across time. Comparing the last three years of the decade (1997-99) to the first seven (1990-96) reveals that Canada and, to an even greater extent, Japan experienced very large increases in the average annual number of deals. In contrast, firms in France, Switzerland and the Netherlands were involved in fewer deals annually as both targets and acquirers.

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<sup>12</sup> The relatively modest amount of cross-industry activity in Japan and the United States in the 1990s may have been largely due to legal restrictions, whereas the relative lack of such activity in Spain may have been largely attributable to an already high level of cross-industry ownership.



Average deal value reveals a somewhat different and more consistent picture. Nearly all countries exhibited a higher average deal value at the end of the decade. In seven countries, the average value of a deal involving a home-country firm was at least three times as high during the last three years as during the first seven. Most notable is Switzerland, where the average value of purchased firms was almost 30 times more at the end of the decade. This difference is due largely to a small number of very large firms being acquired or engaging in mergers, primarily in 1997. When deals are classified by acquirer, acquisitions averaged twice as much in the last three years than in the first seven in 10 countries. Belgian firms made acquisitions that were nearly 15 times larger. The only countries that showed a decline in average deal value were Japan (by target and by acquirer) and the Netherlands (by target). Japan's decline was attributable to one huge deal in 1995 and the drop in the Netherlands was due to several large deals in the early part of the decade.

In the remainder of this section, patterns in M&A activity for the countries included in this study are examined more closely on a regional basis. Nations are placed into one of three geographic regions – North America, the Pacific Rim and Europe. In both North America and the Pacific Rim, there are only two countries, one of which is much larger than the other. Therefore, because a regional discussion would be very similar to a discussion of the larger country, the text focuses on each country separately. In Europe, the discussion is not organised on a country-by-country basis. Instead, area-wide patterns are described more thoroughly, and data from individual countries are introduced as supporting evidence. This approach seems more appropriate for Europe given that there are nine nations with strong economic ties, many of which are fairly comparable in size.

## ***North America***

### *United States*

The global M&A picture was dominated by firms located in the United States. During the 1990s, deals involving US firms, classified either by the country of the target or by that of the acquirer, accounted for about 55% of all financial deals, measured by either number or total value of transactions (Table A.5). The intense consolidation activity in the United States was driven, at least in part, by changes in the regulatory framework, a variety of technological changes, and intense pressure for cost reductions and revenue enhancements in segments of the industry (see the Causes chapter for a more thorough discussion of the causes of consolidation).<sup>13</sup>

In particular, the data reflect the reaction of the US banking industry to the Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994, which greatly relaxed interstate banking and branching restrictions. Although many of the deals in the United States were domestic bank-to-bank transactions throughout the decade, the average value of such deals rose considerably in the latter part of the 1990s. Very large banking companies were increasingly expanding the geographic footprint of their operations by buying other very large banks. In 1998, several extremely large deals took place including BankAmerica-NationsBank, Wells Fargo-Norwest, and Banc One-First Chicago NBD.

Domestic, cross-industry merger activity represented 11% of the total financial sector consolidation activity by number of transactions and 14% by value. This picture, however, is misleading, as most of the domestic, cross-industry transaction volume, in terms of value, took place in the 1997-98 period. During these years, there were some large deals, especially those involving banks. Indeed, the value of banking acquisitions rose to more than USD 80 billion in

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<sup>13</sup> The relatively high level of measured activity for US firms may also reflect a potential bias in the coverage of the database as discussed in Annex A, whereby deals among US firms may be more highly represented than deals involving firms from other countries.

1998, accounting for almost two thirds of the total value of domestic, cross-industry deals in the entire decade. One of the most important and unique financial deals in this period was the 1998 merger between Citicorp, which was a bank holding company, and Travelers, which was an insurance and securities firm.<sup>14</sup> Cross-industry deals involving the acquisition of non-bank financial companies peaked around 1996-97. Earlier in the decade, restrictions on bank activities limited the level of domestic, cross-industry consolidation activity.

Acquisitions of US financial firms by foreign, same-industry firms increased in the late 1990s, as three quarters of the overall deal value associated with such acquisitions arose between 1997 and 1999. Likewise, US firms also increased the rate at which they purchased foreign firms that operated in their own industry. Of special note, firms headquartered in the United States made foreign acquisitions more frequently than their foreign counterparts made US acquisitions, but the size of the purchases made by US firms was smaller. During the decade, acquisitions of foreign firms by US firms had an estimated average value (roughly USD 300 million) which was less than half the value of acquisitions by foreign firms of US firms (roughly USD 800 million), suggesting that foreign firms may have been more focused on larger, more mature firms.

Cross-border, cross-industry deals were rare in the 1990s, but many of the deals of this type involved US firms in the securities/other industry, as either acquirer or target. US banks were also not uncommon targets of such deals.

#### *Canada*

In Canada, consolidation activity was fairly modest in the first half of the 1990s (Table A.6). During this period, M&A activity was characterised by a small number of transactions between small and medium-sized financial firms. However, in later years, a greater number of transactions took place, including some large deals, especially in the banking and insurance industries. Of particular note was a merger between two Canadian banking concerns (TD Bank Financial Group and CT Financial Services) announced in 1999.

Most other domestic, same-industry activity was not very significant. More than half of such deals involved firms in the securities/other industry, but these transactions tended to be very small, with an average deal value under CAD 50 million. The most frequent targets of domestic, cross-industry merger activity were banks. However, with domestic, cross-industry deals, securities/other firms were both the most active acquirers and the largest targets, and insurance firms were engaged in the largest deals as acquirers. Many of the cross-border deals involving Canadian firms, as either acquirer or target, were relatively modest in size.<sup>15</sup>

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<sup>14</sup> The merger between Citicorp and Travelers to form Citigroup did not violate the provisions of the Glass-Steagall Act or the Bank Holding Company Act, which restricted the securities and insurance activities of bank holding companies, because the Board of Governors of the Federal Reserve had the authority to allow Citigroup to operate for as long as five years before requiring a divestiture of certain activities that might be considered impermissible. The issue of whether the deal violated existing laws and regulations became irrelevant with the passage of the Financial Services Modernization Act in 1999.

<sup>15</sup> There is one cross-border, same-industry transaction in the banking industry that may raise questions. The database shows this particular deal as the merger/takeover of Newcourt Credit Group Inc (classified by SDC as a Canadian “credit institution”) by CIT Group Inc (a US “credit institution”). “Credit institutions” are classified as banks in the analysis conducted in this chapter. While this classification might not be highly relevant in this case, classifying credit institutions as banks is appropriate in the context of other countries included in the study.

## *Pacific Rim*

### *Japan*

Merger and acquisition activity in the Japanese financial sector was rather subdued for nearly the entire 1990s (Table A.7). Before 1999, there were few acquisitions of firms in either the banking or securities/other industries and even fewer acquisitions of Japanese insurance companies. The main deals that took place during this period of modest M&A activity were a series of transactions by Mitsubishi Bank, which purchased a majority interest in Nippon Trust in 1994 before merging with Bank of Tokyo in the following year. Also, Taiyo Kobe Bank and Mitsui Bank merged to become Sakura Bank, and Kyowa Bank and Saitama Bank merged to become Asahi Bank at the start of the decade. A number of deals in the middle and late 1990s took place as a result of financial distress among the acquired institutions.

The pattern of modest M&A activity that persisted throughout much of the decade changed dramatically in 1999. Nearly half of all Japanese deals that took place in the 1990s occurred in that final year. Moreover, except for the 1995 Nippon Trust-Mitsubishi Bank merger, the 1999 deals tended to be larger than those in previous years. Many of the 1999 deals were among the nation's top banks and were a product of government efforts to resolve those banks' bad loan situations and improve their longer-term profitability. Only a handful of significant cross-border acquisitions took place in the 1990s that involved Japanese financial companies as either acquirers or targets. However, several distressed Japanese banks and insurance companies were acquired during the decade, especially in the second half. The average value of cross-border deals involving Japanese acquirers was extremely low and was much smaller than the value of such deals with Japanese targets.

### *Australia*

The number of deals between domestic, same-industry Australian firms increased slightly over the 1990s, but not steadily and not by much (Table A.8). However, most large deals of that type were generally concluded during the second half of the decade. Several more very large same-industry deals might have taken place, but mergers between the country's four largest banking organisations were ruled out by the government because of their likely effect in reducing competition. An important factor driving mergers involving insurance firms was the gradual conversion of mutual firms to stock firms. This "demutualisation" increased the opportunities for consolidation.

Domestic, cross-industry M&A activity, which was concentrated in the second half of the 1990s, involved a relatively large number of acquisitions by banks of firms in the securities/other industry. An important factor driving some cross-industry acquisitions, especially those by banks, was a desire to acquire asset management capacity in order to participate in the growth of the private pension provision market. The overall number of domestic, cross-industry transactions was not only half of same-industry activity, but the average value of cross-industry deals was lower as well.

There were only a handful of significant cross-border acquisitions of Australian financial companies during the 1990s, many of which involved firms in the same industry. One significant cross-border deal involved the takeover of an Australian insurance company in 1995. Australian firms were engaged in slightly fewer, but larger, international cross-industry deals as acquirers than as targets.

### *Europe*

Roughly two thirds of European M&A activity in the 1990s, as measured by the total value of transactions involving the acquisition of a European financial firm, occurred during the last three years of the decade (Table A.4). Overall, firms in the European countries included in this study engaged in fewer, but generally larger transactions than North American institutions. The total value of all European deals, however, was only about half that of North American deals.

Merger activity, as measured by the value of firms acquired, was primarily concentrated in the banking industry, which accounted for about 65% of the total. Insurance was the second most active industry at roughly 25%. In both the banking and insurance industries, average European acquisition values were substantially higher than averages in North America. In contrast, values were lower in European deals involving firms in the securities/other industry.

The number of domestic, same-industry transactions showed a less pronounced upward trend in Europe than in North America during the decade. However, important differences exist in the patterns of domestic, same-industry consolidation activity among individual European countries. In Belgium, Italy, Spain, the Netherlands and the United Kingdom, most, and in some cases almost all, of such activity, measured by value, occurred in the last two years of the decade.

Other differences in the patterns of domestic, same-sector deals also existed, as Belgium, Spain and Switzerland exhibited a high concentration of transaction activity in the banking industry, primarily in terms of value. In several European countries, at least one large transaction took place that led to the creation of a dominant domestic institution (eg Bayerische HypoVereinsbank in Germany, UBS in Switzerland).

Among European countries, the United Kingdom was home to the largest amount of domestic, same-sector transaction activity, accounting for about 25% of the number and 30% of the total value of such deals in Europe. This finding is consistent with the casual observation that the increased integration of European financial and capital markets prompted many UK (as well as non-UK) financial institutions to seek a foothold in London or expand their existing operations in that financial centre.

As with the other global regions, domestic, cross-industry consolidation in Europe was less common than domestic, same-industry activity. Compared to North America, however, domestic, cross-industry consolidation exhibited a different pattern over time in terms of the number of firms being acquired. In Europe, the number of acquisitions remained fairly steady in the latter half of the decade, although registering a one-year slump in 1998.

While the overall number of domestic, cross-industry deals was roughly the same in the two regions, the average European deal was valued at about USD 300 million, which was about one third lower than in North America. Both regions experienced a surge in the average value of transactions in 1997 and 1998. This surge resulted in the average value of European, cross-industry targets during this two-year period being about four times the average for the remainder of the decade. Interestingly, the dip in the number of domestic, cross-industry transactions in 1998 coincided with the peak in the total value of deals, with the greatest share of that value involving purchases of banks.

A distinguishing feature in Europe was the relative importance of domestic, cross-industry acquisitions of insurance firms. Transactions in the insurance industry represented the second largest group in terms of total value and exhibited a high average deal value. The total value of such transactions accounted for at least half the value of all domestic, cross-industry activity in Germany, France, Spain and Switzerland. In all of these countries, however, the importance of insurance deals was the result of a few large transactions, as acquisitions of banks outnumbered those that involved the purchase of insurance companies.

Domestic, cross-industry patterns in Belgium, Switzerland and the Netherlands shared an important similarity. In all three countries, there were relatively few, albeit very large, acquisitions, which enabled conglomerates pairing banking concerns with insurance companies (“bancassurance”) to emerge. In fact, in Belgium and the Netherlands, the aggregate value of domestic, cross-industry consolidation exceeded the value of domestic, same-industry transactions.

International mergers and acquisitions involving European firms accounted for a large share of all cross-border, same-industry activity. In fact, European firms were targets in 65% of such transactions. These deals correspond to transactions valued at roughly USD 65 billion. More

importantly, however, same-sector foreign acquisitions by European financial companies over the 1990s exceeded USD 120 billion. Overall, European firms were therefore large same-industry net acquirers, in that they were purchasers of foreign firms (in terms of number and value) more than they were targets.

Overall, insurance was the leading industry in cross-border, same-industry transactions in European countries. This pattern holds, although just barely in some cases, with both the number and average value of transactions, as well as when deals are classified either by the country of the target or by that of the acquirer. In six of the nine European reference countries, more than half of the value associated with the purchase of domestic firms by foreign financial institutions involved transactions with domestic insurance firms. Such deals were particularly important in Germany, Italy, the Netherlands and Switzerland.

A difference exists between the typical size of cross-border, same-industry transactions involving European banks when such firms were targets and when they were acquirers. The average deal value associated with the acquisition of a European bank by a foreign bank was about USD 200 million. This figure is less than half the average value associated with deals involving a European bank buying a foreign bank.

Finally, cross-border, cross-industry acquisitions of European financial firms represented more than 60% of the number and value of all international, cross-industry deals. European banks were particularly popular targets, as the total value of acquisitions of European banks by foreign non-banks was more than two times greater than the value of deals involving the other two financial industries combined. While most of the activity in terms of value took place after 1997, especially in Belgium, Germany, Italy and the United Kingdom, the acquisition of European banking interests by foreign non-banking firms showed an early peak in 1990-93, when a few large deals took place. Overall, European firms were net acquirers with respect to cross-border, cross-industry transactions.

### **Joint ventures and strategic alliances**

In this section, joint ventures and strategic alliances are defined as agreements where two or more entities combine resources to form a new, mutually advantageous business arrangement to achieve predetermined objectives. In addition to participating in the venture, the original firms continue to operate as they had before their alliance. Joint ventures and strategic alliances are a weaker method of binding two firms together than mergers and acquisitions.

The data presented in Table A.18 reveal several of the same patterns as those observed with the M&A data. First, activity volume increased over the decade, especially in the last few years. Of the roughly 3000 deals recorded by SDC, about half took place in either 1998 or 1999. In contrast, about one quarter of all agreements occurred in the five-year period between 1990 and 1994. Second, the United States accounted for much of the activity. Nearly half of all the joint ventures and strategic alliances involved the creation of a US entity.

Third, within-border ventures, defined as deals involving “parent” firms from a single country, were 50% more prevalent than cross-border ones. However, within-border deals were not nearly as universally common as with M&A activity. In fact, with ventures involving the creation of a European or Pacific Rim entity, cross-border transactions were, in aggregate, more common than within-border deals. In Europe, there were about 50% more cross-border joint ventures and strategic alliances than within-border agreements, and in the Pacific Rim, cross-border deals were about 25% more common. Among all deals, cross-border joint ventures and strategic alliances were more common than cross-border mergers and acquisitions. This difference is consistent with the belief that ventures and alliances are highly useful in cases where mergers and acquisitions may be difficult, such as when firms from different countries are involved.

### **Summary of key patterns in transactions activity**

Merger and acquisition activity generally increased during the 1990s, especially during the last three years of the decade when average deal value increased substantially. Over the entire period, several types of deals were prevalent. Transactions involving firms located in the same country and operating in the same industry were by far the most common type of deal. In addition, M&A activity frequently involved firms in the banking industry. Finally, firms in the thirteen countries included in this study were, in the aggregate, acquirers more often than they were targets and were involved in deals with greater total value as acquirers than as targets.

In addition to several important common trends, some key differences characterised the M&A activity of various countries during the decade. The value of such activity varied across nations and was relatively low in Germany, Japan and Canada (below 0.5% of GDP over the decade by target and acquirer) and relatively high in Belgium, Switzerland, the United States and the United Kingdom (greater than 1.0% of GDP). In the United States, a large share of activity, in terms of both number and value of deals, involved domestic, banking mergers. In other countries, most notably Belgium, deals tended to more heavily involve firms from different countries or different industries. Also, some countries, such as Canada, experienced a substantial increase in the number and average value of deals towards the end of the decade, whereas others, such as the Netherlands, did not experience an end-of-decade spike.

Joint venture and strategic alliance data reveal some of these same patterns. The number of agreements increased over the decade, especially in the last few years, and the United States accounted for a large portion of all such ventures. Although agreements involving firms from a single country were more prevalent among all ventures and alliances than cross-border agreements, the latter were actually more common outside the United States.

## **4. Patterns in the structure of the financial sector**

In this section, key structural measures of the commercial banking and insurance industries are examined for each country with the primary focus being elements associated with consolidation. Some international comparisons are also made. In addition, features of banking and certain securities and over-the-counter derivatives activities are examined on a global basis. This section of the chapter illustrates some of the effects that the transaction activity discussed in the previous section has had on financial structure.

The primary data used in the chapter, which were collected from national authorities with the help of the OECD and other sources, are well suited to an analysis of particular industries in individual countries. However, extensive cross-country comparisons are difficult to make due to a lack of consistency. According to the OECD, “international comparisons in the field of income and expenditure accounts of banks are particularly difficult due to considerable differences in OECD countries as regards structural and regulatory features of national banking systems, accounting rules and practices, and reporting methods.”<sup>16</sup> Comparisons of insurance data are similarly difficult. A detailed description of the data and how they were collected is provided in Data Annex B. The annex also presents Tables B.1 to B.13 with banking and insurance data for each country. Table B.14 presents some of the key measures from Tables B.1 to B.13 in a way that makes it easy to view all countries simultaneously.

Most of the data in the section relate to the banking and, to a lesser extent, insurance industries. Only a limited amount of securities data is presented. The discrepancy in the volume of data covering the different industries is driven largely by availability. Obtaining sufficient country-

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<sup>16</sup> Organisation for Economic Co-operation and Development (1999a).

specific banking and insurance data was easier than collecting securities data. Nonetheless, available securities data are presented to illustrate key patterns.

Before discussing each country's financial sector, a brief historical background is provided. Around 1980, there were two basic models for the relationship between commercial banking and securities activities. One, which could be called the "Glass-Steagall" model, involved a legal separation of the two activities; Japan and the United States were good examples of this model. The second, which could be referred to as the "universal bank" model, permitted financial institutions to engage in both commercial banking and securities activities. A somewhat related issue is the degree to which insurance was separate from banking and securities activities.

Another key feature of a country's financial sector was the degree to which capital markets were active and developed. In 1980, capital markets were well developed in Canada, the United States and the United Kingdom. In contrast, capital markets were generally not well developed in the other countries in this study. Firms there relied primarily on banks for long-term funds. Although the characteristics of a country's financial sector in 1980 influenced the consolidation patterns observed in subsequent years, a country's starting point was not necessarily a predictor of subsequent consolidation activity.

## **Country-by-country analysis**

### ***North America***

#### ***United States***

The US financial services sector has traditionally consisted of three largely distinct types of firms – depository institutions (banking), securities firms and insurance firms. This segmentation is primarily attributable to various laws that have defined the scope of activities in which particular types of financial firms may engage. Throughout the late 1980s and 1990s, the severity of the separation was weakened, and the Financial Services Modernization Act, which was passed and signed into law in late 1999, removed most of the remaining barriers among banking, securities and insurance activities. This law did, however, seek largely to retain the long-standing barrier between financial services and non-financial commerce. The US securities industry is large and well developed, with many of the leading securities firms (investment banks) in the world being headquartered in the United States.

The number of firms in each financial segment in the United States is large in comparison with most other industrial countries, particularly in the case of depository institutions. The large number of depository institutions in the United States is due, in large part, to historical restrictions on interstate and intrastate banking and branching. Most restrictions on intrastate banking and branching and some restrictions on interstate banking and non-banking financial activities were eliminated by 1990. The Riegle-Neal Interstate Banking and Branching Efficiency Act eliminated remaining restrictions on interstate branching as of 1 June 1997, making nationwide banking possible and spawning numerous interstate mergers and acquisitions.

There are, and have been, three main types of depository institutions in the United States: (1) commercial banks, (2) thrift institutions (savings banks and savings and loan associations) and (3) credit unions.<sup>17</sup> Thrifts and credit unions tend to be small and provide basic banking services

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<sup>17</sup> Deposits up to USD 100,000 held at any of these types of institutions are protected by federal deposit insurance. Savings and loan associations used to have a separate deposit insurance system (FSLIC) from commercial banks and savings banks (FDIC), but FSLIC was integrated into the FDIC in 1989 after the savings and loans crisis of the 1980s.

to households.<sup>18</sup> Commercial banks are the largest and most important group of depository institutions. They typically serve both households and businesses and engage in the widest variety of financial activities. Most commercial banks are owned by bank holding companies, which may not only control multiple commercial banking institutions, but may operate thrifts and financial, non-depository subsidiaries as well.

Changes in the structure of the banking industry clearly reflect the extensive consolidation that took place in the United States during the 1990s (Table B.1). Between 1990 and 1999, the total number of commercial banks and thrifts decreased by about one third from roughly 15,000 to 10,000. This dramatic decrease was accompanied by substantial growth, in both absolute and relative terms, by the largest institutions. The top 100 commercial banks increased their size, in terms of total assets and assets relative to GDP, and the very largest banks controlled an increasing share of the industry. Relative to GDP, the overall banking industry in the United States decreased during the period.

The life segment of the US insurance industry experienced more modest changes during the 1990s. Although the number of institutions steadily declined, concentration only changed by a small amount, with the direction of the change varying by the number of firms incorporated into the measure. The non-life segment experienced a different pattern of change than the life segment. The number of firms increased slightly, but concentration rose as well. As a share of GDP, both the life and non-life industries grew during the decade, but the non-life industry barely grew, whereas the life industry grew at a more rapid rate.

### *Canada*

For several decades, the Canadian financial system has been based on five principal types of institutions: chartered banks, trust and loan companies, the cooperative credit movement, life insurance companies and securities dealers. These different types of firms traditionally operated separately. Banks entered the securities business following a legislative change in 1987 that allowed banks to invest in such firms.

In 1992, consolidation was further facilitated with the passage of legislation that permitted financial firms to provide most financial services unless expressly prohibited from doing so.<sup>19</sup> In 1992, in order to ensure that banking issues are periodically reviewed, the duration of the sunset clause incorporated in Canadian banking legislation was changed to five years from 10 years. As earlier, life insurance companies and all deposit-taking institutions were restricted in their holdings of equity in commercial enterprises. In 1999, legislation allowed foreign banks to establish commercially oriented branches in Canada. Legislation was introduced in 2000 to further ease ownership restrictions, allow more flexible holding company structures, facilitate joint ventures and strategic alliances, and ease entry requirements by allowing small, closely held financial institutions, including banks, to exist. However, the legislation was not passed before Parliament ended its activities prior to the November 2000 federal election.

The 2000 legislative initiative included guidelines (non-legislative) for the review of merger proposals of major banks. A formal and transparent merger review process was established for banks with equity in excess of CAD 5 billion. The guidelines were established after the Minister of Finance rejected two proposed mergers among leading Canadian banks on the basis that the deals would have resulted in an unacceptable level of concentration, a significant reduction in competition and reduced policy flexibility to address future prudential issues that might arise.

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<sup>18</sup> Throughout the 1980s and 1990s, many thrift institutions faced less restrictive limitations on branching, interstate banking and non-bank activities than commercial banking organisations.

<sup>19</sup> The new laws included the Bank Act, Trust and Loan Companies Act, Insurance Companies Act and Cooperative Credit Associations Act.



The number of commercial banks in Canada increased substantially in the 1980s before declining somewhat in the 1990s (Table B.2). The large rise in the earlier decade was driven by the initial entry of foreign banks, which was allowed starting in 1980. Despite increased entry by foreign banks, the leading Canadian domestic banks, of which there were five during the 1990s, tended to be very large and traditionally controlled most of the banking activity in Canada. The dominance of the largest banks increased substantially during the decade. Moreover, the overall banking industry grew during the 1990s, as assets-to-GDP nearly doubled.

The number of life insurance companies did not change much during the late 1990s. Moreover, although concentration for the five largest life firms increased during the latter part of the decade, concentration levels for the one, ten and fifteen largest firms remained virtually unchanged. The number of non-life insurance companies (largely property and casualty firms) also remained steady in the latter half of the 1990s. Several insurance firms recently converted from mutual to stock ownership.

## ***Pacific Rim***

### *Japan*

For many years, the Japanese financial sector has been compartmentalised. Specifically, banking, securities and insurance activities have traditionally been segmented by regulatory measures with financial institutions competing within narrowly defined industries.<sup>20</sup> Banks can be classified into the following groups: (1) city banks, which conduct wholesale banking activities and maintain large branch networks, (2) long-term credit banks, which engage in long-term lending and issue long-term debentures, (3) trust banks, (4) regional banks and (5) second tier regional banks. In addition, there are groups of smaller, more specialised deposit-taking institutions that include (6) shinkin banks,<sup>21</sup> (7) credit cooperatives and (8) agricultural and fishery cooperatives and others. Often, groups (1), (2) and (3) are considered “major banks” and groups (1)-(5) are called “commercial banks.” In addition, the government-operated postal savings system has had a significant market share.

Divisions began to change in the late 1990s in response to more intense global competition, the announcement of extensive legislation (Big Bang) in 1996, and other, more gradual deregulation of the financial sector. During the decade, Japan’s economy experienced protracted problems that emanated from a large and rising volume of bad debts associated with the property and stock market collapses of the late 1980s. In the face of these problems, several Japanese financial institutions (eg banks, long-term credit banks and securities firms) failed, were acquired by another entity, or were taken over by the government. Much of the financial sector consolidation in terms of the decline in the number of institutions in Japan was driven by balance sheet deterioration in the midst of a broader economic decline.

Little consolidation took place in the Japanese banking industry. The number of firms did not change much between 1980 and 1999, although the number of smaller institutions not classified as banks declined sharply during that period (Table B.3).<sup>22</sup> There was a modest reduction in the

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<sup>20</sup> For more details of the Japanese financial market, see Ito (1992).

<sup>21</sup> Shinkin banks are smaller deposit-taking institutions that specialise in taking deposits and lending in the community.

<sup>22</sup> The number of banks increased from 150 in 1994 to 173 in 1995, because of a classification change whereby trust bank subsidiaries were classified as banks. The number of credit cooperatives declined from 475 in 1980 to 407 in 1990 and 322 in 1998.

number of banks at the end of the 1990s as a result of some bank failures.<sup>23</sup> Other indicators show that Japanese banks retrenched during the 1990s. Relative to GDP, total bank assets fell modestly and large bank assets declined substantially through much of the decade. Concentration measures also tended to decline modestly. The slow growth of the 1990s provides a stark contrast to the rapid growth of the 1980s, especially among large banks. In the late 1980s and early 1990s, large Japanese banks occupied high places in the world rankings in terms of asset size.<sup>24</sup> However, distress in the banking industry and a lack of consolidation resulted in only one bank remaining among the top 10 in 1998.

There is also little sign of consolidation in the Japanese insurance industry. The number of life insurance companies more than doubled, primarily due to deregulation and the entry of 13 firms in 1996. Moreover, concentration ratios remained fairly steady between 1980 and 1997, before dropping suddenly in 1998. Both the number of non-life insurance companies and industry concentration remained stable. The two segments of the insurance industry showed little growth in the level of premiums written throughout the 1990s.

### *Australia*

The Australian financial system in 1980 was strongly segmented along institutional lines. While there were no formal restrictions separating banking, insurance and securities activities, competition was played out within, not across, these lines. The bulk of financial intermediation was conducted through the banking system, which included five private banks, nine government-owned banks (which included two trust banks), and two foreign banks which, for historical reasons, were permitted to operate as branches. In addition, other, smaller deposit-taking institutions (building societies and credit unions) operated as well. With the aforementioned two exceptions, the banking system was closed to foreign entry. Together, banks, merchant banks and finance companies met the bulk of corporate borrowing demand in Australia, and only limited use was made of direct borrowing through the issue of corporate securities. Life insurance and pension funds comprised the remaining significant segment of the financial sector. Although the majority of life insurance companies were foreign-owned, the industry was dominated by one large domestic firm (AMP Society).

The opening of the banking system to foreign competition, which initially occurred in 1984 for a limited number of firms, but was expanded to all foreign firms in 1992, had a large effect on the banking industry. Deregulation, which allowed banks to compete against finance companies in the wholesale market and building societies and credit unions in the retail market, also influenced the industry. Some domestic banks consolidated their merchant banking and finance company affiliates into one entity.

Regarding consolidation, government policy ruled out mergers among any of the four major banks and, until 1997, mergers between the four major banks and the top two or three life insurance institutions. Currently, the only significant restriction in place concerns not permitting mergers among the four major banks, the so-called “four pillars” policy.

Financial deregulation and the opening of the banking industry to foreign competition has resulted in an increase in the number of banks in Australia over the past 15 years (Table B.4). In this deregulated environment, nine large building societies converted to banks. During the 1990s all of the government-owned banks were privatised or sold. Notwithstanding the increase in bank numbers, the Australian banking industry has been consistently dominated by four major banks – the Commonwealth Bank, ANZ, Westpac and National Australia Bank.

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<sup>23</sup> Seven housing loan companies (Jusen) failed in 1995. Several banks failed in the 1990s including Hyogo Bank, an exchange-listed regional bank, in 1995, Hokkaido Takushoku Bank, a city bank, in 1997, and Long-Term Credit Bank and Nippon Credit Bank in 1998.

<sup>24</sup> Data on the largest banks in the world were obtained from various issues of *The Banker* (see Table B.15).

Concentration was initially high, but did not change much in the 1990s, although there was a drop in the middle of the decade, before a modest increase towards the latter part of the 1990s.

Consolidation had little impact on the structure of the insurance industry. Not only did the number of life and non-life insurance companies remain fairly steady throughout the 1990s, but concentration also declined. These patterns were observed during a period when both the life and non-life segments of the insurance industry grew substantially.

## *Europe*

### *Common characteristics of European banking*

There were several important and widely shared characteristics of the banking industry in Europe. First, European banks tended to operate in accordance with the universal banking principle. This principle encompasses two elements: banks may engage in a full range of securities activities in a direct way rather than through separately incorporated subsidiaries and banks may closely link themselves to non-bank firms, by either equity holdings or board participations. Firms in Germany, Sweden and Switzerland were the best examples of universal banks.

The second feature of the European banking industry was a fairly high level of government involvement. There was widespread public ownership of banks, especially in Germany, Italy, Spain and France, although, beginning in the late 1980s, important privatisation took place in certain countries. Moreover, regulations were frequently stringent regarding interest rates on deposit and loans. Also, credit and capital market controls existed in all European countries, except Germany, the Netherlands and, to a lesser extent, Switzerland.

Third, capital markets played a limited role around 1980. Equity markets were generally small and had low market capitalisations in all countries except the Netherlands and Switzerland. Markets for government bonds were more developed, especially in countries with large public debts like Belgium and Italy.

The final feature of European banking was the generally limited role of institutional investors, which were particularly unimportant in Italy and Spain, but somewhat more important in Sweden, the Netherlands and Switzerland. Restrictions on bank ownership of insurance companies were generally binding, especially in Belgium, France and the Netherlands. Regulations were even more constraining on insurance companies holding equity stakes in banks.<sup>25</sup>

### *Belgium*

Belgian commercial banks, which have been the dominant entities in the financial sector, can be classified as universal banks to the extent that they conduct investment banking activities, especially in connection with public debt operations. Also, in the early 1990s, banks were allowed to perform activities in the equity markets through the acquisition or creation of specialised securities firms. Some large banks were permitted to become market-makers in the secondary market for public bonds. This activity was opened to foreign banks in 1998. Banks have not traditionally had significant holdings in non-financial corporations or insurance companies, as this role has been the limited preserve of several large holding companies.

Government ownership of the so-called public credit institutions is another feature of the banking system in Belgium. These institutions were established to grant long-term credit on favourable terms to specific sectors (eg cities, agriculture and small commercial businesses), but evolved during the 1990s to become much more similar to commercial banks. In fact, some

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<sup>25</sup> Office for Official Publications of the European Communities (1997).

public credit institutions were privatised during the decade. The Belgian banking industry also consists of small private savings banks and highly specialised institutions including mortgage companies and finance companies.

The high level of public debt in Belgium partially explains the weakness in the issuance of bonds by private, non-financial corporations. However, equity markets became more fully developed after a 1982 fiscal package that was aimed at stimulating share issues and equity holdings by individuals. In general, limited capital markets increased corporate dependence on banks.

The dynamism of the insurance industry may have been impaired by very strict rules restricting the ownership of such companies and the start-up of insurance subsidiaries by banks. Nonetheless, composite insurance firms, which engage in a wide range of insurance activities, played a much larger role in the financial sector by the end of the 1990s.

Consolidation began influencing the banking industry around the middle of the 1990s. The total number of banks actually increased in the early part of the decade, before reversing course and decreasing (Table B.5). The drop was especially pronounced after 1996 as a result of mergers and acquisitions. Mergers were initially confined to small and medium-sized banks, but a few deals involved large banks towards the end of the decade. As a result of these large mergers, the number of large banks declined and concentration increased in the last few years of the decade.

Consolidation also appears to have influenced the insurance industry. Over the decade, the number of non-life insurance companies fell by almost half, and the number of life companies fell by roughly a quarter. Most of the drop in the number of non-life companies occurred in 1994. The drop in this year may reflect the exclusion from the data after 1993 of branches of foreign companies whose head offices were situated in the European Economic Area. Premium levels indicate that growth was fairly modest in the non-life segment, but robust in the life segment.

### *France*

Until the early 1980s, banking activity in France was governed by a set of regulations adopted in the 1940s that favoured a high degree of specialisation within the financial sector. The main division was between commercial banks and investment banks, although this basic classification was supplemented by the presence of many specialised banks. Specialisations were typically based on such features as the average maturity of credits, industry served (eg agriculture), type of credit provided (eg export financing), and degree of control exercised by the monetary authorities. State-owned mutual and cooperative banks were particularly prominent among the specialised banks. In addition, two special institutions governed by special laws played an important role: the postal financial service and the “Caisse des dépôts et consignations.”

The role of the state in the French banking industry increased in the beginning of the 1980s, when prominent commercial banks were nationalised. However, this development was soon reversed during two periods of privatisation. The first period took place in the late 1980s and involved banks like Société Générale, Crédit Commercial de France and Banque Indosuez. The second period occurred in the 1990s. For instance, Banque Nationale de Paris was privatised in 1993 and Crédit Lyonnais was sold in 1999.

Banks could operate insurance companies, but faced very restrictive rules regarding starting up and acquiring equity stakes in such firms. In the life insurance industry, the largest firms were limited companies. Mutual companies played a much larger role in non-life insurance.

Although the financial sector was highly segmented, a progressive tendency towards universal banking was felt even before 1980. This evolution was decisively reinforced with the adoption of the Banking Act of 1984, which abolished the legal distinctions between commercial banks,

investment banks and other specialised institutions, thereby establishing a full-blown universal banking system.<sup>26</sup> This evolution towards universal banking was further reinforced by a greater involvement of banks in life insurance activities (“bancassurance”) after the liberalisation brought about by the single European market.

Significant consolidation took place among French banks in the 1990s, as revealed by the large reduction in the total number of institutions (Table B.6). This decline was primarily driven by a decrease in the number of small banks, and because much of the consolidation activity involved small banks, concentration was largely unaffected. The French banking industry did not grow much over the decade, as assets-to-GDP remained fairly steady, although it was relatively high throughout.

The life insurance industry also experienced change. The number of firms declined modestly, the industry became more concentrated, and the size of the industry increased dramatically, almost tripling as a share of GDP. The structure of the non-life segment experienced greater change, as the number of firms fell by a third and concentration rose fairly sharply. Much of the increase in concentration followed the privatisation of public companies. The overall size of the industry grew only fairly modestly.

### *Germany*

In Germany, banks have traditionally been free to operate as universal banks. However, the concept of universal banks has to be qualified in several respects: Banks have been able to carry out the full range of commercial banking and investment banking activities, but some restrictions required the separation of banking and insurance. Nonetheless, banks have collaborated with insurance companies primarily through strategic alliances and, to a lesser extent, cross-participations. Aside from the currently four big privately owned universal banks (Deutsche Bank, Bayerische Hypo- und Vereinsbank, Dresdner Bank and Commerzbank), specialised financial institutions, mortgage banks and small local cooperative banks have played an important role and led to a German banking market that has been multi-layered, with a large number of institutions. Publicly-owned banks (Landesbanken and Sparkassen (savings institutions)) were fairly important in Germany and their presence in the industry remained virtually unchanged during the 1990s, although there was a lot of consolidation among the savings banks. The postal giro agencies were merged into the Postbank, which is being privatised.

An important tax change was adopted in 2000 that will exempt German banks (and all other corporations) from corporate tax on capital gains associated with the sale of participating interests from 2002 onwards. This legislation is expected to encourage banks to dispose of some of their industrial interests.

Germany had a tradition of cross-shareholdings between banks and insurance companies. As a result, banks chose to collaborate with insurance companies rather than develop in-house bancassurance. These relationships were further encouraged by conservative marketing practices. Tied agents dominated the life and non-life insurance industries, although brokers played a significant role as well as in the life insurance sector.

Equity and corporate bond markets were both quite small and largely dependent on the banking industry. This dependence was increased by the issuance of medium-term notes by the banking industry. Deregulation proceeded at a slow pace in Germany due to the liberal starting point. Stock market regulations were relaxed in the 1980s, enabling banks to gain better access to securities activities.

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<sup>26</sup> The 1984 Banking Act redefined the notion of credit institutions.

During the 1990s, the German banking industry experienced both substantial consolidation and growth. The number of banks declined by about a third from 4,700 to 3,200, primarily as a result of consolidation among savings and cooperative banks (Table B.7). As a result, consolidation appears to have had little effect on concentration among the largest banks. At the same time that the industry consolidated, total assets increased relative to GDP. In addition, the ratio of deposits to assets decreased during the decade, suggesting that much of the increase in banking assets may have been due to an increase in non-depository activities conducted by German universal banks.

The structure of the life insurance industry was not influenced much by consolidation in the 1990s: the number of firms declined modestly and concentration increased by a very small amount. Concentration among non-life firms showed similarly small increases, although the number of firms fell from about 400 to 330. Both industries grew relative to GDP.

### *Italy*

Italian banks have traditionally faced regulations related to the funding needs of the government. Segmentation existed within the banking industry, with savings banks playing a particularly important role. Moreover, regulation explicitly differentiated between short- and long-term lending banks. In this framework, the so-called special credit institutions provided medium- and long-term financing to the corporate sector. Banks also traditionally faced geographic restrictions that limited their ability to establish branches. Most banking restrictions were removed during the 1980s, so banks faced increasingly less restrictive regulations on their ability to lend, branch and hold participations in non-financial companies.

State involvement in the banking industry was very important at the beginning of the 1980s. However, this involvement declined significantly from the mid-1990s, with the privatisation of several institutions.<sup>27</sup> Nonetheless, despite the privatisations, the state retained an indirect influence on many banks via its role in the so-called “fondazioni” (joint stock companies holding stakes in several banks).

The role of insurance companies was limited at the beginning of the 1980s despite a more liberal regulatory framework. The main channel of distribution constituted tied agents, especially in the non-life segment of the industry. Nearly all large insurance firms offer a wide range of life and non-life products.

Consolidation had a pronounced effect on the Italian banking industry in the 1990s. The number of banks steadily declined, falling by more than a third (Table B.8). At the same time, concentration increased substantially. For example, the largest 10 banks controlled almost two fifths of deposits in 1992 but that figure increased to three fifths by 1999. After growing fairly rapidly in the first few years of the decade, the banking industry actually shrank relative to GDP, possibly due to the effect of economic liberalisation and privatisation.

The limited data available for the Italian insurance industry do not suggest that there was sizeable consolidation. Between 1991 and 1997, the number of life insurance companies increased, while the number of non-life insurance firms declined by about the same amount. Also during this time, total life insurance premiums grew dramatically, whereas non-life insurance premiums grew at a more modest rate.

### *Netherlands*

The Dutch financial landscape underwent a major change at the beginning of the 1990s. Large-scale mergers and closer cooperation among savings banks resulted in a more concentrated

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<sup>27</sup> The most prominent privatised banks were Banca Commerciale Italiana, Credito Italiano and Istituto Mobiliare Italiano. The privatisation wave followed the adoption of the 1993 Banking Law (“Testo Unico” or unified text), which allowed banks to pursue market objectives as opposed to social functions.

banking industry. The process of liberalisation and deregulation, which started as early as the 1970s, made large advances as universal banks that provided an array of services in commercial banking, investment banking and insurance were permitted to emerge. Both the equity and bond markets were highly developed relative to other continental European countries.

In general, Dutch authorities did not impose substantial regulation. The sole significant rule was a strict institutional separation between the money market and the capital market, with each market having its own participants, structure and customs. Partly in response to the mature conditions at home, the largest institutions shifted their focus abroad and became substantial players in international markets. In contrast, penetration into the Netherlands by foreign institutions has remained limited. During the decade under observation, no major financial upheavals occurred. Moreover, the government sold its remaining holdings in commercially relevant institutions.

The insurance industry exhibited a historically close relationship to the banking industry, with bancassurance taking off quite early in the Netherlands as compared to other countries. However, brokers were by far the most prominent distribution channels for insurance companies. Another important feature of insurance was the prevalence of mutual companies in the non-life segment.

Consolidation had a large, but unique, effect on the banking industry. The total number of banks did not change much in the 1990s, in large part due to high levels of new entry (Table B.9). Concentration did, however, rise by a few percentage points. In addition, the largest banks grew substantially. Between 1990 and 1998, the aggregate assets of the three largest banks as a percentage of GDP more than doubled. Increased large bank presence may be due, to a large extent, to the merger of ABN and AMRO in 1991 and several significant foreign acquisitions by ING, a leading Dutch bank. The overall banking industry also grew quickly during the decade, but not as fast as the largest banks.

The number of life insurance companies increased over the 1991-97 period, primarily in 1997. In contrast, the number of non-life firms decreased dramatically. However, much of the drop (over 350 firms) took place between 1994 and 1995 and probably reflects changes in the data whereby reinsurance companies, exempted small local mutuals and branches of foreign insurers with a head office within the EU/EEA were no longer included after 1994.

### *Spain*

The Spanish financial sector is characterised by universal banking, whereby banking groups include firms that engage in insurance, asset management and securities activities. Banks can also hold equity stakes in non-financial companies. This relationship between banks and non-financial companies in Spain has had a considerable historical tradition, dating back to the establishment of the so-called industrial banks in 1962. However, the traditional activities of industrial banks were gradually taken over by larger banks in the 1970s and 1980s, and the historical segmentation between industrial-merchant banks and commercial banks withered away. Strict geographical limits were also imposed on banks, which had to be distinguished as national, regional or local banks according to their size and the number of provinces in which they operated. Ties between insurance companies and banks were historically close in Spain (the main insurance companies were bank affiliates), but banks faced strict regulatory constraints, especially as regards the distribution of insurance products. Tied agents constituted the main distribution channel of insurance products.

Starting in the mid-1980s, regulations such as interest rate controls, branching restrictions, solvency and investment requirements, accounting rules and entry constraints were relaxed or harmonised, which increased the level of competition in the financial sector. Trading on the Spanish stock market was very thin, exhibited a low degree of transparency, and was dominated by a small number of institutions. Bond markets were equally underdeveloped. However, a drastic reform of the equity market began in 1988 to address some of the problems.

Consolidation had a relatively minor effect on the Spanish banking industry. There was a modest decline in the total number of banks in the 1990s and a small increase in the number of commercial banks (Table B.10). Concentration figures generally remained steady between 1992 and 1997. However, more recent figures, which are not reported, are likely to be higher as a result of the mergers between Banco Santander and Banco Central Hispanoamericano (to create BSCH) and between Banco Bilbao Vizcaya and Argentaria (to create BBVA). Banks exhibited modest growth relative to GDP in the early part of the 1990s, but no growth thereafter.

The number of life insurance companies declined by about 20% from 1990 to 1997. This consolidation was accompanied by a nearly fourfold increase in premiums collected. The number of non-life companies fell by a comparable amount on a percentage basis. However, that segment grew much less rapidly over the period.

### *Sweden*

In Sweden, banking and insurance have traditionally remained separate. In the late 1970s, the banking industry included commercial banks, saving banks and cooperative banks, with commercial banks operating as universal banks. Each savings bank was self-owned, independent and required to confine its activities to a well-defined geographical area. In addition, specialised lenders such as mortgage institutions also operated in Sweden. At the time, a few large commercial banking groups and insurance groups dominated their industries.

In the early 1990s, banks and insurance companies were allowed to own shares in each other and be part of the same holding company. Cross-industry consolidation was further encouraged in the mid-1990s with legislation that opened the pension savings market to banks and other financial companies. In addition, savings banks and cooperative banks were permitted to change legal status and become limited liability companies in 1991-92. This change had a large effect on the structure of the banking industry. In the early 1990s, about 10 of the larger saving banks transformed into a new banking group with a parent holding company. Also, the 12 central cooperative banks were merged and subsequently transformed into a single commercial bank.

The banking industry in Sweden exhibited several patterns that were in contrast to most other countries examined in this study. First, as previously mentioned, the cooperative banks merged into one commercial bank in 1992, which accounts for the substantial decline in the number of banks in that year and is also likely to have contributed to the increased concentration in the early part of the decade (Table B.11). Also in 1992, the largest savings banks were transformed into one banking group. It should be noted that this transaction influenced the structure of the industry, but possibly not the reported figures, which are based on institution-level, not organisation-level, data.

Besides these two events, the Swedish banking industry went through a further consolidation involving all the major banking groups. The result was a further decrease in the number of large institutions from six to four. At the same time, between 1992 and 1998 the number of banks increased somewhat due to foreign entry and the establishment of several new, so-called niche banks that competed mainly in the household deposit market. During this time, the banking industry declined relative to GDP in the first part of the decade, before growing rapidly in the latter part.

The available data suggest that the insurance industry was largely unaffected by consolidation. Both the life and non-life segments saw their membership increase by roughly 25% during the 1990s. Between 1990 and 1998, both segments experienced healthy growth, as each roughly doubled in size relative to GDP.

### *Switzerland*

The Swiss banking and, to a lesser degree, insurance industries are characterised by a two-tier structure. The first tier is internationally oriented and, at year-end 1999, consisted of two large banks, two large insurance companies and some smaller private banks and insurance groups that focus either on private banking or life insurance, including asset management. The large banks



are universal banks with substantial investment banking activities that place them among the global leaders in underwriting and brokerage operations.

Large banks and insurance companies were active in the consolidation process of the 1990s on a domestic and cross-border level, and large financial conglomerates emerged as a result. Besides the consolidation of insurance firms and banks, some institutions expanded into asset management abroad.

The second tier consists of a large, heterogeneous group of small, domestically focused banks and insurance companies. This group includes cantonal banks (state-owned), regional banks, Raiffeisen banks (credit cooperatives) and, in another category with a clear focus on a foreign client base, foreign banks. In the early 1990s, Switzerland experienced asset deflation in the real estate market followed by a prolonged period of stagnation, which led to a significant restructuring and consolidation in the banking industry. Many regional banks were acquired by larger domestic competitors, and global financial conglomerates emerged.

The importance of the banking industry in Switzerland is evidenced by the very high level of assets, relative to GDP, held by all banks throughout the decade (Table B.12). Moreover, asset levels grew throughout the period and, by 1997, assets were nearly five times larger than annual GDP. Four large banks accounted for most of this growth and, by 1997, they controlled assets three times larger than GDP. Increased concentration accompanied large bank growth. Concentration figures are only reported up to 1997 and therefore do not fully reflect the increase in concentration over the decade, because they omit the effects of the 1998 merger of two very large Swiss banks – Union Bank of Switzerland and Swiss Banking Corporation. During the 1990s, the number of banks in the industry, which started at just over 450, fell by about 100. However, this decrease was not attributable to fewer commercial banks, which maintained fairly stable numbers.

Consolidation had little impact on the insurance industry. The number of both life and non-life firms increased, albeit modestly, during the 1990s. The level of life insurance premiums more than doubled, suggesting that the segment enjoyed healthy growth, but the level of non-life premiums remained stable. The insurance sector was important in Switzerland, partly due to the significance of asset management activities and the development of private pension schemes.

### *United Kingdom*

The UK financial sector was dominated by a relatively small number of large banks in 1980, along with a larger number of building societies, insurance firms, credit unions and friendly societies.<sup>28</sup> Strict regulations restricted the ability of institutions to compete across traditional lines of business, but regulatory reforms during the 1980s and 1990s removed many of those barriers. This deregulation allowed for the development of more universal banking. Restrictions on building societies' activities were further liberalised in 1997.

The 1986 Big Bang reforms of the London Stock Exchange achieved extensive deregulation, including elimination of practices that had restricted the entry of new participants into London's markets. The wave of mergers and acquisitions that followed these changes resulted in many UK securities firms being acquired by domestic retail banks and foreign investors.

There was a dramatic expansion in the number of banks competing in the United Kingdom during the 1980s from about 350 in 1980 to roughly 500 in 1990 (Table B.13). This increase was primarily due to the growth of international banking and also partly due to building

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<sup>28</sup> Friendly societies have a long history of making mutual provisions for members and their relatives against loss of income through sickness or unemployment and for retirement. The provision of life and accident insurance and small-scale savings products is the staple of most societies. According to the UK Treasury, there were approximately 270 societies with total funds of GBP 12 billion and at least 5 million estimated members as of March 1999.

societies becoming banks after converting from mutual to stock ownership. Subsequent consolidation in the 1990s, however, reduced the number of banks by almost 20%. Surprisingly, concentration ratios among the largest one and five banks in the UK banking industry fell in the 1990s, while concentration among the top 10 and 15 rose only very modestly. In all cases, concentration fell during the late 1990s. Relative to GDP, industry assets grew at a healthy rate throughout the decade, with much of this growth arising from the expansion of international banks operating from London.

The number of life insurance companies declined steadily throughout most of the 1990s. However, there were no significant changes in concentration ratios until the late 1990s. While the concentration ratios of the largest firm showed little change, those of the largest five, 10, and 15 firms increased substantially in 1998. This increase may be due to several mergers involving large insurance companies. The number of non-life insurance companies climbed slightly. Increases in the concentration ratios within the non-life industry were more consistent than those found in the life industry. This may reflect the higher level of merger activity of the largest non-life firms relative to the largest life insurance firms.

### **International comparisons**

Although the data presented in Tables B.1 to B.13 are not well suited for international comparisons, certain large and important differences are clearly observable, especially in the banking industry. Table B.14 presents key banking and insurance data in a manner that enables figures for all countries to be examined simultaneously.

The banking industry in the United States was particularly unique, as a result of strict limitations on branching and interstate banking, as well as on bank activities. Throughout the decade, the United States had many more banks and lower concentration levels than other countries (with the possible exception of Germany). Although both numbers have moved towards most of the world, there was still a substantial difference at the end of the decade. Moreover, as measured as a share of GDP, the banking industry was relatively less important than elsewhere.

Other countries exhibited distinguishing characteristics as well. In about half of the countries included in this study, concentration levels were extremely high throughout the decade, as a small group of banks controlled a substantial share of deposits. These highly concentrated countries include North American (Canada), European (Belgium, France, Netherlands, Sweden and possibly Switzerland) and Pacific Rim (Australia) countries. Also, in several countries, both highly and not highly concentrated, concentration increased substantially over the decade. The largest banks in Belgium, Canada, Italy and the United States generally showed a pattern of controlling a rapidly increasing share of banking deposits. In contrast, the largest banks in Japan and the United Kingdom experienced no change or even a modest decline in their share of total bank deposits.

At the end of the decade, the banking industry was very important in four European countries: Belgium, Netherlands, Switzerland and the United Kingdom. In all four, banking assets were more than three times annual GDP during the late 1990s. In the United States, where the banking industry was relatively small, banking assets did not exceed 100% of GDP at any time in the 1990s. In Switzerland and the Netherlands, bank assets relative to GDP increased by well over 100 percentage points over the decade, contributing to the prominent position of the banking industry in those countries in the late 1990s.

International comparisons of insurance data are even more difficult to make than with bank data, in part because insurance data are reported for only about half of the countries in the study. Nonetheless, notable differences exist among the countries for which insurance data are

available.<sup>29</sup> At the end of the decade, concentration in the life insurance segment was high in Australia, Canada, France and Japan, and low in Germany and the United States. Also, the countries for which non-life data are available can be classified into two well-defined groups: Australia, Germany and the United States were less concentrated than France, Japan and the United Kingdom.

Concentration tended to decline in Japan and Australia, with the leading Australian firms tending to control a declining share of the non-life segment as well. Finally, as measured by assets-to-GDP, the insurance industry was relatively important in Sweden and Switzerland and relatively unimportant in the United Kingdom.

### Global financial leaders

Analysing the banking and insurance industries of each country is very helpful for an examination of the effects of consolidation on those industries in each country. However, the analysis does not shed any light on the impact of consolidation on a global basis. In this section, such an analysis is conducted on the banking and securities industries.

Table I.2 indicates that the consolidated assets of the largest banks in the world increased relative to the GDP of the 13 countries included in this study during the last two decades of the century. The largest banks include banks from all over the world, not just the 13 reference countries, but many of the largest banks, especially the very largest ones, are located in one of the 13 reference countries. Because the GDP numbers in the denominator only reflect the 13 countries examined in this study, the figures account for only about half of total world output. Therefore, the figures reported in the table overstate the relative importance of the largest banks on a global basis.

Relative to GDP, the consolidated assets of the largest banks steadily increased. Assets of the top 50 banks in the world exceeded 70% of the combined GDP in 1998, while the same ratio was just above 35% in 1980. The top 20 banks' ratio increased from almost 20% in 1980 to nearly 40% in 1998. These dramatic changes clearly illustrate the growth of the leading banks in the world relative to the economies of the countries included in this study.

Table I.2  
**Assets of the world's largest banks to G13 GDP**  
(in percentages)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998
Top 20	19.5	31.6	35.2	34.2	36.0	36.5	37.5	36.8	38.1	39.8
Top 30	25.5	40.3	44.4	44.1	46.3	47.0	48.5	49.0	51.1	52.7
Top 40	30.8	47.0	51.5	51.5	54.1	55.1	56.8	56.8	61.4	63.2
Top 50	35.4	52.8	57.6	57.6	60.5	61.9	64.0	66.0	69.0	71.2

G13 refers to the 13 countries included in this study. Sources: Asset data: *The Banker*, various issues. GDP: IMF, *International Financial Statistics*, CD-ROM, March 2000.

<sup>29</sup> Life insurance companies in Canada are allowed to issue some types of annuities with deposit-like characteristics. In Canada, life insurance companies continue to be generally restricted by legislation from directly accepting deposits.

At the same time that the largest banks were becoming increasingly important, the identity of the very largest banks was changing over time. In particular, as Table B.15 shows, the distribution of the home countries of the 10 largest banks in the world (by assets) was not stable over the years. The number of banks from Japan grew in the 1980s, but fell during the 1990s. Large mergers in the late 1990s enabled several banks from the United States to enter the ranks of the largest institutions.

The largest institutions have also played an important role in the securities industry. Table I.3 reports the annual share of total worldwide debt and equity underwriting associated with the largest underwriter, as well as the share of those activities accounted for by the top five and 10. The data indicate that although there has not been an increase in the share of overall activity conducted by the leading firms, underwriting has been dominated by a fairly small group of players. It should be noted that much of the underwriting measured in the table reflects activity in the United States. Nonetheless, firms that are large in the United States also tend to be global players with a sizeable presence in many countries.

Table I.3  
**Concentration of worldwide debt and equity underwriting**  
(in percentages)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Top 1	12.1	12.9	13.0	12.9	12.6	13.6	13.0	13.7	14.1	12.5
Top 5	43.9	47.1	48.2	46.3	44.3	44.8	44.3	50.0	49.7	46.7
Top 10	63.2	68.2	71.0	67.9	65.3	63.5	64.1	70.9	71.2	68.2

Source: *Investment Dealers' Digest*, various issues.

Table I.4 is similar to Table I.3 with the exception that only worldwide equity underwriting data are presented. The levels of concentration are roughly equivalent to those observed with both debt and equity underwriting. However, equity underwriting actually became somewhat less concentrated during the decade. Nonetheless, the 10 largest firms accounted for more than 60% of underwriting activity (measured in US dollars) in 1999.

Table I.4  
**Concentration of worldwide equity underwriting**  
(in percentages)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Top 1	13.7	14.4	13.7	13.9	9.7	10.5	9.9	12.1	14.1	10.9
Top 5	50.7	48.8	50.7	42.3	33.3	35.8	38.7	37.3	43.9	43.0
Top 10	69.0	68.4	69.0	60.3	51.8	52.4	55.2	53.9	61.3	61.2

Source: Thomson Financial, SDC Platinum.

Table I.5 illustrates that in 1999 leading securities firms had a large presence in a variety of other securities activities. Typically about half of the leading firms were headquartered in the

United States. The names, levels of activity and market shares of the largest firms in the activities listed below, as well as several other securities activities, are presented in Table B.16.

Table I.5  
**Global concentration of various securities activities, 1999**  
(in percentages)

Securities activity	Top 1	Top 5	Top 10
International equities <sup>1</sup>	16.2	56.2	75.8
International European equities <sup>1</sup>	19.2	58.4	81.2
International US equities <sup>1</sup>	23.9	83.8	96.6
International IPOs <sup>1</sup>	15.9	59.1	76.1
US Market IPOs <sup>2</sup>	20.7	67.7	87.3
Syndicated loan arrangers - euromarkets <sup>3</sup>	8.0	29.8	47.8
Syndicated loan arrangers - US markets <sup>3</sup>	19.3	59.9	74.0
International bonds <sup>1</sup>	8.9	37.7	63.3
Public euro and global bonds <sup>1</sup>	10.0	40.5	67.1

Sources: <sup>1</sup> Capital Data-Bondware. <sup>2</sup> Thomson Financial Securities Data. Data exclude closed-end funds and rank ineligible issues. <sup>3</sup> Capital Data-Loanware.

On a global basis, over-the-counter (OTC) derivatives markets are not as highly concentrated as securities activities. Table I.6 reports various concentration measures for several types of OTC derivatives activities at several points in the late 1990s. Although there are not enough data to identify a trend, the table indicates that concentration increased between December 1998 and December 1999. Not truly global, the data nonetheless reflect the total derivatives volume in several large countries (France, Germany, Italy, Japan, Switzerland, the United Kingdom and the United States).

Table I.6  
**Concentration of various OTC derivatives activities**  
(in percent)

Instrument type	Date	Top 3	Top 5	Top 10
Foreign exchange	Dec 1998	23.5	34.3	55.5
	June 1999	26.3	38.3	57.4
	Dec 1999	29.4	42.0	60.7
Interest rate	Dec 1998	23.9	32.6	50.6
	June 1999	26.1	35.2	54.4
	Dec 1999	27.6	36.7	56.2
Total	Dec 1998	22.3	31.5	48.5
	June 1999	25.6	34.3	52.7
	Dec 1999	27.2	36.0	54.7

Source: National authorities.

## Summary of key structural patterns in the financial sector

During the 1990s, several key patterns emerged in the financial sectors of the various countries included in this analysis that suggest that consolidation had a substantial impact. In particular, the banking industry was affected a great deal. First, the number of institutions decreased in nearly all countries, as mergers and acquisitions appear to have thinned the ranks. Between 1990 and 1999, about half of the countries in this study experienced a decline of greater than 20% in the total number of banks. During that period, only Belgium, Australia and Japan increased the number of banks, and Japan's increase was due to a definition change while Belgium's change was very small.

The second effect of consolidation on various banking industries was that large banks grew relatively more important, as indicated by growth in various measures of deposit concentration. Such measures increased in all countries except Japan and among the very largest banks in the United Kingdom. In Japan, decreasing concentration stemmed from a relatively modest level of consolidation activity and the financial distress experienced by the largest banks. Japanese concentration may increase in the future if planned mergers among its largest banks are completed. Finally, the banking industry grew relative to GDP in all countries except Japan, which experienced the aforementioned financial distress, and the United States, where banks faced increasing competition from other financial firms such as mutual fund companies and specialised lenders.

The sizeable increase in concentration in banking that is reported in the tables may actually understate the growing dominance of leading banks. Concentration measures are based on total deposits, and so the influence of off-balance sheet activities is not included. These activities, which increased in level throughout the 1990s, have been and continue to be dominated by large banks. Therefore, concentration measures that include them, along with traditional bank activities (ie lending and deposit-taking), would be likely to reflect a higher and faster growing level of concentration over the course of the decade. Table B.17 presents data on the notional size of global OTC derivatives markets between 1992 and 1999, and the quadrupling of total notional size over the period clearly illustrates the rapid growth that has taken place.

The data are less comprehensive and patterns related to consolidation less consistent in the insurance industry. In both the life and non-life segments, the number of firms showed no consistent patterns across countries: the number fell in some countries and increased in others. Interestingly, for a given country, the change in the life segment did not appear related to the change in the non-life segment. Although concentration data lean slightly towards greater concentration in both segments, the patterns are very weak and only reflect about half of the countries. As a result, there is little convincing evidence to suggest that the insurance industry became more concentrated in the 1990s. The industry does, however, appear to have grown. In all countries where data are available for 1990 and 1998, the insurance industry (both life and non-life) grew relative to GDP.

Although the aforementioned patterns are reflective of patterns observed in the banking and insurance industries of the 13 countries included in this study, important distinctions among countries existed. Individual countries exhibited clear differences in both the level and growth rate of concentration and industry size. However, one must be extremely cautious in making international comparisons, as the data are not well suited to such analysis.

Most of the analysis in this section involves independently looking at the financial sectors of individual countries. However, an examination of the largest banks and underwriters in the world reveals that the largest firms are important on a global basis. Relative to the GDP of the 13 countries included in this study, the assets held by the largest 20, 30, 40, and 50 banks in the world increased a great deal during the 1980s and 1990s. Notably, the composition of the home countries of the largest 10 banks in the world changed a great deal over time.

Regarding the securities industry, although there was little change in the concentration of leading worldwide underwriting activity, the largest firms accounted for a substantial share of activity. Concentration figures from the end of the decade also reveal that many specific

securities activities were largely controlled by a small group of leading institutions. OTC derivatives markets were less concentrated.

## **5. Conclusion**

The 1990s saw dramatic change in the financial services industries of the 13 countries examined in this study. Much of this change was driven by consolidation in its various forms. Mergers, acquisitions, joint ventures and strategic alliances are the most common methods, with each involving a different level of control and integration and each being preferable in certain circumstances.

Consolidation activity was brisk during the decade and generally increased throughout. Most mergers and acquisitions, in terms of both the number and value of deals, involved firms in the same industry and from the same country. Moreover, banks accounted for a large share of the M&A activity that took place during the 1990s. The level of joint venture and strategic acquisition activity also increased throughout the decade, especially in the last two years. Deals of this type more often involved firms from the same countries than from different ones, but this result is driven by the United States, which accounted for a large share of all ventures, particularly within-border ventures.

M&A activity contributed to a decreased number of banks and increased concentration in the banking industries of most of the countries included in this study. The insurance industries were not as clearly influenced by consolidation. During the decade under review, the size of the banking and insurance industries in most countries tended to increase relative to GDP. Finally, at the end of the decade, worldwide securities activities were largely controlled by a small group of leading institutions, whereas over-the-counter derivatives markets exhibited more modest levels of concentration.

Collecting data that are consistent across nations and over time is a very difficult and complex task. Nonetheless, the information that is presented in this chapter can be effectively used to illustrate important patterns that emerged. Certain clear and important distinctions among countries can be observed in measures such as the level, growth and nature of consolidation activity and the level and growth of concentration and industry size. However, data must be analysed with caution, especially with respect to international comparisons.

## **Annex I.1**

### **Securities exchanges and consolidation**

#### **United States<sup>30</sup>**

The New York Stock Exchange (NYSE) is the largest stock exchange in the United States. Other smaller stock exchanges include the American Stock Exchange (AMEX), Chicago Stock Exchange, Philadelphia Stock Exchange, Pacific Stock Exchange, Boston Stock Exchange and Cincinnati Stock Exchange. These exchanges are linked by the Intermarket Trading System, which enables market participants at one of the exchanges to direct an order to any of the other exchanges.

Equities are also traded via the National Association of Securities Dealers Automated Quotation System (NASDAQ). Although not a formal exchange, NASDAQ links dealers via a network of computers. Traditionally, nearly all large corporations listed their shares on the NYSE. However, this pattern changed somewhat in recent years, because many firms listed on the NASDAQ operate in the fast-growing high-technology sector and decided to remain listed on NASDAQ as they grew. In fact, some of the largest firms in the world now trade over NASDAQ.

There are three large exchanges that specialise in the trading of futures contracts. They are the Chicago Board of Trade, Chicago Mercantile Exchange (CME) and New York Mercantile Exchange (NYMEX). Securities options are primarily traded on the Chicago Board Options Exchange, as well as on some other securities exchanges. There are also a number of smaller futures exchanges.

Consolidation among the leading exchanges in the United States has been fairly modest in recent years. In 1994, New York's two largest futures exchanges, NYMEX and the Commodity Exchange, combined. In 1998, NASDAQ merged with AMEX to create the NASDAQ-AMEX Market Group.

There are two primary developments currently taking place among the securities exchanges. First, smaller exchanges have been experiencing difficulties attracting members and face pressure to consolidate. Second, exchanges have moved towards restructuring their corporate forms by converting from mutual to stock ownership. Exchanges believe that being stock-owned will enable them to more easily consolidate and acquire capital for investment in technology.

#### **Japan**

The integration of Japanese regional stock exchanges accelerated in the 1990s. Traditionally, there were nine stock exchanges, but at the end of the decade, there were six. However, one major and one minor exchange dominate. About 90% of transactions are carried out on the Tokyo Stock Exchange (TSE), and a majority of the other transactions are carried out on the Osaka Securities Exchange (OSE). The concentration of the stock exchanges is mainly a result of cheaper and simpler communication tools.

The OSE created a new section with NASDAQ in 2000. Although listings were limited in the first few months, this new section will enable Japanese venture capital companies to offer their stocks and it will permit NASDAQ companies to be traded in Japan in the near future. It is also planned that shares of Japanese venture companies will be traded over NASDAQ.

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<sup>30</sup> The discussion in this section is drawn heavily from Austin (1995).



Separate from the stock exchanges, there is JASDAQ, an over-the-counter trading system, managed by Japan Securities Dealers Association. The JASDAQ has operated since 1983, with a computerised system since 1991. At the end of 1999, the total capitalisation of TSE was JPY 456 trillion (roughly USD 4 trillion), while the total capitalisation of JASDAQ was JPY 27 trillion.

Although affiliation and cooperative agreements between Japanese and foreign exchanges have been made, an outright merger has not been pursued. Therefore, the venture between NASDAQ and OSE was an exception, rather than a trendsetter, at least until now.

Futures exchanges exhibit more competition than the equity exchanges. The Nikkei 225 futures have been traded on the OSE, Singapore's SIMEX and Chicago's CME. The SIMEX trading volumes of Nikkei 225 increased in the early 1990s after transactions costs in Osaka were increased. No consolidation is planned among the exchanges that trade futures.

## Europe

The integration of organised securities exchanges in Europe gained momentum in recent years due to growing competition between traditional European exchanges and competition both from foreign exchanges and from private, electronic exchanges like Instinet (the so-called proprietary networks). The advent of the euro has played an important catalytic role in this process by eliminating substantial currency risk and thereby encouraging investors to trade assets by sectors rather than by countries and to be more concerned about liquidity. In this more competitive environment, agreements and alliances may be critical for achieving full economies of scale and transforming technological progress into a competitive edge.<sup>31</sup>

As regards stock exchanges and derivatives markets, the first wave of consolidation, which took place in the second half of the 1990s, exhibited a clear regional or domestic flavour. For instance, in 1998 the OM Stockholm Stock Exchange<sup>32</sup> and the Copenhagen Stock Exchange signed an agreement to set up a common Nordic market, NOREX, which is based on cross-membership and provided for sharing the SAX-2000 trading system and the same trading rules. In 2000 a letter of intent was signed with an additional five exchanges (Norway, Iceland, Estonia, Latvia and Lithuania). The Deutsche Börse was formed in 1993 by the merger of eight regional stock exchanges in Germany. This new exchange promoted the merger between the German and the Swiss derivatives markets in 1996 to form Eurex, the leading European derivatives market. The Dutch and Belgian primary markets merged with their derivatives markets and clearing systems, giving way to AEX in 1997 and BEX in 1999, respectively.

The most recent mergers have a more pan-European flavour. The merger between Paris Bourse, the AEX and BEX to form Euronext was completed in September 2000. Euronext is incorporated as a Dutch limited company and offers trading in equities, bonds and derivatives. The structure of Euronext is designed to preserve various subsidiaries and maintain strong links with local investors through a decentralised structure. Trading in blue-chip equities is offered in Paris, trading in derivatives in Amsterdam, and trading in small or medium-sized companies in Brussels. Trading is based on the French NSC system, already sold worldwide to about 20 exchanges.

Despite persistent efforts over the last two years, a pan-European stock exchange has remained an elusive goal. In May 2000, the London Stock Exchange and Deutsche Börse announced their plan to merge operations in what was to be a significant step towards the pan-European goal. The two exchanges proposed the adoption of a common trading platform and the concentration

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<sup>31</sup> See Abraham and Pirard (1999).

<sup>32</sup> The OM Stockholm Stock Exchange was itself constituted in 1998 by the merger of the Swedish Stock Exchange with the derivatives exchange OM.

of different market segments in one or the other physical location. However, the plan collapsed in September 2000 under the weight of scepticism regarding dual currency listings, the absence of consolidation of the post-trade settlement systems, and the cost to smaller brokers of adopting a new platform. As a consequence, both exchanges are likely to pursue independent routes to consolidation.

Continental European government bond markets were more closely integrated after the advent of the euro. A common trading platform was created for the most liquid government bonds of seven major euro area issuers (Belgium, Germany, Spain, France, Italy, the Netherlands and Austria). This screen-based system is called Euro-MTS and is based on the Italian system MTS-PCT. This system was recently enhanced so as to enable its participants to trade repurchase agreements (repos) on different ranges of maturity. Other initiatives have been undertaken such as Reuters' development of a trading platform for repurchase agreements. No significant integration has occurred regarding the infrastructure of corporate bond markets.

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## **Chapter II**

### **Fundamental causes of consolidation**

#### **1. Introduction**

This chapter is concerned with the fundamental causes of consolidation.<sup>33</sup> To this end, it reviews and builds upon the extensive body of literature academic scholars and other researchers have produced in this field. As generalisations about the main forces driving consolidation are sometimes affected by country-specific circumstances, interviews have been conducted with 45 selected industry participants and experts from the G10 countries, Australia and Spain. These individuals have been asked for their opinions on the basis of a common interview guide, which covers the issues of each section of the chapter.

The analysis distinguishes between motives for consolidation and the environmental factors that influence the form and pace of consolidation. In practice, motives and environmental factors are intertwined, but for the purposes of this chapter it has proven useful to treat them separately. The environmental factors are divided into two categories: those that encourage consolidation and those that discourage consolidation.

The remainder of the chapter is structured as follows. Section 2 analyses the motives for consolidation in the financial sector and examines the main empirical studies. Section 3 deals with the environmental factors encouraging consolidation, which include technological change, deregulation, globalisation, the institutionalisation of savings, and the introduction of the euro. Section 4 discusses the factors that may discourage or impede financial sector consolidation, such as regulations and differences in culture and corporate governance. Section 5 examines three possible future scenarios, based mainly on the outcomes of the interviews. Annex II.1 contains country synopses based on the interviews, where the country-specific causes of consolidation are described. Annex II.2 provides technical information on the structure of the interviews.

#### **2. Framework**

##### **Theory**

Mergers and acquisitions in the financial sector are undertaken for a wide variety of reasons. In any given case, more than one motive may underlie the decision to merge. Motives may vary with firm characteristics such as size or organisational structure, over time, across countries, across industry segments, or even across lines of business within a segment. In the framework used in this chapter, the motives for mergers and acquisitions are broken down into two basic categories: value-maximising motives and non-value-maximising motives. In a world characterised by perfect capital markets, all activities of financial institutions would be motivated by a desire to maximise shareholder value. In the “real” world, while value

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<sup>33</sup> In this chapter, mergers and acquisitions and consolidation are considered as synonyms. The various forms of consolidation are described in more detail in Chapter I.

maximisation is an important factor underlying most decisions, other considerations can, and often do, come into play.

### ***Value-maximising motives***

The value of a financial institution, like any other firm, is determined by the present discounted value of expected future profits. Mergers can increase expected future profits either by reducing expected costs or by increasing expected revenues.

Mergers can lead to reductions in costs for several reasons, including:

- economies of scale (reductions in per-unit cost due to increased scale of operations);
- economies of scope (reductions in per-unit cost due to synergies involved in producing multiple products within the same firm);
- replacement of inefficient managers with more efficient managers or management techniques;
- reduction of risk due to geographic or product diversification;
- reduction of tax obligations;
- increased monopsony power allowing firms to purchase inputs at lower prices;
- allowing a firm to become large enough to gain access to capital markets or to receive a credit rating;
- providing a way for financial firms to enter new geographic or product markets at a lower cost than that associated with de novo entry.

Mergers can lead to increased revenues for a variety of reasons, including:

- increased size allowing firms to better serve large customers;
- increased product diversification allowing firms to offer customers “one-stop shopping” for a variety of different products;
- increased product or geographic diversification expanding the pool of potential customers;
- increased size or market share making it easier to attract customers (visibility or reputation effects);
- increased monopoly power allowing firms to raise prices;
- increased size allowing firms to increase the riskiness of their portfolios.

### ***Non-value-maximising motives***

Managers’ actions and decisions are not always consistent with the maximisation of firm value. In particular, when the identities of owners and managers differ and capital markets are less than perfect, managers may take actions that further their own personal goals and are not in the interests of the firm’s owners. For example, managers may derive satisfaction from controlling a larger organisation or from increasing their own job security. Thus, they might engage in mergers designed to increase the size of the firm or reduce firm risk, even if such mergers do not enhance firm value. Managers may acquire other firms in order to avoid being acquired themselves (defensive acquisitions), even if being acquired would benefit the firm’s owners. In some cases, managers may care about the size of their firm relative to competitors, leading them to engage in consolidation simply because other firms in the industry are doing so.

### ***The role of government***

Government policy can play an important role in either facilitating or hindering consolidation. Governments sometimes facilitate consolidation in an effort to minimise the social costs associated with firm failures. In the United States, for example, government agencies provided financial assistance to healthy banks that acquired failing banks during the banking crises of the 1980s and early 1990s. Financial crises or major problems with large depository institutions also contributed to accelerated changes in the banking landscape in France, Japan, Scandinavia and the United Kingdom. In resolving failed institutions, supervisory authorities have often encouraged mergers or forced the liquidation and sale of the weakest institutions. For example, in Japan during the banking crisis of the 1990s, government funds were deployed to support reconstruction and consolidation of the banking sector. Governments may also promote consolidation in an effort to create a “national champion” that can compete effectively in the global arena. At the same time, laws requiring regulatory approval of mergers and acquisitions or prohibiting certain types of mergers and acquisitions (because of their implications for competition, financial stability, potential conflicts of interest between commercial and investment banking, or other reasons) have the potential to hinder consolidation.

### **Empirical evidence on the motives for consolidation**

Numerous empirical studies have attempted to determine the motives for mergers, both within the financial services sector and more broadly.<sup>34</sup> Unfortunately, the actual motives for mergers are not directly observable and may differ from those stated by management at the time of a merger announcement. Researchers are limited to inferring the motives from observable factors such as the relationship between average cost and firm size, the characteristics of firms that merge, the effects of mergers on stock prices, and the post-merger performance of cost and price measures.

### ***Economies of scale and economies of scope***

Many researchers have estimated the relationship between average cost and firm size or product scope for the banking industry, in an attempt to determine the importance of economies of scale and economies of scope in banking. Studies of economies of scale and economies of scope in financial services sectors other than commercial banking are less numerous. Overall, these studies seem to support the view that economies of scale may be a motivating factor for mergers involving small or medium-sized financial services firms, particularly during the 1990s. They do not provide support for the view that economies of scale are an important factor driving mergers involving the very largest firms in the industry. It should be noted, however, that for very large diversified firms, economies of scale may be more difficult to detect because they may be limited to certain product lines and not show up in aggregate, firm-level data. Thus far, there seems to be little or no evidence in support of the importance of economies of scope as a motivator.

### ***Cost efficiency***

In some cases, managers do not operate a firm in a manner that minimises the cost of producing given quantities and combinations of products. In this case, the firm is said to suffer from cost inefficiency. Consolidation can help to eliminate cost inefficiency if the acquiring firm’s management is more effective at minimising costs than the target’s management, and is able to eliminate unnecessary costs after the combination takes place. Studies of the characteristics of the firms involved in financial sector mergers and acquisitions generally support the view that efficiency gains motivate consolidation. These studies tend to find that acquiring firms are more

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<sup>34</sup> See Chapter V for a review of this literature.

cost efficient than target firms. However, studies that examine ex post changes in cost efficiency resulting from mergers and acquisitions generally fail to find any evidence that efficiency gains are realised. The consistent failure of research to document efficiency gains from mergers may reflect accounting complexities that make it very difficult to measure changes in cost efficiency or unanticipated difficulties in achieving post-merger efficiency gains. Nonetheless, these studies cast some doubt on the significance of efficiency gains as a motivating factor.

### ***Monopoly power***

Mergers and acquisitions can sometimes enhance monopoly power, allowing firms to increase profits by setting prices that are less favourable to customers. This is particularly true when the merging firms are direct competitors and their combination results in a substantial increase in market concentration. Few studies have directly examined the effects of financial sector mergers and acquisitions on prices. Although the findings of these studies are somewhat mixed, those that focus on the types of mergers that are most likely to increase market power do find evidence of significant price effects. Numerous studies have examined the effects of bank mergers on profitability. Some have found increased profitability associated with mergers and acquisitions, while others have not. However, increased profitability does not necessarily imply increased monopoly power, since efficiency gains or cost savings owing to scale or scope economies could also yield improvements in profitability ratios.

Although the evidence is sparse, it seems likely that when direct competitors merge, especially when they already operate in a fairly concentrated market environment, increased monopoly power is one of the factors motivating the consolidation.

### ***Non-value-maximising motives***

As indicated above, when capital markets are imperfect and there is separation of ownership from management, managers may undertake consolidations (or other activities) that are not in the interest of the acquiring firm's owners. A number of mechanisms exist to reduce the probability of managers engaging in activities that are contrary to the interests of the firm's owners. These include:

- ***Managerial stock ownership.*** If managers own a substantial amount of stock in the firms they run, they are likely to have a personal interest in maximising firm value.
- ***Concentrated shareholder ownership.*** If shareholder ownership is highly concentrated, shareholders are likely to do a better job of monitoring managerial behaviour than if shareholder ownership is widely dispersed.
- ***Presence of independent outsiders on the board of directors.*** Likewise, monitoring of managerial behaviour is likely to be easier or more effective if there are independent outsiders on the firm's board of directors.

Numerous studies of non-financial firms and a few studies of commercial banks have examined the extent to which these mechanisms reduce the probability of managers entering into non-value-maximising mergers.<sup>35</sup> Although the studies do find evidence that these mechanisms are somewhat effective, their findings provide support for the view that at least some mergers are undertaken for reasons other than value maximisation.

### **Evidence from the interviews**

In the interviews with financial sector participants and industry experts, a number of questions were asked about the motives for consolidation, distinguishing within-country from cross-

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<sup>35</sup> See, for example, Allen and Cebenoyan (1991) and Subrahmanyam, Rangan and Rothstein (1997).



border combinations, and within-segment from across-segment combinations. (Responses to questions about the motives for consolidation are summarised in Chart II.1.) Several interviewees indicated that motives differed across industry segments (eg commercial banking versus investment banking versus insurance) and across product lines (notably between wholesale and retail services), as well as with firm size. However, the number of interviews is not large enough to allow meaningful distinctions to be drawn along these various dimensions in analysing the responses.

With respect to within-country, within-segment mergers, the single strongest motivating factor appears to be the desire to achieve economies of scale. Thirty-six out of 45 respondents indicated that economies of scale were “very important” in motivating this type of consolidation (see Chart II.1, panel 1a). This finding contrasts rather sharply with the findings of the academic literature (particularly on the US financial sector), which suggest fairly limited economies of scale in financial services. One should bear in mind, though, that this finding may be less paradoxical than it seems because the econometric studies are backward looking, making it difficult to achieve reliable estimates of scale economies that can explain the current industry consolidation. Several interviewees explained, for example, that the large investments required to take advantage of the latest technological advances or to develop innovative products could only be undertaken by very large organisations. Others noted that mergers provide an opportunity to reduce staffing and eliminate branches, thereby reducing costs.

Other important motivating factors for within-country, within-segment mergers, according to the interviewees, were revenue enhancement due to increased size and increased market power (see Chart II.1, panels 3a and 7a). Note that most interviewees interpreted market power to mean market share, rather than the ability to influence price. The argument presented was that a larger market share makes a firm more visible and therefore more attractive to potential customers. In Europe, a larger market share may also be a defensive motive to become one of the major players in the pan-European market. It was also mentioned that larger banks are better positioned to support large bond issues because they have access to a larger capital base, command a more extensive network to place these issues in the market, and have the advantage of name recognition. Risk reduction due to product diversification and change in organisational focus were considered largely irrelevant for this type of consolidation (see Chart II.1, panels 5a and 6a), while economies of scope, revenue enhancement due to product diversification, and managerial empire building and entrenchment were considered to be slightly important (see Chart II.1, panels 2a, 4a and 8a).

For within-country, across-segment mergers, the most important motive appears to be revenue enhancement due to product diversification, or the ability to offer customers “one-stop shopping” (see Chart II.1, panel 5b). Forty-five per cent of the respondents cited this motive as being “very important”, 7% ranked it somewhere between “moderately important” and “very important”, and 27% judged it to be “moderately important”. The desire to achieve economies of scope was perceived by interviewees to be the second most important motive for this type of merger, with 25% of the respondents ranking it as “very important” and 30% classifying it as “moderately important” (see Chart II.1, panel 2b). Economies of scale, revenue enhancement due to increased size, risk reduction due to product diversification, change in organisation focus, market power, and managerial empire building and entrenchment were all considered to be slightly important factors (see Chart II.1, panels 1b, 3b, 5b, 6b, 7b and 8b).

Many respondents did not provide rankings for the motives for cross-border mergers due to the fairly limited amount of cross-border consolidation that has taken place to date. The responses that were provided to these questions suggest that the strongest motives for within-segment cross-border consolidation were increased market power and revenue enhancement due to both increased size and increased product diversification. With regard to cross-segment, cross-border consolidation, revenue enhancement was also considered to be a strong motivator, but increased market power was viewed as only slightly important.

### 3. Forces encouraging consolidation

#### Introduction

This section is concerned with the external forces that have encouraged consolidation in the financial services industry. In some jurisdictions (eg Japan in the 1990s), consolidation has been driven largely by the need to recapitalise distressed institutions after a major crisis. More generally, much of the ongoing restructuring in financial services has been a strategic response on the part of market participants to changes in the competitive environment. Among the major forces creating pressure for change are:

- technological advances;
- deregulation; and
- globalisation of the marketplace.

Just as the motives underlying mergers and acquisitions vary with firm characteristics, etc, the key external forces also appear to vary across multiple dimensions in their influence. In some cases, the basic structural forces are the same, but the impact differs because of different starting points with respect to the number of firms and the range of activities conducted within a given firm. Comments received in the interviews suggest that cross-border mergers are more likely for institutions located in countries that have already experienced considerable domestic consolidation, where the scope for further consolidation based on an exclusively domestic focus has either diminished or bumped up against policy limitations. Various respondents suggested, as well, that different categories of institutions might react to different factors. For example, the need to absorb excess capacity may encourage consolidation among smaller institutions to a greater extent than among larger institutions. Unfortunately, as noted previously, the small number of observations does not permit meaningful distinctions to be drawn along these lines.

Evidence from the interviews does suggest that the influence of the external factors has been supported in some cases by changes in *investor saving patterns* and the *introduction of the euro*, which have served as important catalysts for mergers among institutions in some jurisdictions. In addition, surging stock prices (for acquirers) and low interest rates have provided a supportive environment in which to finance transactions. In sum, technology, deregulation and globalisation have eased or removed entry barriers and paved the way for increased competitive pressures. Shareholders, meanwhile, have become more active. Corporate governance practices still vary across jurisdictions, but the “shareholder value” concept has gained adherents. Thus, as increased competition has squeezed profit margins for many financial institutions, managers have been forced to seek measures to improve performance, including ways to reduce costs, increase revenues, or employ resources more effectively. There are a number of strategic alternatives to achieve these goals, including:

- organic growth;
- de novo entry (especially in niche areas);
- distribution and other strategic alliances; and
- mergers and acquisitions.

All of these strategies have been implemented to varying degrees in most jurisdictions, but mergers and acquisitions have clearly been a big element of the strategic response to date. Going forward, however, the opportunities for online delivery of financial products and services may lead to less emphasis on mergers and acquisitions to achieve entry and increased use of cooperative agreements such as production partnerships, joint ventures and distribution alliances. This will be further discussed in Section 5 on future trends.

## Technological changes

Technology has both direct and indirect effects on the restructuring of financial services. Direct effects of technology may include:

- increases in the feasible scale of production of certain products and services (eg credit cards and asset management);
- scale advantages in the production of risk management instruments such as derivative contracts and other off-balance sheet guarantees; and
- economies of scale in the provision of services such as custody, cash management, back office operations and research.

Many wholesale services, in particular, have high technology investment costs but low margins, given customers' demands for increasingly sophisticated services at lower prices. Providers of these services often pursue mergers and acquisitions as a means of spreading the high set-up costs of new technological infrastructure over a larger customer base. The same may be true of providers of retail products like credit cards. A large firm size helps to counterbalance competitive pressures and provides the wherewithal for the continuous technology upgrades necessary to achieve any unit-cost advantage in pricing services that are basically commodity products. Large size may also provide diversification benefits.

Dramatic improvements in the speed and quality of telecommunications, computers and information services have helped to lower information and other costs of transacting (see Table II.1). This development has had a dramatic impact on the financial services industry. A few key examples are:

- ***Changes in distribution capacity.*** As a result of increased speed and lower costs of computing and telecommunications equipment, financial service providers can, with the appropriate technology infrastructure, offer a broader array of products and services to larger numbers of clients over wider geographic areas than would have been feasible in the past. This process has facilitated the move towards increasingly global connections among financial markets and made a global reach feasible for service providers.
- ***Creation of new financial services and products.*** Technological advances combined with innovations in financial engineering techniques have enabled service providers to unbundle and repackage the risks embedded in existing financial products to tailor new products to meet the risk management and investment needs of specific customers. Modern technology enables financial institutions to make rapid adjustments in the characteristics of their investment portfolios, including the risk profile, and facilitates the efforts of non-financial corporations to develop global operations by providing for the separation of exchange rate fluctuations and other financial risks from their normal business operations.
- ***Blurring of distinctions.*** Technology in conjunction with deregulation of product offerings results in competition on a product-by-product basis. Financial institutions of all types now offer products and services that not only compete against those offered by intra-sector competitors, but also against those offered by other categories of service providers. Banks are increasingly engaging in non-traditional activities and securities firms and non-banking institutions have made inroads in traditional banking activities. The same technologies have enabled non-financial entrants to provide a range of banking-type products. In the process, many financial products have been converted into commodities, characterised by a high degree of standardisation and competition focused on price.
- ***Data mining.*** Technological advances have also enabled financial service providers to harness information more productively, which means that differentiated or specially tailored products can be created and channelled to targeted customers. Technology

supports the implementation of strategies based on the marketing and mass distribution of commodity-like products. A prime example is the use of direct mail or telemarketing campaigns to offer standardised loan products to retail or small business customers that have a certain risk profile, based on assessments from a credit-scoring model.

- **New entrants.** At the retail level, electronic delivery channels such as the internet and automated lending technology enable service providers to take advantage of their brand names and customer databases to reach out to targeted customers, without the need for a pre-existing physical presence. Although some physical presence in the market will probably remain a necessary element in the provision of retail banking services, these technologies potentially remove one of the main entry barriers to the retail financial services business. Online delivery channels make it possible for out-of-market institutions to compete for retail (and also small business) customers as well. Moreover, sophisticated search engines enable customers to comparison-shop more easily, so differences in prices are readily exposed and competitors have a relatively low-cost channel through which a competing firm's customers can be reached. How entry by out-of-market institutions might affect concentration in a financial industry is not clear-cut. This would in part depend on the form entry would take (eg de novo entry, mergers and acquisitions, cooperative agreements such as strategic alliances). Furthermore, new entry might stimulate a change in the structure of the industry. For a more comprehensive discussion, see Section 5 on future trends.

In short, technological advances have changed the competitive functioning of the financial sector, at both the production and the distribution level, and have created incentives for new output efficiencies. As noted in the section on motives, such a restructuring process provides many opportunities for mergers and acquisitions. In the interviews, technological advances were considered to be an important force encouraging consolidation, especially with respect to within-country, within-segment combinations. Over 60% of respondents indicated that improvements in information and communications technology were "very important" in encouraging this type of merger, while another 20% said they were "moderately important" (see Chart II.2, panel 1a). Fifty-eight per cent of respondents ranked financial innovation as a "moderately important" or "very important" force encouraging within-country, within-segment consolidation (see Chart II.2, panel 2a). More than half of the interview respondents viewed each of these technology-related forces as at least "moderately important" in encouraging domestic, cross-segment consolidation and cross-border, within-segment consolidation (see Chart II.2, panels 1b, 2b, 1c and 2c). Electronic commerce was viewed as a less important force with regard to encouraging all types of consolidation (see Chart II.2, panel 3).

## Deregulation

Governments influence the restructuring process in a number of ways:

- through effects on market competition and entry conditions (eg placing limits on or prohibiting cross-border mergers or mergers between banks and other types of service providers);
- through approval/disapproval decisions for individual merger transactions;
- through limits on the range of permissible activities for service providers;
- through public ownership of institutions; and
- through efforts to minimise the social costs of failures.

Over the past two decades, many official barriers to consolidation have been relaxed as governments have reconsidered the legal and regulatory framework in which financial institutions operate. (See Annex II.3 for a chronological listing of important regulatory changes.) In a number of countries, regulations in the financial services industry, especially as

applied to banking organisations, tended in the past to focus almost entirely on safety (eg consumer protection and prevention of failures). However, financial regulatory frameworks in most major countries have shifted from systems based on strict regulatory control to systems based more on enhancing efficiency through competition, with an emphasis on market discipline, supervision and risk-based capital guidelines. In the new operating environment, public policy is less protective of financial service providers (banks), exposing them to the same sorts of market pressures that have long confronted non-financial businesses.

Mergers and acquisitions have been a major component of the restructuring process. This process owes in part to deregulation, but it is difficult to disentangle the effects of regulatory reform in financial services from the effects of advances in technology, innovations in financial engineering and other developments that work in the same direction and may have preceded the changes in regulation. Deregulation in the financial service industry has often been an induced response by policymakers to technological advances and financial crises. At times, regulatory changes have merely ratified changes that had been previously implemented by the market. For example, there is some evidence that technological innovations in deposit taking and lending encouraged deregulation in that area, and technological advances were also a factor enabling financial institutions in the United States to overcome functional and geographic limitations that had been designed into their charters.<sup>36</sup>

The fact that consolidation in some cases has preceded changes in legislation suggests perhaps that deregulation may not be a strictly necessary factor in the textbook sense. The main influence of deregulation appears to be that it enlarges the set of legal tactical manoeuvres, including the types of agreements that can be arranged across sectors and across borders, and thereby gives institutions increased flexibility to respond to competitive impulses.

In the interviews, over half of the respondents indicated that deregulation was at least “moderately important” as a factor encouraging consolidation for domestic, within-segment institutions, with over one third of the respondents ranking it as a “very important” factor (see Chart II.2, panel 4a). Thirty-eight of the respondents assigned a ranking to this factor for domestic, cross-segment consolidation. As before, about half of the respondents said this factor was at least “moderately important” in encouraging consolidation (see Chart II.2, panel 4b). A similar frequency breakdown occurs in the case of cross-border consolidation, but the total number of respondents is smaller (Chart II.2, panels 4c and 4d).

## **Globalisation**

Globalisation is in many respects a by-product of technology and deregulation. Technological advances have lowered computing costs and telecommunications, while at the same time greatly expanding capacity, making a global reach economically more feasible. Deregulation, meanwhile, has opened up many new markets, both in developed and in transition economies. As a factor encouraging consolidation, globalisation largely affects institutions providing wholesale services. Comments received during the interviews indicate that global corporations expect financial service providers to have the necessary expertise and product mix to meet any investment or risk management need in any location in which the corporations have operations.<sup>37</sup> As non-financial corporations increased the geographic scope of their operations, they created a demand for intermediaries to provide products and services attuned to the international nature of their operations. Maintaining a presence in multiple financial markets and offering a breadth of products and services can entail relatively high fixed costs, creating a

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<sup>36</sup> See Kane (1999).

<sup>37</sup> This is one of the basic tenets of client-based universal banking - the service provider chooses the appropriate products, services and geographical presence to service its client base. For a more complete discussion, see Calomiris and Karceski (1998).

need for large size to achieve scale economies. Nonetheless, interviewees did not rate the globalisation of the non-financial sector as an important force encouraging financial consolidation (see Chart II.2, panel 5).

Meanwhile, profit margins in many wholesale business segments have narrowed as a result of increased ease of entry and the commodity-like nature of many wholesale financial products. Low margins, in effect, mean that high volumes are necessary to generate higher returns. This need has prompted some firms to opt for mergers and acquisitions as a means of attaining critical mass. Mergers and acquisitions have also been a frequent option for banks seeking to build a global retail system. By acquiring an existing institution in the target market, the acquirer gains a more rapid foothold than would be possible with an organic growth strategy (see Box II.1).

In addition to increasing the need for wholesale service providers to expand the scale of their operations, globalisation has helped change the competitive dynamics of other market segments. Many financial products are now offered internationally by efficient global competitors, through direct or targeted distribution channels. Some traditional retail banking products and services are still provided on a regional or local level, but a few global providers (eg Spanish banks in Latin America) have begun to make competitive inroads in many markets. National and regional players are forced to respond to the threat posed by new entrants either by emulating their product offerings (which results in commoditisation), or by offering better pricing, which requires increased efficiency, or by offering better services (eg through customisation or personal service).

The globalisation of capital markets also contributes to the shift from a bank-centred system to a market-based one. As capital markets have expanded and become more liquid and efficient, the highest-quality credits have turned increasingly to the commercial paper and bond markets in lieu of certain types of traditional bank and insurance products. Margins on loans to the highest-rated investment grade borrowers have been driven down to the point that only the most efficient institutions are able to provide this form of credit. On the liabilities side of banks' balance sheets, there has been a substantial outflow of deposits to a wide range of competing financial products offered by various institutions in different sectors. For insurers, mutual funds and related products compete against guaranteed investment contracts. In response to the increased competitive pressures, some institutions have opted to expand via the merger route to reach a perceived threshold size for scale economies (see Chart II.2, panel 6a).

A final influence of globalisation is in the area of corporate governance. As businesses have crossed international boundaries and their shares have begun to be held by a wider investor clientele, the demand by investors for a more uniform standard of corporate governance has also increased. Generally, the pressure for change has come from shareholders located outside the home market. A major contributing factor is the ongoing change in investor demographics.

## Box II.1

### Spanish banks' strategy in Latin America

Acquisitions of large shareholdings in the Latin American financial sector by Spanish institutions are an interesting example of cross-border consolidation. This expansion by the largest Spanish banks was initially focused mainly on emulating the Spanish model of retail banking, but lately has also included the acquisition of private pension funds. The main countries that have been involved in the region are Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

A number of factors have supported these efforts. Most governments in the targeted countries have taken steps to modernise their economies and, in particular, reform their banking and financial systems through deregulation, restructuring and privatisation, while opening their domestic markets to foreign institutions. Other supporting factors include:

- the importance of the common language, historical ties and other cultural factors;
- the strong financial solvency position of the acquiring banks, coupled with the need to implement strategies that increase shareholder value;
- higher potential growth in these countries compared with the EU owing to a faster rate of population increase;
- higher intermediation margins in Latin American banking systems compared with those of more developed countries (compensating for the reduction in margins that has taken place in Spain due to fierce competition in retail banking and the reduction in interest rates);
- the adaptability of readily available products and delivery systems;
- minimal correlation between the economic cycles of Latin America and Spain, which allows some risk diversification.

Although there are high risks associated with these investments, given financial sector instability in the region, the belief is that the immediate introduction of the parents' management processes, systems and improved risk management will enhance profitability quickly. This expansion has resulted in strong franchises, which may prove to be a powerful advantage in coping with expected future consolidation in the European financial sector.

### Shareholder pressures

Differences in corporate governance standards still exist among major countries, but use of the "shareholder value" concept has become more widespread and with it has come a focus on the return on assets and the return on equity (ROE) as benchmarks for performance. This emphasis on ROE is most evident in countries where capital markets exert strong competitive pressures, but its importance is spreading rapidly.

One development that has helped to boost the importance of shareholders relative to other stakeholders is the increased institutionalisation of savings stemming from ageing populations in most countries.<sup>38</sup> Financial assets are increasingly being held by large well-informed investors, who base their investment decisions on relative asset returns. Importantly, it has become more common for a large share of the funds institutional investors have under management to be placed with professional fund managers, who develop asset allocation strategies and make investment decisions on behalf of their institutional investor clients. Fund managers actively compete for the opportunity to manage funds from pension plans, foundations, life insurance companies, and so on. Renewal of management contracts and the fund manager's compensation typically have been based on the fund manager's relative investment performance. Consequently, professional fund managers have strong incentives to

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<sup>38</sup> In many countries, ageing and the need for retirement income has prompted growth of private pension plans as alternatives to state-sponsored, pay-as-you-go systems. See, for example, OECD (1998).

express their dissatisfaction with low rates of ROE. This increased activism translates into pressure on managers of financial institutions to generate higher levels of profitability. In response, managers have sought ways to increase revenues, create new sources of earnings, generate fee income, reduce cost-to-income ratios, optimally deploy excess capital or, for some institutions, recapitalise after a major crisis. These goals can be achieved through business gains, productivity enhancement or more effective balance sheet management, but mergers and acquisitions appear to be a simpler strategy for many institutions.

In the interviews, the institutionalisation of savings was considered to be a “moderately important” to “very important” factor encouraging consolidation by 50 to 60% of respondents for each type of consolidation considered (see Chart II.2, panel 7).

### **The introduction of the euro**

Another development that has had an impact on the competitive environment for some institutions is the creation of the euro. The general view of the euro is that it acts as a catalyst, reinforcing already existing trends in EU banking systems. However, the surge in consolidation activity in the euro area just prior to and after the euro’s launch leads to some speculation that the euro might have independent effects.<sup>39</sup> Assessing the specific impact of the euro on financial sector consolidation is, however, rather complex for two reasons. First, by the time the euro was introduced, the European financial sector had already undergone several changes dating back to the end of the 1980s, basically as a result of the harmonisation efforts in the context of the single market and the environmental factors outlined in the previous section, supported by a general trend towards liberalisation of capital movements. Second, the relationship between the euro and the consolidation process varies by segment of the financial system (money and capital markets versus retail markets).

### ***Financial markets***

Since its inception, the euro has quickly led to an integrated *money market*, thereby affecting the motives for consolidation in two ways. First, the euro has removed the pricing advantage in the “home” interest rate previously enjoyed by domestic banks specialised in dealing in the relevant currency. This change may have put pressure on the profitability of some domestic banks that were large in their domestic system but have a much smaller share of the new integrated money market. Second, given the size of the integrated money market, there is a need for providers of payment services to smaller banks, which favours larger institutions because the required technological equipment entails huge installation costs. For these service providers, the degree of revenue enhancement would be even greater if a synergy were to develop between money market and capital market activities, thus enabling them to provide a wide array of interconnected financial services to other financial institutions.

The euro also affects the treasury activities of the corporate sector in the euro area. Internationally operating corporations used to maintain a correspondent banking connection in several European countries, but under the single currency these relations have been reduced significantly. This development may have encouraged consolidation among banks, because in order to serve these international corporate clients, particularly the larger ones, size may have become more relevant.

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<sup>39</sup> According to data obtained from Securities Data Corporation and presented in Chapter I, the value of merger and acquisition transactions involving target firms located in the nine European countries included in our study reached USD 147 billion in 1999, compared with USD 103 billion in 1998 and USD 88 billion in 1997. In 1999, several cross-border mergers took place in the euro area. This process continued in 2000 (eg HSBC-Crédit Commercial de France, MeritaNordbanken-UniDanmark).



The euro also contributes to more integrated *capital markets*, although this process proceeds with a lower intensity than in the money market. In general, the integration of capital markets has three main effects on the motives for bank consolidation:

- it creates the potential for revenue enhancement due to increased size, particularly in the case of institutional investment;
- there is the potential for economies of scale on the cost side; and
- sufficient size may be required to take full advantage of risk diversification within an industry throughout the euro area.

The integration of capital markets represents an opportunity for institutional investors to extend their activity since the size and liquidity of the markets have grown. It may be argued that only large banks are able to develop knowledge throughout the euro area, together with the pool of human resources and the technological capacity needed to suit the needs of large institutional investors, especially in the fields of underwriting, securitisation, investment banking and asset management. Asset allocation in the euro area is increasingly carried out on an industry basis rather than on a country-by-country basis. Accordingly, analysts are being required to follow a larger number of companies, which may entail economies of scale.

Integration has also proceeded in the *government bond markets*. A high degree of liquidity is ensured for benchmark bonds, whose yield to maturity is nearly uniform across the euro area. Spreads between government bond yields and interbank rates have decreased also as a consequence of the restructuring of primary markets carried out by several European governments at the end of the 1990s (eg through the introduction of new competitive auction procedures). This process has penalised particularly those banks that depended on the yield on their government bond portfolio for a significant share of their income. The resultant pressure on margins could induce these banks to pursue cost savings or ways to enhance income, which could lead to merger activity.

In the interviews, roughly 45% of the respondents said the euro was “not a factor” influencing domestic consolidation and approximately 40% said it was “not a factor” encouraging cross-border consolidation. At the same time, approximately 30% of respondents indicated that the euro was a “very important” factor encouraging within-segment mergers, both domestic and cross-border (see Chart II.2, panel 8). Respondents’ views of the importance of the euro varied with their locations. Interviewees from euro area countries tended to rank this factor much higher than those outside the euro area did. Numerous respondents indicated that the euro was likely to become a more significant force in the future than it has been to date.

## **4. Forces discouraging consolidation**

### **Introduction**

There are many other external factors that affect the way financial institutions respond to the changes in their operating environment. This section pays attention to those factors that *discourage* consolidation, such as regulatory regimes, information failures, cultural differences, structures in corporate governance and various other factors. As with the forces encouraging consolidation, the relative importance of the factors addressed may differ across segments and countries.

In addition, some factors discourage certain types of consolidation. In particular, hostile takeovers are impeded much more than friendly mergers, which largely explains the lack of hostile takeovers in the banking industry. For example, government regulation can make

permitted hostile takeovers within commercial banking more expensive and time consuming than in non-bank sectors.<sup>40</sup> Also, ownership structures and corporate governance structures (eg the protection of minority shareholder rights) can make it very difficult to acquire a bank through a hostile takeover. Furthermore, as information asymmetries with respect to, for example, the assessment of the loan book of a bank can be substantial, it may be very risky for the bidder to perform an acquisition without the cooperation of the target's management and shareholders. Finally, several interviewees indicated that the lack of hostile takeovers in the banking sector might also be related to the expectations of the bidders that takeover panels and supervisory bodies are likely to turn down this form of corporate control. Bearing these points in mind, the following paragraphs describe the discouraging factors in a more general context.

## Regulation

The legal and regulatory environment represents a substantial potential impediment for consolidation, as it affects directly the range of permissible activities undertaken by financial firms and may imply considerable compliance costs. In some countries antitrust laws constitute an important impediment, mainly for domestic consolidation within sectors. Prudential regulation may hinder cross-border consolidation through differences in capital requirements. Product-based supervision, which exists largely in the insurance sector, may reduce cross-border consolidation by limiting potential cost reduction from economies of scale. Potential regulatory impediments to consolidation include:

- ***Protection of “national champions”.*** In some countries, the government has an explicit role in approving foreign investment in domestic financial institutions. Governments may protect domestic enterprises by setting high hurdles for foreign buyers attempting to acquire majority stakes. Conditions in some countries have enabled some categories of banks to remain insulated from market forces.
- ***Government ownership of financial institutions.*** The scope for consolidation is similarly limited when banks are partially or fully government owned. For these institutions, the consolidation of business activities with others would have to be preceded by privatisation.
- ***Competition policies.*** Competition policies are concerned with the negative welfare effects stemming from a lack of competition. Some consolidation projects are refused on the grounds that they would result in market dominance. A further important deterrent related to competition policy rules is the fact that some mergers have to pass the test of competition authorities in different countries, which involves long delays, compliance costs and uncertainty.
- ***Rules on confidentiality.*** National regulations with regard to data provision and confidentiality may prevent the consolidation of information platforms on a cross-border and an across-segment basis and, thereby, impede potential cost reductions from technologically induced economies of scale.

Nearly 60% of interviewees viewed legal and regulatory constraints as a “very important” impediment to cross-border mergers, and an additional 15 to 20% viewed them as moderately important. Respondents considered legal and regulatory constraints to be somewhat less important in discouraging domestic consolidation; nonetheless, more than 60% of them rated these factors as at least “moderately important” (see Chart II.3, panel 1). It should be noted that, over time, regulatory differences across countries can be expected diminish, tending to reduce barriers to cross-border consolidation.

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<sup>40</sup> See Prowse (1997).

## Cultural differences

Cultural differences appear in the consolidation process on the corporate level, between sectors, across regions or countries and between wholesale and retail businesses. The need for cultural integration as part of the consolidation process is a multidimensional issue that touches all stakeholders. Cultural differences increase the complexity, and therefore the costs, of managing size. Post-merger problems have often been ascribed to the underestimation of the difficulties involved in attempts to combine different cultures.

- *Differences between countries.* The importance of cultural differences is especially obvious when a merger crosses national borders or spans geographically distinct regions. Factors that may discourage consolidation include differences in language, communication styles, customer needs and specific established distribution channels. These factors determine the ease, and thus the implicit costs, of a firm's entry into a different country or region.
- *Differences in corporate cultures.* Strong corporate identities are considered to be particularly problematic in mergers between equals. Takeover attempts often turn unfriendly when there are large perceived rifts in business cultures between the acquirer and the target. Such differences may impede the exchange of information, the pursuit of common objectives and the development of a coherent corporate identity. Divergent corporate cultures may exist between corporations within the same business segment, as well as across business lines (eg commercial and investment banking activities that may compete with different products for the same customer base).

Not surprisingly, interviewees indicated that cultural constraints were most important with regard to cross-border consolidation. Approximately two thirds of respondents described cultural constraints as a very important factor discouraging cross-border mergers, whether within or across segments. Cultural constraints were also viewed as an important impediment to domestic mergers involving firms in different industry segments by 40% of interviewees. Nearly half of all respondents considered cultural constraints at least "moderately important" in deterring within-segment, within-country mergers (see Chart II.3, panel 2).

## Inadequate information flows

Inadequate information flows are a form of market inefficiency that may increase the uncertainty about the outcome of a merger or acquisition. They may be attributed to incomplete disclosure or large differences in accounting standards across countries and sectors.<sup>41</sup> When faced with such an information asymmetry, stakeholders may disapprove of consolidation.

- *Lack of comparability of accounting reports.* Large variations in accounting principles and procedures from country to country or even across sectors can impede consolidation, as there may be considerable uncertainty regarding the risk profile and valuation of the assets of the institutions involved in the transactions. The growing complexity of large transactions in recent years has further increased the importance of reliable and transparent accounting standards in order to conduct adequate due diligence procedures in mergers and acquisitions.
- *Difficulties in asset appraisal.* The existence of information asymmetries is a commonly acknowledged complication in appraising assets particularly in the context of bank's loan books, which include assets for which market liquidity is low. An

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<sup>41</sup> Due to developments in information technology and the subsequently more widespread implementation of international accounting standards such as the International Accounting Standards and the US Generally Accepted Accounting Principles, the spread and quality of financial information available in G10 countries in recent years have improved.

assessment of the loan book of an institution implies the difficult task of judging the quality of risk management of the takeover target, which is especially problematic in the context of evaluating single loans.

- ***Lack of transparency.*** Ex ante pressure from shareholders to justify a merger decision may be a discouraging factor in the presence of uncertainty and information asymmetries. The potential for hidden costs, as a result of a lack of transparency, may induce acquiring management and shareholders to be more risk averse when considering an acquisition.

Most interviewees did not view market inefficiencies as a particularly important factor inhibiting consolidation, except in the case of cross-border, within-segment mergers (see Chart II.3, panel 3).

### **Corporate governance**

Corporate governance encompasses the organisational structure and the system of checks and balances of an institution. There are significant differences in the legislative and regulatory frameworks across countries as regards the functions of the (“supervisory”) board of directors and senior management, which affect the interrelation of the two decision-making bodies within an institution and relations with the firm’s owners and other stakeholders, including employees, customers, the community, rating agencies and governments.

- ***Ownership structures.*** The organisational form and rules that govern the strategic business decisions of a company have a large bearing on whether consolidation is deemed a valid business option. For example, a strong corporate identity can be an effective defence against surrendering control to outsiders. The “mutual” form of ownership is a special type of ownership structure that may impede consolidation. In some countries mutuals have a large market share in the life insurance and mortgage businesses as well as among depository institutions.
- ***Capital structure.*** Corporate governance should not be viewed independently from corporate finance. As the way of raising capital varies, so do the possibilities for influencing or pressuring the supervisory board with regard to decisions on consolidation. Such influence appears to be greatest for firms that rely heavily on equity financing and whose shares are widely held. Where there are a few large shareholders, it is extremely difficult to sway the vote of the governing board without their express approval. Banks that have lent extensively to an enterprise may exercise similar de facto corporate control, although they may not be represented on the supervisory board.
- ***Existence of defensive strategies.*** Defences against a takeover are strongest where financing is from private sources and the major share of equities is privately held. Defensive strategies are manifold and include payoff provisions for managers, ie “golden parachutes”, or legal and technical obstacles such as complex ownership agreements (“poison pills”) or cross-shareholdings with other institutions.

Though not listed separately in the structured interview guide (see Annex II.2), a number of interviewees emphasised that differences in corporate governance may discourage consolidation.

### **Other discouraging factors**

The process of consolidation is a complex phenomenon and includes judgements about interrelationships among many factors. Two other factors that may discourage firms from going forward with a merger or acquisition that were mentioned in the interviews are the costs associated with managing complex institutions and taxation:

- **Costs of complexity.** An important reason for unsuccessful consolidation is likely to be the underestimation of the costs or the complexity of managing large and heterogeneous institutions and the difficulties of unifying different corporate cultures. For example, a strategy of combining businesses with highly volatile earnings such as investment banking with more stable performers such as life insurance or private banking might lead to a loss in focus as well as undermine the specific strengths of the constituents.
- **Taxation.** Assessing the impact of the various tax regimes on investment decisions is a complex issue. The tax burden is a cost that is factored into business decisions. As such, it influences the choice of location for the different parts of a business. Although consolidation could also result in a reduction of tax obligations, enterprises often feel in practice that the direct and indirect costs imposed by taxation do not justify a merger, be it with a domestic partner or a foreign one. For example, high capital gains taxes on the sale of corporate holdings may impede the disentanglement of cross-holdings between banks, insurance and industry and, thus, hamper structural adjustment in the financial and corporate sectors. The absence of double taxation agreements between the two countries where the consolidating entities are headquartered would also be an impediment to takeovers. From an efficiency point of view, organisational structures that are optimal from a taxation perspective may be less so from the point of view of production and distribution processes.

## 5. Future trends

### Introduction

The interview results suggest strongly that the consolidation process in the future will vary from country to country and from segment to segment, depending on different starting points regarding the number of firms and the range of activities conducted within a given firm. The pace of consolidation could accelerate in Europe, given that the encouraging impact of the euro has not yet run its course, while impediments may be reduced as convergence progresses in areas such as regulation and taxation. There is the possibility that a tiered structure might develop in the interbank market in the euro area, whereby a few large banks act as “money centre” banks. Under these circumstances, the physical location of banks becomes less important and the necessary size could be achieved through domestic consolidation. In retail markets, once physical distribution of the euro currency occurs, there is likely to be greater mobility of depositors and borrowers, which is expected to affect competition in the sector on a cross-border basis and reinforce the structural decline in traditional interest margins. The euro favours integration of the retail sector also in an indirect way by exerting pressure on the competent Community and national authorities to remove the residual barriers to cross-border activity. This would lead to a more competitive environment in which the maintenance of excess banking capacity in some European countries is set to become less sustainable. The integration of the corporate bond markets may also affect motives for consolidation, if the issuance of bonds or commercial paper becomes a significant alternative for corporations to traditional bank loans. Interest margins could decrease, inducing banks to pursue cost savings or increased market share through consolidation. It is also noteworthy that, in Europe, concentration in the financial sector is currently much higher in smaller countries such as the Nordic countries and the Netherlands than in the rest of continental Europe, particularly Germany and Italy. Thus, while institutions in the former countries have already engaged in cross-border consolidation, consolidation in the other countries is expected to continue at the national level for a while. In the United States and Japan, where concentration remains low despite recent consolidation, we can expect to see increasing concentration in the financial services sector in the future.

In all countries, environmental factors (eg technology, deregulation and investor demographics) will still influence the pace and form of consolidation. A stock market crash – if such were to occur – might temporarily slow the pace of financial sector consolidation, but would be unlikely to completely derail it, given the strength of the other underlying forces. The key question, therefore, is not so much whether consolidation will continue in the future, but rather how. In order to explore this issue, the remainder of this section considers a number of alternative future scenarios. It should be noted that these scenarios are not mutually exclusive and could apply simultaneously to different segments of the financial services industry.

## **Scenarios**

### ***Scenario 1: Universal institutions***

The first scenario is a continuation of the current trend towards globally active universal service providers that dominate the wholesale business segment along with other service categories. The “gaps” might be filled in by niche players or regional institutions specialised, for example, in lending to households or to small and medium-sized firms in industries such as agriculture. According to this view of the financial services sector, there would be further consolidation (where legal) between financial and non-financial entities such as internet and communications firms, enabling the financial institutions to secure the advantages of diversification and scale embodied in new technologies. There are, however, reasons to believe that there are upper limits to the advantages of creating ever larger, all-encompassing financial institutions. For example, as the size and complexity of institutions increase, so do the difficulties in managing them. As managerial capacity becomes stretched too far, profits suffer, which often leads to deconstruction or other forms of retrenchment.

### ***Scenario 2: Specialised institutions***

In the second scenario, the deconstruction process is avoided. Consolidation continues apace, but instead of growth in the number of universal banks, firms specialise as they grow. Differences in the optimal scale pertaining to various activities or limited economies of scope also appear to justify at least some degree of product specialisation, for example, in either wholesale or retail activities. Many wholesale institutions already take a global perspective, but in retail segments a regional presence might suffice as the benefits of scale are limited by great differences in the local cultures served. A number of interviewees suggested, moreover, that the optimal size and structure of institutions might depend, in part, on the size of the market in which the institutions operate. In smaller markets such as Scandinavia, medium-sized institutions of a universal nature might be optimal as the benefits of one-stop shopping in such a situation could outweigh any costs of complexity. In large markets such as the United States, specialisation or looser forms of consolidation (eg strategic alliances or joint ventures) may be more appropriate as the costs of merging to become “large” start to dominate.

### ***Scenario 3: Contract banking***

The third scenario takes the specialisation process in the preceding scenario one step further. In addition to specialisation along functional lines, financial institutions in the future may also choose to specialise in certain production technologies. This would entail a radical departure from current practices, which generally consist of the joint production of a broad line of products and services, including the production of all sub-components (vertical integration). In this respect, a distinction can be made between the *manufacture* of (components of) financial services and the *delivery* of these services to the final customer. The key question is whether financial institutions must manage the entire manufacturing process themselves in order to secure scale benefits or whether the same benefits may be realised if (part of) the production process is outsourced.

In the so-called paradigm of contract banking<sup>42</sup> (which applies equally to other segments of the financial services industry) the answer to the first part of this question is negative. Depending on the comparative advantages of a certain bank, it need manufacture only some of the (components of) services it has on offer, obtaining the rest from other specialised producers (whether in or outside the financial sector proper). Competition would take place on the basis of brand name, the quality of products and services, and pricing. In the extreme case, relying solely on its information advantage, a bank would function as a gateway supplying customers with all the products and advice they need, but doing little more than managing contracts with external suppliers (hence the term contract banking). A good example might be internet banking. Bridges between personal financial software and the websites of financial institutions – combined with advances in reliability, security, digital signatures, etc – could make it possible for the internet to support a full range of financial services. Third parties may actually originate the various services or advise customers on where to obtain the cheapest offerings. Thus, supply chains could be “deconstructed”, as different institutions would specialise in certain aspects of the financial intermediation process. Other industries, such as the telecom industry, the automobile sector and the airline industry, are leading the way in this respect. All of these industries have generally disintegrated into a constellation of sub-industries, while the individual firms at the end of the production chain maintain a single marketing channel to the customer.

While consolidation among providers of financial services will almost certainly continue in the short-term, it is possible that in the longer run some of this consolidation will be undone. Experience in other economic sectors suggests that merger waves are sometimes (partially) reversed. Usually, though, a merger wave will have inexorably changed the industry, so that the starting point will never be regained.

### **Impact on the consolidation process**

Although the prospects for the contract banking paradigm may appear somewhat remote for the near future, a few respondents in the interviews indicated that, in some countries, more moderate forms of specialisation in combination with outsourcing are indeed expected to take place (“back to core business”). One policy issue related to this theme is how competition in the financial sector might develop if indeed the future has more specialisation in store, as within certain specialised areas monopoly power might increase.

Specialisation to such an extent would certainly change the pattern of consolidation in the financial sector. Consolidation would still occur as firms strove to diversify in terms of both products and markets served, but this process would be accompanied by divestments as the underlying production chain was (partly) broken. At the same time, the various specialised producers, for example in the area of payment processing, might also consolidate. Thus, the structure of the financial sector would become more layered than it is nowadays.

Between the extremes of a highly concentrated financial sector consisting of predominantly universal institutions and a more specialised financial sector as described above, there is a whole spectrum of possible outcomes. For example, rather than a complete deconstruction of the production chain, forms of cooperation may be established between the various suppliers, including strategic alliances and joint ventures. In fact, in the interviews a number of financial sector experts suggested that these forms of collaboration might become more common in the future as cross-border and cross-industry cooperation increases, because in those instances more intense forms of consolidation are relatively difficult to realise or justify. What balance will be struck will depend, in particular, on the economies of scope that exist between the various production processes as well as the intensity of competition in the financial sector. The fewer the economies of scope and the higher the level of competition, the greater the pressures

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<sup>42</sup> The term “contract banking” derives from Llewellyn (1999). However, similar ideas have been expressed in Deloitte Touche Tohmatsu International (1995) and Evans and Wurster (2000).

towards deconstruction of the production chain will be. In this respect, financial sector regulation may also have a role to play by influencing the degree of financial sector competition from both within and outside the financial services industry.

All told, the consolidation trend in the financial sector is likely to continue, given the sustained pressures on the environment in which financial institutions operate. Simultaneously, there are also forces at work that may change the organisation of the financial sector. Of course, exactly how these myriad forces will balance out in the future remains to be seen.

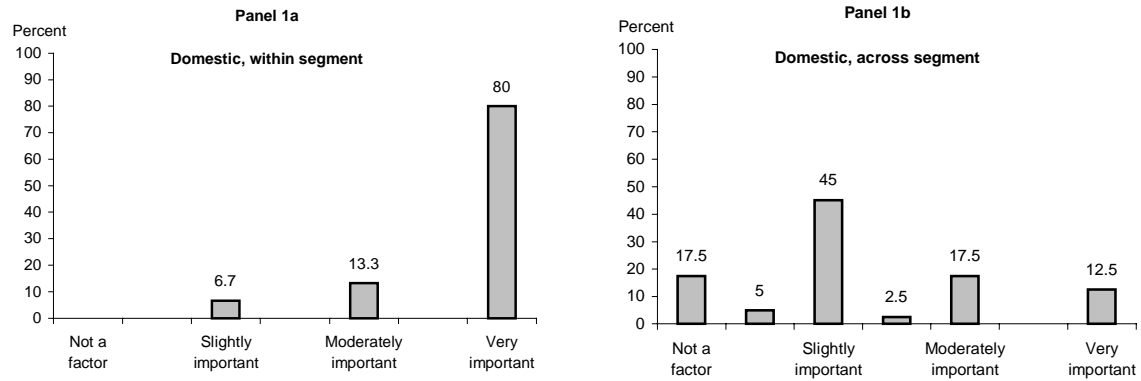


## Tables and charts (Chapter II)

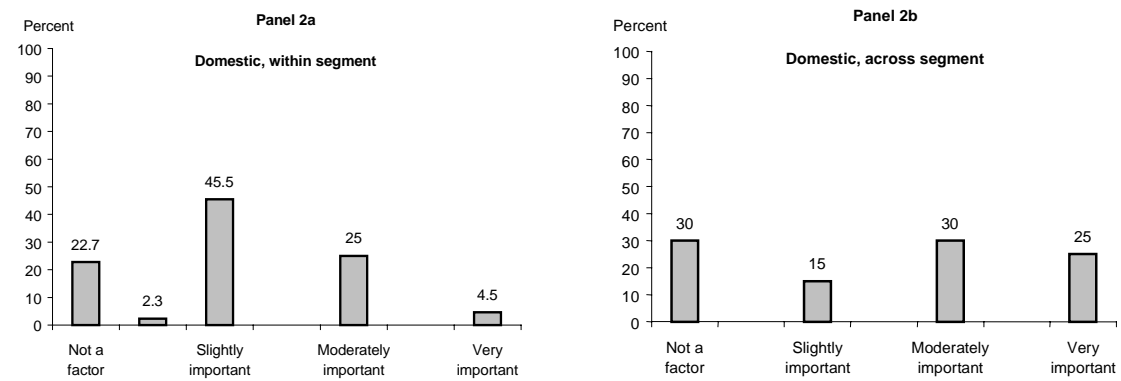
Table II.1	
Insurance fees – life and property/casualty	
Traditional agent	USD 400 - 700
Internet	USD 200 - 350
Banking costs per transaction	
Branch	USD 1.07
Telephone	USD 0.52
ATM	USD 0.27
Proprietary online system	USD 0.105
Internet	USD 0.01
Costs per bill	
<i>Paper</i>	
Biller cost	USD 1.65 - 2.70
Cost to customer	USD 0.42
Bank cost	USD 0.15 - 0.20
<i>Internet</i>	
Biller cost	USD 0.60 - 1.00
Cost to customer	USD 0
Bank cost	USD 0.05 - 0.10
Source: <i>Emerging Digital Economy</i> , US Department of Commerce, 1998.	

Chart II.1  
Motives for consolidation

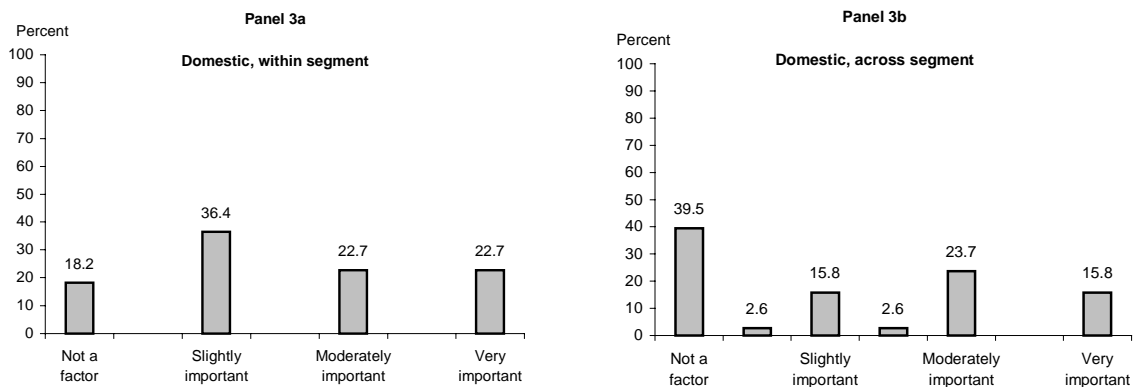
Panel 1: Economies of scale



Panel 2: Economies of scope

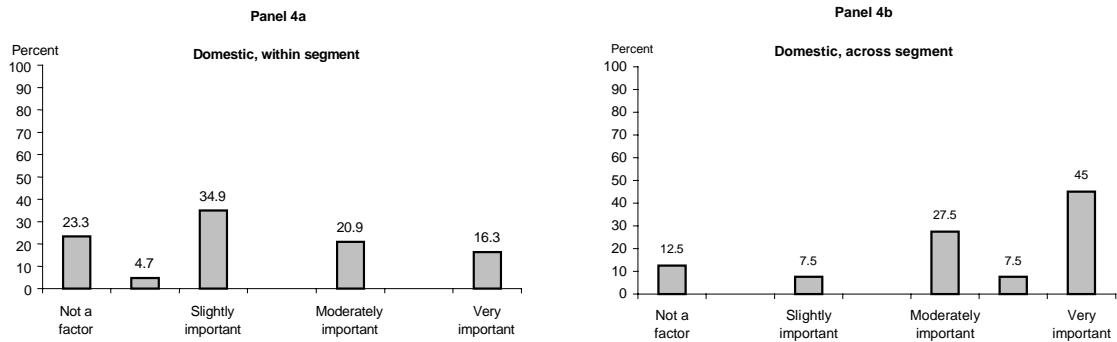


Panel 3: Revenue enhancement – increased size

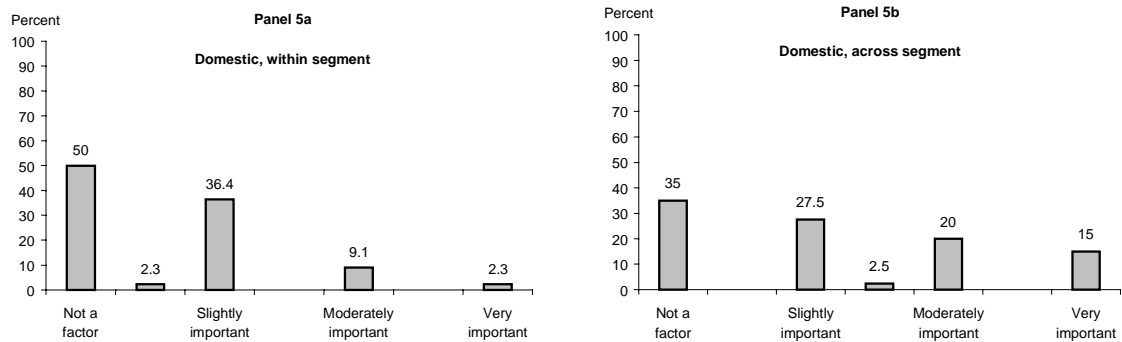


## Chart II.1 (continued)

### Panel 4: Revenue enhancement – one-stop shopping



### Panel 5: Risk reduction: product diversification



### Panel 6: Change in organisational focus

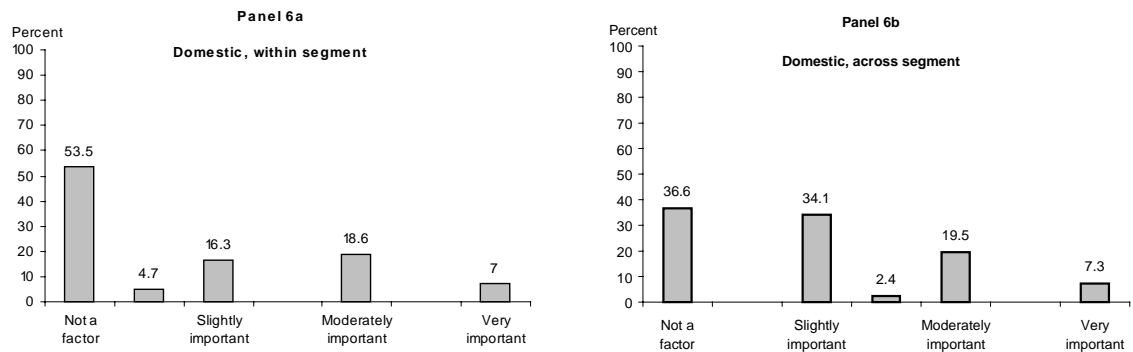
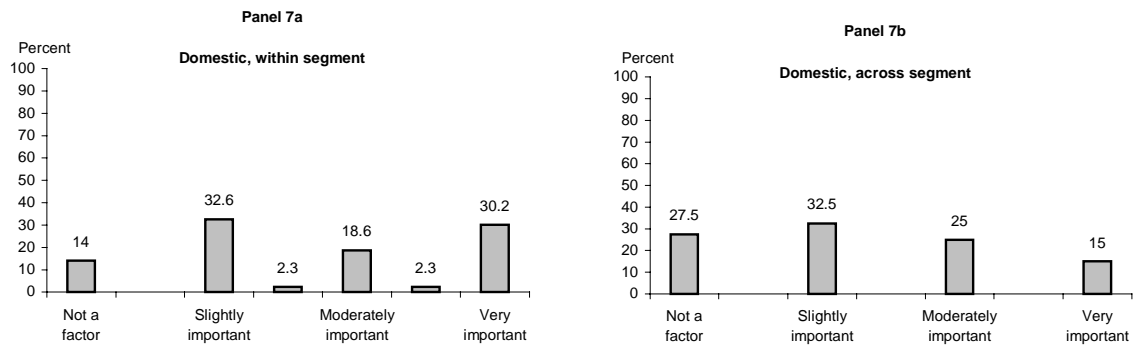


Chart II.1 (continued)

Panel 7: Increased market power



Panel 8: Managerial empire building

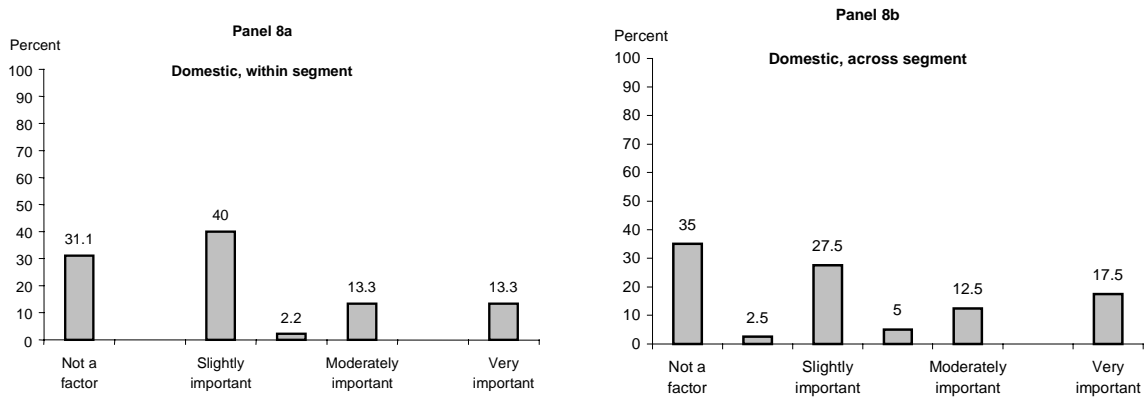
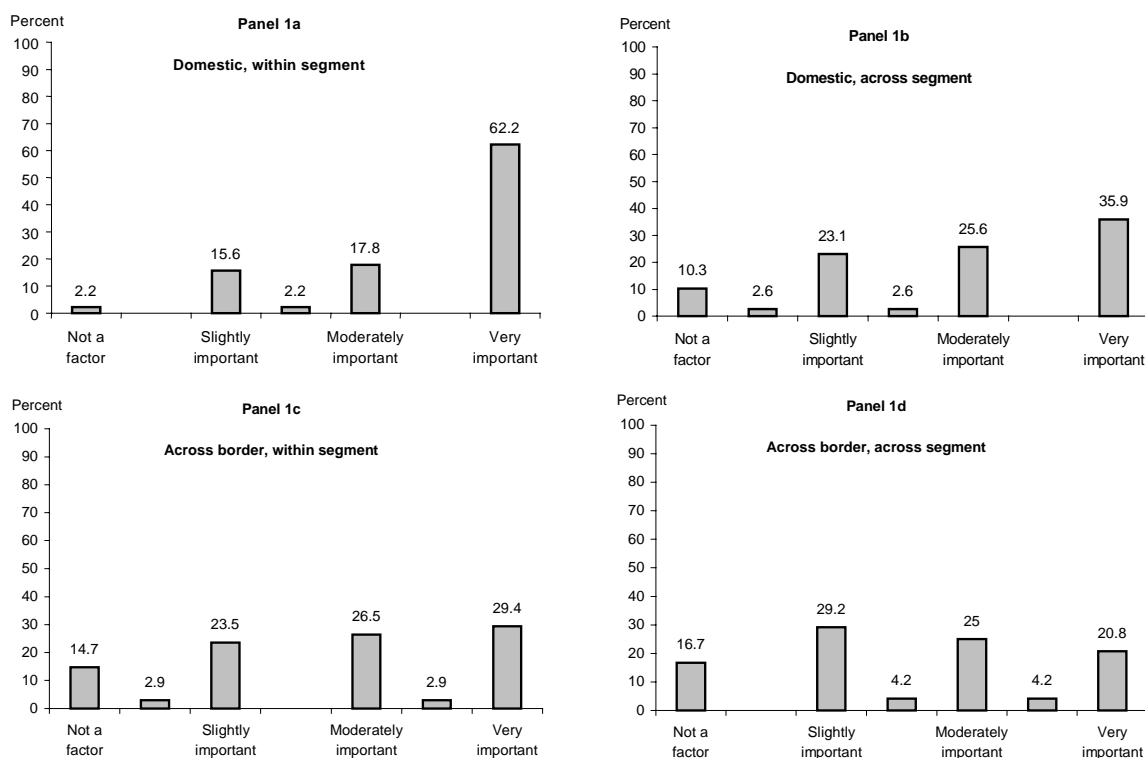


Chart II.2

## Forces encouraging consolidation

### Panel 1: Technology – IT and communications



### Panel 2: Technology – financial innovation

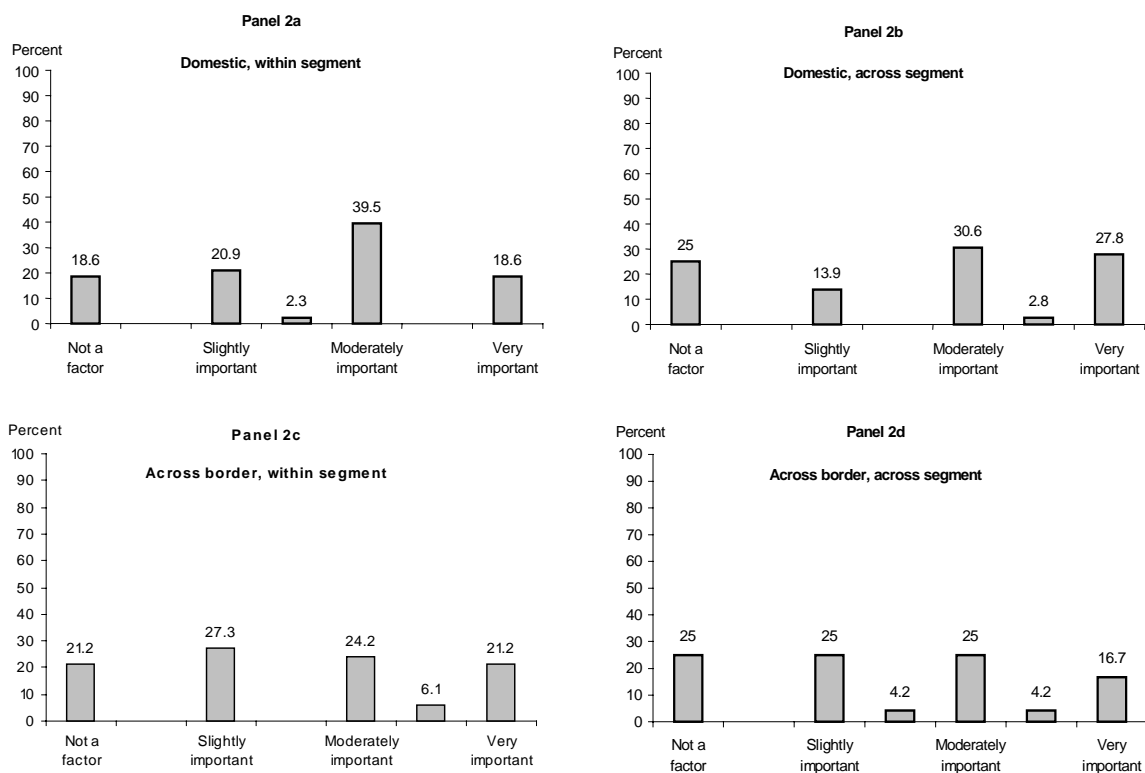
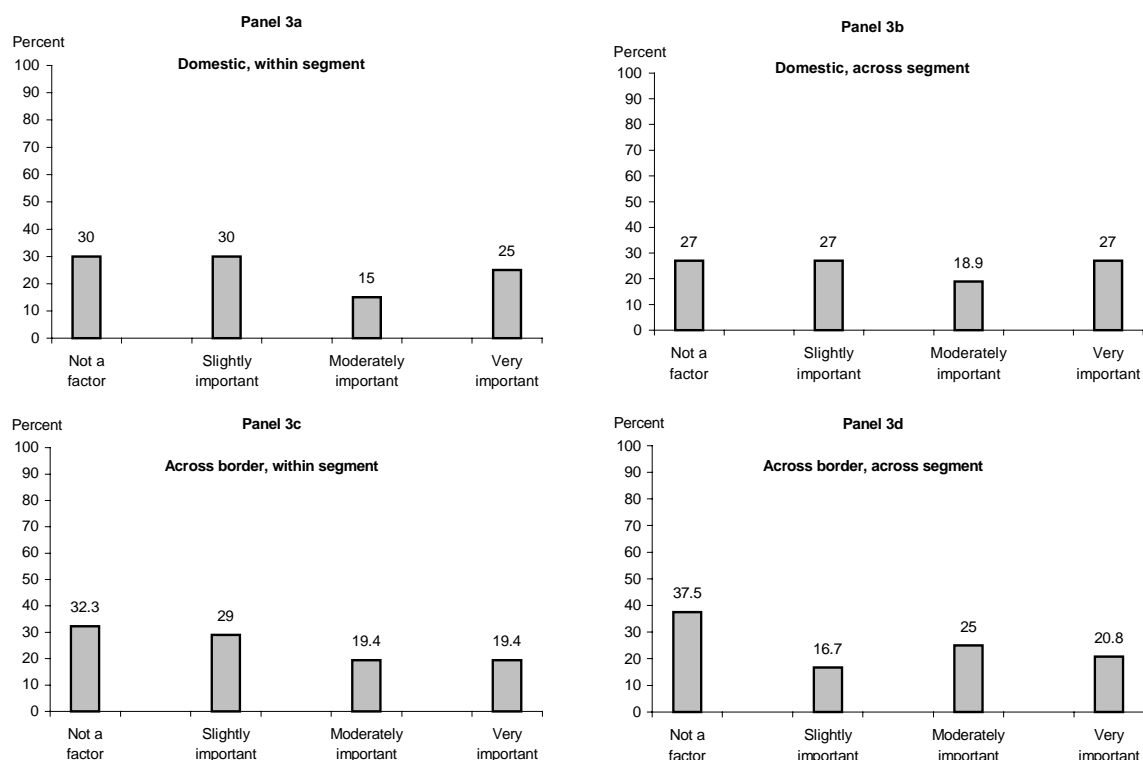


Chart II.2 (continued)

Panel 3: Technology – electronic commerce



Panel 4: Deregulation

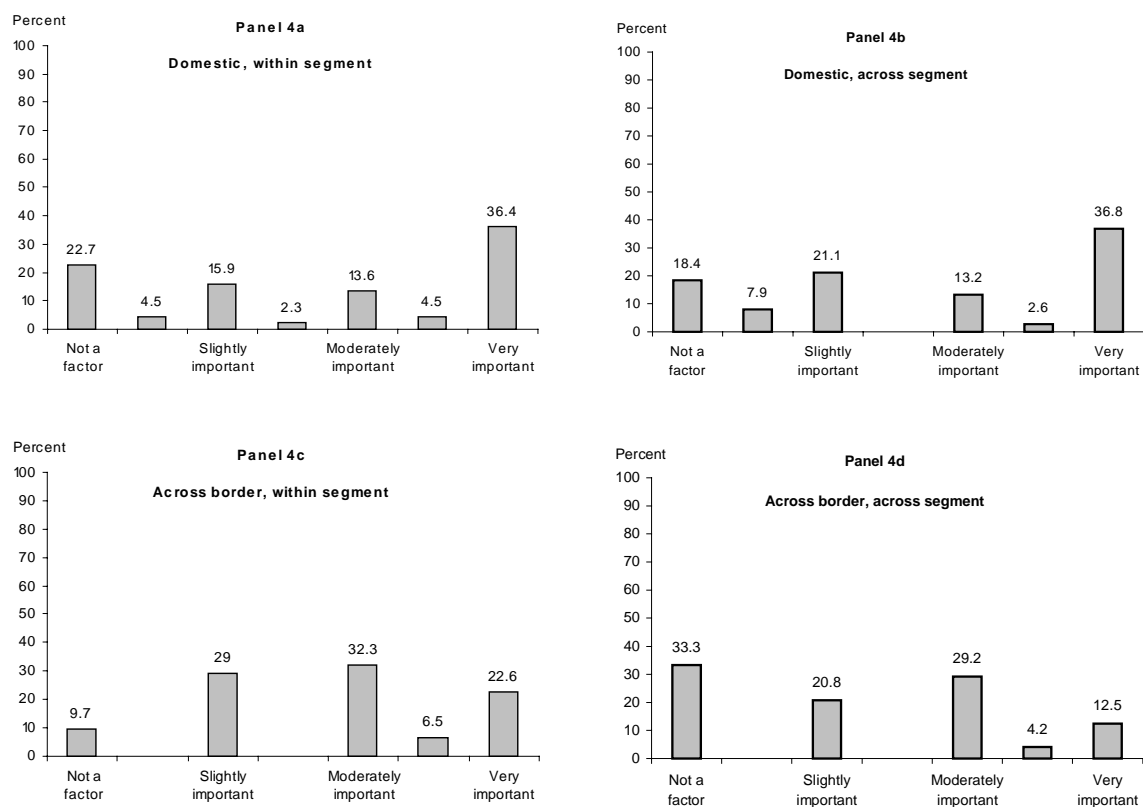
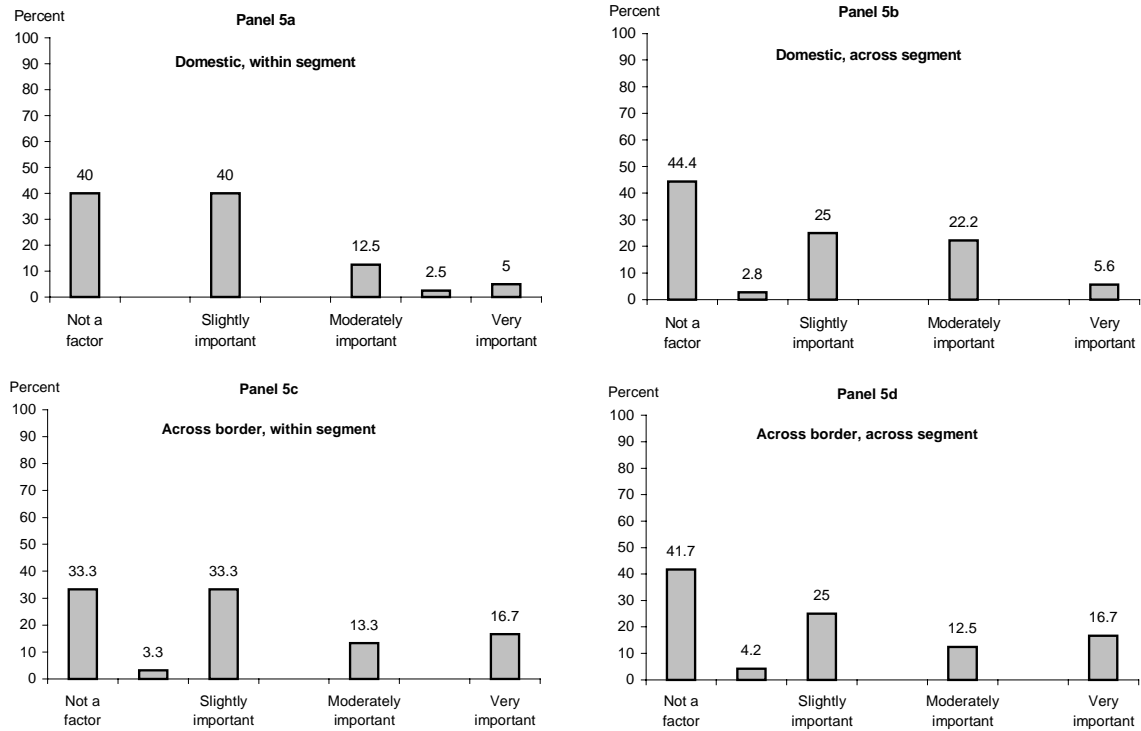
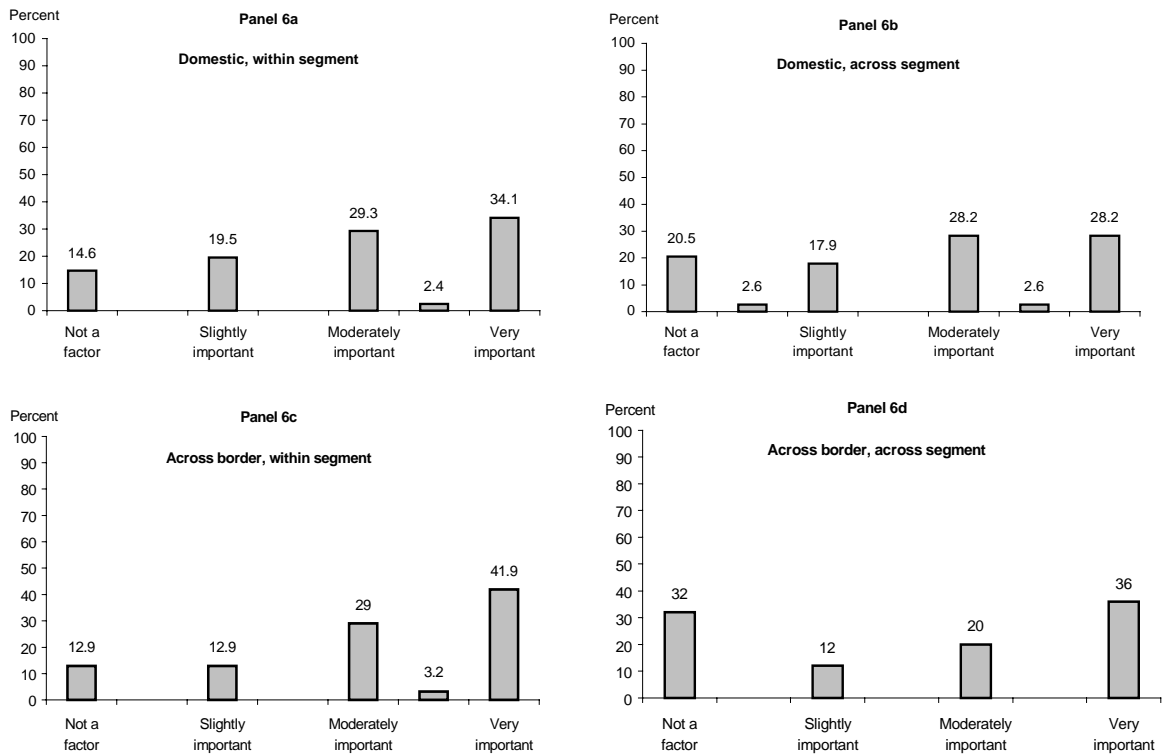


Chart II.2 (continued)

Panel 5: Globalisation – non-financial trade

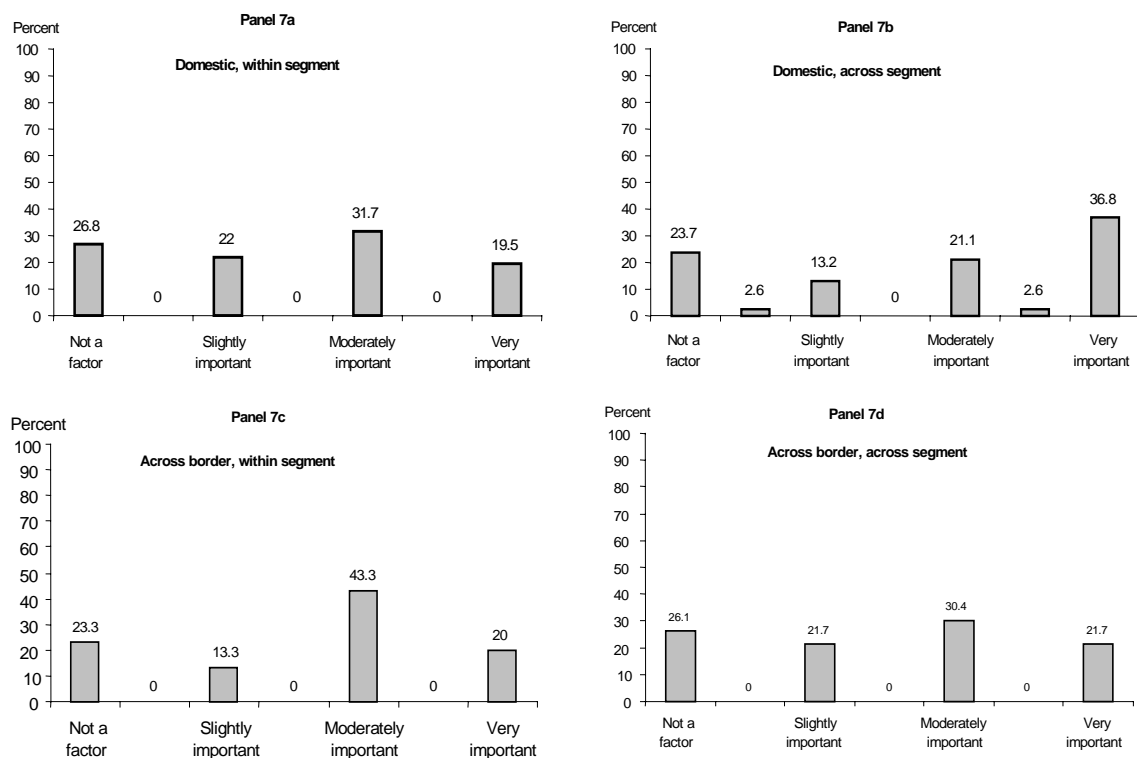


Panel 6: Globalisation – expansion of capital markets

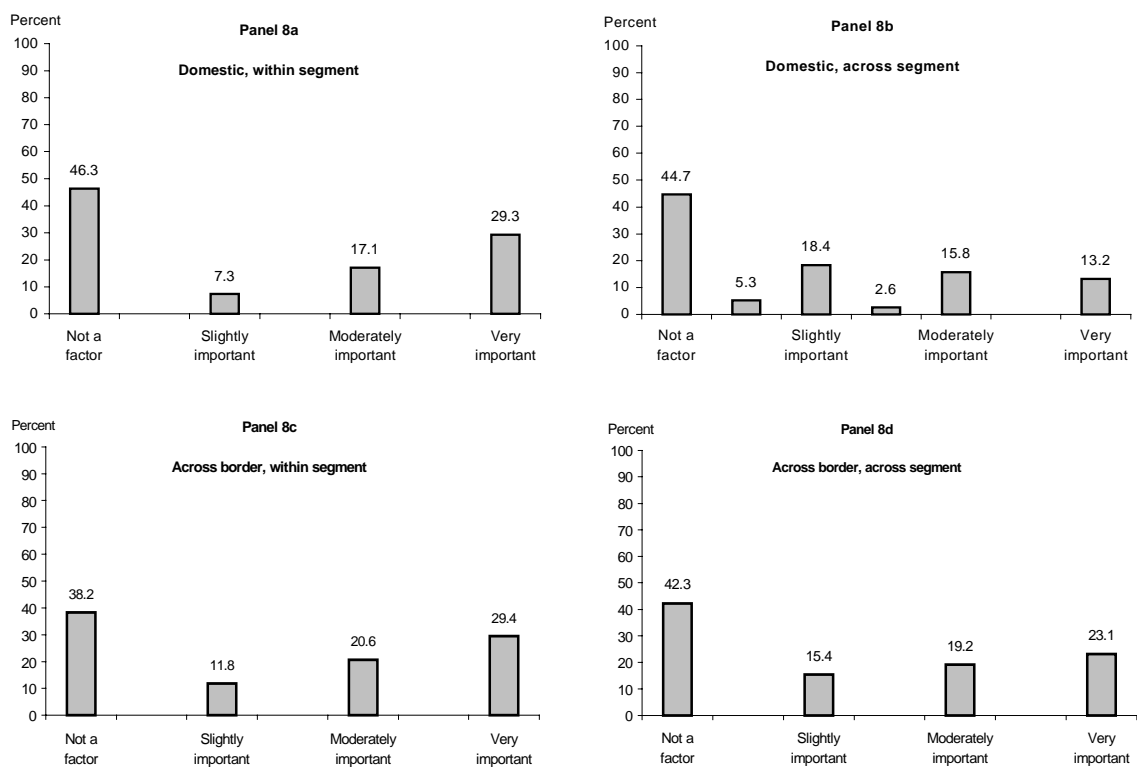


## Chart II.2 (continued)

### Panel 7: Globalisation – institutional savings



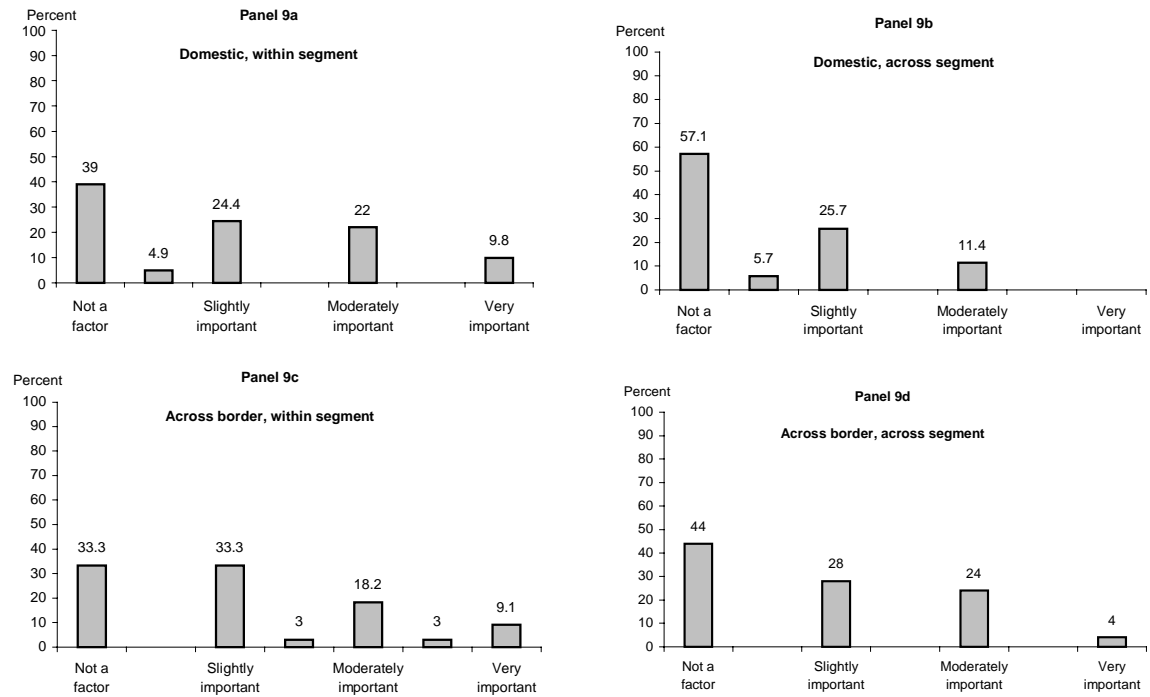
### Panel 8: Globalisation – euro



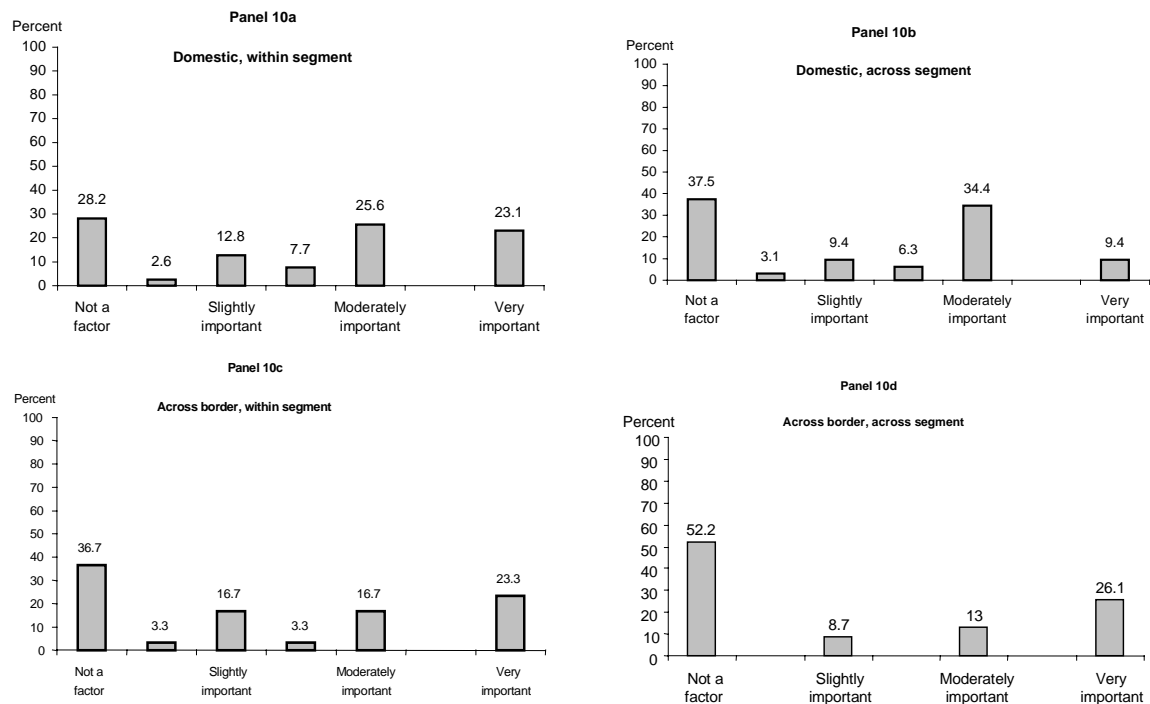


## Chart II.2 (continued)

### Panel 9: Privatisation



### Panel 10: Climate of capital markets



## Chart 2 (continued)

### Panel 11: Bail out and financial conditions

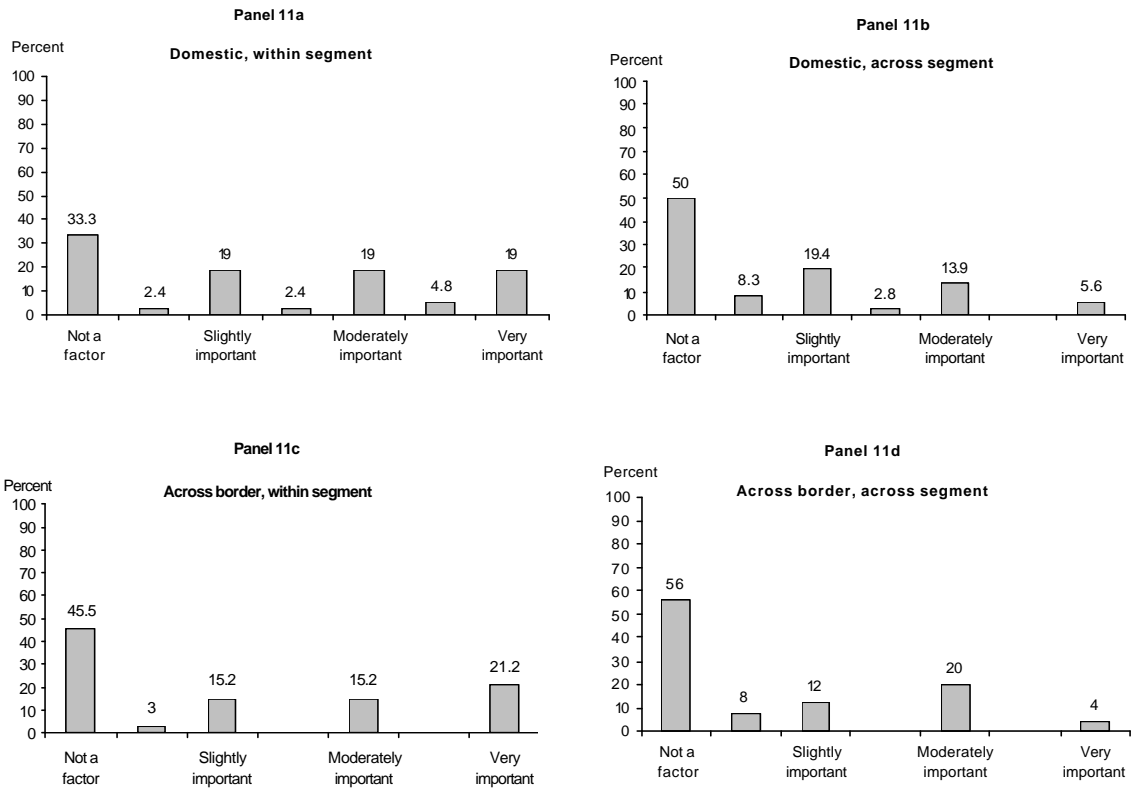
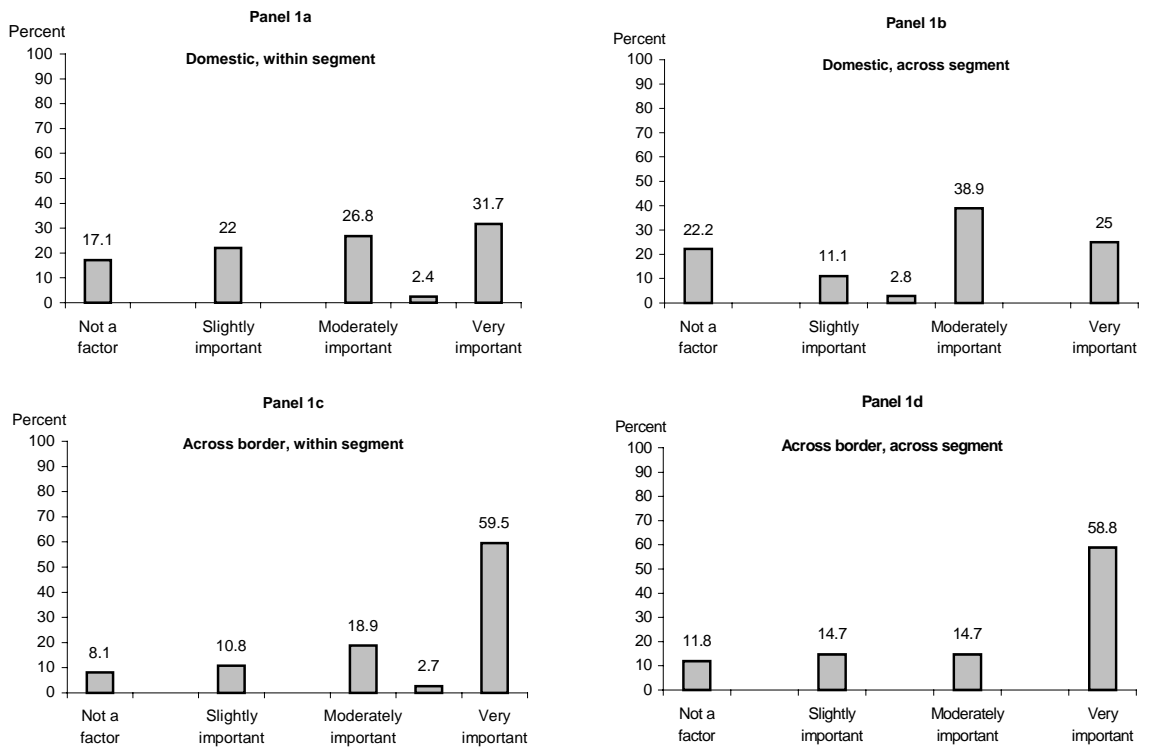


Chart II.3

## Forces discouraging consolidation

### Panel 1: Legal and regulatory impediments



### Panel 2: Cultural constraints

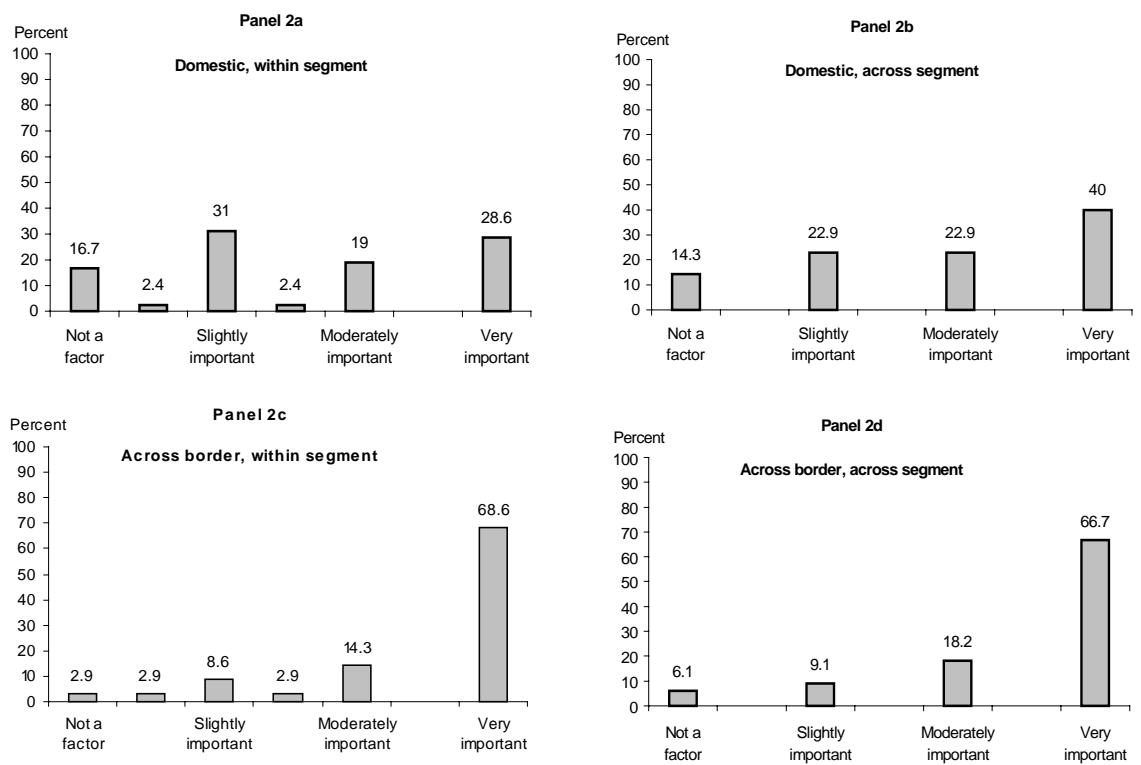
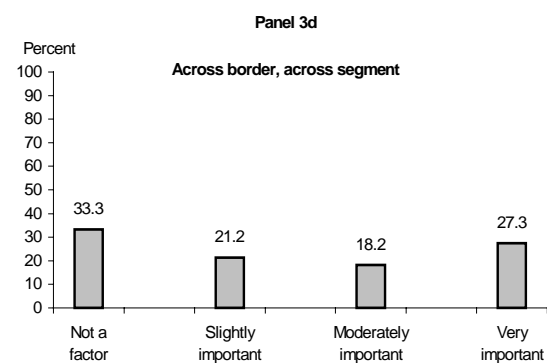
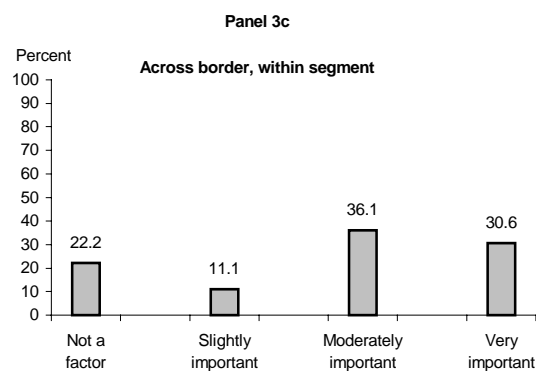
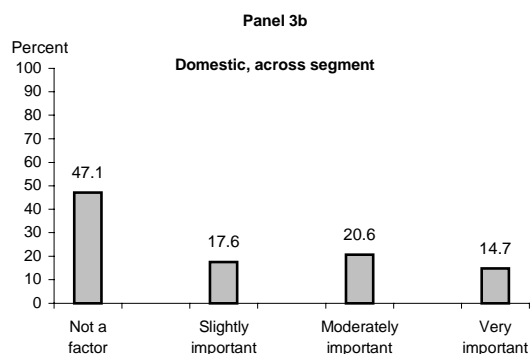
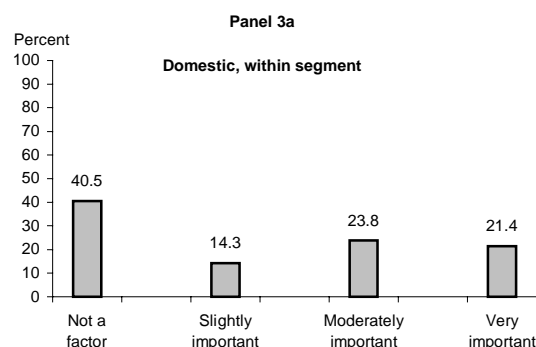
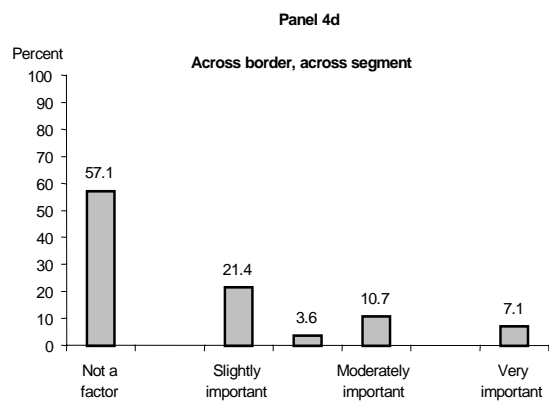
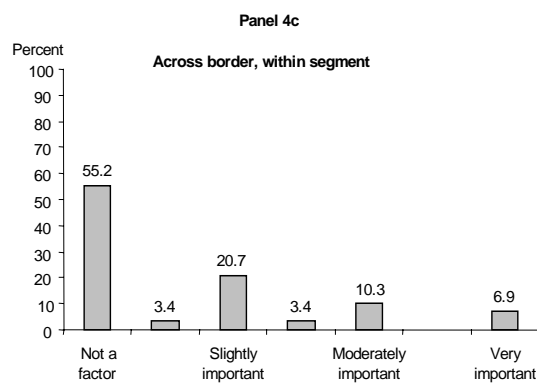
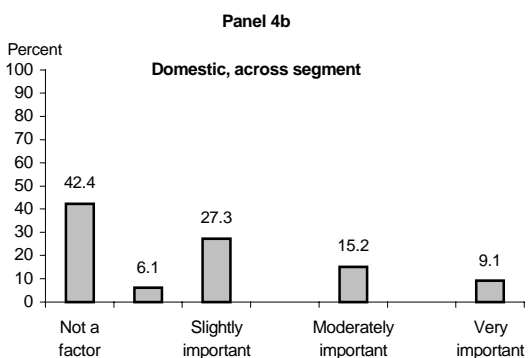
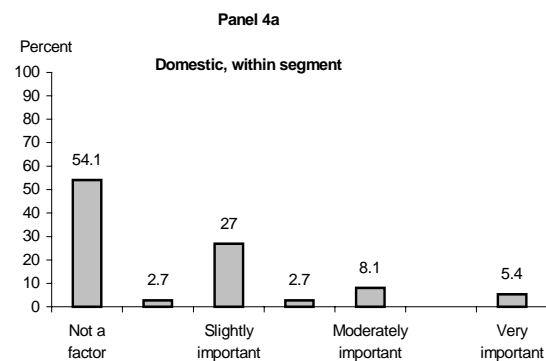


Chart II.3 (continued)

Panel 3: Market inefficiencies

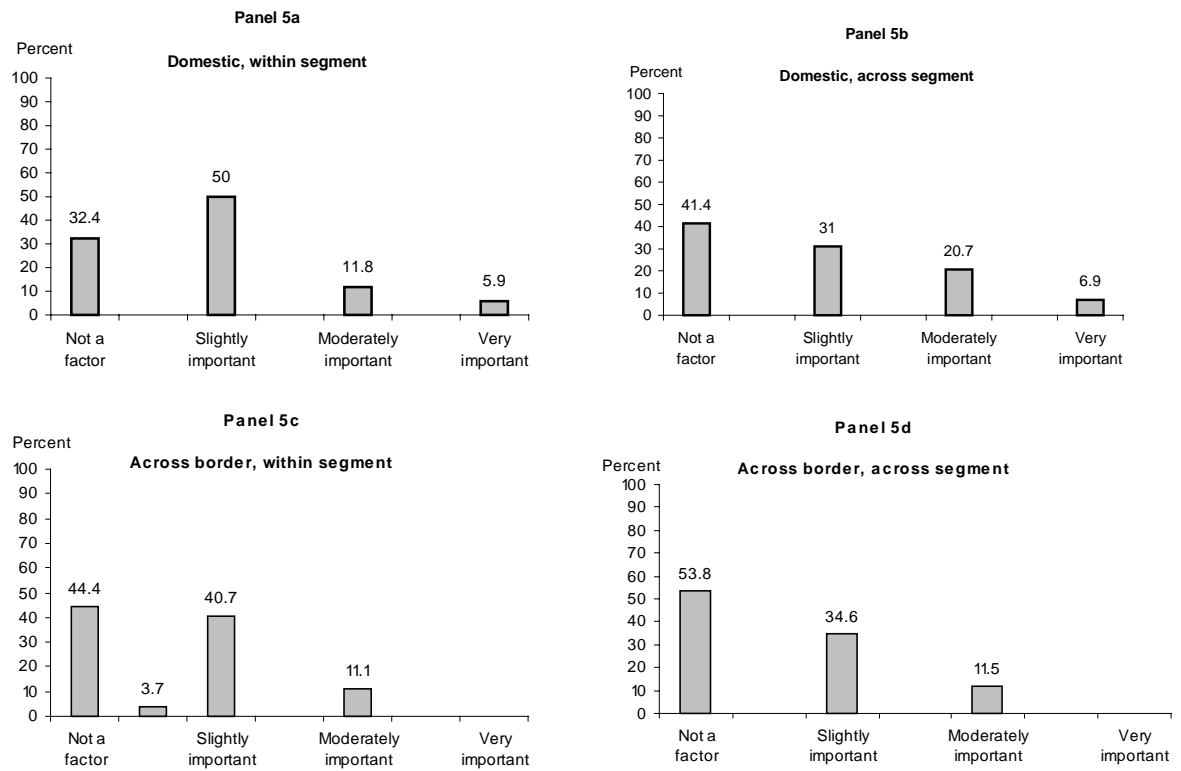


Panel 4: Deconstruction

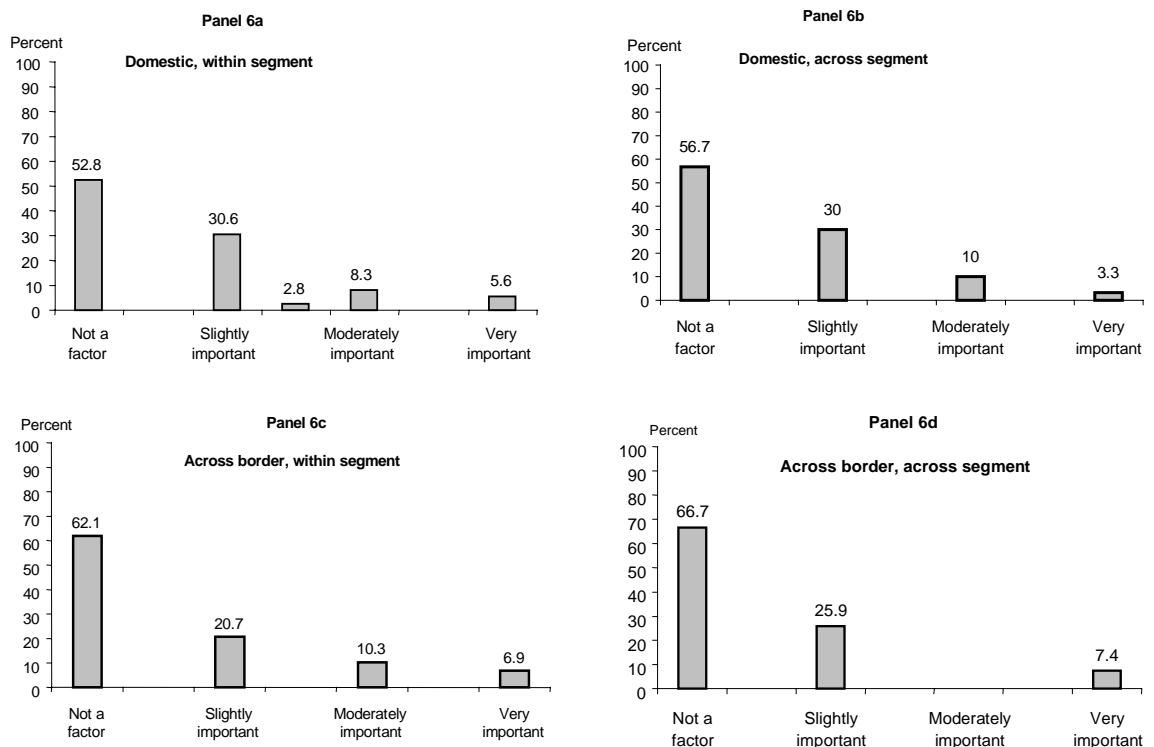


## Chart II.3 (continued)

### Panel 5: Outsourcing



### Panel 6: Internet



## **Annex II.1**

### **Interviews – country synopses**

For each G10 country, Australia and Spain a synopsis has been drawn up based on the qualitative assessments of the interviews. These synopses contain information on the motives for consolidation, external factors and expectations for the future. The sequence is as follows:

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United States	98
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United Kingdom	106
Australia	107
Belgium	108
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Switzerland	113

#### **United States**

In order to develop a picture of financial sector consolidation in the United States, seven interviews were conducted with various industry experts. The interviewees included a lawyer who has advised banks on mergers and acquisitions, a senior official with a leading US bank, two banking industry consultants, a senior analyst with an investment bank, and representatives of a thrift industry trade association and an insurance industry trade association.

#### ***Motives for consolidation***

All but one of the seven US interviewees indicated that cost savings due to economies of scale were moderately or very important as a driver of within-segment, within-country mergers, although it was noted that anticipated cost savings often were not realised. Cost savings due to economies of scale were viewed as slightly important or not a factor in the case of cross-segment mergers and cross-border mergers. Revenue enhancement due to product diversification was viewed as moderately to very important in motivating cross-segment mergers, both within and across borders. Five out of seven interviewees considered change in organisational focus to be unimportant, while one viewed it as very important for cross-segment mergers and one viewed it as very important for within-segment mergers for small savings institutions. The interviewees varied considerably in their views regarding the importance of increased market power and managerial empire building as motives for consolidation.

#### ***External factors***

For commercial banks, the most important forces encouraging domestic consolidation (both within and across segments) were improvements in information and communications technology, deregulation (especially interstate banking), bailouts (particularly in the late 1980s and early 1990s) and the climate of capital markets. For cross-border consolidation involving commercial banks, expansion of domestic and international capital markets was viewed as an important factor. Cultural constraints were viewed as a very important factor discouraging

cross-border mergers and a moderately important factor discouraging domestic cross-sector mergers. One interviewee indicated that cultural constraints have not played as big a role as they should, since firms often have trouble dealing with cultural differences after a merger. One interviewee perceived market inefficiencies to be a very important factor discouraging cross-border consolidation.

For investment banking and asset management companies, the most important factors encouraging mergers of all types were improvements in information and communications technology, trade in non-financial products, expansion of domestic and international capital markets and the climate of capital markets. Market inefficiencies were viewed as a moderately important factor encouraging cross-border consolidation, rather than a deterrent to consolidation. Cultural differences were deemed a very important deterrent to domestic cross-segment mergers and to cross-border mergers. Legal and regulatory constraints were viewed as important factors discouraging cross-border mergers.

For insurance firms, the most important factors encouraging within-country mergers were the institutionalisation of savings (within segments) and deregulation. Electronic commerce, privatisation, bailouts and the climate of capital markets were viewed as moderately important. For cross-border mergers involving insurance companies, trade in non-financial products and the creation of the euro were viewed as important factors as well. Legal and regulatory constraints were viewed as moderately important factors discouraging consolidation, both within and across borders, and cultural constraints were viewed as very important in discouraging cross-border mergers.

### ***Expectations for the future***

Consolidation is expected to continue in the future, with essentially the same economic factors driving deals. The pace of bank-bank consolidation is expected to slow down, especially if the anticipated elimination of pooling-of-interest accounting for mergers is implemented. There is likely to be a substantial increase in insurance company mergers if the economy slows down. The Financial Services Modernisation Act is expected to have a minor impact on consolidation. It is unlikely that there will be many bank-insurance deals. None of the interviewees expect to see a great deal of cross-border consolidation involving US firms in the near future. Strategic alliances may play a more important role in the future than in the past. There may also be more disaggregation as firms shed non-core lines of business.

### **Canada**

This synopsis is based on interviews with a Canadian lawyer who has advised Canadian banks about their merger objectives, an academic well versed in financial services sector issues, and representatives of two major Canadian banks.

### ***Motives for consolidation***

The most important motive for within-country, within-segment consolidation is cost savings attributable to increased size. Other factors that ranked important or moderately important include revenue enhancement due to increased size, cost savings attributable to product diversification, and revenue enhancement due to product diversification. Increased market power and managerial empire building were said to be not important. In cross-segment mergers, cost savings attributable to increased size were again deemed fairly important, but revenue enhancement due to product diversification was considered the most important motive. Cost savings attributable to product diversification and revenue enhancement due to increased size were viewed as moderately important.

Rankings of the motives for cross-border and within-segment consolidation varied across the interviewees, but it is fair to say that the same general ranking prevailed as above for in-country consolidation. Overall, the motives for cross-border and cross-segment consolidation were weak

relative to the motives for within-country mergers and relative to the motives for cross-border within-segment mergers.

Interviewees all agreed that motives for consolidation are affected by the size of the financial institutions involved. They believed that in the current Canadian regulatory environment, mergers between smaller institutions are more likely to win government approval than mergers involving large institutions. Another observation made by the interviewees was that consolidation for smaller institutions can lead to an increase in market power, while larger institutions see consolidation as providing opportunities to get rid of excess capacity or increase efficiency.

### ***External factors***

As for forces encouraging consolidation within segments, each of the three technology forces were ranked as moderately important or very important. Under globalisation, trade in non-financial products and expansion of domestic and international capital markets were ranked as moderately to very important, and institutionalisation of savings was ranked as moderately important. The climate of capital markets was also viewed as a moderately important factor. Rankings of forces for consolidation across segments and within the country were quite similar.

Turning to cross-border consolidation within segments, interviewees did not agree on the relative importance of the three technology forces. One thought that they were not at all important, while another thought they were very important. Under globalisation, expansion of domestic and international capital markets was ranked very important. The institutionalisation of savings was not ranked as a significant force encouraging cross-border consolidation. Creation of the euro and privatisation were viewed as not at all important. Under other forces, the climate of capital markets was regarded as moderately important.

Legal and regulatory constraints were frequently cited as most important among the forces discouraging consolidation in Canada. There was less agreement on the importance of cultural constraints and market inefficiencies. Outsourcing was mentioned as slightly important by two of the interviewees. Forces discouraging consolidation across segments within Canada were said to be the same as the forces discouraging consolidation within segments. In terms of cross-border transactions, the undervalued Canadian dollar was viewed as a market inefficiency acting as a force discouraging consolidation, as was the high equity price of many US financial institutions. As for inbound mergers and acquisitions, Canadian regulation and ownership policy considerations were seen as forces discouraging consolidation.

### ***Expectations for the future***

Turning to future expectations, interviewees said that a great deal hinges on a change in Canadian government policy. This will come about in time, they believed. Consolidation within segments and across segments was seen as a way to enhance the efficiency of Canada's financial sector, and would be in Canada's national interest. Interviewees agreed that the largest Canadian financial institutions are small players on the world scene and felt they need to be bigger in order to compete more effectively with large foreign counterparts. The interviewees believed that a merger between large Canadian banks may be one or two years away from happening, while a merger between a large insurance company and a bank may not occur for possibly three years. With a change in Canadian government policy, cross-border consolidation between US and Canadian firms, in both directions, would be quite probable. Whilst the interviewees expressed a preference for further consolidation, it should be acknowledged that the optimal level of concentration in the Canadian financial sector is a contentious issue. In 1998 public authorities denied two merger requests by four of the largest Canadian banks on the basis of prudential concerns and concerns regarding the level of domestic competition (for a comprehensive discussion of the decision see Annex III.1 of Chapter III).



## **Japan**

Interviews in Japan were conducted with four representatives of large investment banking firms.

### ***Motives for consolidation***

During the 1980s, most of the large Japanese banks (like other G10 financial institutions) sought a more active international presence, and expanded their branch networks and business operations overseas in an attempt to gain market share. The bursting of Japan's asset bubble in 1990-91, however, and the rapid deterioration of loan portfolios radically changed the operating environment. There were some cases of bank consolidation in the early to mid-1990s, the purpose of which was to achieve greater market power, to adapt to a changed regulatory environment, or to effect a "rescue merger" of a smaller, weaker bank with a larger bank. Since the late 1990s, the most important aim of financial consolidation has been to cut costs, combine revenue streams, and achieve economies of scale in order to survive in a new and more competitive environment. Although mergers and tie-ups seen thus far may not have an obvious strategic goal, the general consensus is that "bigger is better". Through mergers, acquisitions and shared business operations, Japanese financial institutions are seeking to streamline operations, reduce operational redundancies and use the resources from combined revenue streams to increase spending on information technology (IT) and other crucial infrastructure. The focus of this drive to regain competitiveness is clearly the domestic market. Japanese banks have been retrenching for several years from their overseas operations. At the same time, foreign banks in Japan are niche players, do not show significant interest in increasing their emphasis on loan intermediation, and appear unlikely to challenge domestic banks in their most important markets.

### ***External factors***

Interviewees all cited bailouts or the financial condition of firms as being a very important force encouraging consolidation. One of the interviewees said that price deregulation was a very important force encouraging consolidation, while others ranked that factor as either moderately or slightly important. Privatisation was rated as slightly important. Information technology was believed to be very important as a force for consolidation by two interviewees and moderately important by two others. (Japanese financial institutions are behind in IT and consolidation is one way to make the extremely high costs of catch-up more manageable.) Interviewees said that expansion of domestic and international capital markets has been slightly important as a force for consolidation, while creation of the euro was not a factor in Japanese consolidation. Turning to forces discouraging consolidation, all interviewees rated cultural forces as very important. (In particular, the keiretsu model of business group organisation has had a chilling effect on consolidation, although there is some basis for believing this counterforce has been weakening recently.) Market inefficiencies were seen as somewhat important in discouraging consolidation, and legal and regulatory constraints were slightly important. Interviewees ranked other forces discouraging consolidation as not a factor for Japan.

### ***Expectations for the future***

Looking to the future, there is anticipation of more consolidation. Lending capacity in Japan continues to be high relative to GDP. It will probably take years for Japanese banks to regain their competitiveness by raising their return on equity and become world-class players with up-to-date, efficient IT systems. With greater market acceptance and greater use of e-banking and e-commerce in Japan, more mergers as well as other types of consolidation (joint ventures, strategic alliances) may develop. Regulatory changes, which allow cross-industry entry through holding companies, may stimulate cross-segment consolidation. However, the market pressure that prompted the dramatic waves of structural reform and consolidation of the past two years is waning, and the pace of change may be slow.

## **France**

Two large commercial banks, one large mutual bank and the association representing the insurance firms were interviewed.

### ***Motives for consolidation***

The commercial banks had a broad vision for financial sector consolidation (though somewhat centred on traditional banking and less so on investment banking) and shared a relatively common view, while the views of the mutual banks and the representatives of the insurance firms emphasised within-sector developments. The dominant motive for consolidation was thought to be cost cutting. In particular, the greatest scope for cost savings arising from consolidation was at the level of “production”; ie the production of instruments, such as mortgages, other specific loans and insurance, as well as back-office functions. Few cost savings were envisaged at the level of distribution, where the development of “brands” was considered to be critical. Moreover, cost savings were considered to be greater among banks within the same geographic region. Overall, much less emphasis was placed on revenue enhancement as an important factor, with one bank arguing that consolidation provided no such advantage while the other was rather more circumspect. It thought that size (using market capitalisation as a proxy) was related to return on equity and therefore the maximisation of shareholder value.

### ***External factors***

Turning to the forces encouraging consolidation, there was general agreement that information technology would produce cost savings but, as it was an expensive purchase, would also play an important strategic role. In Europe, deregulation and privatisation were considered to be another major force as they provided opportunities for consolidation.

As for factors discouraging consolidation, the most important impediment to cross-border consolidation between commercial banks had been moral suasion at the political level, though there is some evidence that this may have been lessening more recently. Another important impediment to consolidation through a merger (both cross-border and within-country) is tax considerations, especially large capital gains taxes in an asset-heavy industry. As for within-country consolidation, the large share of the banking and insurance sectors controlled by mutuals was said to be another important impediment to consolidation. Mutuals have many advantages, including some tax advantages (though these have been diminished in the case of banks), dominant local presence in certain rural areas, and, of course, the fact that they cannot be bought (unless they are demutualised). Mutuals have used these advantages and relatively healthy balance sheet positions to purchase listed firms. Most notably, this has occurred in the case of the two large mutual banks in France.

### ***Expectations for the future***

Looking forward, the concept of a universal bank is thought to be out of date, and it is anticipated that financial institutions will specialise, eg in investment banking or in the retail business. Furthermore, the traditional retail bank will need to have access to customers through a multi-channel network, rather than just through its branches. New channels may include the internet and television.

Cross-border consolidation of retail banks in Europe could circumvent political obstacles both through the creation of cross-border alliances and through cross-border mergers of upstream production (as described above) – for which the concentration was expected to be much greater than in retail distribution. In many ways this is similar to what has happened in the automobile industry, where cars of a different brand use similar parts (even engines). The more consolidated (upstream) sectors would probably be controlled by the larger retail banks.

The demutualisation of savings and loan banks, which will bring them onto the market as candidates for takeovers, would be another source for major changes in the financial landscape in Europe. It will have an effect similar to D'Amato's bank reform in Italy, which transformed the banking sector there. However, demutualisation is not currently under consideration in France. For a mutual to become a large player in its own right, it will need to improve the centralisation of management decisions, as the structure currently in place assigns many decision-making functions to regional cooperatives, which can retard the process. In terms of cross-border consolidation between mutuals, there currently does not exist a pan-European directive concerning the establishment of cross-border mutual subsidiaries.

## **Germany**

Interviews in Germany were conducted with three commercial banks and an investment bank.

### ***Motives for consolidation***

With regard to consolidation within segments at the domestic level, cost savings attributable to increased size (economies of scale) were singled out by all interviewees as the primary motive. This factor is important mainly because of the growing diffusion of technologies. Revenue enhancement due to increased size is frequently underlined as well, thus further confirming the significance of scale economies. Besides IT departments, scale economies are deemed particularly significant with respect to other activities, including research, legal services, risk management, advertising, back-office operations and investment banking.

Increased market power was the second most cited motive. The attainment of a greater volume via a larger customer base would enable banks to alleviate the impact of declining interest margins. Another advantage of increased market power is better name recognition, which would be particularly significant for investment banking activities.

The situation is less clear as regards operations across segments, because consolidation has hardly stretched beyond sectoral boundaries in recent years. As a result, the only consistent pattern is the greater importance attributed to economies of scope (cost savings attributable to product diversification and revenue enhancement due to product diversification). Consolidation of banks with insurance companies is usually regarded as essential for the improvement of risk management. Moreover, existing alliances (achieved by cross-shareholdings) between these two sectors reduce the scope for full-blown mergers and acquisitions. By contrast, there are some examples of the acquisition of investment banks by large commercial banks. These are generally justified on the ground that they enable the latter to acquire better expertise in securities activities.

With regard to cross-border consolidation, the interviewees generally indicate that the ranking of motives is not fundamentally different from the case of consolidation at the domestic level. As regards the size of firms, economies of scale could be especially important for smaller banks, especially in retail banking (network of branches, development of common platforms) or in investment banking.

### ***External factors***

As for forces encouraging consolidation, all interviewees underlined the importance of technology for operations within segments at the domestic level. This driving force has a direct impact on economies of scale due to the huge set-up costs and to the importance of spreading the costs of technology over a large customer base. Furthermore, technology induces a greater mobility of consumers and enables them, especially corporations, to gain direct access to capital markets. Finally, technology enhances competition because it favours the emergence of new competitors targeting new market niches (for instance in the field of remote banking).

The euro was often cited as an important factor as well. The euro mainly acts as a catalyst for changes through its impact on the integration of capital markets and on price transparency and,

therefore, on the degree of competition. Expansion of domestic and international capital markets was mentioned by all participants. One interviewee referred specifically to the securitisation trend and the accompanying use of ratings. Other commonly cited forces, albeit to a lesser extent, include the institutionalisation of savings and deregulation.

According to two interviewees, consolidation across segments is characterised by a far lesser role of technology due to technological discrepancies. Likewise, the euro loses much of its significance. As far as cross-border consolidation is concerned, the euro was widely cited as an essential encouraging factor. Deregulation is more important as well in this context. By contrast, the role of technology decreases due to technical incompatibilities from one country to another. Size is an important factor in a country where small banks are very commonplace. Unless they have a specialised niche, they are bound to be negatively affected by technology through strengthened competition and greater economies of scale.

With respect to the forces discouraging consolidation within segments at the national level, all interviewees referred to the role played by the segmentation of the German banking market and more specifically by the cooperative and publicly owned savings banks. In particular, it was indicated that these banks cannot be acquired by other institutions and are insulated from competitive forces. As regards consolidation across segments, cultural constraints and the fact that informal alliances are already in place reduce the impetus towards the acquisition of insurance companies. Cultural and regulatory impediments are especially significant for cross-border consolidation.

### ***Expectations for the future***

The interviewees anticipate an increase in the number of mergers, especially on a cross-border basis (one interviewee is sceptical in this respect). This evolution could be enhanced by two other anticipated developments, namely the lifting of remaining regulatory constraints (one interviewee is less optimistic in this respect), which is an effect of the introduction of the euro, and a greater openness of the cooperative and savings banks sector. The specialisation and the polarisation of the German banking sector are liable to increase in a context characterised by the diffusion of technology. Some banks anticipate a re-specialisation of financial institutions and a growing tendency towards outsourcing.

### **Italy**

Three interviews were conducted with banks, which covered the main segments of the banking sector in terms of size, and one with a university professor, which covered the insurance sector.

### ***Motives for consolidation***

The main motive for consolidation within the banking sector at the domestic level concerns the need for banks to pursue cost savings attributable to increased size (economies of scale). A number of areas were referred to in which economies of scale can be pursued, including information technology, back offices, payment services, general directorates, etc. The objectives of revenue enhancement due to product diversification and, to a lesser extent, to increased size were mentioned as other relevant motives for consolidation. In particular, the need to be able to provide the whole range of services to customers was regarded as a very important motive. Another relevant motive was the need of banks to increase their market share with the objective of enlarging the customer base and diffusing products and services. Among other factors, geographical diversification was mentioned as an important factor for risk diversification and increased market share.

Regarding operations across segments (bancassurance), the main motive for consolidation is the pursuit of product diversification. This is intended, in the first instance, to provide “one-stop shopping capabilities” and, secondly, an opportunity for risk diversification. For cross-border operations within the banking and the insurance sectors, the motive of revenue enhancement due

to increased size tends to become more important, whereas the cost saving argument loses some of its relevance. Moreover, the motives based on revenue enhancement through increased size and increased market power tend to be more important for large banks, whereas the motives based on cost savings through increased size and revenue enhancement through product diversification appear more relevant for small/medium-sized banks. By contrast, the pursuit of economies of scale is relevant throughout the whole banking sector.

### *External factors*

Information technology was regarded almost unanimously as a primary encouraging factor. The introduction of the euro was a second important factor. The euro was perceived in the strategic planning of banks as the main driving force to complete the single market and, thus, to achieve the full integration of financial markets. Third, deregulation has also played an important role over the past years, though it has in current times exhausted its effects. Fourth, privatisation was regarded as an additional important factor, given the large number of publicly owned banks. Finally, consolidation as a tool for the resolution of banking crises has played an important role for both small and large banks.

For operations across segments, the aspect of institutionalisation of savings in particular tends to become more important, whereas with regard to cross-border operations some factors become more important (eg globalisation), others less (eg privatisation and resolution of crises). Furthermore, technology and financial innovation may represent a threat for small and medium-sized banks that are not dynamic and thus create an incentive for consolidation. By contrast, these two factors may represent an opportunity for those banks that are dynamic to follow niche strategies and to develop new distribution channels.

Regarding the forces discouraging consolidation in the banking sector at the domestic level, the emphasis was put on legal and cultural constraints. However, this refers mainly to the first part of the reference period (1990s) rather than to more recent years since most of the constraints have been removed. In this respect, one aspect frequently mentioned was that the publicly owned banks lacked the necessary managerial mentality and that this tended to discourage the process of consolidation. Legal and cultural constraints were regarded as having even more relevance with regard to operations across segments at the domestic level and on a cross-border basis.

### *Expectations for the future*

In the banking sector, the process of consolidation was expected to continue at the national level but mainly for small and medium-sized banks. For the largest six or seven banking groups, the increase in size in the domestic market no longer appears to be a strategic priority, largely because it could raise antitrust concerns. The new strategic focus is likely to be the development of complementary activities to the traditional banking business, such as asset management and investment banking, which generate non-interest income. In these areas, it is possible to set up international platforms also through partnerships or strategic alliances with specialised institutions.

As far as the factors affecting consolidation in the banking sector are concerned, the importance of information technology (internet) was expected to grow. Second, the importance of the euro as a factor encouraging consolidation was also expected to grow through its effects on the integration of financial markets. Third, further regulatory convergence was expected mainly on a cross-border basis, also partly as a consequence of the pressure exerted by the euro on the competent Community and national authorities. Fourth, competition from non-banks was expected to increase not only from non-bank financial institutions but also through the provision of banking services by industrial firms. Fifth, cultural constraints were thought likely to decrease in terms of importance for operations across segments. Finally, outsourcing is expected to spread further by providing an opportunity to save costs, especially for small banks. However, this was not expected to have a direct effect on consolidation.

## **United Kingdom**

Five interviews were conducted in the United Kingdom. Interviewees included a representative of a large British bank, representatives of a rating agency, a representative of a bank consulting firm especially knowledgeable about the UK banking sector, a representative of a large securities firm, and representatives of a boutique investment bank with expertise in both the banking and insurance sectors.

### ***Motives for consolidation***

The most important motive for consolidation within sectors (banks, investment banks and insurance firms) has been cost savings attributed to increased size. There has to be a credible cost savings story about a proposed merger or acquisition in the United Kingdom or the market will not ratify the deal. Interviewees also reported revenue enhancement due to increased size as important, but secondary to cost savings as a motive for consolidation. Other motives deemed important were increased market power and managerial empire building. Motives for consolidation across sectors yielded a different set of rankings. Revenue enhancement due to size and due to product diversification were most important; managerial empire building continued to rate as an important motive. However, cost savings attributable to increased size dropped to “slightly important”. In investment banking, a few of the biggest players have a global strategic focus. Firms in this category believe they can do any kind of deal anywhere in the world that a customer desires. The market gives special rewards to firms in this “bulge bracket” in terms of much higher trading volumes. (Investment banking capabilities that were formerly housed in major UK-owned banks have been divested in some cases in order to concentrate on retail banking services.)

Cross-border consolidation in the banking sector requires a certain leap of faith, as one interviewee put it, and those interviewed tended to downgrade the importance of the various motives when compared to within-country consolidation. Motives for cross-border consolidation in investment banking were deemed stronger than within-country because of a desire by the bulge-bracket firms to offer any service to any firm. Interviewees reported that motives for cross-border consolidation within segments in order of importance were revenue enhancement due to increased size and managerial empire building. Interviewees generally indicated that size matters. For banks, the largest ones have the greatest acquisition opportunities. For investment banks, smaller firms seeking shelter look for the best deal they can get; large firms want to be in the bulge bracket.

### ***External factors***

Turning to forces encouraging consolidation within segments, information and communications technology and e-commerce, along with expansion of domestic and international capital markets were ranked highest, while deregulation and privatisation were insignificant. The creation of the euro has not been a significant force for consolidation up until now. Across segments, forces for consolidation were rated the same or lower. Across borders, the creation of the euro and institutionalisation of savings were ranked highest by all but one interviewee among forces for consolidation (particularly looking ahead and looking towards Europe), followed by e-commerce, deregulation and privatisation. For banks, size is a factor in determining the number of potential buyers and sellers. For investment banks, small firms are vulnerable; medium-sized firms are attractive to foreign buyers looking for footholds elsewhere.

The most important forces discouraging consolidation within segments were market inefficiencies and legal and regulatory constraints. Across segments, and across borders, cultural constraints and legal/regulatory constraints were most important. Two interviewees rated the internet as a moderately important or very important force discouraging cross-border consolidation, while others rated it only “slightly important”. Outsourcing was seen as only slightly important. Furthermore, larger firms can more easily fight off within-country or cross-border acquisition attempts. Regulators were perceived as having a home court bias.

### ***Expectations for the future***

Mergers within segments will continue at a moderate pace in the UK market, particularly in banking. In investment banking, the few remaining UK-owned firms will continue to diminish as a result of foreign acquisition. In the insurance sector, interviewees believe there is relatively little opportunity remaining for consolidation among non-life firms owing to the consolidation that has already taken place. Further consolidation will result in the comparatively weak UK firms being acquired by US and/or European firms. Consolidation in the less-concentrated life insurance sector will continue, and European life insurance companies may acquire some of these entities. Key variables affecting the pace and nature of consolidation include: investor attitudes; regulatory constraints, where the key concern will be the effects of further consolidation on competition; and the public's perception of merger problems. Outsourcing, mentioned as a force against consolidation, is still active and could mitigate against consolidation in the future. If the United Kingdom decides to join the euro area in the future, and if increasing harmonisation ensues for tax regimes, financial regulation and financial products, then there could be much more pan-European financial sector consolidation over time.

### **Australia**

Interviews were conducted with three of the four major banks in Australia about their approach to consolidation.

### ***Motives for consolidation***

In the first phase of consolidation – until the mid-1990s – an important motive was risk reduction through geographic (cross-border) diversification, to reduce dependence on economic conditions in Australia. However, the experience of two of the banks in moving offshore provides an interesting contrast. One bank began to build up its offshore network, with a focus on the Asian-Pacific region, in the mid 1980s, but withdrew a few years later in response to substantial domestic losses and integration difficulties; cultural differences were cited as a major obstacle. In contrast, the second bank concentrated successfully on retail bank acquisitions in Anglo-Saxon countries and was cautious not to alienate local customers by re-branding banking products.

More recently, consolidation has increasingly been driven by the desire of the banks for revenue enhancement by becoming retailers of a full range of financial services to customers. This is recognition that, within a relatively mature banking market, funds management and other financial products offer greater potential for earnings than traditional banking. Accordingly, two of the banks have acquired or are pursuing acquisitions in the funds management area and in other specialised services, such as mortgage processing, as a means of filling gaps in their product ranges. For one bank, the goal is to become a “best of breeds” retail supermarket.

Although not a factor in every acquisition, the banks acknowledged the potential for significant cost savings from economies of scale, particularly in technology. Research and development of newer technologies involve substantial fixed costs and risks, which are more easily borne by larger institutions. Mergers were viewed as a rapid and cost-effective way of increasing size both at home and abroad; organic growth was expensive because of the need to compete aggressively on price to attract customers from other banks.

### ***External factors***

Globalisation was acknowledged as an important factor encouraging consolidation, in at least two respects. The expansion of international capital markets has allowed the banks to fund their balance sheet growth well beyond what could be sustained by domestic deposit growth and the Australian capital market alone. Their size, diversification and strong credit ratings have also given the banks a funding advantage over smaller institutions. Secondly, greater global competition has spurred the banks to shore up their positions by increasing their size and

product range through consolidation. Financial innovation, technological change and the commoditisation of products have fostered the emergence of a competitive fringe of non-bank financial institutions in Australia, and made it easier for customers to shop around, placing further pressure on profit margins.

Government policy on competition has been a key influence shaping the direction of consolidation in Australia. Under the current “four pillars” policy, mergers between the four major banks will not be approved until the Commonwealth Government is satisfied there has been a sufficient strengthening of competition in the Australian banking market. In the absence of this policy, each of the banks interviewed would be looking to merge with another of the majors in expectation of substantial cost savings through a rationalisation of branch networks as well as technology and back-office synergies. A further element in competition policy is the application of a regional rather than a national definition of the banking market in assessments of merger proposals by the Australian competition regulator. This has created some difficulties for major banks seeking to merge with smaller banks, which have, nevertheless, sizeable positions in a regional market.

Aside from competition policy, regulatory and taxation arrangements were not seen as an impediment to consolidation. Nor was outsourcing, because this process was already occurring in the non-core areas of the banks themselves and because outsourcing contracts could always be paid out or renegotiated. On the other hand, cultural differences have been a barrier, especially across segments. Experience suggests that successful acquisitions have been based on a marriage of similar management philosophies and have been friendly in approach, thus reducing the risk of loss of customers and management. Across borders, the banks believed that risk increased with distance from customers – in physical, cultural and language terms.

### ***Expectations for the future***

The banks interviewed expected that the four major banks would continue to dominate financial intermediation in Australia because of their broad-based relationships with customers. These banks will all be seeking to develop the financial services supermarket concept – including a strong move into the management of retirement savings – and will be competing in an increasingly global market. Looking further ahead, consolidation may also involve mergers or alliances with non-financial institutions specialising in distribution technologies. In this environment, small banks may be able to survive if they can develop expertise in niche markets and products, buying in technology and other services to benefit from any scale economies of suppliers. The banks interviewed thought that the group most at risk from competition is medium-sized financial institutions, which, in the absence of strategic alliances, face burgeoning technology costs and may lack the scale to compete successfully in global markets.

## **Belgium**

Three interviews were conducted in Belgium, two with large financial services groups (including a cross-border financial conglomerate) and one with a medium-sized financial group.

### ***Motives for consolidation***

Despite the differences that exist between the three financial institutions that were interviewed, it is possible to distinguish several common motives that explain why consolidation has occurred. The leading motive was a combination of cost savings and revenue enhancement. Cost savings, particularly in the case of the largest groups, were envisaged through downsizing the number of branches and staff restructuring. It was mentioned that a merger makes it somewhat easier from a practical or political perspective to actually realise these cost reductions compared to a standalone situation. Since much consolidation in Belgium is across segments, it is no surprise that groups expect to enhance their revenues through exploiting the bank-insurance concept. The possibilities of cross-selling (access to distribution channels) and the diversification of products (one-stop shopping and the need to be able to provide the whole



range of products to customers) are key in this respect. Revenue enhancement through increased market size and market power tended to be important for the larger groups. Other motives, such as risk reduction and managerial empire building, were not found to be very relevant in the Belgian case.

### ***External factors***

The introduction of the euro along with the globalisation of capital markets was considered as a factor encouraging consolidation. The euro will integrate European financial markets, making them much larger than the markets that existed previously in EMU member states. In order to be a player of some significance – particularly in the wholesale segment – one needs to grow. In the case of asset management, consolidation will even accelerate, as this type of business will receive a stimulus from the demographic changes (ageing) that are taking place. The favourable climate of capital markets was also seen as a stimulating force, as this facilitates the financing of mergers and acquisitions. The developments in information technology were mentioned as well, as small and medium-sized firms cannot afford the large investments that are needed, although one felt that its impact on mergers and acquisitions should not be overstated. Disintermediation (more than deregulation) was also identified as a factor, since it increases competitive pressures to which banks must respond.

Differences in culture and corporate governance have been complicating and impeding consolidation in Belgium to a considerable extent. In fact, these factors largely explain why consolidation among large banks took off relatively late. Culture and corporate governance play an even more discouraging role in the cross-border context.

### ***Expectations for the future***

All interviewees anticipate more consolidation, including cross-border consolidation in Europe brought about by the euro and the process of globalisation. Furthermore, one expects that there will remain room for three or four retail banks in Belgium (domestic players), while there may emerge a few very large European retail banks, serving Europe and beyond. In order to meet competitive pressures from the global wholesale players of the United States, the large universal banks in Europe may specialise in the future. There will continue to be many niche players and regional players in the wholesale field. Finally, it was recognised that the developments in the financial sector are surrounded by a large degree of uncertainty, and that competition will probably also come from outside the financial sector (eg telecommunications). That may be behind the strategy of the Belgian banks as they try to diversify their activities across banking and insurance. Outsourcing may also increase, as it provides opportunities for cost savings. Deconstruction of the financial sector, although not very likely in the short run, may be a threat in some form in the longer run. This will partly depend on the progress in information technology, which is difficult to predict.

## **Netherlands**

The interviews in the Netherlands were held with four major banks.

### ***Motives for consolidation***

Increasing scale appears to be one of the main motives for consolidation in the Dutch financial sector, with an eye on both cost savings and revenue enhancement. Cost savings were related, for example, to overlaps in branch networks and staffing as well as to high investments needed in technology, product innovation and (in the wholesale sector) human capital. Generally, cost savings were thought to be most important in cases of consolidation within industry segments (both domestic and cross-border). With regard to the motive of revenue enhancement through increasing scale, a distinction was made between wholesale and retail. In the wholesale segment, increasing scale was thought to motivate consolidation because a larger equity base and greater name recognition allow larger customers to be served. In the retail sector, increasing

scale was linked to the need to speed up the innovation process and widen distribution channels in view of the fact that competitors can copy product innovations ever faster due to technological developments. The desire to extend the retail customer base has stimulated cross-border consolidation, given a mature home market.

Product diversification was cited as another important motive for consolidation, particularly for consolidation across segments (both domestic and cross-border), though it was connected to revenue enhancement (“one-stop shopping”) rather than to cost savings (economies of scope) or risk reduction. A key factor in this process has been that customers view financial products more and more as substitutes. The interviews indicate that psychological motives have been moderately important, particularly the fear of becoming a takeover target oneself. Another moderately important motive was said to be shareholder pressures to create value. This also indirectly influences institutions that are not publicly held, as it affects the behaviour of their competitors. There were different views as to how the size of the firms involved might affect the relative importance of the various motives. Tentatively, it may be concluded that cost considerations have been particularly relevant to smaller institutions, whereas larger players may have had a broader set of objectives, including, for example, change in organisational focus.

### ***External factors***

All interviewees viewed the development of technology, particularly information and communications technology, as one of the main factors encouraging consolidation. It enables substantial economies of scale to be achieved (for example concentration of the back office) as well as efficiency gains (such as a more efficient use of customer data, or data mining), while it is itself also subject to considerable economies of scale. Deregulation was also commonly mentioned as a cause of consolidation both within the Netherlands and across borders. Of the factors related to globalisation, the introduction of the euro was mentioned by some as an independent force, particularly for its psychological effect and because the concomitant loss of revenue may have stimulated consolidation as a way of achieving cost savings. More value was attached to the process of European integration in general. Finally, one interviewee mentioned high stock prices as a factor in the recent merger and acquisition wave: if an institution’s own stock price appears overvalued it will be more willing to pay a high price for the target (in case of an exchange of stock).

The existence of factors discouraging consolidation was emphasised particularly in the context of cross-border and cross-segment consolidation. The most important ones were legal, regulatory and cultural constraints, including differences with regard to tax systems and corporate governance and policies promoting national champions. It was noted that the impact of the above-mentioned impediments is more severe in the case of full-fledged mergers compared to more decentralised types of cooperation such as strategic alliances.

### ***Expectations for the future***

It was generally expected that merger and acquisition activity will continue in the coming years. In the retail segment, cross-border consolidation may well increase because of the need to buy brand names and customer bases. One scenario put forth is that in five or 10 years there will be only a handful of retail banks left in Europe. Some identified certain potential counterforces for the future. Technological progress and increasing transparency (partly because of the euro) may undermine the traditional advantages of financial institutions with regard to customer information and financial techniques, while at the same time reducing customer loyalty. In this view, increased competition, especially from outside the financial sector itself, may lead to a partial dissolution of production and distribution chains. Such a scenario was seen as a potential threat because institutions might lose control over product development. Others, however, believed that these counterforces would not prove strong enough to significantly weaken the practice of universal banking.

## **Spain**

Four interviews were conducted in Spain: two with commercial banks and two with bankers' associations.

### ***Motives for consolidation***

There was agreement that the most important factor in the Spanish domestic process of consolidation has been cost savings due to economies of scale. Interviewees considered that cost reduction is easier to achieve when mergers and acquisitions take place between institutions of the same country. It was also mentioned that it is less painful to undertake these types of measures during an upward economic cycle. Another factor pointed out as very relevant is the attainment of critical mass for three main reasons: to face the upcoming European consolidation that is expected to take place, to increase market share, notably for certain activities, and to defend against possible hostile acquisitions. The first two reasons were considered to be more important for larger firms and the third for smaller ones.

With regard to cross-border consolidation (the acquisition of Latin American institutions), the main motive cited was revenue enhancement owing to the reduction of margins that has taken place in Spain. Another factor cited was cost savings (economies of scope) as Spanish banks emulate in Latin America their Spanish model of retail banking. When it comes to risk reduction there were mixed opinions. Some of the interviewees cited the risks involved, while another mentioned that the negative correlation between the economic cycles in some Latin American countries and Spain allows some risk reduction.

### ***External factors***

Bailouts were mentioned as one of the main forces encouraging domestic consolidation. Deregulation and the creation of the euro were also reported as catalysts for consolidation. Expansion of domestic and international capital markets was also cited, stressing that it is a force for big banks that want to be players in these markets. The climate of capital markets was also mentioned as important because the current situation makes it easier to finance an acquisition. Nevertheless, it could also act as a discouraging factor because the quoted price of the target institution could be at a very high level. There were mixed opinions regarding technology issues. Technological developments are obliging financial institutions to invest large amounts and to think about new strategies, especially in the case of small institutions. But it was noted that technology is often mentioned for reasons of image, and that it is not encouraging consolidation.

Regarding cross-border consolidation (the acquisition of Latin American institutions), deregulation, privatisation and bailouts were mentioned as the most important forces. The institutionalisation of savings was included as relevant because it explains why Spanish banks have acquired sizeable Latin American private pension funds. Regarding technology issues, there were the same mixed opinions that have been noted previously. It was also underlined that the only actors in this process were the large institutions. The most important factor discouraging domestic consolidation mentioned was legal and regulatory constraints. This is because Spanish savings banks have a special legal status that makes it difficult for them to be acquired by commercial banks.

Legal and regulatory constraints were cited as a very important factor in the cross-border context – even at the European level – because regulation is still very fragmented and there are also some political issues. Nevertheless, it was pointed out that these constraints are less important when the target institution is not very big. Market inefficiencies and cultural constraints were also mentioned as meaningful issues, especially when they referred to the situation of some Latin American capital markets.

### ***Expectations for the future***

Every interviewee said that the Spanish banking system is currently consolidated and they did not expect more mergers and acquisitions between big institutions. Further consolidation will take place among the medium and small banks and within the savings bank sector. They agreed that cross-border consolidation in the European Union is expected to be very important in the next decade. Factors of growing importance will be the impact of the euro, increased globalisation and greater use of new technology. Market inefficiencies and regulatory constraints will become less important.

Some said that there will be more hostile mergers and acquisitions, and that the role of insurance companies will increase. It was also noted that the current cross-border alliances are likely to be the first place for future mergers, although alliances are difficult to manage and do not add value for shareholders. It was also mentioned that e-business will be crucial in the near future. Financial business will be done more and more by non-financial firms and vice versa. The first step has already taken place with alliances between banks and telecommunications companies. Those investments will only be profitable with a large customer base.

### **Sweden**

The interviews in Sweden were held with two major banks and one investment bank.

### ***Motives for consolidation***

Insiders in the industry commonly identified economies of scale as one of the main motives for consolidation. These have been realised through reductions in personnel, a flat organisation structure, decentralisation and the use of technology. Scaling up was also thought to be stimulated by shareholder pressures and by the shift to offering retail customers more comprehensive service and integrated asset and liability management. One relative outsider noted, though, that there would be limits to the benefits of sizing up further. If Scandinavian institutions were to grow much beyond their current medium size, diseconomies of scale might set in due to a dilution of control as well as cultural differences. Instead of economies of scale, empire building and psychological factors might be the main motives behind the current consolidation process.

No clear-cut distinction could be made between consolidation within segments and across segments because of the overriding presence of universal banking. However, it was noted that, if anything, wholesale operations are being scaled down as global enterprises have been lost to larger, non-Nordic institutions and the capital markets. The concomitant shift in activities from traditional lending to advice implied that the need to enhance the capital basis is no longer felt in the wholesale segment. In the context of cross-border consolidation, mention was made of revenue enhancement due to geographic expansion.

### ***External factors***

All interviewees mentioned technology as a relevant factor changing the financial landscape, though they judged its importance somewhat differently. One expert downplayed the general impact of technology on the financial sector, particularly the retail segment, because the scope to save costs is limited, for example, by the fact that customers attach value to having access to both the branch network and electronic distribution channels. In this view, technology did not much stimulate consolidation through increasing competition from niche players, since high customer loyalty, low margins and high cost efficiency among the incumbents make entry difficult. The other experts put more weight on technology because of the inherent scale economies. In this context, it was noted that since technology has become a competitive factor in its own right, looser forms of consolidation, such as joint ventures and strategic alliances, may no longer suffice as a foundation for collaboration between smaller or medium-sized financial institutions, thereby stimulating mergers.

Globalisation was thought to be a minor factor encouraging consolidation, mainly in asset management due to the institutionalisation of investment. Deregulation and privatisation were not regarded as important forces encouraging consolidation in the 1990s. Deregulation was completed mostly in the 1980s, while state ownership has been of a fairly passive nature. Legal constraints were identified as important forces discouraging consolidation. One example of a legal constraint was that mergers and acquisitions require the consent of a large majority of shareholders, far larger than needed to actually exercise control. Generally, cultural differences between firms were also thought to discourage consolidation. With regard to cross-border consolidation, the Norwegian policy of promoting national champions was seen as an obstacle to consolidation involving Norwegian institutions, while consolidation with Danish institutions has been made more difficult by the scattered and opaque structure of share ownership.

### ***Expectations for the future***

For the time being, consolidation is expected to continue on a regional scale. However, it was expected that once consolidation at the domestic level has advanced in the rest of Europe, Scandinavian institutions could become takeover targets by institutions from the European continent. The validity of the universal banking concept was generally upheld in the case of Scandinavia. It was thought that in medium-sized markets, such as Scandinavia, the benefits of one-stop shopping outweigh the commercial benefits of specialisation. One interviewee stressed the need to control distribution channels and maintain direct contact with customers. In any case, the high cost efficiency of the incumbents would continue to thwart entry, including entry by non-financial companies offering competing distribution channels.

### **Switzerland**

Four interviews were conducted in Switzerland. The interviewees were from two large globally operating financial services groups, a regional partially government-owned bank and an industry association.

### ***Motives for consolidation***

Cost savings attributable to increased size were strongest in retail market consolidation or when a smaller institution within the same segment was involved. Revenue enhancement due to increased size was not perceived to be a consolidation motive for small banks and reinsurance businesses, but was very important across segments among insurance, banking and asset management in view of the requirements of institutional investors. The ability to provide “one-stop shopping” was seen as a very important motive for across-segment consolidation between non-life insurance and banking and insurance and asset management. Increased product diversification and subsequent risk reduction was seen as an important factor for across-segment consolidation for the banks but not for large insurance companies. Reaping the benefits of a strong rating was seen as an important motive for acquirers in the banking sector, where traditionally solidity and trustworthiness were seen as valuable intangible assets to gain market share. Another motive for consolidation may be the ability to gain better ratings due to “too big to fail” considerations.

### ***External factors***

Technological developments were seen as a very important factor for consolidation. The interviewees of the large institutions considered the institutionalisation of savings as an important factor (ability to serve larger customers, ie institutional investors). Deregulation was deemed to be a very important factor but has its limits as a one-off effect. Privatisation was seen as moderately important and includes not only the privatisation of financial institutions but the emergence of new large customers as well. The climate of capital markets (eg low interest rates, low volatility in share prices, etc) was considered as a moderately important factor but mostly from the shareholder perspective.

Market inefficiencies in terms of information asymmetries were seen as a growing factor impeding consolidation, as high expectations about the gains from consolidation have often not been realised. Legal and regulatory constraints are considered important factors in cross-sector consolidation and were seen as even more important in cross-border than domestic cases. Cultural constraints were perceived by the representatives of the larger players to be manageable on a domestic level and therefore only a slightly important factor. For smaller banks, cultural impediments were important, especially across segments. Cross-border cultural constraints were seen as important when European companies were involved. Other important impediments included data protection issues and different stock exchange rules.

### ***Expectations for the future***

Economies of scale in information technology have been an important factor for consolidation in the past. Lower production costs lessen the importance of this factor. Changing customer needs towards convenience and returns, the emergence of large institutional investors due to the institutionalisation of savings and new large corporate customers due to privatisation may further revenue enhancement effects. Consolidation in Europe has so far mainly taken place within countries. After consolidation opportunities become scarce on a national level, more cross-border consolidation can be expected. Pressure from shareholders is expected to gain even more importance in the future. Although the effects due to market inefficiencies are not always straightforward, on balance this may result in a continuation of consolidation. The segmentation process in the industry may gain further momentum, whereas middle-sized companies are considered to be prone to consolidation. Deconstruction of institutions along production and distribution lines was seen as an important potential counterforce, especially in minimising costs of managing large and complex entities. In the Swiss domestic market a continuation of the privatisation process of the state-owned banks can be expected. This may further the potential for domestic consolidation.

## Annex II.2

### Interviews – technical appendix

To help gain a better understanding of the motives underlying and factors influencing the form and pace of consolidation in the financial services sector, members of the G10 Task Force on Causes of Financial Sector Consolidation conducted interviews with various market participants and experts in the G10 countries, Australia and Spain. Among the interviewees were representatives from the banking, insurance and investment banking sectors, as well as legal experts, consultants, trade associations and academics. The numbers and types of interviewees varied across countries.

For purposes of the interviews, consolidation was defined broadly to include all forms of cooperation, whether through formal mergers and acquisitions or looser arrangements such as distribution alliances and joint ventures. The interviewees were asked to focus on consolidation that has occurred since 1990 among major finance industry segments, which were defined as depository institutions, insurance companies, asset management companies, investment companies and other financial institutions.

In addition to providing a qualitative assessment of the consolidation process (including future expectations), participants were asked to rank a number of motives for consolidation, as well as forces encouraging and discouraging consolidation, using the scale shown below.

Rank	Assessment
0	Not a factor
1	Slightly important
2	Moderately important
3	Very important

In a number of cases respondents indicated that the value for a particular factor lay between two rank categories (eg 0-1). For purposes of quantitative comparisons, responses given as ranges were coded at the midpoint of the range (eg 0.5).

For each of the three major categories of questions (motives for consolidation, forces encouraging consolidation and forces discouraging consolidation), interviewees were asked to consider consolidation both within and across industry segments as defined above. The same questions were asked for both domestic and cross-border consolidation. Thus, for each factor the following grid was obtained:

	Within segments	Across segments
Domestic consolidation		
Cross-border consolidation		

There were a total of 45 respondents to the written questionnaires. Generally speaking, a smaller number of responses were given for consolidation across industry segments compared with rankings assigned for consolidation within industry segments. In a number of cases, respondents assigned the same rankings to factors motivating or encouraging consolidation across industry segments as they did to the same factors regarding within-industry consolidation; thus, comparisons along these lines would not be meaningful. The sample size also is too small to permit meaningful comparisons based on the type of institution or firm size. Nonetheless, the bulk of the interview results provide very illustrative and consistent information on the consolidation process in the financial sector.

As for the rows of the response grid for each factor, a larger number of respondents provided rankings for domestic consolidation than for cross-border consolidation. In most instances, those respondents declining to provide rankings for cross-border factors cited the limited amount of cross-border consolidation that has taken place thus far. In many cases, however, the rankings given for cross-border consolidation result in fairly similar frequency distributions as for domestic consolidation, but are based on a smaller numerical count.

Note that missing values are not included in any of the calculations. Thus, for example, if only 41 of the 45 respondents provided rankings for a given factor, frequency tabulations for that factor are based on a numerical count of 41. Details shown in the charts may not sum to 100% due to rounding.

The interviews were conducted on the basis of a common interview guide, which listed the following factors.

<b>List of factors</b>		
<b>Motives for consolidation</b>	<b>Forces encouraging consolidation</b>	<b>Forces discouraging consolidation</b>
Cost savings attributable to <ul style="list-style-type: none"> <li>– increased size (economies of scale)</li> <li>– product diversification (economies of scope)</li> </ul>	Technology: <ul style="list-style-type: none"> <li>– information and communications</li> <li>– financial innovation</li> <li>– electronic commerce</li> </ul>	Market inefficiencies
Revenue enhancement <ul style="list-style-type: none"> <li>– due to increased size (ability to serve larger customers)</li> <li>– due to product diversification (ability to provide “one-stop shopping”)</li> </ul>	Globalisation: <ul style="list-style-type: none"> <li>– expansion of domestic and international capital markets</li> <li>– trade in non-financial products</li> <li>– institutionalisation of savings</li> <li>– creation of the euro</li> </ul>	Legal and regulatory constraints
Risk reduction due to product diversification	Deregulation	Cultural constraints (cross-firm and cross-segment)
Change in organisational focus	Privatisation	Deconstruction (breaking up of institutions into more specialised units)
Increased market power	Bailouts or financial conditions of firms	Outsourcing
Managerial empire building and retrenchment	Climate of capital markets	Internet



## **Annex II.3**

### **Chronological list of key regulatory changes**

#### **Australia**

- **1979.** An open tender system allowing the market to determine the prices of Commonwealth Government securities was introduced.
- **1980.** Interest rate ceilings on all bank deposits were removed.
- **September 1981.** The practice of issuing credit directives governing the growth of banks' lending ceased.
- **December 1983.** The Australian dollar was floated and exchange controls were lifted.
- **1984.** The Reserve Bank established a banking supervision unit.
- **September 1984.** Access to the Australian banking market was opened to foreign banks.
- **May 1985.** The Liquid and Government Securities Convention (which had required banks to hold around one-fifth of their assets in government securities) was replaced with a prudentially focused Prime Assets Ratio.
- **April 1986.** The last interest rate control, a cap on the rate for owner-occupied housing loans, was lifted.
- **1986.** Employer-provided superannuation contributions began to be incorporated into the employment contracts covering a range of private sector industries.
- **1987.** The Insurance and Superannuation Commission was established.
- **May 1990.** The Commonwealth Government stated that mergers would not be permitted among any of the four major banks or two or three major life insurance institutions (the so-called "six pillars" policy).
- **1991.** The Commonwealth Government introduced a mandatory system for employer contributions.
- **February 1992.** The Government removed the restriction on the number of foreign banks and allowed such banks to operate as a branch and/or a subsidiary.
- **1992.** The state-based regime of supervision of building societies and credit unions was unified under the Australian Financial Institutions Commission.
- **1995.** The Commonwealth Government enhanced incentives for employee contributions to superannuation.
- **March 1997.** The Financial System Inquiry (known as the Wallis Committee) released its Final Report.
- **April 1997.** The "six pillars" policy was ended. At the same time, the Commonwealth Government indicated that it will not approve mergers between the four major banks until it is satisfied there has been a sufficient strengthening of competition in the Australian banking market (the "four pillars" policy).
- **July 1998.** An integrated prudential regulator, the Australian Prudential Regulation Authority (APRA), was established.

## Canada

- The **1954** Bank Act amendments allowed banks to enter and compete for household loans.
- The **1967** amendments further enhanced competitive pressures. A ceiling (6%) on interest rates was eliminated; banks were permitted to finance residential mortgages; and deposit insurance for banks and trust and mortgage loan companies was introduced. However, banks were prohibited from owning trust companies and a 10% ownership limit was imposed on shares of banks.
- The **1980** amendments allowed foreign banks to establish subsidiaries in Canada. (The aggregate size restrictions were removed in 1989 for US banks as part of the Canada-US Free Trade Agreement, in 1994 for Mexican banks as part of NAFTA and in 1995 for the rest of the foreign bank subsidiaries). The Canadian Payments Association (CPA) Act was passed and the CPA took over cheque clearing from banks.
- In **1987**, restrictions which kept banks out of the securities industry (the Canadian equivalent to the Glass-Steagall Act) were eliminated. From June 1987, there were no limits on investments in securities firms by Canadian financial institutions; and non-residents were permitted to own up to 50% of a securities firm (100% from 1988).
- In **1992**, cross-ownership restrictions on financial institutions were eased and business powers were broadened. Corporate governance and rules associated with self-dealing and conflict of interest were strengthened. Federal financial institutions were allowed to diversify into new financial businesses and into limited non-financial services; reserve requirements on banks were phased out to offer a level playing field.
- In **1997**, the government announced its intention to allow foreign banks to branch directly into Canada.
- In **1998**, legislation and regulations were introduced to allow all federally regulated mutually owned life insurance companies to convert to public stock companies.
- In **1999**, the legislation and regulations required to allow foreign banks to establish specialised, commercially oriented branches in Canada were introduced and passed.
- In **2000**, the government introduced legislation to create financial holding companies, to relax the widely held ownership rule for large financial institutions, and to allow close holding of small- and medium-sized financial institutions, including banks. The initiative included non-legislative guidelines for the review of merger proposals among major banks.

## Continental Europe

### *France*

- **1980**. Implementation of the first banking directive.
- **1982**. All major banks are nationalised.
- The **1984** Bank Act allows the emergence of universal banks.
- In **1987** and **1993**, privatisation of several banks including Banque Nationale de Paris.
- **1989**. Implementation in French law of the second banking directive (89/646).
- **1990**. The liberalisation of capital movements is completed (Article 67 of the EEC Treaty).
- **1995**. Implementation of the deposit insurance directive (94/19).

### *Germany*

- **1973.** Most capital controls are dismantled.
- **1978.** Implementation of the first banking directive. The first banking directive adopted in 1977 established the minimum requirements for licensing and supervising banks (the so-called credit institutions) and was a first step towards the principle of home country supervision. The requirements for licensing relied on two major criteria, namely a minimum capital requirement and reputable and experienced management (“fit and proper”).
- **1992.** Implementation of the second banking directive (89/646). This directive, adopted by the Council of Ministers in June 1989, introduces the so-called single banking licence (“European passport”). The latter issued by the home country enables any bank to establish branches or subsidiaries or to offer a wide range of services in another EU country.
- **1994.** Money market funds are permitted.

### *Italy*

- **1983.** Elimination of credit ceilings.
- **1985.** Implementation of the first banking directive.
- **1990.** Liberalisation of banks’ branching.
- **1990.** Foreign exchange and capital controls are eliminated by May 1990.
- **1992.** Elimination of floor prices on government bonds.
- **1993.** Implementation of the second banking directive. Foreign banks are permitted, the demarcation line between short-term and long-term lending banks is abolished.
- **1993-94.** Privatisation of Credito Italiano and some other publicly owned banks.

### *Japan*

- **1979, May.** The deposit interest rate is deregulated for negotiable certificates of deposit (CDs) of JPY 500 million and above and with a maturity of three to six months.
- **1983, April.** Banks started to retail public bonds.
- **1984, January.** The minimum CD size with deregulated interest rates was set at JPY 300 million. (Between January 1984 and 1994, gradual liberalisation on deposit interest rates on various deposit instruments proceeded.)
- **1984, May.** “Real Demand Principle” in foreign exchanges was abolished. Current and capital accounts are completely liberalised.
- **1984, June.** Banks started to deal public bonds.
- **1986, February.** Treasury Bills were introduced.
- **1986, December.** Tokyo Offshore Markets opened.
- **1986.** Asset (pension fund) management companies were allowed to be established by banks as subsidiaries.
- **1987, November.** Banks and securities firms started to deal in CDs.
- **1987, November.** Auctions were introduced in 10-year bond issues.

- **1988**, May. Banks started to deal securities futures and securities firms started to deal financial futures.
- **1992**, June. A law was passed (to be enacted in 1993): banks would be allowed to establish a subsidiary for securities business with limited scope of business; banks and securities firms would be allowed to establish trust banking subsidiaries with limited scope of business. Between 1993 and 1996, 19 securities subsidiaries were established by banks. Between 1993 and 1995, 17 trust banking subsidiaries were established by banks and securities firms. Banks would be allowed to set up investment trust management companies.
- **1995**, May. A law was passed (to be enacted in 1996): life insurance companies would be able to establish non-life subsidiaries, and non-life insurance companies would be able to establish life subsidiaries.
- **1998**. Insurance premiums for non-life insurance policies, such as auto, fire and casualty, were deregulated.

### United Kingdom

- The **1979** Banking Act gave formal responsibility for supervision to the Bank of England. Prior to that the Bank had traditionally exercised informal banking supervision powers.
- The **1979** Credit Unions Act provided a statutory framework for the incorporation and regulation of credit unions – small mutual banks serving members.
- The **1982** Insurance Companies Act provides the regulatory framework for authorisation and prudential supervision of companies carrying on insurance business. An important subsequent amendment was to change the framework so as to comply with requirements of EU Directives on life and non-life insurance business. Some requirements under the Act affect Lloyd's of London – though that is largely self-regulated with underpinning from successive Lloyd's Acts.
- The **1986** Building Societies Act gave societies a legal framework and established the Building Societies Commission with regulatory responsibility. It also provided a legal means for societies to convert from mutual to plc status. The 1986 Act was prescriptive about societies' powers, but these restrictions have largely been removed by the 1997 Act, so societies now have (almost) as much freedom as banks.
- The **1986** Financial Services Act created a two-tier system that split regulatory responsibility between the Securities and Investments Board (SIB) and the Self Regulatory Organisations (SROs), together with the Recognised Professional Bodies (RPBs). The SIB and SROs had the primary responsibility to deliver the standards of regulation, supervision and investor protection required by the Financial Services Act. This structure was intended to be sufficiently flexible to respond to the regulatory needs of the various financial market sectors.
- The **1986** "Big Bang" reforms saw extensive deregulation of the City. Anticompetitive practices that had restricted the entry of new participants into London's markets were abolished.
- The **1987** Banking Act enhanced the supervision of banks, including the establishment of a Board of Banking Supervision. The Act also reflected the establishment of a single European market in banking, with recognition of home state responsibility for supervision.
- The **1992** Friendly Societies Act established the Friendly Societies Commission with regulatory responsibility.

- In **1997** the SIB became the FSA. The functions of the SROs and RPBs will be exercised by the FSA. The objectives were to reform the institutional architecture to bring regulation and supervision closer to the changing structure of the financial industry, to introduce clearer responsibilities and accountability, and to reduce complexity whilst reducing compliance costs. The FSA regulates and authorises all financial business including unit trusts and OEICs, and recognises and supervises all investment exchanges and clearing houses.
- In **1997** a memorandum of understanding between HM Treasury, the Bank of England and the FSA set out their respective roles in the area of financial stability and established a framework for accountability, transparency and information exchange, including for support operations. The Bank of England is responsible for the overall stability of the financial system.
- The **1998** Bank of England Act passed responsibility for banking regulation from the Bank of England to the FSA on 1 June 1998.
- The **2000** Financial Services and Markets Act will give the FSA a series of enabling powers to allow it to act as it considers appropriate in particular cases. The Act also places a number of obligations on the FSA eg to consult on proposed rules and to publish cost-benefit analyses to ensure proportionality.

Other relevant pieces of UK legislation not specifically targeted at the financial services sector include the Companies Act 1989. The European Union is another source of regulation through various directives such as the Investment Services Directive and the Capital Adequacy Directive.

## United States<sup>43</sup>

### *Banking*

- **1980.** The Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMCA) phased out deposit interest rate ceilings, expanded the powers of thrift institutions, and increased the limit of deposit insurance from USD 40,000 to USD 100,000.
- **1982.** The Garn-St. Germain Depository Institutions Act of 1982 authorised money market deposit accounts and net worth certificates for thrifts. It also relaxed restrictions on commercial lending by thrifts. The law loosened other lending restrictions as well.
- **1987.** The Competitive Equality Banking Act of 1987 (CEBA) recapitalised the thrift insurance fund and made other provisions to protect certain depository institutions.
- **1987-96.** In 1987, The Federal Reserve Board permitted bank holding companies to exercise limited underwriting and dealing powers with four types of debt in “Section 20” subsidiaries. The revenue generated by these activities could not exceed 5% of the organisation’s total revenues. The powers granted to bank holding companies were increased over the years to include more types of debt securities and equity securities. Moreover, the revenue limit was raised to 10% in 1989 and further to 25% in 1996.

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<sup>43</sup> The primary source for changes in banking legislation is the *FDIC Banking Review*, Volume II, No 1, 1998. Securities information comes from several sources including “Securities Underwriting” by Samuel L Hayes, III; Andrew D Regan, in *Financial Services* edited by Samuel L Hayes, III, 1993; and a conversation with Mike Schoenfeld of the Federal Reserve Board.

- **1989.** The Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) authorised the use of taxpayer funds to resolve failed thrifts. The act also eliminated the existing thrift regulatory structure, gave FDIC control of thrift deposit insurance, and set deposit insurance reserve levels.
- **1991.** The Federal Deposit Insurance Corporation Improvement Act of 1991 (FDICIA) was designed in large part to restrict discretion in monitoring and resolving problems in the thrift industry.
- **1990s.** Most, if not all, individual state legislatures loosened restrictions on intrastate branching. States also passed legislation allowing increasing levels of interstate banking. In other words, bank holding companies had an increasing number of options regarding potential acquisition targets.
- **1994.** The Riegle-Neal Interstate Banking and Branching Efficiency Act of 1994 permitted banks to engage in interstate banking and interstate branching.
- **1999.** The Gramm-Leach-Bliley Act of 1999 substantially expanded powers for qualifying bank holding companies by repealing existing restrictions on affiliations with insurance companies and securities firms. Also, firms that met certain criteria could engage in a broad array of other financially related activities.

#### *Securities*

- **1975.** The Securities and Exchange Commission (SEC) abolished fixed rate brokerage commissions, whereby brokers had charged a fixed rate per share traded. After this change, brokers were free to set the level of their commissions and negotiate with customers regarding fees.
- **1982.** Securities and Exchange Commission (SEC) Rule 415 of the Securities Act of 1933 was introduced in 1982 to enable firms to use shelf registration, which permits certain firms to register predetermined amounts with the SEC for sale to investors at some undetermined time in the future.
- **1987-96.** Section 20 subsidiaries of bank holding companies (see above).
- **1990.** Rule 144A of the Securities Act of 1933 was adopted by the SEC in 1990 to liberalise and enhance the liquidity of the private placement market.
- **1999.** Gramm-Leach-Bliley Act (see above).

#### *Insurance*

- **1999.** Gramm-Leach-Bliley Act (see above).

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## Chapter III

### Effects of consolidation on financial risk

#### 1. Introduction

This chapter considers the potential implications of financial consolidation for financial risk. Financial risk is defined to encompass both individual financial institutions and a systemic financial crisis.

The chapter's objective is to assess the impact of *consolidation* on risk, *not* to judge whether consolidation in combination with *other developments* has led to a net change in the risk of either individual financial institutions or the financial system. Indeed, it is possible to argue that the probability that a given shock will either threaten the solvency of a particular firm or develop into a systemic event has, on net, declined over the last decade. Many of the reasons for such a judgement, such as regulatory reforms designed to increase bank capital and reduce moral hazard, and the development of efficient markets for a variety of financial instruments, probably have little to do with consolidation per se. Others, such as increased geographic diversification, may have resulted substantially from consolidation. In both cases, this chapter attempts to isolate the "partial" implications of financial consolidation.

As the previous paragraph suggests, the objective of isolating the effects of consolidation is much easier to state than to achieve. Consolidation, as discussed in Chapter II, is but one of several powerful forces causing change in the financial system, and each of these forces affects and is affected by the others.

The chapter begins by specifying a working definition of systemic financial risk (Part 2). The primary objective is to provide a common analytical framework for evaluating the potential impacts of consolidation. This definition is used throughout both the chapter and the broader study. It emphasises losses of economic value or confidence, as well as the probability of significant adverse effects on the real economy, as defining characteristics of systemic risk. It also argues that the possibilities for negative real economic effects generally arise from disruptions to the payment system and to credit flows, and from the destruction of asset values. However, it should be noted that the systemic risk aspects of the payments system are not discussed in this chapter, as this topic is covered in Chapter VI.

Once systemic risk is defined, the potential implications of financial consolidation on individual firms and systemic risk are discussed for three separate geographic regions: the United States, Europe and Japan (Parts 3, 4, and 5). Annexes focus on the potential effects of consolidation on systemic risk management in Canada and on the possible effects of strategic alliances on financial risk. The geographic distinctions were chosen in large part because each region has distinct economic characteristics, including the structure of its financial system, its position in the macroeconomic cycle, and the nature of its ongoing financial consolidation. These characteristics could significantly influence the ways in which consolidation is affecting and will affect financial risk. Each geographic section is organised in a similar manner, although the authors were given considerable latitude to pursue issues most relevant to their area.

The discussion of individual firm risk focuses on the question: Can we make a judgement regarding whether consolidation has led or will lead to financial institutions that are more or less risky on a standalone basis?

The discussion of systemic risk begins by considering whether financial consolidation has, or is expected to lead to the creation of a new class of firms that are too big to fail, liquidate, or

discipline effectively. The analysis of systemic risk then reviews the potential effects of consolidation on key characteristics of economic “shocks” that may become a systemic event. These characteristics include: (i) “direct” interdependencies between firms and markets through interfirm on- and off-balance sheet exposures, (ii) “indirect” interdependencies through correlated exposures to non-financial sectors and financial markets, and (iii) the degree of transparency of firms and markets, including the role played by market discipline. For example, consolidation could affect firms’ direct interdependencies through the interbank market by reducing the number of players and counterparties. Consolidation could also affect firms’ indirect interdependencies by encouraging greater reliance on markets for funding as well as by encouraging increasingly similar investment objectives; both could result in an increase in the correlation of firms’ exposures. Finally, consolidation may induce firms to undertake larger cross-border and cross-product activities that may increase their complexity, thereby affecting their transparency to markets and regulators. Where relevant, both domestic and cross-border effects are discussed. In addition, the importance of both institutions and markets is emphasised.

The final portion of each geographic section identifies the key areas of policy concern raised by the previous discussion. As is the case with other portions of the study, specific policy recommendations are not the objective. Rather, identification and perhaps prioritisation of the most important concerns are sought.

## 2. A working definition of systemic risk

*Systemic financial risk* is the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on the real economy. Systemic risk events can be sudden and unexpected, or the likelihood of their occurrence can build up through time in the absence of appropriate policy responses. The adverse real economic effects from systemic problems are generally seen as arising from disruptions to the payment system, to credit flows, and from the destruction of asset values.

Two related assumptions underlie this definition. First, economic shocks may become systemic because of the existence of negative externalities associated with severe disruptions in the financial system. If there were no spillover effects, or negative externalities, there would be, arguably, no role for public policy. In all but the most highly concentrated financial systems, systemic risk is normally associated with a contagious loss of value or confidence that spreads to parts of the financial system well beyond the original location of the precipitating shock. In a very highly concentrated financial system, on the other hand, the collapse of a single firm or market may be sufficient to qualify as a systemic event. Second, systemic financial events must be very likely to induce undesirable real effects, such as substantial reductions in output and employment, in the absence of appropriate policy responses. In this definition, a financial disruption that does not have a high probability of causing a significant disruption of real economic activity is not a systemic risk event.

This definition is consistent with most of the definitions of systemic risk proposed in the literature.<sup>44</sup> However, this definition is stricter than most because it explicitly requires (i) that the negative externalities of a systemic event extend to the real economy, and (ii) that this is highly probable to occur. The emphasis on real effects reflects the view that it is the output of real goods and services and the accompanying employment implications that are the primary concerns of economic policymakers.

Financial institutions and markets can be hit by shocks that originate in the real sector, in financial markets, or from within the financial industry. When considering a financial shock,

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<sup>44</sup> See Kaufman (1999) and the Bank for International Settlements (1992).

and whether it may have systemic potential, it is useful to distinguish between *impact* and *transmission* effects. In addition, the *width* of a shock can be defined as the fraction of firms (in terms of their market share) or markets simultaneously affected at impact. The *depth* of a shock can be defined as the fraction of firms or markets subsequently affected by the shock during the transmission phase. Thus, a systemic financial risk event can be viewed as a shock whose impact and transmission effects are wide and deep enough to severely impair, with high probability, the allocation of resources and risks throughout the financial and real economic systems.

Once a financial event has become systemic, effects on the real economy are generally thought to occur potentially through three channels. First, payment system disruptions, including bank runs, may cause the failure of illiquid but solvent firms. Second, disruptions in credit flows may create severe reductions in the supply of funds to finance profitable investment opportunities in the non-financial sector. Third, collapses in asset prices, perhaps induced by a drastic decline in the aggregate money supply caused by bank runs or by a general decline in the liquidity of financial markets, may induce failures of financial as well as non-financial firms and households, and decrease economic activity through a decline in wealth and an increase in uncertainty.

Most systemic crises that have occurred in G10 and other countries in the past 50 years have exhibited at least one of the defining characteristics of systemic risk events just discussed. In addition, the economic significance of the real effects of systemic banking problems is witnessed by the large costs that have been associated with the resolution of banking crises and wind-downs of banking organisations. Such costs have been estimated to range from an average of about 4% of GDP in developed countries to an average of about 9% in developing economies.<sup>45</sup>

### **3. Effects of consolidation in the United States**

This section discusses the potential effects of financial consolidation on the riskiness of individual US financial firms and on the potential for a negative economic shock, either financial or real, to become a systemic financial event in the United States.

#### **Risk of individual financial institutions**

This subsection focuses on the effects of three types of consolidation on the risk of individual financial institutions: (i) consolidation of large banking organisations in the United States, (ii) universal-type consolidation between US banking organisations and other types of US financial institutions, such as investment banks or insurance companies, and (iii) international consolidation involving US banking organisations. While not a comprehensive list, it covers the significant combinations involving those large US banking organisations that may impose substantial burdens on the safety net and whose failures may have systemic consequences.

The main topics covered are how consolidation may affect the risk of these institutions by altering their (a) geographic diversification, (b) product diversification, (c) managerial efficiency, (d) operating risk, and (e) market power rents. Before proceeding, an analytical framework that links these topics to the risk of an individual financial institution is outlined.

Under the so-called Altman z-score model, risk is measured as the number of standard deviations an institution's earnings must drop below its expected value before equity capital is

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<sup>45</sup> See Caprio et al (1998), Caprio and Kinglebiel (1997) and Lindgren, Garcia and Saal (1996).

depleted.<sup>46</sup> Although this framework has its limits, it is useful to think of the contributions to risk in terms of factors that affect expected earnings (returns), the variation in earnings, capital, and the institution's trade-off along the efficient risk-return frontier.<sup>47</sup> For example, managerial efficiency and market power rents contribute primarily to expected earnings, whereas geographic diversification, product diversification, and operating risk primarily contribute to the variation in earnings.

It is important to recognise the endogeneity of the location of the efficient risk-return frontier, the choice of the point on the frontier, and equity capital  $k$ . That is, the changes in expected earnings and variations in earnings brought about by consolidation through altering managerial efficiency, market power, geographic and product diversification, and operating risk may be thought of as pushing in or out the efficient frontier. For example, a reduction in risk may raise future earnings and contribute to capital through retained earnings because a safer banking organisation may pay lower risk premiums on debt and other contingent claims, have reduced regulation or supervision costs and an increased capacity to issue credible financial guarantees. Furthermore, as discussed below, the improved geographic diversification brought about by bank mergers and acquisitions (M&As) tends to shift up the efficient frontier (ie lowers variations in earnings for given expected earning), but also tends to be accompanied by a shift into higher earnings, riskier lending (ie raises both expected earnings and variations in earnings).<sup>48</sup> Research also suggests that increases in market power rents increase franchise value, shift up the frontier, and tend to bring about safer lending and increased equity capital.<sup>49</sup>

### ***Geographic diversification***

To examine the risk implications of geographic diversification, this section focuses on theory and empirical evidence on the first and third main types of consolidation involving large banking organisations – consolidation of large banking organisations in the United States (first subsection) and international consolidation of US banking organisations (second subsection).

#### *Geographic risk diversification effects of the consolidation of large US banking organisations*

Consolidation of US banking institutions often involves geographic diversification, as institutions expand into new local markets. Geographic consolidation may diversify risks because the returns on loans and other financial instruments issued in different locations may have relatively low or negative correlations.

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<sup>46</sup> To illustrate, let  $\mu$   $\equiv$  expected earnings,  $\sigma$   $\equiv$  standard deviation of earnings, and  $k$   $\equiv$  capital. The z-score  $\equiv (\mu+k)/\sigma$  is the number of standard deviations below the mean earnings that just wipes out capital. Under standard economic theory, a firm trades off between higher expected earnings and lower variation of earnings along its  $\mu$ - $\sigma$  efficient frontier, as well as choosing its capital  $k$ . For a recent empirical analysis of the cross-sectional relationships between a z-score measure of insolvency risk, charter value and bank size, see De Nicoló (2000).

<sup>47</sup> The z-score may be inadequate for measuring the risk of failure, since the extreme negative tail of the earnings distribution may not be well approximated by just the mean and standard deviation of the distribution.

<sup>48</sup> We also note the possibility that diversification can increase financial institution risk. An institution's risk may increase if the additional assets have low expected returns, low capital or high variation of returns (Haubrich 1998). In addition, the expanded institution may choose to take on more risk, for example, by reducing loan monitoring (Winton 1999).

<sup>49</sup> See Keeley (1990). Another potential effect of consolidation on risk not treated here regards the abilities of a firm to engage in credit risk and market risk modelling. On the one hand, lower fixed costs of implementation induced by consolidation may help a firm to push up its  $\mu$  -  $\sigma$  efficient frontier and to choose capital  $k$  more efficiently. On the other hand, risk modelling might be harder for consolidated institutions involved in a broader range of activities, since the complexity of risk modelling might rise substantially, and appropriately aggregating the risks associated with each activity may be quite difficult.

Table III.1 gives information about the distribution of bank earnings across geographic regions in the United States. The table shows the means and correlations of bank earnings, as measured by return on equity (ROE), across the eight regions of the United States defined by the Bureau of Economic Analysis over the period 1979-98. These data suggest very strong diversification possibilities from cross-regional consolidation that may shift up the efficient risk-return frontier. Bank earnings in many region pairs, particularly when the regions are non-contiguous, have fairly low correlations, including one negative correlation. Consistent with these data, research generally finds that larger, more geographically integrated institutions tend to have better efficient frontiers.<sup>50</sup>

There is also some evidence regarding bank M&As that bears on this issue. Acquiring banks tend to bid more for targets when the M&A would lead to significant diversification gains, consistent with a motive to diversify risks.<sup>51</sup> Studies have also found that M&As tend to improve profit X-efficiency,<sup>52</sup> and that this improvement could be linked to an increased diversification of risks.<sup>53</sup> After consolidation, institutions tend to shift their asset portfolios from securities to loans, to have more assets and loans per dollar of equity, and to raise additional uninsured purchased funds at reduced rates. This evidence is consistent with a more diversified portfolio that allows institutions to shift to a higher risk-return frontier. Other studies that do not directly focus on M&As have found consistent results.<sup>54</sup>

This research suggests that consolidation of banks within the United States is likely to lead to reductions in risk due to geographic diversification. However, to the extent that larger organisations tend to take on larger risk exposures to individual obligors or industries, or tend to take part of the diversification gains as the opportunity to make higher risk investments, the reductions in total risk may be offset.<sup>55</sup>

#### *Geographic risk diversification from international consolidation*

There may be greater risk diversification benefits, on average, from cross-border consolidation than from within-nation consolidation, because nations can differ greatly in their macroeconomic cycles and their monetary and fiscal policies.

Unfortunately, there is little research that tests whether this potential for diversification benefits has been exploited. Correlations of bank returns on equity across nations suggest strong diversification possibilities for US banking organisations venturing abroad. Banks headquartered in the United States tend to be more profit-efficient than other banks both at home and in other nations. Most of the US efficiency advantage is on the revenue side of the income statement, rather than the cost side. Although it is difficult to disentangle the causes of these efficiencies, the results are consistent with the hypothesis that at least some US banks have been successful in taking advantage of international risk diversification.<sup>56</sup>

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<sup>50</sup> See eg McAllister and McManus (1993), Hughes, Lang, Mester and Moon (1996 and 1999), Demsetz and Strahan (1997) and Hughes and Mester (1998).

<sup>51</sup> See Benston, Hunter and Wall (1995).

<sup>52</sup> X-efficiency measures how close the performance of a firm is to the performance of a best-practice firm facing the same exogenous conditions.

<sup>53</sup> See Akhavein, Berger and Humphrey (1997) and Berger (1998).

<sup>54</sup> See Berger and Mester (1999) and Hughes, Lang, Mester and Moon (1999).

<sup>55</sup> Note that some of these gains from geographic diversification of risks may be achieved without consolidation. Institutions may engage in cross-regional lending or investments, or buy and sell financial instruments in national secondary markets (eg mortgage pools, securitised commercial loans and derivatives).

<sup>56</sup> See Berger, DeYoung, Genay and Udell (2000).

### ***Product diversification***

For analysing the effects of product diversification, the focus is on evidence regarding universal-type consolidation, where the change in product mix is most substantial. Universal-type consolidation may diversify risks (ie lower variations in earnings for given expected earnings) because the returns across different financial services industries may be less highly correlated than the returns within a single industry alone. However, consolidation with other types of financial firms could increase the risk of a banking organisation (ie raise variations in earnings for given expected earnings) if the other activity has low expected earnings, high variation of earnings, or a low capital ratio.

Again, there is relatively little research on this topic. Some simulation-type studies combine the rates of return earned by different types of assets in US institutions and mostly find relatively limited potential for diversification benefits.<sup>57</sup> A study of US banks and bank holding company securities affiliates similarly found very limited diversification benefits.<sup>58</sup>

### ***Managerial efficiencies***

To examine the managerial efficiency implications of consolidation, this section reviews evidence on all three of the main types of consolidation – consolidation of large banking organisations in the United States, universal-type consolidation and international consolidation of US banking organisations.

The consolidation of banking organisations can create cost scale efficiency gains through such effects as spreading fixed costs over more units of output, taking better advantage of technology, and issuing securities in larger sizes. Alternatively, consolidation may result in cost scale efficiency losses by creating organisational diseconomies in managing the larger organisation. Most empirical research has found that the average cost curve in the United States has a relatively flat U-shape, with medium-sized banks slightly more cost scale efficient than either large or small banks. For a detailed review of the evidence on scale economies, see Chapter V.

Universal-type consolidation may create the potential for changes in scope efficiency, or how well joint producers perform relative to specialists under the same exogenous conditions. Cost scope efficiency gains from consolidation may for example occur through sharing physical inputs, information systems, or databases. As noted in Chapter V, research on scope efficiency within a single category of financial institution in the US usually finds very little evidence of substantial cost scope economies or diseconomies within the financial sector.

International consolidation may involve any or all of scale, scope, or X-efficiency effects. As noted in Chapter V, limited research suggests some international diffusion in efficiency.

### ***Operating risk***

The term “operating risk” is a somewhat ambiguous concept that can have a number of definitions. Here the focus is on risks created because senior management cannot fully monitor and control its employees, creating the possibility of losses due to “mistakes” such as operating errors, fraud, crime, and unintended credit and market risks. The potential effects of consolidation on the operating risk of financial institutions is of concern because operating failures can quickly create losses that affect an institution’s financial condition. Nonetheless, operating risk is the least understood and least researched contributor to financial institution risk. Also, operating failures occur relatively infrequently, and data on the internal operations of

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<sup>57</sup> See eg Kwast (1989), Rosen, Lloyd-Davies, Kwast and Humphrey (1989), Boyd, Graham and Hewitt (1993) and Saunders and Walter (1994).

<sup>58</sup> See Kwan (1997).

a financial institution are typically not publicly available. Studies of bank risk and failure typically use balance sheet and income statement ratios, which are not useful indicators of financial institutions' internal operations.

However, it is reasonable to conjecture that operating risk might increase with all three of the main types of consolidation, *ceteris paribus*.<sup>59</sup> For consolidation of large banking organisations in the United States, the potential for managerial inefficiencies in operating and monitoring the institution arising from the organisational diseconomies associated with size and geographic distance also apply to operating risk.

As the organisational and geographic distance between senior management and individual employees grows, additional layers of management and policies and procedures tend to replace direct supervision, and may reduce managerial control. The disruptions from the M&A process itself may also contribute to difficulties in supervising employees who may not perform exactly as intended by management.<sup>60</sup> These same problems in monitoring and controlling employees who may create operational problems might occur for universal-type consolidation. Organisational diseconomies might be relevant for universal banks if senior management teams stray from their areas of core competency. International consolidation may create the same types of organisational difficulties in controlling operating risks as domestic consolidation. The larger distances and differences in time zones associated with operating international organisations may exacerbate these problems. Also, differences in language, culture and regulatory/supervisory structures faced by foreign affiliates may make it even more difficult to monitor and control employees who may create operating failures.

### ***Market power rents***

If consolidation increased a firm's market power, the resulting increase in franchise value, equivalent to an increase in capital, could lower the firm's risk profile. Indeed, such a view seemed to underlay restrictions on competition, such as severe limitations on intra- and interstate banking, that prevailed in the United States over much of the 20th century. In the long run, however, it may well be that a competitive and flexible banking and financial system is more stable.

In any event, research suggests that consolidation of US banking organisations has had and is likely to have only minor effects on market power for three reasons. First, most types of M&As do not increase local market concentration significantly, and local markets are where market power rents are most likely to occur. Second, antitrust authorities and potential market entrants are likely to restrain the exercise of substantial market power. Third, deregulation, advances in applied finance and technological change may be increasing the degree of competition in local banking markets.<sup>61</sup>

### ***Conclusions***

Existing research suggests some potential for both reductions and increases in the risks of individual US financial institutions from consolidation, and thus no unambiguous conclusion can be drawn. The greatest potential for risk reduction appears to be from geographic

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<sup>59</sup> As with other types of risk, technological improvements in risk management may offset potential increases in operating risk. Again, the discussion here is focused on the partial effects of consolidation.

<sup>60</sup> As it becomes more difficult to monitor and control individual employees, risks from operating errors, problems in monitoring the credit risk of counterparties and difficulties in monitoring intraday credit exposures in the payment system (eg Herstatt risk) might be more severe for large merged institutions. In addition, unintended overexposures to one industry, one nation, or one region (eg East Asia in 1997) fraudulent or criminal activities, and large, unauthorised or unwise positions in financial markets might all be more likely to occur.

<sup>61</sup> See Chapter V for a more comprehensive discussion of the effects of consolidation on competition.

diversification of risks from the consolidation of large banking organisations in the United States and (especially) international consolidation of US banking organisations. Some limited benefits from product diversification may also occur as a result of universal-type consolidation. Modest managerial efficiency gains are also possible from all three types of consolidation, which could lower risk by increasing expected returns, pushing up the efficient risk-return frontier, and providing more of a buffer against variation in returns. However, the managerial efficiency benefits appear to be less likely for universal-type consolidation, which could create scope diseconomies if managers stray too far from their areas of core competence. Because it does not appear likely that consolidation has led to systematic increases in market power in the United States, any resulting economic rents are unlikely to have had substantial effects on individual bank risk.

Increases in risk from consolidation might arise from operating risks due to the difficulty of monitoring and controlling the actions of individual employees in the consolidated organisations. This potential for harm might be more likely for universal-type and international consolidation, where there are greater organisational and geographic distances between senior management and employees. Organisations might be vulnerable to this kind of risk through operating error, failure to monitor credit risks and risk concentrations, fraudulent or criminal activities, or through exposures to unintended market risk. Yet, advances in risk management techniques brought about by technological progress may counterbalance the potential for an increase in operating risk following consolidation.

### **Systemic risk**

In the United States, concerns regarding systemic risk have focused traditionally on the implications of bank deposit runs for the payment system, the money supply and financial intermediation. However, the advent of deposit insurance, an understanding of the need to maintain an adequate supply of money and money market liquidity, and the development of prudential supervision and regulation have essentially eliminated the threat of deposit runs by retail customers (primarily households and small businesses) of insured depository institutions (commercial banks, thrifts and credit unions).<sup>62</sup> Indeed, systemic deposit runs and flights to currency have not occurred in the United States (or any other G10 nation) since World War II. As a result, discussion of systemic risk has shifted more to consideration of issues raised at the wholesale level.<sup>63</sup> This refocusing has been reinforced by the forces causing changes in the US and global financial systems discussed in Chapter II. For all of these reasons, the discussion below concentrates on attempting to identify the potential effects of financial consolidation on systemic financial risk that may arise in the institutions and markets that provide wholesale financial services.

### ***Creation of firms that may be “too big to fail”, liquidate, or discipline effectively***

There is no doubt that the evolution of financial institutions and markets, including their consolidation as defined in this study, has created larger and more complex banking organisations in the United States. Indeed, these developments have caused the Federal Reserve

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<sup>62</sup> Estimates from the Federal Reserve Board’s 1998 Survey of Consumer Finances indicate that only 2% of US households that hold deposits have uninsured deposits in US depository institutions. Uninsured deposits are estimated to represent about 14% of total US household deposits. For more details on the 1998 Survey of Consumer Finances see Kennickell et al (2000).

<sup>63</sup> Wholesale financial services generally encompass the provision of intermediation, investment banking, securities trading, asset management and payments services to corporations and other institutions. Excellent discussions of the changing nature of systemic risk are found in Bank for International Settlements (September 1998) and Chapter IV of International Monetary Fund (1999).



to define a category of financial institutions called large, complex banking organisations, or LCBOs. In general, LCBOs (i) have significant on- and off-balance sheet risk exposures, (ii) offer a broad range of products and services at the domestic and international levels, (iii) are subject to multiple supervisors in the United States and abroad, and (iv) participate extensively in large-value payment and settlement systems.

The set of LCBO banking organisations is not homogeneous, and even simple comparisons reveal clear variations in business mix. The LCBOs may be divided roughly into five “peer” groups that also correspond approximately to a declining degree of complexity. “Active Trading” firms are distinguished from the others in terms of their trading and derivatives activities, as well as in other dimensions such as global and custodial activities. The characteristics of “Second Tier” companies resemble some aspects of the Active Trading firms, but with somewhat less across-the-board prominence. A group of “Trust and Custody” organisations have substantial fiduciary businesses and a range of complex trading or other activities that support those businesses. A “Cusp” set of banking organisations with predominantly traditional activities have commenced speciality businesses and expanded in ways that make them look somewhat like the Second Tier firms. Lastly, a group of relatively more “Traditional Intermediaries” continue primarily to fund themselves with deposits and make loans.

Despite their prominence, it would be seriously misleading to apply the term “too big to fail” to the LCBOs. It is the explicit policy of the US bank supervisory agencies that no banking organisation is too large to fail in the sense that it can be required to contract assets, divest affiliates, cut dividends, replace management, sell or close offices, and the resultant entity or entities be sold to another institution. Nor is there any commitment to assure payment, let alone full payment, to any uninsured depositor or other non-deposit creditor of any bank, bank holding company, or financial holding company. Given this policy, the practical challenge faced by US bank supervisors is how to achieve the orderly closure or “wind-down” of a troubled LCBO without raising systemic concerns. The changed nature of the problem is also illustrated by the fact that probably the most complex large banking organisation wound down in the United States was the Bank of New England Corp. Its USD 23 billion in total assets (USD 27.6 billion in 1999 dollars) in January 1991 when it was taken over by the government pales in comparison to the total assets of the largest contemporary firms (eg in December 1999 Citigroup had USD 716.9 billion and Bank of America Corp had USD 632.6 billion).

From the perspective of this section of the study, the key issue is therefore: Has consolidation, defined to include both increases in size and complexity, increased the risk that the failure of an LCBO would be disorderly?<sup>64</sup>

The answer to this question is complex, and no one can say precisely how the sundry and often subtle arguments should be weighed. Indeed, the answer to the question will surely depend on the exact nature of a given systemic risk event, each of which will inevitably have a number of idiosyncratic characteristics. Having said this, there are reasons to believe that financial consolidation as it has evolved in the United States has increased the risks that the failure of an LCBO would be disorderly.

The resolution of LCBOs has become more difficult and uncertain as the corporate structure and risk management practices of LCBOs have become, at least in part because of consolidation across product and international borders, more complex. LCBOs frequently define their principal business lines so that the same line is conducted in more than one of an individual

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<sup>64</sup> Note that the question assumes that an LCBO has failed, or is about to fail. Thus, the discussion here is concerned with how consolidation has affected the probability of a disorderly workout, but not whether the probability of an LCBO failure has changed. The latter topic was addressed in part 1 of this section.

LCBO's major legal entities.<sup>65</sup> The LCBO generally manages those business lines without regard to a given line's location in one or more legal entities, and the supporting management information systems and corporate control functions tend to be structured along business lines and not legal entities. The result may be a financial institution with substantial intragroup transactions and exposures that may be difficult to disentangle.

The complexities are magnified when the LCBO has significant international activities and the management and control structures straddle national borders as well as legal entity lines. For example, conflicting approaches to bankruptcy across countries and the possibility that host country supervisors will "ring-fence" portions of troubled institutions are long-standing, unresolved issues. In addition, OTC derivatives and foreign exchange activities may have offsetting positions that extend across both domestic and foreign legal entity lines. Another complicating factor is that several large US banks, including several that are LCBOs, are now owned by foreign banks. Although the US chartered banks would be subject to FDIC insolvency proceedings in the event of their failure, stresses and conflicts are likely to arise in the event of the failure of the parent organisation.

Indeed, the complexity and uncertainty of the overall legal conventions governing a failure resolution in the United States have almost surely been heightened by financial consolidation. While the FDIC will, as always, be the receiver of a failed insured depository institution, the parent holding company and most other non-bank entities, which may have become much more prominent as a result of consolidation, will be subject to a US Bankruptcy Code proceeding. An exception is a broker-dealer that is part of a consolidated financial services holding company; it would be liquidated under the Securities Investor Protection Act. In addition, an Edge Corporation, which is usually a subsidiary of a bank, could be liquidated under either the Bankruptcy Code or the Federal Reserve Act by the Federal Reserve Board. And, as suggested in the previous paragraph, it is currently unclear whether the foreign branch of a US chartered insured depository institution would be liquidated by the FDIC or by a separate proceeding in the nation where the branch is licensed.

The FDIC's choice of resolution methods is constrained by the least cost resolution standard imposed by the FDIC Improvement Act (FDICIA) of 1991. Under least cost resolution, the total cost to the FDIC must be the least costly method for meeting the FDIC's insurance coverage obligations.<sup>66</sup> One important factor is the relative size of domestic deposits in total liabilities. Domestic deposits are relevant because of the so-called "domestic depositor preference" of US law enacted in 1993. If domestic deposits are substantially less than the estimated realisable value of assets, liquidation may produce a net positive balance and thus result in no cost to the FDIC. Although such a scenario would not necessarily require a liquidation under the least cost test, at a minimum it would seem to complicate the choice of resolution methods in a systemic risk situation.<sup>67</sup> As a result, the probability of supervisors needing to invoke FDICIA's so-called "systemic risk exception", under which uninsured creditors can be protected, may have increased. However, because the exception has never been used, there is considerable uncertainty regarding how and when it might be applied.

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<sup>65</sup> Under the holding company structure prevalent in the United States, major legal entities are usually separately incorporated, but wholly owned subsidiaries of the holding company parent. In bank holding companies, the bank(s) is normally the primary asset of the holding company. As of the end of 1999, banking assets exceeded 70% of total bank holding company assets at 17 of the 21 largest US BHCs, all of which were LCBOs. However, banking assets exceeded 95% of total assets at only seven of these institutions.

<sup>66</sup> For a brief summary of FDICIA's major provisions see FDIC (December 1997). Further discussion is contained in Benston and Kaufman (1997).

<sup>67</sup> For example, if another resolution method would preserve more franchise value, the net cost to the FDIC could be lower.

Consolidation across business lines has helped to complicate the failure resolution process in other ways. Historically in the United States, government-led resolution has generally worked well for traditional banking intermediaries. However, new complications are likely to arise in managing some of the more “market-oriented” business lines that have become prominent activities at some LCBOs, partly as a result of financial consolidation. Such lines would require that the resolution process address the fact that they need active day-by-day expert management, continuous access to markets and funding, and a high level of market confidence.

OTC derivatives and foreign exchange trading are probably the most important examples of where resolution difficulties are likely to arise. These activities are highly sensitive to a bank’s credit standing and market sentiment, and thus become increasingly difficult to maintain and manage as a bank’s financial condition deteriorates. For example, if a bank defaults on any of its obligations, its counterparties in these markets may very quickly proceed to close out their transactions before the bank fails and the FDIC has a chance to intervene. An additional complication arises because derivatives transactions are often booked centrally or in a limited number of locations, rather than in the legal entity that originated them.

Extensive participation by LCBOs in securities and insurance underwriting activities would further complicate the winding down of a troubled institution. For example, the near or actual failure of an LCBO that was engaged in either or both activities as a major business line would raise issues of coordination among diverse supervisors and potentially conflicting supervisory priorities.

Another reason why the probability of an LCBO resolution being disorderly may have risen is the increased speed, observed in recent failures or near failures, at which a troubled LCBO is likely to decline. The speed of information dissemination via improved technology, and greater reliance by LCBOs on capital markets for risk management and funding (markets where prices can move quite rapidly), are contributing factors to strong and sometime late-emerging forces of market discipline by creditors and counterparties.

Although it is not clear that consolidation per se is a major factor in the increased potential for a rapid decline at an LCBO, it is possible that consolidation has played a role. For example, and as discussed in Section 1 of this chapter, the increased size and complexity of institutions may have reduced management’s ability, as well as that of the supervisor, to recognise the severity of a problem and make hard decisions in a timely manner. As a result, problems that are not addressed promptly have the opportunity to deepen, and now seem to deepen more rapidly. Similar arguments may be made with respect to other market participants. For example, although there have been improvements in the transparency of financial institutions in recent years, the increased complexity of modern LCBOs can mask the full extent of an institution’s problems from market participants, especially in the problem’s early stages.<sup>68</sup> Such masking tends to increase the probability of a rapid decline in an LCBO’s financial condition once market participants realise the full extent of the institution’s problems.

### ***Key characteristics of shocks that may become systemic***

The likelihood of a shock becoming systemic, and the sizes of its impact and transmission effects, depend on firms’ interdependencies. Interdependencies can be classified as *direct* and *indirect*. Direct interdependencies arise from inter firm on- and off-balance sheet exposures. Large direct interdependencies, which might occur if firms have large bilateral exposures, may make the impact and transmission effects of a shock to a set of firms large enough to become systemic. Indirect interdependencies can arise from correlated exposures to non-financial sectors and financial markets. If firms have highly correlated exposures to some non-financial

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<sup>68</sup> The impact of consolidation on the transparency of financial institutions is discussed more fully below.

sectors or financial markets, a shock originating in one sector could have an impact large enough to become systemic.

An assessment of the potential impacts of consolidation on the vulnerability of the financial system to systemic risk requires measures of consolidation, measures of financial firms' interdependencies, and some means of relating such measures. As previously observed, detecting the existence of a *causal* relationship between consolidation and interdependencies is difficult, since it requires the explicit consideration of all relevant factors that affect interdependencies. To the best of our knowledge, a detailed analysis of the potential causal links between consolidation and interdependencies is unavailable for US financial firms, and such an analysis is outside the scope of this study.

Instead, this section focuses on measures of firms' interdependencies and on their *correlations* with a measure of consolidation. The finding of an increase (decrease) in interdependencies may signal an increase (decrease) in systemic risk. Moreover, if an increase in interdependencies *and* a positive correlation between interdependencies and consolidation were detected, this finding would suggest consolidation as a possible driving force of increases in systemic risk. Conversely, discovery of no or negative correlation would be consistent with the view that systemic concerns had not increased or had even declined. Although the finding of a significant positive or negative correlation would not necessarily imply that consolidation is a *cause* of interdependencies, consistently strong correlation results would be quite suggestive.

A sample of US-chartered and -owned LCBOs is considered. As was the case in the previous subsection, attention is restricted to LCBOs because difficulties at these firms are those most likely to raise systemic concerns in the United States today. Data for the LCBO sample extend from 1988 to end-1999. Accounting data are taken from the Federal Reserve's National Information Center (NIC) database at the bank holding company level. Sample selection and data construction proceeded in two steps. First, the 18 US-chartered and -owned LCBOs in existence on 31 December 1999 were included. Second, inspection of the sample led to the addition of four more LCBOs that did not "officially" exist at the end of 1999, but which, in our judgement, existed for a long enough proportion of the sample period to be included in the sample.<sup>69</sup> The resulting sample consists of 22 LCBOs.

The importance of the sample LCBOs has increased substantially in recent years. For example, their share of assets as a fraction of the assets of US commercial banks and savings and loans grew steadily from about 21% in 1988 to 54% in 1999. Both the aggregate of the LCBOs and five subsets are examined, with firms classified according to the five "peer" groups described previously.<sup>70</sup>

In order to measure consolidation, a proxy measure of *consolidation events* is constructed and a measure of *consolidation intensity* is derived. Consolidation events for an LCBO are measured by the yearly percentage growth of its assets *minus* the yearly percentage growth of assets in the entire banking system. For the sample of LCBOs considered, this measure is a good proxy of their net acquisition activity since LCBO internal growth is close to the asset growth of the entire banking system.<sup>71</sup> Consolidation intensity for an LCBO in a given period is defined as the *sum* of its consolidation events across all years during the period. Accordingly, consolidation intensity for the LCBO aggregate is measured by the *cumulative* percentage rate of growth of

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<sup>69</sup> In order to deter inappropriate comparisons, specific LCBOs are not identified.

<sup>70</sup> Again, the classification of firms as Active Trading, Second Tier, Trust and Custody, Cusp, and Traditional Intermediaries can be viewed as roughly ordering firms according to their decreasing degree of complexity.

<sup>71</sup> For the sample LCBOs considered, inspection of the data indicates that any completed acquisition recorded by the National Information Center database is matched by a *jump* at the same date in an acquirer's yearly asset growth. Moreover, estimates of annual rates of growth of LCBO's assets net of jumps are on average close to and not greater than the banking system's asset growth.

the group's assets since 1988 *minus* the cumulative percentage rate of growth of assets of the entire banking system.<sup>72</sup> For the peer groups, consolidation intensity is multiplied by the group's share of LCBO assets in order to measure the impact of a group's consolidation intensity *relative* to the consolidation intensity of all LCBOs.

Chart III.1 shows consolidation intensity for the LCBOs (graph 1) and for each peer group (graphs 2-6). As shown in graph 1, LCBO consolidation intensity has steadily increased since 1988, with a sizeable jump in 1997. Consolidation intensity has been the highest for Active Trading and Second Tier firms (graphs 2 and 3), followed by Cusp and Traditional Intermediaries (graphs 5 and 6). Consolidation intensity for Trust and Custody firms has been the lowest among LCBOs (graph 4).

The next two subsections document the time patterns of various measures of interdependency during the 1988-99 period, and examine the correlations between firm consolidation intensity and measures of firm *total* and *direct* interdependency. Correlations are measured by correlation coefficients between consolidation intensity and "gross" measures of interdependency, as well as between consolidation intensity and the yearly *deviations* of interdependency measures from their pooled annual means (herein also called "de-meaned" measures).

The correlations between gross measures of interdependency and consolidation intensity embed effects common to all firms, as well as group- or firm-specific-effects. Because they measure total effects, these correlation coefficients are probably the most relevant for assessing the potential for systemic risk. The correlations between deviations of the interdependency measures from their pooled means and consolidation intensity are likely to capture primarily firm- or group-specific effects, since effects common to all firms are (partially) embedded in the time evolution of the pooled annual mean correlation.<sup>73</sup>

#### *Total interdependencies*

Total (direct plus indirect) interdependencies are measured by the cross-correlation structure of LCBO percentage changes in stock prices. Stock prices are ideally suited to this purpose, since they reflect market participants' collective evaluation of the future prospects of the firm, including the *total* impact of its interactions with other firms.

For each year in the 1989-99 period, cross-correlations of weekly percentage changes in stock prices (herein also called returns) are computed for each of the 22 sample LCBOs. The average cross-correlation in each year for LCBOs is given by the average taken over all LCBOs' cross-correlations. For each of the five peer groups, the average cross-correlation is obtained by averaging the correlation figures of each firm in a peer group.

Chart III.2 shows the average cross-correlation time series for the LCBOs (graph 1) and for each peer group (graphs 2-6). Graphs 2-6 also depict the time series of deviations of a group's correlations from the LCBO average, indicated with a dotted line. As may be seen in graph 1, until 1995 average LCBO stock return cross-correlations fluctuated significantly, but overall rose only modestly. Since 1995, however, cross-correlations have increased markedly. In particular, the average LCBO stock return cross-correlation jumped about 28%, from an average of 0.42 during 1989-94 to an average of 0.54 during the 1995-99 period, a difference that is statistically significant at the 5% level.

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<sup>72</sup> Consolidation intensity can be also viewed as a proxy of the cumulative change in the market share of LCBOs due to consolidation, since internal growth and net firms' entry in the industry during the sample period have been approximately constant.

<sup>73</sup> Results similar to those presented below were obtained with measures of interdependencies net of the impact of the macroeconomic cycle (as measured by levels and variability of GDP growth, inflation and short-and long-term interest rates), as well as with correlations of measures of interdependencies and consolidation intensity both expressed in deviations from their pooled annual means.

Graphs 2-6 indicate that the dynamics of stock return cross-correlations for each peer group are rather homogeneous. However, cross-correlation *levels* do differ somewhat across groups. The average deviation from the LCBO average during the entire period is *positive* for Active Trading firms, albeit significant only at the 10% significance level. For Trust and Custody firms, average deviations from the LCBO average are *negative* and significant at a 5% significance level. Notice that the Trust and Custody firms are those that exhibit the lowest consolidation intensity among LCBOs. For all other groups of LCBOs, average deviations are not significantly different from zero.

Table III.2 presents correlation statistics between average yearly firm-specific stock return cross-correlations and yearly firm-specific measures of consolidation intensity. As shown in column [1], LCBO average stock return cross-correlations are positively and significantly associated with consolidation intensity. However, an important difference emerges among peer groups. All peer groups exhibit positive and significant correlations *except* the Trust and Custody firms, which exhibit a negative and significant correlation. Again, these firms are precisely those firms whose consolidation intensity is the lowest among LCBOs. Looking at the de-meaned correlations (column [2]), stock return cross-correlations are still positively and significantly associated with consolidation intensity for the full LCBO sample. However, such positive average correlation mainly captures the positive and significant correlations of Active Trading, Second Tier and Traditional Intermediaries firms, since the correlation for Trust and Custody firms is still negative and significant, and that of the Cusp firms is not significantly different from zero. Interestingly, the Active Trading and Second Tier firms are precisely those firms whose consolidation intensity is the highest among LCBOs.

On balance, this evidence on total interdependencies suggests three general conclusions. First, total LCBO interdependencies, as captured by stock return cross-correlations, have significantly increased on average and for each peer group, particularly since 1995. Second, total interdependencies are positively (and significantly) correlated with consolidation intensity for the aggregate of the LCBOs. Third, the positive correlations between total interdependency and consolidation intensity appear to be the strongest for those firms where the degrees of complexity and consolidation intensity are greatest.

### *Direct interdependencies*

Direct interdependencies, and their relationship to consolidation, are examined through measures of firms' exposures to (i) short-term interbank lending, (ii) medium- to longer-term interbank loans, and (iii) derivatives activities. Interbank lending exposures are clearly a potentially important channel through which difficulties arising in one bank may affect and be transmitted to the financial system with potentially adverse systemic consequences.<sup>74</sup>

Since 1995 the growth of derivatives markets and banks' activities in these markets has been dramatic.<sup>75</sup> In particular, the global volume of OTC trading of derivatives instruments rose more than thirtyfold between 1988 and 1998, with explosive growth in the last five years. By contrast, the size of exchange-traded markets increased a still impressive tenfold during 1988-98. As detailed in the previous section, OTC derivatives exposures are a likely spot for resolution difficulties to arise at large and complex banking organisations.<sup>76</sup>

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<sup>74</sup> Furfine (1999) and Bernard and Bisignano (2000) are among recent analyses assessing systemic risk arising in domestic and international interbank markets. Again, the potential effects of consolidation on interdependencies that arise through payment and settlement systems are discussed in Chapter VI.

<sup>75</sup> See Bank for International Settlements (1999a).

<sup>76</sup> For an extensive discussion of OTC derivatives markets and their relevance for international financial markets and systemic risk see Chapter IV, OTC Derivatives Markets, in International Monetary Fund (2000).

All measures of exposure are expressed as percentages of equity capital. Since the focus of this chapter is on risk, exposure-capital ratios are a straightforward summary measure of risk associated with exposure.

#### Short-term interbank lending

The evolution of short-term interbank lending as a fraction of firms' total equity capital is illustrated in Chart III.3 for all LCBOs (graph 1) and the peer groups (graphs 2-6). For ease of comparison, in graphs 2-6 the total LCBO short-term interbank lending-capital ratio reported in graph 1 is plotted as a dotted line. The interbank lending-capital ratio for the LCBOs has risen steadily since 1989, increasing about 57% from 70% of capital in 1989 to 110% of capital in 1999. It is important to note that total short-term interbank lending exposures have increasingly concentrated in LCBOs. In fact, short-term interbank lending-capital of all US commercial banks has decreased at an average rate of 2% per year during the 1991-99 period. Thus, interbank lending exposures of non-LCBOs have decreased significantly.

Differences among the peer groups are noteworthy. The level of the short-term interbank lending-capital ratio is highest for the Active Trading Firms, followed by the Trust and Custody group, and is approximately the same for the remaining three peer groups. Indeed, this ratio has increased sharply for the Active Trading firms and mildly for the Second Tier firms, has gone up substantially only in the last four years for the Trust and Custody firms, and has remained flat for the remaining two groups. Thus, direct interdependencies through short-term interbank lending exposures relative to capital have increased for the highest and medium complexity firms.

Panel A in Table III.3 reports measures of correlation between consolidation intensity and short-term interbank lending exposures. The correlation between short-term interbank lending-capital ratios and consolidation is positive and significant for the aggregated set of LCBOs (column [1]). Breaking the sample into peer groups, this correlation is *positive* and significant for Second Tier, Trust and Custody, and Cusp firms, and *negative* and significant for Traditional Intermediaries. These relationships hold for both interbank lending-capital ratios and their deviations from the pooled annual mean (column [2]) with the exception of Second Tier firms. Thus, the interbank lending-capital ratio is positively and significantly correlated with consolidation intensity for the peer groups of medium complexity. Note, however, that a positive and significant correlation between short-term interbank lending and consolidation intensity is found both for those peer groups that exhibit a relatively high level of consolidation intensity (Second Tier and Cusp) *and* for the group with the lowest level of consolidation intensity (Trust and Custody). In addition, the Trust and Custody firms exhibit the highest positive correlation among groups. This suggests that other factors beyond consolidation might be at work as driving forces of trends in short-term interbank lending.

#### Medium- to longer-term interbank loans

Chart III.4 illustrates the evolution of exposures to medium- to long-term loans to all banks (solid line) and to foreign banks (dotted line), expressed as a percentage of equity capital, for all LCBOs (graph 1) and the peer groups (graphs 2-6). As shown in graph 1, this ratio of loans to banks-capital has decreased on average. This drop is primarily due to the reduction of loans to domestic banks. The dynamics of these ratios are similar among firms that have lent the most to other banks (Active Trading, Second Tier and Trust and Custody), and are relatively flat for the other two groups, for whom this type of lending activity is quite small.

Panel B of Table III.3 reports measures of correlation between consolidation intensity and the ratio of medium- to long-term interbank loans to capital. The data exhibit no positive and significant correlations between consolidation intensity and direct interdependencies through medium- to long-term lending to banks. Indeed, the gross correlation is significantly negative for the Active Trading firms. Thus, these results suggest that this measure of interdependency has not been affected by consolidation.

## Derivatives activities

The final measure of direct interdependency uses exposure data on derivatives activities. Derivatives activities include OTC and exchange-traded interest rate, foreign exchange, equity and miscellaneous other contracts. Where relevant, exposures on futures, forwards, options and swaps contracts are included. Up until about 1995 exchange-traded contracts were the most common type, but in the second half of the 1990s, OTC contracts came to dominate. Exposures are measured by gross positive market values: the sum of the market values of all contracts that are in a gain position at current market prices as of the reporting date. Thus, gross positive market value is a proxy indicator of exposure to counterparty credit risk, because it measures all claims on counterparties if all of a firm's outstanding contracts were settled at the reporting date. As before, exposure is measured relative to a firm's equity capital.

Chart III.5 shows the ratio of gross positive market value to capital for all LCBOs (graph 1) and the peer groups (graphs 2-6) for the 1995-99 period, the only period for which data for all LCBOs are available.<sup>77</sup> For the LCBOs (graph 1), this ratio increased through 1998 and then decreased markedly. The decrease is due to the sharp reduction in the ratio of the Active Trading firms (graph 2), whose gross positive market value is the bulk of total gross positive market value for LCBOs. The 1999 reduction in gross positive market value was caused by a severe reduction in foreign exchange contracts. This reduction was due in part to lower foreign exchange volatility in 1999 compared to 1997 and 1998, as well as to the introduction of the euro and the unwinding of positions following the Russian crisis in August 1998 and its international repercussions.<sup>78</sup>

The time pattern of the ratio of gross positive market value to capital of Second Tier and Cusp firms (graphs 3 and 5) is similar to that of Active Trading firms (graph 2). The time patterns of Trust and Custody and Traditional Intermediaries ratios differ from those of Active Trading firms only in 1999. In addition, although all groups exhibit impressive increases in their derivatives exposures during 1995-99, relative to capital the Active Trading firms are substantially more exposed than the other groups. Still, direct interdependencies through derivatives exposures have increased substantially across all peer groups in recent years.

Panel C of Table III.3 reports measures of correlation between consolidation intensity and the ratio of gross positive market value of derivatives positions to capital. The correlation between this ratio and consolidation intensity (column [1]) is positive and significant for the aggregate LCBO ratio. Such positive correlation is also found for deviations of gross positive market values from the pooled LCBOs' annual mean (column [2]). As far as peer groups are concerned, the correlation of the ratio of gross positive market value to capital with consolidation intensity is positive and significant only for the Trust and Custody firms and for the Cusp firms. Such correlation is positive only for the former group when the correlation of deviations of this ratio from the pooled annual averages is considered.

## Summary

The evidence presented here suggests two general observations regarding direct interdependencies among LCBOs. First, average LCBO direct interdependencies through short-term interbank lending and derivatives exposures have increased substantially during the time period considered. Second, there is reason to believe that direct interdependencies are significantly and positively related to consolidation through short-term interbank lending and derivatives activities. Such evidence appears particularly robust for firms of medium complexity.

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<sup>77</sup> For the sake of readability, each graph has a different vertical scale.

<sup>78</sup> See Bank for International Settlements (1999b).



### *Degree of transparency of firms and markets and the role of market discipline*

The evolution of large and increasingly complex financial institutions raises the question of whether private market participants' abilities to assess these firms' financial conditions have kept pace. The issue is important for at least two reasons. First, efficient financial markets in general, and effective market discipline in particular, require well-informed creditors, counterparties and market-makers. Put differently, high levels of market ignorance and uncertainty can be destabilising under any circumstances. But they can be especially dangerous in a potential systemic risk situation because ignorance and uncertainty increase the probability of liability runs, institutional and market illiquidity, and irrational contagion.<sup>79</sup> Second, if supervisors want to rely in part on market discipline to control risk-taking at financial institutions, then it becomes even more critical that market participants be well-informed.

As with all of the topics discussed in this section, it is extremely difficult to identify the "pure" effects of consolidation on firm and market transparency and the associated role of market discipline. On the one hand, the increasing size, complexity and international nature of many financial institutions have sparked widespread recognition of the need for enhanced transparency, and both the public and private sectors have taken an impressive variety of initiatives. On the other hand, discussions with institutional investors and market-makers suggest considerable room for improvement. In the light of these uncertainties, in mid-1998 the Federal Reserve began a major study of ways to improve public disclosure in banking and thereby augment market discipline. The results of this research were recently published as a Staff Study, and the discussion in this section relies heavily on this effort.<sup>80</sup>

Public disclosure in the United States, with its combination of regulatory requirements and private sector initiatives, generates a substantial amount of information for assessing the financial condition and risk of banking organisations.<sup>81</sup> The process has demonstrated responsiveness in the face of changes in the financial services sector. Indeed, in interviews conducted for the Federal Reserve Study with securities analysts, institutional investors and rating agencies, respondents tended to compare bank disclosures in the United States favourably with those of non-banks as well as with those of banks abroad.

Nevertheless, the Federal Reserve Study identified six areas where improved disclosures may be appropriate for banking organisations operating in the United States. These include risks retained in securitisations and loan sales, the distribution of assets by internal risk rating, explanations of loan-loss reserve calculations and adequacy, credit concentrations by counterparty, industrial sector, or geography, market risk, and risk by legal entity and business line.

Most of the items on this list appear to have more to do with the increased complexity of banking organisations and financial markets, including the ongoing blurring of traditional distinctions between different types of financial intermediation, and less to do with increased size or even a higher level of international activity. For example, securities analysts strongly recommended that banks disclose how much risk they retain in securitisations of bank assets and loan sales, including information relating to so-called bankruptcy-remote vehicles sponsored by banks. Analysts also recommended that banks report more information about hedges using credit derivatives, a financial innovation that appears only tangentially related to financial consolidation per se. Still, complexity and size can be complementary. For example, it is widely believed that certain complex market activities require a rather large minimum scale to be viable business lines.

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<sup>79</sup> Bank for International Settlements (September 1998), pp 27-28 also discuss this point.

<sup>80</sup> See Board of Governors (March 2000).

<sup>81</sup> See Board of Governors (March 2000), especially appendices D, E, F and G.

As US banks have grown in size and complexity, many of the largest have begun to develop increasingly sophisticated internal systems for rating the credit risk of assets.<sup>82</sup> The development of such systems can probably be attributed in some degree to financial consolidation, although financial innovations (such as the increasing ability to separate risk into its component parts) and vast reductions in the cost of data processing have almost certainly played larger roles. Disclosure of the distribution of a bank's assets, both on- and off-balance sheet, according to its internal ratings of risks would provide the market with much more detail of a bank's assessment of its risk profile than is currently available. Interestingly, although some of the largest banking organisations provide information on the credit quality of their OTC derivatives counterparties, disclosure of comprehensive information on risk categories of loans is unusual.

Another area of bank transparency that has been affected directly by consolidation is the need for more information on concentrations of exposures by counterparty, by industrial sector and by geographic area. Such disclosures would help market participants determine if financial organisations that have increased their potential for diversification have in fact become more diversified. A good example is the need for more detailed disclosure of information on the geographic distribution of assets, especially by large multistate financial institutions in the United States.

The growth of financial markets, and particularly the increased level of bank participation in those markets over the past decade, raises the issue of whether public disclosures of market activities by banks and other financial institutions are adequate. A case study conducted to assess financial disclosures of trading activities at nine large bank holding companies and investment banks examined the usefulness of the information disclosed on trading accounts in connection with the financial market turmoil associated with the Russian default in the third quarter of 1998.<sup>83</sup> The review raised some questions about the current state of public disclosure. First, it is clear that disclosures regarding market risk vary considerably among institutions. Second, there appears to be little connection between the degree of risk as suggested by value-at-risk (VaR) disclosures by firms and their actual trading account performance in the wake of the 1998 financial shock. Although this case study is only suggestive, these results appear consistent with views of market participants.

Similar conclusions were reached by a presidential report.<sup>84</sup> It concluded that the central public policy issue raised by the Long-Term Capital Management (LTCM) episode was excessive leverage. However, it also concluded that another key aspect of the problems raised by LTCM was the breakdown of market discipline, caused in part by the complexity and the resulting opacity of LTCM. It recommended that both the public and private sectors take action to improve market discipline by improving the quality of information on the risk profiles of hedge funds and certain other highly leveraged institutions provided to market participants.

US financial markets demand information both at bank level and by lines of business. The demand for bank-level data in part reflects the need by creditors to assess banks as separate legal entities. As indicated earlier, however, activities of US LCBOs are frequently organised on a line-of-business basis that cuts across legal entities within the holding company. Securities analysts, investors and the rating agencies express a desire for more information related to business lines.<sup>85</sup> They emphasise that as large banking organisations expand the scope of services they offer, disclosure by business lines is becoming even more crucial for assessing bank and financial services holding companies. This is clearly the case regarding very different

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<sup>82</sup> See Treacy and Carey (1998) for an excellent discussion of the state of the art in the US.

<sup>83</sup> See Board of Governors (March 2000), pp 12-13 and Appendix G.

<sup>84</sup> See United States (1999).

<sup>85</sup> See Board of Governors (March 2000).

activities, such as insurance and commercial lending. However, a problem will arise as the activities of bank subsidiaries overlap more with the activities of non-bank subsidiaries of the same holding company. In such cases, disclosures along business lines are less informative about the bank subsidiaries.

As US financial institutions and markets have evolved, and especially as banking organisations have become larger, more complex, and more involved in both domestic and international financial markets, interest in using market discipline as a supplement to government supervision and regulation has increased. Indeed, market discipline has been enshrined as one of the “three pillars” for controlling bank risk-taking by United States and other G10 bank supervisors.<sup>86</sup> Because market discipline can only be effective if market participants are well-informed, government authorities have expressed considerable interest in improved disclosure.<sup>87</sup> If initiatives in this area proceed and are successful, financial consolidation can, at least from this perspective, be said to have stimulated market discipline.

Another area where the increased breadth and complexity of financial activities have increased market discipline is derivatives and foreign exchange trading. For example, a substantial and growing portion of trading activities are subject to mark-to-market collateral agreements, exchange-traded derivatives are subject to margin requirements, and OTC derivatives are increasingly collateralised. In addition, transactions in the OTC markets (derivatives, repos and securities loans) are documented under master netting agreements that allow counterparties to close out transactions, liquidate collateral, and net the amounts owned if a default occurs.

On balance, a case can be made that financial consolidation has helped to increase the demand for and the supply of transparency among US LCBOs and to some extent encouraged an increased degree of market discipline in the United States. The augmented market discipline (and possibly even more market discipline in the future) is likely to have reduced the probability that banking and other financial institutions will take excessive risks. Thus, at least from this perspective, the chances of maintaining financial stability may have been improved.

However, the net effect of financial consolidation in this area is impossible to judge. For example, despite the stated policy of the supervisory authorities, the evolution of the LCBOs themselves may have increased perceptions that some firms are “too big to fail”, thereby increasing moral hazard and reducing market discipline. In addition, although market discipline may work to improve the chances of maintaining financial stability the vast majority of the time, these benefits may be partially offset by the risk that even rational markets can, and sometimes do, react in precipitous ways.<sup>88</sup> Moreover, it was noted in the section on the creation of firms that may be “too big to fail”, liquidate, or discipline effectively that strong market discipline can emerge well after an LCBO has become financially impaired. Such late-acting discipline can result from masking effects caused by the increased complexity of LCBOs. Whether they derive from rational or irrational calculations, such forces could complicate the resolution of a troubled LCBO, and greatly complicate management of a systemic risk event.<sup>89</sup>

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<sup>86</sup> See Basel Committee on Banking Supervision (June 1999).

<sup>87</sup> Another current idea for improving market discipline (and encouraging disclosure) is to require large banks to issue a minimum amount of subordinated debt. A recent Federal Reserve Staff Study has investigated this issue. See Board of Governors (December 1999). In addition, the Gramm-Leach-Bliley Act, enacted in November 1999, required the Federal Reserve Board and the US Treasury to study the feasibility and appropriateness of requiring large insured depository institutions to hold a portion of their capital in subordinated debt. The joint study must be submitted to Congress within 18 months of the date of enactment.

<sup>88</sup> For an evaluation of the range of ways investors in bank holding company subordinated debt can react see Board of Governors (December 1999).

<sup>89</sup> It can be argued, however, that knowledge of this possibility will give both financial institutions and their supervisors incentives to deal quickly with a potentially systemic event, before it gets difficult to manage. Put differently, the risk of a rapid and extreme market reaction provides a strong form of market discipline.

## Potential policy implications

It is important to begin any discussion of potential policy concerns by emphasising the fundamental importance of sound monetary and fiscal policies for achieving financial stability, and thereby minimising the chances that a given adverse economic shock will become a systemic risk event. Financial institutions and markets, like most economic activity, tend to thrive in a positive and stable macroeconomic environment. Indeed, the discussion in this chapter has pointed out that identification of the effects of consolidation (and other factors) in the United States has sometimes been made more difficult by the long period of strong economic growth with low inflation. Such observations are not a complaint, but rather a reinforcement of the importance of sound macroeconomic policies.

Market activities tend to play an important role in the activities of the largest US financial institutions, in part because these institutions operate in highly developed money and capital markets. Market activities can introduce new risk considerations, such as potentially accelerating the speed of a firm's deterioration. More broadly, however, financial markets and financial institutions are likely to play complementary roles in encouraging financial stability. For example, financial firms' increased reliance on financial markets may allow them to achieve better diversification, and developed financial markets foster efficient market discipline. Indeed, there is some evidence that institutions operating in countries with relatively developed financial markets may exhibit lower individual risk profiles.<sup>90</sup>

Assuming the continued existence of federal deposit insurance backed by sound monetary and fiscal policies and supervision of depository institutions, it has been argued here that systemic risk concerns in the United States should focus on financial institutions and markets that provide wholesale financial services. Although wholesale services are provided by more than just banking organisations, it does not necessarily follow that federal safety net protection should be extended to non-bank financial institutions. Expanding safety net protections to a wider range of institutions would almost surely increase the degree of moral hazard and thereby reduce the level of market discipline in the financial system.<sup>91</sup> Tilting the trade-off between market discipline and moral hazard in the direction of moral hazard could well increase the degree of systemic risk in financial institutions and markets. In addition, such a tilt would be fundamentally inconsistent with the direction of US legislation over the past 10 years. Starting with FDICIA in 1991 and extending through the Gramm-Leach-Bliley Act of 1999, the US Congress and both Republican and Democratic administrations have expressed the intent to narrow safety net protections and keep them focused on insured depository institutions.

This having been said, it must be acknowledged that the evolution of non-bank financial institutions in the United States, including their increasing ability to affiliate with banks, has reached the point where the scale and level of participation in financial markets of a number of these institutions is sufficient to make their financial impairment a potentially systemic event. Indeed, this development was recognised as early as 1991 when FDICIA clarified and simplified Federal Reserve authority to provide discount window loans to securities firms in emergency situations.<sup>92</sup> How best to resolve the resulting inevitable tension between protecting financial stability and inducing moral hazard is difficult to say, but clearly an issue that policymakers should address.

One approach that may have promise is to begin with a judgmental assessment of which markets, if disrupted, would pose the greatest risk to the real economy. For each of these markets, it would then be necessary to develop a clear understanding of the role of the key

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<sup>90</sup> See De Nicoló (2000).

<sup>91</sup> For an analysis of how the safety net has affected banks' cost of capital, see Kwast and Passmore (1999).

<sup>92</sup> This authority is granted under Section 13-3 of the Federal Reserve Act, which allows expanded discount window lending in unusual and exigent circumstances.

institutions providing critical services. Fundamental questions to answer include: Who are the market-makers and key sources of liquidity? Who are the key providers of financing? How do market participants manage their risks? What are the main settlement banks and custodians? If there is a clearing mechanism, who are the leading clearing firms?<sup>93</sup> Interestingly, questions very similar to these were addressed as part of US bank and other financial supervisors' planning for responding to potential disruptions caused by the century data change, or Y2K. Although that effort was in response to a clearly defined specific event, it seems reasonable to argue that planning for less clearly defined systemic events could usefully begin by building on the lessons learned from the Y2K experience. Still, even this rather modest approach would have its dangers. Considerable care would need to be taken to avoid the impression that safety net protections had been expanded, moral hazard encouraged, and market discipline deterred.

With respect to the net effects of consolidation on the risk of individual financial institutions, especially LCBOs, existing evidence supports a continued need for vigilance in the supervision of such organisations. Indeed, research supports the value added of supervision in assessing an institution's risk.<sup>94</sup> The fact is that research has not been able to identify with sufficient precision which types of consolidation or which individual institutions are likely to have the greatest increases (or decreases) in risk from consolidation. Conventional credit risks clearly remain a high priority. But market risks, encouraged in part by the consolidation process, have also certainly become a matter of significant importance. In addition, it appears that supervision should, at least in response to the forces of consolidation, give extra attention to systems to control operating risks. For all three types of risks, a supervisory approach that is heavily focused on risk measurement, management and accountability seems called for.

These arguments reinforce the view that capital standards, and particularly more risk-based capital standards, are a critical complement to supervision. Conventional economic models (including those used in this study) agree that, in a private market economy, private capital is the first line of defence against incentives for excessive risk-taking by institutions that receive safety net protections. In addition, capital standards provide an anchor for virtually all other supervisory and regulatory actions, and can support and improve both supervisory and market discipline. For example, early intervention policies triggered by more accurate capital standards could prove to be important in crisis prevention.

Financial consolidation, especially the increased complexity and international activity of US LCBOs, appears to have increased the risk that, should it occur, the failure of an LCBO would be disorderly. Thus, consolidation alone provides a powerful case for developing additional supervisory and regulatory policies and procedures for winding down an LCBO in ways that would minimise disruptive effects.

The empirical analysis conducted for this study strongly reinforces the importance of improving supervisory and regulatory policies. This empirical research suggests that consolidation has probably increased the degree of systemic risk associated with US LCBOs. The degree of total interdependency among US LCBOs appears to have significantly increased since about 1995. Moreover, this increased interdependency is positively correlated with the degree of consolidation at LCBOs as a whole, and especially at their most complex peer groups.

With respect to direct interdependencies, empirical analysis indicates that the most likely areas of concern deriving from consolidation are short-term interbank loan exposures and derivatives exposures. Increases in both types of exposures at US LCBOs are positively correlated with consolidation. These correlations are particularly strong at LCBOs of high and medium degrees of complexity.

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<sup>93</sup> It is interesting to note that the answers to a number of these questions will involve bank-dominated markets. See also the discussion of clearing and settlement issues in Chapter VI.

<sup>94</sup> See Berger and Davies (1998) and Flannery and Houston (1999).

What are the highest priority areas that policymakers should pursue, given the increase in consolidation and its correlation with measures of interdependencies documented here? Several seem worthy of note. First, management of LCBOs should develop contingency plans for winding down their organisations under conditions of severe stress. It seems likely that such plans, which should be reviewed as part of the examination process, could greatly reduce the costs and risks of an actual wind-down. Second, a natural complement to contingency planning by LCBOs is similar planning by bank supervisors. Given the increasing complexity of cross-product and cross-border relationships at LCBOs, a core component of such planning should be the augmentation of existing communications links, policy understandings and other protocols within and among domestic and foreign supervisors. As discussed previously, the extensive planning in these (and other) areas conducted as part of the preparations for the Y2K event seem likely to provide useful experience and models for development.

Third, the organisational complexity of LCBOs, and the fact that safety net guarantees in the United States continue to apply only to insured depositories, suggest that both LCBO management and supervisors should be clear regarding the management of business-line structures that diverge from legal-entity structures. For example, policies and practices should be clear about such things as the role of management and boards of subsidiaries, lines of accountability, and the maintenance and sharing of necessary information at the legal entity level in easily accessible form.

Fourth, the heightened importance of derivatives, foreign exchange and other market activities at LCBOs suggests that policymakers should be clear regarding how such activities would be treated in a distress situation. How to wind down these activities is an obvious example. A less obvious case is perhaps the need for the Federal Reserve to be prepared both legally and operationally to make discount window loans to the insured depositories of an LCBO with non-traditional businesses, and therefore potentially non-traditional collateral. More generally, the ability to distinguish quickly between a liquidity crisis and an insolvency crisis at one or more LCBOs will likely be an ongoing challenge for bank supervisors as consolidation proceeds.

Financial consolidation also appears to have increased both the demand for and the supply of transparency by US financial institutions, particularly LCBOs. The resulting increases in disclosure, combined with other supervisory, regulatory and market developments, have encouraged an augmented level of market discipline in the United States. Still, counterarguments can be made, and the net effect of consolidation on the ability of market discipline to limit a potentially systemic event is impossible to judge. This is especially true given that the long period of economic prosperity in the United States has not, other than during the relatively short period of financial market turmoil associated with the Russian default in August 1998, forced a test in the United States of new supervisory and regulatory policies and supporting market developments. Nevertheless, a recent study by the Federal Reserve suggests that, on balance, a strong case can be made for encouraging more disclosure by LCBOs.

The judgement that more market discipline should be encouraged derives in part from the view that the increasing size and complexity of LCBOs will make it increasingly difficult for supervisors to assess the financial condition of these organisations in a timely and efficient manner. Under this view, supervisors would benefit from additional discipline provided by the market, especially if such discipline were exerted by market participants with risk preferences similar to those of supervisors.<sup>95</sup> The results of the current study certainly support the conclusion that consolidation has substantially complicated the job of bank supervisors in the United States. In this regard, it is important to note that on 27 April 2000 the Federal Reserve Board, the Office of the Comptroller of the Currency and the Securities and Exchange Commission jointly announced formation of a private sector working group sponsored by the

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<sup>95</sup> Such discipline would be likely to be provided in certain circumstances by holders of subordinated debt. See Board of Governors (December 1999).

Board to develop options for improving public disclosure of financial information by banking and securities organisations.

#### **4. Effects of consolidation in Europe**

The process of consolidation in Europe may have implications for both individual firm risk and the risk to stability of the financial system as a whole, both at the national and the European levels.

##### **Risk of individual financial institutions**

###### ***Geographic diversification***

It is widely recognised that a larger coverage of geographic areas, industries, types of loans and maturity structures contributes to reducing the risk of bank insolvency.<sup>96</sup> Consolidation that increases diversification reduces vulnerability to external shocks and thus improves bank safety, whereas an increase in the size of institutions per se tends to be associated with a greater appetite for risk and thus a greater probability of insolvency.<sup>97</sup> In Europe, most bank mergers have occurred within national borders. In this respect it is important to assess to what extent national economies offer enough scope for diversification.

The existing evidence concerning Europe is somewhat mixed. While individual economies in Europe are relatively small compared to the United States, as well as being more open to international trade, they tend to be quite diversified domestically. On the other hand, in those countries that subsequently formed the European Monetary Union (EMU) there was considerable convergence of macroeconomic measures during the 1990s compared with the 1980s, as greater coordination of policy reduced the cross-country variation of economic cycles. Looking forward, the single currency in conjunction with the Maastricht Treaty will narrow the scope for national discretion with respect to economic policy.

The same does not hold for finer geographic divisions such as regions within countries. In the run-up to EMU, European regions became less synchronised, indicating that regions have grown increasingly more specialised in fewer economic sectors.<sup>98</sup> This result is consistent with the notion that with further integration of markets for goods and services within the context of the European Union, there is more specialisation at the regional level. It suggests that banks that remain regional in focus are increasingly susceptible to large non-diversifiable shocks, while those that are able to spread their lending across regions – even if they still remain domestic in character – should be in a better position to reduce asset risk, at least in principle. This is not necessarily true, of course, for other types of intermediaries, such as insurance, which are exposed to risk factors that are less correlated with the business cycle. Interestingly, banks merge largely with other banks within the same country, while mergers by insurance companies represent the largest component of the cross-border transactions.<sup>99</sup> By contrast, the influence of country - specific factors dominates the sector-specific factor in the pricing of a sample of 952 large individual company stocks in Europe.<sup>100</sup> This result is fairly robust over the period

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<sup>96</sup> See Berger, Demsetz and Stahan (1999), Berger (1998), Mishkin (1998), Pilloff and Santomero (1998).

<sup>97</sup> See Hughes, Lang, Mester and Moon (1999).

<sup>98</sup> See Fatas (1997). Forni and Reichlin (1998), using more sophisticated techniques reach a similar conclusion. Similarly Fuss (1997) has found that heterogeneity among European regions is greater than among European countries.

<sup>99</sup> See Berger, DeYoung, Genay and Udell (2000) and Chapter I of this report.

<sup>100</sup> See Rowenhorst (1999).

1978-98 suggesting that, at least based on the pre-EMU period, country-specific shocks and investor attitudes are still very important determinants of company stock valuations despite the underlying process of economic convergence.

A similar conclusion can be drawn from the low cross-country correlations of earnings for European banks.<sup>101</sup> Also, empirical research on statistical models on credit risk measurement indicates that cross-border diversification continues to be more relevant.

The contradiction between these two sets of results regarding the scope for geographic diversification across borders and across regions within the same country can be partially reconciled by noting that the first refers to trends in correlations over the recent past, while the second focuses more on the levels of these correlations. In other words, while significant asymmetries still exist at a country level, these have tended to decline as economic integration in the European Union has progressed, and at the same time regions within countries have tended to become more specialised.

These results suggest that it is difficult to derive generalised implications for banks' portfolio risk. The answer is dependent on the initial profiles of the merging institutions, the scale of their operations and the complementarities in their geographic focus. Moreover, although it is hard to deny the significance of risk factors that are intimately connected to the business cycle for bank profitability and financial strength, it is important to recognise that financial innovation, in the form of securitisation and credit derivatives, can help institutions to better control their exposure.

### ***Product diversification***

The concept of financial conglomerates and close cooperation (based on formal or informal links) between providers of different financial services is not a new concept in Europe. Many banks (often the larger ones) are also engaged directly, through subsidiaries, or through alliances in the provision of insurance products.<sup>102</sup> In this respect, consolidation may not necessarily add a new qualitative dimension to individual institution risk. However, a number of factors have contributed to the intensification of the desire by institutions to offer a broad array of products to their customers, thus multiplying the cases when a main objective of a corporate transaction becomes the acquisition of productive capacity in another financial sector.<sup>103</sup>

One such factor that offers the motivation for merger activity among larger banks is the pressure from corporate customers, which are themselves growing in size either organically or through M&As, in combination with the advent of the euro. Companies with a substantial presence across several countries in the single currency area have a cost incentive to consolidate their banking relationships and probably centralise part, or all, of their treasury and other financial operations. In order to become (or remain) a reference bank for such clients, it is important for banks to be able to offer more complex services and operate in a larger number of markets. A similar motivation for pursuing growth, and a more relevant one for smaller institutions, is that an enlarged customer base makes it more economical for banks to offer a wider array of products (cross-selling) and to increase the proportion of their income derived from non-interest sources. In the traditionally bank-oriented European financial systems, asset management activity is already performed by large bank institutions, either directly or through subsidiaries.

M&As often result in the creation of *financial conglomerates* that combine two or more types of intermediaries (banks, asset management companies, stock brokers, private banking entities,

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<sup>101</sup> See Berger, DeYoung, Genay and Udell (2000).

<sup>102</sup> Dinenis and Nurullah (2000) found that all of the 100 largest European banking institutions have some form of direct involvement in insurance provision.

<sup>103</sup> For additional discussion of this point see Chapter II.



insurance companies). However, mergers across financial sectors in European countries have occurred less often than within sector. Nonetheless, conglomeration has sometimes been an important motivation in European cross-border transactions. A number of conglomerates on a cross-border basis have been established in recent years (eg Fortis, Dexia, Unidanmark-Merita Nordbanken).

An important development along this dimension is the emergence of the so-called *bancassurance*, which combines banking with insurance business. The link is mainly established through the creation or the acquisition of separate corporate entities.<sup>104</sup>

The limited empirical literature on the implications of the combination of banking and insurance on individual institution risk presents a relatively sceptical view of the potential for risk reduction. Hypothetical mergers between UK building societies and mutual life insurers would bring about significant risk reduction, but the benefits of other combinations of different types of intermediaries in the United Kingdom would be small or ambiguous.<sup>105</sup> Among large European banks, only in the case of insurance brokerage would hypothetical mergers have potential benefits in terms of risk reduction.<sup>106</sup>

The emergence of a stronger “investment culture” among European retail savers, supported by increasing wealth levels, a benign financial environment and the drive towards funded pension systems, has fuelled a record inflow of funds into Europe’s mutual fund industry and a strong interest in equity investments. Many banking institutions have seized this opportunity to leverage their name recognition and customer franchise, and thus offer asset management and broker services. Banks in most European countries are the main providers of mutual fund products. This shift has helped to reduce their reliance on low-margin traditional deposit taking and lending activities and increase their share of revenue derived from fee-based activities. At the same time, however, it has altered the character of risk undertaken by banks, marking a shift from the role of a principal (ie the ultimate bearer of risk) to that of an agent (ie someone acting on behalf of a principal).

A key issue in evaluating the implications of this expansion for the risk profile of institutions is whether the chosen structure for the corporate umbrella is one that permits explicit cross-subsidisation of different activities. In general, these activities are performed by distinct entities, which are separately capitalised and subject to regulatory requirements specific to the particular industry. Moreover, since an appropriate European legal structure is lacking, cross-border operations have usually been performed through financial holding company structures with subsidiaries operating along different business lines. It is, however, reasonable to assume that the holding company will be proactive in the face of financial troubles in one of its subsidiaries, and it will try to reallocate liquidity and resources within the group to address the problem. This is more likely given that one of the motivations for creating a conglomerate is to capitalise on the brand name, reputation and client base of the holding company.<sup>107</sup>

Also, as mentioned earlier, the combination of different financial activities under the same corporate roof may allow for economies of scope in the field of risk management. While the potential gains from combining portfolios with complementary exposures to risk factors can be significant, a common problem that newly created conglomerates have to confront from the beginning is how to merge together the risk control structures of the different businesses. Risk management structures inevitably reflect the realities of the specific environment within which

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<sup>104</sup> The development of *bancassurance* is discussed in Chapter I.

<sup>105</sup> See Brown, Genetay and Molyneux (1996).

<sup>106</sup> See Dinienis and Nurullah (2000). Their study of actual post-merger performance confirms the above results.

<sup>107</sup> The readiness of Deutsche Bank to absorb the initial losses of its investment banking operation in the United Kingdom is a case in point.

they were created and tend to differ substantially both at the conceptual and technical levels across different business lines. Combining them in a meaningful and consistent way is a complex task that can easily be underestimated.

### ***Managerial efficiencies***

This section deals with the effect of M&A activity on the management of financial institutions. It focuses specifically on the impact such transactions may have on (i) the ability of management structures to respond to the challenges posed by the fusion of two different organisations into one, and (ii) on the incentives of management with respect to financial and other risk.

When the acquired institution is large and is operating in a wide range of markets it can be difficult to evaluate its fair value and the risk of paying too high a price may materialise. This may in turn create the incentive for the management team of the acquiring institution to pursue more aggressive (and riskier) business strategies in an effort to generate results that will provide an ex post justification of the initial valuation.

In general terms, the main risk implicit in M&As is represented by cultural differences between the managerial teams of the banks involved.<sup>108</sup> In the European context, most cross-border transactions have been mainly intended to acquire *financial know how* (eg the acquisition of foreign investment banks and private banking entities on behalf of German banks). Merging the often distinct cultures of two corporate entities is a major managerial challenge, especially as differences are particularly pronounced in transactions that are across borders. In the short run, it is important to avoid the risk of disrupting and demotivating staff and management of the acquired institutions, especially in cases where the acquired bank is operating in a field of activity in which the acquirer is a relatively new entrant.

The complexity of the post-merger organisation could prevent a clear evaluation of its risk profile by the market. Market discipline might become ineffective. For this reason, supervisory authorities are (or should be) concerned about the completeness of the information flows to the public.

Apart from the beneficial diversification effect, consolidation strategies may be connected with a substantial increase in risk-taking, especially when the acquiring bank is entering a new market or a market that is characterised by a higher volatility of returns. Moreover, if the initial goals of the operation become less likely to be achieved, the management could be encouraged to take more risk in order to meet profit objectives.

The effects of M&As on bank performance are also dependent on the characteristics of the labour market, since rigidities can impede thorough restructuring. For example, in Italy agreements have only recently been reached between banks and trade unions to allow a reduction in the number of employees.

### ***Market power rents***

Financial institutions' incentives for risk taking are powerfully influenced by the presence of rents derived from market power or other characteristics of the operating environment of the specific institution. The higher the value of the firm as a going concern for its owners and managers, the less likely it is that these decision makers will adopt riskier strategies in their pursuit of higher yield and profits. In this context, examination of the presence of scale economies (either on the cost or revenue side of the firm's income statement) is relevant for the assessment of the impact that the merger wave might have on financial risk.

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<sup>108</sup> See Dierick (1999).

As discussed in Chapter V, economies of scale seem to be widespread in Europe among relatively small banks. With respect to the impact of M&As on bank performance in Europe, studies generally reject the hypothesis of improved post-merger efficiency but show significant cost cutting and profitability gains in some cases. Bank consolidation and cross-sector operations have allowed financial institutions to take advantage of the increasing demand for asset management services and to invest resources into providing low-cost remote banking services.

### ***Conclusions***

Overall, the evidence suggests that the current merger wave is likely to create value for the merging institutions in ways that have not been observed in past transactions. This is likely to mitigate risk-taking incentives for these institutions and thus counterbalance other factors discussed above that could lead to greater financial risk. This beneficial influence is more likely to be evident in Europe where there is considerable scope for realising economies given the current structure of the industry. However, the fact that the potential for gains may be greater in Europe does not reduce the significance of inherent risks that are also part of the consolidation process. Indeed, as past experience has shown, the planning and execution of a merger is an equal if not more important factor for success as the fundamental economic underpinning of the transaction. Also, given the diversity of institutions and structural factors that make up the European financial landscape, it would be naïve to assume that the potential for benefits that may exist on average will necessarily mean that these benefits will be there for every transaction. A case by case evaluation of individual deals is therefore warranted both by the principals of the individual institutions involved and by the relevant authorities.

### **Systemic risk**

Consolidation in Europe, especially the merging of large financial institutions, has raised the issue of whether some, or more, institutions are now “too big to fail”, ie whether the failure of a large firm may disrupt the financial system as a whole unless the authorities intervene to either keep it alive or manage its “wind-down”. There is also a question of whether the systemic linkages of firm failure, both domestically and internationally, have changed because of the ongoing consolidation process.

### ***Creation of firms that may be “too big to fail”, liquidate, or discipline effectively***

Traditionally, “too big to fail” applied to large *domestic banks* mainly because the externalities associated with their failure, particularly due to the central role they play in the domestic payment and monetary system, were thought to be larger than those associated with non-banks (or foreign-operating banks).<sup>109</sup> However, disintermediation has made this distinction less clear, since banks can increasingly be weakened by the failure of non-banks either through direct exposures or indirectly through the disruption caused to financial markets (see the subsection on indirect interdependencies below). Moreover, consolidation between traditional banks and non-banks has blurred this distinction, particularly when non-banking activities within conglomerates cannot be ring-fenced and thus can cause losses to the banking business.

In contrast with the United States, the absence of legal barriers in Europe has meant that the concepts of both universal and cross-European state banks have long existed. The question here is whether the recent spate of consolidation has led to a greater emphasis on non-banking and cross-border activity.

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<sup>109</sup> Because of mismatches between their assets and liabilities, traditional commercial banks are also thought more likely to fail than other financial firms even when fundamentally solvent following an ill-informed liquidity run.

### *Domestic aspects*

Because the adoption of economic union has not been accompanied by political union, financial stability in Europe, as elsewhere, remains primarily a national concern. Consolidation involving domestically operating financial institutions (including those acquired by foreigners), and thus firms whose failure may have implications for domestic systemic stability, is more of a public policy issue for national authorities than domestic firms' acquisitions of assets in other financial markets.<sup>110</sup>

Table III.4 shows the total value of acquired firms in European countries over the 1985-97 period through domestic mergers between banks, securities firms and insurance companies.<sup>111</sup> Almost two thirds of the acquired assets involved mergers within the same business lines, particularly mergers between domestic banks. Although part of this merger activity, especially in Germany, has involved consolidation among small banks, banking concentration has increased in most European countries. The more recent very large merger between NatWest and Royal Bank of Scotland in the United Kingdom and the abandoned one between Deutsche Bank and Dresdner Bank in Germany suggest that concentration ratios may be rising further in some of the larger European countries. In a number of smaller European countries, concentration ratios have already risen to very high levels. In the Netherlands, for example, three banks account for almost 80 % of domestic assets. This increase in consolidation has raised the issue of whether "too big to fail" concerns have increased in some European countries, and if so, what policies should be adopted to prevent or manage large failures to avoid systemic repercussions.

There have also been a number of bank-security firm and bank-insurance (bancassurance) mergers between domestic firms in some European countries in recent years. As shown in Table III.4, such mergers accounted for USD 63 billion of acquired assets over the 1985-97 period – around 25% of the total value of acquired firms by domestic buyers. An important question is whether the non-banking activities can be incorporated within conglomerates without affecting the banking activities. In principle, an institutional structure consisting of subsidiaries with separate capital bases could limit contagion. In practice, there may be large transactions between subsidiaries and, in any case, there remains the possibility of reputational contagion. For example, losses at Barings Brothers were large enough to lead *directly* to the failure of Barings Bank, and despite a separate company structure, Deutsche Bank absorbed losses at Morgan Grenfell Asset Management in order, inter alia, to avoid reputation contagion. In addition, a number of banks are expanding into investment banking where there are thought to be economies of scale, particularly in the euro area, and away from traditional retail banking. For example, the aborted merger between Deutsche Bank and Dresdner Bank had planned to concentrate on asset management and to sell off their retail business. This increase in emphasis on investment banking activity may increase the complexity of banks' balance sheets. This would make it more difficult for public sector authorities to distinguish between illiquidity and insolvency problems especially in the time frame required and, in the latter case, it would complicate winddown procedures.

### *Cross-border aspects*

#### *Within Europe*

Cross-border consolidation *within* Europe presents two "too big to fail" policy issues. The first arises when locally operating branches of foreign banks are more systemically important to the host country than the home one. For example, the failure of a bank from a large country that has a branch in a small country may have bigger systemic concerns in the latter – where the branch

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<sup>110</sup> Although, as discussed in Section 3, below, the latter would have implications for cross-border cooperation between national supervisors and central banks (where separate).

<sup>111</sup> See Berger et al (2000).

may be large in relation to the financial system and economy – than the former. But according to “home country rule”, it is the responsibility of the supervisory authorities or central bank from the large country to decide whether or not to intervene in the case of the bank’s failure. Therefore, financial stability of smaller countries may be vulnerable to the behaviour of foreign banks, and domestic authorities may also have limited powers in the event of a systemic situation. The second policy issue is whether cross-border consolidation will result in the emergence of pan-European banks that are large in relation to the European financial system as a whole.

So far, cross-border activity *into* most European banking systems has been limited. For example, the value of bank acquisitions in Europe by banks from other European countries over the 1985-97 period was one sixth that of domestic bank acquisitions (see Table III.5). This is in contrast with merger activity amongst insurance companies in Europe, which have occurred as much across as within country. Most intra-European banking mergers have occurred in smaller countries or in those on the outskirts of Europe; for example, between Merita (Finland) and Nordbanken (Sweden) and between ING (Netherlands) and BBL (Belgium), both in 1997, and between BSHC (Spain) and Champalimaud (Portugal) last year. More recently, MeritaNordbanken (Finland and Sweden) has announced a planned merger with Unidanmark, a Danish bank with an insurance subsidiary in Norway.

In most European countries, assets of subsidiaries and branches of foreign-owned banks still account for less than 10% of domestic banking system assets (Table III.6). The main exception is the United Kingdom, where foreign banks account for half of domestic banking assets.<sup>112</sup> Despite the important role that foreign banks play in the UK financial system, particularly branches, individually they remain quite small compared to the main domestic banks. So far then, the potential threat to domestic systemic stability from the local operation of very large foreign banks has not materialised.

However, the continued progress to a single market for financial services in Europe, and especially the euro, may result in large banks, as well as securities firms and insurance companies, increasingly regarding the “market” at the European, rather than the national level. This is especially likely in the smaller European countries where the home banking market may already be close to saturation point. But in some of the larger countries too, where large parts of the banking system are owned by the public sector or on a mutual basis, such as in France or Germany, cross-border acquisitions or alliances may represent the most likely avenue for rapid expansion.

#### Outside Europe

Cross-border acquisitions by European banks in recent years have been at least as large outside Europe as within it, while the assets outstanding of European banks held abroad are, for most countries, currently much larger than foreign banks’ assets held domestically. For example, the assets of both German and French banks’ subsidiaries and branches operating abroad in 1997 were 30% of total domestic banking assets – seven and three times respectively as large as the assets of foreign banks operating in their domestic markets (see Table III.6).<sup>113</sup>

This increase in cross-border consolidation involving European banks, albeit gradual in most countries, raises issues of whether current cross-border arrangements – both between European authorities and with those from other countries – are adequate to ensure effective cooperation and information flows between different supervisors (both bank and non-bank), central banks

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<sup>112</sup> Foreign banks also account for a large share of domestic assets in Luxembourg and Ireland. Of course, a foreign presence can also arise from foreign banks setting up a subsidiary or branch in another country rather than through M&A activity.

<sup>113</sup> See ECB (1999).

and governments. The complexity of international conglomerates is also likely to complicate winding-down procedures, especially since bankruptcy laws differ across European countries.

### ***Key characteristics of shocks that may become systemic***

Systemic instability can occur either because of a *common* shock to a number of institutions or markets, as occurred to the Scandinavian banks in the early 1990s, or an *idiosyncratic* shock, such as the failure of Barings in 1995.<sup>114</sup> The latter could be caused by an internal weakness, such as fraud, or deterioration in the external environment. As discussed in Section 1, the potential diversification benefits from consolidation could reduce the probability of firm failure following an adverse shock. However, the mirror image of this is that when a failure does occur the *impact* of the shock will be larger than before and may affect more than one business line (conglomerate) or country (cross-border merger). Also, if large firms' assets are now more correlated by instrument or geographical location, then should an adverse shock occur it would hurt, on impact, more firms than in the past. The consolidation process may also have increased the propagation of shocks – both within national financial systems and across countries – through increasing the extent of contagion.

Authorities in the euro area have limited ability to use macroeconomic policies to offset nation-specific shocks. Monetary policy is set at the euro level based on the average euro-wide inflationary conditions, while national fiscal policies are constrained by Maastricht criteria and the Pact of Stability and Growth. In principle, therefore, banks whose operations are concentrated in a single euro area country may be more exposed to nation-specific shocks than they were prior to the formation of the economic and monetary union or than banks operating in countries not yet part of the economic and monetary union. In practice, since industrial structures are similar across countries in the euro system, nation-specific shocks will probably be rare. Moreover, the discipline imposed by anti-inflationary monetary and fiscal policies in Europe has created a more stable financial environment.

Despite the recent increase in the role of financial market intermediation, the European financial system remains largely dependent on bank intermediation. In the euro area, bank assets account for more than half of the sum of total bank assets, bonds and equities, compared with less than one quarter in the United States, and are three times as large in relation to GDP as in the United States. This suggests, *ceteris paribus*, that channels of contagion involving banks rather than markets are more likely in Europe than in the United States.

The propagation of an *idiosyncratic* shock from one bank to another may occur through a number of channels. On the liability side of a failed bank's balance sheet, uninsured depositors may incur credit losses. Consolidation may have increased the average size of such bilateral exposures.

Also, and despite the universal presence of explicit retail depositor insurance schemes in Europe, it is possible that liquidity runs will cause insolvency rather than the other way around because of *expectations* – rightly or wrongly – of insolvency. Although any liquidity runs nowadays are likely to be induced by better (although not perfectly) informed uninsured wholesale depositors, consolidation may have increased the complexity and thus reduced the transparency of firms' activities.

On the asset side, direct interbank loans may be recalled in a crisis, causing liquidity problems for the borrowing financial firms. This could have particularly large implications for financial stability through depressing financial prices if the borrowers are themselves important investors or market-makers in financial markets. In addition, correlated exposures may increase the propagation of an idiosyncratic shock. For example, a marked decline in asset prices caused by

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<sup>114</sup> Although the failure of Barings was not considered a systemic threat.

heavy selling by a weakened financial firm would hurt indirectly the balance sheets of other firms holding the same asset.

Deposit withdrawals will often be based only on partial information of a bank's credit worthiness. To the extent that such runs are irrational rather than information-based, this represents a market failure that could be reduced through an increase in disclosure on firms' performance (see the section on Potential Policy Implications below).

#### *Direct interdependencies between firms through interfirm exposures*

Consolidation may affect the size of interbank exposures. On the one hand, firms' total exposures may have fallen to the extent that transactions are internalised within the merged firm; on the other hand, the average size of exposures may have increased with fewer firms in the industry. But the contagious impact will also depend on the distribution of exposures. A small number of strong interbank links would affect some counterparties significantly while leaving others unaffected. Alternatively, a large number of weaker links could individually have more modest effects but will accumulate with the number of links.

Within Europe, there seems to have been a convergence in the level of interbank lending during the 1990s unrelated to changes in concentration (a reasonable proxy for M&A activity – see Chart III.6a). Interbank lending has generally risen relative to capital and as a share of total assets in the smaller countries, particularly those on the periphery of Europe, where it tended to be lowest, and fallen in the larger countries. Despite this trend, banking systems with higher levels of concentration – the smaller countries – still tend to be those weakly associated with *lower* interbank lending/capital (Charts III.6f-h). One interpretation is that a large degree of consolidation, proxied by concentration, results in an internalisation of interbank lending. Alternatively, there may be economies of scale in interbank activity implying that interbank lending (relative to capital) is higher in larger banking systems. Supporting this latter view, at least in the European context, is the clear positive association between the size of national European banking systems – measured by total assets – and interbank lending relative to capital (see Charts III.6i-k). The latter interpretation would suggest that interbank lending relative to capital, and thus the susceptibility of the system to an interbank shock, might rise with the advent of the euro as the market is seen increasingly at the European rather than national level.

Although total cross-border interbank lending by EU banks in aggregate has increased only modestly (relative to total assets) since 1990, there has been a marked shift towards intra-European lending from less than half the total in 1990 to two thirds at the end of 1998. Moreover, there has also been a steep increase in aggregate intra-euro area interbank lending since the introduction of the euro (see Table III.8) and (unsecured) overnight interbank rates have converged. Thus an unsecured interbank market at the European level has been established since the introduction of the euro. A two-tiered system has developed with the largest banks providing liquidity across the euro area, and with smaller banks confined mainly to national markets. However, *secured* interbank markets remain segmented at national levels. Consolidation in secured money markets is constrained by differences in national tax and legal systems and a number of infrastructure difficulties including unifying securities settlement systems and back office functions across institutions.

Nonetheless, interbank exposures with and to banks in other European countries remain significantly less than domestic interbank linkages. For example, in Germany and France domestic interbank loans remain eight and four times larger than loans to banks in other euro area countries respectively (see Table III.7). The United Kingdom is an exception where (unconsolidated) cross-border interbank assets in other European countries are about 30% of the total assets of the domestic banking system – about the same magnitude as domestic interbank loans – and outside Europe a further 25% of total assets (Table III.8). This suggests the possibility for international banking contagion following the weakening or failure of UK operating banks, and that banks operating in the United Kingdom are susceptible to shocks occurring to banks in other countries. For example, the problems in the Japanese banking

system resulted in the failure of Hokkaido-Takushoku Bank and Yamaichi Securities in London in November 1997.

Despite the advent of the euro, the bulk of interbank activity in nearly all European countries remains to a large extent within national borders. Given this situation, the repercussions of bank failure would likely affect, in the first instance, domestic counterparts. However, the ongoing integration of European money markets should increase the likelihood of national shocks having Europe-wide effects. On the other hand, a fully integrated European interbank market would reduce the likelihood of national liquidity (as opposed to solvency) failures since banks would have greater access to funding from banks located elsewhere in Europe rather than primarily from the domestic market.

An indication of the interdependencies of financial institutions or their susceptibility to a common shock is given by the correlation in returns on bank equities. If the market thinks that banks have similar asset structures or are highly interconnected, equity returns should be highly correlated.

Charts III.7a-m plot the co-movements of stock returns, measured by the average annual correlation of weekly changes in share prices, for a selection of banks in 13 banking systems in Europe during the 1990s against bank concentration measured by the combined market share held by the five largest firms. The sample consists of large banks – ranked within the top 10 in the domestic banking system by asset size in 1999 – that are currently traded on the respective national stock markets and have been so continuously since the early 1990s. Thus the sample of banks varies somewhat across countries and since there are usually only a few banks in the sample, the national banking system correlations should be treated with a degree of caution.<sup>115</sup> Bearing this caveat in mind, the charts suggest that correlations in the growth of share prices are quite volatile from year to year in most European countries and there does not appear to be a clear-cut relationship with annual changes in bank concentration. Moreover, there does not appear to be a uniform trend across European countries of correlations in the growth of stock prices during the 1990s. Correlations increased in half the countries and fell in the other half between 1990-94 and 1995-99. The European average of national correlations in bank returns was little different in the second half of the 1990s than the first half (see Chart III.8).

In order to assess whether there has been a change in interdependencies between banks *across* European countries as a whole, all 45 banks in the 13 countries were correlated against each other. As expected, the average annual correlation of the growth in bank share prices across Europe (0.4, on average, 1990-99) is usually lower than that within each country (0.5, on average, 1990-99). Moreover, there is no evidence from these data that correlations in the growth of bank share prices across Europe have increased so far with the approach and adoption of economic and monetary union (see Chart III.9a-b).

In sum, based on the co-movements in the growth of bank share prices on this sample of banks, there is no clear evidence of an increase in total bank interdependencies either within or across European banking systems during the 1990s. Moreover, there does not appear to be a clear relationship in the past between consolidation, proxied by changes in bank concentration, and direct interdependencies, measured by interbank activity. That said, the more recent introduction of the euro has led to an increase in both interbank lending between large banks across Europe and consolidation, albeit mainly so far at the national level.

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<sup>115</sup> Adding smaller banks to the sample involves a trade-off. On the one hand, an enlargement of the sample size will increase the statistical validity. On the other hand, consolidation of very small banks would not be expected to affect concentration ratios. We found that the *level* of correlations amongst all available quoted banks in national banking systems were generally lower than amongst the largest banks. However, the *movement* in correlations over time were similar to those reported above as are the conclusions drawn.



### *Indirect interdependencies through correlated exposures to non-financial sectors and financial markets*

The shift towards non-banking activity of large financial conglomerates in Europe discussed above, particularly towards asset management, has increased financial firms' exposures to financial markets. This could have increased both the impact and propagation of shocks.

An adverse shock to asset prices may directly affect more institutions than in the past because many large banks and other financial institutions, such as hedge funds, have grown simultaneously through increasing trading activities and investing in marketable assets (see Table III.9). Such shocks are also likely to more quickly impair the creditworthiness of a financial firm than would occur through the deterioration in a loan book which is not marked to market. On the other hand, as banks' assets have become more liquid and marketable, the likelihood of underlying illiquidity problems has probably declined.

The combination of consolidation and increased market activity may help an idiosyncratic shock to an individual firm to propagate more widely. For example, if a weakened firm sells a large quantity of marketable assets this could depress prices significantly, and thus weaken institutions that are holding similar assets. Illiquidity of a key market-maker, which could be more likely following consolidation in the sector, may result in a dislocation of financial asset markets which in turn could adversely affect financial firms more generally. Although the precise role of consolidation in such effects is unclear (see Annex III.3), these kinds of shocks have occurred in the United States (eg the failure of Drexel which was important in the junk bond market, and a number of LTCM's counterparties were important in the US securities markets), but not recently to European firms.<sup>116</sup>

Along with firm consolidation, there is currently a parallel consolidation in European capital markets, particularly since the introduction of the euro. A private sector bond market at the European level is quickly emerging, while in the equity market there have been recent announcements of the merging of the London Stock Exchange and the Deutsche Börse on the one hand and between the Paris, Amsterdam and Brussels stock markets on the other. This will increase the ability of large firms, at least, to raise finance from capital markets at a pan-European level. This potential increase in non-bank finance for corporates may reduce the systemic impact of a bank crisis if it occurs independently from a marked reduction of liquidity in the capital markets (a "market crunch"). On the other hand, European banks are themselves currently the largest borrowers from the bond market in Europe, perhaps increasing the possibility of a combined bank and market crunch in Europe.

### **Potential policy implications**

The increase in financial consolidation raises a number of questions for the design of public sector safety nets.

Consolidation may have increased the number of banks, or possibly non-banks, that are *thought* by the private sector to be "too big to fail", particularly in some of the smaller European countries where bank concentration is now very high, and in countries where consolidation is not accompanied by the development of capital markets that would offer borrowers an alternative source of funding. Those firms *thought* covered by the safety net may receive a funding subsidy compared with those that are not. This could affect competitiveness both within national financial systems – between large and small banks and between banks and non-banks where business overlaps – and across countries between banks depending upon where the financial institution is incorporated. The regulatory framework in Europe leaves some discretion to national authorities for interpretation and translation into national legislation. These

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<sup>116</sup> Johnson Matthey - a key market-maker in the London Gold Market - was supported by the Bank of England in 1984 because it was thought that its failure would have disrupted the London financial markets more generally.

differences may be positive from a viewpoint of financial stability, since national authorities should be best suited to take into account the specific characteristics of local markets. On the other hand, this could potentially result in regulatory arbitrage and an unlevel playing field. However, the scope for providing risk capital support by governments is very limited in a European context since the European Commission is directly involved in scrutinising whether state aid is compatible with the Community's competition legislation.

In principle, the creation of firms thought by the private sector to be "too big to fail" could make financial instability *more* rather than less likely if firms take more risks in the expectation of being supported by the safety net – the moral hazard problem. But excessive risk-taking could be constrained through regulating the activity of risky banks through more intensive inspection, and ensuring that such banks have sufficient capital and adequate risk management systems to absorb unexpected losses. This is recognised in the proposed changes to the Basel capital standards for international banks. Supervision is likely to be increasingly focused on firms' risk management systems rather than formulaic capital standards. Also, central banks usually make it transparent that any financial support will be conditional on disciplinary measures on those responsible for the failure, particularly managers and shareholders.

More generally, given that the systemic costs of a firm's failure, although not the likelihood of failure, have probably increased because of the consolidation process, additional policies may be required to avoid the need for official emergency support. These could include policies which ensure that firms and markets are better able to withstand shocks, reduce the likely contagion once firms fail, encourage support from the private sector where failed firms are likely to be systemic and increase transparency (see below). The development of a liquid and deep pan-European interbank market would reduce the likelihood of national liquidity problems. The development of a secured rather than unsecured interbank market at the European level, in particular, would also minimise the potential for banking problems to spread across banks and country boundaries. This would parallel the increase in safety of the payment system following the introduction of a collateralised European-wide system (TARGET). Also, most central banks and regulators currently try to organise private sector support before risking public funds, such as facilitating liquidity support or organising a takeover in a situation of insolvency. In Germany this is formalised with the operation of a semi-private liquidity institution (Likobank) which for the past quarter of a century has provided lending of *penultimate* resort to failed illiquid but solvent banks, albeit small ones. There is a question here of whether a more consolidated financial system increases or reduces the likelihood of support from other banks when a firm fails. This depends on the balance between the costs to other banks of a bank failure with the potential competitive benefits and the ability of private banks to coordinate support where these costs outweigh the benefits. Everything else equal, having resulted in fewer banks, consolidation may reduce the coordination problem, thus making it easier for central banks or supervisory authorities to organise private sector support.

Public sector safety nets have traditionally been centred on banks rather than other financial institutions. Banks' expansion into investment banking and trade in securities and derivatives may reduce the likelihood of true liquidity problems but, on the other hand, may make their exposures more sensitive to changes in market developments. Conglomeration has blurred, to some extent, the distinction between banking and other financial activity. The creation of conglomerates raises two issues for safety net policies. First, it widens the potential safety net, and thus moral hazard, if banking activities cannot be ring-fenced from the non-bank part. Secondly, non-banks that are part of a banking group would gain a competitive advantage compared with those that are not.

The Scandinavian countries and the United Kingdom have reacted to convergence in financial firms by creating conglomerate supervisors, while in other European nations cooperation between bank supervisors and those of other financial institutions is the preferred model. Nonetheless, central banks still tend to regard the distinction between banks and non-banks as sufficiently clear to concentrate any potential central bank liquidity support on banks. But, as in the case of banks, where non-banks are thought to pose a systemic threat, the central bank or

supervisor may attempt to orchestrate private sector support. If current trends continue, the distinction between banks and non-banks may become increasingly difficult to sustain.

Although monetary policy in the euro area is now set by the euro system of central banks, policies for financial crisis prevention and management remain largely the responsibility of national authorities. This is consistent with the principle that the costs of support are borne by the country which most benefits from the support. Supervision remains the responsibility of national authorities whether inside or outside the central bank, whilst lender of last resort (LOLR) to individual institutions remains the responsibility of national central banks. Although, to avoid increasing moral hazard, no central banks in Europe give precise details on the terms, conditions and circumstances in which they would provide LOLR, some make transparent their general principles, while others deliberately provide no guidelines. There are also wide differences in the generosity of explicit national deposit insurance schemes above the minimum set by the European Union, while bankruptcy laws and winding-up procedures continue to be set at the national level.

Central banks focus their concerns on liquidity crises whereas consideration of solvency support, and thus explicitly using taxpayer money, is also an issue for ministries of finance. All the recent episodes of large support operations in Europe have been of the latter type – Nordic countries in whole banking systems and Credit Lyonnais and Banco di Napoli for large individual failures. Consolidation may increase the need for government involvement in crisis management. First, the increased complexity of financial firms' balance sheets and the potential increased speed of the development of financial crises, as shown in the Barings failure, make it more difficult to clearly distinguish a liquidity problem from a solvency one, especially in the time frame required. Second, the likely increase in size of individual bank failures in the future will increase the size of possible losses and thus potential costs to the taxpayer. The current euro arrangements for crisis management are compatible with the possible need for government involvement in crisis management. Since the responsibility of lender of last resort in the euro area is at the individual state level, decisions on support are made by those bearing the costs. In any case, given the potential costs of financial crises, the EU fiscal budget would be too small to finance such a rescue at the EU level.

Nonetheless, the growing integration of international financial markets and expansion in cross-border merger activity witnessed in the last few years are likely to accelerate following the euro. This may reduce financial risk through the benefits of geographical diversification, but if failure occurs it is more likely to have a pan-European or even global rather than solely domestic effect. This could occur either through a common shock hitting financial firms or markets in several European countries simultaneously, or through a shock to a firm or market in an individual European country being more likely to spread to firms or markets in other countries. This emphasises the need for cooperation and information sharing amongst national supervisors and central banks to prevent the occurrence of such euro-wide crises. It also requires arrangements to be in place between national central banks, including the European Central Bank, where euro area monetary stability or the payment system are potentially affected, as well as national supervisors and ministries of finance to manage such crises.

The institutional arrangements in Europe to safeguard financial stability are based, on the one hand, on bilateral agreements that make use of the principle of mutual recognition of national regulations, and, on the other hand, on participation in multilateral forums such as the Banking Advisory Committee and the Banking Supervisory Committee (for EU countries) and the Groupe de Contact (EU countries plus Norway, Iceland and Liechtenstein). In the case of cross-border banks, there is already an extensive set of general bilateral Memoranda of Understanding (MOUs) in place between the respective banking supervisors whereby information is exchanged and meetings are held regularly. There are also some MOUs for specific cross-border financial groups, in particular between the French and Belgian supervisors with respect to the supervision of Dexia and among the four banking and insurance supervisors of Belgium and the Netherlands with respect to the supervision of Fortis. On balance, although institutional arrangements in

Europe to maintain financial stability seem adequate at the moment, some improvement may be required in their practical functioning. Such improvements could include:

More bilateral information sharing and cooperation within countries and across Europe between bank supervisors and those of non-banks, and across countries between supervisors and central banks such as in surveillance analysis of financial stability;

A convergence in supervisory practices and, for large financial groups at least, an extension of the concept of the coordinating supervisor(s) – see Box III.1;

Increased effort to deal with the possibility of Europe-wide financial crises. For example, the Banking Supervision Committee, that consists of senior representatives from both central banks and supervisory bodies, provides a setting for the discussion of macro-prudential and financial stability issues, contributing to prudential bank supervision and financial system stability, and providing a multilateral forum for the exchange of information and cooperation between banking supervisors of member states;

Convergence in aspects of national legal frameworks, such as bankruptcy legislation, and market infrastructure to assist the development of secured pan-European money markets and to facilitate the possibility of cross-border private sector solutions in cases of bank failure;

Improvement in information flows and coordination between home and host supervisors and central banks. Within the European Economic Area, supervision is the responsibility of the home supervisor which, together with the home central bank (if separate), would be expected to take the lead in the case of problems at branches of home banks located abroad. In order to perform this task the home supervisor may need greater access to carry out examinations of affiliates in the host country. On the other hand, the potential systemic threat of bank failure, if any, may be most acute in the host country. Therefore, an increase in the number of cross-border banks may increase the gap between the costs and benefits of intervention for *national* supervisors and central banks. This could become a particular problem in small countries if branches of foreign banks – European or otherwise – account for a large share of the domestic banking system. Here the home supervisor and central bank may be willing to accept liquidation without taking full account of the systemic consequences in the host country. In this case, the role of the host supervisor and central bank may need to be more active;

Depending on the extent of future integration of pan-European financial markets and the emergence of pan-European financial institutions, there may be an issue of whether crisis prevention and management practices across European countries would need to converge further;

Because consolidation is increasing the complexity of financial firm structures across both sectors and countries, it may increase the need for timely information to assess solvency and potential systemic risk. This suggests the need to modify approaches to supervision and to increase market discipline. An increase in market discipline would be useful as a complement to supervision in crisis prevention. This is recognised in Pillar 3 of the proposed Basel Accord. Also, an increase in the disclosure of firms' performance and risk profile may enhance market discipline particularly by other financial firms and credit rating agencies. In principle, banks should be well placed to monitor each other since they operate in the same or similar markets and share the same information. But it is debatable whether banks have the right incentives for such monitoring. An increase in disclosure is more likely to increase market discipline if the private sector does not believe that a broad implicit safety net is in place.

### Box III.1

#### The 'Brouwer' Report

A recent report has been published on regulatory and supervisory structures in the European Union and financial stability by a working group of the EU Economic and Financial Committee chaired by the Dutch Deputy Governor Henk Brouwer. The Brouwer Report (2000) made the following recommendations to enhance the practical functioning of current institutional arrangements:

Strengthening cross-sector cooperation at the international level, since the present supervisory arrangements are primarily designed to enhance cross-border cooperation. Within the European Union, an important development is that the EU Commission has facilitated a round table discussion among the chairs of the supervisory committees of the different disciplines. International cross-sector cooperation could be further improved by clarifying and extending the concept of the coordinating supervisor(s) for the large financial groups domiciled in Europe;

Making the exchange of information among different supervisory authorities, and between supervisory authorities and central banks, on the major financial institutions and market trends a key feature of the strengthened cooperation between the authorities involved. In this respect, the Basel Committee on Banking Supervision and the Groupe de Contact can be expected to work in close collaboration. Furthermore, it is important that the ministries of finance and supervisory authorities regularly exchange views on the adequacy and necessary adjustments of financial regulation in a national context as well as in the context of the Banking Advisory Committee, the Insurance Committee and the High Level Securities Supervisors Committee;

Strengthening cooperation between supervisors and central banks, with a view to ensuring that if the emergence of financial problems at a major group may have contagion effects in other EU-countries, this is reported to the relevant authorities of the countries concerned;

Working on the convergence of supervisory practices, which can significantly enhance the efficiency of the national supervisory authorities involved in monitoring cross-border financial institutions.

## 5. Effects of consolidation in Japan

During the bubble period of the 1980s, financial consolidation in Japan was an event almost exclusively confined to the banking industry. Deposit-taking institutions were motivated to have bigger balance sheets with a view to taking advantage of the then-existing regulatory framework. The bursting of the bubble and deregulation in preparation for Japan's Big Bang have led to a sharp increase in consolidation among the different kinds of financial institutions. Table III.10 shows the change in the number of financial institutions during the past decade, which mainly reflects consolidation.

### Risk to individual financial institutions

#### *Consolidation during the bubble*

Under the former regulatory framework, Japanese financial institutions were segmented geographically and functionally.<sup>117</sup> The Ministry of Finance's branching policy that continued until the early 1990s was aimed at preventing excessive regional competition. Such a segregation policy virtually prevented new entrants into the trust and long-term credit bank

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<sup>117</sup> For example, Japanese banks were segregated by geographic region. City banks had branches in major cities while regional banks had branches only in the regions in which they operated. Japanese banks were also segregated by function. Long-term credit banks and trust banks specialised in long-term lending for equipment investment, while commercial banks provided short-term working capital.

fields.<sup>118</sup> In the late 1980s and early 1990s, the booming economy and gradual financial liberalisation promoted mergers among small and medium-sized deposit-taking institutions because mergers were the only way to expand branch networks as well as increase asset size in a short period.<sup>119</sup> A few mergers between relatively small major banks also took place.<sup>120</sup>

While these mergers aimed mainly at revenue scope economies, they often duplicated organisational and decision-making processes due to the conflict of corporate cultures and lack of well focused strategies. During this period, mainly attributable to the then remaining regulations on banking activities, such as deposit interest rate caps, and a very low rate of credit losses, the most important criterion generally used in Japan for judging a bank's performance was the size of its balance sheet, which was also the major source of revenue. The reduced importance of asset size as a revenue source, mainly attributable to the non-performing loan problem, saw an end to such mergers, especially among large banks. As Chart III.10 shows, the relationship between asset size and profitability of the largest 20 Japanese banks has become increasingly negatively correlated since 1994.

### ***Post-bubble consolidation***

After the bursting of the bubble, consolidation among small and medium-sized financial institutions continued but a substantial number of them represented failure resolutions. The wave of very large consolidations which began in 1999 marked an end to the non-performing loan problem among major financial institutions<sup>121</sup> (Table III.11) and may be regarded as survival strategy in response to the likely creation of a competitive environment that will be brought about by Japan's Big Bang (deregulation of virtually all existing frameworks that have hitherto prevented free competition) as well as global consolidation trends. It is also propelled by the various safety net frameworks that have been put in place by the government in response to the financial crisis, including that for the injection of capital using public funds.<sup>122</sup> Capital injection by the government, which was accompanied by management improvement plans and the stricter accounting treatment of non-performing loans, not only restored confidence in the solvency of recipient banks but also acted as a catalyst for consolidation in terms of diminishing information asymmetry regarding the financial conditions of merging partners.

### ***Geographic specialisation and diversification***

There are some consolidation cases that aim to benefit from specialisation and others from diversification. One major bank envisages becoming a retail bank specialising in the Kansai area (western Japan) by assuming the assets and liabilities of smaller failed regional banks in the same region; it has withdrawn from all overseas operations. Acquiring failed banks will give the

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<sup>118</sup> See Koyama (1995).

<sup>119</sup> Until the early 1990s, new branches were subject to approval that specified the exact location of a branch so that it would not infringe upon the business territory of others. Moreover, each financial institution was, in principle, allowed to set up only one new full-branch in two years.

<sup>120</sup> There were mergers between Taiyo-Kobe Bank and Mitsui Bank (Sakura Bank) in 1990, and Kyowa Bank and Saitama Bank (Asahi Bank) in 1991. The merger of Bank of Tokyo and Mitsubishi Bank (Tokyo-Mitsubishi Bank) in 1996, although taking place after the bursting of the bubble, could also be regarded as belonging to this category.

<sup>121</sup> Regional consolidation by Daiwa Bank, the merger of Tokai Bank and Sanwa Bank, that of IBJ, Fuji Bank and DKB (Mizuho Financial Group), that of Sakura Bank and Sumitomo Bank (Sumitomo-Mitsui Bank), as well as that of Tokyo-Mitsubishi Bank and Mitsubishi Trust Bank (Mitsubishi-Tokyo Financial Group) belong to this category.

<sup>122</sup> In January 1999, the Financial Reconstruction Commission announced basic policies concerning capital enhancement plans, which state, "financial institutions negligent of consolidation efforts are not eligible for capital injection".

bank more flexibility in conducting rigorous rationalisation such as closing unprofitable branches and dismissing excess personnel. If this vertical consolidation materialises, the bank is likely to acquire a strong and cohesive client and depositor base in the region and attain a critical franchise mass. Until the early 1990s, the Japanese regulatory authorities compartmentalised the regional customer base into small units for the purpose of restricting disorderly competition under the “convoy system”. This merger can perhaps thus be seen to take advantage of market power rents stemming from geographical specialisation.

But more importantly, the increase in small (largely insured) local deposits as a result of this merger will provide the bank with a stable source of funds. From a risk management perspective, mergers between major banks that are constantly dominant takers of short-term interbank funds and regional banks that are constantly main providers of short-term interbank funds could reduce total interbank exposure.

As yet there has not been a typical consolidation case that aims at geographical diversification. While some merger plans between major banks have been unveiled (or actually carried out); these banks have a strong franchise in their respective regions, namely Nagoya (the Tokai area), Osaka (Kansai), and Tokyo (Kanto). The net geographical diversification effect of mergers between major banks such as this one is somewhat ambiguous. As Chart III.11 indicates, geographical diversification effects in terms of credit and interest rate risks may be generally limited because the business cycles of these regions have a high positive correlation. In addition, mergers among major banks are not likely to alleviate heavy reliance on interbank borrowing, which could increase potential funding costs.

Indeed, the fact that Asahi opted out of the planned merger with Tokai that was aimed at creating a supraregional retail bank may suggest the difficulty in exploiting geographical diversification effects in Japan, especially by major banks.

### *Managerial efficiencies*

Most very large mergers so far observed in Japan seem to aim more at cost scope economies, especially in terms of information technology (IT) investment. In order for a major bank to enjoy cost efficiency gains, it is increasingly important to make large-scale IT investments to have as high-speed and integrated a computer system as possible, which, judging from the global standard, is too costly for major Japanese banks in comparison to their individual profits. For example, most major US banks spend more than JPY 100 billion annually on IT investment while the six largest city banks in Japan spend only JPY 55 billion on average (Chart III.12). After consolidation, the Mizuho Financial Group is expected to invest more than JPY 150 billion annually on a consolidated basis. Such large-scale IT investment, coupled with consolidated customer bases,<sup>123</sup> will likely produce a critical mass of customers per unit of IT investment and improve cost efficiency of the merged banks.<sup>124</sup> However, there are a series of issues to be tackled. To start with, corporate culture gaps between merging banks cannot be underestimated. The fact that each bank has its own historical background and established relationships with clients, and also that existing shareholders often have vested interests, argue in favour of strong managerial leadership to promote successful mergers. Japan’s experience indicates that this is probably more the case for regional banks that have deep roots in the local areas they serve.

Second, in terms of risk management, aggregating similar risk profiles may not in itself reduce the amount of risk in proportion to the increase in size. Management must have clear risk management objectives and make efforts to actively control risks. In addition, if the corporate

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<sup>123</sup> Although still far down the scale from major US banks that normally have thousands of branches, the Mizuho Financial Group will have approximately 800 branches at the outset.

<sup>124</sup> See eg Atkinson (1998 and 1999b).

architecture of a financial conglomerate becomes complex, a small risk could develop into a major one because the complexity itself may confuse depositors and other creditors. A minor problem affecting one arm of a financial conglomerate could be interpreted as a problem affecting the whole conglomerate. At any rate, improvements aimed at attaining a sufficient compliance function and auditing skills vis-à-vis operational risks may prove to be an important task to be achieved by risk management in a large and complex structure.<sup>125</sup>

Finally, integration of the computer systems of merging banks is bound to be costly in Japan due to the keiretsu relationships that involve computer companies. For example, in the case of Mizuho, all three banks have different systems provided by different makers (IBJ has Hitachi System, Fuji IBM, DKB Fujitsu). It is said that it will take almost two years to consolidate their computer systems.<sup>126</sup>

### ***Product specialisation and diversification***

Parallel with stabilisation of the financial market, cross-sector alliances are beginning to be seen as an attempt to capture complementarities. These are typically alliances between banks and securities companies and between banks and insurance companies. These alliances aim at merging overlapping functions, each specialising in comparatively competitive fields. They also aim at sharing delivery channels. For example, selling fire insurance to mortgage borrowers could bring in additional revenue.

To what extent such consolidation produces additional synergies is yet to be seen. There is a view that Japanese financial institutions have already engaged in the cross-selling of key financial products through the keiretsu network, and therefore additional synergies in this respect are limited.<sup>127</sup> If this is the case, there is a risk that a newly created financial group may only serve to maintain excess capacity in the industry by subsidising less competitive firms in the group.

On the other hand, the risk diversification effects of cross-sector consolidation could prove positive, especially between banks and insurance companies whose risk profiles are generally less correlated. For example, if insurance policies against natural disasters (catastrophe bonds) were mixed in the liabilities of a financial conglomerate, they would contribute to diversifying risks since the probability of natural disasters in major countries normally has little correlation with interest rates and foreign exchange rates.<sup>128</sup> It is also pointed out that maturity structures of assets and liabilities between banks and life insurance companies are broadly complementary. Of course, offsetting risks between banks and insurance companies may not be as easy to achieve in practice as in theory for Japanese financial institutions at this juncture. More realistically, managing complex risk profiles to secure competitive returns may prove to be a challenging task for Japanese financial institutions for some time. At any rate, complex risk profiles are expected to stimulate the development of better risk management techniques and capabilities.

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<sup>125</sup> On the other hand, if managerial integration increases across firms in a group, its corporate architecture may become simpler. A simple structure could promote assimilation of trading strategies and risk management methods across firms in the same group. If scenarios or assumptions underlying these strategies and methods prove biased or wrong, the group as a whole could incur an unsustainable loss.

<sup>126</sup> Many large Japanese banks have built up computer systems with central, large-scale host computers supplied by different manufacturers, making the interfacing and integration of computer systems of merging banks more complex and time consuming. By March 2001, individual financial services offered by the three banks involved in the Mizuho consolidation will be operated by single computer systems, eg retail banking by the DKB system, investment banking by IBJ's system. By April 2002, an entirely new system will replace all current systems.

<sup>127</sup> See eg Atkinson (1999a).

<sup>128</sup> See eg Morimoto (2000).



### ***Platform risk***

Some Japanese commercial entities have announced their intention to enter the banking area using their existing platforms such as internet businesses and supermarket chains.<sup>129</sup> Such banks will try to capture customers from their original commercial businesses to take advantage of synergies between the two businesses.

However, some analysts point out that just depending on customers of the original business may not achieve critical franchise mass to make the banking operation sufficiently profitable. Also, since such banks are physically dependent on the platform (premises, customers, communication networks etc.) of the original business, they are directly exposed to performance, accident and reputational risks attaching to the original business – this may be called *platform risk*. For example, in the case of a supermarket bank, if the business of a supermarket chain were taken over, the bank could lose all the premises immediately. This risk is totally foreign to risks inherent in banking.<sup>130</sup>

### ***Cross-border transmission of risks***

Another feature of recent financial consolidation is the entry of foreign financial institutions into retail markets (Table III.12). This is especially true of foreign investment banks and insurance companies (for example, the purchase of Yamaichi Securities by Merrill Lynch, the purchase of Nikko Securities by Travelers, and the purchase of Nippon Dantai Life by Axa). They aim to capture the fruits of Japan's Big Bang by using the existing branch networks as a platform to sell their products to Japanese customers as well as take advantage of global risk diversification effects. Some investment banks also regard such networks as a safety valve to control volatile revenue flows in terms of transferring a portion of risks (for example, in a repackaged product) to end-investors in exchange for commission fees. While this type of consolidation could bring in new capital, new financial skills, and different management styles, such international networks might directly channel home-made risks to Japanese financial markets, which would pose a challenge for Japan's financial authorities as host country supervisor.<sup>131</sup> In order to forestall such financial contagion, better supervisory coordination and information sharing with home country supervisors, supported by improved disclosure, is called for.

This said, such direct contagion risk may not be imminent because the purchase of Japanese financial institutions by foreign financial institutions will be a gradual process. In fact, most of the Japanese financial institutions purchased so far by foreign institutions are those which had failed and whose balance sheets were cleaned up by the safety nets. This suggests a generally cautious approach on the part of foreign institutions.

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<sup>129</sup> Ito-Yokado plans to set up a bank specialising in payment services based on its network of nearly 10,000 supermarkets and convenience stores. Moreover, Sony (internet banking) and Japan Railways (payment service) are also planning to enter banking.

<sup>130</sup> In August 2000, Japan's Financial Supervisory Agency released a guideline concerning the licensing of banks established by commercial firms, which also requires banking subsidiaries to take appropriate measures to segregate risks stemming from the original business of their respective parent firm, as well as to prepare contingency plans to cope with the possible materialisation of such risks.

<sup>131</sup> The cases of BCCI and Barings suggest the possibility of risks being transmitted directly from abroad. These cases involved risks transmitted through payment systems. BCCI's Tokyo branch was a member of BOJ-NET (Bank of Japan's large-value net payment system) and Barings' Tokyo Branch was a member of the Japanese government bond book-entry system operated by the Bank of Japan. In turn, Japanese financial institutions could exert adverse effects on foreign markets. One study suggests that Japanese banks' asset contraction after the bursting of the bubble, which included a sharp curtailment of lending in the United States, contributed to a decline in real economic activity in the commercial real estate sector in the United States (Peek and Rosengren (2000)).

### ***Market power rents***

Market share will remain an important competitive factor for some time and will increase very large financial institutions' power to become price leaders. However, in the longer term, globalisation may reduce such benefits if outside capital can enter Japan's financial markets freely to supplement reduced supply capacity. Technological improvements such as faster information dissemination and standardised trading and risk management models may, at least for the time being, serve to reduce market power rents of the existing large market participants who used to enjoy profitability derived from superiority in terms of information and technology.

### ***Summary***

The recent consolidations among major banks appear to have noticeable cost saving effects in terms of rationalising personnel and branches, integrating customer bases, and improving IT quality. However, mergers with regional banks are called for in order to alleviate heavy reliance on interbank borrowing (which could increase potential funding costs). Overcoming cultural gaps would also be an important cost saving factor. On the revenue side, geographical diversification may not result in effective risk diversification due to the highly positive business cycle correlation among major regions in Japan. Also, establishing an effective risk management system is critical to control risks, thereby stabilising revenue flows.

The net effect of cross-sector consolidation is not clear. The existing keiretsu cooperation might have already exploited complementarities deriving from cross-selling, leaving little additional profit to be obtained from consolidation. There could be some risk reduction effects between banks and insurance companies but only if risk complementarities between the two businesses are effectively managed. Foreign firms purchasing retail securities and insurance franchises in Japan may enjoy some revenue increase deriving from Japan's Big Bang as well as some risk reduction effects deriving from global risk diversification and risk transfer to end investors on a global scale.

Finally, success of commercial firms entering banking seems to hinge on whether a critical customer mass is attracted from the original business. It should also be noted that banks physically depending on the original business may be vulnerable to platform risks attaching to the original business.

### **Systemic risk**

#### ***Creation of firms that may be "too big to fail", liquidate, or discipline effectively***

Consolidation has created a number of systemically important financial institutions. For example, the Mizuho Financial Group alone has total assets of USD 1,500 billion (30% of nominal GDP). If such a financial institution were to experience a severe financial problem – insolvency, illiquidity, or operational failure – it could lead to a disorderly resolution process that could have a serious impact on both domestic and international financial markets. It could also cut off the funding sources of borrowers, thus exerting substantial adverse effects on the overall economy. The loss of the franchise value of such an institution would also result in larger resolution costs. Given the potential damage to the financial system and economy, it might be difficult, if not impossible, to allow such a financial institution to fail and at the same time maintain financial stability.

Japan has faced this trade-off in actuality. To address the situation, Japan's financial authorities allowed internationally active (and thus systemically important), failed financial institutions such as LTCB to continue operations and thus to maintain their financial intermediary function because it was considered less expensive than liquidating them and dealing with the financial disruption that would otherwise have ensued. At the same time, in order to minimise moral hazard and resolution costs, the financial authorities removed management and penalised shareholders in the form of a capital reduction. This implied, at least from the perspective of

management and shareholders, that the bank had failed, although it continued to provide all existing services. This basic concept in dealing with failed financial institutions was formally legalised in October 1998 (Financial Stability Early Strengthening Law and Financial Reconstruction Law), and is discussed later.

### ***Key characteristics of shocks that may become systemic***

#### *Direct interdependencies between firms and markets through interfirm on- and off-balance sheet exposures*

Many analysts agree that consolidation could give the resulting larger financial institutions greater ability to absorb shocks. However, at the same time, a reduction in the number of market participants could significantly increase the concentration of risks and mutual dependence in coping with financial risks. For example, an increase in credit exposure among very large financial institutions could theoretically increase direct interdependencies. Interestingly though, as a matter of practice, interbank loan exposure is more an issue of indirect interdependencies in Japan, as is pointed out in the following section.

On the other hand, the derivatives positions of Japan's major financial institutions are, and are likely to be, principally among major financial institutions, both domestically and globally. Since the derivatives exposures of individual major financial institutions are already colossal, direct interdependencies between merged financial groups will inevitably be systemically significant (Chart III.13).

In the case of LTCB, it was feared that a disorderly collapse might trigger a closeout clause for its global derivative positions worth USD 450 billion in notional principal,<sup>132</sup> a substantial amount of which was cross-border. If this had transpired, it was viewed as conceivable that the resulting open positions on the part of its counterparties would disrupt international financial markets because those counterparties would try to replace liquidated positions in a concerted manner. In an effort to prevent this, the Bank of Japan clarified, in a statement issued by the Governor<sup>133</sup> upon the temporary nationalisation of LTCB on 23 October 1998, that "all liabilities of the bank, including derivative transactions, will be smoothly met and the Bank will provide necessary liquidity to LTCB." As a result, few institutions closed their position vis-à-vis LTCB.

This incident suggests that a disorderly closure of a very large financial institution might disrupt global financial markets, as shocks would be transmitted across national borders via the direct interdependence of firms at such a speed and magnitude (typically reflected in derivatives transactions) that the authorities would have very limited time to respond. Moreover, although arrangements like closeout netting would contribute to reducing credit risks, actual execution may result in higher volatility and thus greater market risk, despite the fact that risk management efforts at individual institutions are completely rational.

#### *Indirect interdependencies through correlated exposures to non-financial sectors and financial markets*

A typical example of indirect interdependencies through correlated exposure was observed during the bubble economy of the late 1980s in Japan. During the period, banks in general expanded loans to real estate-related industries. Thus, the fall in land prices during the 1990s gradually reduced Japanese banks' lending capacity and, in turn, exerted a considerable negative impact on land prices (Chart III.14). This caused a spiral deterioration in asset quality across the

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<sup>132</sup> This figure compares to JPY 6 trillion in the Drexel case and Y4 trillion in the Yamaichi case.

<sup>133</sup> Masaru Hayami, Governor of the Bank of Japan, "Statement by the Governor", 23 October 1998.

banking industry over the decade. Disposal of non-performing loans by one bank also indirectly affected other banks' asset quality in terms of the bankruptcy of common borrowers.

Very large financial mergers in Japan will probably further intensify indirect interdependencies via correlated exposures to non-banks and financial markets. For example, on the asset side, the four very large financial groups now being established are likely to account for approximately 50% of the total loans of banks in Japan. In some cases, it may result in the concentration of credit risk on a certain borrower or industry (Table III.13). On the liability side, these groups will likely account for approximately 70% of total short-term borrowings while they account for only 3% of total short-term loans (Chart III.15) – traditionally in Japan, the short-term money market (call money, certificates of deposit, large-lot deposits) has been an important funding source for major banks, and one which accounts for almost 20%, on average, of their liabilities. This means that the failure of one of the major four groups as a borrower in short-term money markets could lead to the failure of common lenders in such money markets, typically regional banks and trust funds, which also provide other very large groups with short-term loans. In fact, during the crisis of autumn 1997, the liquidity of short-term money markets nearly dried up reflecting mounting uncertainty over the financial conditions of some major Japanese banks.

Therefore, it is conceivable that consolidated very large financial institutions will inevitably be motivated to reduce loans to non-banks and minimise funding in the short-term money market by compressing balance sheet size, for example, through loan liquidation and securitisation.<sup>134</sup> Some borrowers may be asked to reduce overall borrowing limits and seek alternative funding sources in the corporate bond market. In addition, these financial institutions are likely to liquidate a significant portion of their cross-shareholdings (Table III.14) because shareholdings will become too large for a consolidated financial institution in terms of market risk (measured, for example, in terms of VaR, they correspond to approximately 20%<sup>135</sup> of capital). Thus, by stimulating securitisation, corporate bond issuance and the liquidation of cross-shareholdings, very large financial mergers in Japan may trigger the development and substantial growth of capital markets which have so far played a complementary role in terms of corporate financing in Japan (Table III.15).

The liquidation of cross-shareholdings that inevitably involves the sale of bank shares by other keiretsu firms may also prompt banks to improve return on equity in order to attract a new slate of investors who will agree to enter into long-standing relationships. Such new relationships will be based on banks' profitability rather than stability in supplying industrial funds.<sup>136</sup> Banks may have to improve lending profitability by, for example, the improved pricing of loans to generate higher return on equity.<sup>137</sup>

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<sup>134</sup> The major four financial groups are reported to be planning to establish a loan liquidation market in order to reduce concentration of risks as a result of consolidation (Nikkei Newspaper, 31 May 2000).

<sup>135</sup> VaR here means maximum risk exposure calculated using stock data at the end of the financial year 1996 under the conditions that the holding period is six months and confidence interval is 99%.

<sup>136</sup> Cross-shareholding has been a useful arrangement in which corporate borrowers who are also shareholders of a bank focus more on the stable supply of funds from the bank at a relatively cheap cost and less on return on equity. Bank lending, therefore, has not necessarily reflected the credit risk of individual borrowers; the rationale of banks is to maintain stable and long-term relationships with borrowers based on cross-shareholdings. While such an arrangement served to channel industrial funds into the corporate sector and thus economic growth, it may well explain banks' relatively low profitability on lending as well as low return on equity investment in banks.

<sup>137</sup> The growth of capital markets in Japan (as well as the increased attractiveness of bank stocks, which account for approximately 10% of the total market value of the Tokyo Stock Exchange) is also expected to stimulate pension and fund management activity. This, in turn, will probably relieve part of the increased risk concentration in the banking sector by way of diversifying the channels through which risks are transmitted as well as providing the banking sector with risk capital from end investors.

There may be both costs and benefits from the development of capital markets in Japan. Banking systems have a tendency to temporarily absorb the adverse consequences of macroeconomic and financial shocks (such as business and credit booms and busts) by revaluing assets internally (via provisioning, for example) and usually, more slowly, by using abundant capital. By contrast, capital markets tend to react more quickly to similar shocks as market participants manage and shed risks by trading and repricing assets. Thus, as a financial system evolves from one dominated by banks to one with deep and liquid capital markets, price and financial flow volatility are likely to increase. While this can be costly, a potential benefit is that financial risks become less concentrated in financial institutions and more widely distributed among investors who are willing, and potentially able, to shoulder and manage such risks. This could serve to prevent potential problems at a single financial institution or group from developing and severely affecting the financial markets and the real economy.

### *Deposit runs versus deleveraging*

The progress of securitisation as a result of financial consolidation appears, in turn, to be promoting financial consolidation, which is likely to change the nature of systemic risk in the sense that it blurs the demarcation between banking and other financial businesses. For example, in order to benefit from the development of the capital markets, major financial institutions are trying to develop sophisticated trading and risk management technology to manage volatile market risks. Consolidation will allow sizeable revenue flows to constantly finance the massive IT investment that sophisticated technology requires. Also, some wholesale financial institutions are motivated to acquire a retail base in order to increase fee business vis-à-vis end investors as a stable source of revenue as well as to retain core deposits as a stable source of funding.

In traditional thinking, banks are the only entities that are uniquely systemic in nature because of their balance sheet structure (ie short-term funding and long-term lending) and their role in payment systems. However, consolidation among various types of financial institutions, with the help of deregulation, is gradually blurring the demarcation of businesses, especially between banking and securities. Indeed, the balance sheet structure of securities firms has gradually become more similar to that of banks. For example, securities firms have recently increased their holding of less liquid assets such as securitised loans, high yielding bonds and other instruments with derivative features. On the liability side, the recent growth of the repo market has enabled securities firms to easily obtain liquid funds and leverage their balance sheets.<sup>138</sup> All of this has created systemic problems similar to those that exist in the banking industry.

Meanwhile, bank assets have become more liquid parallel to the development of securitisation and credit derivatives, thereby relieving, at least to some extent, the traditional role of banks in transforming short-term, liquid funds into long-term, illiquid funds. The risk reduction needs of very large banks as well as the fusion of banking and securities businesses as a result of consolidation will promote such changes and thus reduce the uniqueness of banks.

Moreover, such fusion between the banking and securities businesses will also make market-making an increasingly important means of financial intermediation because more financial instruments will be either priced or evaluated in the markets. As a result, credit risks will become increasingly market-tied and volatile. In contrast to loan-loss provisioning, the correction of credit risks in the market could immediately usurp market players' risk capital, as was the case during the Asian crisis in 1997. The loss of market-makers' risk capital would see liquidity evaporate in the capital markets and intensify the funding difficulties of highly leveraged institutions because they need to put up additional margin calls, unlike banks whose

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<sup>138</sup> In fact, in Japan, major securities firms have traditionally been allowed access to the short-term interbank money markets. In retrospect, it may be no coincidence that the financial crisis in autumn 1997 was triggered by the default of interbank obligations by Sanyo Securities.

funding is protected by deposit insurance.<sup>139</sup> Moreover, deleveraging tends to have serious adverse effects on the real economy because it can create negative equity as a result of plunges in asset values. Indeed, this was one of the reasons the Bank of Japan had to extend liquidity support to facilitate the orderly unwinding of Yamaichi Securities.<sup>140</sup>

On the other hand, development of real-time gross settlement, which is expected to become operational in early 2001, and the introduction of speedy resolution methods to the deposit insurance system scheduled to become effective in April 2001, will make the payment system more resistant to a chain reaction or financial risk contagion. In other words, in the future, systemic risks may stem more from deleveraging in the market than deposit runs or the chain reaction stemming from a payment failure.

## **Potential policy implications**

### ***Design and operation of financial safety nets***

Japan has three consumer protection funds: deposit insurance, the investor protection fund, and the policyholder protection fund, each respectively covering the banking, securities and insurance industries. In principle, the deposit insurance system and investor protection system protect depositors and investors in securities up to JPY 10 million, while the policyholder protection system guarantees 90% of insurance companies' reserves. However, these partial protection systems were incapable of coping with the post-bubble crisis, and thus temporary special measures were introduced to protect all liabilities of deposit-taking institutions until the end of March 2002, as well as to protect securities investors and insurance policyholders beyond the limits until the end of March 2001.

Learning from these experiences, in 2000, legislation enabled the deposit insurance system to commence the resolution of failed depository institutions as early as possible and to expedite business transfer procedures. This framework is aimed at minimising depositor losses and preserving the liquidity of deposits by maintaining financial functions to the greatest possible extent so that the possibility of systemic risk is minimised. It was also stipulated that, in the event of systemic risk, the Deposit Insurance Corporation might be authorised to protect all liabilities of a troubled financial institution as well as to inject capital into undercapitalised banks (systemic risk exceptions<sup>141</sup>).

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<sup>139</sup> Moreover, if consolidation promotes the dominance of particular trading and risk management practices and models, it will tend to increase positive feedback effects and induce herding behaviour, for instance, in terms of synchronising dynamic hedging among a number of market participants. As financial institutions have become larger, more global and increasingly capable of dominating relatively small financial markets, global portfolio diversification on a large scale will increase, and, in fact, already appears to be increasing, the risk of positive correlation on a global scale in times of stress. For example, the fact that the depreciation of the Russian rouble in August 1998 led to a depreciation of the dollar, as well as the fact that bond and stock prices in Russia led to a plunge in stock prices in Latin America and partially in the United States, indicate that international markets have become strongly correlated due to the progress of global portfolio diversification.

<sup>140</sup> The 1997 financial crisis was first triggered by the default of Sanyo Securities, a medium-sized securities firm, in the interbank market. As the crisis developed, the Bank of Japan decided to provide liquidity support for the orderly winding down of Yamaichi Securities (one of the big four securities houses in Japan which announced the voluntary closing of business) with a view to containing systemic risks. Yamaichi was a financial conglomerate that held securities subsidiaries in nine major financial centers and two banking subsidiaries in Japan and the United Kingdom.

<sup>141</sup> If the Prime Minister acknowledges the existence of systemic risk after consulting the Conference for Financial Crisis, the Deposit Insurance Corporation may be authorised to protect all depositors and other creditors of a troubled financial institution by facilitating capital injection, financial assistance beyond the payoff cost limit, or temporary nationalisation.

Japan's new safety net framework may cope with systemic risk better than before. However, there are issues that require further consideration with regard to the failure of a very large bank. First, a substantial amount of public funds would probably be needed to cover the loss incurred by the failed bank. Obtaining approval from the Diet to appropriate funds might require a long time during which the franchise value of the failed bank would deteriorate significantly, resulting in further losses. Second, it might not be easy to find a rescuer financial institution in a timely manner, particularly when the troubled bank's prospects for restoring viability are uncertain. Third, when a financial group is a complex conglomerate comprising a bank and other financial institutions, the collapse of a non-bank firm within the group might threaten the viability of the bank because the counterparties of the financial group may trigger cross-defaults against the bank, particularly when the firewalls among the firms are unclear. Fourth, the Bank of Japan might have to extend bridging loans to allow the failed bank to continue operations in order to avoid market disruption until funds to cover the loss become available. Fifth, the expectation of bailout would generate moral hazard on the part of very large banks.

These limitations underscore the importance of early correction rather than an early resolution in coping with the problems of systemically important financial institutions. This is the rationale behind the new deposit insurance system being authorised to inject capital into undercapitalised banks. However, such public subsidisation should only be allowed in truly exceptional cases because it could generate moral hazard and distort competition.

In this respect, the market mechanism remains a crucial tool in assessing the financial soundness of financial institutions. In order to facilitate market discipline, continuous efforts to improve public disclosure are indispensable. Also, accounting rules should be more coordinated to make financial conditions with respect to different activities more transparent and comparable. In addition, an independent and strong compliance function as well as more developed auditing systems are called for. For example, a risk-based performance evaluation and intrafirm competition between compliance offices related to different activities would probably enhance the effectiveness of risk controls, although more centralised risk control models might be suitable for more traditional banking activities. Needless to say, there is no "one size fits all" type of risk control system. Each financial conglomerate should develop an original system in accordance with its own risk profile. It should also be noted that while increased reliance on market discipline helps to detect problems earlier, it is like a double-edged sword in the sense that it leaves only very limited time for the financial authorities to respond once a problem surfaces and quickly develops in an unfavourable way. The markets might also react excessively to such a shock and generate irrational panic from time to time.

Early supervisory intervention could, therefore, be an especially important means to check the health of systemically important financial institutions. Effective supervisory intervention at a fairly early stage could correct problems even before solvency is questioned. If such early intervention were successful, moral hazard could also be effectively checked because management should face penalties well before the use of public funds is hinted. Such (somewhat draconian) intervention may be justified with respect to systemically important financial institutions because they are too important to be left to market mechanisms alone and, therefore, systemically important financial institutions inevitably remain the largest potential beneficiaries of safety nets.

### *Adequacy of data flows*

A major challenge for the supervisory authorities is how to know when to intervene. Needless to say, one of the methods of correcting problems at individual financial institutions is the enforcement of prompt corrective action (PCA), which was introduced in Japan in 1996. PCA currently relies primarily on risk-asset capital ratios but, useful as they may be, risks can be measured using different methods. Table III.16 shows the level of leveraging measured in various ways, which implies that risk amounts of a financial institution can vary greatly in accordance with measurement methods. These indicators may also prove to be useful in supplementing current PCA.

More generally, in order to discover problems at an early stage, supervisors should look into structural and macroeconomic factors, such as infrastructural impediments, that can distort market mechanisms, the creation of irrational expectations that can lead to financial bubbles, in addition to factors peculiar to individual financial institutions. For example, our experience tells us that bank behaviour has clearly changed in accordance with the progress of risk accumulation. Chart III.16 shows the relationship between lending spreads and the lending attitude of Japanese banks. During the bubble period Japanese banks aggressively expanded lending with little regard to profitability, but this suddenly ended when the financial bubble burst. Apparently, Japanese banks started to pay attention to lending spreads and became cautious about asset expansion after stock prices plunged in February 1990.

However, it should be noted that the accumulation of risks could be detected in various aspects of bank behaviour, and there is no such thing as an omniscient early warning indicator that can signal a warning for all problems. Thus, simple though it may be, it is important for the financial authorities to look carefully at various macro and micro indicators (various interest rates and asset prices, changes in transaction patterns, change in market players etc) that can affect bank behaviour parallel with developments in economic and monetary conditions. In this regard, an in-depth study of the past banking crisis may well offer useful insights into developing indicators that capture behavioural changes with respect to financial institutions.<sup>142</sup>

### ***Role of LOLR assistance***

Given the desirability of early intervention, lender of last resort (LOLR) assistance could prove to be the most effective means to cope with systemic risks, at least under the Japanese safety-net framework. The Bank of Japan has extended LOLR assistance in two different ways. Ex ante LOLR assistance aims at correcting irrational market pessimism by showing the central bank's belief that the institution concerned is solvent and viable. Ex post LOLR assistance is extended to help meet all the liabilities of an institution to reduce panic, regardless of solvency.

Ex ante LOLR assistance relies on announcement effects. It could be extended either directly to an individual financial institution or via the market. In an idealistic environment in which the central bank enjoys unshakeable confidence from the market, simply announcing its commitment to provide liquidity could correct market pessimism due, for example, to information asymmetry. Such commitment from the central bank could prove to be the cheapest and the most effective means to deter a self-fulfilling occurrence of systemic risk, since successful ex ante LOLR assistance could restore the corporate value of the financial institution in question or conditions of the affected market. It should also be noted that in order to succeed in such ex ante LOLR assistance, the central bank must be seen by the market to be making an independent decision concerning the solvency of the financial institution in question, unaffected by political considerations. However, in the Japanese setting, an independent judgement implies that the Bank of Japan must be prepared to assume losses should they materialise. Moreover, there could be an instance in which the Bank might still deem it necessary to extend LOLR assistance to maintain financial system stability, even knowing that it could result in a loss with a certain probability.

Also, as one form of ex ante LOLR assistance, the central bank could temporarily supplement the role of market-makers in terms of providing liquidity to the market as a market-maker of last resort. For example, the central bank can engage in direct transactions with market participants when liquidity in the market dries up due to financial crises that incapacitate private market-makers. This role would be particularly effective if the market were overshooting because of panic. For example, during the crisis of the autumn of 1997 when the "Japan premium" increased significantly, the Bank of Japan played a role in intermediating liquidity from foreign

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<sup>142</sup> See Bank of Japan (2000).



banks to Japanese banks in the short-term money market in order to calm financial turmoil.<sup>143</sup> As the panic subsided, market pessimism over Japanese banks' solvency disappeared (Chart III.17).<sup>144</sup>

An obvious question is how to determine the scope of LOLR in the face of a systemic threat. This is particularly the case in an environment where the emergence of financial conglomerates is blurring the distinction between banks and other non-bank financial institutions. In this regard, ex ante LOLR assistance could also prove to be the more effective and a legally more justifiable means for the central bank to cope with problems of non-bank financial institutions because it aims at correcting market sentiment instead of bailing out non-deposit creditors. Thus, such extension of LOLR could be compatible with the objectives of the central bank that has responsibility for financial system stability. Furthermore, liquidity can be provided not only to troubled financial institutions individually but also to financial markets as a whole through market operations.

Ex post LOLR assistance is often used as a bridge for deposit insurance funds (or the provision of funds by the government to cover losses) when the deposit insurance system is not sufficiently funded or empowered to design rescue plans for failed financial institutions.<sup>145</sup> Ex post LOLR assistance may not always be a practical choice to handle a very large financial conglomerate because it is often not realistic for the central bank to provide all the funds needed to meet the drain of liabilities without risking some side effects on monetary policy. Even if the government guarantees repayment, central bank funds might have to be dedicated to the failure resolution for an undesirably long period until the funds are finally repaid, which could undermine the flexibility of conducting monetary policy. Nevertheless, the central bank could be pressed to provide ex post LOLR assistance if the authorities failed to contain the risk at an early stage.

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<sup>143</sup> The Bank of Japan provided relatively long-term yen funds to Japanese banks that had funding difficulties while it absorbed yen funds from foreign banks that wished to invest risk-free yen assets in bills drawn by the Bank of Japan. By acting as an intermediary between Japanese banks and foreign banks, it supplemented the market function and contributed to alleviating the uneven distribution of funds caused by information asymmetries with respect to the financial conditions of Japanese banks.

<sup>144</sup> See eg Hanajiri (1999).

<sup>145</sup> At an early stage of the financial crisis in Japan, lack of a sufficient safety net led the Bank of Japan to provide funds to cover losses in the forms of capital injection and profit support.

Table III.1  
**Correlation analysis of bank ROE among US regions**  
Annual data, 1979-1998

Region (mean ROE)	New England	Mideast	Great Lakes	Plains	Southeast	Southwest	Rocky Mt	Far West
New England (0.106949)	1							
Mideast (0.106738)	0.65875	1						
Great Lakes (0.120448)	0.02411	0.50080	1					
Plains (0.131574)	0.10756	0.44102	0.66704	1				
Southeast (0.126031)	0.84124	0.66657	0.25513	0.38250	1			
Southwest (0.090953)	0.23662	0.60174	0.25345	0.69174	0.36296	1		
Rocky Mt (0.121841)	0.26030	0.48990	0.43650	0.90354	0.46883	0.87720	1	
Far West (0.107647)	-0.28249	0.28071	0.69177	0.56564	0.07846	0.32124	0.39953	1

Sources: U.S. bank Call Reports, U.S. Bureau of Economic Analysis (BEA), Berger and DeYoung (2000).

Return on equity (ROE) = the aggregate net income for the banks in the region, divided by the aggregate book value of equity for the banks in the region.

Regions: New England (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont); Mideast (Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania); Great Lakes (Illinois, Indiana, Michigan, Ohio, Wisconsin); Plains (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota); Southeast (Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia); Southwest (Arizona, New Mexico, Oklahoma, Texas); Rocky Mountain (Colorado, Idaho, Montana, Utah, Wyoming); Far West (Alaska, California, Hawaii, Nevada, Oregon, Washington).

Table III.2  
Total interdependencies

Correlation between firm average stock returns cross-correlations and consolidation intensity

		Gross <sup>1</sup>	De-meaned <sup>2</sup>
LCBOs*	coefficient	<b>0.25</b>	<b>0.06</b>
	t-stat	18.77	4.38
Active trading	coefficient	<b>0.36</b>	<b>0.11</b>
	t-stat	11.64	3.6
Second tier	coefficient	<b>0.25</b>	<b>0.10</b>
	t-stat	7.89	3.15
Trust and custody	coefficient	<b>-0.07</b>	<b>-0.33</b>
	t-stat	-2.10	-10.66
CUSP	coefficient	<b>0.31</b>	-0.02
	t-stat	10.38	-0.75
Traditional intermediaries	coefficient	<b>0.30</b>	<b>0.06</b>
	t-stat	12.13	2.39

<sup>1</sup> Correlation between firm average stock returns cross-correlation and consolidation intensity. <sup>2</sup> Correlation between firm average deviations of stock returns cross-correlation from the pooled mean and consolidation intensity.

\* Correlations are computed using 474 firm-year observations.

Coefficients that are significantly different from zero at a 5% significance level are reported in bold.

Table III.3  
Direct interdependencies

Correlation between firm measures of direct interdependencies consolidation intensity

		Panel A		Panel B		Panel C	
		Short-term interbank lending/capital		Medium-to-long-term loans to banks/capital		Gross positive market value/capital	
		gross <sup>1</sup>	de-meaned <sup>2</sup>	gross <sup>1</sup>	de-meaned <sup>2</sup>	gross <sup>1</sup>	de-meaned <sup>2</sup>
LCBOs*	coefficient	<b>0.14</b>	0.08	-0.09	0.02	<b>0.26</b>	<b>0.24</b>
	t-stat	2.18	1.24	-1.40	0.34	2.80	2.51
Active trading	coefficient	0.04	-0.29	<b>-0.45</b>	-0.21	-0.22	<b>-0.47</b>
	t-stat	0.28	-1.95	-3.22	-1.41	-0.97	-2.25
Second tier	coefficient	<b>0.39</b>	0.26	-0.18	0.02	0.25	0.27
	t-stat	2.65	1.7	-1.15	0.14	1.01	1.1
Trust and custody	coefficient	<b>0.77</b>	<b>0.74</b>	-0.19	-0.02	<b>0.60</b>	<b>0.59</b>
	t-stat	7.84	7.09	-1.29	-0.13	3.17	3.13
CUSP	coefficient	<b>0.31</b>	<b>0.32</b>	0.17	0.12	<b>0.51</b>	0.40
	t-stat	2.08	2.16	1.1	0.76	2.48	1.79
Traditional intermediaries	coefficient	<b>-0.45</b>	<b>-0.24</b>	-0.05	0.15	0.20	0.06
	t-stat	-4.00	1.98	1.37	1.22	1.07	0.31

<sup>1</sup> Correlation between firm average measure of direct interdependencies and consolidation intensity. <sup>2</sup> Correlation between firm average deviations of measure of direct interdependencies from the pooled mean and consolidation intensity.

\* Correlations are computed using 474 firm-year observations.

Coefficients that are significantly different from zero at a 5% significance level are reported in bold.

Chart III.1  
Consolidation intensity

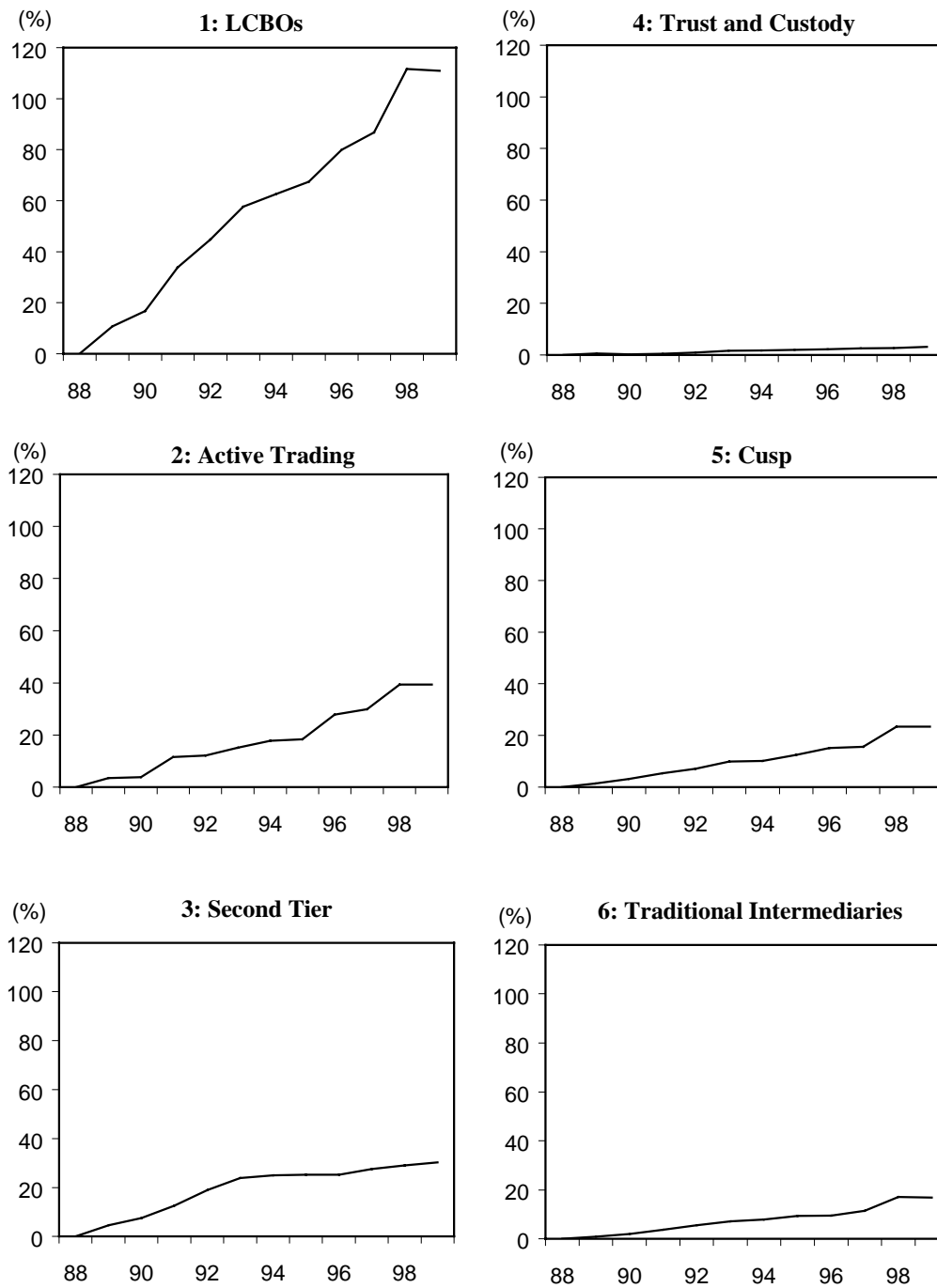
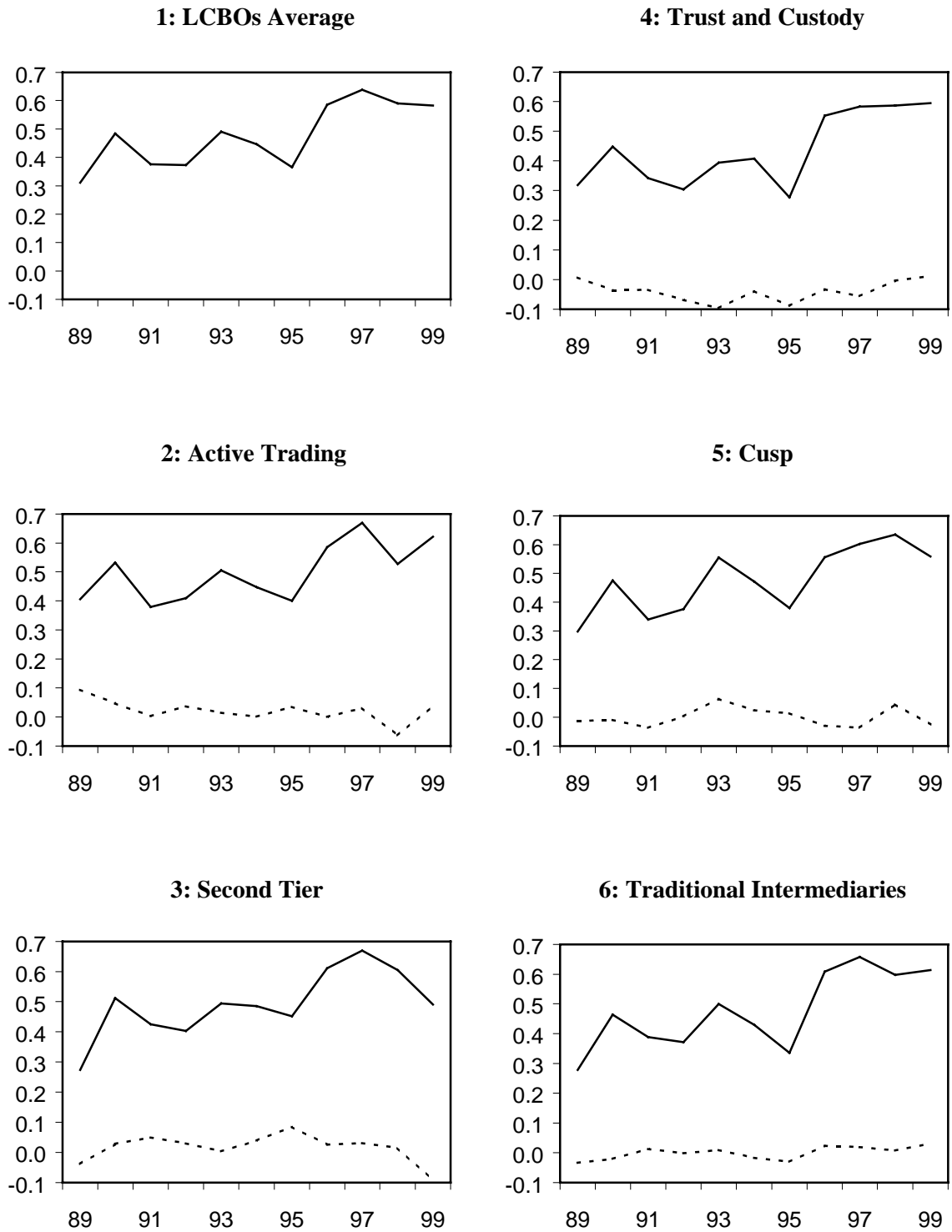
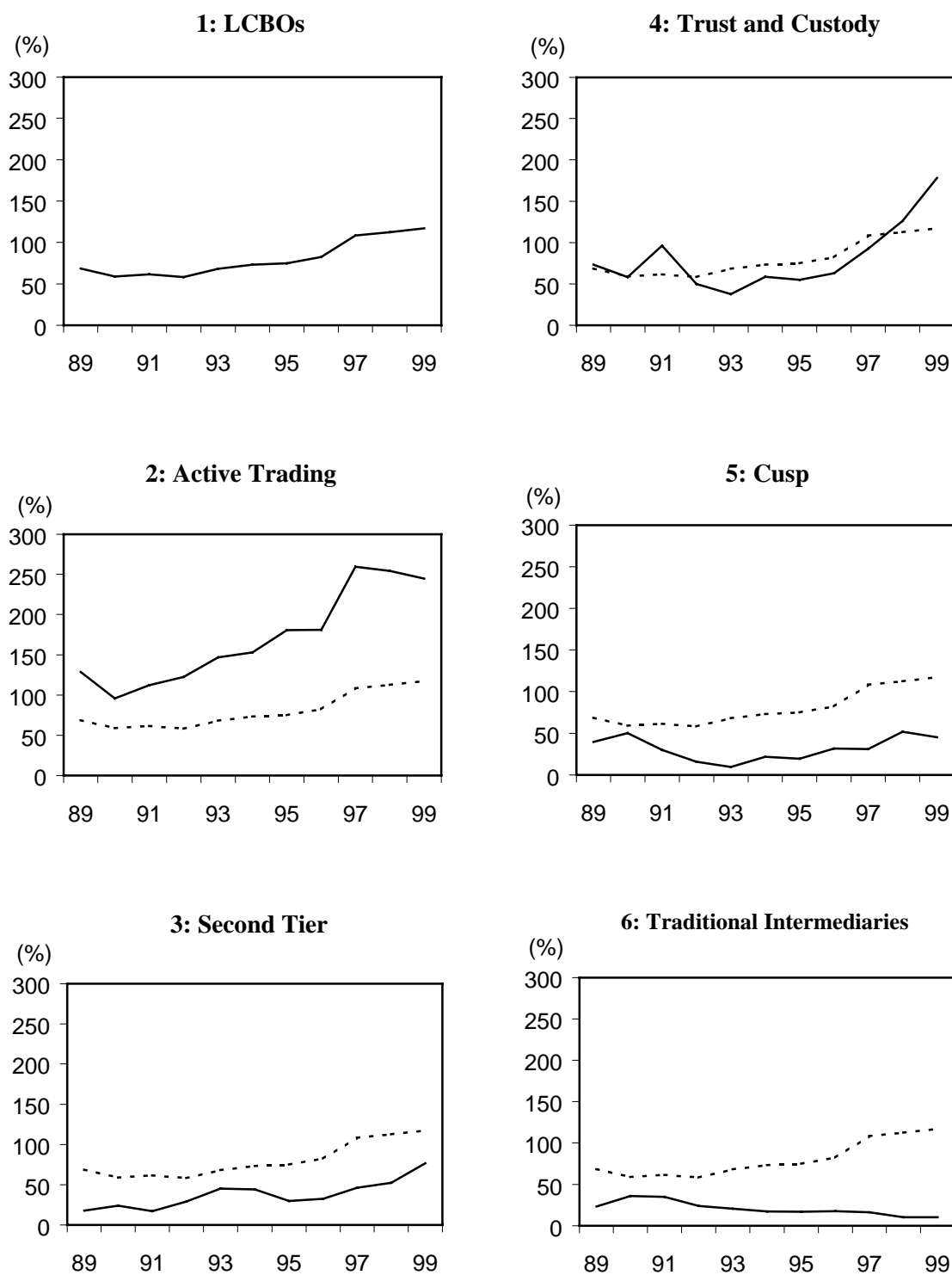


Chart III.2  
Average stock returns cross-correlations



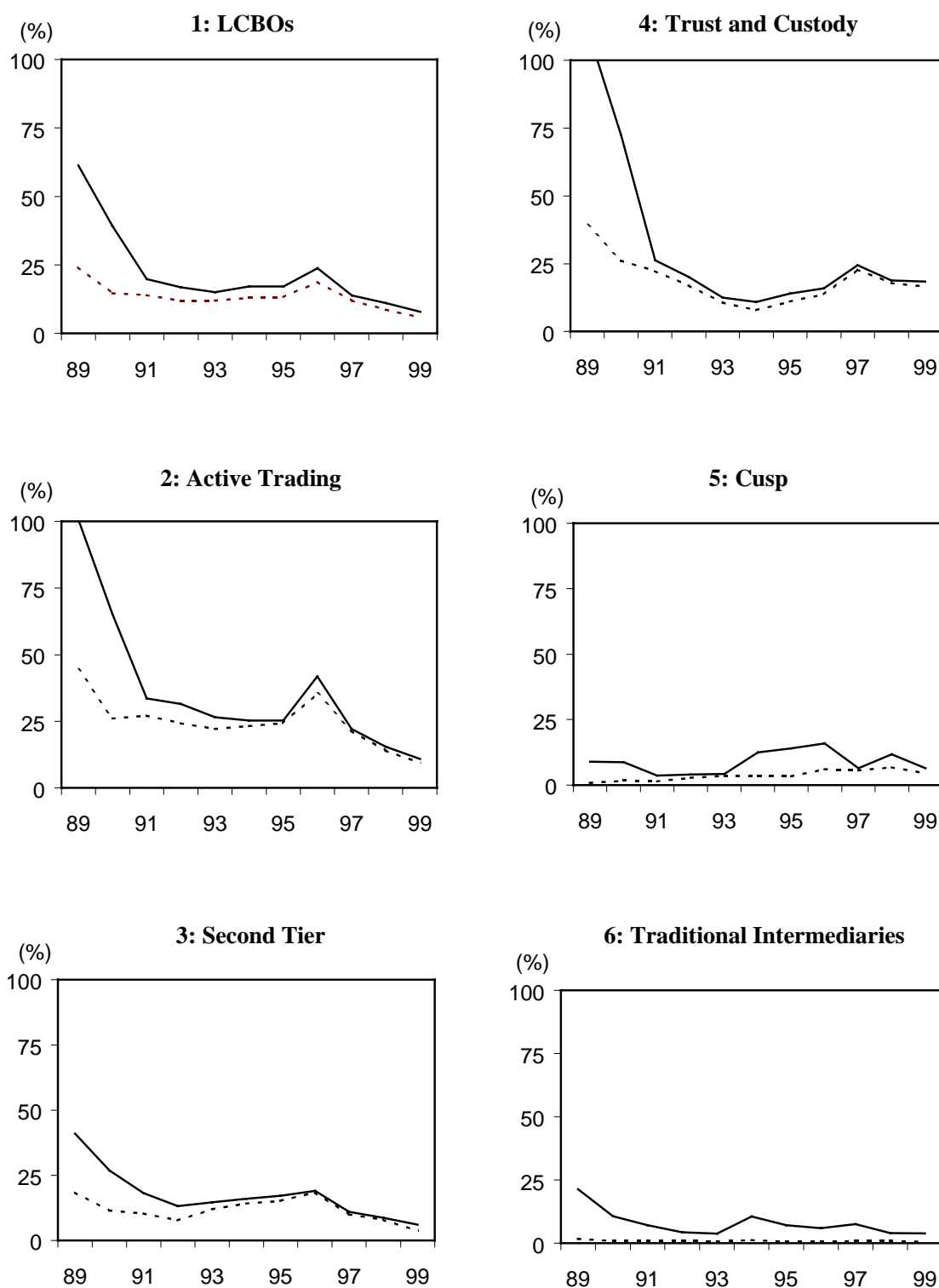
Note: The dotted line depicts the time series of deviations of a group's correlations from the LCBO average.

Chart III.3  
Short-term interbank lending – capital ratios



Note: The total LCBO short-term interbank lending-capital ratio (graph 1) is shown as a dotted line in the other graphs.

Chart III.4  
Medium- to long-term loans to banks – capital ratios



Solid line - medium- to long-term loans to all banks; dotted line - medium- to long-term loans to foreign banks.

Chart III.5  
Gross positive market value – capital ratios

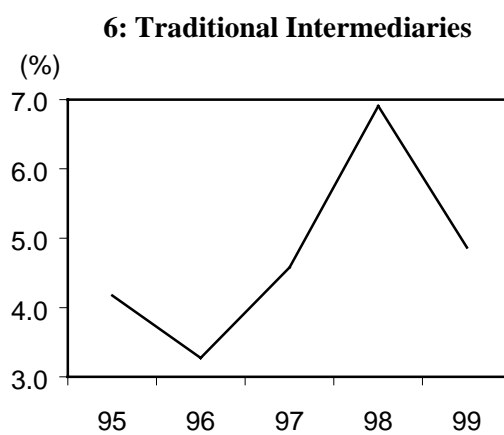
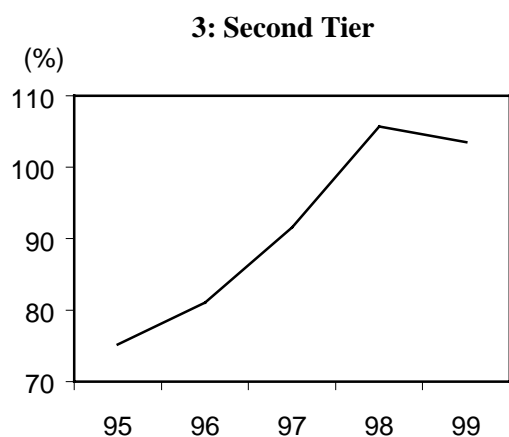
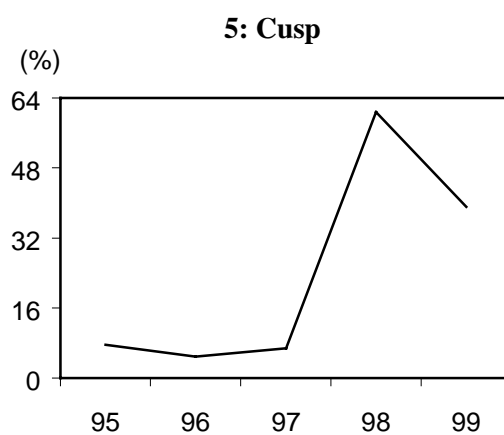
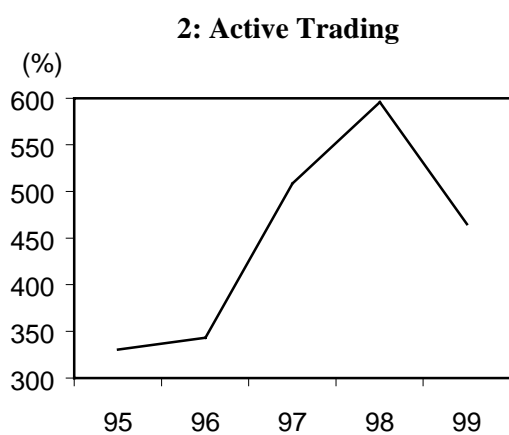
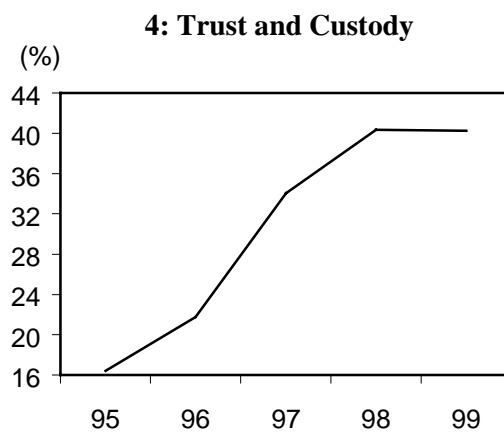
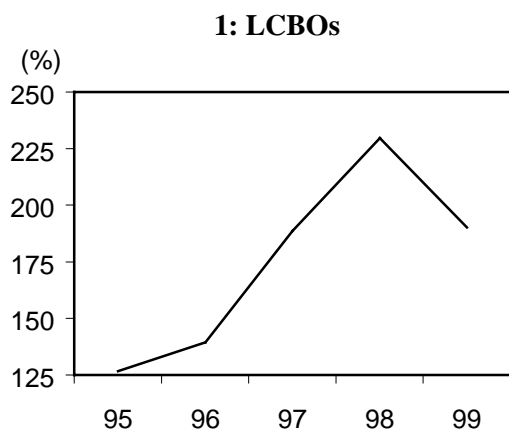




Table III.4  
**Values of target institutions in domestic European financial services  
M&A activity from 1985 to 1997**

Acquiring institution	Target institutions		
	Banks	Securities	Insurance
Commercial banks	89 (36.0%)	9 (3.6%)	20 (8.1%)
Securities firms	23 (9.3%)	19 (7.7%)	24 (9.7%)
Insurance companies	11 (4.4%)	6 (2.4%)	46 (18.6%)

Sources: Berger et al (2000). Original sources DeLong, Smith and Walter (1998), Berger, Demsetz, and Strahan (1999) and Securities Data Company. The main number shown in each entry is the sum of the equity values (in billions of USD) of the target institutions. The number in parentheses is the percentage of the total (these sum to 100 for each 3x3 matrix).

Table III.5  
**Values of target institutions in cross-border European financial services  
M&A activity from 1985 to 1997**

Acquiring institution	Target institutions					
	Intra-Europe international M&As			Europe - non Europe international M&As		
	Banks	Securities	Insurance	Banks	Securities	Insurance
Commercial banks	15.0 (17.9%)	8.7 (10.4%)	0.4 (0.5%)	14.5 (14.5%)	4.3 (4.3%)	0.3 (0.3%)
Securities firms	4.3 (5.1%)	5.8 (6.9%)	1.1 (1.3%)	15.6 (15.6%)	15.9 (15.9%)	12.9 (12.9%)
Insurance companies	11.2 (13.4%)	0.3 (0.4%)	37.0 (44.2%)	1.0 (1.0%)	3.1 (3.1%)	32.7 (32.6%)

Sources: Berger et al (2000). Original sources DeLong, Smith and Walter (1998), Berger, Demsetz, and Strahan (1999) and Securities Data Company. The main number shown in each entry is the sum of the equity values (in billions of USD) of the target institutions. The number in parentheses is the percentage of the total (these sum to 100 for each 3x3 matrix).

Table III.6  
Internationalisation of European Banking Systems, 1997

	Market share of branches and subsidiaries (% of total domestic assets)				Average size of individual foreign branches and subsidiaries as % of total domestic assets				
	in other countries	from abroad	o/w branches	o/w subsidiaries	from all countries	from EEA		from non-EEA	
						branches	subsidiaries	branches	subsidiaries
AT	n.a	3.4	0.8	2.6	0.09	0.12	0.08	0.05	0.09
BE	n.a	36.3	15.9	20.4	0.51	0.36	1.20	0.46	0.08
DE	27.9	4.2	1.6	2.6	0.03	0.02	0.05	0.02	0.03
ES	14.9	11.7	6.4	5.3	0.15	0.15	0.16	0.08	0.32
FI	13.1	7.1	7.1	0	0.79	0.79	0.00	0.00	0.00
FR	29.2	9.8	5.2	4.6	0.03	0.05	n.a	0.06	n.a
IR	34.6	53.6	18.9	34.7	1.09	0.98	1.32	0.40	0.99
IT	15.2	6.8	5	1.8	0.11	0.10	0.43	0.08	0.03
NL	n.a	7.7	2.8	4.9	0.16	0.21	0.38	0.05	0.10
SE	n.a	1.7	1.4	0.3	0.09	0.09	0.00	0.03	0.20
UK	n.a	52.1	45.5	6.6	0.13	0.21	0.06	0.15	0.05

Source: ECB (1999) "Possible Effects of EMU on the EU Banking Systems in the Medium to Long Term". Pages 5.1 and 5.2.

Table III.7  
Interbank loans – domestic/euro-wide, USD billions  
(% of total in brackets)

	December 1995		December 1998		December 1999	
	Domestic	Euro-area	Domestic	Euro-area	Domestic	Euro-area
France	895 (78)	260 (22)	925 (79)	246 (21)	n.a n.a	n.a n.a
Germany	1,408 (91)	133 (9)	1,757 (90)	196 (10)	1,500 (89)	188 (11)
Italy	158 (77)	48 (23)	159 (69)	72 (31)	n.a n.a	n.a n.a
United Kingdom	459* (58)	332 (42)	520 (50)	512 (50)	510 (48)	544 (52)

\* Excludes repos and bills. All data are on an unconsolidated basis, as reported in the sources.

Sources: Relazione Annuale 1998 (Italy), Deutsche Bundesbank Monthly Report February 2000 (Germany), Bulletin de la Banque de France, Supplément "Statistiques", 3<sup>E</sup> Trimestre 1999 (France), Bank of England Monetary and Financial Statistics, February 2000 (UK).

Table III.8  
Cross-border interbank lending of banks operating in European countries

Country	End-September 1996								End-September 1999							
	Europe <sup>1</sup>				Non-Europe				Europe				Non-Europe			
	USD bn	% of GDP	% of capital <sup>2</sup>	% of total assets <sup>4</sup>	USD bn	% of GDP	% of capital <sup>2</sup>	% of total assets <sup>4</sup>	USD bn	% of GDP <sup>3</sup>	% of capital <sup>2</sup>	% of total assets <sup>4</sup>	USD bn	% of GDP	% of capital <sup>2</sup>	% of total assets <sup>4</sup>
Austria	36.4	16.5	n.a.	8.4	19.5	8.8	n.a.	4.5	34.3	15.3	n.a.	7.9	19.0	8.5	n.a.	4.4
Belgium	90.7	34.9	279.3	12.8	76.8	29.5	236.4	10.8	135.6	51.7	348.4	19.1	20.1	7.7	51.7	2.8
Denmark	25.5	14.2	n.a.	13.5	13.2	7.4	n.a.	7.0	33.4	18.3	n.a.	17.7	11.9	6.5	n.a.	6.3
Finland	11.6	9.2	n.a.	9.4	4.0	3.2	n.a.	3.3	13.3	10.0	n.a.	10.7	1.2	0.9	n.a.	1.0
France	234.3	15.4	209.1	6.9	190.7	12.6	170.1	5.7	264.8	17.4	225.0	7.9	133.5	8.8	113.4	4.0
Germany	205.0	8.9	142.9	4.2	127.2	5.5	88.7	2.6	304.8	13.6	173.6	6.3	105.2	4.7	59.9	2.2
Ireland	20.5	80.4	n.a.	18.9	5.2	20.2	n.a.	4.7	44.4	129.4	n.a.	40.9	12.8	37.2	n.a.	11.8
Italy	101.0	8.3	131.3	6.3	34.5	2.8	44.9	2.2	94.6	7.7	114.8	5.9	17.7	1.4	21.5	1.1
Luxembourg	187.8	1,100.1	3,654.2	31.8	41.9	245.4	815.0	7.1	204.3	1,119.4	3,541.4	34.6	23.0	126.2	399.4	3.9
Netherlands	112.2	29.5	2,132.0	10.4	58.2	15.3	1,107.2	5.4	130.2	32.8	212.6	12.1	39.4	9.9	64.3	3.7
Norway	1.8	1.1	n.a.	1.3	1.3	0.8	n.a.	1.0	3.5	2.4	n.a.	2.6	1.5	1.0	n.a.	1.1
Spain	73.0	13.0	n.a.	8.2	26.0	4.6	n.a.	2.9	53.1	9.2	n.a.	6.0	13.8	2.4	n.a.	1.5
Sweden	29.7	12.1	147.3	11.8	10.7	4.4	53.0	4.2	28.8	12.9	155.1	11.4	6.3	2.8	33.7	2.5
Switzerland	341.3	125.6	514.2	28.4	57.4	21.1	86.4	4.8	488.1	175.2	879.5	40.7	115.5	41.5	208.2	9.6
UK	388.4	30.3	347.3	20.6	430.7	33.6	385.2	22.9	594.7	42.7	377.0	31.6	460.6	33.1	292.0	24.5
<b>Total Europe</b>	<b>1,859.2</b>				<b>1,097.3</b>				<b>2,427.9</b>				<b>981.5</b>			
<i>MEMO</i>																
<i>Japan</i>	<i>102.3</i>	<i>2.4</i>	<i>27.9</i>	<i>1.9</i>	<i>558.4</i>	<i>13.0</i>	<i>152.3</i>	<i>10.4</i>	<i>102.1</i>	<i>2.4</i>	<i>28.7</i>	<i>1.9</i>	<i>356.0</i>	<i>8.3</i>	<i>100.0</i>	<i>6.2</i>
<i>United States</i>	<i>157.6</i>	<i>2.1</i>	<i>83.7</i>	<i>2.9</i>	<i>332.7</i>	<i>4.3</i>	<i>176.6</i>	<i>6.2</i>	<i>307.1</i>	<i>3.6</i>	<i>118.0</i>	<i>5.7</i>	<i>359.0</i>	<i>4.2</i>	<i>137.9</i>	<i>6.7</i>

<sup>1</sup> The countries included in the Europe category are: Austria, Belgium, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the UK. <sup>2</sup> Capital is defined as the net capital base of internationally active banks. The figures used in 1999 are the 1998 figures due to lack of more recent data. <sup>3</sup> The GDP figures used for 1999 are the 1998 figures due to lack of more recent data. <sup>4</sup> Total bank assets are for 1997.

Sources: Capital: Basle Committee on Banking Supervision: The Financial Strength and Performance of Internationally Active Banks (1999). GDP: IMF IFS. Interbank lending: BIS International Loans and Deposits: Geographical Location and Country Analysis Tables DL/1-3 (end-September 1996/1999). Total Assets: OECD Bank Profitability Report.

Table III.9

**Indicators of relative share of traditional and non-traditional banking activity  
in (aggregate) European countries reporting to BIS**

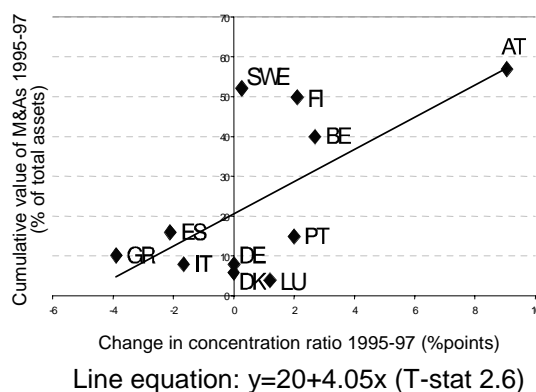
		1990	1997
Assets (% of total)	Loans	51	44
	Securities	13	22
	Other	36	34
Income (% of total)	Interest	70	58
	Non-interest	30	42

Source: OECD Bank Profitability 1999.

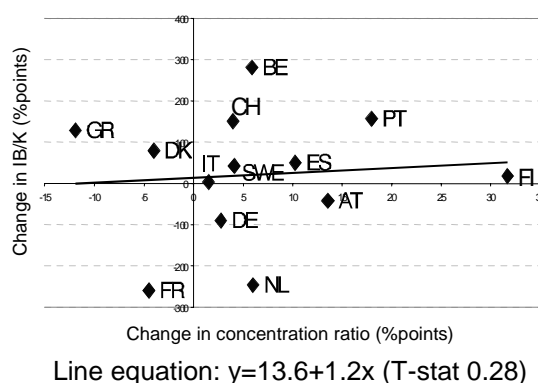
Chart III.6

# Interbank lending and consolidation

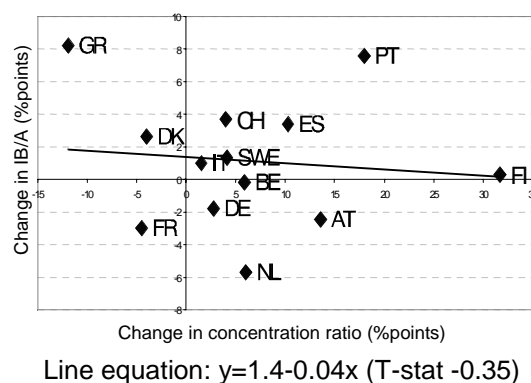
a. Correlation between M&A activity and change in concentration ratio (C5) 1995-97



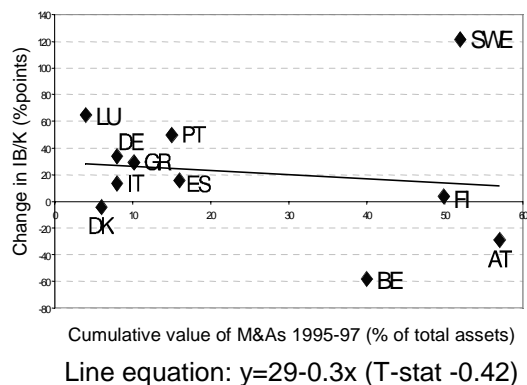
b. European banking systems: Change in concentration (C5) and change in interbank lending/capital (1990-97)



c. European banking systems: Change in concentration (C5) and change in interbank lending/total assets (1990-97)



d. European banking systems: Value of M&As and change in interbank lending/capital (1995-97)



e. European banking systems: Value of M&As and change in interbank lending/total assets (1995-97)

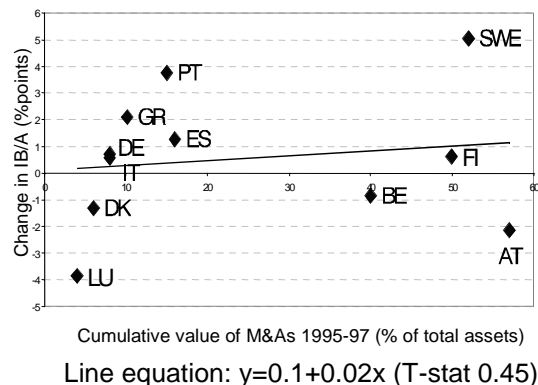
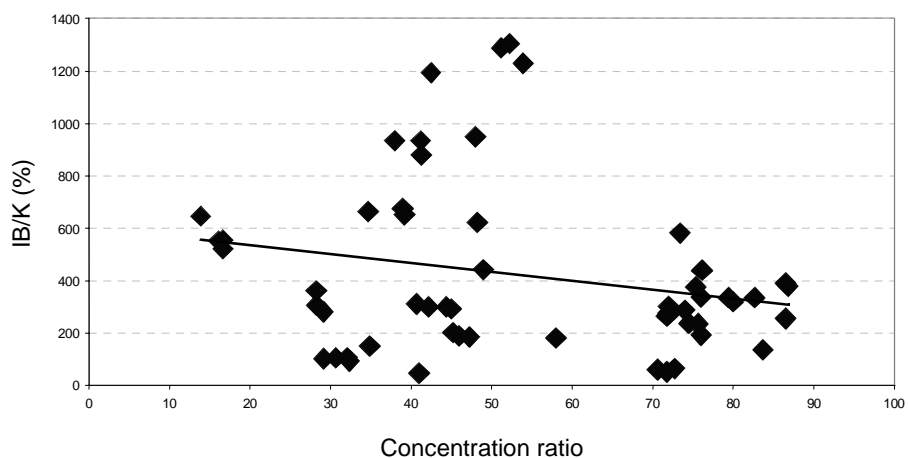
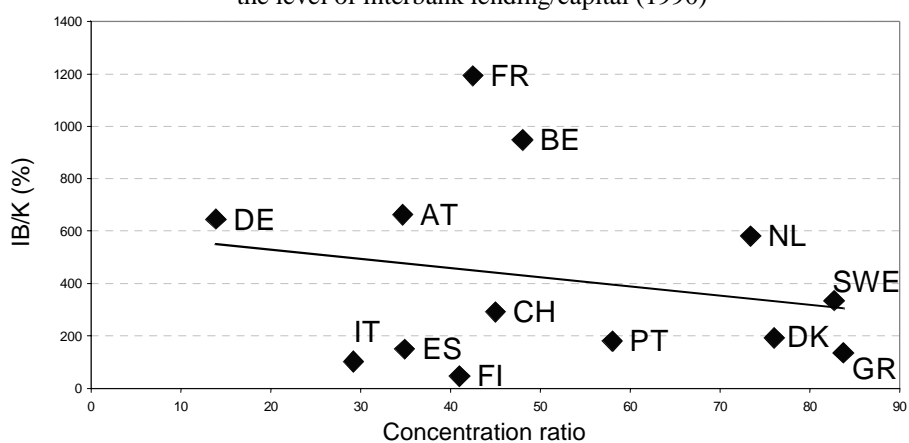


Chart III.6 (continued)

f. European banking systems: C5 concentration ratios and the level of interbank lending/capital (all years)



g. European banking systems: C5 concentration ratios and the level of interbank lending/capital (1990)



h. European banking systems: C5 concentration ratios and the level of interbank lending/capital (1997)

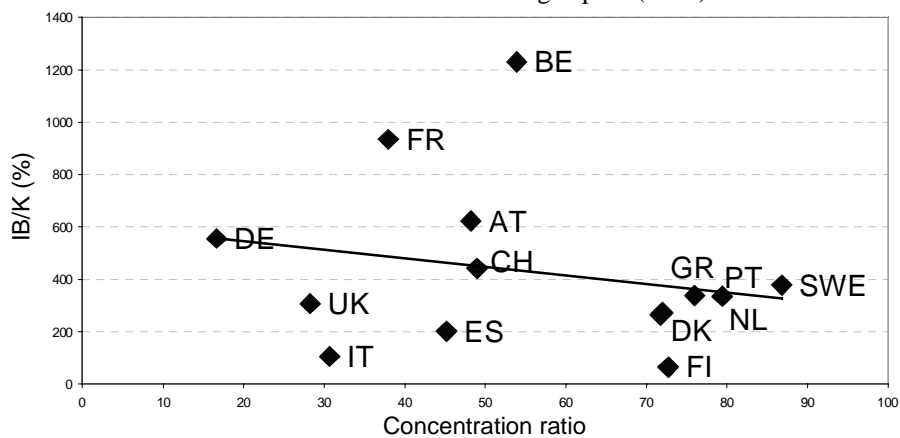
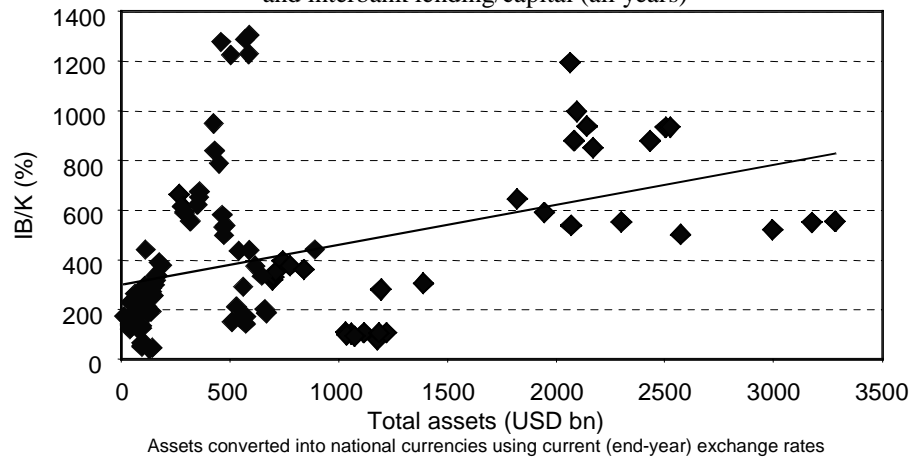


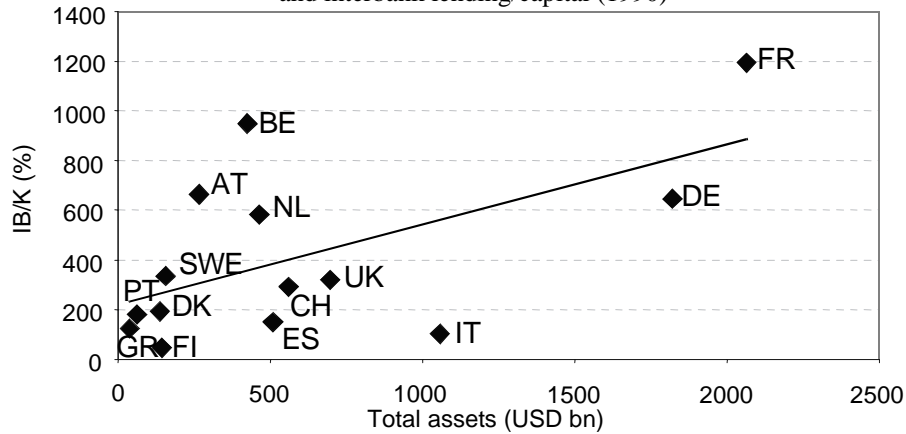
Chart III.6 (continued)

i. European banking systems: Level of total banking systems assets and interbank lending/capital (all years)



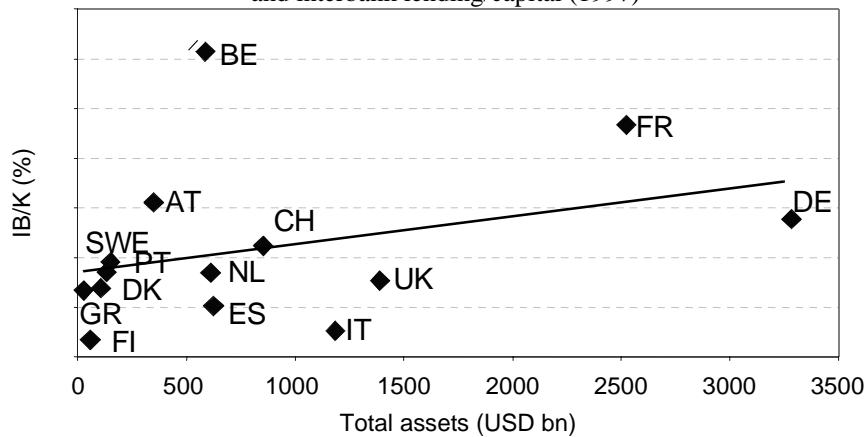
Line equation:  $y=298+0.16x$  (T-stat 4.52)

j. European banking systems: Level of total banking systems assets and interbank lending/capital (1990)



Line equation:  $y=227+0.3x$  (T-stat 2.48)

k. European banking systems: Level of total banking systems assets and interbank lending/capital (1997)

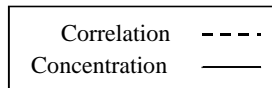


Line equation:  $y=335+0.11x$  (T-stat 1.24)

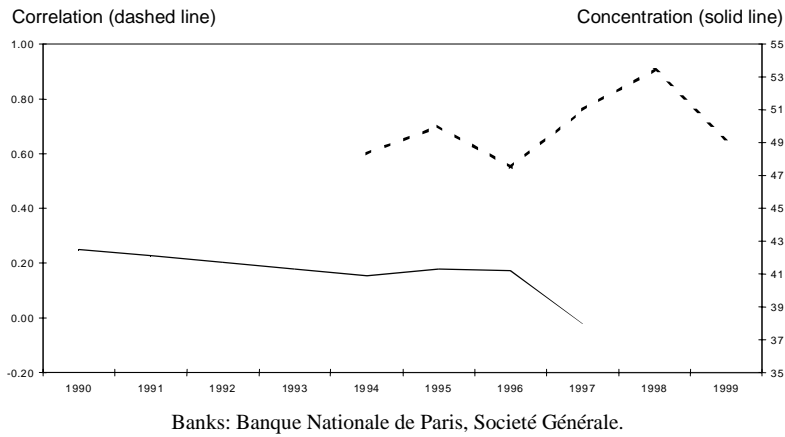
Sources: IB/K, total assets - OECD Bank Profitability Report; Switzerland concentration ratio - BIS Quarterly Review: International Banking and Financial Market Developments (August 1999); all other concentration ratios, value of M&As - ECB Working Group on Developments in Banking.

Chart III.7

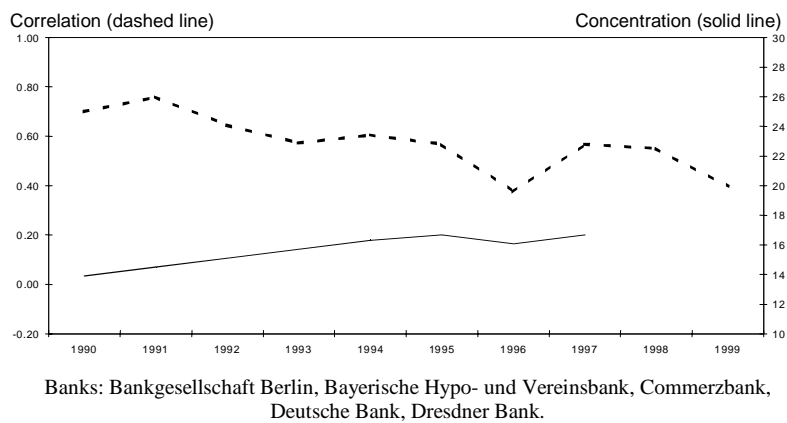
### Correlation of bank stock returns and consolidation



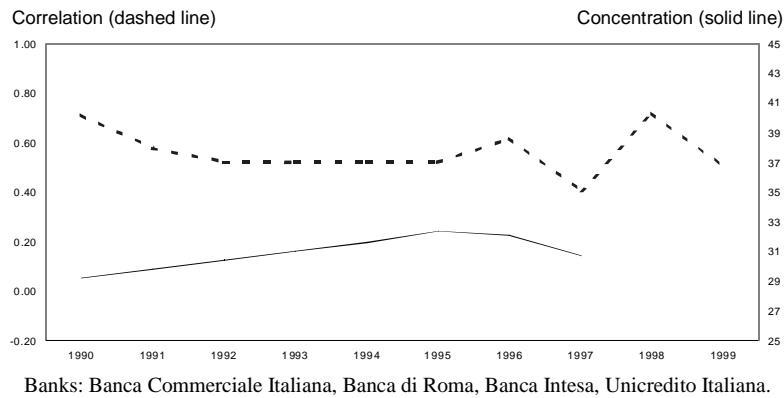
#### a. Correlation of stock returns and concentration: France



#### b. Correlation of stock returns and concentration: Germany



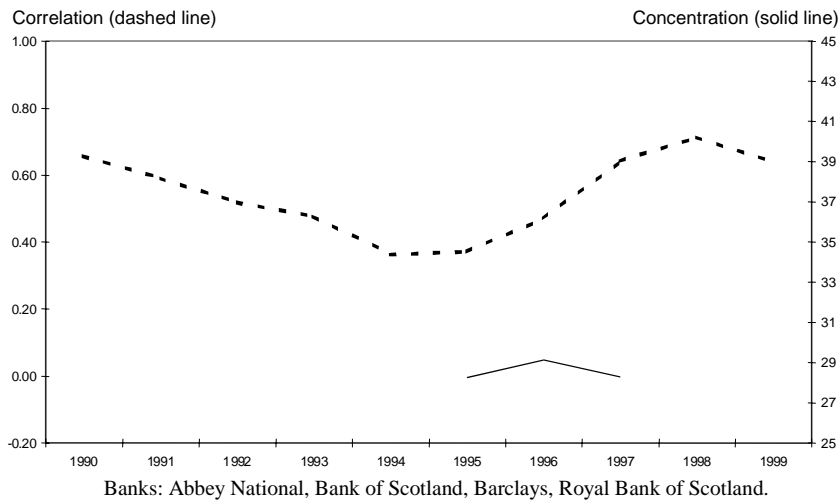
#### c. Correlation of stock returns and concentration: Italy



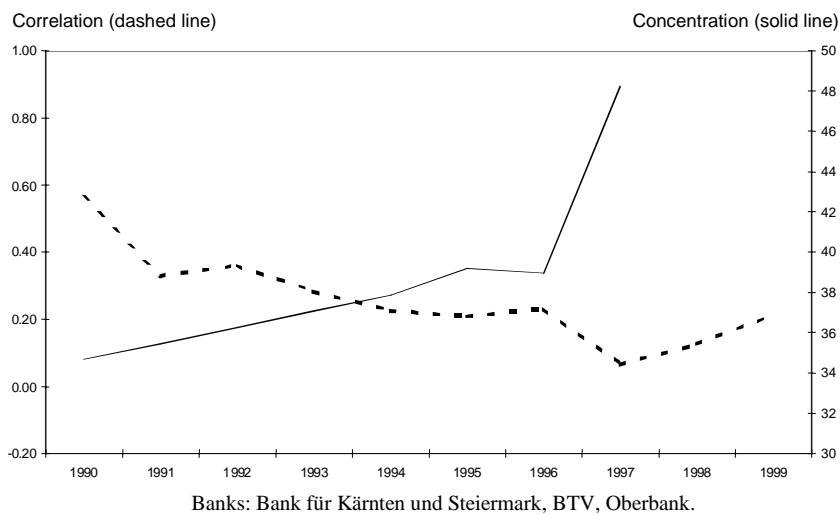


### Chart III.7 (continued)

#### d. Correlation of stock returns and concentration: United Kingdom



#### e. Correlation of stock returns and concentration: Austria



#### f. Correlation of stock returns and concentration: Belgium

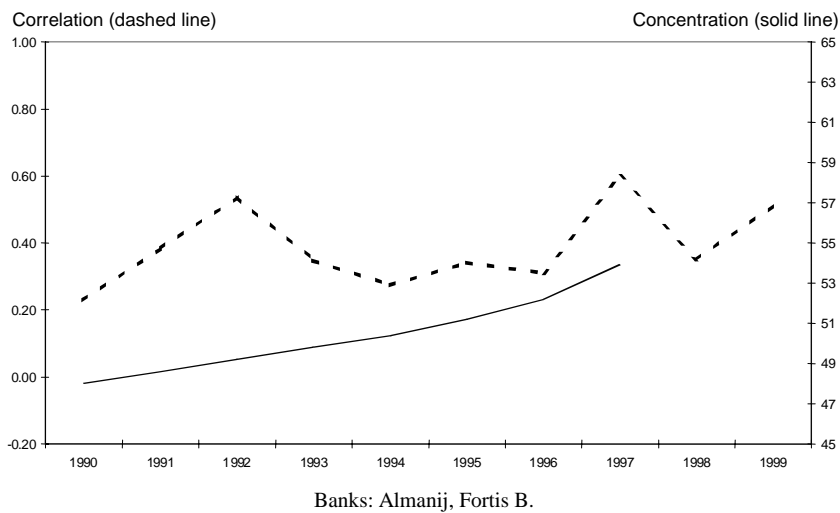
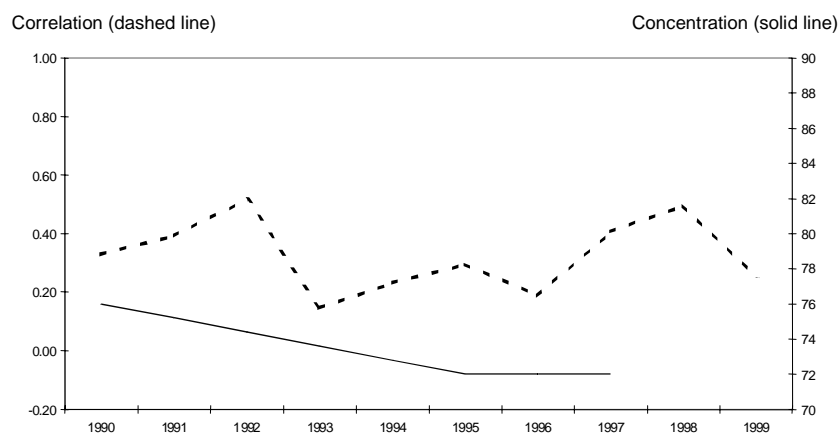


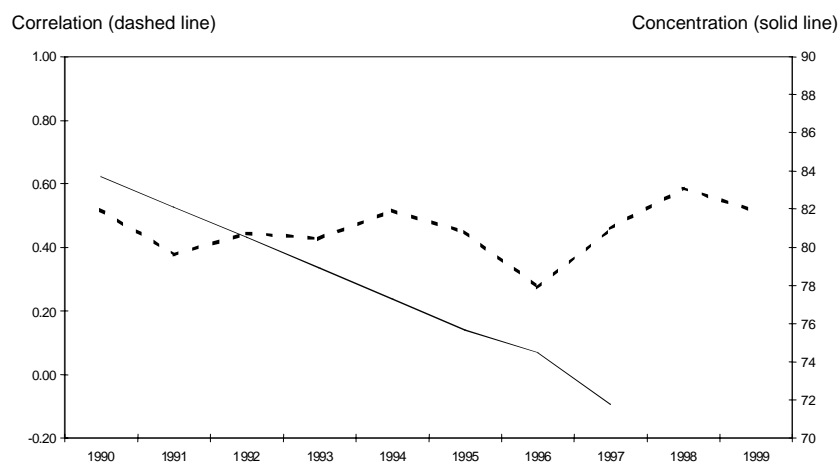
Chart III.7 (continued)

g. Correlation of stock returns and concentration: Denmark



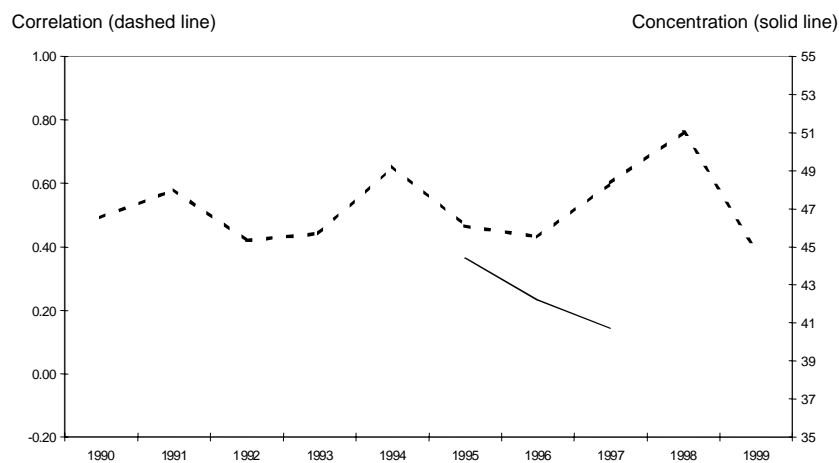
Banks: Den Danske Bank, Jyske Bank, Sydbank.

h. Correlation of stock returns and concentration: Greece



Banks: Alpha Credit Bank, Commercial Bank of Greece, EFG Eurobank, Ergobank, Macedonia Thrace Bank, National Bank of Greece, Piraeus Bank.

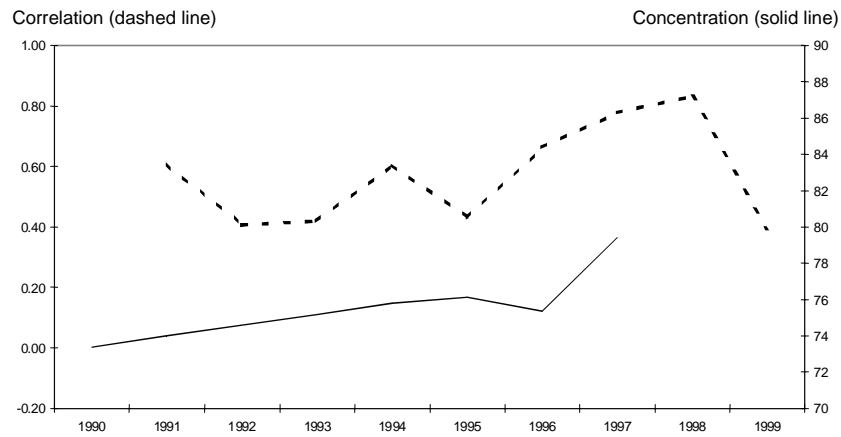
i. Correlation of stock returns and concentration: Ireland



Banks: Allied Irish Banks, Anglo-Irish Bank, Bank of Ireland.

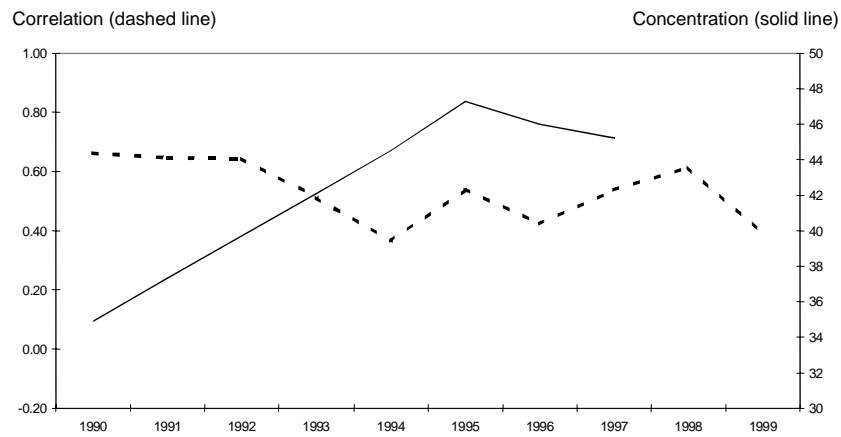
Chart III.7 (continued)

j. Correlation of stock returns and concentration: Netherlands



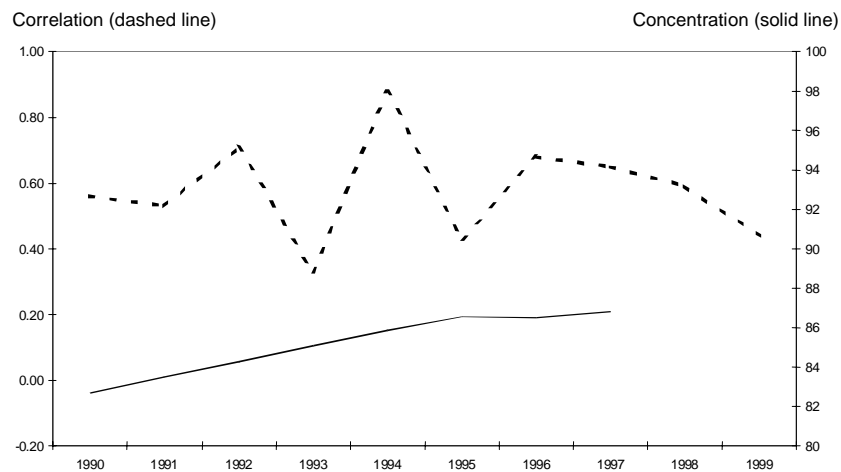
Banks: Fortis NL, ABN Amro.

k. Correlation of stock returns and concentration: Spain



Banks: Banca Bilbao Viscaya Argentaria, Banco Español de Credito (BANESTO), Banco Popular Español, Banco Santander Central Hispano.

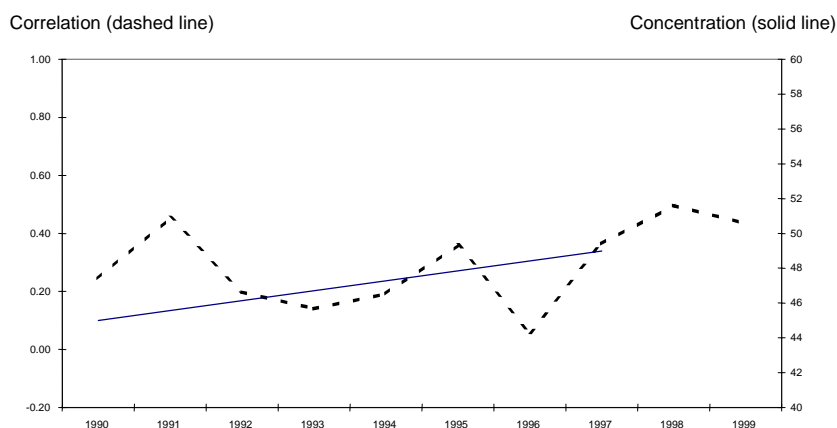
l. Correlation of stock returns and concentration: Sweden



Banks: Skandinaviska Enskilada Banken, Svenska Handelsbanken.

Chart III.7 (continued)

m. Correlation of stock returns and concentration: Switzerland

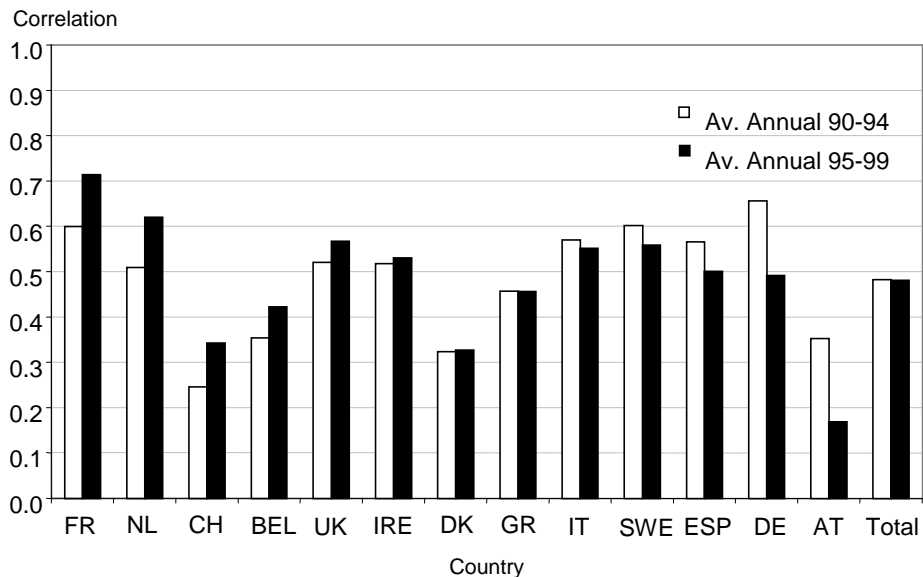


Banks: Banque Cantonale Vaudoise, Credit Suisse, UBS. Concentration data only available for 1990, 1997.

Note: Throughout Chart III.7 stock returns are measured as the weekly growth in share prices (taken from Datastream). Correlations are the annual average of the correlation of weekly stock returns for the banks in the sample.

Chart III.8

Correlation of average annual bank stock returns by country 1990-94 and 1995-99



France: data only available from 1994; Netherlands: data only available from 1991.

Chart III.9 (a)  
**Average annual national and European-wide  
correlation of bank stock returns**

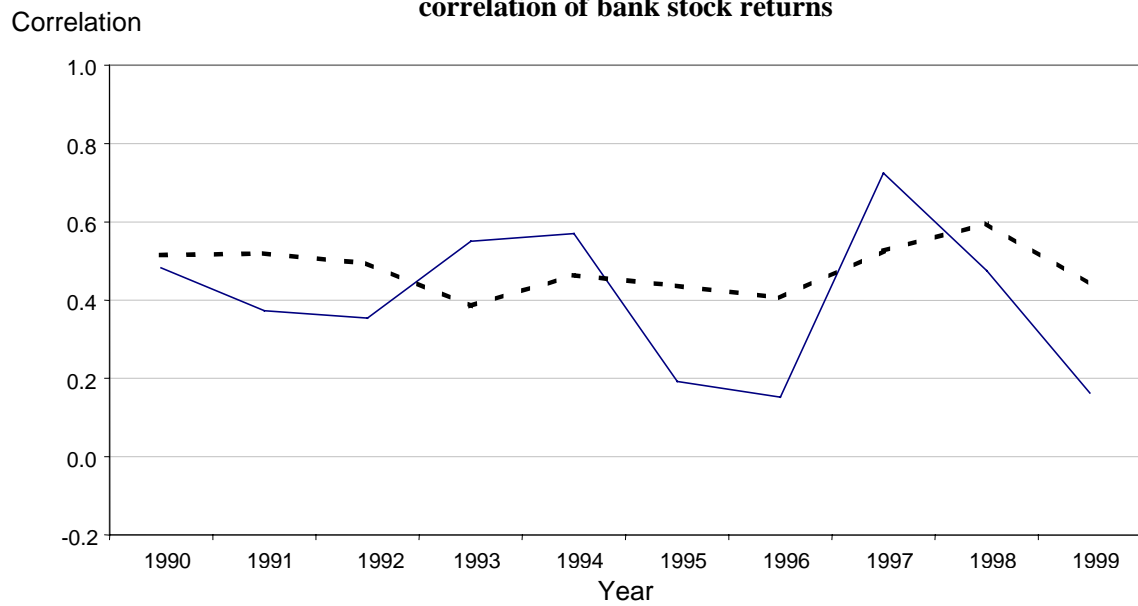


Chart III.9 (b)  
**Difference in average annual national and  
European-wide correlation of bank stock returns**

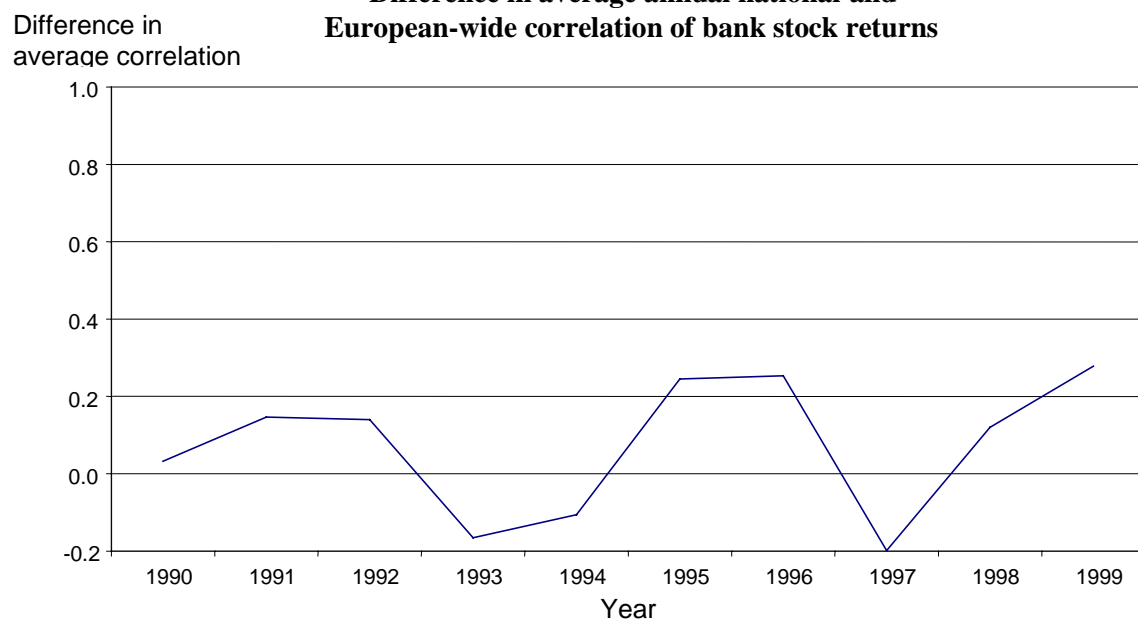


Table III.10  
Number of financial institutions in Japan

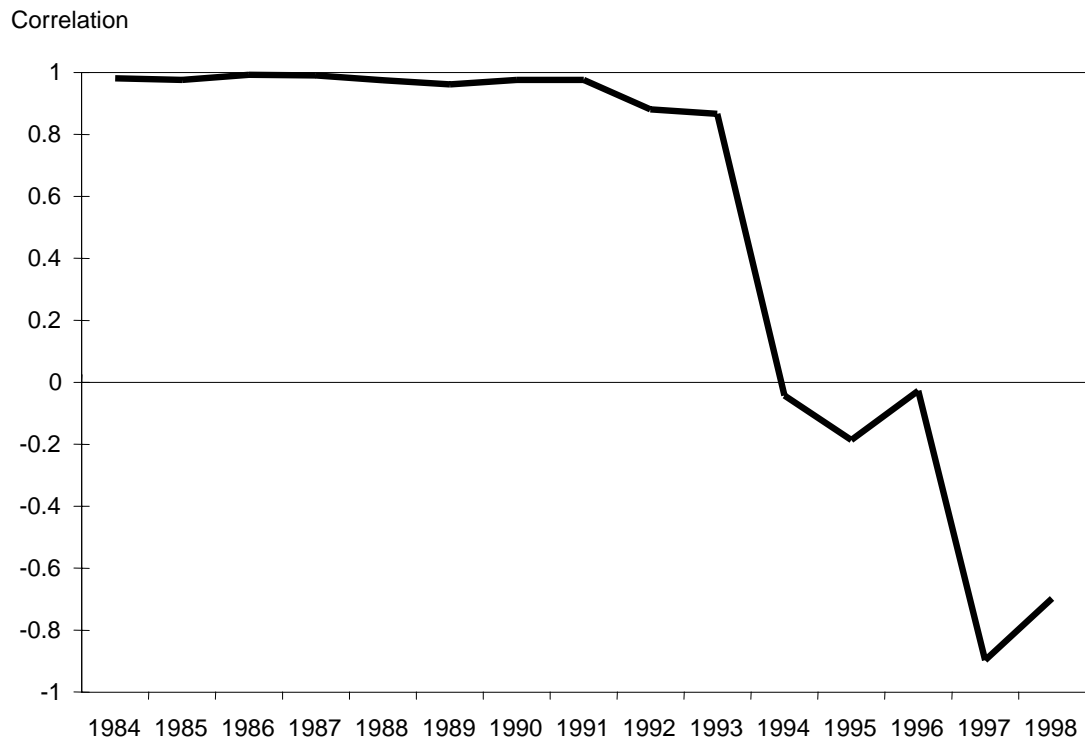
End of fiscal year

	1990	1995	1999	Change since 1990
City banks	12	11	9	-3
Long-term credit banks	3	3	3	0
Trust banks	7	7	7	0
Regional banks	64	64	64	0
Regional banks	68	65	60	-8
All banks	154	150	143	-11
Shinkin banks	451	416	392	-59
Credit cooperatives	407	368	298	-109
Agriculture and forestry cooperatives	3,634	2,461	1,606	-2,028
Insurance companies	50	55	80	30
Securities companies	272	285	288	16

Source: Financial and Economic Statistics Monthly, Bank of Japan (BOJ).

Notes: As of May 2000, seven banks (two long-term credit banks and five regional banks) have failed and they have transferred and will transfer their business to other institutions. Trust banks: only independent Japanese trust banks. Agriculture and forestry cooperatives: Norinchukin Bank, the Credit Federation of Agricultural Cooperatives and agricultural cooperatives. Insurance companies: life insurance companies and non-life insurance companies.

Chart III.10  
Correlation between asset size and profitability of major Japanese banks



Source: Annual reports.

Notes: 1. Correlation: correlation between asset size and recurring profits

2. Recurring profits = operating profits + net stock-related gains/losses - loan write-offs

3. Major Japanese banks: top 20 banks in terms of asset size

Table III.11  
Recent Financial Consolidation  
(1) Initiatives within the same segments

	Institutions involved	Type of consolidation	Effective date	Features
Banks	Sumitomo Sakura	Merger	Apr 2001	Merger between banks belonging to different former <i>zaibatsu</i> .
	DKB Fuji IBJ	Holding company	Oct 2000	Resulting banking organisation rivals world's top-tier banks in asset size.
	Sanwa Tokai	Holding company	Apr 2001	Asahi bank left from the consolidation.
Trust banks		Merger	Apr 2002	
	Chuo Trust Mitsui Trust	Merger	Apr 2000	Fundamental business reconstruction.
	Sumitomo Trust Daiwa	Common subsidiary	Oct 2000	Establishment of a subsidiary specialising in pension fund management.
Non-life insurance companies	Mitsui Sumitomo	Holding company	Apr 2002	Top market share.
Securities companies	Universal Taiheiyo Towa Daiichi	Merger	Apr 2000	Sanwa Tokai group. (Tsubasa Securities)

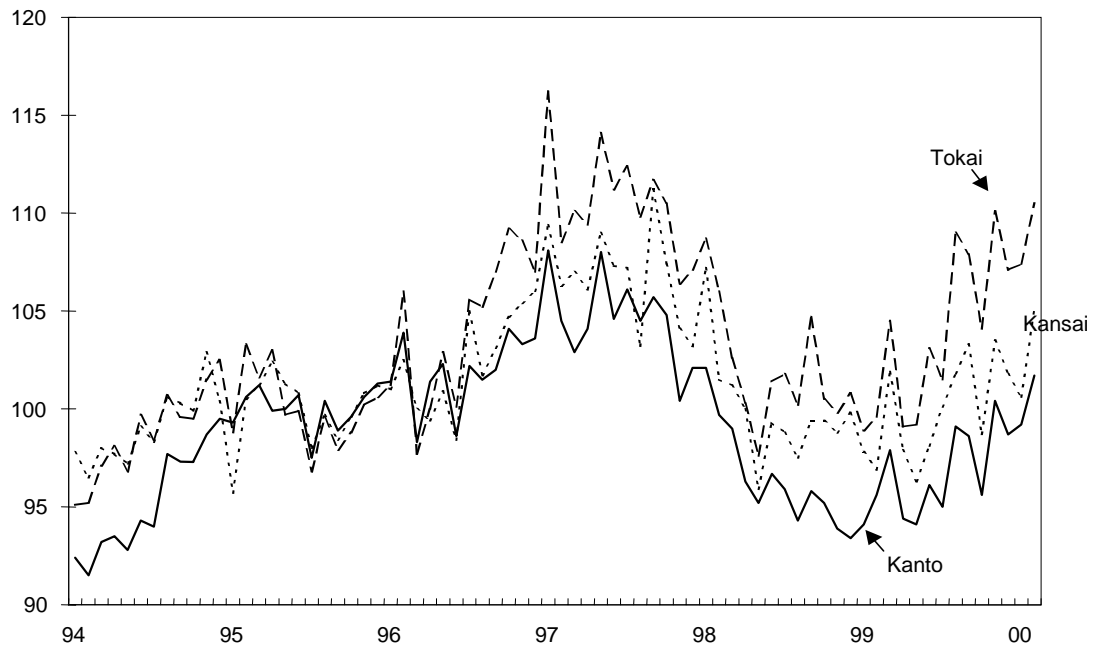
**(2) Initiatives across segments**

Institutions involved	Type of consolidation	Effective date	Features
Tokyo Mitsubishi (banking) Mitsubishi Trust (trust)	Holding company	Apr 2001	Consolidation of the Mitsubishi group.
IBJ banking Nomura securities Daiichilife insurance	Business alliance	May 1998	IBJ and Nomura established a joint venture for derivatives and fund management. IBJ and Daiichi cooperate in product development and sales and entered into a cross-shareholding arrangement.
Sumitomo banking Daiwa securities	Subsidiary	Apr 1999	Establishment of a joint venture for wholesale securities, derivatives, and fund management.

Source: Bank of Japan

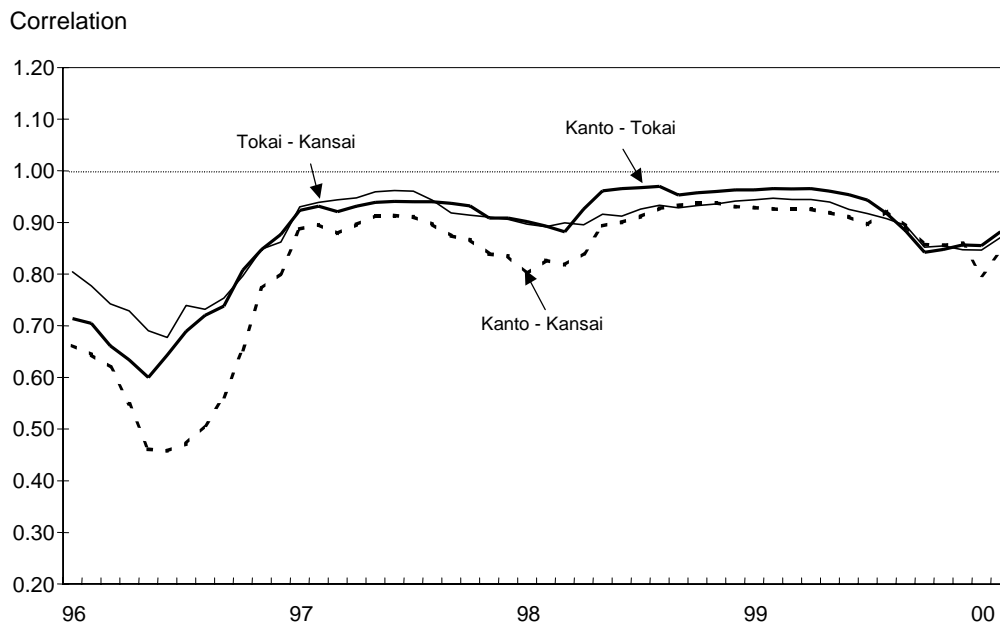


Chart III.11 (a)  
**Business cycles of major regions in Japan**  
 (Industrial production index, 1995=100)



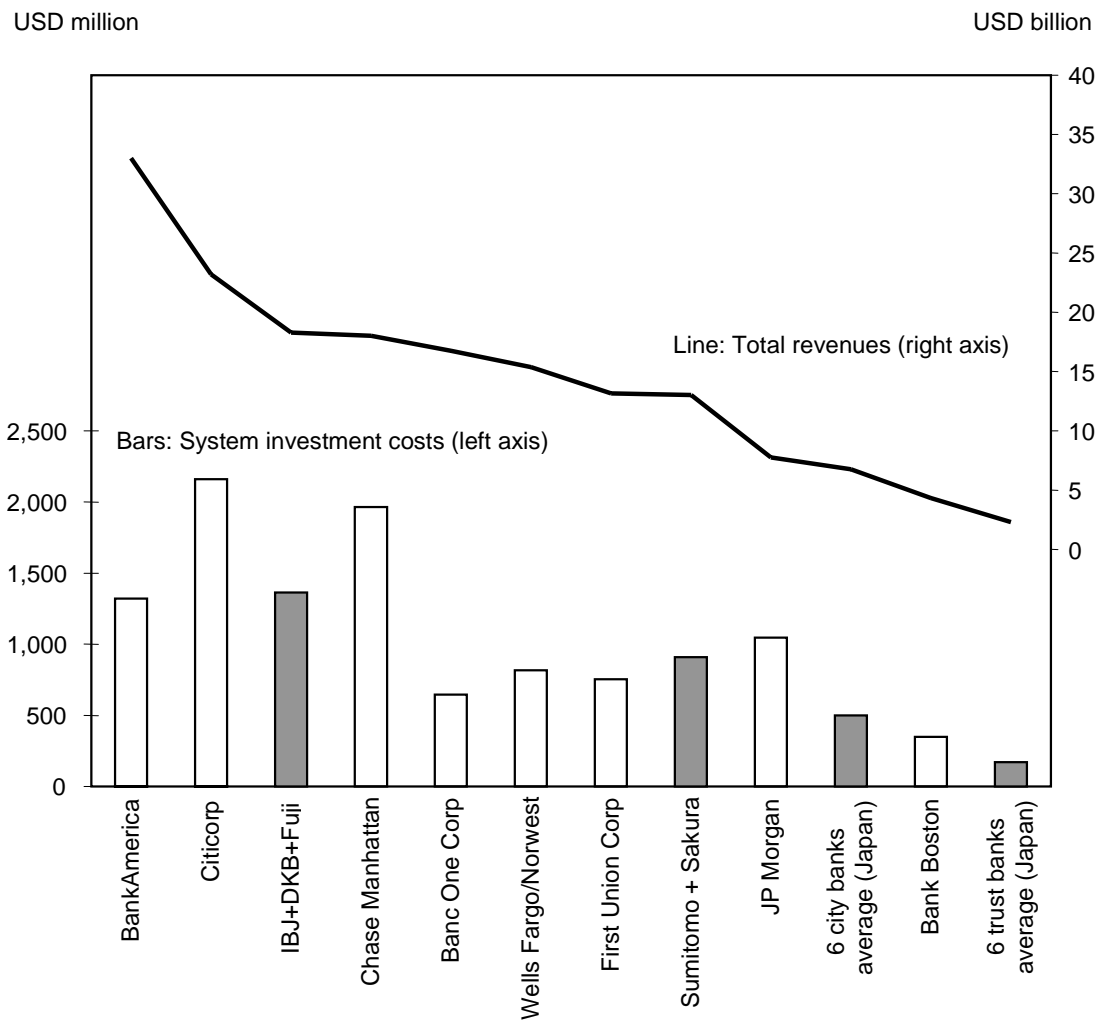
Source: Ministry of International Trade and Industry (MITI).

Chart III.11 (b)  
**Correlation of business cycles in major regions**



Source: MITI. Correlation of the industrial production index among three major regions using data for previous 24-month periods.

Chart III.12  
**System investment costs compared to revenues**  
(Fiscal 1997)



Source: Atkinson, David (1999b), *Japanese Bank Systems Expenditure*.

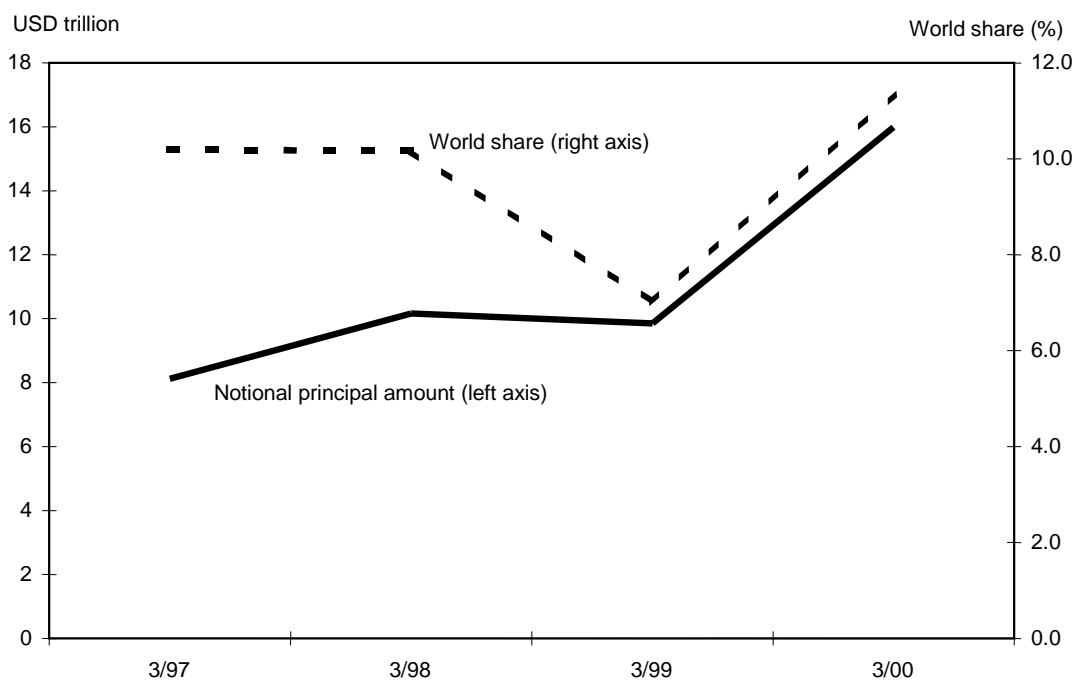
Table III.12  
Business launches in Japan by foreign financial institutions

Business sector	Effective date	Foreign company to launch business	Principal business of the foreign company	Japanese company involved	Content
Banking	Apr 2000	Ripplewood (US)	Private equity	Long-Term Credit Bank of Japan	Purchased Long-Term Credit Bank of Japan which is under special public administration.
Securities	Jul 1998	Merrill Lynch (US)	Securities	Yamaichi Securities	Assumed the business of failed Yamaichi.
	Jan 1999	Travelers (US)	Insurance, securities	Nikko Securities	Established a joint venture for trusts, and entered into a cross-shareholding arrangement.
Insurance	Mar 1998	GE Capital (US)	Non-bank finance	Toho Mutual Life Insurance	Established GE Edison Life Insurance, a joint venture, and assumed the staff as well as business franchise of failed Toho. Toho's contracts will later be assumed in bulk.
	Dec 1999	Artémis (France)	Retail	Aoba Life Insurance	Purchased failed Aoba from the Life Insurance Association of Japan.
	Apr 2000	Axa (France)	Life insurance	Nippon Dantai Life Insurance	Took over Nippon Dantai as a subsidiary of a newly established insurance holding company.
	Mar 1999	Manulife (Canada)	Life insurance	Dai Hyaku Mutual Life Insurance	Assumed the business of Dai Hyaku through a newly established joint venture.
	Nov 1999	Aetna (US)	Life insurance	Heiwa Life Insurance	Purchased 33% of Heiwa's equity.
Non-bank finance	Mar 1999 Mar 2000	GE Capital (US)	Non-bank finance	Nippon Lease, Life	Assumed the business of Nippon Lease, a leasing affiliate of LTCB, and will assume the business of Life, a consumer finance company.
	Nov 1998	GE Capital (US)	Non-bank finance	Lake	Took over Lake, an independent consumer finance company.

Source: Bank of Japan

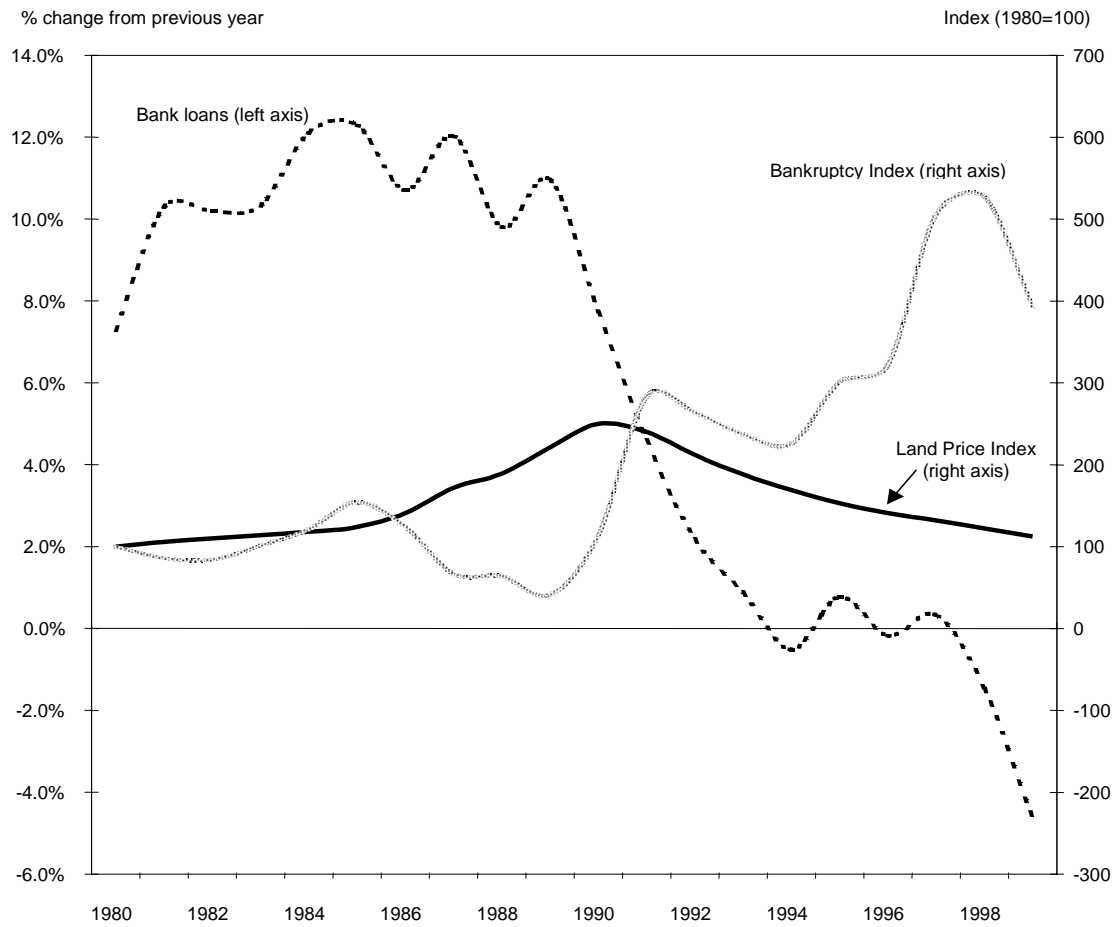
Chart III.13

**Derivatives transactions: top four banks in Japan**



Source: Annual reports (Japanese banks; Bank for International Settlements). Figures for 3/00 are reckoned by aggregating ten banks to be consolidated into four groups (Mizuho group, Sumitomo/Sakura, Sanwa/Tokai and Tokyo-Mitsubishi/Mitsubishi Trust). For 3/00, data of the ten banks concerned as of 3/99 are aggregated.

Chart III.14  
**Bank loans, land prices and bankruptcies**



Sources: BOJ, National Land Agency, Tokyo Shoko Research.  
 Bank loans: All Japanese banks (loans in trust accounts included).  
 Land Price Index: price index for all commercial land (1980=100).  
 Bankruptcy Index: index of total debts of firms declared bankrupt (1980=100).

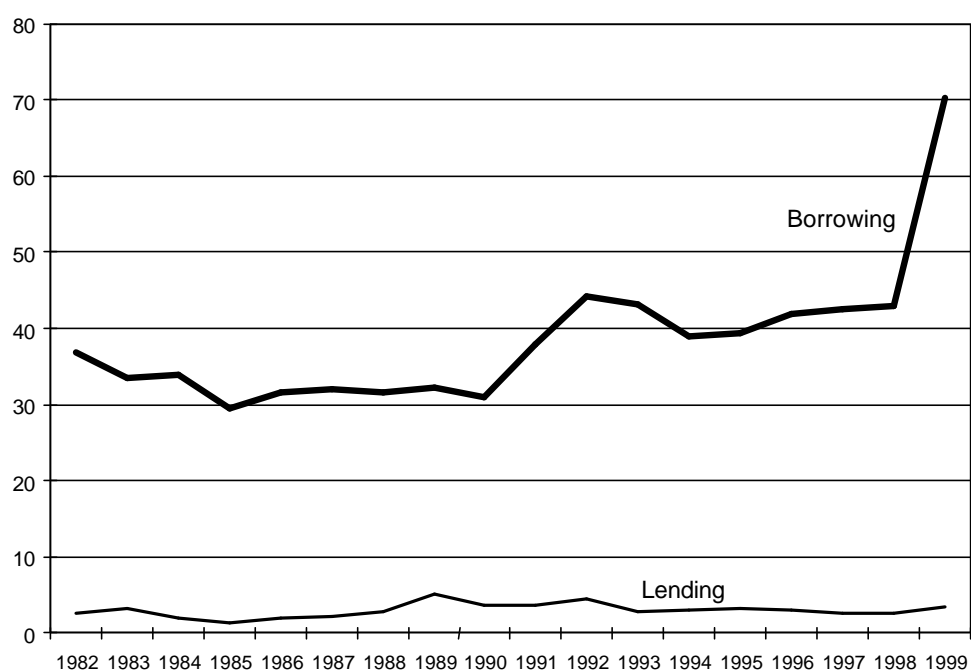
Table III.13  
**Concentration of loans (March 1999)**  
(USD billion, market share in %<sup>1</sup>)

	Loans	Loans to three industries <sup>2</sup>	
	(A)	(B)	(B/A)
Mizuho	780.0 (17%)	179.6 (15%)	23%
Sumitomo-Sakura	600.1 (13%)	148.9 (12%)	25%
Sanwa-Tokai	459.5 (10%)	108.0 (9%)	23%
Mitsubishi-Tokyo	431.1 (9%)	103.1 (9%)	24%
Total of the four groups	2,270.6 (48%)	539.5 (45%)	24%

Source: Annual reports.

Notes: <sup>1</sup> Market share: vis-à-vis total of all banks. <sup>2</sup> Three industries: construction, real estate, finance & insurance.

Chart III.15  
**Shares of the top four banks in the call, NCD,  
large-lot deposit markets**



Source: Figures for fiscal 1999 are reckoned by aggregating banks to be consolidated into four groups (Mizuho group, Sumitomo/Sakura, Sanwa/Tokai, Tokyo-Mitsubishi/Mitsubishi Trust). For fiscal 1999, data of the nine banks concerned for fiscal 1998 are aggregated. Large-lot deposit is aggregated from fiscal 1994.

Table III.14  
**Breakdown of Stockholdings by Investor Category**  
 (% of total)

	<b>FY1990</b>	<b>FY1998</b>
Financial institutions	45	39
Non-financial enterprises	25	24
Individuals	23	25
Foreigners	4	10
Others	3	2

Source: The National Conference of Stock Exchanges.

Notes: The table shows the ratios of stockholdings held by different investors to all Japanese listed stocks. Financial institutions: banks, life insurance companies, non-life insurance companies.

**Banks' Stockholdings (March 1999)**  
 (JPY trillion)

	<b>Capital</b>	<b>Stockholdings</b>	
	<b>(A)</b>	<b>(B)</b>	<b>(B/A)</b>
Mizuho	6.4	9.9	156%
Sumitomo-Sakura	4.1	6.7	163%
Sanwa-Tokai	3.7	6.3	169%
Mitsubishi-Tokyo	3.6	7.0	192%
<b>Total of the four groups</b>	<b>17.8</b>	<b>29.8</b>	<b>168%</b>

Source: Annual reports.



Table III.15  
**Financial Liabilities and Assets of the Corporate and Household Sectors**  
**(December 1998)**  
(USD billion)

	Japan (a)		US (b)		(b/a)
<b>Financial Liabilities</b>	<b>14,345</b>	<b>100%</b>	<b>28,127</b>	<b>100%</b>	<b>2.0</b>
Borrowings	7,809	54%	9,382	33%	1.2
Stocks	2,264	16%	11,945	42%	5.3
Bonds	745	5%	1,927	7%	2.6
Others	3,527	25%	4,873	17%	1.4
<b>Financial Assets</b>	<b>17,955</b>	<b>100%</b>	<b>43,727</b>	<b>100%</b>	<b>2.4</b>
Cash & deposits	9,636	54%	6,018	14%	0.6
Insurance and pension funds	3,318	18%	11,236	26%	3.4
Investment trusts	345	2%	4,145	9%	12.0
Securities	1,636	9%	9,700	22%	5.9
Other	3,018	17%	12,627	29%	4.2

Source: Comparative Economic and Financial Statistics Japan and Other Major Countries, BOJ.

Notes: Total of non-financial enterprises and the household sector. Borrowings: from banks and other financial institutions.

Table III.16  
**Risks Measured by Various Leverage Ratios**

	GOBSL (Times)	GEL (Times)	VL (%)	Capital ratio (%)
Dai-Ichi-Kangyo	13.5	62.7	0.90	11.5
IBJ	14.1	100.0	0.99	11.3
Fuji	12.5	111.0	0.53	11.2
Sumitomo	12.8	80.9	0.53	11.0
Tokyo-Mitsubishi	14.8	89.9	0.48	10.5
Bankers Trust	21.8	368.3	0.79	14.1
BankAmerica	9.8	72.4	0.20	11.6
Chase	11.0	247.3	0.22	11.6

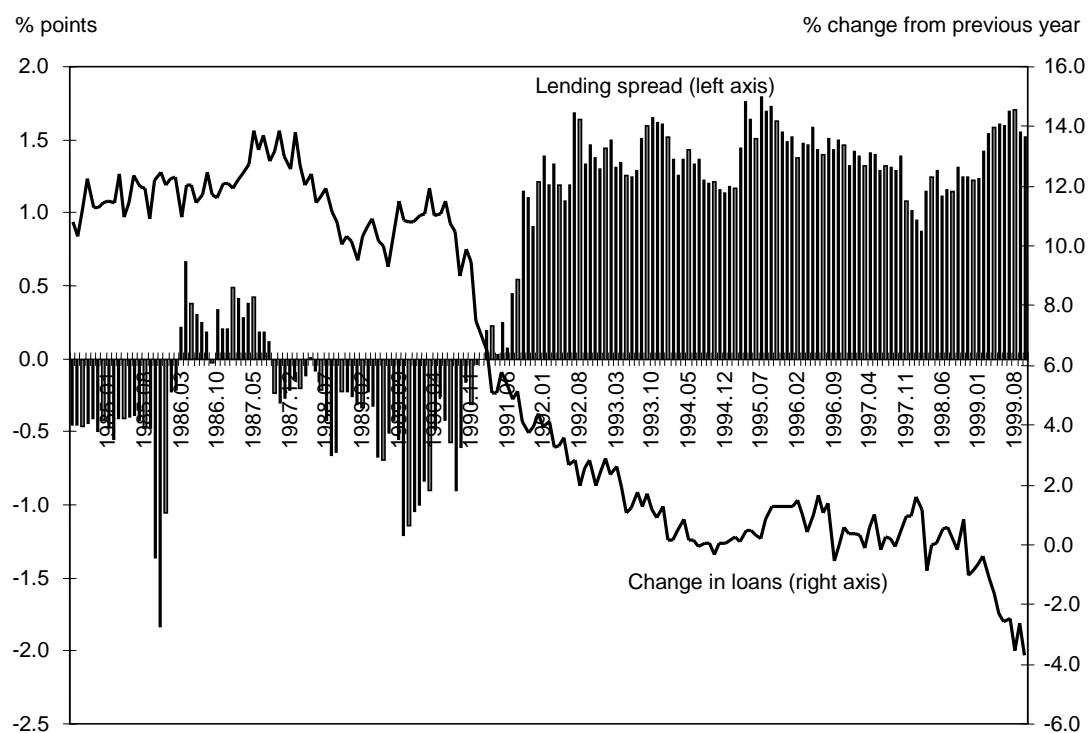
Source: Annual reports.

Notes: Japanese banks: Mar 1999; US banks: Dec 1997. Capital ratio: BIS based. VaR of Tokyo-Mitsubishi, Fuji: average of FY1998. VaR of BankAmerica: average of CY1997.

GOBSL: Gross on-balance sheet leverage = Assets/Capital. GEL: Gross economic leverage = (Risk assets + Risk liabilities + Notional principal amounts of derivative transactions)/Capital. Risk assets = Assets – Cash, risk liabilities = Liabilities – Deposits. VL: VaR leverage = VaR/Capital

Chart III.16

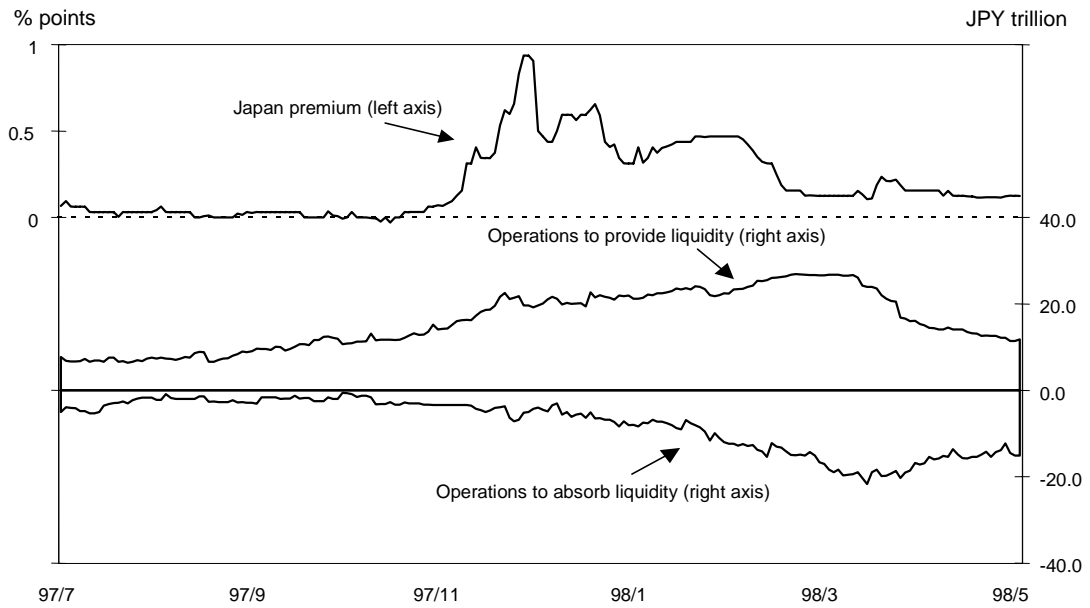
# Behaviour of Japanese banks before and after the crisis



Source: *Financial and Economics Statistics Monthly*, Bank of Japan.

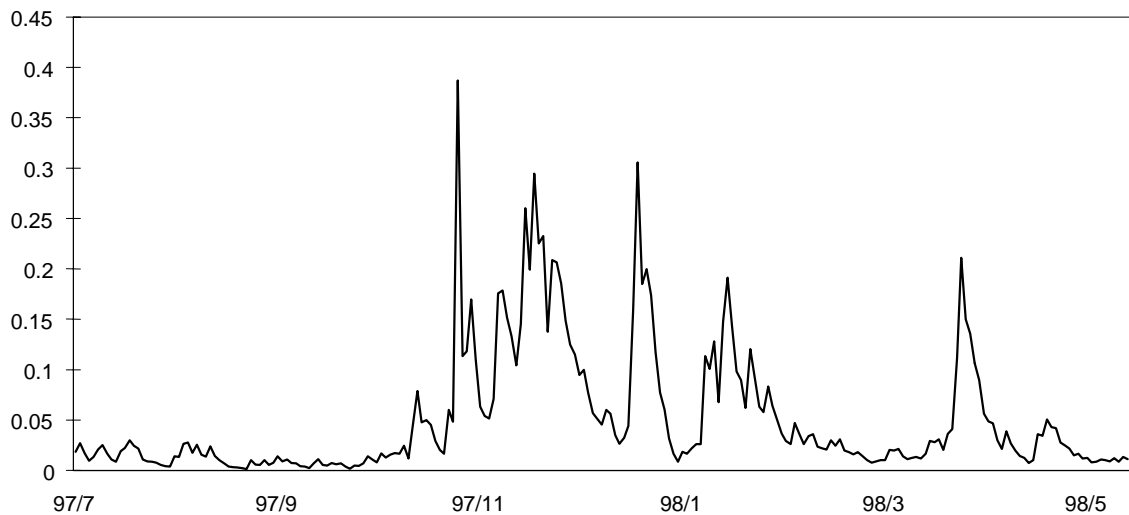
Lending spread = average interest rate on new loans (domestic yen, banking accounts) – CD (3-month) quotations.

Chart III.17 (a)  
Japan premium and two-way operations



Sources: BBA, Zenginkyo, Bank of Tokyo Mitsubishi, Bank of Japan.  
Japan premium = (3-month dollar JOM) – (3-month dollar LIBOR)

Chart III.17 (b)  
Expected default probability of major Japanese banks



Source: Bank of Japan

Notes: Estimation of expected default probability is based on the equity price volatility of six major Japanese banks. The volatility assumption relies on EGARCH (1,1) model. For details, see Ieda (1999). There is a seasonal tendency for stock prices to become volatile around the end of the fiscal year, which partly explains the increase in expected default probability around the end of March.

### **Annex III.1**

## **The effects of consolidation on managing systemic risk in Canada: the 1998 Bank Merger Decision**

In 1998, four of Canada's largest banks comprising approximately 70% of bank assets in Canada announced their intention to merge. In January 1998, the Royal Bank of Canada and the Bank of Montreal made their announcement. This was followed in April of 1998 by the announcement that the Canadian Imperial Bank of Commerce (CIBC) and TD Bank had reached an agreement to merge. The Competition Bureau, the Office of the Superintendent of Financial Institutions (OSFI) and the Department of Finance examined the merger proposals in depth. On 14 December 1998, the Minister of Finance announced the government's decision not to allow the two proposed mergers to proceed.

In announcing his decision, the Finance Minister noted that the mergers were not in the best interests of Canadians and would not be allowed because they would lead to:

- an unacceptable concentration of economic power in the hands of fewer, very large banks;
- a significant reduction of competition; and
- reduced policy flexibility for the government to address potential future prudential concerns.

### **Assessment of impacts on the financial system**

In 1998, consolidation in the already very concentrated banking industry in Canada clearly raised important questions about the potential impact on the overall Canadian financial system. In the context of the review of the merger proposals, the Superintendent of Financial Institutions was asked to advise the Minister on whether there were prudential reasons why the two bank merger proposals should not be considered. Specifically, the Superintendent was asked:

1. If the merger proposals were to be allowed, would there be circumstances or issues which would be likely to have a material, adverse impact on the financial viability of either merged bank going forward, or would there be other material concerns as to the safety and soundness of either merged bank?
2. If the merger proposals were to be allowed and one of the merged banks were to experience serious financial problems, would the resolution of those problems be more difficult than would be the case if any one of the predecessor banks experienced such problems?

To develop a view on the prudential aspects of the two merger proposals, OSFI began with an analysis of the current financial condition and risk profile of each of the merging banks, based on existing supervisory information. OSFI then considered relevant literature on mergers, consulted with other regulators on their merger experience, and worked with the banks to review and analyse the merger proposals, financial forecasts and relevant reports, and to discuss merger strategies and integration plans. The views of several banks and federal government agencies were also sought on issues to be considered in the resolution of any serious financial problems encountered by the merged banks.

There were certain limitations on OSFI's review that included the following:

- Canadian experience with large mergers, particularly in the financial sector, was limited. Therefore, much of the merger literature reviewed by OSFI related to American transactions, and most dealt with acquisitions as distinct from "mergers of equals";

- There were constraints on the merging banks' sharing of confidential and proprietary information with their potential merger partners and as a result, detailed integration plans had not been completed when OSFI's assessment was underway.

### **Institution-specific analysis**

The Superintendent concluded that it was not possible to make generalised statements as to whether larger banks are financially stronger than smaller banks or whether mergers of financial institutions increase or decrease their financial strength. He concluded that the record was mixed and that there were examples of both increased and decreased financial strength.

He did note, however, that mergers of large institutions are difficult to accomplish and create major challenges in developing a coherent strategy for the new organisation, and in integrating people, processes, technologies and risk management frameworks. The quality of the strategy and the integration process can significantly affect the success of the merger. Because of the importance of the integration process, the merged institution is at greatest risk in the period shortly following the merger, during which most of the integration activity takes place.

Despite these evident risks associated with mergers, OSFI did not identify circumstances or issues that would be likely to have a material, adverse impact on the financial viability of either merged bank, nor did OSFI identify other material concerns as to the safety and soundness of the merged banks. Therefore, OSFI was not able to identify any prudential reasons why the two merger proposals should not be considered. However, the Superintendent did point out that the increased size and complexity of the merged banks would create supervisory challenges and could require new approaches.

In considering the issue of resolving serious financial problems encountered by either of the merged banks, the Superintendent noted that prior experience had to be taken into account. While Canadian financial institutions had experienced problems in the past, in some cases leading to failure, there had been few failures of large financial institutions and, for many years, no failures of major Canadian banks.

The four merging banks had argued that their merger proposals, if allowed, would enhance financial strength and reduce the risk of significant financial problems, thus diminishing the possibility that any resolution issues would arise. The banks and OSFI also discussed strategies, building on the two merger proposals, which would have reduced the risk profiles of the merged banks. However, OSFI was not able to conclude, on the basis of existing evidence, that the merged banks arising out of the two merger proposals would necessarily be financially stronger than their predecessors. They could be stronger, but much would depend on success achieved in integrating the merging banks and in executing strategies directed at reducing their risk profiles.

### **System concerns**

The Superintendent noted that currently, if a major Canadian bank were to experience serious financial problems, there would be a range of options available to the bank, its shareholders and creditors as well as OSFI, the Canada Deposit Insurance Corporation and, if necessary, the Bank of Canada, for resolving these problems. These options could include one or more of:

- recapitalisation;
- sale of individual businesses;
- various forms of restructuring;
- liquidation and piecemeal or en bloc sales of individual assets and business lines; and
- an outright sale of the bank to another financial institution.

The Superintendent concluded that if the mergers were approved and one of the merged banks experienced serious problems, these options would probably remain, but, given the relative size

of the institution in relation to potential buyers and investors, some would be more difficult and more time-consuming to implement, and a “least cost” resolution could be more difficult to achieve. Furthermore, to make full use of certain options, changes to ownership, competition and other policies might be required.

### **The decision**

In releasing the government’s decision in 1998, the Minister of Finance noted that the Superintendent had not ruled out either merger for prudential reasons, but did raise some important and legitimate issues about their potential impact on the overall financial system, which the government had to consider.

The Minister noted that when a financial institution gets into trouble, it is vitally important that there be as many options as possible available to work out the difficulties and that historically, in Canada, when a financial institution faced difficulties, one possibility was always to sell its operations to other, stronger Canadian competitors. After the proposed mergers, if one of the new merged banks were to experience difficulties, a sale to another domestic firm could seriously reduce the level of competition within the Canadian sector. If this were not acceptable, the government could be faced with a situation where the only other option would be a sale to a foreign institution. But, given the size of the banks that would result from the proposed mergers, such a sale of assets to a foreign institution would result in a substantial reduction in Canadian ownership and control.

Ultimately, the government decided that the sheer size of the institutions that would result from the mergers would constrain unacceptably the alternatives available to regulators and to the government in the face of a large financial institution in difficulty.

### **Conclusion**

In June 1999, the government of Canada released a new policy framework for the financial services industry, which included measures to increase competition in the industry in Canada and to encourage new entrants. In that document, the government also acknowledged that mergers among financial institutions were a legitimate business strategy and a new, transparent merger review process was established to cover mergers involving large Canadian banks with over CAD 5 billion in equity. As part of that process, the Superintendent of Financial Institutions will be asked to advise the Minister of Finance regarding any prudential concerns raised by proposed mergers.

The Canadian banking sector remains one of the most concentrated financial sectors in the world. The failure resolution issue will, therefore, continue to form a part of the government’s concerns in relation to any future consolidation in the financial sector. The extent of the problem posed by any particular merger proposals will depend on the size and number of parties involved as well as on the overall structure of the industry and the presence and position of other industry participants that are not involved in the merger.

## **Annex III.2**

### **Potential effects of strategic alliances on financial risk**

Strategic alliances can be defined as interfirm relationships that involve the creation of tangible or intangible assets over which each firm has some control. Strategic alliances lie somewhere between arm's-length contractual relationships with no direct sharing of decision-making, returns and risk, and mergers and acquisitions with complete sharing of decision-making, risk and reward. A key characteristic that distinguishes strategic alliances from mergers and acquisitions is their lower costs of formation and dissolution. Strategic alliances include (i) joint ventures, where firms share costs, rewards and benefits of a focused investment through the formation of a new corporate entity, (ii) operating agreements among firms backed by exchange of minority equity stakes, and (iii) joint marketing and distribution agreements.

The potential effects of a strategic alliance on firms' individual risks are in general ambiguous. First, the sharing of risks of a particular business carried out through an alliance, together with the limited equity stake each firm might commit, could induce alliances to be formed with the aim of investing in highly risky projects. Second, the focus of an alliance on particular business lines might increase the concentration of lending to or borrowing from particular firms or sectors. Third, if an alliance is formed by firms of different financial strength and the strongest firm initiates its dissolution, such action might be viewed by the market as a signal of increased weakness of the other firms, exposing them to reputation risk. In all these cases, the risk profile of one or several members of an alliance could increase, *ceteris paribus*.

Alliances potentially leading to a reduction of individual firm risk might be those that allow firms to share costly infrastructures, thereby decreasing their costs and increasing their returns. Joint marketing and distribution agreements might also lead to reduced risk through increases in returns due to sharing and profiting from individual firms' common customer bases. Furthermore, alliances may be a low cost device to gauge the profitability and risks involved in a full merger, thereby decreasing the likelihood that a firm undertakes an unprofitable merger or acquisition. Also, the lower cost of dissolving an alliance facilitates opting out of it in the case of perceived or actual lack of profitability of the joint activity. Thus, individual firms' risk might be reduced by the alliance's low-cost option of divesting a low-return investment. Given the great variety of forms alliances can take, a reliable assessment of their effects on an individual firm's risk would require a case by case evaluation.

Strategic alliances could increase the potential for systemic risk through increases in firms' direct and indirect interdependencies. For example, alliances backed by cross-shareholdings may result in an increase in firms' direct interdependencies, which might augment the impact and transmission effects of a shock. Indirect interdependencies may also increase through alliances' correlated exposures to economic sectors or financial markets. The sharing of common customer bases through alliances might make firms more vulnerable to shocks originating in the sectors where these customers operate. Likewise, the impact and transmission effects of a shock might increase under alliances that induce firms to provide funds to the same debtors, thereby increasing the concentration of the exposures of each firm in an alliance. Finally, reputation effects might lead to potential increases in systemic risk, since difficulties at a firm participating in an alliance might be perceived as spilling over to the other firms in the alliance, decreasing market confidence in the financial health of the entire set of allied firms. At this point, however, the practical significance of the possibilities is unknown, and thus strategic alliances represent an interesting area of future research.

### Annex III.3

#### Consolidation and the liquidity of financial markets

For a number of years, observers have noted a trend towards a reduction in the number of market-making institutions in off-exchange traded securities markets (including foreign exchange). Table III.A3.1 suggests that this trend is not uniform. It shows concentration ratios and Herfindahl indices for interest rate and currency derivatives activity for a group of 100 large internationally active banks. The market share of the top five institutions in currency derivatives activity increased only modestly from 23% to 25% between 1998 and 1999, against a moderate decline in the overall market size. In contrast, the equivalent measure for interest rate products jumped from 25% to 32% over the same period, which is also characterised by a marked increase in the activity of that market. The other measures of market share and the Herfindahl indices show similar patterns.

Table III.A3.1  
Concentration in the global derivatives markets

	Currency derivatives		Interest rate derivatives	
	1998	1999	1998	1999
Total (USD bn)	33,112	31,034	79,724	105,984
Top 5 (%)	22.9	25.4	25.0	31.9
Top 10 (%)	37.8	40.5	39.1	48.0
Top 20 (%)	59.1	61.9	59.3	67.7
HI	0.0234	0.0255	0.0256	0.0334

Source: Swaps Monitor (various issues).

It is not clear a priori whether increased concentration has a positive or negative effect on financial market liquidity.<sup>146</sup> On the one hand, an increase in concentration does not necessarily lead to a reduction in market liquidity, as long as the aggregate capital base devoted to market-making is sufficiently large in relation to total trading activity, and if the number of significant players remains large and barriers to entry low. Indeed, it can be argued that larger institutions with more capital (in absolute terms) and a greater number of customers can provide more efficient order-matching and capitalise on economies of scale and greater flexibility in allocating capital to the market-making function. On the other hand, a smaller number of participating institutions may restrict the ability of each to execute large orders anonymously, possibly reducing overall liquidity, and resulting in an increased cost of execution and higher costs to the end user. Moreover, a reduction in the number of market participants and an increase in their market shares may result in higher aggregate intra-dealer exposures, and thus the potential for market disruption may also increase in the event of the failure of a single institution.

The discussion in Chapter IV indicates that central banks have not identified significant effects of consolidation on either the liquidity or the volatility of financial markets in normal times. However, during periods of stress, such as the failure of one of the main market participants or

<sup>146</sup> See Madhavan (2000).



in the aftermath of a currency crisis, the risk of a serious disruption to the functioning of the market may be higher now than it has been in the past.<sup>147</sup> The financial market disruptions during the autumn of 1998 in both developed and emerging market economies have been partially described as the result of major players withdrawing from their market-making functions. A shrinkage in the capital base of these institutions and the impact of uncertainty regarding effective credit exposures have been offered as explanations for this withdrawal.<sup>148</sup> Note, however, that neither of these explanations is necessarily directly related to or caused by consolidation.

The financial liquidity of emerging market economies might be affected by the consolidation of G10 financial institutions although, again, the direction of the impact is unclear. On the one hand, consolidation may reduce the number of G10 institutions already operating in these markets. On the other hand, an increase in the number of large institutions in the G10 countries following consolidation might raise the number of firms that perceive international expansion as a feasible option due to their enlarged size, and induce some to enter these markets. Although the entry of G10 financial institutions in emerging market economies has steadily increased in the past decade, it is unclear to what extent consolidation per se is a driving force of this process.<sup>149</sup> Whatever the motivation for entry, an increase in the number of institutions that have important market-making functions in these markets is, *ceteris paribus*, likely to foster liquidity. This is because an increased presence of foreign dealers almost surely represents a net increase in risk capital devoted to this activity and also enhances the diversity of market participants.

A substantial presence of foreign banks operating in some small and medium-sized emerging markets may make such markets more vulnerable to shocks arising elsewhere, potentially exposing these markets to contagious liquidity shocks. A recent study, however, finds a negative relationship between foreign bank presence and the probability that a banking system will incur a crisis.<sup>150</sup> This result suggests that even in distressed periods the liquidity of emerging markets might not be adversely affected by the presence of foreign banks.

On balance, neither existing theory nor evidence supports a strong connection between current levels of consolidation among G10 banks and reductions in market liquidity. However, the issue is clearly important, particularly during periods of generalised financial stress, and a review that expands the list of relevant factors beyond consolidation might prove fruitful.

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<sup>147</sup> Bank for International Settlements (1992) provides an early presentation of this view. Similar concerns have been raised in official circles recently with special focus on the foreign exchange market. For a discussion see Chapter V of the Bank for International Settlements Annual Report (June 2000).

<sup>148</sup> See International Monetary Fund Capital Markets Report (December 1998), the Bank for International Settlements Annual Report Chapters V and VII (June 1999) and the Committee on the Global Financial System Report (1999).

<sup>149</sup> See Chapter VI of the International Monetary Fund Capital Markets Report (September 2000).

<sup>150</sup> Levine (1999).

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## **Chapter IV**

### **The impact of financial sector consolidation on monetary policy**

#### **1. Introduction**

This chapter examines whether financial sector consolidation has affected the environment in which monetary policy decisions are made, how they are put into practice or how they are transmitted to the rest of the economy, and whether it may do so in the future. Central banks implement policy by influencing the market for central bank balances in order to maintain a specific short-term interest rate near a target level. The reactions of financial firms and participants in asset markets to changes in current and expected future short-term interest rates then lead to changes in longer-term interest rates and asset prices more generally, which in turn affect spending by firms and households and hence output and prices. The behaviour of financial firms and markets is therefore a key influence on both the implementation and transmission of monetary policy. Consolidation within the financial sector may alter this behaviour, with potentially important implications for how central banks implement their policy decisions and the impact of those decisions. Moreover, if consolidation affects how financial firms and markets react to other shocks, that too may need to be taken into account in monetary policymaking. Any consequences are likely to depend on the form of consolidation – eg within industry, across industries, or across borders – the reasons behind it – eg technological change, economies of scale, or the search for market power – and the initial level of concentration in the financial sector.

The following sections consider the economic arguments for thinking that consolidation may matter, review some of the – admittedly limited – evidence available from relevant empirical studies and report the assessments by central banks surveyed. Section 2 focuses on the implementation of monetary policy and how consolidation might affect the market for central bank balances and the markets in which monetary policy operations are conducted. Section 3 turns to the possible impact of consolidation on the transmission of monetary policy to the rest of the economy through various channels. Is it likely that consolidation amplifies or damps the impact of a given change in the proximate instrument of monetary policy? Might it speed up the transmission of a policy change or slow it down? Might it change the relative importance of different channels? Section 4 considers briefly some further possible consequences of consolidation for monetary policy, such as changes in the way financial shocks are transmitted across markets and borders, changes in the liquidity and volatility of financial markets, and changes in the information content of variables monitored by central banks. Section 5 draws attention to some important caveats that need to be remembered, pointing out the need for further research. Section 6 offers some tentative conclusions.

#### **2. The impact of consolidation on the implementation of monetary policy**

Whether consolidation within the financial sector affects the implementation of monetary policy depends on whether it affects the market for central bank balances, or the market or markets used by the central bank to adjust the supply of such balances. Hence any impact on the volatility and price elasticity of financial firms' demands for central bank balances, or on the degree of competition in the relevant markets, could be relevant to monetary policymakers.

All the central banks of the G10 economies currently implement monetary policy by manipulating conditions in the market for central bank balances in order to bring a particular short-term interest rate in line with their target.<sup>151</sup> Central bank regulations with regard to clearing, overdrafts, payment of interest on balances and required minimum levels of balances all influence deposit-taking institutions' demand for central bank balances. At the same time, central banks are monopoly suppliers of such balances and adjust that supply through transactions with financial firms to set the policy interest rate at the desired level. These monetary policy operations include outright purchases of government securities, term and overnight repurchase agreements, and currency swaps.

In addition to their market operations, many central banks use other mechanisms to limit volatility in the market for central bank balances. These include standing facilities that help to keep the overnight interest rate in a desired range. The top of the range is set by the rate on a lending facility to which institutions may turn to obtain central bank balances, and the bottom by the rate on a deposit facility that provides an outlet for excess balances. Minimum reserve requirements can also serve to damp volatility in the market for central bank balances by increasing the willingness of some institutions to adjust their demands within a maintenance period in response to movements in the overnight interest rate. Also, the move towards clear announcements by central banks of a target value for their policy interest rate has probably helped to focus market expectations on the target rate, and thereby increased the influence of intertemporal arbitrage by financial firms in keeping the actual rate near the target.<sup>152</sup>

### **Potential effects of consolidation**

Consolidation could affect the key financial markets for the implementation of monetary policy – the market for central bank balances and those in which policy operations are conducted – through two possible routes. First, consolidation could affect the degree of competition. For example, a reduction in the number of active participants in the interbank market for central bank balances could reduce competition if there are barriers to entry. Barriers to entry could arise due to features of the regulatory environment or other institutional arrangements, or because of the search costs or other informational disadvantages facing potential new entrants. In that event, there would be a danger that some market participants might try to exploit their market power or greater knowledge of liquidity conditions, leading to higher costs of liquidity for other market participants. Such an outcome might impede the arbitraging of rates in the market for central bank deposits into other markets. Moreover, if the ability of market participants to act in this way depended in part on market conditions, the result could be unexpected volatility in very short-term market rates and a more variable cost of liquidity for other market participants. Similarly, a reduction in the number of counterparties for central bank monetary policy operations, if it were sufficient to generate some market power for the remaining firms, might allow some counterparties to obtain funds at rates below those that would prevail if they were all price-takers. The implementation of monetary policy would be made more difficult if the cost of liquidity to non-counterparty participants in the interbank market became higher or more variable as a result. The importance of these effects would depend on the regulatory environment and operating procedures for monetary policy operations and, over a longer horizon, on whether changes in those regulations and operating procedures could be implemented to ensure the efficient operation of the markets following consolidation.

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<sup>151</sup> Borio (1997) presents a very useful summary of the implementation of policy in a variety of industrial nations as of September 1996. Updated descriptions of procedures for the Bank of England, the Swiss National Bank, the Bank of Canada and the European Central Bank can be found in Bank of England (1999), Swiss National Bank (1999), Howard (1998) and European Central Bank (1998) respectively.

<sup>152</sup> See Borio (1997), p 89.

Consolidation could affect the markets involved in the implementation of policy through a second route if the larger firms created by the consolidation were to behave differently from their smaller predecessors, even aside from any changes in the degree of market competition. For example, a change in the size and number of deposit-taking institutions may affect the ability of central banks to estimate the demand for central bank balances and so to supply the funds necessary to achieve the desired target for the policy rate. Also, by internalising what had earlier been interbank transactions, consolidation could reduce the liquidity of the market, making it less efficient at reallocating balances across deposit-taking institutions, increasing market volatility, and perhaps affecting the extent to which changes in conditions in the market for central bank deposits are arbitrated into other short-term markets. If these effects were sufficiently large, consolidation could conceivably cause such arbitrage to break down, thereby cutting the link between monetary policy actions and the real economy.<sup>153</sup> Even if the market were not impaired to that extreme degree, the implementation of monetary policy could become more complicated. Central banks are likely to be able to adjust over time to relatively gradual changes in the level of demand for central bank balances caused by consolidation. But changes in the volatility of demand or the liquidity of the market might lead to increased volatility in the policy rate or other short-term market rates. Of course, central banks might be able to combat such an increase in volatility by, for example, increasing the frequency of fine-tuning operations.

### **Evidence on the effects of consolidation**

While studies have compared the implementation of monetary policy across countries with different degrees of financial sector consolidation, the effects of consolidation on policy implementation have not been explicitly studied.<sup>154</sup> The task force, therefore, circulated a questionnaire to the central banks of the G10, Australia and Spain, asking for information both on the effects of consolidation on the implementation of policy over the past decade and the expected effects in the future. The responses from the central banks indicate that the effects of consolidation both on competitive conditions in key financial markets and on the behaviour of larger market participants have generally been minimal. Consolidation is not expected to pose a significant problem for the implementation of policy going forward.

### **Evidence on the market for central bank balances**

The structure of the markets for central bank balances differs widely across countries judging by the evidence from central bank respondents, with the number of active participants ranging from just four or five in a few countries to about 200 (see Table IV.1). Nonetheless, consolidation has reduced the number of participants in this market in many countries, and it was commonly expected to continue to do so. Nearly two thirds of the respondents indicated that consolidation over the past 10 years had caused the number of market participants to decline either somewhat or considerably. Over the coming 10 years, a similar fraction expected this pattern to continue. However, several respondents noted that other factors – including financial difficulties at some deposit-taking institutions, increased concerns about risk and changes in operating procedures – have also contributed to the decline in market participation.

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<sup>153</sup> See Friedman (1999).

<sup>154</sup> See eg Borio (1997).

Table IV.1  
**Number of firms active in markets relevant for monetary policy implementation**  
(April 2000)

Country	Interbank market for central bank deposits		Open market operations	
	Number of active firms	Central bank estimate of effective minimum <sup>a</sup>	Number of counterparties	Central bank estimate of effective minimum
Australia	52 <sup>b</sup>	n/a <sup>c</sup>	27	5
Belgium	5 <sup>d</sup>	30 <sup>e</sup>	15	10-25
Canada	15	3 <sup>f</sup>	13	5-10
France	200 <sup>g</sup>	n/a <sup>h</sup>	65-71	n/a
Germany	150	20-30	545	10-25
Italy	59 <sup>k</sup>	30-40	40	>25
Japan	40-50	n/a <sup>p</sup>	50	n/a <sup>q</sup>
Netherlands	85 <sup>i</sup>	55-110 <sup>j</sup>	14	>25
Spain	90	n/a	45	n/a
Sweden	4	3-4	8	<5
Switzerland	20 <sup>l</sup>	10	15 <sup>m</sup>	10-25
UK	15 <sup>n</sup>	5	20	5-10
US	200 <sup>o</sup>	20-30	29	10-25

n/a = not available

<sup>a</sup> Responses from euro area central banks generally refer to the minimum number of participants for the euro area as a whole. However, in the case of Germany, the number shown is the estimated number needed in Germany alone.

<sup>b</sup> There are 52 institutions with exchange settlement accounts at the Reserve Bank of Australia. <sup>c</sup> The minimum number of participants is likely to be significantly less than the current number. <sup>d</sup> Number of firms actively participating in the euro overnight market. <sup>e</sup> This is an estimate of the number that market participants would prefer to have. <sup>f</sup> The Bank of Canada estimates that at least three participants would be needed and that a somewhat higher number would be preferable. <sup>g</sup> Precise figures are not available. Twelve institutions are selected in calculating the EONIA rate; 52 are participants in the TELMA system, which allows them to participate in refinancing operations of the Eurosystem, and more than 200 institutions participate in the RTGS TBF. <sup>h</sup> The important point is that no institution can be in a position to become a price-maker. <sup>i</sup> The number of active participants is not known. Currently, 85 institutions have reserve requirements and it is likely that all of them participate in the market at least to a certain extent. <sup>j</sup> The minimum required is 5-10 per euro area country. <sup>k</sup> There are 24 institutions with a market share of 1% or more. There are 59 with market shares of ½% or more. <sup>l</sup> Of the 20 participants, two account for the bulk of the activity. <sup>m</sup> Fifteen institutions participate on a regular basis, while about 30 more participate on an irregular basis. <sup>n</sup> It is difficult to define active participation. About 15 banks made 75% of the total outstanding advances, but only five settlement banks offer a meaningful customer settlement service. <sup>o</sup> About 200 institutions participate in the brokered federal funds market. <sup>p</sup> The number of participants is not the only factor affecting the efficiency with which the market operates. Others include the institutional framework and the degree of competitiveness among the market participants. <sup>q</sup> As in note p, factors other than the number of participants also affect the efficient conduct of operations.

Despite the declining number of participants in this market in the majority of countries, the central banks did not appear to be concerned about its efficient operation. Generally, the number of participants substantially exceeds the central banks' estimates of the number needed to ensure the efficient operation of the market, and, even taking into account the expected reductions over the next decade, the number of participants was expected to remain above that level. Moreover, as some respondents pointed out, the number of participants in a particular country within the euro area is no longer very important, since there is now a single monetary policy and an integrated money market, and the total number of participants in the euro area as a whole is very large.

The central banks' estimates of the minimum number of market participants necessary for the efficient functioning of the market also varied widely, ranging from a low of just three to a high of 30. Those countries with relatively few market participants generally also thought that the minimum necessary number was lower. This pattern suggests either that the market can remain competitive with relatively few participants, or that those countries with relatively concentrated financial sectors have found ways to adjust the markets' operations in order to ensure that they remain efficient. An important consideration in this regard is whether the market is contestable – in other words, whether the existing market participants are constrained from setting prices above the levels that would prevail in perfectly competitive markets by the knowledge that, if they did so, other firms could enter the market quickly and with no sunk costs and would find it profitable to do so. The Bank of Canada, for example, indicated that the market for central bank balances would operate properly even with very few participants so long as it remained contestable.

### **Evidence on central bank monetary policy operations**

The responses to questions on the effects of consolidation on the efficiency of monetary policy operations were broadly similar to those about the market for central bank balances. The number of counterparties for such operations differed substantially across central banks. In several countries there were 15 or fewer counterparties last year, and most others had less than 100. By contrast, Germany had more than 500 counterparties. Not surprisingly, the share of the top five counterparties also varied widely, ranging from less than 20 to 90%. For the European System of Central Banks as a whole, there were more than 800 counterparties, and the share of the top five was just 12%.<sup>155</sup> Nearly half of the respondents reported that consolidation had reduced the number of counterparties for their monetary policy operations and increased the share of the top five counterparties either somewhat or considerably over the past 10 years. However, several of the respondents noted that other factors, including changes in operating methods, probably contributed to these changes. About half of the respondents thought that consolidation would continue to trim their roster of counterparties and boost the share of the largest counterparties in monetary policy operations over the coming 10 years.

The respondents were not generally worried that there would be too few counterparties to ensure the efficient conduct of tenders and open market operations. The largest fraction of respondents reported that a moderate number of counterparties (10-25) would be sufficient, but a couple thought that more were needed and three thought that fewer than 10 would be satisfactory. Again, the minimum number judged necessary fell with the actual number of counterparties, suggesting that fewer counterparties may be necessary than some central banks believe, at least given accommodating adjustments in operating procedures.

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<sup>155</sup> The number of counterparties reported by the ECB is the sum of the numbers of counterparties reported by the national central banks, but the same financial firm may be a counterparty of more than one national central bank, so the number is likely to be an overstatement.

## **Effects of consolidation on the behaviour of financial firms**

Central banks were also asked about the effects of consolidation on the behaviour of firms in the market for central bank deposits and in monetary policy operations. The responses suggested that consolidation had generally had little effect, and was not expected to do so in future. There appears to be little concern about the possibility of firms wielding market power, one of the hypotheses suggested above. Many of the respondents noted that the demand for central bank balances is essentially zero in their economy (eg Canada) or is virtually entirely determined by reserve requirements (eg the European Central Bank). In such cases, consolidation cannot have a significant effect on the level of demand. A couple of respondents noted that larger banks might be more efficient at managing reserves, and so consolidation could reduce holdings of free reserves, but they thought this effect was likely to be small.

Respondents reported that consolidation had not influenced borrowing at their lending facility appreciably in the past and that it was not expected to do so in the future, although a few of them indicated that changes in operating procedures in recent years made it difficult to be sure. Some respondents pointed out that, given their operating methods, borrowing is primarily determined by the quantity of liquidity provided by the central bank relative to the needs of the banking system as a whole, and so consolidation cannot have a substantial effect. It was noted that, in the United States, larger institutions tend to be less willing to borrow. And it was pointed out that, in Australia, larger institutions, while subject to more late-day volatility in payments flows (which might be expected to boost borrowing needs), also have better credit ratings and so are less likely to have to borrow from the central bank.

The central banks also reported that consolidation had not affected the behaviour of counterparties for monetary policy operations – including their willingness to participate in operations and the size of the positions they are willing to take. Only the Swiss National Bank reported an increased willingness to participate in operations over the past 10 years. Similarly, only two of the central banks thought that consolidation would make counterparties more willing to participate in operations over the coming 10 years. Two respondents argued that the behaviour of counterparties was determined by the central bank, and that central banks could encourage participation in central bank operations by making them more attractive sources of liquidity.

## **Adjustments made by central banks in response to consolidation**

Since most of the central banks thought that consolidation had not had very large effects, few had made changes in operating or other procedures as a result, and few expected to do so. While many of the central banks reported having changed monetary policy operating procedures, particularly in the run-up to Stage III of Economic and Monetary Union (EMU) in the euro area, these changes had not usually been made in response to consolidation. The only exception was Switzerland, where consolidation had led to substantial changes in operating procedures in recent years. The Swiss National Bank increased the frequency of tender operations, introduced repo operations – thereby making it easier for smaller institutions to participate – and changed its rules for counterparties to encourage participation in operations by foreign-related institutions.<sup>156</sup> Looking forward, only one central bank (The Reserve Bank of Australia) thought that, if there were significant further consolidation in the financial services sector, changes might become necessary, including an increase in the number of fine-tuning operations, changes in the types of operations employed, or changes in the rules for their borrowing facility.

Some of the central banks thought that changes in procedures might be introduced in the event that further consolidation reduced the number of counterparties available for monetary policy

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<sup>156</sup> The Swiss National Bank also shifted from a reserves target to an interest rate target, but the decision to do so was not the result of consolidation.



operations to an unacceptable degree. About half thought that more careful monitoring of operations would be either possible or likely – presumably to reduce the possibility of non-competitive behaviour by counterparties. A smaller number thought it likely that their central bank would increase the openness of the conduct of operations (some of the respondents noted that their operations were already open) or monitor the activities and financial condition of counterparties more carefully. Only two pointed to possible stricter management of credit risk, such as tighter limits on exposures to counterparties. Nearly half of the respondents thought that none of these possible responses was likely to be adopted. A few of them commented that a problem was unlikely to arise in their jurisdiction. In the case of the euro area, in particular, it was noted that the introduction of the single monetary policy had greatly increased the number of possible counterparties for operations. One respondent indicated that actions would be taken to ensure that operations remained competitive, but did not elaborate.

Another possible response to a substantial reduction in the number of counterparties would be to change the eligibility criteria for counterparties in order to include a broader range of financial firms. Doing so might be useful for two reasons. First, it would directly increase the number of firms that could choose to be counterparties, which might be expected to increase the number doing so. Second, it might make the pool of counterparties less homogeneous. A broader range of counterparties could be helpful in times of stress, since shocks having relatively large adverse effects on some classes of financial firms – potentially making them less willing to participate in operations – might leave other types of firms relatively unaffected.

Despite these possible benefits, the central banks surveyed were generally not inclined to change their eligibility criteria. Only the Swiss National Bank reported having done so, implementing changes allowing participation in operations by foreign institutions. Similarly, only two of the respondents (Spain and Switzerland) thought that it might become important to encourage participation in monetary policy operations by smaller firms in order to offset the effects of consolidation.<sup>157</sup> Indeed, the introduction of repo operations by the Swiss National Bank had reduced the cost of participation for smaller firms. However, opinion was generally mixed on the desirability of participation by such firms. Three of the central banks thought that there should be no preference shown to larger firms in monetary policy operations. Four of them noted that the efficiency gains from operations with larger counterparties made it necessary to focus operations on a relatively small number of larger firms, especially in the case of fine-tuning operations. In particular, the ECB noted that its procedures are designed to ensure the participation of a broad range of counterparties, but that for technical reasons the European System of Central Banks (ESCB) can select a limited number of counterparties for fine-tuning operations. (The ECB also noted that fine-tuning operations have played only a very minor role thus far.) A couple of the respondents pointed to factors other than size that influence their selection of counterparties, including a firm's activity in interbank markets. Some also noted that while operations with very small counterparties were inefficient, medium-sized firms did not pose a problem.

While many of the respondents reported that their central banks had implemented organisational changes over the past 10 years, only two reported that such changes had been undertaken in response to consolidation. In France, the relationship between the central bank's money desk and payment system division was strengthened. In Switzerland, the central bank has organised teams to monitor monetary policy operations with the largest institutions. The other respondents reported that no changes in central bank organisation were even being contemplated as a result of consolidation.

A couple of respondents reported that consolidation had led to changes in risk management practices with regard to monetary policy operations. Going forward, five respondents thought

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<sup>157</sup> However, central banks of several of the smaller countries in the euro area (responses for which were reported by the ECB) thought that doing so might be desirable.

that their central bank might face heightened operational risks. The most common risk noted was increased moral hazard on the part of borrowers. This moral hazard could take two forms. Most directly, consolidation could allow some financial firms to manipulate monetary policy operations in order to obtain lower cost funding from the central bank than would otherwise have been the case. A second possibility is that the larger firms resulting from consolidation could be seen by investors as very likely to obtain substantial central bank credit in the event of financial difficulty. As a result, the risk premium on such firms' obligations would be lower than otherwise, encouraging them to take on increased risk. Of course, even in this case, investors would need to be mindful that central banks, particularly the national central banks in the euro area, cannot be expected to provide emergency liquidity to institutions in all circumstances regardless of the institutions' size. In addition to these concerns about moral hazard, two of the central banks thought that consolidation could, by increasing the size of transactions with the largest firms, increase the credit risks they face, and one of the respondents was concerned that consolidation could lead to less efficient management of systemic risks.

### **3. The impact of financial sector consolidation on the transmission of monetary policy**

Financial sector consolidation may affect the impact of monetary policy by altering the monetary transmission mechanism that links central bank operations in the market for central bank deposits to output and inflation. Consolidation may therefore be relevant to policymakers' choice of the appropriate setting of monetary policy instruments.

Changes in monetary policy instruments are transmitted to the rest of the economy through various channels. This section considers three of these channels – the “monetary” channel, the “bank lending” channel and the “balance sheet” channel (the latter two being variants of what is often termed the “credit” channel). It outlines briefly the key characteristics of each channel in order to identify how consolidation might affect them, and it considers what empirical studies reveal about whether in fact any effects can be identified. The section also draws on the results of a second questionnaire and a series of interviews with central bank staff, which sought to find out to what extent policymakers themselves think that consolidation alters the monetary transmission mechanism.

#### **The monetary channel**

In simple models of the monetary (or interest rate) channel, central bank policy determines the short-term interest rate. Arbitrage across markets ensures that yields on longer-term financial assets are an appropriately weighted average of current and expected future short-term interest rates, after allowing for the assets' perceived riskiness. Competition amongst lenders to firms and households and deposit-takers ensures that interest rates set by banks are determined by the term structure of market interest rates. In practice, arbitrage is imperfect and depends on, amongst other factors, market liquidity, risk aversion, and the degree of monopoly power. In this model, changes in monetary policy affect spending by changing household wealth and the opportunity cost of funds facing firms and households.

#### **The effects of consolidation on the monetary channel: empirical evidence**

This view of the traditional monetary channel suggests that one should consider whether financial sector consolidation has affected the pass-through of changes in policy-determined interest rates to other interest rates at longer maturities, and asset prices generally. It was argued above that in some circumstances consolidation might reduce the level and increase the volatility of interbank liquidity, impeding arbitrage across financial markets and thus slowing pass-through and reducing its extent. On the other hand, to the extent that large firms are able to process information more effectively than small firms, because of the set-up costs and

economies of scale in information processing, consolidation may promote more rapid arbitrage of interest rate changes across markets and assets. In addition, consolidation amongst those lending to firms and households, if it reduced competition, could bring about higher margins between wholesale interest rates and those charged to borrowers. That would cause difficulties for monetary policymakers if it was not expected, particularly if the change was observed imperfectly or with a significant lag. Margins could also become more erratic if the number of lenders (and potential lenders) was sufficiently small that they could alter their pricing in response to perceived changes in the elasticity of demand for loans, the supply of credit by their competitors, and expected changes in monetary policy.

In practice, it is difficult to assess the independent effect of consolidation on pass-through. In many countries, consolidation has been accompanied – and, in some cases, encouraged – by the introduction of new technology, the removal of some barriers to entry (including regulatory ones) and improved access to alternative sources of finance. Hence it has not always led to reductions in liquidity or competition.

Amongst studies of the pass-through of money market rates into retail rates, one considers the possible role of differences in financial structure across countries.<sup>158</sup> It shows that, while in the long run bank lending rates respond virtually one-for-one to changes in money market rates, the pass-through during the following month is generally much less. Moreover, there is considerable cross-country variation, particularly in the short-term responses. But is that variation related to differences in the degree of financial sector consolidation? Neither GDP per capita, as a proxy for the overall degree of development of the financial system, nor the market share of the largest five banks, as a proxy for the degree of competition within the banking system, were found to be significant. But results with a qualitative index of the existence of barriers to entry suggested that lack of contestability of markets, rather than concentration or consolidation in markets per se, is the critical factor in slowing down pass-through.

Research at the Bank of Canada suggests that consolidation has been accompanied by an increased responsiveness of mortgage rates to official interest rate changes, although it is difficult to establish causation (see Box IV.1). In contrast, work on the transmission of official rates into retail mortgage and saving rates in the United Kingdom suggests that there has been no significant change in the speed of pass-through over the past 15 years, a period during which some consolidation has taken place.<sup>159</sup> But other developments may have acted to offset any impact on competitive conditions in retail banking markets. In the United Kingdom, for example, the demutualisation of former building societies, together with the arrival of new entrants, seems to have encouraged greater competition in lending to households. (Also, the Canadian study uses weekly data, so it may have been able to pick up changes that were unobservable in the monthly data available in the United Kingdom.)

Evidence of an impact of consolidation on bank margins is not strong. Studies have found no effect of increasing concentration amongst Swiss or Spanish banks on interest rates.<sup>160</sup> Instead, increased competition has made the banking system more responsive to monetary policy impulses over the past decade, and consolidation has not prevented that development. To the extent that increased scale has enabled banks to diversify income streams and squeeze out costs, consolidation amongst institutions has allowed profit margins to be sustained despite this increased competition. According to one paper, consolidation in the United States increased margins on personal loans, but had no effect on automobile loan margins.<sup>161</sup>

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<sup>158</sup> See Cottarelli and Kourelis (1994).

<sup>159</sup> See Hoffman and Mizen (2000).

<sup>160</sup> See Braun et al (1999) and Fuentes and Sastre (1999).

<sup>161</sup> See Kahn et al (2000).

Even if other things being equal, consolidation does tend to increase margins, a central bank should be able to alter its own target interest rate to offset any impact on aggregate demand and asset prices, once it has observed the change in the relationship between its target rate and rates charged in the market. Thus, although the wider margins would be undesirable because of their effects on the efficiency of intermediation, they might not have an important effect on monetary policy making. However, there might be greater difficulty in setting the appropriate official rate in the transition period during which margins adjusted, depending on how quickly policymakers identified the phenomenon.

#### **The effects of consolidation on the monetary channel: assessment by central banks**

Central banks generally suggested that consolidation alone had not had an important influence on the pass-through of official interest rate changes to administered rates, such as bank loan and deposit rates, over the past 10 years. Only the Swedish and Swiss respondents thought that pass-through had become more rapid as a result of consolidation (Table IV.2). A couple of respondents indicated that the speed of transmission had increased, but suggested that factors other than consolidation were likely to have been responsible.

### Box IV.1

#### The pass-through of interest rate changes in Canada

In recent years, the Canadian financial system has been characterised by five or six large banks, one large trust company (which has very recently been taken over by one of the large banks) and a number of smaller players. Mergers in the 1990s increased the market share of the group of large institutions in certain markets. As Table A shows, the market shares of the “Big Six” Canadian banks in the deposit and residential mortgage markets increased by around 10-15 percentage points between 1990 and 1999.

Table A  
Market shares (per cent)

	1990 (Dec)		1999 (Dec)	
	“Big 6”	“Big 6” + CT <sup>1</sup>	“Big 6”	“Big 6” + CT <sup>1</sup>
Total CAD Deposits <sup>2</sup>	56 (52)	62 (58)	70 (66)	75 (71)
Residential mortgage loans	39	46	55	58

<sup>1</sup> CT= Canada Trust. <sup>2</sup> Figures in brackets exclude money market mutual funds, but include life insurance annuities.

The pass-through from market rates to administered rates has typically been rapid and complete in Canada. Econometric investigation of the speed of adjustment of mortgage rates suggests that it may have increased in the second half of the 1990s compared to the first half. For example, since 1995, the pass-through of market rate changes to five-year mortgage rates has been about 60% complete after one week has elapsed, compared with a 45% pass-through for the period 1990-95.

Table B  
Effect on the mortgage rate of changes in government bond yields

Short-run effect <sup>1</sup>	Impact		One week		Three weeks	
	1990-95	1996-2000	1990-95	1996-2000	1990-95	1996-2000
One-year mortgage rates	0.10	0.32	0.46	0.60	0.82	0.86
Five-year mortgage rates	0.16	0.26	0.45	0.59	0.79	0.97

<sup>1</sup> Effect on mortgage rate of a sustained one-percentage-point rise in government yield for the same maturity.

Overall, the evidence is not consistent with the hypotheses that (i) financial sector consolidation will decrease the speed or size of the response of administered rates to market rates, or (ii) a financial system that is dominated by six or seven big institutions will display a slow, partial or unpredictable response of administered rates to market rates. However, one cannot conclude that consolidation in Canada has resulted in the opposite effects. Other factors are also likely to have been at work. In particular, more sophisticated information technology systems may be allowing more rapid and more frequent changes in administered rates. And the arrival of actual and potential entrants (whether domestic or foreign) with highly sophisticated systems (and unconstrained by a need for an expensive branch network) may have encouraged large institutions to move administered rates more rapidly than in the past.

Table IV.2

Q: Over the past 10 years, how has consolidation in the financial services industry affected the SIZE and SPEED of the effect of changes in your central bank's policy interest rate on administered rates, such as rates on bank deposits and bank loans?

Effect	Left it about unchanged	Increased it somewhat	Increased it substantially
SIZE	Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Spain, UK, US.	Sweden, Switzerland	
SPEED	Belgium, Canada, Germany, Italy, Japan, Netherlands, Spain, UK, US.	Sweden, Switzerland	

Similarly, most of the central banks did not expect consolidation to have important effects on pass-through in the future, although they were somewhat less certain. Most of the respondents thought that consolidation would not affect either the speed or the size of the effects of changes in the policy rate on market rates over the coming 10 years. However, as shown in Table IV.3, a few of the European central banks thought that consolidation would affect the pass-through to administered rates, with most of them expecting pass-through to be somewhat faster and larger.

Table IV.3

Q: Over the coming 10 years, how do you anticipate that consolidation in the financial services industry will affect the SIZE and SPEED of the effect of changes in your central bank's policy interest rate on administered rates, such as rates on bank deposits and bank loans?

Effect	Decrease it somewhat	Leave it about unchanged	Increase it somewhat
SIZE	Sweden	Australia, Canada, Germany, Netherlands, Spain, UK, US	France, Italy, Switzerland
SPEED		Australia, Canada, Germany, Netherlands, Spain, Sweden, UK, US	France, Italy, Switzerland

While a number of central banks noted that the transmission mechanism had changed in recent years, such changes were generally viewed as fairly minor and likely to be due to changes in financial markets and institutions that were essentially unrelated to consolidation. Table IV.4 summarises the responses to the task force's questionnaire as a whole. It seems likely that other factors have offset any effects of consolidation alone and, indeed, that consolidation may have occurred, at least in part, in response to these factors. For example, competition has reportedly increased in retail domestic credit and deposit markets in a number of countries, but the further globalisation and integration of wholesale markets, exemplified by EMU, have acted to offset any increases in market power that large institutions might otherwise have enjoyed.

Table IV.4

**Impact of financial sector consolidation on the monetary transmission mechanism (MTM)**

(summary of questionnaire responses)

Q	Effect of consolidation	Australia	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Spain	Sweden	Switzerland	UK	US
1	Overall impact on policy	N	N	N	N	N	Y?	N	N	N	N	N	N	N
2	Impact on one or more specific channel of policy	N	N	N	N?	?	Y	?	N	N	?	?	N	N
3	Distributional effects	N	N	N	N	N	Y	N	N	?	N	Y	N	N
4	Impact on financial markets	N	N	N	N	N	N	?	N	N	N	N	N	N
5	Impact on information indicators	Y	N	N	N	N	N	N	?	N	N	Y	?	N
6	Changes in monetary policy strategies	N	N	N	N	N	N	N	N	N	N	?	N	N
7 & 8	Future MTM and policy	N	?	N	?	Y	?	?	?	?	N	Y	?	

Y = explicit effect observed/or expected; N = no evidence of impact; ? = uncertain. The ECB was only asked about the prospective effects of consolidation on the MTM (questions 7 & 8). According to the ECB, these effects are uncertain.

### The bank lending channel

Monetary policy may affect the economy via its impact on the scale of bank lending, in addition to its influence over interest rates generally. This channel depends on bonds, bank loans and bank deposits being imperfect substitutes. When interest rates rise, transactions and savings deposits at banks are likely to contract, requiring banks to reduce the size of their balance sheets and hence the stock of lending. This reduction may be larger – particularly in the short run – than the reduction in the demand for loanable funds that would be brought about anyway by the increase in the central bank's target interest rate. In that event, a gap would arise between the supply of and demand for funds, which banks would be able to fill if they could replace the deposits they had lost with new wholesale funding. Because of information asymmetries, however, banks may be unable to raise wholesale funds at the same rates as they pay on deposits. As a result, banks may have to increase the wedge between capital market interest rates and the rates they charge their borrowers. The thicker wedge implies that a tightening of monetary policy will have a bigger impact on bank-dependent borrowers – including households and smaller businesses – than on those borrowers who are able to tap financial markets directly.

### The effects of consolidation on the bank lending channel: empirical evidence

Consolidation could affect the size of the bank lending channel in two ways. First, larger banks may have better access to sources of funds other than transactions and savings deposits because of improved name recognition, fixed costs, or lower information costs. If so, then the effect of

tighter monetary policy on the supply of bank loans is likely to be reduced by consolidation if consolidation reduces small banks' share of the industry.<sup>162</sup> Unfortunately, the height of the threshold that banks need to cross in order to gain improved access to wholesale markets is not clear. Consolidation amongst banks already able to borrow at good rates in wholesale markets is unlikely to have a significant effect; nor is consolidation amongst small banks if it does not carry the consolidated banks over the relevant threshold. Whatever its current height, the threshold is likely to fall as a result of the increasing size, depth and integration of capital markets. The second possibility is that consolidation, by allowing stronger banks to take over weaker ones, could strengthen the financial condition of the banking sector. In that case, banks would also have improved access to alternative sources of funds, the bank lending channel thereby attenuating and reducing the impact of a given change in the proximate instrument of monetary policy.

While there is no direct evidence regarding the effect of consolidation on access to markets for managed liabilities, there is strong circumstantial evidence that larger banks find it easier than smaller banks to fund loans in periods of tight monetary policy.<sup>163</sup> The impact of a policy tightening on bank lending is smaller for banks with more liquid balance sheets, where liquidity is measured by the fraction of assets accounted for by securities which can be sold to fund loans. This effect of liquidity is important primarily for smaller banks (those in the bottom 95% of the size distribution), suggesting that these institutions are less able than larger banks to find alternative sources of funds.

However, there is considerable controversy about whether the bank lending channel is empirically important at all. A number of studies report results suggesting an important role for the bank lending channel in the United States.<sup>164</sup> However, drawing on evidence from a variety of countries, others cast doubt on the existence of this channel.<sup>165</sup>

In addition, it is difficult to assess the effects of consolidation on the bank lending channel in an individual country because of the relatively modest amount of consolidation experienced in many of them. However, there are substantial differences in financial sector concentration across countries, and some recent cross-country studies may shed light on the effects of consolidation on the bank lending channel. For example, one study tests the hypothesis that the effects of changes in monetary policy should be larger in countries that have smaller and less robust banks, greater dependence on bank finance and smaller firms, because theory suggests that the bank lending channel should be stronger in such economies.<sup>166</sup> It considers data from EMU countries on the size and concentration of the banking system, the health of the banking system, the importance of bank finance and the size of firms. Smaller firms were regarded as more likely to be bank dependent. Using a vector autoregression approach to measure the size of the effects of monetary policy, it finds some evidence in support of this hypothesis. This result suggests that consolidation in a given country could, by increasing the size of banks and perhaps also by improving the health of the banking system, reduce the importance of the bank lending channel.

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<sup>162</sup> Note that the effect of consolidation on the bank lending channel depends on how it influences the responsiveness of bank loan supply to changes in policy. The static effect of consolidation on the availability of bank loans to bank-dependent borrowers is discussed in Chapter V.

<sup>163</sup> See Kashyap and Stein (2000).

<sup>164</sup> See Kashyap et al (1986) and Kashyap and Stein (2000).

<sup>165</sup> See Dale and Haldane (1995), Favero et al (2000), Miron et al (1993) and De Bondt (1998).

<sup>166</sup> See Cecchetti (1999).



By contrast, a second study tests to see if the timing and size of the effects of policy are influenced by variables that would be involved in the credit channel of policy transmission.<sup>167</sup> In particular, it considers banking sector holdings of securities as a measure of banks' ability to continue lending following a policy-induced reduction in deposits. This study, which focuses on large European countries, indicates that the bank lending channel is probably not important in Belgium, the Netherlands and the United Kingdom, but may be important in France, Germany and Italy. The different results across countries could be due to one of four reasons. First, the financial sectors of the United Kingdom and the Netherlands may be "healthier" than those in the other countries.<sup>168</sup> Second, Belgium, the Netherlands and the United Kingdom have a greater portion of foreign-owned banks, which may be better able to find alternative sources of funding to mitigate any potential bank lending channel.<sup>169</sup> Figures show that 30-40% of the banking system is foreign-owned in Belgium, the Netherlands and the United Kingdom, while the comparable figure in the other countries in this sample is less than 10%.<sup>170</sup> Third, a low level of concentration in the banking industry, as in Germany for example, could cause the bank lending channel to be amplified, since smaller banks may be less able to find alternative sources of funds. Finally, a better developed market for managed liabilities in the United Kingdom could account for the lack of evidence of a bank lending channel there. If any of these conjectures are valid, then consolidation could well have the effect of weakening the bank lending channel, thereby reducing the effect of monetary policy on the economy.

### **The effects of consolidation on the bank lending channel: assessments by central bankers**

Perhaps not surprisingly, given the lack of academic consensus on the issue, the central bankers interviewed generally thought that either the bank lending channel was not important in their country or that its importance was difficult to assess. It was noted that the impact of policy transmitted through the bank lending channel was likely to be highly correlated with the impact via the traditional monetary channel. In the United States, there was evidence in the early 1990s that shocks to bank capital had an effect on bank lending, and that difficulties obtaining bank loans may have reduced activity in some regions and industries. While this experience was consistent with an important bank lending channel for monetary policy, it was still not clear to policymakers whether bank lending had an important independent role in the transmission of policy changes.

The central bankers also generally reported that, assuming a distinct bank lending channel did exist, consolidation had not had a noticeable effect on the size or speed of the transmission of monetary policy via that route. Nor did they view such an effect as likely to be important in the future.

Central bank officials in Germany pointed to the possible importance of another aspect of bank lending to small and medium-sized firms. In Germany, such firms often have a special relationship with their "house bank", which in effect helps to insure them against cash flow problems in the event of a downturn or a tightening of monetary policy. The house bank, far from magnifying the impacts of changes in monetary policy on its borrowers, tends to cushion them. This conclusion implicitly assumes that the house bank has the ability to fund loans in such situations and can afford to do so. In practice universal banks may find that easier than banks with generally less diversified balance sheets (such as commercial banks in the United States). Consolidation could lead to a reduction in house bank relationships, by making the

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<sup>167</sup> See De Bondt (1998).

<sup>168</sup> This was pointed out by Kashyap and Stein (1997).

<sup>169</sup> See Jayaratne and Morgan (1997).

<sup>170</sup> See De Bondt (1998).

close monitoring on which such relationships depend more difficult to carry out, and by reducing the trust of the borrowers that the implicit contract underlying such relationships would be honoured. In that case, banks might allow loan rates to respond more to changes in official interest rates, rather than buffering such changes. If that were to happen, those firms that rely on a continuing relationship with their bank (most typically small and medium-sized firms), and so are limited in the choice of alternative finance sources, would face higher borrowing costs following a tightening of policy than they do under current arrangements. Such changes could imply an increase in the importance of the bank lending channel. However, as the Bundesbank also noted, consolidation has been accompanied and perhaps partly caused by globalisation, securitisation and disintermediation, all of which facilitate smaller firms' access to market-based finance and thereby reduce the strength of the bank lending channel.

### **The balance sheet or “financial accelerator” channel**

A second variant of the credit channel of monetary policy is the balance sheet or financial accelerator channel, which derives from the role of collateral in lending. Lenders may require borrowers to post collateral if they are uncertain that borrowers would otherwise be able or willing to repay loans. A tightening of monetary policy is likely to reduce the value of that collateral, by reducing demand for the borrower's products (in the case of a firm) and increasing the rate at which future service flows generated by the collateral asset are discounted. A reduction in the value of collateral could, in turn, lead to cutbacks in spending, defaults when existing loans come up for renewal, and fire sales of collateral assets.

### **The effect of consolidation on the balance sheet channel: empirical evidence**

The key question in this case is whether consolidation eases or aggravates the information problems between lenders and borrowers that lead lenders to demand collateral as security for loans. If consolidation makes newly merged lending institutions more efficient assessors of credit risk, for example because larger institutions can afford increased investment in information technology, then fewer borrowers might be required to provide collateral, and the balance sheet channel might weaken. If, on the other hand, the larger consolidated institutions are more remote from borrowers (are less like small “relationship banks”) and rely more on statistical rules and uniform lending policies, then it is possible that the balance sheet channel might strengthen. Thus, the effect of consolidation on the balance sheet channel could be either positive or negative. Moreover, either result could be consistent with consolidation having been driven by competitive pressures.

As with the bank lending variant of the credit channel, there is controversy in the academic literature about whether this channel is empirically significant at all. A number of studies cast doubt on the existence of a (household) balance sheet channel, at least in some countries.<sup>171</sup>

But some cross-country studies hint at an important effect in some cases. One finds that differences in the effects of monetary policy on the real economy in a number of European countries may reflect differences in variables intended to proxy for both bank credit and balance sheet channels, in particular, financial structure, levels of household debt and the prevalence of collateralised loans.<sup>172</sup> Another tests whether the net worth of households and businesses appears to influence the transmission of monetary policy, as one might expect if the balance sheet channel were operating.<sup>173</sup> It finds evidence of a household balance sheet channel in Germany, Italy and the Netherlands, but not in Belgium, France or the United Kingdom. It also

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<sup>171</sup> See eg Jappelli and Pagano (1989), Bachetta and Gerlach (1997) and De Bondt (1998).

<sup>172</sup> See Dornbusch et al (1998).

<sup>173</sup> See De Bondt (1998).

reports some, but by no means a perfect, correlation of the strength of the balance sheet channel (by this measure) with financial sector concentration. The strength of the balance sheet channel varies across European countries in a way that is consistent with differences in the efficiency of the market for secured lending to households.<sup>174</sup> To the extent that consolidation promotes access to credit (eg by facilitating mortgage equity withdrawal), it is likely to erode the importance of balance sheet effects. These cross-country studies suggest, then, that consolidation might weaken the strength of the balance sheet channel.

#### **The effects of consolidation on the balance sheet channel: assessment by central bankers**

The central bankers interviewed by the task force were unsure of the importance of the balance sheet channel and, assuming that such a channel was operative, they generally did not appear to believe that consolidation had had a noticeable effect on its magnitude. However, some conceded that such an effect could manifest itself in future.

#### **Implications of any reduced importance of the credit channels**

Since the credit channels are the result of credit market imperfections, if consolidation reduces their importance, welfare should be improved. However, monetary policymakers may face difficulties in adjusting to some of the changes. First, easing credit market imperfections may lead to a temporary increase in borrowing and spending, as some who had previously been constrained by higher borrowing costs or lack of collateral find themselves able to borrow. Second, any reductions in borrowing constraints may boost equilibrium real interest rates, and policymakers will need to take the higher equilibrium rates into account when setting policy. These two effects would probably be similar to those experienced in some countries as a result of financial liberalisation.<sup>175</sup> Finally, the reduction in the size of the credit channel implies that, to attain a particular effect on the real economy, policy instruments will have to be adjusted more than had previously been the case. Of course, in practice, the effects of consolidation on the credit channel are likely to emerge only slowly, allowing the central bank to observe these effects and allow for them in an orderly way. Indeed, none of the central banks interviewed had noticed an effect of consolidation on the monetary transmission mechanism or on the distribution of the effects of monetary policy across classes of borrowers (eg households versus firms, small firms versus larger ones, or producers of tradable goods and services versus producers of non-tradables).

### **4. Some further possible consequences of consolidation for monetary policy**

While there is little evidence that consolidation has generally affected either the implementation of policy or the monetary transmission mechanism, it is nonetheless possible that it could influence the setting in which policy is determined. For example, consolidation may affect the impact of financial shocks and the way that they are transmitted across markets and borders. To the extent that consolidation leads to larger firms that have major positions in many markets and countries, shocks that once might have been isolated in a single market, region or country may have broader effects. For example, an economic downturn in one country could, through its effects on the balance sheets of banks with cross-border operations, cause a tightening of lending standards or terms in other countries. As a result, the appropriate stance of policy in

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<sup>174</sup> See Iacoviello and Minetti (2000).

<sup>175</sup> The effects of financial liberalisation on aggregate demand and real interest rates are discussed in G10 (1995), pp 49-52.

those other countries might change. Similarly, losses sustained in one financial market could lead to movements in prices or liquidity in other financial markets, as firms active in the troubled market trimmed their positions or cut back on trading and market-making activities as a result of their losses. On the other hand, because such firms are more diversified and might also benefit from a cushion of monopoly rents, they may be in a better position to absorb rather than transmit shocks, particularly if they perceive them to be temporary. In either case, the dynamics of foreign exchange rate determination would be likely to change if a greater proportion of cross-border capital flows were internalised by large, global financial firms. Such an outcome seems unlikely, however, given the declining relative importance of bank lending in international capital flows in recent years.

Another way in which consolidation might affect the environment for policy is by decreasing market liquidity and boosting volatility. Most simply, consolidation could reduce liquidity if it allowed market-makers in a financial instrument to use their market power to boost bid-asked spreads at the expense of other market participants. Alternatively, liquidity could decline if the restructuring that followed consolidation led to a reduction in the total amount of capital allocated to trading in, or making markets in, a particular instrument. A related possibility is that, following consolidation, the total amount of resources dedicated to the analysis and forecasting needed to price an instrument appropriately could decrease. In that case, the market price of the instrument could vary more widely around the value justified by fundamentals, directly boosting volatility and increasing trading risk, and perhaps reducing liquidity. Volatility could also increase if consolidation resulted in a few very large firms dominating financial markets, because in that case a change in the investment strategy of a single firm could have a substantial impact on asset prices. Moreover, consolidation could increase herding behaviour since departures from the consensus view might be more noticeable, in which case deviations of market prices from fundamentals could increase in size, boosting volatility.<sup>176</sup> These factors could also cause financial markets to respond less predictably to changes in the stance of monetary policy, perhaps strengthening the case for gradualism and transparency in policy making.

As noted in the previous chapter on systemic risk, consolidation could not only affect the liquidity of markets, but might also cause a deterioration in market performance during times of stress. Such an effect would likely be a greater concern if consolidation led to a small number of large firms dominating many important financial markets, especially if differences in outlook among those firms were, at times, smaller than in the past because their models and trading strategies had converged. In such situations, a shock in a particular market could be transmitted across firms and markets more rapidly and to a greater degree than had previously been the case. Moreover, subsequent decisions by some firms to reduce their risk exposures – because of reductions in their capital, reductions in their appetite for risk or counterparties' concerns about their financial strength – might trim market liquidity and cause further declines in market prices. Indeed, the report by the Committee on the Global Financial System (CGFS) on the financial events in the autumn of 1998 notes that such factors may have exacerbated the response of markets to shocks at that time.<sup>177</sup>

Consolidation could also cause markets to be less resilient following a shock if it reduced the likelihood that financial firms would act to cushion the impact of the shock on borrowers and markets. For example, consolidation could result in all of the largest and most important financial firms in an economy participating in the same broad set of financial markets. Clearly, consolidation need not have this effect, and the extent to which it does so would depend on the forces driving the consolidation. Nonetheless, to the extent that consolidation had such an effect, a major shock in one market could impose substantial losses on virtually all of the large

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<sup>176</sup> See Scharfstein and Stein (1990) for a model of herding behaviour in financial markets.

<sup>177</sup> See CGFS (1999), p 14.

financial firms. As a result, none of the firms might be willing and able to expand their activities to compensate for reductions by the others, thereby amplifying the effect of the shock on markets and the real economy relative to the outcome with a more fragmented and diverse financial sector. Thus, while consolidation might reduce the impact of smaller shocks – since financial firms would be better diversified – it could increase the effects of large shocks because the financial sector would be less well diversified. Consolidation could affect the resilience of financial markets through other channels as well. On the one hand, it could reduce the competitive pressures on financial firms to provide finance and market-making in periods of market turbulence. These pressures might be important, since each firm would probably want to reduce its activities if it could do so without the risk of losing future business as a result. On the other hand, if all firms cut back on their activities, they might all be made worse off. If so, consolidation could actually reduce firms' incentives to pull back, since larger financial firms might be more likely to take account of the effects that their own activities could have on the macroeconomic outcome and so on the value of their positions.

In any case, the potential effects of consolidation on the operation of financial markets do not yet appear to have become significant practical concerns. The central bankers who were interviewed generally thought that consolidation had not affected the volatility or liquidity of financial markets. Only in Japan, where significant consolidation of domestic institutions is expected to take place within the next couple of years, together with increased involvement of large overseas institutions in key asset markets, did the central bank think that such effects might become an issue in the future. Other central banks were more sanguine. In Europe, it was evident that the largest institutions were the providers of market liquidity in national markets, in adverse conditions or otherwise. But the introduction of the euro had significantly increased the size of the market in which they operate. In the United States, it was pointed out that consolidation did not necessarily imply any change in the aggregate capital allocated to trading and market-making. Indeed it was noted that, so long as barriers to entry are not large, the effects of consolidation on market volatility and liquidity should be small, since increased volatility and reduced liquidity relative to their levels in competitive markets would seem to offer profit opportunities to potential entrants.

Another possible adverse effect of consolidation for monetary policy is that changes in financial structure might make it more difficult to interpret movements in indicator variables such as yield spreads or the monetary aggregates. There have been instances in the past when financial-sector liberalisation has had unexpected consequences for widely monitored variables (eg monetary aggregates in the United Kingdom in the 1980s), with the consequence that the monetary policy stance has been difficult to assess. Could consolidation have a similar impact? At least thus far, it does not seem to have done so. As noted, the central bankers interviewed generally did not believe that consolidation had had noticeable effects on the behaviour of financial markets, suggesting that indicators based on prices or interest rates have been essentially unaffected. Similarly, few of those interviewed thought that consolidation had significantly affected the behaviour of monetary aggregates. While a number of central banks noted that financial market developments more generally had made movements in the aggregates more difficult to predict, only a few of them reported that consolidation had had an influence, and its effects were generally thought to have been fairly minor. However, a few of the central banks thought that the effects of consolidation on the behaviour of the aggregates was not yet clear, or thought that such effects could be more significant in the future. If the pace of consolidation were to increase suddenly, that would be more likely to have an effect similar to that of sudden financial liberalisation.

If consolidation led to the development of very large and complex institutions, the failure of which would be particularly difficult to manage, central banks' lender of last resort and monetary policy responsibilities would be more challenging. If such firms became troubled, the central bank, taking account of the potential moral hazard problems, would have to decide upon the appropriate magnitude and duration of any provision of emergency liquidity to the affected firm or firms. It would also have to carefully consider the possible need to ease the stance of

monetary policy both to cushion the real economy from the effects of the resulting stresses in financial markets – which might include an increased aversion to risk taking and reduced market liquidity – as well as to potentially reduce those stresses. Such consideration would require the central bank to judge the likely duration of the financial market difficulties, their potential impact on the economic outlook and the possible downside risks they pose to that outlook. Moreover, if policymakers decided that easier policy were warranted, they would need to be prepared to reverse course once market conditions began to improve. In practice, central banks have, at times, thought it appropriate to ease monetary policy in response to concerns about the possible macroeconomic effects of difficulties at financial institutions or in financial markets. For example, in the early 1990s monetary policy in the United States was for a time easier than it otherwise would have been owing to concerns about the effects on the economy of efforts by many banks to boost their capital in response to regulatory and market pressures. Moreover, consolidation – by increasing the number of large, complex institutions whose failure might have significant macroeconomic effects – might increase the likelihood that monetary policy would have to respond to financial difficulties at a particular firm or firms. In such situations, monetary policymakers would need to take care that their decisions were not unduly influenced by the possible effects of policy changes on the financial condition of the troubled firm or firms, but rather remained focused on the effects of such changes on the economy. In practice, however, the central bankers interviewed did not believe that consolidation had increased the likelihood that policy would be adversely affected by firm-specific concerns. But some pointed out that this possible distortion made past and present efforts to limit contagion through improvements in clearing, payments and settlement systems and tightened capital standards even more important.

Many of the large and complex financial institutions that might pose challenges to central banks would have cross-border operations. Difficulties at such firms would raise the additional question of which central bank should provide emergency liquidity assistance should it prove necessary. This issue was considered in the preparations for the century date change, and there was broad agreement that foreign banking organisations should have the same access as domestic institutions to normal sources of central bank liquidity, so long as they satisfied the criteria for such lending (eg quality of collateral and standards of home country supervision). However, more difficult situations could arise if an institution's collateral proved insufficient or concerns about its condition meant that the borrowing likely was probably not just to meet a temporary liquidity shortfall, but rather suggested a more substantial problem. In that event, the question might no longer be about the appropriate source of liquidity assistance, but rather how to handle an impaired institution. In such cases, it was thought that home and host country central banks and supervisory authorities would need to consult closely and that home country central banks might well be responsible for providing liquidity from the outset or at least very soon after such support became necessary. It was also noted at that time that the ability to use collateral in another country to back borrowing from a central bank could be useful for some institutions. Of course these issues were discussed in the context of the century date change, and further discussion will be needed for the case of lending to large, complex, internationally active banking institutions.

## **5. Some caveats and research challenges**

While there is no compelling evidence that consolidation has generally had effects on the implementation or transmission of monetary policy, it is worth bearing in mind some of the difficulties in assessing its impact.

First, variation in financial sector concentration over time within most countries has been relatively small compared to the variation across countries. Thus, identifying the effects of consolidation on monetary policy based on information from individual countries alone may be hard. On the other hand, cross-country studies are difficult because of the significant differences in legal and regulatory frameworks, institutional and market structures, and attitudes and

expectations across countries. An additional complication is that central banks may respond to consolidation by adjusting their operating procedures, thereby offsetting the effects that consolidation might otherwise have had.

Second, many of the central banks interviewed noted that consolidation had taken place at the same time as a number of other important changes in financial markets, including globalisation, deregulation, and substantial improvements in information and communications technology. As a result, it is difficult to separate the effects of consolidation alone from the effects of other changes, and to disentangle cause and effect.

Third, empirical estimates of the effects of monetary policy on the real economy are fairly imprecise, making it difficult to tell if consolidation has changed the transmission mechanism. And the hypotheses being tested have sometimes not been formulated clearly.

Finally, since most analyses of the effects of monetary policy are based on models that do not include many potentially important features of banks and financial markets, they have little to say about the influence of changes in the industrial structure of the financial sector on the effects of policy.

This review suggests several avenues of research that might allow a more thorough assessment of the impact of financial sector consolidation on monetary policy. Further development of formal models of the bank lending and balance sheet channels of the monetary transmission mechanism, to incorporate a richer characterisation of the financial sector, would help in formulating testable hypotheses. Work in a number of other areas would also be helpful. Studying the impact of a reduction in the number of participants on competition and efficiency in different market and auction settings would help to clarify both how far consolidation can go before difficulties in implementing policy are likely to emerge, and what changes in operating procedures might help to ameliorate those difficulties. A better understanding of the effects of heightened volatility in the policy rate on other market interest rates would be important if it was found that consolidation did in fact tend to raise the volatility of the policy rate. Across countries, the average volatility of a country's overnight rate is not related to the volatility of other short-term market rates in the country. This suggests that central banks may be able to allow some rise in volatility in the policy rate without great concern. However, periods of increased volatility in a country's policy rate are associated with periods of higher volatility in other short-term market rates, suggesting that some vigilance is appropriate.<sup>178</sup>

## **6. Conclusions**

Thus far, financial sector consolidation does not appear to have impeded the implementation of monetary policy, even though it has affected the markets in which central banks act in order to set policy. While most of the central banks surveyed reported that the number of participants in the market for central bank balances and the number of counterparties for monetary policy operations had declined as a result of consolidation, they generally thought that these numbers remained high enough to ensure that markets were competitive. While many central banks had made changes in monetary policy procedures and some had restructured their operations, these changes had not generally been undertaken in response to consolidation. Many of the central banks were confident that the appropriate regulations and operating procedures could ensure adequate competition going forward. Nonetheless, changes in regulations and procedures may be necessary to offset adverse effects of further consolidation, and central banks need to be alert to this possibility. For example, competition may be enhanced by promoting the participation of a wider range of counterparties. Indeed, the Swiss National Bank reported having made some

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<sup>178</sup> See Borio (1997).

changes that had helped to offset undesirable effects of consolidation on participation in monetary policy operations.

There is little evidence of an effect of consolidation on the monetary transmission mechanism in individual countries. Central banks generally report that the pass-through of changes in policy rates to market rates and rates on bank deposits and loans had not changed appreciably as a result of consolidation, and only a few respondents expected effects in the near term. Central bank staff generally indicated that they had not identified significant changes in the monetary transmission mechanism in recent years. It seems possible that consolidation might reduce the importance of the bank lending and balance sheet channels of policy – if indeed they are operative – because larger banks are likely to find it easier to raise funds in capital markets and to assess credit risk amongst potential borrowers (thus reducing the role of collateral). If so, it would be likely that the impact of a given change in the monetary policy instrument on output would be reduced. A reduction in the importance of these channels would also be expected to affect the distributional impact of monetary policy changes (eg by putting less of the burden of adjustment on agents without direct access to capital markets, such as most smaller businesses and the household sector), yet the central banks reported no evidence that the distributional impact had, in fact, changed.

However, many of the central banks noted that it was difficult to disentangle the effects of globalisation, technical innovation and financial sector consolidation, so that some effect of consolidation could not be ruled out. It is quite possible that consolidation has changed the economic environment in which central banks operate, but that they have been able to adjust policy appropriately without having to identify the reasons for the changes. A few central banks argued that the phenomenon was too recent for them to be able to evaluate its effects with any confidence. Some of them also thought that consolidation might be relevant in the future – particularly if its pace picked up relative to that of globalisation. Moreover, studies of cross-country differences in the strength of the monetary transmission mechanism offer some support for the existence of financial structure effects on the potency of monetary policy. In short, it should not be asserted that there is conclusive evidence that financial sector consolidation has had no effect on monetary policy. Rather the case for such an effect is not proven; it may simply be too early to tell. Central banks need to be flexible about how they set the proximate instruments of monetary policy, so that they can respond to any apparent changes in the monetary transmission mechanism. The optimal response will depend upon the reason for the change. Understanding the potential impact of financial sector consolidation – and indeed of other factors such as globalisation – should enable central banks to do better than with trial and error alone. It would be prudent for forward-looking central banks to bear in mind in particular the possibility that consolidation could, in future, tend to reduce the importance of the so-called credit channels of monetary policy transmission – to the extent they are operative – and thereby reduce the impact of changes in monetary policy instruments on the real economy.



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## **Chapter V**

### **The effects of consolidation on efficiency, competition and credit flows**

#### **1. Introduction**

The liberalisation of financial markets and the accelerating development of information technology have increased competition both within and across industries. In particular, the lowering of geographical barriers and the increasing integration of financial markets pit against each other banks, insurance and asset management companies that used to operate in segmented markets. In response to this process, financial institutions attempt to improve the efficiency of existing operations and to expand into new markets, trying to build a competitive advantage in a new environment.

Mergers and acquisitions (M&As) allow financial institutions to rapidly increase their size and to improve their knowledge of new products and markets, thereby allowing them to attempt to exploit economies of scale and scope, to preserve falling margins by increasing market share and to attract new customers. M&As on the scale witnessed by the financial sector in the last decade have profound effects on the firms involved, their competitors and their customers, in particular households and small firms, for whom changing providers of financial services is more costly.

M&As can result in larger and more diversified firms; however, this does not necessarily mean that these firms are run more efficiently. In order to assess the impact of consolidation on the performance of financial institutions, the first section of this chapter defines what is meant by efficiency improvement; it then examines the evidence available regarding the effect of consolidation on the efficiency of financial institutions in the G10 countries.

Consolidation might increase the market power of financial institutions, thus leading to prices above (and volumes below) those prevailing in a hypothetical situation of perfect competition. The effect of consolidation on competition depends on several factors, such as the characteristics of the deal (eg in-market or out-of-market), the type of customers (local or international) and the degree of contestability of the markets involved. In the second section, the possible effects of consolidation on competition are analysed. Particular attention is given to ongoing fundamental developments in financial markets that have raised questions about the continued importance of the geographic markets identified under traditional antitrust policies. Existing empirical research is examined in order to assess the impact of M&As on competition. In addition, the main features of actual antitrust policy in the G10 countries are reviewed and a few relevant case studies are presented.

In many countries the process of consolidation of the banking system has involved a large number of small banks, raising fears that the reduction in the number of these institutions may affect the availability of credit to small firms that traditionally rely on bank credit. When consolidation occurs, the larger bank resulting from the merger is able to expand its lending capacity with respect to larger borrowers, and it may restructure its portfolio, discontinuing credit relationships with smaller borrowers.

In the section on the effects of consolidation on the availability of credit flows, the relative importance of small firms for G10 countries is briefly examined. After discussing why consolidation may adversely affect credit flows to small businesses, the existing empirical

evidence is reviewed. The effects of changes in size and organisation that result from consolidation on the propensity of participating banks to make small business loans are analysed, as is the behaviour of other market participants that might provide financing to the borrowers that have been rejected by the banks involved in M&As.

## **2. Consolidation and efficiency**

The financial services sector is transforming itself in response to fundamental changes in regulation and technology. Financial institutions respond by attempting to improve their efficiency and by searching for new customers, increasing the range of products they offer and their geographical reach.

M&As are one way of implementing these strategies; however, the effect of consolidation on the performance of the institutions involved is not always clearly positive. After defining what is generally meant by efficiency improvement, the impact of consolidation on the performance of financial institutions is gauged on the basis of a review of the evidence available for G10 countries regarding the effect of M&As on the efficiency of financial institutions.

### **How do we measure efficiency?**

Efficiency is a broad concept that can be applied to many dimensions of a firm's activities. According to a narrow technical definition, a firm is cost-efficient if it minimises costs for a given quantity of output; it is profit-efficient if it maximises profits for a given combination of inputs and outputs. These definitions take size and technology as given and focus on how production factors are combined; they both measure managerial efficiency (the optimisation of existing resources), as opposed to the more comprehensive concept of technological efficiency.

Technological efficiency considers scale and scope economies: an efficient firm is one that reaches the optimal size for its industry (scale) and that produces the optimal mix of products given the prices of their production factors (scope). The minimum efficient size and optimal product mix vary with technologies, regulations and consumers' tastes. Therefore, there should be wide variations in firm structure across time, industries and countries if firms fully exploit scale and scope economies.

The definitions call for different measurement methodologies. The simplest approach consists of comparing balance sheet ratios that describe costs (eg operating costs over gross income) and profitability (eg return on assets or on equity). However, this methodology does not fully take into account the complexity of the financial industry. More complex analyses measure managerial cost and profit efficiency by comparing firms to the best practice of the industry, as determined by statistical methods, taking into account for each institution its inputs, outputs and the prices it faces. A frontier (a combination of the factors just mentioned) along which all efficient firms would operate is estimated, then the distance of each actual firm from the frontier is taken as a measure of its (in)efficiency.<sup>179</sup>

In order to evaluate economies of scale and scope, the shape of the frontier, given by the existing technologies, is investigated: if the performance of firms on the frontier (ie firms that optimally combine the existing resources) would improve by changing their size or product mix, then there is still room for exploiting economies of scale or scope.<sup>180</sup>

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<sup>179</sup> This method should be considered with a certain degree of caution, given that it is based on the presumption that the residuals of the estimated frontier (usually thought of as what cannot be explained) are highly correlated with the managerial inefficiency of the banks.

<sup>180</sup> For a review of estimation techniques, see Berger and Mester (1997).

The impact of M&As on firm-level efficiency can be gauged by comparing firms along different dimensions. For example, several studies investigate the relationship between size and cost efficiency. The results provide indirect evidence on the effects of mergers: if larger firms are more efficient, then presumably mergers will improve performance. This methodology suffers, however, from a weakness: it assumes that merged institutions are largely comparable to other larger firms; but the fact that some firms are involved in a merger while others are not is an indication that they may be different in several (possibly unobservable) ways. Analyses that focus on the performance of merged institutions compared with the performance of the non-merged ones are more reliable and provide direct evidence on the relationship between M&As and efficiency.

The two approaches are complementary; both provide information on the consequences of the consolidation process on competition and efficiency. Research has usually been conducted by analysing indirect evidence, mainly because of problems of data availability.

Finally, for firms listed on a stock exchange, efficiency gains can be measured on the basis of stock market performance: a firm is thought to be doing well when its shares outperform a given benchmark (the industry average or an index of firms of comparable size). The overall efficiency gains from a merger are evaluated in terms of the sum of the market values of the bidder and the target: if the sum increases, the deal is supposed to create value, and vice versa if it decreases.

Differences in regulations, institutions and market structure across countries mean that conclusions drawn from the analysis of one country should be generalised to others only very carefully. This also means that common patterns that might eventually emerge from an international comparison are particularly informative for a policy debate.

### **Commercial banks**

Before analysing the empirical evidence, a few warnings on the commercial banking industry should be given. First, the industry really consists of two markets, retail and wholesale banking; retail banking is oriented towards households and small firms, while wholesale banking caters to larger firms and other financial institutions. Of course, many banks provide both services, but this only adds to the complexity of the analysis. In general, research has not distinguished explicitly between retail and wholesale banking, although the focus is implicitly on retail banking, where policy issues regarding competition, regulation and consumer protection are more relevant. The remainder of the section is mainly concerned with retail banks.

Second, in countries with a heavily bank-oriented financial system, the banking industry may evolve differently than in countries where there is more scope for securities markets, both in terms of products offered and risk management. This should be kept in mind when comparing cost and revenues structures and economies of scale and scope. In countries with well-developed financial markets, banks provide more services than just loans and deposits and are more able to offload risks, thus maintaining more liquid balance sheets; they may behave differently from banks that rely more on the traditional intermediation business.

Finally, because of differences in regulation, in some countries commercial and investment banks are (or have been in the past) strictly separated, while in others they can operate jointly as universal banks and even have cross-shareholdings with industrial companies. These differences make for different market structures and internal organisations, again hampering international comparisons. All these warnings notwithstanding, the banking industries in G10 countries do share some structural features that emerge from a careful analysis.

As most, although not all, M&A activity has taken place so far within country borders, the large majority of research is carried out at the domestic level. Most papers deal with efficiency, scale and scope issues indirectly, by comparing firms of different size; a few papers look directly at the evidence on mergers, analysing ex post improvements in performance. The following

summary of the aggregate data introduces a review of empirical papers that deal with issues of consolidation and technical and managerial efficiency for commercial banks.

### *Aggregate data*

Similarities and differences among North American, European and Japanese banks emerge from the comparison of simple balance sheet ratios. The relationship between the cost structure and size of North American and European commercial banks shows some similarities: the ratio of operating costs to gross income is higher for smaller banks (with total assets below USD 5 billion) and it decreases from over 60 to around 55% for banks with assets between USD 20 and 50 billion (see Table V.1).

Table V.1  
**Size and performance of commercial banks**

Area	Variables	< USD 5bn		USD 5-20bn		USD 20-50bn		> USD 50bn	
		No	Average	No	Average	No	Average	No	Average
Europe	Non-int. income (% of gross income)	539	19.2	169	24.6	50	20.2	64	30.8
	Operating costs (% of gross income)	543	63.1	183	61.6	55	55.6	63	65.5
	Return on equity	559	7.1	185	7.4	48	7.2	58	8.2
North America	Non-int. income (% of gross income)	266	21.5	97	29.2	29	28.2	19	53.4
	Operating costs (% of gross income)	266	60.9	96	59.8	29	55.4	19	67.8
	Return on equity	266	11.2	97	13.5	29	13.5	19	14.1
Japan	Non-int. income (% of gross income)	15	0.4	63	9.2	29	8.9	26	30.0
	Operating costs (% of gross income)	17	76.9	63	69.5	29	67.9	26	60.4
	Return on equity	17	1.3	63	0.1	29	0.5	26	3.2

Source: Fitch-IBCA data for commercial banks of G10 countries; banks are ranked by assets in USD billions. All variables are averaged over the 1994-97 period; the distribution is truncated at the top and bottom 10%.

The largest banks, with assets greater than USD 50 billion, present the highest costs (more than 65% of gross income). This pattern points to the existence of economies of scale up to a certain size, followed by diseconomies for very large banks. However, profitability rises with total assets: for North American banks the return on equity increases from 11 to 14% from the first to the fourth class; for European banks it increases from 7 to 8%.<sup>181</sup> Higher operating costs are

<sup>181</sup> Return on equity, unlike return on assets, is influenced by the capital structure of the bank; however, given that the capital structure is endogenously determined by the bank's management, it can also be considered as part of the measurement of efficiency.

compensated by a lower ratio of equity to total assets, probably an indirect benefit of increased diversification, and by a higher share of non-interest income (more than 50% of gross income for North American banks, more than 30% for the others). For Japanese banks the picture is more straightforward: the ratio of operating costs to gross income decreases as firms become larger; profitability is low or negative because of the deteriorating economic and financial conditions of the country in the mid-1990s.

As for managerial efficiency, the dispersion of cost and profitability ratios is a good proxy for the distance between the best and the worst performers. In North America, among banks with less than USD 5 billion of assets, the costs of those in the top quartile represent 55% of gross income and the return on equity is above 15% (Table V.2).

Table V.2  
**Dispersion of performance measures of commercial banks**

Area	Variables	< USD 5bn		USD 5-20bn		USD 20-50bn		> USD 50bn	
		Best quarter	Worst quarter	Best quarter	Worst quarter	Best quarter	Worst quarter	Best quarter	Worst quarter
Europe	Non-int. income (% of gross income)	23.7	14.2	32.1	15.1	31.9	13.3	37.3	23.9
	Operating costs (% of gross income)	57.5	68.7	53.4	70.4	34.4	69.3	58.0	73.8
	Return on equity	8.8	5.4	9.7	4.7	9.0	5.6	9.9	4.8
North America	Non-int. income (% of gross income)	26.2	25.3	34.2	24.4	35.7	22.6	74.5	38.1
	Operating costs (% of gross income)	55.1	65.7	55.5	64.5	55.2	64.5	63.6	74.1
	Return on equity	15.2	7.7	17.4	10.1	16.5	11.2	15.5	13.0
Japan	Non-int. income (% of gross income)	13.6	3.5	11.2	7.0	9.8	7.3	41.3	24.9
	Operating costs (% of gross income)	68.2	75.8	66.8	72.2	63.1	71.3	55.8	64.7
	Return on equity	3.2	-9.8	3.6	-4.0	3.7	-0.3	-2.0	-4.3

Source: Fitch-IBCA data for commercial banks of G10 countries; banks are ranked by assets in USD billions. All variables are averaged over the 1994-97 period; the distribution is truncated at the top and bottom 10%.

For banks in the bottom quartiles of the cost and profitability distributions, costs are above 65% of gross income and the return on equity is less than half that of the best performers; the results are qualitatively the same for European and Japanese banks. The heterogeneity of results among banks of roughly the same size is an indication that there is room for large efficiency gains. For the largest banks, with assets above USD 50 billion, there is less heterogeneity, at least in North America (except for the share of non-interest income, which varies widely, perhaps due to the simultaneous presence of traditional intermediaries and more innovative banks). This could be due to the fact that the largest banks largely operate in wholesale markets where there is more

competition and less room for complacent behaviour. For European and Japanese banks, the differences between the top and bottom quartiles are similar to those recorded for the smaller banks; again, heterogeneity indicates room for efficiency improvement.

### *Cost and profit efficiency*

Most studies of cost efficiency find that retail banks operate on average at between 10 and 20% below the efficient cost frontier, ie their costs are higher by 10 to 20% than those of the best institutions.<sup>182</sup> This result holds across countries, suggesting that the gap between the best and the average practice is fairly stable. Efficiency is almost always measured relative to a domestic benchmark, as international comparisons are difficult (because the best banks of each country operate with different technologies that are not directly comparable). A study of 2000 European banks covering the period 1993-97 (ie after the implementation of the European Union's Second Banking Directive of 1988 and the adoption of the Single Market of 1992) shows that, on average, costs could be reduced by 16%;<sup>183</sup> in the period examined, some countries – such as Italy, the Netherlands and the United Kingdom – achieved rapid cost efficiency improvements, while in other countries – such as France and Germany – banks have yet to start slimming down.

Estimates of profit efficiency are more dispersed, averaging around 50% (ie the average bank could be twice as profitable); however, they are also more sensitive to the specification used to measure them and are thus less robust. On average, this dispersion suggests that profits are more driven than costs by firm-specific factors such as management quality or unobservable characteristics of local demand.<sup>184</sup> Therefore, there is a high potential for improving the overall performance of an inefficient target by reducing costs or increasing revenues.

The studies that analyse the direct effect of M&As on banks' efficiency have been performed on the basis both of balance sheet ratios and of multivariate cost and profit functions. The evidence on the effects of the deals on cost efficiency varies by country. For the United States there is little evidence of any improvement in cost efficiency following a merger, although a few studies that use more recent data show that there are some gains.<sup>185</sup> The evidence for European banks is broadly consistent with these results: one study finds that domestic mergers among banks of equal size improve cost efficiency, but this result does not hold for all countries; cross-border acquisitions are associated with a reduction in the costs of the target, while no effect is found for domestic M&As.<sup>186</sup> The difficulties in improving cost efficiency are related to the obstacles encountered, especially in continental Europe, to reducing banks' labour forces. In fact, personnel reductions, one of the main sources of savings, are hardly an option in countries with rigid labour markets.

As for profit efficiency, research performed on US banks finds an improvement, due mainly to an increased diversification of risks.<sup>187</sup> Larger banks have more diversified loan portfolios; this may also be due to the recent lift of the ban on interstate transactions, which allowed banks from different states, each with geographically concentrated portfolios, to merge and thus

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<sup>182</sup> See for example Berger and Humphrey (1997) for the United States and Altunbas, Molyneux and Thornton (1997) and Schure and Wagenvoort (1999) for Europe.

<sup>183</sup> See Schure and Wagenvoort (1999).

<sup>184</sup> See Demsetz and Strahan (1997).

<sup>185</sup> See Berger (1998), Peristiani (1997) and Rhoades (1998).

<sup>186</sup> See Altunbas, Molyneux and Thornton (1997), Focarelli, Panetta and Salleo (1999) and Vander Vennet (1996).

<sup>187</sup> See Akhavein, Berger and Humphrey (1997), Berger, Hancock and Humphrey (1993), Berger, Humphrey and Pulley (1996), Berger and Mester (1997) and Clark and Siems (1997).



diversify their holdings.<sup>188</sup> The reduction in risk allows them to lend more per unit of equity, thus earning higher returns. In Europe, more efficient banks tend to acquire institutions in worse shape. Mergers have a positive impact on profitability, mainly driven by improvements in operational efficiency; however, deals that consist of the purchase of the majority of the voting shares of the target do not appear to result in significant improvements.<sup>189</sup> One study finds that Italian banks merge in order to change their business focus towards providing financial services and thus increase their non-interest income, rather than to obtain efficiency gains;<sup>190</sup> the increase of profitability that is observed after M&As is related also to a more efficient use of capital.<sup>191</sup>

The direct evidence on how M&As affect banks' performance is mixed. In general, better banks acquire banks in worse shape; there is then some improvement, especially on the revenue side and for the deals of the last decade.<sup>192</sup> However, the gains are probably not as large as those advertised by practitioners; more time is needed to fully assess the effects of the more recent transactions, including those involving very large institutions.

### *Scale and scope economies*

Perhaps the most commonly quoted source of potential gains from M&As is the exploitation of scale economies. Banks that significantly increase their size by merging with others may have the opportunity to access cost saving technologies or to spread fixed costs over a larger base, thus reducing average costs and improving profitability. Notice however that many of the same gains could be achieved by outsourcing typical back office functions.

Most research on the existence of scale economies in retail commercial banking finds a relatively flat U-shaped average cost curve,<sup>193</sup> with a minimum somewhere around USD 10 billion of assets, depending on the sample, country and time period analysed.<sup>194</sup> This suggests that efficiency gains from the exploitation of scale economies disappear once a certain size is reached and that there might be diseconomies of scale above a particular threshold, presumably due to the complexity of managing large institutions.

This result is fairly robust and holds again across countries, but it relies mainly on data from the 1980s and early 1990s; it might have to be revised due to recent technological changes that imply large fixed costs and thus have the potential for scale economies even for larger banks.

Probably the second most quoted reason for M&As is the exploitation of synergies, or economies of scope: by merging with institutions specialised in different market segments, it is claimed that banks can improve their production process and cross-sell their products to a larger customer base. Measuring the existence and extent of economies of scope is especially difficult,

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<sup>188</sup> Berger and DeYoung (2000) find that some banking organisations are efficiently managed on a cross-regional basis.

<sup>189</sup> See Vennet (1996).

<sup>190</sup> See Focarelli, Panetta and Salleo (1999).

<sup>191</sup> Haynes and Thompson (1999) find significant cost cutting and profitability gains from mergers.

<sup>192</sup> See eg Berger and Humphrey (1992), DeYoung (1997), Linder and Crane (1993), Peristiani (1997), Rhoades (1993 and 1998) and Srinivasan (1992).

<sup>193</sup> For the United States, see eg Berger, Hanweck and Humphrey (1987), Berger and Mester (1997), Hughes and Mester (1998), Hunter, Timme and Yang (1990) and Noulas, Ray and Miller (1990); for Europe see Altunbas and Molyneux (1996), Salleo (1999) and Schure and Wagenvoort (1999). For a fairly comprehensive review on scale and scope economies, see Berger, Demsetz and Strahan (1999).

<sup>194</sup> For Europe, scale economies are somewhat higher for savings banks, but for all categories of banks they are much lower than the cost reduction that can be obtained by improving the quality of management. See Schure and Wagenvoort (1999).

given that, in theory, the benchmark should consist of single-product firms. The lack of such firms casts doubts on the reliability of results in this particular field.

The analysis of universal banking, conducted on European data, searches for complementarities between loans and investment-related services; there is no strong evidence either in favour or against the joint provision of different services, but this might be due to measurement problems involving economies of scope.<sup>195</sup> In fact, the true test might be about to come, when a fully unified European market will see specialised and universal banks compete against each other.

Scale and scope economies are usually mentioned as the main drivers of M&As, but the available evidence, although indirect, seems to confirm that there are tangible benefits only for smaller banks. However, changes in technology and market structure might soon render these results obsolete.

### ***Shareholder value***

The last indicator of efficiency gains is the stock market performance of merging banks. The main finding of the event studies looking at share prices around the time that a deal is announced is that, on average, total shareholder value (ie the combined value of the bidder and the target) is not affected by the announcement of the deal, since, on average, the bidder suffers a loss that offsets the gains of the target. Therefore, M&As imply a transfer of wealth from the shareholders of the bidder to those of the target.<sup>196</sup>

For US banks, one study finds the combined gains to be higher when there is significant overlap between institutions, consistent with a market power hypothesis, according to which higher market share leads to higher profits. Another paper finds, consistent with a diversification hypothesis according to which geographical diversification leads to a lower variability of income, that it is out-of-market transactions that create value for shareholders.<sup>197</sup> In both cases, the market value of the two banks combined should be higher than the sum of their values as separate entities.

Higher market concentration created by consolidation is likely to lead to an increase in prices for retail financial services, leading in turn to an increase in profits. However, it is also true that firms operating in more concentrated markets are generally found to be less efficient: this might offset the gains from an increase in market power and thus leave unchanged the market value of the bank.

A merger could also result in a bank with a different risk profile. Changes can come from many sources: larger banks could develop more sophisticated financial strategies or have more diversified assets and liabilities. Most gains would come from geographical diversification or from combining banks with other financial institutions such as securities and insurance companies; all this would influence the market value of merging banks. In general, M&As do not seem to generate significant shareholder value; at the moment it is hard to identify patterns that result in successful deals.

### ***Conclusions***

In conclusion, M&As do not significantly improve cost and profit efficiency and, on average, do not generate significant shareholder value. There is evidence in favour of exploiting scale

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<sup>195</sup> See Allen and Rai (1996) and Lang and Welzel (1998).

<sup>196</sup> See Hannan and Wolken (1989) and Houston and Ryngaert (1994 and 1997); Cornett and Tehranian (1992) found positive overall returns from banking M&As. Cybo-Ottone and Murgia (2000) is the only event study of the European market. For a survey of event studies, see Pilloff and Santomero (1998).

<sup>197</sup> See Houston and Ryngaert (1994) for the market power hypothesis and Zhang (1995) for the diversification hypothesis.

economies in retail banking up to a certain size (well below that of the most recent very large deals). Economies of scope are harder to pin down; there is no clear-cut evidence of their existence.

### **Investment banks**

M&As involving investment banks, as well as joint ventures and strategic alliances, are increasingly common, especially between continental European commercial banks and British and American investment banks. Firms are using M&As to establish a global presence. Cross-industry M&As involving investment banks and securities dealers have been plentiful, because within the financial services industry the latter is perceived to be a growth business.

There is little analytical evidence to draw on in analysing the impact on efficiency resulting from the consolidation process as it relates to investment banks. There are some results from the securities portion of the industry, but there is little evidence looking at this industry segment as a whole. Some evidence is also available from case studies that have been carried out on high M&As.<sup>198</sup>

As a cautionary note, these results are based on US financial data from the 1980s. This is due to the lack of research on investment banks in other countries and to the fact that, where universal banking is allowed, investment banks are often divisions of commercial banks with no readily accessible separate balance sheets.

### ***Cost and profit efficiency***

Unfortunately, there are no studies that look rigorously at the question of the cost and profit performance of investment banks before and after mergers. A survey of case studies of recent consolidation transactions involving investment banks suggests that globalisation is the main force underlying consolidation. Customer demand is driving the process as businesses are looking for comprehensive services and solutions from their financial institutions as they expand across borders. In this environment, efforts to sustain profitability are leading to the globalisation of the market segment. Quotes from merging entities suggest that mergers create business synergies in areas of product offerings, product development, distribution and service. Earnings growth is often cited as an important reason for mergers, as is the need for global industry knowledge and global distribution, which demands global products, services and intelligence.

In case studies, the sentiment is often expressed that in this industry “size matters”, as it is believed to be closely related to prestige. Large organisations with a recognisable brand name appear to be trusted and to enjoy levels of demand for their services that generate profits even in the presence of inefficient cost structures. In addition, some commentators have pointed to the increasing size of deals in recent years and suggested that investment banks need to be large in order to win business and participate in various large loan syndications and equity and debt underwriting.

### ***Scale and scope economies***

Analytical research is available only for the securities industry. The results indicate that economies of scale do exist among smaller securities firms, but are exhausted when the firm reaches between USD 14 and 36 million in total revenue and at about USD 40 million in assets and USD 4 million in equity.<sup>199</sup> Larger firms demonstrate scale diseconomies. It appears,

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<sup>198</sup> See Pearson (1998).

<sup>199</sup> See Goldberg, Hanweck, Keenan and Young (1991).

therefore, that only very small firms can expand their product mix and level of output, in the aggregate, and lower costs.

Similarly, on the question of economies of scope, research suggests that smaller speciality firms exhibit economies of scope while large multi-product firms exhibit diseconomies of scope. The overall conclusion, however, is that economies of scope do not appear to be important in the securities industry. Neither diversified nor speciality firms of minimum optimal scale operate at a cost disadvantage.

The results outlined above might be outdated in the foreseeable future, given the tremendous amount of change that has occurred in this sector in recent years. As a consequence, the efficient scale values found in past research, particularly for securities firms, are likely to change. However, the pattern of economies of scale to a relatively small size threshold appears to hold, as in the case of commercial banks.

### **Asset management companies**

The wave of consolidation in the asset management industry has been widely driven by round-the-clock trading, the internet, globalisation and other technology-driven advances.<sup>200</sup> Consolidation is also resulting from consumers' desire for the convenience of one-stop shopping. Japan and Europe are expected to be growth areas in the future because they have lagged behind the US institutional asset management industry.

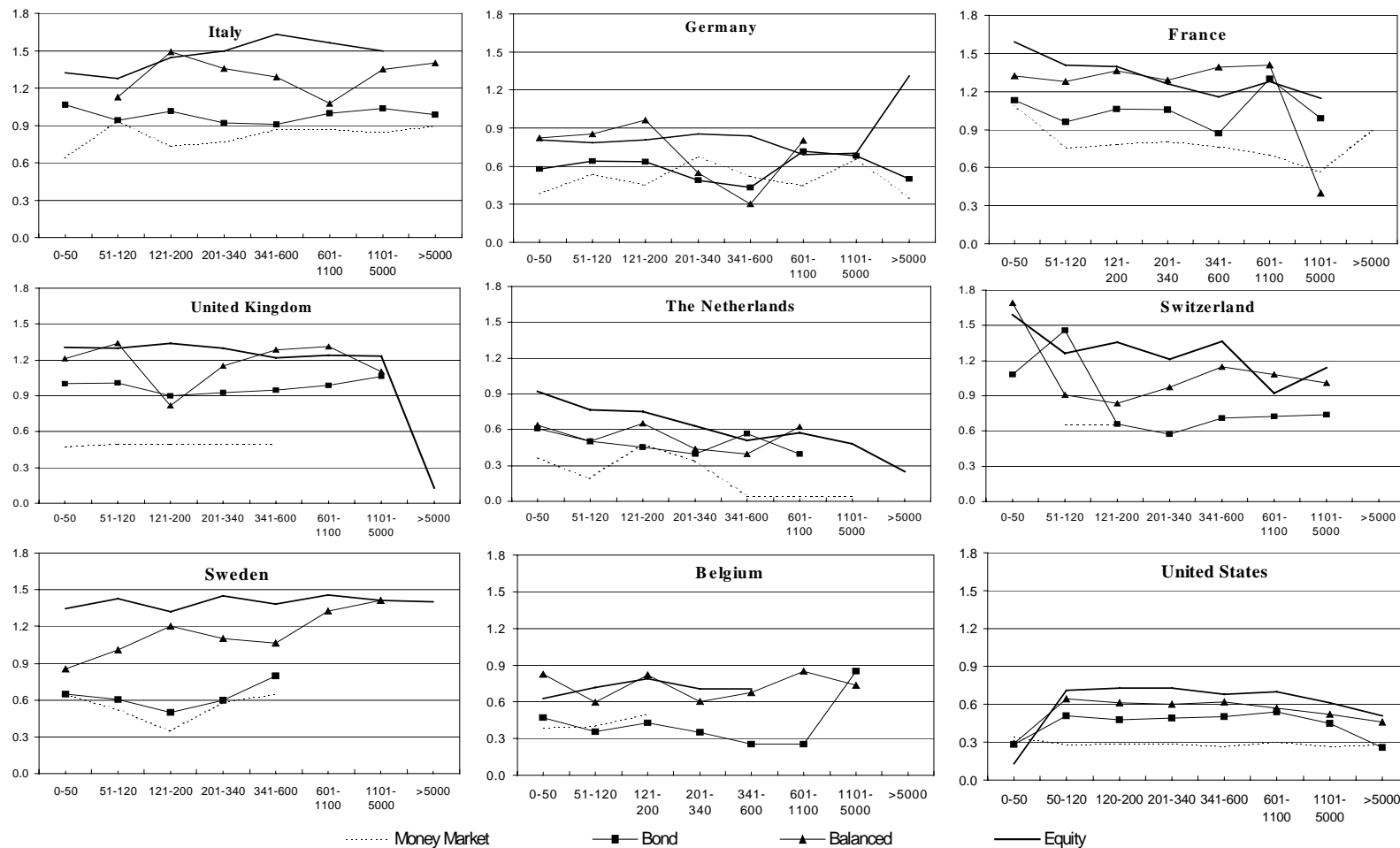
Surveys indicate that many mutual fund investors do not know mutual funds charges, which are the price paid for asset management services. Investors' ignorance of fees is most likely attributed to double digit returns seen during good economic times. However, the issue of mutual funds' income and expenses will probably become more important during unfavourable conditions in capital markets. As a consequence, the mutual fund industry is likely to undergo some restructuring in the future as individual fund companies start to compete not only in performance but also in cutting fund charges.

At first glance, there is no strong correlation between fees charged by mutual funds and their size, measured by assets under management (see Chart V.1). In the United States, fees are generally low and slightly declining with the increase in the size of the funds, suggesting mild economies of scale passed on to customers (this, of course, assumes that the industry is highly competitive, ie that mutual funds do not exert much market power). In Europe patterns are not as smooth: equity funds are generally more expensive than money market, bond and balanced funds, as in the United States. Although in many countries the largest funds charge less than the smallest ones, the trend in the relationship between assets under management and fees is not as clear as in the United States; in fact, it is often funds of intermediate size that seem to offer the best conditions to customers.

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<sup>200</sup> See Barbash (1998).

Chart V.1  
**Management fees and net assets of mutual funds\***  
 (percentage points and millions of USD, at December 1999)



\* Source: Lipper. Management fees are simple averages of maximum charges. No account is taken of charges scaled to fund size.

### *Economies of scale and scope*

The expansion of shareholder services in the 1980s and 1990s, along with growth in new industries and foreign markets, placed upward pressure on the funds' expense ratios, because of the increased complexity in investing and managing risk. However, in spite of these developments, operating expenses have decreased, with larger reductions generated by funds with more assets under management (and thus with a higher probability of offering new services at an additional cost).

When the scale of activity of a mutual fund expands, a less than proportional increase in costs may be recorded both in the area of portfolio management (information technology and security turnover) and in that of shareholder servicing (record keeping and distribution). However, this can happen only if asset growth is not accompanied by a huge increase either in the variety of securities in the portfolio or in the number of accounts.<sup>201</sup>

For a sample of US mutual funds, economies of scale at the management group level are significant, especially for smaller groups. However, if a fund's size is measured by the number of accounts, then scale economies are far smaller holding assets per account constant.<sup>202</sup> In general, there are scale economies in administering mutual funds in all size categories and the average cost curve of a typical mutual fund is downward sloping over the entire range of fund assets.<sup>203</sup> For the United States, the relationship between fund assets and operating expenses, related to the management and administration of funds, declines steadily as assets grow and reaches a low of 70 basis points for the group of funds with over USD 5 billion in assets.<sup>204</sup> In general, large equity funds display significantly lower operating expense ratios than small funds; the reductions in fund expenses from efficiency and productivity gains are passed on by service providers as they expand the scale of their operations. These results are partially consistent with those found for a sample of French open-end mutual funds, for which significant scale economies are detected only for small funds, while larger institutions tend to exhibit diseconomies of scale.<sup>205</sup>

There is also some limited econometric evidence on the presence of economies of scope in mutual funds. These results are qualitatively the same as those presented above for scale economies, with one difference noted in the study of French open-end mutual funds. In that case, economies of scope were found to be significant for both small and large firms.<sup>206</sup>

The evidence in favour of the existence of scope economies squares with the latest developments in the industry. Asset management services are often distributed jointly with other types of financial products, in order to reap the benefits from cross-selling: in Europe mutual funds are sold by bank branches, while in the United States fund distribution is concentrated in broker-dealers and discount brokers.<sup>207</sup> Also, life insurance companies tend to have a competitive advantage as well as other more specialised firms that have established cost-effective channels of distribution by using electronic means. In order to gain access to distribution, fund management expertise and a greater international presence, a number of cross-border M&As involving asset management firms have occurred in recent years (eg Mercury

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<sup>201</sup> See Baumol (1995).

<sup>202</sup> See Baumol, Goldfeld, Gordon and Koehn (1990).

<sup>203</sup> See Latzko (1999).

<sup>204</sup> See Rea et al (1999).

<sup>205</sup> See Bonanni, Dermine and Röller (1998) and Dermine and Röller (1992).

<sup>206</sup> See Bonanni, Dermine and Röller (1998).

<sup>207</sup> See Walter (1999).

Asset Management of the United Kingdom was purchased by Merrill Lynch in 1997). As an alternative to M&As, many mutual fund firms have opted for strategic alliances with banks, securities broker-dealers and insurance companies.

To summarise, there is little analytical work available that directly addresses the issue of efficiency gains from consolidation in investment banking and asset management companies. Some results from the securities portion of the investment banking industry suggest the presence of economies of scale, but only for smaller securities firms, while there is limited evidence for the existence of scope economies. With regard to asset management firms, the scarce evidence available suggests that larger mutual funds tend to be more efficient than smaller ones; however, economies of scale and scope are probably significant only up to a certain size threshold.

### **Insurance companies**

The insurance industry remains heavily regulated, both in its life and non-life segments; this could be a restraining factor for the consolidation process, decreasing the possibility of reaping economies of scale and diversification by discouraging consolidation, in particular cross-border deals. Differences in social security systems could also contribute to the international segmentation of the life insurance industry, if firms differentiate themselves in such key variables as the age of retirement or the model of funding (defined benefits or defined contributions). Furthermore, despite a trend towards deregulation, “cross-border trade in insurance services is limited by differences in culture, consumer protection laws, taxation, and the need to establish a local presence to process claims and handle administration.”<sup>208</sup> However, at least within domestic markets, there is a potential for economies of scale and scope, in particular with other financial products, such as those offered by banks. These benefits may be obtained through joint ventures or through the combination of banks and insurance companies, a growing trend especially in Europe. Finally, the proposition that there could be efficiency gains by letting the best firms take charge of the others is even more true in a sector protected, at least to an extent, from outside competition. The following sections discuss the available evidence on the insurance industry, distinguishing between the two main lines of business – life and casualty/property.

### ***Aggregate data***

The insurance industry seems to exhibit economies of scale, at least judging from a cursory examination of firms’ balance sheet ratios. In the North American life insurance segment, management expenses as a fraction of net premiums written decrease from 16% for the smaller firms to 11% for the larger ones; in Europe the ratio decreases from 9 to 4% (see Table V.3).<sup>209</sup> As for the non-life segment of the industry, the ratio decreases from 18 to 16% in North America and from 17 to 8% in Europe. In terms of profitability, the same pattern emerges: larger firms are more profitable than smaller ones. In North America, the return on equity increases from 3 to 13% for the life segment and from 7 to 10% for non-life firms; in Europe, it increases from 1 to 12% for life insurance companies and from 7 to 11% for the non-life firms.

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<sup>208</sup> See OECD (1998).

<sup>209</sup> The difference in cost levels between North America and Europe might depend on different definitions of the variables. Because of the low number of Japanese firms in the available sample, they are not included in the analysis.

Table V.3  
Size and performance of insurance companies

Area	Variables	Life insurance companies by asset size					
		< USD 500m		USD 500-2000m		> USD 2000m	
		No	Average	No	Average	No	Average
Europe	Management expenses (% of net premiums written)	76	8.6	86	5.0	142	4.4
	Return on equity	99	1.3	76	10.6	134	11.8
North America	Management expenses (% of net premiums written)	72	16.2	102	14.0	134	10.9
	Return on equity	71	3.4	104	10.6	135	13.0
Area	Variables	Non-life insurance companies by asset size					
		< USD 100m		USD 100-500m		> USD 500m	
		No	Average	No	Average	No	Average
Europe	Management expenses (% of net premiums written)	117	16.6	156	10.8	144	7.8
	Return on equity	263	7.2	183	9.3	145	11.2
North America	Management expenses (% of net premiums written)	254	17.9	364	15.9	216	15.5
	Return on equity	269	7.2	373	9.2	217	9.5

Source: Fitch-IBCA data for insurance companies; firms are ranked by assets in millions of US dollars. All variables are averaged over the 1994-97 period; the distribution is truncated at the top and bottom 10%.

If the dispersion of cost and profit measures is used as a proxy of efficiency, then North American insurance companies appear to differ substantially in their performance: for each class size and each segment of the industry, the costs of those in the worst quartile are more than double those in the best quartile and profitability is half as high (see Table V.4). The European industry reflects more or less the same pattern, suggesting that insurance companies in general could benefit from a consolidation process that would allow them to exploit scale economies and transfers of high-quality managerial skills. Of course, if the consolidation process goes too far, offsetting costs due to market power may arise (see below).



Table V.4  
**Dispersion of performance measures of insurance companies**

Area	Variables	Life insurance companies by asset size					
		< USD 500m		USD 500-2000m		> USD 2000m	
		1st quarter	4th quarter	1st quarter	4th quarter	1st quarter	4th quarter
Europe	Management expenses (% of net premiums written)	3.4	12.9	2.5	6.7	3.0	5.6
	Return on equity	6.7	0.0	13.9	6.2	16.2	6.7
North America	Management expenses (% of net premiums written)	10.8	20.6	8.9	17.8	6.5	15.2
	Return on equity	10.6	0.0	14.7	6.6	17.3	9.1
Area	Variables	Non-life insurance companies by asset size					
		< USD 100m		USD 100-500m		> USD 500m	
		1st quarter	4th quarter	1st quarter	4th quarter	1st quarter	4th quarter
Europe	Management expenses (% of net premiums written)	10.0	23.2	4.4	16.1	1.8	12.7
	Return on equity	13.3	0.0	13.2	5.2	14.8	8.2
North America	Management expenses (% of net premiums written)	13.3	22.2	12.7	18.2	12.5	18.5
	Return on equity	10.1	4.4	12.9	5.5	12.5	6.1

Source: Fitch-IBCA data for insurance companies; firms are ranked by assets in millions of US dollars. All variables are averaged over the 1994-97 period; the distribution is truncated at the top and bottom 10%.

### ***Cost and profit efficiency***

A study performed on the insurance industry in the OECD countries finds that the increase in productivity observed for insurance companies in all countries is due to technical progress.<sup>210</sup> However, efficiency scores vary widely by country, the US firms being, on average, the most efficient. Efficiency seems positively correlated with the reinsurance rate and negatively correlated with the share of life insurance; this can be explained by the national characteristics of the life insurance market, which deters foreign entry and thus decreases competition, allowing domestic firms to grow complacent.

US non-life insurance companies operate at an efficiency level that varies from 80% of the best practice assessed for the medium-sized companies to 90% for the large ones, suggesting that competition keeps them from becoming too inefficient and that improvements from M&As are likely only for the firms in worst conditions.<sup>211</sup> The average inefficiency level in the life

<sup>210</sup> See Donni and Fecher (1997).

<sup>211</sup> See Cummins and Weiss (1993) and Gardner and Grace (1993).

segment of the insurance industry is higher, between 35 and 50%.<sup>212</sup> Given that M&As improve the efficiency of targets,<sup>213</sup> the foreseeable consolidation process will be beneficial to the industry by, for example, rationalising the agency distribution system.

The evidence for other countries points towards a larger gap between the best practice firms and the rest of the industry: the average efficiency level is around 50% for France and Belgium,<sup>214</sup> around 50% and growing in Germany<sup>215</sup> and a little higher in the British life insurance industry.<sup>216</sup> Given that efficiency seems to be higher in countries where the regulatory burden is lower, deregulation could help close the efficiency gap by introducing more competition.

The insurance industry is still very fragmented because of regulation and the specificity of some of its products (for example, claims settlements). The dispersion of efficiency levels that results from these barriers to entry could probably be reduced if the better managed firms took over the weaker ones,<sup>217</sup> but the lack of evidence for the past and the rapid changes foreseeable in the future make it hard to assess the potential efficiency gains from M&As.

### *Economies of scale and scope*

Scale economies in the US insurance industry have been studied extensively. For property/casualty insurance companies, there is evidence of scale economies for the small and intermediate size firms; this suggests that consolidation among them may reduce average costs.<sup>218</sup> On the other hand, larger firms seem to exhibit diseconomies of scale, while there is no evidence of scope economies at any size level.<sup>219</sup> As for the life insurance industry, scale economies are found up to USD 15 billion of assets, but it is unclear whether the result holds for larger firms.<sup>220</sup>

The evidence for European markets is more mixed, but in general it is in favour of the existence of scale and scope economies.<sup>221</sup> However, most studies refer to data of the early 1990s; the sweeping changes in regulation and technology that took place in recent years might have deeply affected the cost and revenue structure of the industry. Past results, therefore, should be considered with caution. For Japanese insurance companies there seems to be a consensus on the existence of scale economies, at least for the life industry.<sup>222</sup>

As in other financial industries, scope economies are more elusive; the coexistence of specialised life and non-life insurance companies within insurance conglomerates probably

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<sup>212</sup> See Yuengert (1993).

<sup>213</sup> See Cummins, Tennyson and Weiss (1999).

<sup>214</sup> See Delhaussse, Fecher, Perelman and Pestieau (1995).

<sup>215</sup> See Mahlberg and Url (2000).

<sup>216</sup> See Rees and Kessner (1999).

<sup>217</sup> As long as concentration is not so high that firms become complacent or enjoy substantial market power.

<sup>218</sup> See Cummins and Weiss (1993).

<sup>219</sup> See Hanweck and Hogan (1996).

<sup>220</sup> See Yuengert (1993) and Cummins and Zi (1998); Grace and Timme (1992) find evidence of scale economies throughout their sample, but they do not control for differences in the output of small and large companies.

<sup>221</sup> See Focarelli (1992) and Prosperetti (1991) for Italy; Focarelli (1992) also finds evidence of scope economies for the life and non-life segments. Fecher, Perelman and Pestieau (1991) find significant scale economies for the French industry, both life and non-life; Mahlberg and Url (2000) find significant scale economies for the German market; and Kaye (1991) finds them for the British life insurance companies.

<sup>222</sup> See Fukuyama (1997).

means that there is no single winning strategy (diversifying versus specialising). Diversification may be more suited to some firms and countries, while specialisation may be better for others.<sup>223</sup>

Just as for banks, the smaller insurance companies could probably reduce their costs by taking advantage of the potential economies of scale, however the benefits are likely to disappear after a threshold that is well below the size of the largest firms. The existence of economies of scope with other financial institutions is debated.

### **Cross-industry and cross-border consolidation**

Research on the efficiency effects of M&As across financial industries and across national boundaries is scarce, largely because there have been relatively few such acquisitions to date. The primary difference between within- and across-industry M&As is the greater possibility of scope economies in mergers across industry lines – for example, through sharing physical inputs, information systems, or databases, or through consumption complementarities. There is also greater room for scope diseconomies – for example, from senior management straying far from its area of core competence.

There is very little research on the revenue scope efficiency effects of universal type consolidation. Some inference may be taken from the research on firms producing a single category of financial services. Such research shows that the evidence is ambiguous.<sup>224</sup>

There are factors that may make the efficiency consequences of international consolidation different to those for domestic M&As. First, there may be some barriers that inhibit foreign financial institutions from operating efficiently and competing against domestic institutions. These barriers may include differences in language, culture and regulatory or supervisory structures, and explicit or implicit rules against foreign competitors. In some cases, the organisational diseconomies of operating or monitoring from a distance may be exacerbated by having to manage institutions many time zones away.

Second, the market conditions and policies of the home nation may affect cross-border efficiency. In particular, the home market conditions (eg the degree of competition, the market for corporate control, or securities market development) and home market policies (eg banking powers, prudential regulation and supervision, and safety net guarantees) may affect the efficiency of national institutions abroad.

Studies of cross-border efficiency have usually found that domestic banks are significantly more efficient than foreign-owned banks.<sup>225</sup> In particular, one study found that institutions headquartered in the United States tended to be more efficient than other institutions both at home and in other nations.<sup>226</sup>

### **Summary**

There seems to be a general consensus that consolidation in the financial industry is beneficial up to a certain (relatively small) size in order to reap economies of scale. Although the evidence

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<sup>223</sup> See Berger, Cummins and Weiss (1999) and Berger, Cummins, Wiess and Zi (2000).

<sup>224</sup> Berger, Humphrey and Pulley (1996) found little or no revenue scope economies between bank deposits and loans. Berger, Cummins, Weiss and Zi (2000) found revenue scope diseconomies on average from providing life insurance and property-liability insurance together. Berger, Hancock and Humphrey (1993) and Berger, Cummins, Weiss and Zi (2000) found that joint production is more efficient for some types of firms and specialisation is more efficient for others.

<sup>225</sup> See eg DeYoung and Nolle (1996) and Mahajan, Rangan and Zardkoohi (1996).

<sup>226</sup> See Berger, DeYoung, Genay and Udell (2000).

is more mixed, there is also little in the way of gains from economies of scope or of improvements in managerial efficiency due to the transfer of skills from the bidder to the target.

There is no clear evidence that M&As result in cost reduction. The most recent studies suggest that consolidation may enhance revenues, although results vary with the countries and deals analysed; moreover, the gains appear limited in magnitude. Stock markets also seem sceptical of M&As: on average, at the announcement of a transaction, the combined value of the firms involved does not vary much, as it should if significant benefits were expected.

Ex post results of M&As seem to contradict the motivations given by practitioners for consolidation, which are largely related to issues of economies of scale and scope and to improvements in management quality. However to a certain extent this might be a puzzle in appearance only. The following explanations have been put forward: (i) practitioners consider cost reductions or revenue increases per se to be a success, without also taking into account industry trends as a benchmark; (ii) there might be a “denominator effect”: a 20% reduction in operating costs seems larger than an equivalent 0.4% reduction as a fraction of total assets; (iii) the fact that there are no improvements, on average, means that some institutions do better and some do worse; given the inside knowledge of their firm and the arm’s length knowledge of competitors, managers might be justified in believing that their institution might be among the ones that would benefit from a merger or acquisition; and (iv) deals done in the past might have suffered from stricter regulation (eg labour laws) that prevented firms involved in M&As from reaping all of the benefits of the deal.

### **How innovation will affect the financial industry**

The lack of clear-cut results on the efficiency of merged institutions could be traced back to the motivations for M&As. If they are not entirely driven by profit-maximising strategies (see Chapter II), M&As might well turn out to produce mixed results, in accordance with the fact that they were not all meant to increase profits in the first place. Other factors that potentially affect all participants might blur the picture, if their effect is large enough to overshadow the direct effect of M&As.

The opportunities presented by advances in payments technology, the development of internet banking and financial-engineering products should benefit all institutions (to the extent that they can be outsourced), but they are generally more easily exploited by large institutions that are able to invest up-front, postponing returns for longer. These firms also have more complex asset and liability structures that can benefit from sophisticated risk management strategies.

The development of outsourcing might have significant external effects on the financial industry. If the functions involved are those that exhibit clear economies of scale (eg processing credit card transactions), there might be a small number of firms performing them and offering lower rates to all financial institutions; this might, in turn, lower the threshold above which the smaller firms become viable, by decreasing their costs. The need for a larger size may be counterbalanced for some products by network economies, such as joining a nationwide ATM system, that can be obtained even by small banks.

Sales of mutual funds will be influenced even more heavily by branding, advertising and distribution channels. These developments will probably lead to internal, external and inter-sectoral competition in the asset management industry, promoting market efficiency and lower fees for consumers. The simultaneous presence of many, diverse institutions should benefit consumers and improve the dynamic efficiency of the financial industry by fostering competition and innovation.

A general warning with regard to these conclusions should be made, due to the importance of innovation itself in shaping firms and markets. On the one hand, innovation may reduce the cost of accessing the new technology, and therefore decrease the need for larger size in order to make its adoption profitable, so that even small intermediaries could handle tasks that today are out of their reach. On the other hand, there might be cases in which new systems are profitable

only if applied on a large scale, for example in the field of risk management. In the latter case, the differences between large and small institutions might increase; policymakers and regulators should carefully differentiate their action on the basis of products and markets rather than by categories of institutions.

### **3. Consolidation and competition**

Consolidation affects competition because it increases market concentration, with the final effect dependent both on the likelihood of market entry and on firm behaviour. Market entry may be limited, for example, by regulation, and oligopolistic behaviour may intensify when concentration becomes higher, possibly leading to non-competitive levels of prices (or interest rates) and volumes. In this section these theoretical issues are discussed. Then, existing empirical research is examined in order to assess the practical relevance of the various theoretical propositions. Since empirical analysis is inevitably based on the past and the financial landscape is changing quickly, the relevance of foreseeable future trends is assessed. Finally, actual antitrust policy is reviewed and some relevant case studies are presented.

#### **Theory**

The theoretical analysis starts with two subsections that review the ways in which consolidation may affect competition. First, the potential of market entry is discussed in order to assess the effect of consolidation on concentration. Second, firm behaviour is discussed because it may determine how concentration affects competition. These subsections are followed by a short discussion of the trade-off between competition, efficiency and financial stability. The final subsection discusses the issue of market definition, which is relevant for antitrust purposes.

#### ***Market entry***

Assuming a well-defined market, the standard literature on industrial organisation implies that the ease of market entry determines the link between competition and market concentration. In a contestable market, due to the threat of profitable entry, active firms are not able to exploit market power.<sup>227</sup> However, contestable markets are an extreme theoretical benchmark: in fact, the conditions that are required for a market to be fully contestable do not hold in the real world. In such a market environment, concentration would increase as a result of consolidation, but there would be no effect on competition.

In the case of the financial industry, contestability fails to hold as a result of three conceptually different types of entry barriers: (i) those that are directly caused by regulation, (ii) those inherent in firms' cost structures, and (iii) those that result from (relatively) inelastic customer demand. Regulatory barriers include specific subsidies or public guarantees. For example, commercial bank deposits are generally insured by the government and may lower banks' capital costs. This gives commercial banks a relative advantage in products markets where non-commercial banks such as investment banks and insurance companies also compete. Another example would be national or state differences in legal frameworks and in their applications, such as differences in the jurisdictional status of contracts in different countries; this is particularly relevant for the insurance industry. Finally, imposition of host country regulations on foreign competitors can create barriers to entry. For example, foreign institutions may be required to establish a physical presence in a particular country before authorisation for servicing customers is given.

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<sup>227</sup> Baumol et al (1982) introduced the concept of market contestability as an extreme example of the concept of potential competition introduced by Bain (1956).

Entry barriers due to differences in firms' costs arise where entry requires significant sunk costs that have to be earned back. This can reduce competitive pressures, at least in the short run. Economies of scale or scope or the necessity to set up a network of branches may create barriers to entry for firms that do not have the necessary size to be economically viable. In addition, unequal access to production technology, production factors, or infrastructure can confer market power on favoured firms. Such situations may be difficult to detect because they may involve non-financial industries. For example, a financial institution might be affiliated vertically with a telecom enterprise, until lately usually a monopoly, that in turn restricts its services to this institution.

The third cause of the lack of contestability is a relatively inelastic customer demand, a cause that may be most significant for retail markets. For example, when customers find it convenient to buy all their financial services at a single financial service provider, they may become locked in and as a result less inclined to switch to other providers in response to favourable price offers by competitors. Cross-sector consolidation may foster the bundling of products, thus increasing switching costs and the rigidity of demand for financial products. In the case of banking, for example, the lack of a legal requirement that account numbers as well as the associated transaction data in an electronic bank account be transferable to another bank may increase barriers to entry by making it more cumbersome for customers to switch banks. Another source of rigidity of demand is the complexity of products, which may increase the difficulty of comparing the services of different providers.

### ***Market behaviour***

The effect of concentration on competition depends, among other variables, on whether firms compete on quantities or prices. In the first case, it is straightforward to show that the market outcome is closer to the monopoly result the smaller the number of firms. In the second case, the effect depends on the heterogeneity of products; the more heterogeneous the products are, the greater is the market power of firms. Firms tend to adopt niche strategies, in order to differentiate products beyond their essential characteristics. This may ultimately lead to mass customisation, whereby technology improvements allow firms to tailor their standardised products to the specific needs of individual customers.

There might be instances in which the financial industry presents the characteristics of a natural monopoly, with the regulatory consequences emphasised by the traditional industrial organisation literature. For example, with respect to payment services of banks, there may be network effects, possibly implying natural monopoly or oligopoly (see the following chapter), with the potential to set prices at non-competitive levels.<sup>228</sup> Concentration of payment services in a non-contestable market environment increases the probability of market power abuse.

Linked oligopoly theory hypothesises that firms that compete simultaneously in many markets may recognise their interdependence and determine that aggressive behaviour in one market may lead to retaliation in the others; as a consequence firms may reduce competition in the affected markets. Multi-market contacts may lead to higher prices and lower quantities than the competitive outcome.<sup>229</sup> By increasing contact points among firms, cross-border and cross-sector consolidation in the financial services sector may reduce competition.

The theories on relationship lending emphasise the crucial role of financial institutions in financing customers that do not have direct access to capital markets. Such theories focus on the screening and monitoring function of financial institutions and hypothesise adverse effects of competition on users of financial services. These arise, among other reasons, because of the

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<sup>228</sup> See McAndrews (1995).

<sup>229</sup> Linked oligopoly theory was introduced by Edwards (1955) and was developed theoretically by Bernheim and Whinston (1990) among others.

inability of financial firms to subsidise new firms at the expense of established borrowers.<sup>230</sup> It may be the case that bank loans to small firms are better available in more concentrated markets than in competitive markets. However, as will be discussed extensively in the section on Consolidation and the availability of credit flows, consolidation may be detrimental to small business lending.

### ***Does consolidation create a trade-off between efficiency and financial stability?***

In general, in a competitive environment only the most efficient and innovative firms survive, thus ensuring that the industry remains healthy and that firms pass on the benefits of competition and innovation to their customers. However, for the financial sector there might be instances in which competition may have a negative impact on stability, as the least efficient firms may have an incentive to increase their risk in order to reach the industry profitability level (the so-called incentive to “gamble for resurrection”). If these firms are large, financial stability may be threatened (see Chapter III).

The role of consolidation in altering the balance between competition and stability is ambiguous; M&As among large banks create institutions whose failure is potentially more threatening to the stability of the industry. However, if the new entities are managed more efficiently or if they benefit from economies of scale or scope, there should be both benefits for the consumers (to the extent that the improvements are passed on) and no particular negative effect on financial stability.

Prudential supervision and regulation, in particular liquidation procedures and coordination among supervisors of different industries and from different countries, should ensure that the stability of the financial industry is not threatened by the external effects of competition.

### ***Market definition***

The preceding discussion assumed that the relevant market was already defined, but empirical work must start with a workable market definition. This subsection investigates the theory behind the definition of markets for purposes of antitrust regulation.

One may define a relevant product market as a market that comprises all products and services that are viewed by consumers as similar or equivalent because of their properties, price and purpose. The relevant geographic market is the territory including the firms that impose competitive constraints on each other. For example, one definition of a market used in antitrust analyses is “a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximising [monopoly] firm, not subject to price regulation ... likely would impose at least a ‘small but significant and non-transitory’ increase in price.”<sup>231</sup> A second, closely related definition that emphasises market structure more than conduct, is: “The relevant geographic market comprises the area in which the undertakings concerned are involved in the supply and demand of products and services, in which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas.”<sup>232</sup> In some countries, the relevant geographic markets are identified by the antitrust authorities with administrative areas (eg regions or provinces; see Annex V.1).

In defining product markets, the substitutability of different products may vary across buyers of that product. For example, commercial bank transactions accounts and investment bank money

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<sup>230</sup> For an overview, see Boot (2000).

<sup>231</sup> See US Department of Justice and Federal Trade Commission (1992), p 7.

<sup>232</sup> “European Commission Notice on the definition of the relevant market for the purpose of Community Competition Law”, Official Journal of the European Communities, Series C, no 372, 9 September 1997.

management accounts have many similar features that may make them part of the same market for some consumers. On the other hand, bank accounts may be insured by government, while investment bank accounts typically are not insured. This may place these products in separate markets in the view of more risk-averse customers. Product market definitions also depend on the extent to which different goods are complements that are purchased together. In addition, convenience considerations may lead consumers to bundle their purchases of different goods or services. The extent of such clustering, and the resulting scope of the relevant product market, is an empirical question.

The geographic market indicates the extent to which consumers will travel to complete a transaction. This depends on the size of travel costs and other transaction costs relative to the utility gained from purchasing the product. As a generalisation, low-value goods that are purchased frequently tend to have smaller geographic markets than expensive goods that are purchased only rarely. Thus, wholesale markets will generally cover larger geographic areas than retail markets, and non-fiduciary financial services (such as mortgages) generally will have larger geographic markets than fiduciary services (such as deposits).

### **Empirical evidence**

This section analyses the existing studies that have examined the extent to which the consolidation of financial markets has affected competition. The first empirical issue addressed is the empirical definition of the relevant markets. Subsequently, the main findings of the empirical studies on the effect of consolidation on competition are discussed. It is important to be aware that this literature uses data that do not represent the most recent technological developments.

### ***Market definition***

A recent examination of the suppliers of financial services shows that individual US firms are supplying more and more products over broader geographic areas.<sup>233</sup> The fact that firms have increased both their product selection and their geographic reach does not necessarily imply, however, that markets have expanded. Firms often operate in many different markets. Also, some traditional financial business processes are now split into functions that can be offered in separate markets. An example is lending, where origination, securitisation and interest rate or foreign exchange swaps split the lending process into separate components that may be conducted by different firms. In addition, on the demand side, some claim that consumers of financial products want bundled products to a lesser extent than they once did.

In research and policy analysis, markets are defined in terms of products and geographical areas. In the first respect, surveys of household and small-business bank customers show evidence of clustering around the principal transactions account, but credit cards, mortgage and other loans, and other financial services are often purchased elsewhere.<sup>234</sup>

Insurance product markets tend to be defined more narrowly, as developing expertise in any product line implies substantial costs, even for producers that are already active in other business segments.<sup>235</sup> In the non-life sector, customers generally feel that insurance products for different types of risks (health, property and casualty, travel etc) are not substitutable. Moreover, legal rules are often structured by type of risk, licensing for new types of risk is

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<sup>233</sup> See Berger, DeYoung, Genay and Udell (1999).

<sup>234</sup> According to Kwast, Starr-McCluer and Wolken (1997), households tend to cluster the following products with their checking account: savings accounts, MMDAs, lines of credit and certificates of deposits. For small businesses, the clustered products are savings accounts, lines of credit, mortgages and cash management services.

<sup>235</sup> See Chidambaran, Pugel and Saunders (1997).



generally a slow process, and certain combinations of risk may be legally prohibited.<sup>236</sup> Therefore, the products of non-insurance firms are usually not included in the market definition of non-life insurance products.<sup>237</sup>

As an example of a stance taken by an antitrust authority, the European Commission in several cases has had to decide whether credit insurance in the areas of domestic use and export of capital goods can be considered a substitute for banking services such as factoring and letters of credit. While acknowledging that certain banking products are increasingly entering the market as competitors of credit insurance products, the Commission has concluded, on the basis of product characteristics and prices, that credit insurance and factoring are still different product markets.<sup>238</sup>

With respect to life insurance, it has to be noted that products generally carry a large savings component. Therefore, the relevant market may also include non-insurance companies (eg pension funds) that offer long-term savings products.<sup>239</sup> As insurance products compete little or not at all with each other, the empirical literature tends to treat each of them as a separate market, even if they are offered jointly by the same companies.<sup>240</sup>

Turning to the geographic market definition, markets for some bank products appear to remain local, while others are national or international in scope. Among the latter are the markets for large commercial loans and credit card loans, secondary loan markets and other wholesale markets, while the local markets include household and small-business transactions accounts, small business lending and some types of consumer lending.

In empirical research, local markets are usually approximated by areas such as provinces, rural counties, cantons or metropolitan areas.<sup>241</sup> For the United States, this assumption is supported by survey evidence indicating that both consumers and small businesses overwhelmingly procure banking services from suppliers located within a few miles of the customer. It is still rare to bank with institutions that can be reached only via the telephone or internet. In fact, some recent articles in the popular press suggest that firms that have attempted to stress internet-based banking are retrenching.<sup>242</sup> Thus, on the demand side, markets for some bank products appear to be local.<sup>243</sup>

Retail bank product markets are also local in Europe.<sup>244</sup> Despite the development of electronic banking and other advances, “there are still high ‘transport costs’ in retail banking and this

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<sup>236</sup> One of the major barriers to entry for firms that want to expand their insurance activities is the often limited availability of knowledge on loss statistics. This should be properly taken into account when defining relevant markets for competition purposes.

<sup>237</sup> The factors that induce the fragmentation of the non-life insurance market are only partially mitigated by the similarities between the technologies used by banks and insurance companies (information processing, risk management, etc) that imply the possibility of including a broader range of institutions in the market definition.

<sup>238</sup> Case Comp/M. 1082 - Allianz/AGF, OJ C 246/4; 6.8. 1998; case Comp/M. 1101 - Hermes/Sampo, OJ C 212/6, 8.7. 1998; case Comp/M. 1661 - Crédit Lyonnais/Allianz-Euler/JV, OJ C 285/6, 7.10. 1999.

<sup>239</sup> See Table 4 in OECD (1998).

<sup>240</sup> For example, Cummins, Tennyson and Weiss (1999) split the industry into five product markets.

<sup>241</sup> See Egli and Rime (2000) for Switzerland; MacKay (1998) for Canada; Rhoades (1996) for the United States; Sapienza (1998) for Italy; and the Wallas Committee (1997) for Australia.

<sup>242</sup> See Costanzo (2000), Day (2000), Julavits (2000a and 2000b), Snel (2000) and Toonkel (2000).

<sup>243</sup> See Kwast, McCluer and Wolken (1997).

<sup>244</sup> See Dermine (1999).

means that entry into foreign markets must be based largely on the opening (or acquisition) of a branch network.”<sup>245</sup>

Also, on the supply side there is evidence that some banking markets are local. The number of bank branches in most countries continues to increase despite a consolidation process that has reduced the number of independent banking organisations and legal changes that have largely removed legal constraints on bank geographic expansion. This indicates that firms continue to feel the need for a local presence.<sup>246</sup> Continental Europe has a greater density of branches than English speaking countries, an indication of local markets and that technology has not yet led to a reduction in the number of branches.<sup>247</sup> While cross-border banking is growing, it is still at a low level.<sup>248</sup>

For wholesale banking products, the introduction of the euro has increased the geographic scope of the European market since it has eliminated foreign exchange risk. Bond markets have tended to be national in scope, but have expanded with the adoption of the euro; cross-border competition should also increase for services like correspondent banking. The geographic scope of the activities is national or international also in the case of financial markets, and in particular money market trading, foreign exchange trading, derivative trading and asset management.<sup>249</sup> On the contrary, for other services in the corporate banking sector – especially those provided in connection with exports – the Commission has found that the activity is predominantly national in scope, since it usually requires a close relationship between a bank and its customers in order to meet the particular needs of the clients.<sup>250</sup> Investment banking services, which usually require a knowledge of national corporate law and the company structure as well as of accounting principles and the local market habits, are also considered to be national in scope.<sup>251</sup> In general, while acknowledging that many M&As are cross-border, the Commission has distinguished between the activity, which may be international in scope, and the service provided, which is mainly national in scope and may require that the principal advisor be physically established in the country where the target company is situated.

Geographic markets for most insurance and securities activities appear to be national in scope (or statewide for the United States). For example, for products like automobile insurance, consumers generally search only within the state or nation and the degree of regulation varies substantially across states and countries.<sup>252</sup> Nevertheless, some argue that barriers to entering geographic markets are low relative to the barriers to entering different product lines.<sup>253</sup>

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<sup>245</sup> See Gual (1999) and Vives (1999).

<sup>246</sup> Local geographic markets for banking are not universally accepted. Hannan and Strahan (2000) find that geographic markets for certain banking products under a certain size limit may be broader than the typically local market. They find that, in most cases, markets that correspond to US states explain price variations better than local markets.

<sup>247</sup> See Barth, Nolle and Rice (1997) and European Central Bank (1999).

<sup>248</sup> See White (1998).

<sup>249</sup> See European Commission, case M. 597 - Swiss Bank Corporation/S.G. Warburg, OJ C 180, 14.7. 1995, and case no IV/M 1043 - B.A.T./Zurich.

<sup>250</sup> Case No IV/M. 596 - Mitsubishi Bank/Bank of Tokyo.

<sup>251</sup> See case Comp/M. 319 - BHF/CCF/Charterhouse, paras 6 and 9.

<sup>252</sup> See Bajtelsmit and Bouzouita (1997).

<sup>253</sup> See Chidambaran, Pugel and Saunders (1997).

## *How consolidation affects prices*

### *Banking*

In general, competition in the banking industry has increased in the last few years due to deregulation and technological innovation.<sup>254</sup> Consolidation might affect prices, especially in local markets that witness significant increases in concentration, but these might be unusual cases given the decisions of antitrust authorities that have blocked altogether mergers that would have sharply reduced competition (eg Canada) or demanded compensatory measures such as the sale of branches in markets where the increase in market share resulting from the deal would have been threatening to consumers (see Annex V.1). In fact, the pre-emptive action of antitrust authorities limits the possibility that merging intermediaries could take advantage of their increased market share, thus reducing ex ante the incentives to merge in order to exert market power.

In the United States, for example, four bank mergers have been denied on competitive grounds in the last decade, and branch divestitures have been negotiated in more than 50 cases. In Italy, the Bank of Italy (the antitrust authority for the banking sector) demanded in 10 cases the sale or closing of branches as a condition to allow mergers. In the case of the Bank Austria-Creditanstalt merger, undertakings were required by the European Commission before authorising the deal. The Swiss Federal Competition Commission authorised the UBS merger conditional on some limitations, among them the divestiture of 25 branches (see Annex V.2). In Canada in 1998, proposed mergers involving four banks accounting for 70% of bank assets were rejected; one concern cited in the rejection was that the mergers would have led to a substantial lessening of competition that would have caused higher prices and lower levels of service. In January 2000, the acquisition of Canada Trust by TD Bank was approved, but the divestiture of 13 branches and the Canada Trust MasterCard portfolio were conditions of the approval. In addition, in each country an unknown number of merger proposals have been aborted due to competitive concerns raised by antitrust authorities.

The effects of consolidation on competition can be evaluated indirectly in cross-sectional studies comparing markets with different degrees of concentration at a point in time. Alternatively, they can be examined directly, by studying markets that have experienced consolidation. Studies using the former, indirect approach with European data generally find that higher concentration leads to less favourable conditions for bank customers.<sup>255</sup> The US evidence is consistent with that for Europe, indicating the existence of market power in connection with prices for small business loans and retail deposits.<sup>256</sup> Studies using data from the 1990s indicate that the connection between concentration and retail deposit rates has dissipated somewhat relative to the previous decade.<sup>257</sup> Examination of fees instead of interest rates shows that the degree of market power for retail deposits and payment services is relatively low.<sup>258</sup> Nonetheless, there is some empirical evidence which finds that competition

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<sup>254</sup> For example, Angelini and Cetorelli (1999) show that the Italian banking system has become highly competitive in the 1990s. For similar studies see also De Bandt and Davis (1999) and Shaffer (1994).

<sup>255</sup> De Bonis and Ferrando (1997) find a positive relationship between concentration and interest rates on loans in Italy. A similar result is obtained by Egli and Rime (2000) for Switzerland. Swank (1995) finds inverse relationships between concentration and price-competitiveness in Dutch markets for savings deposits and mortgages.

<sup>256</sup> See Berger and Hannan (1989) and Hannan (1991).

<sup>257</sup> See Hannan (1997) and Radecki (1998).

<sup>258</sup> See Hannan (1998).

has not been offset by consolidation even though an increase in concentration has been observed.<sup>259</sup>

Indirect evidence on cross-sector competition can be drawn from the change in banks' behaviour when their borrowers become listed on a stock exchange. A study of IPOs in Italy finds that after being listed, firms pay lower interest rates, receive more credit and increase the number of banks that lend to them.<sup>260</sup> This means that the availability of diverse sources of financing (in this case because of listing, but this might be also true in the case of competition from other players, including non-banks) causes banks to react, to the benefit of their customers.

Direct studies confirm that M&As may influence market prices. In the United States, a reduction in the interest rate on deposits is detected in markets that have been affected by consolidation.<sup>261</sup> A study of Italian M&As finds that loan rates increase when the market share of the acquired bank is large.<sup>262</sup> Estimates of the impact of mergers on prices for the Swiss retail banking market indicate that concentration may have a negative effect on prices.<sup>263</sup>

In conclusion, the empirical evidence suggests that there are entry barriers for banking markets and that market structure affects prices. While legal barriers to entry have been reduced over the last few decades, economic barriers such as economies of scale (although minimum efficient size is relatively small: see the section on consolidation and efficiency), switching costs and informational asymmetries remain important. Tests of the multi-market contact hypothesis do not find significant evidence of collusion among firms that compete against each other in different geographic markets;<sup>264</sup> competition issues seem limited to in-market behaviour.

### *Investment banks*

The investment banking industry is highly internationalised: among the largest firms in each geographic area are institutions from the United States, the United Kingdom, Japan, France, Germany, the Netherlands etc. This indicates that the market is international in scope. However, the same firms dominate product markets in most geographical areas: in equity underwriting, the top five firms consistently have a market share above 50%, be it initial public offerings (IPOs) or secondary offerings (see the tables in Chapter I). Moreover, the top ten firms, although with different rankings, come up in almost all "league tables", confirming the general impression that the industry is in fact highly concentrated, even at a supranational level. The same can be said of M&As advisory services, both for the United States and the European markets (see the tables in Chapter I). The US syndicated loan market and the debt underwriting market are less concentrated (see the tables in Chapter I), mainly because of competition from commercial banks.

There has been almost no analysis on competition for the investment banking sector. In Italy a thorough examination was performed by the antitrust authorities; it concluded that even though the market for investment banking was dominated by a small number of firms, there was no evidence of abuses.<sup>265</sup>

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<sup>259</sup> In Fuentes and Sastre (1998) for Spain, using the dispersion of interest rates as a proxy for competition, it is found that consolidation has not negatively affected the heightening competition which has developed in Spanish bank markets during the nineties.

<sup>260</sup> See Pagano, Panetta and Zingales (1998).

<sup>261</sup> See Prager and Hannan (1998) and Simons and Stavins (1998).

<sup>262</sup> See Sapienza (1998).

<sup>263</sup> See Egli and Rime (2000).

<sup>264</sup> See De Bonis and Ferrando (2000) for Italy and Pilloff (1999) for the United States.

<sup>265</sup> See Banca d'Italia and Autorità Garante della Concorrenza e del Mercato (1997).

A study of the US market for IPOs found that underwriting commissions cluster at 7% for issues below USD 100 million, while they are lower by half in other countries.<sup>266</sup> A possible explanation is that investment banks recognise that if they undercut each other they would collectively end up with lower profits; this behaviour is only possible if they have some form of market power, due, for example, to barriers to entry.<sup>267</sup>

One analysis of the US market for corporate securities underwriting finds that entry of commercial banks has significantly reduced underwriter commissions in the corporate debt market.<sup>268</sup> The reduction is strongest in those market segments in which banks' market share was larger. This suggests that entry of banks into the corporate securities market has significantly enhanced competition relative to the previous situation, in which only investment banks were active.

There is little or no research on the effects of M&As on prices and availability of investment banking services. However, the indirect evidence mentioned above suggests that in-market consolidation among important players might result in a significant increase of market power, thus harming customers. In fact, the sector is highly concentrated, and research for the United States – the largest world market – suggests that in some segments firms may already be exerting significant market power. Moreover, barriers to entry are likely to survive the technological developments foreseeable in the near future, as they are mainly due to the importance of reputation and to the placing power of underwriters.<sup>269</sup> However, at the moment, the consolidation process involving investment banks is mainly cross-sector, aiming at creating financial conglomerates with commercial banks, asset management and insurance companies, so that it may not represent a clear threat of anticompetitive behaviour.

#### *Insurance companies*

Two studies of insurance markets in the United States find higher prices in more concentrated markets. A study of a cross section of state markets for automobile insurance finds higher premiums in states with more concentrated industries.<sup>270</sup> An examination of a cross section of 18 types of insurance finds higher premiums in those insurance lines with higher four-firm concentration ratios.<sup>271</sup>

The last few years have witnessed considerable consolidation in the insurance industry, particularly in the United States and Europe, including large mergers between banks and insurance companies. Nonetheless, according to an OECD report,<sup>272</sup> the insurance market is competitive, although the extent of competition seems to vary significantly from product to product and from country to country.

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<sup>266</sup> See Chen and Ritter (2000).

<sup>267</sup> This case is similar to that of market-makers in stock markets. In 1998, NASDAQ market-makers agreed to pay a large fine in a settlement that followed the suspicion that they were colluding in fixing the bid-ask spreads. Although the issue did not involve consolidation, it is still suggestive of behaviours that might intensify as M&As reduce the number of players in reputation-sensitive industries.

<sup>268</sup> See Gande, Puri and Saunders (1999). The study finds that the reduction in underwriting spreads has not been compensated by higher yield spreads; on the contrary, yield spreads have also declined.

<sup>269</sup> There is some evidence that a security's features and the underwriter's reputation influence the level of underwriting commissions. See Carow (1999).

<sup>270</sup> See Bajtelsmit and Bouzouita (1998).

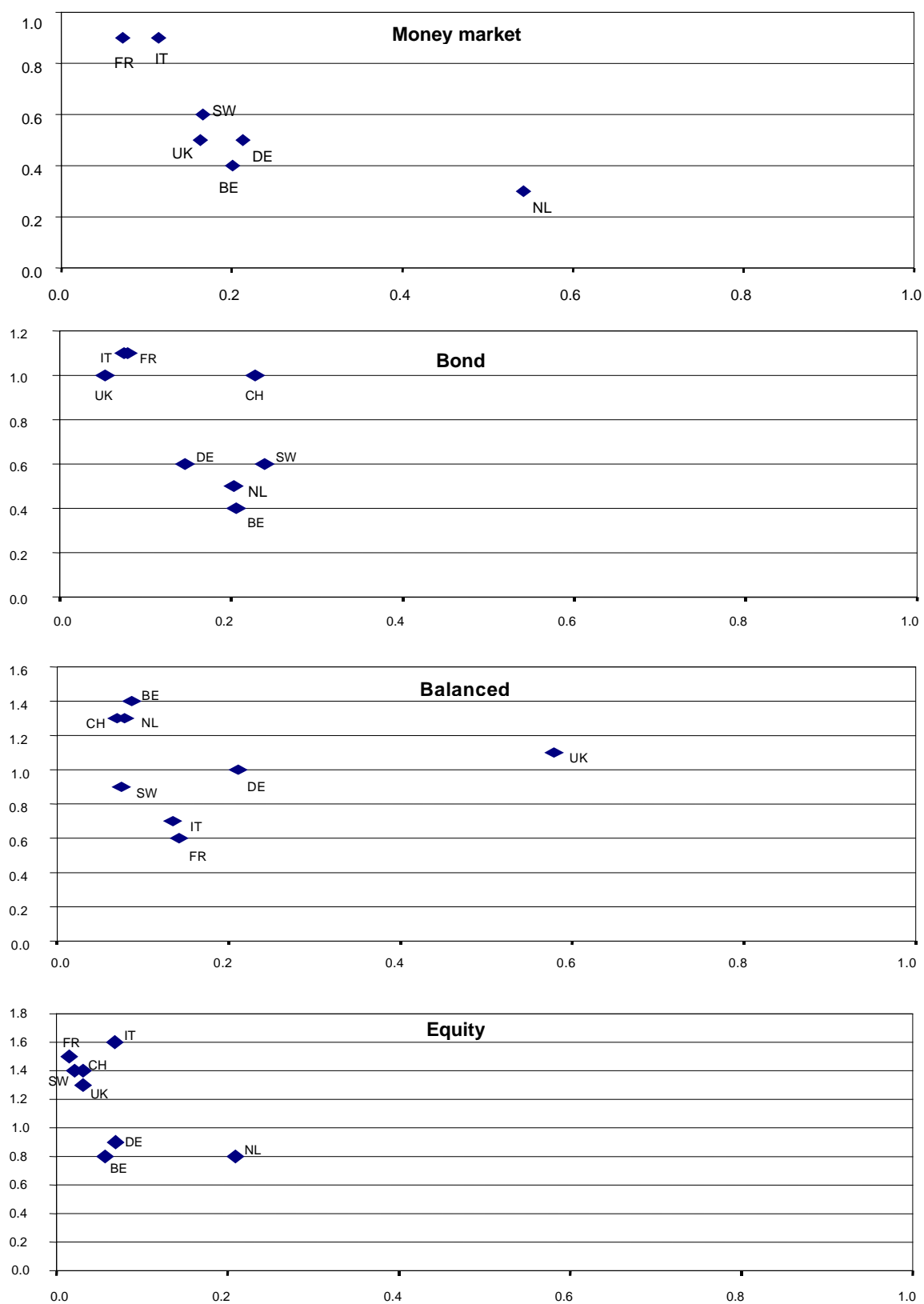
<sup>271</sup> See Chidambaran, Pugel and Saunders (1997).

<sup>272</sup> See OECD (1998).

### *Mutual funds*

At first glance, there seems to be a negative relationship between market concentration and fees in the European mutual funds industry, in particular for money market, bond and equity products (see Chart V.2). This suggests either that market power is not a relevant issue in this industry, or that the possible existence of market power is more than offset by efficiency gains or scale economies that are passed on to consumers. However, given that most countries have similar levels of concentration but different average fees, the explanation for the cost and revenues structure might be country-specific for each segment of the mutual funds industry.

Chart V.2  
**Management fees and concentration in mutual funds industry**  
 (percentage points and Herfindahl-Hirschman index)



Source: Lipper. Management fees (vertical axis) are simple averages of maximum charges. The Herfindahl-Hirschman index (horizontal axis; monopolistic market=1) refers to market shares of the ultimate parent companies of fund management groups.

## **Conclusion**

Overall, the evidence favours the hypothesis that more concentrated markets are less competitive and that large in-market mergers may significantly increase market power, thus harming customers, especially in retail banking markets and markets for some investment banking services. However, technological changes and product innovations may alter the results based largely on data from a few countries and referring to the early 1990s or earlier.

## **The future impact of technology**

The diffusion of the internet and of electronic commerce could have major implications for the geographic market definition and therefore for the relationship between M&As and competition. Although electronic finance is not yet widespread, forecasts suggest a rapid growth in the near future; the penetration of online banking in Europe is projected to grow from 8% in 2000 to 22% in 2003; in the United States it should grow from 15 to 33%.<sup>273</sup> If financial services can be purchased or supplied effectively by electronic means, geographic limits to market expansion may disappear, increasing the competition from firms located in other areas. Developments in electronic technology could also reduce entry barriers by reducing search costs for consumers, for example by facilitating the development of third-party information brokers. Language barriers may become more significant than entry barriers due to geographic distance. On the other hand, technology could increase barriers to entry due to the large fixed costs of adopting many new computer technologies.

The short- and medium-term impact of e-finance, however, should not be exaggerated for several reasons. First, it is still relatively costly for consumers: the need for a personal computer or mobile telephone to access the internet, and the ability to use these tools still constitute a barrier to its diffusion. Second, electronic banking does not reduce information costs for products where the bank has to rely on information about local markets. Furthermore, new entrants may be forced to back up their internet entry with massive advertising outlays before they can effectively compete. Finally, for some products, customers may demand more than online contracts, however customised. Examples are high-value, infrequently bought items such as life insurance and mortgages, for which one might research terms and conditions online but may wish some personal advice before buying them.<sup>274</sup> These reasons may induce customers to keep using local suppliers, even if some services can be purchased electronically from a distant firm.

The picture might change considerably if intermediaries that operate exclusively on the internet emerge. Such firms may be able to offer more attractive conditions than those offered by traditional firms, since they do not need to support a branch network. At the moment, however, the legal framework for such firms is missing, in particular with regard to consumer protection and money laundering. Moreover, in many countries, a customer still has to show up personally in order to open a bank account. In addition, in their lending activity banks may want to continue to rely heavily on local information in the future, as offering some products (eg mortgages) on the internet is considered highly risky.

However, there are also reasons for which the development of e-finance may reduce, rather than increase, competition. The typical financial institution increasingly operates in multiple markets, partly in an attempt to sell bundles of products to customers. Due to technological progress,

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<sup>273</sup> A forecast of the penetration of online financial services in Europe in 2003 shows that around 20% of mutual funds and credit cards will be acquired online, while less than 10% of mortgages and life and pension products will be, even though internet users will represent more than a third of the total population. See JP Morgan (2000), p 29 and 37.

<sup>274</sup> JP Morgan (2000), p 6 and 25.



these bundles may become increasingly customised for a large number of customers. As a result, switching costs would increase and customers may become locked in to their existing suppliers, thereby reducing potential market entry. Finally, due to technological advances, new ways of distributing financial services may be created which might only be exploited by vertical consolidation of financial institutions with non-financial partners such as telecom and media enterprises. From this perspective, competition in non-financial markets may also become relevant.

### **Antitrust policy**

In this subsection, the antitrust rules that are applied in cases of financial sector consolidation, as well as experiences with their implementation, are described for a sample of G10 countries. The regulatory record on antitrust regulation of financial markets is not complete. In many countries, antitrust concerns have not played a prominent role in regulating mergers to date.

All of the countries covered by this study examine both the structural effects of proposed mergers and the behavioural aspects that may mitigate the anticompetitive effects of structural changes. Large countries with many local banking markets tend to have specific structural rules that serve as screens to determine whether a proposed merger might be anticompetitive in a particular market. If the structural effects of a merger exceed that screen, the merger is examined more closely and behavioural aspects are taken into account.

Smaller countries and countries in which there is not a long history of mergers among financial institutions, such as Japan and most European countries, do not have structural screens for processing mergers. Because of a lower volume of mergers, each proposed merger in these countries can be examined more intensively. An annex to this chapter contains the details of the rules and implementation of antitrust policies in individual countries.

Consolidation in the European Union is an example of the problems that might arise for antitrust authorities if financial institutions continue merging across borders and sectors. Of the decisions taken concerning the banking sector, the only case which gave rise to potential difficulties was the merger between Bank Austria and Creditanstalt.<sup>275</sup> The merged entity would have become not only the leading supplier of banking services in Austria, but also the only bank with significant market shares in all relevant product segments. However, Bank Austria gave undertakings to the European Commission that eliminated the competitive concerns relating to the proposed merger.

Other banking cases reviewed by the European Union did not present competitive concerns for one or more of the following reasons. First, for wholesale banking or financial services related to capital markets, there are large numbers of international suppliers – that is, the market in general is not highly concentrated and market shares are rather fragmented. Consequently, customers have had sufficient choice and, barring unlawful collusion, there are no concerns as to restrictions of competition. This conclusion was drawn for example in the merger between Schweizerische Bankgesellschaft and Schweizerischer Bankverein to create UBS, at the time the largest banking institution in Europe. Second, several banking consolidations assessed by the Commission have involved companies which had no activities or only limited activities in the European Economic Area (eg Kyowa/Saitama or BankAmerica/Nationsbank). Finally, in a number of cases (such as the Deutsche Bank/Bankers Trust merger) the operations in question were largely complementary in nature, since there were no substantial overlaps in the activities of the companies.

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<sup>275</sup> All other banking M&As of which authorities were notified were cleared within the statutory four-week period.

#### **4. Consolidation and the availability of credit flows**

Consolidation in the banking industry has raised concerns of a reduction in the availability of credit to small and medium-sized enterprises due to the decrease in the number of small banks that specialise in this type of lending.

There are two sets of arguments as to why this may occur. According to the first, larger and more complex credit institutions have a lower propensity to lend to small firms. Hence, if the industry moves towards a structure with a small number of large banks, credit flows to small borrowers may be reduced. The second argument emphasises the dynamics of consolidation, which may cause a permanent disruption of credit relationships. To the extent that credit relationships between banks and small firms are characterised by soft information, which is less transferable than hard information such as balance sheet and income statements, small firms could face difficulties in finding credit from other sources.

When assessing the effects of M&As on credit flows to small firms, it is necessary to analyse also the behaviour of other market participants, since borrowers that are dismissed by the merging banks may be served by other banks or financial institutions. The effect of the spread of new technologies should also be taken into account because it may have an impact on the lending practices of banks, large or small, and provide new ways of dealing with the information asymmetries that are a fundamental aspect of lending relationships with small firms.

In this section, the relative weight of small firms for G10 countries is briefly examined. After discussing reasons why consolidation may adversely affect credit flows to small firms, the existing analytical evidence is summarised.

##### **The importance of small business credit**

Small and medium-sized enterprises (SMEs) make a substantial contribution to national output and job creation. In 1996, on average, they accounted for 66% of total employment in Europe (Table V.5), ranging from 57% in the United Kingdom to 80% in Italy. SMEs are also very important in the United States and Canada, although slightly less than in Europe, as they still represent more than 50% of the labour force. In Japan, SMEs appear to have the highest relative weight in all sectors of the economy compared to the United States and the 15 nations of the European Union, but the data are distorted by the fact that the national statistics are based on establishments rather than enterprises or enterprise groups.

Table V.5  
Share of employment accounted for by SMEs

		Industry and energy	Construction	Trade, hotels, restaurants	All sectors
Belgium	1995	55.9	93.7	90.4	72.6
Canada	1994	44.3	89.3	75.6	52.1
France	1995	51.2	84.9	81.3	65.9
Germany	1995	37.6	87.1	73.3	57.7
Italy	1994	74.1	95.2	94.8	79.9
Japan	1993	66.9	95.4	83.9	76.5
Netherlands	1994	49.9	85.2	77.9	66.4
Sweden	1995	46.8	70.9	79.5	60.9
Switzerland	1995	62.2	90.4	76.7	68.8
United Kingdom	1995	47.9	88.2	58.1	56.8
United States	1993	37.5	88.9	58.5	52.9
<i>EU 15</i>	<i>1995</i>	<i>52.6</i>	<i>87.7</i>	<i>78.9</i>	<i>65.7</i>

Source: Eurostat; Enterprises in Europe. For an enterprise to be classified as an SME it must have no more than 249 employees, its annual balance-sheet total must not exceed ECU 27 million, no more than 25 percent of the capital of the enterprise must be controlled by one or more other enterprises, and its annual turnover must not exceed ECU 40 million. Only enterprises with at least one employee are included.

Economic performance may benefit from the presence of SMEs because they tend to be more flexible than larger firms, thus reducing the costs of organisational changes and innovation. Moreover, SMEs are characterised by high rates of entry and exit: failing enterprises are more quickly replaced in sectors where small businesses are widely represented. Thus, a sound small business sector, especially during downturns, may contribute substantially to the process of job creation.

SMEs tend to rely more on debt financing relative to large firms (see Chart V.3) with the exception of the United States, where firms face fewer difficulties in accessing equity markets and where the venture capital industry is more developed.<sup>276</sup> Another explanation could be that the aggregate data reflect the sectoral composition of SMEs in each country, as different industries have different financial needs in terms of the mix between equity and different kinds of debt financing.

Breaking down financial debt by source shows that SMEs are mainly financed by banks (Table V.6) and hold a share of bank credit that is significantly higher than that of large enterprises. The only countries that are exceptions to this rule are Japan, where large firms have strong ties with credit institutions, and Belgium. Small firms are very highly dependent on banks in Germany and Italy.

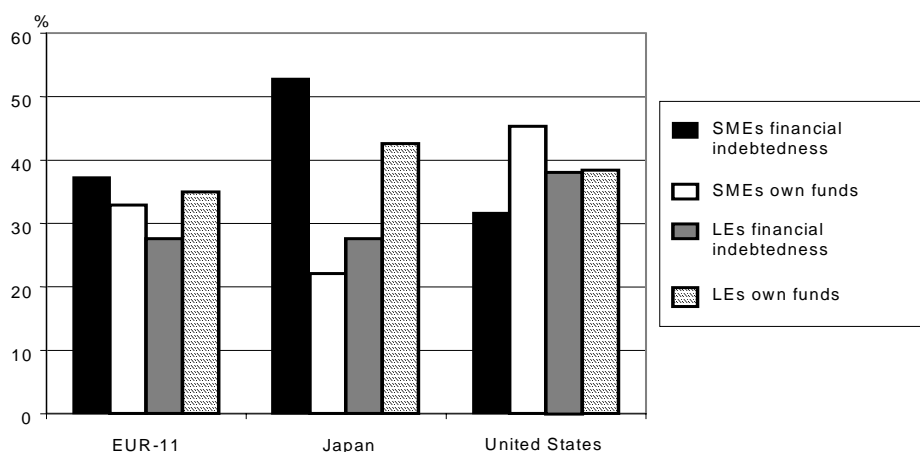
In conclusion, bank credit flows to SMEs appear to be very important in all G10 countries, particularly in Europe. Currently, SMEs are highly dependent on banks but the total availability of funds for them depends not just on consolidation but on all future developments of the

<sup>276</sup> For example, in the European Union or Japan, the concept of stock markets specialising in SMEs is a rather new phenomenon, whereas the American Nasdaq was created in the early 1970s.

financial sector. The costs of accessing capital markets and the availability of other sources of financing might change in the future, but demand for traditional forms of bank financing is likely to remain substantial.

Chart V.3

**Financial indebtedness and own funds ratio for small and large firms**



Definitions: Financial indebtedness = ratio of short-term loans and amounts owed to credit institutions to total liabilities. Own funds = ratio of own funds less unpaid share capital to balance sheet total. LEs = large enterprises.

Source: DGII, BACH.

Table V.6

**Share of bank debt to total debt for small and large firms**

Country	Bank debt/total debt	
	Small	Large
Belgium (1998)	42.2	50.1
Canada (1996)	53.1	n.a.
France (1998)	44.3	21.2
Germany (1998)	64.1	29.9
Italy (1998)	64.6	27.3
Netherlands (1998)	54.9 <sup>a</sup>	35.9
Japan (1995)	28.2	33.2
United States (1995)	40.9	7.9 <sup>b</sup>

Note: Small firms have sales less than EUR 7 million; large firms have sales greater than EUR 40 million.

<sup>a</sup> Also includes medium-sized firms. <sup>b</sup> The figure refers to medium-sized firms, as no information is available for large firms.

Source: BACH; for Canada: "What's New in Debt Financing for Small and Medium-sized Enterprises", The Conference Board of Canada, 1997.

## **Why consolidation may (not) reduce credit flows to small firms**

### ***The impact of consolidation on small business lending***

Consolidation increases the size and complexity of the credit institutions involved. There are several arguments as to why this may reduce the provision of credit to small firms.

Smaller banks are constrained in lending to large firms, while large banks have access to a wider pool of borrowers and to a different mix of assets and financial products.<sup>277</sup> Once the size constraint is eased, banks might shift their portfolios of loans in favour of larger borrowers or even shift their assets composition away from traditional lending activities.

A second reason could be that in providing credit to small borrowers, characterised by large information asymmetries, small banks enjoy a cost advantage over other banks both in loan origination and monitoring. Therefore, once small banks are replaced by larger ones, a decrease in small business credit may be observed because loans that were profitable are no longer so.

Small firms are considered significantly more opaque than larger ones; since they do not have traded securities on public markets and the requirements on their financial statements are looser, their quality may be more difficult to assess. Banks develop relationships that allow them to overcome asymmetric information problems because detailed knowledge of the firms is gained over time through contact with them.

Small banks may have a comparative advantage in issuing relationship-based loans and in monitoring small firms' activities. Due to their knowledge of the community in which the firm operates, they may have access to soft information on the entrepreneur and on local market conditions. As banks consolidate, their organisational structure tends to become more complex, and the lending decisions may be made at corporate headquarters located at a distance from the firms' activities. It may not be efficient to combine the provision of retail services to small customers with the provision of wholesale capital market services to large customers.<sup>278</sup>

Moreover, M&As usually involve deep restructuring and changes of branch managers. The reassessment of the loan portfolio by new managers who might not possess this soft information may imply the interruption of some of the existing relationships. Borrowers demanding relationship-based credit will find it difficult to convey their quality to other banks, due to adverse selection problems, and may end up being rationed.

On the other hand, there are reasons why these concerns may be unjustified and small firms might not face problems due to the creation of larger and more complex banking institutions and may even benefit from them. Larger banks or bank holding companies may act as efficient internal capital markets and allocate financial resources to their best use (although internal administrative allocation has problems of its own). In addition, having access to greater diversification opportunities, they can fund a larger number of small and riskier firms. Moreover, during periods of financial stress, large and diversified financial institutions may be stronger and more able to keep providing services to their customers than small, non-diversified local banks. Therefore, the ultimate effect of M&As on small business lending has to be evaluated on empirical grounds.

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<sup>277</sup> In most countries there are regulatory limits on loan concentration; even in the absence of such limits a bank would not issue loans that account for a high proportion of its capital.

<sup>278</sup> See Berger and Udell (1996b).

### ***The impact of changes in the degree of competition***

Consolidation may also influence the provision of credit to small firms if it changes the degree of competition in the banking sector. Two opposite mechanisms are likely to be relevant.

Abstracting from informational asymmetries, a less competitive banking system should increase the cost and decrease the supply of credit for all categories of borrowers, thus resulting in less favourable conditions. As small firms make extensive use of bank credit, a decrease in competition may generate significant problems.

An alternative view, which takes into account information asymmetries, suggests that a more competitive banking system may be detrimental to borrowers, such as new and small firms, for whom “soft information”, as discussed above, is likely to be of significance.<sup>279</sup> The reason is that a highly competitive environment may discourage intermediaries from investing in long-term relationships, which requires a degree of market power. If the bank expects to be able to extract rents in the future, it will offer lower rates to a borrower facing temporary credit problems. Hence, a reduction in market power of banks in these circumstances may lead to a reduced availability of credit to small firms or new borrowers.

### ***How competitors react to mergers and acquisitions***

The total change in the supply of small-business credit resulting from M&As also depends on the reactions of other lenders and on broader developments in the financial sector. Even if a bank reduces its supply of relationship-based loans because it faces diseconomies associated with supplying transaction-based services, other banks that are not burdened by these diseconomies may expand their own supply.

The development of new banks, which are a source of borrowing for small firms, should also be considered. Since de novo banks are small, they issue business loans to small firms. In addition, these new banks may have been created by loan officers who have left consolidating institutions, taking some of their relationship-based loan portfolios with them, or who believe that they possess above average screening capabilities based on knowledge of the local market.

Of course, it may be the case that even if borrowers dropped by consolidating banks are picked up by other lenders, the conditions they will face may be worse (ie higher rates or more collateral). Moreover, the possibility of finding another lender is likely to be influenced by the structure of the banking industry: if the industry is highly concentrated it may be difficult for a small business to find alternatives. If, instead, there are many banks even after the consolidation, it may be relatively easier to shift.

The overall impact on small firms of changes in the supply of bank credit resulting from M&As will also depend on the availability to these firms of non-bank sources of funding. These include equity finance, trade credit and funding by non-bank financial institutions. The access to these alternative sources of finance may vary with the earnings profile of the firm and the category of business in which it operates. Small firms in high-growth, high-risk sectors are more likely to obtain external private equity (ie “angels” and venture capitalists), while firms with steadier income flows and tangible assets more easily obtain external debt finance from banks and other financial institutions because they have collateral.

In countries with particularly concentrated banking sectors (eg Australia, Canada and the Netherlands) consolidation may raise particular concerns for marginal small business borrowers

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<sup>279</sup> See Sharpe (1990) and Petersen and Rajan (1995). According to this view, the relationship between competition in banking and the availability of credit to new firms is likely to be affected by the informational structure of the market: the ability of banks to obtain information about their clients’ creditworthiness, the extent to which that information is appropriable, the presence of credit rating agencies, and the degree of heterogeneity of borrowers and their ability to signal their creditworthiness.

that may be too risky for some, but not all, financial services providers. For many small businesses seeking financing, there is value in having more rather than less choice. Having a wide range of alternatives for bank financing, credit advice and a variety of other services offered by the banks is particularly important to marginal borrowers because it increases the probability that they will be seen as an attractive business opportunity by at least one service provider. For these borrowers, the question of the availability of financing options is not only a matter of obtaining competitive rates but a question of enhancing the chances of getting a loan at all. In these countries, leaving decisions on credit allocation in the hands of even fewer, larger institutions raises serious concerns that go beyond the issue of competition to the availability of credit at any price.

In Canada, for example, in 1998 four banks accounting for 70% of bank assets announced their intention to merge into two firms. One of the concerns cited in the rejection of the proposals was that the range of remaining alternatives for bank financing and banking services (especially for marginal small firms) would be reduced. The government felt that the question of the availability of financing options is not just a question of competitive rates but a question of enhancing the chances of getting a loan at all.<sup>280</sup> Unlike in the United States, the emergence of local small business lenders to fill the gap left by a merger among traditional small business finance providers may not be likely.<sup>281</sup>

### ***The impact of technology***

A consideration of increasing importance for banks' propensity to lend to small firms is the impact of technological change. Large banks are increasingly able to use credit scoring to make small-business loans and to process applications using automated and centralised systems. Scale economies allow these banks to generate large volumes of small-business loans at low cost, and improved technology and marketing, which change the delivery of financial services to small customers, make this possible even in areas where they do not have branch offices.<sup>282</sup> Credit scoring may also encourage more small-business lending because it gives banks a tool for pricing risk more accurately and makes the securitisation of these loans more feasible than in the past.<sup>283</sup>

A key issue, however, is that information technology is expected to reduce the cost of processing hard information. Therefore, it will benefit mainly "transaction-type" loans, which, like credit card loans, do not need much information-intensive credit evaluation beyond what is done in a credit scoring model based on quantitative data. It will not necessarily reduce the cost, and indeed may increase the relative cost, of processing the sort of information typical of relationship lending.<sup>284</sup>

An important implication of this is that small customers with strong financial statements and valuable collateral should not experience a reduction in credit availability. On the other hand, small borrowers who do not qualify for a sufficiently high credit score will continue to depend heavily on small banks, which offer traditional relationship-based loans. Hence, they may face an increased cost of funds or a reduced availability if credit scoring practices become dominant in the industry.

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<sup>280</sup> Statement by the Honorable Paul Martin, Minister of Finance, Ottawa, Canada, 14 December 1998.

<sup>281</sup> See McFetridge (1998).

<sup>282</sup> See Mester (1999); see also Berger, Saunders, Scalise and Udell (1998).

<sup>283</sup> The securitisation of small-business loans has usually been limited, not least because of their heterogeneous nature. Credit scoring will tend to increase the standardisation of loans.

<sup>284</sup> See Petersen (1999).

## **The empirical evidence**

Empirical research on consolidation and small-business lending has followed two approaches. The first one infers indirectly the effects of M&As in the financial industry by analysing the relationship between firm size and bank size, using both market-level and bank-level data. The second one examines directly the changes that occur in small-business lending by the institutions involved in M&As. The majority of the existing literature is based on US data; some evidence exists for Italy.

### ***Indirect evidence: bank size and small-business lending***

Evidence shows that larger banks have a lower share of small-business loans to total loans. This is usually interpreted as evidence that consolidation may harm small-business lending.<sup>285</sup>

The effects of bank size on small-business lending have also been studied employing market-level data. The relative weight of small banks in local credit markets has not been found to influence the probability of a small firm having a line of credit from a bank. Some short-run disruption may occur, but firms in areas with fewer small banks do not appear to be more credit constrained.<sup>286</sup>

The hypothesis that increased organisational complexity may negatively affect the propensity to lend to small firms has found some support in the empirical literature. Results from investigating loan contract data suggest that larger banks tend to issue many fewer loans to these borrowers, although they charge lower rates and require less collateral. A similar result holds for banks with greater organisational complexity, as measured by proxies of the holding company structure.<sup>287</sup>

### ***Direct evidence on M&As and small-business lending***

Consolidating banks often reduce their total small-business lending. Several explanations have been suggested for this result. A first explanation is that the bidder tends to drive the share of small-business lending in the portfolio of the merged bank towards the share that the bidder held prior to the merger.<sup>288</sup> Since the bidders are usually larger than the targets and hence have a smaller share of small-business loans, on average, M&As tend to reduce the availability of credit to small firms.

A study on the effects of bank M&As in Italy finds that banks involved reduce their share of credit to small firms.<sup>289</sup> The reduction does not seem to be associated with organisational problems, because it follows M&As that generate differing levels of complexity for the integration of the banks involved. It does not appear to be related to loss of information either, because M&As are not followed by a reduction in the number of employees. In fact, the reduction of the share of credit to small firms seems part of a broader strategy of asset allocation that changes the composition of the loan portfolio towards larger, less risky borrowers and reduces credit to low-quality firms. This is consistent with the results of another study which finds that small borrowers who maintain their relationship with the consolidated bank are those least harmed by increases in interest rates.<sup>290</sup> At the local (provincial) level the temporary

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<sup>285</sup> See Berger, Kashyap and Scalise (1995).

<sup>286</sup> See Jayaratne and Wolken (1999).

<sup>287</sup> Berger and Udell (1996a) test whether large and complex banks supply less credit to small business borrowers relative to smaller, less complex banks.

<sup>288</sup> See Berger, Saunders, Scalise and Udell (1998), Peek and Rosengren (1998) and Walraven (1997).

<sup>289</sup> See Focarelli, Panetta and Salleo (1999).

<sup>290</sup> See Sapienza (1998).



reduction in lending to small firms is comparable in size to the reduction of lending to all firms, thus confirming that consolidation determines a general revision of the loan portfolios; borrowers in good standing (including small ones) do not appear to be negatively affected by consolidation.<sup>291</sup>

Overall, the evidence discussed above suggests that consolidating banks do adjust their small-business lending strategy after consolidation. The direction is generally towards a reduction, but there are cases in which the change is in the opposite direction, as in the case of a small bank buying a larger one. Therefore, from a policy standpoint, the main finding of the papers summarised in the previous sections cannot be used as an accurate predictor of what will occur in the future and in different countries, since the impact of M&As on small-business lending depends crucially on the motivations of the deal and on the type of banks involved. Moreover, what is relevant is the total availability of credit to small borrowers; accordingly, some studies (discussed below) do not focus exclusively on consolidating banks but extend the analysis to the behaviour of other institutions in the same markets.

### ***The reaction of competitors***

Even if consolidation involves the interruption of some relationships, if the borrowers are able to find other lenders at the same cost there would be no effect on total lending. Other banks or other providers of financial services may pick up small-business loans dropped by merging banks, if these loans are profitable.

Some evidence on a positive reaction by the competitors of consolidating banks that reduce small-business loans has been found in US data.<sup>292</sup> One study examined the effect of M&As on the small-business lending of other banks in the same local markets and found that they tend to offset the reduction in the supply of credit to small firms by the consolidating banks. Another study employing market-level data finds that in markets where consolidation reduces small-business lending other institutions tend to increase it.<sup>293</sup>

Finally, de novo banks tend to lend more to small firms than other banks of similar size,<sup>294</sup> so entry may be another source of substitutes. However, de novo banks are generally small; therefore, their effect is likely to be felt in the long term. Consolidation may be itself a determinant of entry in local markets as the structure of the banking sector changes; lending to small firms may shift across different categories of banks.<sup>295</sup> One problem with the existing studies is that only the quantity of credit issued is examined but no information is available on rates and other contract terms.

### ***Impact on birth rates of firms***

As discussed previously, consolidation changes the competitiveness of the banking sector, thus indirectly influencing credit allocation. Several studies have investigated the relationship between the degree of competition and the availability of credit to small firms.<sup>296</sup>

In more concentrated banking markets commercial loan interest rates tend to be higher, especially for small firms that face higher switching costs.<sup>297</sup> Other research has found, instead,

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<sup>291</sup> See Bonaccorsi di Patti and Gobbi (2000).

<sup>292</sup> See Berger, Saunders, Scalise and Udell (1998).

<sup>293</sup> See Avery and Samolyk (1999).

<sup>294</sup> See DeYoung (1998) and Goldberg and White (1998).

<sup>295</sup> See Berger, Bonime, Goldberg and White (1999).

<sup>296</sup> See Petersen and Rajan (1994).

evidence of the positive effect of market power described by the theory on relationship lending: young firms in concentrated markets receive more credit than do similar firms in competitive markets, but such difference tends to disappear as firms become older.<sup>298</sup>

Concentration has been found to have a strong negative effect on the aggregate rate of birth of firms. Another study has found that in local banking markets the relationship between concentration and the rate of birth of firms differs across industries. Specifically, concentration appears to be relatively beneficial (or less unfavourable) for firms in highly opaque industries, as these industries have relatively higher rates of firm birth.<sup>299</sup>

## **Conclusions**

Empirical evidence suggests that consolidation may have diverse effects on small-business lending. Although there are reasons for concern that the reduction in the number of smaller institutions may harm small-business lending, there is no evidence on the quality of borrowers that are discontinued credit. What appears to be most relevant is how permanent changes in market structure affect the competitiveness and efficiency of the industry, and how these factors will affect allocative choices of banks across different segments of borrowers. In addition, there is little evidence yet on how technology and the blurring of boundaries across financial products change relative costs and revenues from servicing different types of borrowers.

## **5. Policy issues**

### **Competition policy**

Policymakers and regulators should take into account how competition is affected by the ongoing consolidation process and changes in technology, in particular with regard to the evaluation of the benefits to the consumer and the burden laid on the industry.

There is little evidence on the benefits of consolidation (if any, they seem to be smaller for larger firms) and there are concerns about possible abuses of market power, especially by investment banks and by providers of local bank products such as small-business lending and financial services for households. Therefore, when proposing transactions, supervisors of financial institutions should carefully examine claims of efficiency improvements (mainly cost reductions to be passed on to consumers) that firms believe they will generate. This is especially important in cases in which a merger could raise significant issues of market power, such as for markets with significant economic or regulatory barriers to entry, or that are highly concentrated.

The impact of consolidation on competition can be assessed only by using an empirically supported definition of the relevant product and geographical markets. For example, electronic commerce and electronic banking may increase competition by enlarging the markets geographically; on the other hand, they could facilitate consumer lock-in by increasing switching costs, thus changing the definition of the relevant bundle of products to be analysed. Since financial markets are constantly changing, their definition has to be scrutinised regularly, taking into account the differential impact on different classes of consumers, such as households, small and large firms etc.

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<sup>297</sup> See eg Hannan (1991).

<sup>298</sup> See Petersen and Rajan (1994 and 1995).

<sup>299</sup> See Bonaccorsi di Patti and Dell’Ariccia (2000).

In particular, the impact of technological changes could be more powerful for households than for small firms, since standardised techniques such as credit scoring models are more suited to the former. The analysis of the relevant markets for antitrust purposes should focus less on institutional categories, such as administrative boundaries (provinces, counties etc) or classes of firms (banks, insurance companies etc); it should take more into account changes in the geographic and the product dimension as well as changes in demand. In any case, the goal of antitrust authorities should be to maintain competitively structured markets.

In order to increase competition in an environment subject to mergers that significantly reduce the number of providers of financial services, obstacles to the mobility of customers should be removed. This could be done for example by setting and enforcing transparency rules regarding products and prices, or by simplifying the process of changing providers, eg by allowing customers to keep their account numbers and by enforcing the transfer of historical transaction information between intermediaries. Better flows of information between customers and financial institutions could also decrease the asymmetric information problems between small firms and banks; this in turn would limit the probability of credit rationing and relax one of the constraints set by regulators on M&As.

### **Alternative sources of finance**

The problems faced by small firms in funding their projects might be alleviated if alternative sources of finance, both in terms of providers and products, are developed. This is particularly relevant for countries where firms rely more heavily on bank finance; the diversification of firms' financial structure could be encouraged, for example, by moving towards fiscal neutrality between debt and equity, by increasing the protection of minority shareholders, by fostering the development of equity markets or by decreasing the costs of being listed.

Alternative sources of finance, which include venture capital, private equity markets, specialised financial institutions and stock markets for small firms, may become more available as information generating and storing costs decrease and expertise in this field becomes more widespread, especially in Europe and Japan. Policies that encourage transparency and promote awareness of financial markets (such as, for example, incentives for individual pension plans and the diffusion of ratings) would be helpful in this respect.

Cross-industry competition may be beneficial to consumers both indirectly, by improving their outside options, and directly, by competing with existing products and by offering new products that increase consumers' choice. Eliminating policies that limit cross-industry competition would have a beneficial effect. In countries with particularly concentrated market segments, however, the costs and benefits associated with cross-industry M&As would have to be evaluated with special care.

### **Adequacy of data flows**

Antitrust policy needs data on market shares, prices, and volumes of activity in key financial services business lines in order to be enforced efficiently. The financial services industry already regularly provides some of the relevant data; however it would be advisable to enrich the available information, especially at the firm level. The burden of these added reporting requirements should be minimised; authorities should explore ways to encourage financial institutions to contribute the needed data on an ongoing basis, possibly by publishing in return the aggregate data they collect for policy purposes.

In order to limit unjustified costs to the industry, authorities could focus on collecting data only in areas where the consolidation of the financial sector is likely to have significant effects, such as small-business lending and retail branch banking services. In some countries it might be possible to rely on sample surveys of financial institutions rather than having the entire financial services industry report data.

In general it is important to consider what kind of information should always be readily available so that the impact of M&As can be quickly assessed. In the area of small-business lending, for example, it is essential that governments and regulators be able to assess the impacts of financial sector consolidation on the availability of credit for small firms. At the moment, in many countries there is a lack of specific data on small-business lending and other forms of debt financing such as leasing, as well as little information on the availability of equity financing (eg venture capital).

### **Technology and consolidation**

Technological progress is changing the landscape of the financial industry. It may increase the importance of economies of scale and scope, raising the minimum efficient size for financial institutions. This means that larger institutions could achieve cost reductions and pass them on to consumers, as long as markets remain sufficiently competitive. However, technological progress can also decrease competition by contributing, for example, to locking in consumers through increased switching costs. In this case, larger, more technologically sophisticated institutions could take advantage of their customers. Antitrust authorities should therefore focus on anticompetitive behaviour at least as much as on changes in market structure and on efficiency gains when analysing the potential effects of M&As.

## **Annex V.1**

### **Antitrust rules and their implementation in specific countries**

#### **Australia**

##### ***Rules***

Competition policy in Australia is governed by the Trade Practices Act of 1974. The Act prohibits M&As that have the effect, or likely effect, of substantially lessening competition in a market. The Australian Competition and Consumer Commission (ACCC) is responsible for administering the Act.

##### ***Implementation***

To determine whether a merger breaches the Act, the ACCC must define the relevant market and judge whether the merger would substantially lessen competition.

In defining a market, the ACCC takes into account the availability of substitutes, the geographical area over which an individual firm could exercise market power and the length of time that it may take other suppliers to develop substitutes for the merged firm's products. In its assessment of recent applications for banking mergers, the ACCC has indicated that it considers markets for wholesale banking (such as corporate fund raising and derivatives trading) to be national in scope; however, a more narrow, regional or state-based market has been applied to retail banking.

In assessing whether a proposed merger would substantially lessen competition, the ACCC takes into account such factors as market concentration, import competition, barriers to entry, the presence of vigorous and effective competitors, and the pace of product innovation in the market.

In assessing market concentration, the ACCC considers both the merged firm's market share and the share of the four largest institutions in the market. If the post-merger combined market share of the four largest firms is 75% or more, and the merged firm's share is 15% or more, the ACCC will need to consider other factors before permitting the merger. If the merged firm's market share exceeds 40% (regardless of the market share of the four largest firms) this also prompts further scrutiny by the ACCC.

In addition to the requirements set out in the Act, the Commonwealth Government has indicated that mergers amongst the four largest banks will not be permitted until competition in the financial industry, particularly in small-business lending, has substantially increased.

#### **Belgium**

##### ***Rules***

Since 1991, the protection of economic competition in Belgium has been based mainly on theoretical foundations identical to EU competition law. According to the law of 5 August 1991 on the Protection of Economic Competition, as changed in 1999, three authorities oversee its application: the Commission of Competition (advisory body on general competition policy), the Service of Competition (the public administration charged with inquiries and the follow-up of the law's application) and the Council of Competition (an administrative judicial body that ensures the law's application and sanctions offences). They are the competent authorities for all economic sectors; for the financial sector, there is an ex ante authorisation of the Commission of Banking and Finance (CBF), the supervisory authority for the banking and financing sector. Under articles 30 and 31 of the law of 22 March 1993 on the establishment and supervision of

financial institutions, by and large all M&A operations in the financial sector must ask for this prior authorisation.

### ***Implementation***

In the recent past, Belgium has experienced a number of large M&As in the financial sector. The CBF has only three months to investigate a case and is presumed to approve any operation unless otherwise stated. It is also restricted in its disapproval to the evaluation of the sound and prudent management of the financial institutions concerned. The CBF has never refused its approval. Neither has the Council of Competition found any infringements, though this may be due in part to a difficult working situation, culminating in its temporary resignation from office in 1997, and a changing legal framework.

## **Canada**

### ***Rules***

Generally, mergers are not challenged on the basis of concerns relating to the unilateral exercise of market power where the post-merger market share of the merging parties would be less than 35%. Mergers are not challenged on the basis of concerns relating to the interdependent exercise of market power where the share of the market accounted for by the four largest firms in the market after the merger would be less than 65%, and the merging parties would hold less than 10% of the market.

### ***Implementation***

First, the Competition Bureau, a federal agency within the Department of Industry, defines the relevant product and geographic markets. Second, it examines the parties' market shares and overall industry concentration. Third, the Bureau assesses key evaluative factors listed in Section 93 of the Competition Act, such as foreign competition, availability of acceptable substitutes, barriers to entry, change and innovation, removal of an effective competitor, business failure and exit, and the effectiveness of remaining competitors. All of these are used to determine the likelihood that prices will rise or service decline after the merger. Finally, efficiencies are examined if it is concluded that the merger results in a substantial lessening or prevention of competition. The Competition Act provides that a merger may proceed if (i) these efficiencies represent cost savings that would not be attained if a remedial order against the merger were made, and (ii) the cost savings represent real savings in economic resources. The analytical framework used by the Competition Bureau is described in the Merger Enforcement Guidelines as Applied to a Bank Merger released on 15 July 1998.

## **European Union**

### ***Rules***

The approach of the European Community to merger control is part of a competition policy that has developed separately from equivalent national policies. It has been designed not only to ensure the objective contained in the Treaty of Rome that competition "in the common market is not distorted", but also as an instrument to facilitate integration and the development of the internal market. The Merger Regulation, which came into force in September 1990 and was modified in 1997, extended and clarified the Community's responsibilities concerning merger control.

The Merger Regulation gives the European Commission exclusive responsibility to control mergers with a Community dimension. The procedure is initiated by mandatory notification by the parties concerned. Smaller mergers remain in principle under the control of national authorities. The division of responsibility is made on the basis of the turnover of the enterprises

involved. The starting point for establishing whether a consolidation is considered to have a Community dimension is that:

- the aggregate worldwide turnover of all the undertakings concerned is more than EUR 5 billion; and
- the aggregate Community-wide turnover of each of at least two of the undertakings concerned is more than EUR 250 million, unless each of the undertakings concerned achieves more than two thirds of its aggregated Community-wide turnover within one member state;
- A concentration that does not meet the above-mentioned thresholds has a Community dimension where: (i) the combined aggregate worldwide turnover of all the undertakings concerned is more than ECU 2,500 million; (ii) in each of at least three member states, the combined aggregate turnover of all the undertakings concerned is more than ECU 100 million; (iii) in each of at least three member states included for the purpose of point (ii), the aggregate turnover of each of at least two of the undertakings concerned is more than ECU 25 million; and (iv) the aggregate Community-wide turnover of each of at least two of the undertakings concerned is more than ECU 100 million, unless each of the undertakings concerned achieves more than two thirds of its aggregate Community-wide turnover within one and the same member state.

In the context of exclusive Commission responsibility for dealing with mergers with a Community dimension, the Regulation states that no member state can apply its national legislation on competition to such cases unless it is to protect legitimate interests, which are defined as public security, plurality of the media and prudential rules.

### ***Implementation***

The Commission adopted over 160 decisions on mergers in the financial sector (including banking, insurance and pension funds) between January 1991 and mid-May 2000. Almost all of those examinations have been of cross-border operations, involving companies from at least two different EU member states or companies located in third countries, generating a certain turnover within the European Union. This relatively low number of decisions reflects the fact that, to date, most mergers in the financial sector have been domestic and have lacked a Community dimension, so that the examination has been left to the member state concerned. The trend towards cross-border consolidation is stronger in smaller member states, in particular in the Benelux countries. Of the 90 Commission decisions on banking mergers, for example, 20 cases concerned Belgian and 12 Dutch firms. A similar trend can be observed in the Nordic countries.<sup>300</sup> This may be explained by the fact that credit institutions in smaller markets are more dependent on international expansion to achieve a critical mass. Language and cultural similarities may also be a factor.

## **France**

### ***Rules***

For M&As among banks which do not fall under European Community regulation, and in the present state of French competition legislation (which is not completely clear on this subject), takeovers in the banking sector seem to be out of the jurisdiction of competition authorities, although some aspects of financial competition are within their jurisdiction.

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<sup>300</sup> These include, for example, Royale Belge/Anhyp, Kredietbank/Cera/Fidelitas/ABB, Paribas Belgique/Paribas Nederland, Merita/Nordbanken, Merita Nordbanken/Unidanmark and Föreningssparbanken/FI-Holding/FIH.

On the financial legislation side, there is no explicit disposition in the Banking Act that gives financial authorities the responsibility for monitoring concentration. However, a bank willing to take over another bank has to obtain authorisation from the Comité des établissements de crédit et des entreprises d'investissement (CECEI), which checks the compatibility of such an operation with the smooth functioning of the banking system and the safety of the customers. Therefore, when the CECEI approves a deal, it takes into account, in some way, its consequences on competition. However, the CECEI would not base a refusal on competitive considerations alone.

### ***Implementation***

In 1998, when CIC was privatised, five institutions were candidates for the takeover. The authorities examined the market shares that would result in each case. In four cases, the expected market shares of the new entities were quite significant in some market segments, but were deemed acceptable. In 1999, during the BNP-SocGen-Paribas affair, the CECEI looked closely at the effects of the proposed operations on the market shares of the resulting entities.

## **Germany**

### ***Rules***

In Germany, the act prohibiting barriers to competition (Gesetz gegen Wettbewerbsbeschränkungen) provides the legal basis for regulating mergers. The essential criterion for a merger is met if a controlling entrepreneurial, or competitively significant, influence on the target enterprise would be attained through the acquisition of capital. Such influence may even be exercised through a minority stake if this is accompanied by special rights to information, co-determination or control on the part of the acquiring party.

The Federal Cartel Office (Bundeskartellamt) is primarily responsible for monitoring corporate mergers. It intervenes in mergers if the enterprises involved have reached certain turnover thresholds and merger control does not fall within the jurisdiction of the European Commission. Thus, mergers are generally subject to domestic supervision only if all the enterprises involved have achieved a total prior-year turnover of at least DEM 1 billion and if at least one of them has recorded a turnover in Germany of more than DEM 50 million for the preceding year. In the case of credit institutions, the total amount of receipts less the taxes that are paid directly from this source is used instead of turnover. The domicile of the enterprise is immaterial.

### ***Implementation***

The enterprises involved must report an intended merger to the Bundeskartellamt prior to the actual merger (preventive merger control). On receipt of notification, a preliminary procedure begins in which the Office decides within one month whether the merger is unobjectionable or whether it will proceed to examine the merger (main examinational procedure). During the main examinational procedure, the Office decides within four months whether it will allow the merger to proceed (possibly, subject to certain conditions), or prohibit it.

The Bundeskartellamt will prohibit a merger if it is expected to constitute, or bolster, a position of market dominance on the part of the enterprises involved. In examining market dominance, the relevant market first has to be defined and then market concentrations are determined based on the market structure (actual and potential competition from domestic and foreign rivals).



## **Italy**

### ***Rules***

Italian antitrust regulation was introduced with the law number 287 in 1990. The objective of the law is to guarantee the functioning of the competitive process by prohibiting: (i) agreements that have the goal or effect of impeding, restricting or distorting competition; (ii) the abuse of dominant positions; and (iii) operation of consolidations that create or strengthen a dominant position which eliminates or substantially reduces competition.

The application of the law, which has to be carried out in accordance with the principles of the EEC regulation in the same domain, is the responsibility of the *Autorità Garante della Concorrenza e del Mercato* (AGCM). An exception is the banking sector: the law attributes to the Bank of Italy the application of the antitrust regulation to banks. The Bank of Italy adopts its own decisions after having heard the opinion (which is not binding) of the AGCM; an agreement was signed in 1996 on the means and terms of cooperation between the two authorities. Another exception is the insurance sector. The AGCM adopts its decisions after hearing from ISVAP, the supervisory authority for insurance companies.

### ***Implementation***

When the competent authority finds a potential violation of the antitrust law, a file is opened. From the approval of the law in 1990 to May 2000, the Bank of Italy, in its antitrust function, has opened 33 files: 16 were on consolidations, five on abuse of dominant positions, and 12 (plus one currently under examination) on anticompetitive agreements.

As far as consolidations are concerned, the main element for the assessment of the impact on competition is the definition of the relevant market, both geographically and in terms of products. The Bank of Italy usually defines the province as the relevant market for deposits and the region for loans. In many of the files on consolidation, the Bank of Italy has imposed compensatory structural measures, such as the sale or closure of branches in the local markets affected. Also, behavioural measures have been imposed in certain cases, for example, prohibiting the banks involved, for a given period of time, from opening new branches in the markets believed to be critical from the competitive point of view.

Growing importance is given to the control of anticompetitive agreements and abuses of dominant positions. The files opened until now by the Bank of Italy on agreements have been related to the behaviour of individual banks and business associations. The Bank has investigated agreements that could harm competition by fixing prices or other sales conditions of given products, and agreements on the territorial sharing of markets. The Bank of Italy has opened five files on the behaviour of the Italian Bankers Association with regard to the definition of uniform tariffs, specifically in the payment system area, and the suggestion of uniform mechanisms for the definition of pricing strategies on exchange rate fees. Recently, a fine of ITL 30 billion was imposed on 13 large banks that had agreed to exchange proprietary information and fix prices of given banking services, thus distorting competition.

## **Japan**

### ***Rules***

The Anti-Monopoly Law prohibits any consolidation where “the effect of a merger may be to substantially restrain competition in any particular field of trade”. This is determined by the position of the merging companies in an industry (as measured by their market shares, ranks, the extent to which they compete etc) and by market conditions (as measured by the number of competitors, degree of concentration, entry, competition from imports, and the financial condition of the firms).

### ***Implementation***

The Japanese Fair Trade Commission is in charge of Japanese competition policy. The Commission implements the Anti-Monopoly Law and formulates guidelines for its implementation in order to make the law more transparent. The Commission also reviews government regulations and exemptions from the Anti-Monopoly Law. In practice, antitrust law works in tandem with efforts to deregulate the economy in order to increase competition in Japanese markets.

## **Netherlands**

### ***Rules***

The antitrust legislation of the European Community overrides Dutch legislation if a particular intended consolidation has a “Community dimension” (see above). The Dutch legislation only applies to consolidations above a particular size (firms with a global turnover higher than NLG 250 million, of which at least two have a turnover of at least NLG 30 million in the Netherlands).

Consolidation is prohibited between firms (financial and non-financial), without giving prior notification to the Dutch competition authority, the Nederlandse Mededingings Autoriteit (NMA). The NMA subsequently determines whether concentration may pose a threat to competition and if it does, research is undertaken by the NMA, ultimately resulting in rejection, acceptance or the start of licence procedure (see below).

After notification is received, the NMA has a maximum of four weeks to determine whether a licence is required; if nothing happens, the consolidation may proceed. During these four weeks, the NMA investigates whether there is a chance of unacceptable market power as a result of the consolidation. If this is the case, a licence procedure is started, lasting a maximum of 13 weeks. The NMA investigates the nature of the relevant market, the market shares of the firms involved, the possibility of new entry and the degree of dependency of external stakeholders (suppliers, clients). This research determines whether or not a licence is issued and whether conditions will be attached. In exceptional cases the Ministry of Economic Affairs may override a rejection by the NMA, if the “general good” is endangered.

To deal with particular, financial sector specific situations, two exceptions to the procedure above are allowed. First, an exception has been created with respect to this notification procedure in case a consolidation would prevent bankruptcy of a financial institution, and thereby avoid severe consequences. In such a case, the relevant financial supervisor(s) and the NMA investigate, confidentially and without loss of time, whether consolidation between the problem institution and another would solve the problems without harming competition. In case the NMA disagrees with the preferred solution of the financial supervisor(s), the Minister of Economic Affairs may be asked to give a decision.

Second, when a consolidation, valid according to the NMA, would threaten the goals of financial regulation, the Minister of Finance, after consulting the relevant financial supervisor(s), may block the concentration.

### ***Implementation***

The rules as listed above have only been effective in the financial sector since 1 January 2000; for the non-financial sector, they have been effective since 1998. Since that time, there have not yet been situations in which the NMA has been actively involved in financial sector consolidation.

## **Spain**

### ***Rules***

Spanish legislation, which is only applicable to consolidations that do not have a Community dimension (see Rules of the European Community in this annex), is laid down in Competition Law 16/1989 of 17 July 1989 (Articles 14 to 18), which contemplates the existence of two specialised administrative bodies: the Competition Service, which is responsible for initiating proceedings and implementing decisions, and the Competition Court, which submits reports and proposals to the Government. Both bodies cooperate with the European Commission in Community proceedings.

### ***Implementation***

Consolidations in excess of given thresholds, based on a definition of concentration similar to that laid down in Community legislation, are required to notify the Service. These thresholds are set according to market share (25% of the national market or of a distinct geographical market within a member state) and sales volume (aggregate amount of ESP 40 billion and ESP 10 billion in each of at least two of the undertakings concerned). The Service shall be notified of consolidations prior to, or not more than one month after, the conclusion of an agreement to combine, though notifications shall not imply the suspension of the operation. Whenever the Service considers that the consolidation may impede competition, the Government shall request a non-binding report of the aforementioned Court and may decide, within three months of the date of receipt of the report, to attach conditions to the consolidation or to impose appropriate measures to restore effective competition, including a reversal of the merger. The decisions of the Government may be brought before the Spanish Courts of Justice.

## **Sweden**

### ***Rules***

According to the Competition Act, the Competition Authority must be notified of any merger if it creates an entity with a turnover greater than SEK 4 billion and the acquired firm has a turnover greater than SEK 100 million. A merger may be challenged if it results in a dominant market position or further strengthens an already dominant market position. Mergers may also be challenged on the basis of concerns regarding the resulting market concentration (collective market dominance). In general, mergers in the financial sector are treated in the same way as those in any other industry.

### ***Implementation***

When it is notified of a merger, the Competition Authority makes a preliminary investigation to determine whether there is cause for concern regarding the resulting market power or market concentration. If this is the case, the Competition Authority initiates a full investigation addressing issues regarding the possible effects on efficiency, competition, prices, quality of services etc. If necessary, the Competition Authority might then challenge the merger in civil court.

## **Switzerland**

### ***Rules***

The Federal Competition Commission must be notified of a merger if the situation reaches the following thresholds during the financial year preceding the merger: (i) the aggregate worldwide turnover of the companies concerned amounted to at least CHF 2 billion or the aggregate turnover of the companies within Switzerland amounted to at least CHF 500 million, and (ii) the

aggregate turnover in Switzerland by each of at least two of the companies concerned amounted to at least CHF 100 million. For banks, turnover is replaced by 10% of total assets, and for insurance companies, the thresholds are calculated with reference to aggregate annual gross premiums. In addition, the Federal Competition Commission must be notified if a participating firm holds a dominant position in a market in Switzerland and if the merger involves either that market, a related market, or an upstream or downstream market.

### ***Implementation***

Merger control is governed by the Federal Law on 'Cartels and other Restrictions of Competition' of 1995. The law is applied by the Federal Competition Commission and its Secretariat. The Secretariat investigates proposed mergers and the Commission determines whether they should be allowed. Banks are basically treated like other industries, with the exception that the Swiss Federal Bank Commission takes the place of the Competition Commission if a merger is seen to protect the interests of creditors. This is expected to be the exception and has not yet occurred since the Act entered into force.

On receipt of the notification, the Secretariat starts a preliminary investigation by examining whether the merger might create or strengthen a dominant position liable to eliminate effective competition. If so, the Commission initiates a regular investigation. The duration of the preliminary investigation is limited to one month, that of the regular investigation to four months.

The main patterns of the examination are (i) the relevant markets, (ii) current competition in these markets, (iii) potential competition, and (iv) countervailing powers of customers.

### **United States**

#### ***Rules***

The competitive effects of all mergers and acquisitions are reviewed by either the Department of Justice (DOJ) or the Federal Trade Commission. The DOJ has traditionally had jurisdiction over mergers among financial services providers.

The DOJ applies a structural screen to mergers and closely examines those mergers that violate this screen. The screen is stated in terms of the level of the Herfindahl-Hirschman index (HHI) and the change in this index resulting from the proposed merger.<sup>301</sup> In most industries, mergers are examined closely if they would increase the HHI by more than 100 points to a level above 1000 or by more than 50 points to a level above 1800. In banking, the DOJ applies a more lenient standard, requiring an increase in the HHI of over 200 to a level above 1800 to conduct a more thorough review. This relaxed standard for banking is meant to reflect the competition banks face from non-bank financial institutions that are not included explicitly in the HHI calculation. US antitrust authorities define banking markets as clusters of services offered by banks to all customers (Federal Reserve Board) or to small businesses (DOJ).<sup>302</sup> It is implicit in these definitions that markets for products supplied to large businesses are geographically larger. These wholesale markets may also be narrower in product space since large firms may find it easier to purchase individual products from different suppliers. US antitrust authorities have not actively challenged mergers in the securities or insurance industries, and thus have not taken a formal position on the product or geographic markets in these industries. There is no exemption for mergers among firms under any size threshold.

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<sup>301</sup> The HHI is the sum of the squares of the market shares of all firms in the market, with the market shares measured as percentages.

<sup>302</sup> See Amel (1997).

Mergers among banks are also subject to review by federal bank regulators and by state governments. The three federal bank regulatory agencies tend to use the same structural standards as the DOJ, though they differ in the weight they give to factors that may mitigate the structural effects of mergers. State Attorneys General rarely challenge mergers among financial institutions.

### ***Implementation***

Most large US bank mergers have involved both expansion into new geographic regions and in-market, horizontal effects in some local banking markets. In most cases, the merging parties have been willing to divest branches in those local markets in which structural changes would be so great as to cause concerns to antitrust enforcement agencies. Thus, structural effects of large bank mergers generally have not been so large as to cause competitive effects in local banking markets. In those rare cases in which smaller mergers have substantially increased concentration, there have been adverse effects on prices.<sup>303</sup>

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<sup>303</sup> See Prager and Hannan (1998).

## **Annex V.2**

### **Case studies**

#### **The UBS merger**

The merger was announced on 12 January 1998. On 2 February the Federal Competition Commission decided to open a regular investigation. On 20 April the Commission cleared the merger subject to some conditions.

The Commission investigated the markets for mortgage loans and commercial loans. It reached the conclusion that the merger would not affect competition in the mortgage loan market since the new UBS was expected to face strong competition from either local banks or Credit Suisse. For the commercial loan market, the Commission restricted the investigation to loans of up to CHF 2 million.

Considering the geographic market, the Commission defined the markets for loans to small and medium-sized firms as regional markets, which roughly coincided with Swiss cantons. The Commission focused its investigation on eight regional markets where the new UBS market share would be above 30% and found that the countervailing power of customers was weak in those markets. Furthermore, it was possible that the merger could lead to a collusive dominant position. Thus, the Commission imposed the following remedies to stimulate competition: (i) UBS had to divest, upon approval by the Commission, 25 branches distributed over Switzerland as well as two subsidiary banks; (ii) Corporate credit facilities cumulated in the new bank but not exceeding CHF 4 million had to be maintained until the end of 2004; and (iii) UBS was not allowed to give up membership in several joint ventures with other Swiss banks for several years.

The sale of branches turned out to be difficult. No single buyer could be found. Eventually, Migros Bank and Coop Bank (two banks belonging to the two major food and non-food retailers) each bought 11 branches, and three other branches were sold to three regional banks.

#### **The merger of Banco Bilbao with Telefonica**

In February 2000, the Spanish Banco Bilbao Vizcaya Argentaria (BBV) announced an alliance with Telefonica, the largest Spanish telecom company, in order to develop online banking and e-commerce services for the Spanish-speaking world. This alliance covers a series of joint ventures linked to internet-based financial services. The move is similar to recent “new-technology” alliances between AOL and Time Warner and Vodafone, AirTouch and BSCH.

The Spanish antitrust authority has investigated the case and required that the new group restructure, amongst others, its media holdings.

#### **BSCH/Champalimaud**

On 3 August 1999, the European Commission approved an agreement by which Banco Santander Central Hispano (BSCH)<sup>304</sup> would have acquired control over the Portuguese financial group Champalimaud. The Portuguese authorities had opposed the planned concentration by a decision taken on 18 June 1999, based on the need to protect national interests and strategic sectors of the national economy.

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<sup>304</sup> Banco Santander Central Hispano is the leading Spanish bank. It was created through the merger of Banco Santander and Banco Central Hispano at the beginning of 1999.

The Commission was concerned that the decision of the Portuguese authorities was not justified on prudential grounds and therefore violated EU rules on freedom of establishment and the free movement of capital. It decided therefore to open formal infringement proceedings against Portugal. It also took action against the Portuguese measures by two decisions based on the EC Merger Regulation that grants the Commission exclusive powers to assess consolidations having a Community dimension. With the first decision of 20 July 1999, the Commission requested the suspension of the decision by the Portuguese Minister of Finance to oppose the operation and the measures deriving therefrom, such as the suspension of voting rights of BSCH and Champalimaud in Mundial Confiança, because the Portuguese authorities had failed to notify their decision to the Commission. With the second decision adopted on 20 October, the Commission indicated that the measures of the Portuguese authorities could not be regarded as protecting legitimate interests within the meaning of the Merger Regulation and were thus incompatible with Community law. The Portuguese authorities challenged both Commission decisions before the Court of Justice and did not comply with the Commission's request to suspend their decision to oppose the acquisition.

Subsequently, BSCH and Champalimaud concluded a new agreement which replaced the previous one and according to which BSCH acquired Banco Totta & Açores and Banco de Crédito Prédial Português belonging to the Champalimaud group. This new agreement was reported to the Commission on 29 November 1999, and authorised by the Commission on 11 January 2000, and was not opposed by the Portuguese authorities.

The Champalimaud case is important for Community law and the business community as it reaffirmed the exclusive jurisdiction of the Commission for mergers having a Community dimension. This case also raised the question of the application and interpretation of "prudential rules" in consolidations in the banking sector. Under the Second Council Directive 89/646/EEC of 15 December 1989, on the coordination of laws, regulations and administrative provisions relating to the taking up and pursuit of the business of credit institutions, a potential buyer of a qualifying holding in a credit institution has to inform the competent authorities of the member state. The competent authorities have three months to oppose such a plan if, in view of the need to ensure sound and prudent management of the credit institution, they are not satisfied as to the suitability of the potential acquirer. In the Champalimaud case, the Commission made clear that any intervention by member states concerning mergers that have a Community dimension and therefore fall within Commission jurisdiction, has to be reported to the Commission and has to be based on one of the recognised "legitimate interests" (public security, plurality of the media and prudential rules) mentioned in the Merger Regulation. The Portuguese authorities were considered to fall short on both of these accounts.

### **CGU/Norwich Union**

The merger of the two British-based insurance companies was announced on 21 February 2000 and reported to the European Commission on 15 March 2000. After examination, the Commission cleared the merger on 13 April 2000, concluding that the reported agreement, which had a Community dimension, was compatible with the common market and with the functioning of the European Economic Area agreement.

CGU provided all classes of general insurance and life insurance throughout the world. The main activities of Norwich Union were the provision of general insurance, life insurance and pension and investment products. Both had activities in the United Kingdom, Ireland, continental Europe, North America and Australia. However, the only member states in which either party had a significant market presence and where there was a significant overlap between the parties' activities were the United Kingdom and Ireland, where the new entity would have become the largest insurer in the general insurance sector.

The Commission practice of defining the relevant product market in the insurance sector is to make a distinction between general insurance, life insurance and reinsurance. General and life insurance can be divided into as many product markets as there are different kinds of risks

covered. However, in the assessment of this case as on several other occasions, the Commission did not deem it necessary to define conclusively the relevant product and geographic market. This was possible because the Commission concluded that, even when applying the narrowest market definition, the consolidation would not have created or strengthened a dominant position as a result of which effective competition would have been significantly impeded.

Having examined the various market segments of the United Kingdom and Irish general insurance sector, the Commission concluded that the combined entity would face strong competition across all lines of business from a significant number of well established competitors with comparable financial strength including Allianz, AXA, Royal & Sun and Eagle Star (Allied Zurich). Moreover there would also be a number of strong companies, in particular brokers and financial institutions, active in the distribution channels, creating competitive pressures for insurers.

### **Fortis/G-Bank**

On 24 June 1998, the Commission cleared the acquisition by Fortis group, the Belgian-Dutch insurance and banking group, of the whole of Generale Bank, the largest Belgian bank also active in life and non-life insurance.

The integration of Generale Bank and Fortis would create an international conglomerate active in banking and insurance and operating mainly in Belgium and the Netherlands, with relatively high market shares in Belgium. However, the Commission authorised the deal, taking into consideration that there would remain strong competitors in Belgium both in banking (BBL/ING, Kredietbank, Bacob) and in insurance (Groupe Royale Belge, AXA, Assubel/AGF, SMAP).

In its assessment of the merger, the Commission regarded the relevant geographic market as being national in scope for retail banking and for small and medium-sized corporate clients, and international for large corporate clients and for financial markets. Nevertheless it considered that certain assets of the merging companies, such as the strength of their distribution network, needed to be analysed at a smaller level, that is on a regional or local level. As strong market overlaps existed in Belgium, the Commission examined the network effect of the merger in all the Belgian provinces and regions. Even though the new entity would have the strongest market network in Belgium, the Commission concluded that this would not confer on it a dominant position since consumers would have sufficient competing banking outlets at hand. In its assessment, the Commission also ruled that the existence of electronic cash dispensers, electronic banking and telephone banking minimised the effect of any strong position in this respect.

### **Generali/INA**

On 12 January 2000, the Commission cleared, subject to a number of commitments given by the parties concerned, the proposed acquisition by Generali, a company active in the insurance sector both in Italy and abroad, of INA, one of the largest Italian insurers. According to the commitments, Generali would divest its controlling stakes in three subsidiaries active in the life insurance sector, its shareholding in Fondiaria and INA's controlling interests in BNL Vita and Banco di Napoli. Moreover, Generali would eliminate the interlocking directorships between the Board of Directors and Executive Committee of INA and reduce significantly those between its own Board and Executive Committee.

In investigating this case, the Commission cooperated closely with the Italian Antitrust Authority and with ISVAP, the Italian surveillance authority in the insurance sector. As regards the substantive aspects of the case, the Commission found that the consolidation, as originally proposed, could have led to the creation or strengthening of a dominant position in the Italian life insurance sector. The combined entity's market power would have been fostered by the strength of its distribution network, which is the main driver of competition in the insurance



sector. The new group would have been stronger than its competitors in the most important distribution channels, ie in the agency and banking channels. As regards the latter, the Commission's preliminary investigation indicated that this channel has grown rapidly in the last few years. About 70% of new policies concluded in 1999 were estimated to have been sold through banks. The merged entity would have controlled approximately one quarter of the existing bank outlets in Italy.

### **Bank Austria/Creditanstalt-Bankverein**

On 11 March 1997, the Commission approved the acquisition of Creditanstalt-Bankverein by Bank Austria Aktiengesellschaft, following undertakings given by Bank Austria that eliminated the identified competitive concerns. Bank Austria and Creditanstalt were both universal banks that had their main focus of activity in Austria. Measured by the balance sheet total, the new entity would have been approximately five times larger than the next largest Austrian bank.

In assessing the implications of the proposed consolidation, the Commission found that, after the merger, the new entity would not only have been the leading supplier of banking services in Austria, but also the only bank with significant market shares in all relevant product segments. The Commission also found that, both in consumer and business customer banking services in Austria, the parties (together with GiroCredit, in which Bank Austria had a major holding) would have attained significant market shares. These would have been several times higher than those of the next largest competitor in a number of product segments, including credit business, stocks and shares and deposits. In addition to the high market shares, the Commission considered that Austrian banking markets were characterised by market access barriers that, in retail banking in particular, resulted from the need to be present locally through an extensive network of branches. It held that consumers usually maintained a link with only one bank because they incurred both information and transaction costs when changing banks. The mobility of bank customers was considered to be further reduced by the fact that maintaining several banking links, and dividing deposits between banks, reduces the chances of getting a loan. The Commission also considered that the foreign banks active in Austria had, despite many years' presence in some cases, achieved only very small market shares and were collectively too insignificant to be able to exert a decisive competitive influence in the medium term. Further competitive concerns stemmed from the addition of the holdings of Bank Austria and Creditanstalt in the specialised banks Österreichische Kontrollbank (OeKB) and Österreichische Investitionskredit AG, two institutions active in the public interest (ie export insurance, financing and processing and subsidised lending). The Commission thought therefore that there was a risk of the creation or reinforcement of a dominant position.

In order to meet the competition concerns expressed by the Commission, the parties offered certain commitments. Bank Austria agreed to sell its stake in GiroCredit. In addition, it undertook to reduce the global participation of Bank Austria and Creditanstalt in OeKB to the level of participation that Bank Austria and GiroCredit held together prior to consolidation. Furthermore, Bank Austria agreed not to extend its influence in Investkredit beyond the level of influence that it had, together with GiroCredit, prior to the concentration. These undertakings were considered appropriate to completely resolve the competitive concerns raised by the Commission and led to the approval of the proposed merger in its modified form.

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## **Chapter VI**

### **The effects of consolidation on payment and settlement systems**

#### **1. Introduction**

This chapter consists of three sections. Section 2 reviews the types of consolidation identified in Chapter I and discusses applications to payment systems. Section 3 provides a review of the main causes of and obstacles to consolidation covered in Chapter II in the context of payment systems. Section 4 analyses efficiency, competition, risk and oversight aspects of the consolidation of the financial industry on payment and settlement systems. The chapter ends with some preliminary conclusions concerning those issues that deserve further consideration from a policy perspective.

#### **2. Types of consolidation**

Consolidation in a payment and settlement context includes both mergers and acquisitions (M&As) and other developments within the financial industry, such as alliances, joint ventures and the outsourcing of payment processing, that result in a higher degree of concentration of payment and securities settlement activities. In addition, reorganisation measures within individual financial institutions and the consolidation of market infrastructures have significantly influenced the structure and dynamics of the payment and securities settlement industry.

##### **Institutional consolidation**

Merger decisions are generally not driven by payment or securities settlement considerations. Nevertheless, M&As often have important implications for payment and securities settlement activities: they are usually followed by internal reorganisation and consolidation of information technology (IT) infrastructures, payment functions and accounting systems. They may also stimulate a rationalisation of the payment and securities settlement policy of the banks concerned.

##### **Specialisation, outsourcing, alliances and joint ventures**

Consolidation in the payment and securities settlement industry also occurs through structural and business developments such as alliances, specialisation, joint ventures and outsourcing. At a domestic level, cooperative joint ventures, outsourcing and specialisation have been the predominant forces of concentration. At the international level, fewer correspondent banks (due to industry consolidation) and the emergence of new cross-border infrastructures have been key factors.

At the domestic level, cooperational approaches in the G10 countries have a long tradition, particularly in the savings, cooperative and community banking sectors. Small and medium-sized savings and cooperative banks often outsource payment activities or securities-related back office activities to sector-specific cooperative interbank clearing mechanisms. In Germany, for example, the savings and cooperative banking sectors have established their own giro networks based on internally agreed exchange and settlement procedures. In the United States, credit unions often clear some of their payments through a network of so-called corporate credit

unions and a central corporate credit union. Corporate credit unions are cooperative entities owned by the credit unions and chartered to supply transaction services to the credit unions. Similarly, in the US community banking sector, payment transactions may flow through bankers' banks owned by several community banks.

Another domestic development is the emergence in Europe of transaction banks (sometimes also called "white-label providers") that specialise in the provision of payment or back office services to other banks. These banks are often established as separate legal entities, even when they are sponsored by one large bank. This ensures confidentiality of operations, which is an important condition for being chosen as a service provider by other banks, and leaves open the possibility for other banks to become shareholders. In the United States, specialised banks known as bankers' banks provide a wide array of payment and settlement services to other banks.<sup>305</sup>

Another domestic phenomenon, particularly in the United States, is the outsourcing of payment and securities clearing to a third party, which may be a bank or a non-bank entity. Banks increasingly have recourse to such entities, allowing them to specialise in the "sales function" (covering direct relations with customers, including account holding) while outsourcing the "production function", ie the processing of payments and securities, to third-party service providers. In the United States, for example, the top five non-bank service providers already account for nearly 20% of the outsourcing market. Third-party service providers are confident that the rapid convergence of financial services providers will increase their business even further in the coming years. These companies forecast that traditional financial institutions, such as banks, will increasingly focus on offering existing and new products that are in line with their core competencies rather than expending effort on conquering the more repetitive back office tasks.

At the international level, consolidation is leading to an increasing concentration of correspondent banking<sup>306</sup> and custody services<sup>307</sup> in a smaller number of large market players. Correspondent and global custody institutions are normally selected by other banks according to the range of products they offer, the ease of access to their services (including the issue of how the exchange of payment and securities settlement-related information between the service provider and the customer is handled), the payment and settlement systems in which they participate, their financial standing and their ability to raise liquidity.

The role of traditional correspondent banks is also changing with consolidation. Most international banks have reviewed and reduced the number of nostro accounts they maintain with other banks and correspondent relationships based on reciprocity are largely being replaced by commercially based relationships, joint ventures or alliances. In addition, the emergence of cross-border settlement mechanisms, such as TARGET,<sup>308</sup> the Euro Banking Association's (EBA) Euro 1 system and the impending CLS Bank, are eroding the traditional payment "bridging" function of international correspondents. Networks have also been established for the purpose of making low-value cross-border retail payments in Europe. TIPA, for example, is a network of correspondent banks, mainly from the cooperative banking sector, which hold

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<sup>305</sup> See "Bankers' Banks: A Correspondent Alternative for Community Banks", Camden R Fine, Thesis, Stonier Graduate School of Banking, American Bankers Association, June 1992.

<sup>306</sup> The term "correspondent banking" describes an arrangement where one bank provides payment and other services to another bank. Payments through correspondents are often executed through reciprocal accounts ("nostro" and "loro" accounts), to which standing credit lines may be attached. Correspondent banking services are primarily provided across national boundaries.

<sup>307</sup> Custody services include the safekeeping and administration of securities and financial instruments on behalf of others.

<sup>308</sup> The information on TARGET can be found in the annex to this chapter.

accounts for each other and which have thereby established a multilateral correspondent arrangement. Via the receiving correspondents, the respective local payment systems can be accessed. S-Interpay is a network founded in 1994 by the German savings banks to facilitate cross-border retail payments. The system consists of a network of correspondent banks, most of them also from the savings bank sector, in different countries.

Economic and monetary union (EMU), for example, has substantially reduced the number of correspondent relationships needed to operate in Europe and, as a result, has accelerated the trend towards concentration of the correspondent banking business. In Japan some of the largest banks have gained most of the yen payment and securities settlement business originating from small or medium-sized banks located in the United States and Europe. Similarly, several large US banks indicated that they have consolidated their correspondent and custody banks to the extent that they use only one or two local correspondents in each major currency. With regard to global custody, the assets held in custody by the 20 largest global custodians increased by more than 80% between 1996 and 1999.<sup>309</sup>

### **Internal consolidation**

Internal consolidation describes a reorganisation process within an individual financial institution (or within a banking group) that leads to the concentration of payment and securities-related processing and back office activities within a few processing centres. This evolution is in contrast with the traditional organisation of major international banks, where payment and securities settlement business is distributed among their branches and subsidiaries abroad, each of them having responsibility for settlements in the local currencies. Large international banks now tend to concentrate most of their worldwide payment activities in one (or a few) processing centre(s). The future establishment of the Continuous Linked Settlement (CLS) mechanism, which is intended to limit foreign exchange settlement risks, is likely to support this trend.

In the case of banking groups consisting of legally independent banks controlled by a holding company, consolidation is sometimes achieved by centralising a number of payment-related activities (eg direct access to payment systems, liquidity management for the group as a whole, correspondent banking and custody services) at the holding company or at one of the banks of the group. Centralisation of access to large-value payment systems and liquidity management may provide significant cost savings as well as greater efficiency in liquidity management.

Furthermore, individual systems, including those that are run by central banks, may be subject to some form of internal consolidation. For example, in the United States, the IT platform supporting the Fedwire funds and securities transfer systems has been consolidated from 12 district data processing centres and four backup locations into three sites. In the euro area, the Eurosystem has started discussions on how to overcome the difficulties related to the fragmented nature of the present TARGET system.

### **Consolidation of market infrastructures**

Consolidation concerns not only financial institutions, but also the market infrastructures for making payments and settling securities transactions. Market participants are increasingly seeking to produce interbank payment and securities settlement services in a cost-minimising approach, leaving the creation of value added payment services to the commercial relationship between a bank and its customer. In this respect, a global trend towards consolidation is observable both at the horizontal level (eg the merger of two securities settlement systems) and at the vertical level (eg in the securities industry, the integration of trading, clearing, settlement and custody services within a single institution).

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<sup>309</sup> *Institutional Investor*, September 1999, volume 24, issue 9, pp 199-200.

Securities settlement in the United States offers a good example of horizontal and vertical consolidation. First, the Depository Trust Company (DTC), the largest securities depository in United States, merged with two regional depositories, the Midwest Securities Trust Company and the Philadelphia Depository Trust Company, resulting in a single central securities depository (CSD); second, in 1999, DTC and the National Securities Clearing Corporation, which compares and nets almost all broker-to-broker corporate and municipal securities trades in the United States, affiliated their organisations under a common holding company, the Depository Trust and Clearing Corporation.

In the European Union (EU) the consolidation of the securities settlement industry has accelerated since the start of Stage Three of EMU. It is taking place through the merging of CSDs that operate securities settlement systems. In January 2000 the owners of Cedelbank, the Luxembourg-based international central securities depository (ICSD), and the owners of Deutsche Börse Clearing, the German CSD, set up a new holding company called Clearstream International, which owns both depository institutions. These have been renamed Clearstream Banking S.A. and Clearstream Banking AG respectively. The legally separate entities will use a common technical infrastructure and intend to create a pan-European clearing house. In March 2000 the boards of Euroclear, the Belgium-based ICSD, and Sicovam, the French CSD, also announced their agreement in principle to merge fully the two organisations. The agreement states that Euroclear will take over Sicovam and that it has an option of taking an ownership interest of up to 20% in Clearnet, the Paris Bourse's subsidiary for clearing and netting. In turn, Sicovam will receive a certain share in Euroclear.

Consolidation, in the form of international joint ventures, is also occurring among securities clearing organisations. An example is the establishment of the European Securities Clearing Corporation (ESCC). The ESCC is a pan-European clearing house, which was set up by Euroclear and the US Government Securities Clearing Corporation (GSCC) to provide trade comparison and netting services for European government debt securities. The London Clearing House (LCH) has joined this partnership.

### **3. Causes of and obstacles to consolidation**

#### **Causes of consolidation**

Although consolidation in the financial sector is driven by a variety of factors (see Chapter II), two have been the main driving forces behind the consolidation of payment and securities processing: cost reduction and leveraging specialised business opportunities. For banks, it is becoming increasingly important that the provision of payment and securities settlement services is produced at minimal cost due to increased competition as a result of EMU and nationwide banking in the United States. In addition, increased concentration in processing payments will drive the demand for rationalisation of market infrastructures.

A move towards consolidation of payment and settlement processes, for example, is one natural consequence of the European integration process stemming from the introduction of the euro. This integration process will allow banks, whether based in Europe or not, to take full advantage of economies of scale and scope inherent in the payment and settlement business. Major players in the financial markets, especially, tend to ask for a higher degree of harmonisation of the different domestic systems or even to require a consolidation of infrastructures across borders in order to save costs. For example, in the securities industry, the introduction of the euro and the elimination of currency risk permit investors to adjust their portfolios by targeting new financial instruments and markets. The increasing importance of cross-border trades, in turn, has put pressure on service providers to integrate their infrastructures in order to provide cost-efficient mechanisms for the transfer of cash and of securities. An outgrowth of these pressures has been the creation of the European Central Securities Depository Association (ECSDA), which is looking at methods of integrating or linking European central securities depositories. As banks

globalise, their need for more efficient payment and settlement processes has also manifested itself in the growing demand for direct remote access<sup>310</sup> to payment and settlement systems and a global collateral pool.<sup>311</sup>

On the business opportunity side, the interviews indicate that, as cross-border mergers occur in order to diversify business portfolios, international banks also want the ability to offer a wide range of payment and settlement services to sophisticated customers. Such services are complementary, and in some cases essential, in order to seize business opportunities in such areas as asset management, global custody and corporate cash management services.

Closely related to technology investment is the requirement for real-time payment processing. Furthermore, providers of payment and securities settlement services have to accommodate requests for more sophisticated services, such as intraday (or even real-time) delivery versus payment (DVP) settlement (ie the simultaneous settlement of the securities leg and the cash leg of a securities market transaction), cash management services and related information services. Other requirements stem from the goal to increase processing efficiency through systems integration and straight-through processing. The Global Straight Through Processing Association (GSTPA), for example, is an initiative set up by financial intermediaries composed of broker/dealers, global custodians and investment managers involved in the processing of cross-border securities trades. The primary objective of the GSTPA is to reduce the risks and costs of cross-border trade activities by accelerating the flow of cross-border trade information and reducing the number of failed trades.

On the other hand, technological progress has also reduced processing costs and made many options more affordable to all market participants, irrespective of size. Several interviewees expect certain non-bank institutions to provide payment-related services via the internet in the coming years and thus to become direct competitors of banks.

### **Obstacles to consolidation**

In the field of cross-border consolidation, the political and regulatory environment has the potential to increase the difficulties facing mergers and internal consolidation of payment and securities settlement processes. Certain tax regulations, different legal frameworks (eg with regard to employment law, bookkeeping rules and the nature of the legal title to securities in different countries, such as bearer versus registration) and differences in reporting requirements have been the main impediments to consolidation. A higher degree of harmonisation in these fields – if desired – would probably not be easy to achieve. Moreover, restrictions concerning direct remote access to payment and settlement systems or to intraday and overnight central bank credit (including the issue of locally accepted collateral) often make it necessary for banks to continue to rely on foreign subsidiaries or branches or correspondents in order to have access to the respective systems.

The existence of non-harmonised internal IT platforms may prevent banks from consolidating their payment and back office activities at fewer locations, whether domestically or cross-border. The general lack of standardisation (with regard to message formats, etc) between payment and settlement systems in different countries causes similar problems. Banks, however, might now be expected to make greater efforts to streamline their internal systems and

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<sup>310</sup> Direct remote access to an interbank funds transfer system (IFTS) is the ability of a credit institution established in one country ("home country") to become a direct participant in an established IFTS in another country ("host country") and, for that purpose, to have a settlement account in its own name with the central bank (or, more generally, with the settlement agent) in the host country without necessarily having established a legal physical presence in the host country.

<sup>311</sup> A global collateral pool would contain collateral denominated in several currencies, which would be accepted by several central banks for the collateralisation of intraday and/or overnight credit provided to their eligible counterparties.

procedures given the end of Year 2000 transition efforts, which hampered the consolidation process.

On the other hand, advances in information and network technology have also reduced the obstacles to consolidation in the payment and securities settlement industry. Declining technology costs and increasing technological capabilities have allowed for the emergence of new payment and settlement processing arrangements. For example, centralised processing and remote access through telecommunications networks have reduced geographical barriers. As a result, for those banks that have or can attract a critical mass of transactions, the provision of payment and securities services can leverage their business opportunities across other banking services (eg credit provision, custody services, information services, cash management services, etc). At the international level, specialised correspondent and custodian banks acting on a global basis may seek to provide payment and settlement services. For those institutions without a critical mass of transactions, technology has also enabled them to outsource their payment and settlement activities to other processors that can capture economies of scale. One of the main advantages for the outsourcing bank is that it shifts the investment costs (as well as the operational risk) to the service provider and converts fixed costs to variable costs. In this respect, consolidation is a rational outcome made possible by declining technology costs and increasing technological capabilities.

#### **4. The effects of consolidation**

This section analyses the efficiency, competition, risk and oversight aspects of the consolidation of payment and settlement systems. It concentrates on the major issues related to consolidation and does not attempt to describe all possible implications of all the different types of consolidation.

##### **Effects on efficiency**

Consolidation has an impact on the efficiency of payment and securities settlement since it affects the way in which these activities are conducted and thus the resources that are used for the provision of the respective services. A first effect is related to the fact that consolidation tends to lead to a greater concentration of payment and settlement flows among fewer parties within the financial sector. For example, in the United States the top five originators of automated clearing house (ACH) transactions accounted for 49% of total ACH transactions in 1998, compared with only 25% in 1989. At the international level, regional or global banks that specialise in correspondent banking are emerging, while banks of a smaller size are tending to abandon this activity, for which the profit margins are shrinking. Evidence from US commercial banks suggests that concentrations of correspondent deposits have increased over the last five years among both the 10 largest banks and the next 90 largest banks by asset size. By contrast, the share of correspondent deposits at other US banks declined sharply from around 38% in 1995 to some 16% in 1999.

As a result of such concentration, a greater number of transactions are internalised within fewer institutions. Interbank transactions become intrabank transactions which do not involve external exchanges of payment messages via an interbank funds transfer system (IFTS) and hence tend to be cheaper to process.<sup>312</sup> The degree of payment internalisation, however, is dependent upon factors such as the type of businesses in which each entity participated prior to the consolidation, the extent to which the merged institutions consolidate their internal payment processing, and the existing concentration within the market. In Switzerland, for example, two

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<sup>312</sup> A comprehensive description of, inter alia, the effects of consolidation on payment system efficiency is provided in the text by Berger, Demsetz and Strahan (1999).

large banks, prior to their merger, had similar types of businesses and nearly the same daily turnover in the national real-time gross settlement (RTGS) system. After the merger and the consolidation of the two RTGS accounts, the turnover of the new institution was roughly the same size as that of one of the pre-merger banks. The total volume and value of payments processed in the RTGS system decreased by around 25%. By contrast, owing to the large number of depository institutions in the United States, the two largest mergers in the fourth quarter of 1999 reduced the overall average value of daily Fedwire flows by less than 0.4%.

Large banks that have specialised in payment processing now increasingly compete directly with interbank systems. Large banks have two main advantages over their smaller competitors with regard to efficiency in payment and securities settlement. First, they typically have the financial strength to invest in new, sometimes costly, technologies that may increase efficiency and reduce risk in payment and securities settlement. Second, their high market share in the payment business enables them to decrease unit costs by capturing economies of scale. Lower unit costs may attract additional volume and increase profits. In the case of specialisation and outsourcing, the market power of the service provider and the contestability of the outsourcing market largely determine whether such efficiencies result in lower prices for downstream users or increased profits for service providers.

Similarly to consolidation in the form of specialisation and outsourcing, internal consolidation may yield scale efficiencies. The cost savings that financial institutions can realise through internal consolidation may sometimes be so great that internal consolidation even becomes an alternative to outsourcing. The cost savings through internal reorganisation also apply to payment and settlement systems: for instance, when the Federal Reserve consolidated the IT platforms that supported Fedwire operations, it was able to eliminate redundant resources and reduce operating costs. These efficiencies permitted dramatic Fedwire fee reductions over a three-year period (a 50% reduction for funds transfers, and a 25% reduction for securities transfers). A recent study found substantial long-run benefits in terms of economies of scale and an improvement in the cost efficiency of Fedwire as a result of consolidation, although there were significant transition costs.<sup>313</sup> Consequences of consolidation for the efficiency of a payment system can also be found in a study<sup>314</sup> of the Federal Reserve's costs of processing cheques, ACH transfers and wire transfers. Both electronic services, ACH and Fedwire, were found to have significant economies of scale. The electronic services have also experienced rapid technological change over the last five years. This finding is consistent with the rapid decline in the prices of computer and communications equipment. Cheque processing, on the other hand, has shown little measurable progress over time. This may, in part, have been due to the fact that easier-to-process items such as payroll cheques may have tended to migrate to ACH. The results of both studies may carry over to consolidation of private sector processors.

The concentration of payment and settlement flows within fewer institutions might also lead to increased efficiency because a reduction in the number of banks can facilitate agreements on technical standards and market conventions. In fact, one study found that countries with more consolidated banking systems have greater use of electronic payments and attributed this to the greater ease experienced in agreeing on common standards, technology and the use of centralised account information.<sup>315</sup> However, there are also examples of countries with a less consolidated banking industry where interbank cooperation in the field of payment systems (including standardisation issues) works well owing to the fact that banking associations – or similar common entities – have been given a mandate by their member banks to act on their behalf in this special area. Furthermore, in cases where a few large institutions dominate the

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<sup>313</sup> Hancock, Humphrey and Wilcox (1999).

<sup>314</sup> Bauer and Ferrier (1996).

<sup>315</sup> Humphrey, Pulley and Vesala (1996).

market, each with a legacy system geared to a somewhat different standard, ultimate agreement on common standards and conventions might not be quickly attained.

Finally, financial sector consolidation leads to the emergence of large market players that often have very demanding business needs with regard to the functionality of interbank payment and settlement systems. This is the case at the domestic level, and even more so at the international level. Global players normally participate in several systems and would thus prefer a higher degree of cross-system standardisation. The demand for standardisation includes technical aspects, such as message formats, as well as support for global cash management, DVP procedures and professional information systems. Thus, under the pressure from global market players, the system operators need to enhance market infrastructures continuously. An example of this phenomenon is the efforts of the Federal Reserve, CHIPS and SWIFT over the years to maintain compatible funds transfer message formats (ie an ability to map fields between formats) in order to facilitate straight through processing of cross-system domestic and cross-border payments. With regard to TARGET, in particular large banks operating in several EU countries request a higher degree of harmonisation of the service provided by the different RTGS systems participating in TARGET. The requests from these banks range from the harmonisation of message formats to the provision of a uniform service throughout TARGET. Another example is the work undertaken by ECSDA to standardise the procedures and messages for securities settlement.

### **Effects on competition**

As described in the previous section, the consolidation processes in the financial industry have the potential to increase the efficiency of payment and settlement activities. In many cases, these benefits come from a reduction in the number of market participants. There might, however, be a limit to concentration beyond which the reduction in the number of institutions involved in payment and settlement activities results in reduced competition. This may in turn have negative effects, such as increased prices for settlement services and lower incentives for innovation.

Consolidation also concerns the number of institutions with access to interbank infrastructures (interbank funds transfer systems, securities settlement systems, etc) and the volume of traffic in the systems. Should the volumes processed via traditional IFTSs (or the number of participants) decrease substantially, processing fees might have to be increased in order to ensure cost recovery. As a result, smaller participants may face higher fees or be forced to become indirect participants in the system via the large participants, running higher credit and liquidity risks than is currently the case.

The overall effects of consolidation on competition are likely to vary according to the type of consolidation being considered (eg consolidation of financial institutions or market infrastructures), the definition of the market (ie local, national or global) as well as its contestability, the extent of existing market concentration, and the legal and policy framework governing competition.

With regard to the definition of the relevant market, it would, for example, be inappropriate for the evaluation of the competitive situation in global correspondent banking to assess the market power of a global player which is active in that field against one of the smaller, domestically oriented institutions in its home market. Depending on how the relevant market has been defined, the number of banks that are active in that market or their competitive strengths might differ considerably. It is also interesting to note that, as recent developments in the custody business have shown, two institutions can be both partners in some countries and competitors in others.

As mentioned above, whether consolidation leads to a decrease in competition depends largely on the contestability of the market. If the market is easily accessible to new entrants and there are no sunk costs from entry, the incumbent will not be able to reap excessive profits if it wants to remain in the market. Some of the entry barriers to a market, or barriers to continuing participation by smaller participants, may include the criteria for access to payment and



settlement systems, the fee structures of interbank systems, high fixed costs, switching costs, compliance costs and critical mass of participants and transaction volume to capture economies of scale. These considerations may reduce the contestability of the payment processing market. One response to fears about excessive market concentration has been reasonably open and objective criteria for direct access to interbank facilities.

Most of the banks that were interviewed expect that, despite consolidation, competition in the provision of payment and settlement services will increase in the coming years. One of the reasons is that an increasing number of banks and non-banks are establishing transaction banks intended to act as new third-party service providers. In addition, the possibilities offered by the internet and other technological advances will lower the cost barriers to entering the processing business, and will probably increasingly foster disintermediation of the traditional banking activities, leading to a more pronounced distinction between “sales banks” and “production banks”. In general, market participants expect competition to be more intense in the fields of service level and innovation than in the field of pricing policy. Non-price features are, however, often difficult to compare across organisations, so it is difficult to assess the degree of competition in a specific market.

Despite these market expectations, policymakers should be aware that competition is a dynamic process. Competition effects observed over the short term may not be indicative of competition over the longer term. In particular, an increase in competition as a result of consolidation may exist only for an interim period. The picture may change once the market situation has become more stable and the remaining institutions exercise their market power. In short, policymakers should always make sure that a market is contestable.

In this framework, consolidation among payment and settlement infrastructures may represent a special, albeit complex, case. Consolidation among infrastructure systems seems to be driven largely by economies of scale, network effects, and consolidation in the banking industry. For example, banking consolidation increases the likelihood of common membership between two systems. To the extent that two systems have common membership, those common members may seek to achieve cost savings by consolidating systems. These cost savings would arise from elimination of redundant costs and economies of scale. In addition, consolidation would probably expand the network of participants served by the system and provide a larger financing base for investments in new products and technologies. Three policy views of system consolidation exist in the literature – a competing network model, a public utility model, and a model for promoting intra-network competition.<sup>316</sup> The competing network model is premised on the assumption of sufficient transaction volume to sustain multiple networks in a region and that banks have a choice as to which network they can join. Under these assumptions, interbank payment networks would compete on both a price and non-price basis, thus motivating efficiency and innovation. The public utility model sees interbank payment systems as essential facilities that should have open access in order to provide a level playing field for the provision of downstream payment services by the participating banks. In the United States, the public utility model generally exists at the wholesale level for the clearance and settlement of securities transactions. Central securities depositories and clearing organisations, for example, are highly regulated by federal authorities. In a public utility model, efficiency and innovation is achieved through greater economies of scale and network effects, and greater investment capacity resulting from network consolidation. The intra-system competition model also assumes open access and equitable governance that allows all participants a common infrastructure on which to base downstream services and products. For example, in ATM networks, consolidation may enhance competition for retail deposits by allowing small and large banks equal access to a large number of ATM locations.

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<sup>316</sup> See Robert Anderson and Brian Rivard: “The Competition Policy Treatment of Shared EFT Networks”, and David Balto and James McAndrews: “Joint Venture Payment Networks and Public Policy”, Proceedings of the Bank Structure and Competition Conference, Federal Reserve Bank of Chicago.

The competitive effects of system consolidation, however, largely depend on such factors as the governance structure of the surviving system, access criteria, market demand for downstream services, and economies of scale levels. For example, if the governance structure acts to restrict access, limit the introduction of innovative services by the system, or implement anticompetitive pricing schemes, then overall competition may be adversely affected. Determining the competitive effects of system consolidation (ie the social welfare effects) is a complex task requiring the evaluation of highly uncertain costs and benefits.<sup>317</sup>

The multidimensional effects of consolidation on competition are not limited to retail payments, but also apply to wholesale payments and securities settlement. However, in the latter field, system consolidation seems generally to be regarded as having positive competitive effects. In the current restructuring process of the respective European systems, which is, however, a very specific case owing to the introduction of the euro only one and a half years ago, most large banks are in favour of a higher degree of consolidation. In certain fields, such as securities settlement and the settlement of foreign exchange transactions, several interviewees even expressed their preference for monopolies. With regard to securities settlement systems, some took the view that it could be useful to separate the business into areas that could be monopolies (eg registration of ownership) and areas where competition might be favourable (eg transfer of ownership). Others were, however, of the opinion that competing utilities would be preferable, since advances in technology increasingly allow the different systems to connect to each other. This connection was seen as an opportunity to combine the advantages of a more integrated general infrastructure with those of competition between different systems.

The overall market infrastructure should always be considered from the standpoint of risk, competitiveness and cost efficiency. The ownership structure and the governance of a specific system also play an important role in this respect. In some systems, control is vested in the largest users. These large users may not be sympathetic to the needs of smaller users. Other systems may operate on a shared basis or a more representative governance basis. Whether a system is organised on a profit or non-profit basis may also influence competition effects.

### **Effects on financial, operational and systemic risk**

Consolidation in the financial sector may affect the nature and the size of risks associated with payment and securities settlement activities in four areas – transparency, scope, concentration and incentives. These effects may necessitate changes in risk management within individual financial institutions and payment and settlement systems, as well as changes in oversight and supervisory practices.

Settlement risks, for example, may become less transparent as risks shift from rule-based interbank systems with relatively open disclosure to large private sector payment service providers with more discretionary credit management practices and less transparency. Critical operational “choke points” may shift from well recognised and understood interbank systems to private sector firms whose payment and settlement roles may not be recognised fully by market participants or authorities. Risks must be identified and monitored as a first step in risk management. To the degree that consolidation makes settlement risks less transparent to counterparties and the markets by shifting transactions to private systems, risk management may be weakened.

On the more positive side, consolidation also has the potential to improve the scope, integration and coverage of an institution’s settlement risk management across settlement transactions such

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<sup>317</sup> For opposing views on the effects of ATM network consolidation in the United States, see Elizabeth S Laderman: “The Public Policy Implications of State Laws Pertaining to Automated Teller Machines”, *Federal Reserve Bank of San Francisco Economic Review* (Winter 1990), and Robin A Prager: “ATM network mergers and the creation of market power”, *The Antitrust Bulletin* (Summer 1999).

as foreign exchange, domestic large-value payments and securities. Some banks, for example, have or intend to implement a single global operations, treasury or risk management centre working on a 24-hour basis, especially to meet the requirements stemming from the use of the CLS system. Some large international banks, such as Chase, Bankers Trust and Deutsche Bank, already have regional or global centres. Consolidations among institutions may also reduce the number of counterparties a large bank must assess for settlement risk purposes, but may also complicate assessment due to the increased complexity of larger, merged institutions.

Chapter III discusses the possibility that consolidation may create firms that may be too large to fail, liquidate, or discipline effectively. One important attribute of such large, complex firms is their extensive participation in large-value payment and securities settlement systems. Consolidation of payment and settlement activity within such firms will also consolidate settlement risks (credit and liquidity risks) and operational risk. In particular, those large, complex firms that specialise in trading, settlement, correspondent banking or custody activities are likely to be the most intertwined with the global payment and settlement infrastructure and become the focal points for much of the settlement activity. The key question, therefore, is: has consolidation increased the risk that the failure or operational disruption of a large, complex firm would be disorderly to the payment or securities settlement systems? Consolidation of payment flows among a few major processors may lead to a significant shift of credit risk from interbank settlement systems that are relatively transparent public utilities to private firms that are relatively more opaque. In particular, financial firms may be extending to or receiving from a large private sector payment processing firm a significant amount of intraday and overnight credit. As a consequence, the failure or disruption of a large payment provider in terms of credit risk could be significant.<sup>318</sup> Furthermore, by shifting credit risk from interbank settlement mechanisms to private firms, the financial markets may forgo some of the risk management benefits of interbank settlement mechanisms, such as settlement guarantees, backup liquidity facilities and settlement failure resolution procedures that help to mitigate the effects of credit risks and buffer systemic shocks.<sup>319</sup> In order to properly manage this shift in settlement risk, bank and non-bank service providers need to have well developed securities settlement and payment risk control mechanisms in place, including adequate liquidity, monitoring of intraday exposures, and counterparty/customer credit and liquidity risk assessments.

With regard to the effects of consolidation on liquidity risk, it is not clear whether positive or negative effects prevail. For example, as payment flows become more concentrated among fewer participants, the likelihood of offsetting incoming and outgoing payments for any particular participant increases. Therefore, there are indications that concentration may facilitate banks' intraday liquidity management and reduce intraday liquidity tensions in a given payment system.

Nevertheless, consolidation may also negatively affect the general liquidity situation in the interbank market. Should the local money market, for instance, be dominated by one or two banks, the possibility of disrupting banks' liquidity management may increase (and, in fact, the dominant participant might also have difficulty investing a large amount of excess reserves in the local money market), as experience in some countries such as Switzerland has shown. For example, if such a major market player fails or, owing to a malfunctioning of its internal IT

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<sup>318</sup> In the global custody business, the risk situation might be somewhat different, because securities owned by customers are typically segregated from the custodians' own assets. In this case, the customer may be better protected in the event of the failure of the custodian than in the case of deposit balances with a settlement agent.

<sup>319</sup> The issue of risks within payment and settlement systems has been extensively studied by central banks, especially with regard to RTGS systems, hybrid and net settlement systems, DVP securities settlement systems and foreign exchange settlements. Several central bank reports have outlined procedures for reducing or managing risks in these systems (eg Lamfalussy standards and the Core Principles for Systemically Important Payment Systems). See the website of the Bank for International Settlements for a listing of the relevant reports ([www.bis.org](http://www.bis.org)).

systems, is no longer able to process payment orders, this may give rise to serious repercussions not only for the liquidity situation of individual market participants which do not receive expected incoming funds, but also for the money, capital and foreign exchange markets in general.

A particular consolidation issue at the international level is the emergence of global correspondent banks that participate directly in multiple foreign payment systems and process high payment volumes in the respective currencies, but which have only limited liquidity resources (eg collateral) in these currencies. Liquidity problems may arise, especially when full collateralisation of central bank credit is required. In the past, these banks usually relied on locally based correspondents that had ample home country assets to pledge for liquidity purposes. Some institutions consider the establishment of a multi-country common collateral pool to be a possible solution to this problem. Such a global collateral pool (see footnote 5) may reduce liquidity cost, since the same collateral could be used for central bank credit in several currencies. In the context of CLS, where banks will have to issue payments in several currencies simultaneously, a global collateral pool might facilitate their operations considerably. Establishing such a common collateral pool, however, would raise important monetary policy, legal and technical issues which would need to be resolved. Another alternative would be for individual central banks (or other liquidity providers) to accept a broader range of collateral. In particular, instruments denominated in foreign currencies might be accepted, subject to an appropriate haircut to cover currency risk. This is, in fact, the approach being followed in the development of the US dollar clearing system in Hong Kong, where the settlement institution proposes to accept certain Hong Kong dollar instruments as collateral for US dollar credit.

Consolidation also affects operational risk. In the short term, banks indicated that operational risk tends to increase after a merger of two financial institutions, until the IT platforms of the two institutions can be integrated.<sup>320</sup> In the longer term, to avoid the liquidity problems linked to a malfunctioning in the internal IT systems of a major player (see above), banks should have robust backup systems and contingency arrangements that are reviewed and enhanced on an ongoing basis. To the extent that consolidation results in the emergence of certain key operational “choke points” in the payment system, public authorities may wish to increase their supervision and monitoring of financial institutions’ backup systems and contingency arrangements with an emphasis on the continuity of payment operations.

Finally, consolidation may also affect systemic risk. The stability of the financial system can be endangered when the failure of a financial institution leads to considerable adverse effects on one or several other financial institutions.<sup>321</sup> Payment and securities settlement systems determine to an important extent the exposures among and linkages between financial institutions, because they provide the technical infrastructure through which market transactions are settled. Therefore, they are one of the channels through which contagion effects can be transferred through the financial system. One basic premise is that the greater the degree of consolidation, the more concentrated payment flows will be among fewer, larger institutions and the greater the adverse effects on other financial institutions from the failure to settle of another financial institution.<sup>322</sup> It is not clear, however, what net effect consolidation will have on the settlement risk profile of individual institutions. As mentioned previously, consolidation

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<sup>320</sup> In this report, the term “operational risk” mainly refers to major failures of information technology systems. In a broader sense, however, operational risk also includes breakdowns in internal controls and corporate governance. Such breakdowns - which might also be more likely to occur in the restructuring phase after a merger - can lead to financial losses through error, fraud or failure to perform in a timely manner. A detailed analysis of this issue is provided in the Report on Operational Risk Management of the Basel Committee on Banking Supervision (1998).

<sup>321</sup> This is a narrow definition of systemic events or systemic risk. For a comprehensive analysis of the concept of systemic risk, see de Bandt and Hartmann (1998).

<sup>322</sup> See also Berger, Demsetz and Strahan (1999).

may allow institutions to improve their risk management practices by getting a more comprehensive picture of their settlement exposures across multiple markets and systems. Larger institutions would also have the resources to invest in more sophisticated risk management systems. On the other hand, consolidation may shift payment flows and their attendant risks from relatively transparent, rule-based interbank systems to more opaque, discretionary private institutions.

Second, it should also be considered that a smaller number of market players might facilitate the monitoring of risks by supervisors and counterparties. On the other hand, the structure of a merged institution may be so complex, at least in the initial period after the merger, that it raises additional concerns and makes supervision more difficult (this is especially true for cross-border mergers). In any case, it is clear that even if consolidation does not necessarily increase the probability that individual institutions will fail, it makes the consequences of the failure more likely to have wide-ranging systemic effects.

Third, the rapid changes in the financial markets and organisations as a result of consolidation coupled with technological changes and the entry of non-banks into payment and settlement activities might also have systemic risk implications. Supervision of the credit, liquidity and operational risks posed by non-bank service providers of payment services is still an evolving issue. Organisational change, unless managed proactively, can pose significant risks. Technology can be a powerful tool or a significant risk, depending on the level of understanding of the issues by management.

Fourth, a shift of settlement activity from interbank settlement mechanisms with risk-averse objectives to private sector firms with a more positive risk appetite, in the aggregate, may increase systemic risk. The incentives for risk management, particularly under adverse market conditions, may shift from the collective protection of the clearing house to the protection of an individual firm. Such a shift in incentives may be destabilising during a market crisis as payment service providers look to the protection of their firm first. Since robust interbank payment systems play a role in buffering credit and liquidity shocks by dampening their transmission to other market participants, the shock absorber role may be minimised or forgone as consolidation progresses. To the extent that most payment flows continue to go through interbank systems, systemic effects depend largely on the design and the robustness of the payment system's risk controls. A payment system can function in a neutral way as a simple transmitter of contagion effects, increase contagion effects or, by contrast, act as a shock absorber, depending on its approach to settlement risk management. Central banks have undertaken several major efforts in the past two decades to strengthen risk management in systems and to reduce and contain systemic risk. For example, they have promoted and operated RTGS systems and insisted on the implementation of risk control measures in net settlement systems. RTGS systems, for instance, can offer a powerful mechanism for limiting systemic risks in the interbank settlement process, because they can effect final settlement of individual funds transfers on a continuous basis during the processing day. With regard to public and private net settlement systems, the Lamfalussy standards (ie minimum standards for the design and operation of netting schemes) define one basis for effective risk control. Systems fulfilling the Lamfalussy standards will be able, at the very least, to withstand the failure of the participant with the largest single net debit position. Due to the risk control measures in such a system (eg limit systems, collateral requirements and loss-sharing agreements), this is independent of the size of an individual participant. For example, after a merger of two participants in the same system, the new institution might have higher limits in the system, but will also have to provide more collateral to cover the higher exposure. It is, however, also true that, in the event of the failure of a participant during the settlement day, counterparties in both an RTGS system and a net settlement system complying with the Lamfalussy standards would not receive expected incoming funds from the failed participant if the failed participant had not submitted the payments to the system prior to its failure.

Finally, consolidation as it affects the size of a participant, its settlement business or the role of interbank payment systems may have implications from a systemic risk perspective.<sup>323</sup>

For example, certain developments at the level of both financial institutions and payment and settlement systems may increase systemic risks by increasing the dependencies between systems. Interdependencies between systems have increased as a result of the emergence of multinational institutions and specialised service providers that have access to several payment and securities settlement systems in different countries. Furthermore, consolidation has caused an increasing interdependence between different systems as evidenced by the development of systems such as CLS or by the implementation of DVP procedures. On the one hand, DVP mechanisms, for example, eliminate principal risk in securities settlement. On the other hand, by connecting payment and securities settlement systems, they may accelerate the transmission of settlement problems from one system to another.<sup>324</sup> Likewise, CLS acts as a bridge mechanism between multiple payment systems, potentially increasing the operational and liquidity interdependencies between such payment systems. These examples indicate the growing importance of payment and settlement systems in the potential transmission of contagion effects caused by consolidation among participants and systems. Finally, market participants may assume that global correspondent and custodian banks are “too big to fail” from the perspective of settlement system and financial system stability. Market participants may also mistakenly believe that settlements on the books of these institutions have the same quality as settlements on the books of a central bank. Consequently, a moral hazard problem might occur not only with regard to the global clearing and custodian banks themselves, but also with regard to other market participants.

In conclusion, financial consolidation may shift credit and liquidity settlement risks from relatively transparent, risk-averse interbank utilities to more opaque, risk-taking private firms. At the same time, operational “choke points” in the payment system may shift from well recognised and understood systems to private firms whose role in the payment system may not be fully recognised by market participants or authorities. Consolidation may shift risk management incentives from a risk-avoidance, collective protection to a risk-taking, individual firm protection bias. Such a shift may be destabilising during a market crisis as individual payment processors seek to protect their firm interests first. Finally, consolidation may be increasing the interdependencies and linkages between payment and settlement systems. Taken together, these effects may create additional opportunities for spillover effects or negative externalities to arise.<sup>325</sup> Consolidation’s effect on financial, operational and systemic risks in a particular venue, however, depends in part on the initial conditions of the banking system in that venue regarding payment flows, concentrations and merger patterns.

### **Effects on the oversight role of central banks**

Consolidation processes lead to the expansion of very large institutions with a high share of in-house payment and settlement transactions. Many of these institutions provide payment services to other banks or other payment intermediaries by effecting payments between the accounts of these entities in their books. To some extent, these institutions can be considered alternatives for traditional payment and settlement channels. As consolidation progresses, the concentration of payment activity among a few large institutions will challenge the traditional oversight role of

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<sup>323</sup> See Chapter III for a working definition of systemic risk.

<sup>324</sup> However, DVP is often achieved via systems where the securities settlement system also settles the cash leg of a transaction through its own processing system. In such a system design, the interdependencies between payment and securities settlement systems are significantly reduced.

<sup>325</sup> Spillover effects, negative externalities and interdependencies are key components of systemic risk as defined in Chapter III.

central banks over the payment system and the bank supervisors' role over individual institutions. Central banks will need to better understand the role played by key institutions in the flow of payments and bank supervisors will need to analyse whether existing supervisory tools are suited to coping with institutions' growing role in the payment and settlement business. New cooperative arrangements between banking supervisors and overseers may be needed to identify and analyse the interactions, dynamics and risk at both the institutional and system levels. With regard to major payment systems, the Core Principles for Systemically Important Payment Systems now provide a key set of evaluative standards for the relevant authorities.<sup>326</sup> Moreover, the increasing importance of cross-border consolidation may require an intensification of cross-border cooperation between payment and settlement systems overseers and banking supervisory authorities and securities supervisory authorities. Examples in this direction include the joint IOSCO/CPSS working group to develop standards for securities settlement systems and the joint IOSCO/CPSS effort to establish a disclosure framework for securities settlement systems.

Finally, the expected increased entrance of non-banks in payment and settlement-related activities might present a further challenge to central banks and bank supervisors. Most of the interviewees did not express a general concern about this fact, although they expect increased competition. However, what the banks clearly have requested is a level playing field between themselves and any kind of new market participant.

## 5. Conclusions

The current situation of the financial industry in the G10 countries is characterised by an accelerated consolidation process, not only changing the banking structures through M&As, but also affecting the market infrastructures for payment and securities settlement and banks' internal systems and procedures for payment and back office activities. In parallel, the global correspondent banking and the global custody businesses are tending to be concentrated among a smaller number of large market players and, at the domestic level, banks are increasingly starting to outsource payment and settlement activities to bank and non-bank payment service providers.

The emergence of large, specialised service providers is driven primarily by both the benefits of size and, consequently, of the potential to make large investments in the necessary IT infrastructure, and the internationalisation of the interbank and capital markets. The latter factor has been made possible by a general trend towards deregulation and liberalisation of financial markets and is connected with sharply increasing cost-cutting pressure. Global players, in turn, are becoming more demanding vis-à-vis market infrastructures in terms of their business needs for efficiency of payment and securities processing. Consequently, they are often the main drivers of a greater harmonisation and consolidation of systems, both domestically and across borders.

All the types of consolidation analysed in this report affect efficiency, competition, risk and the oversight role of central banks. Many of these effects can be considered to be quite positive and may, for instance, lead to lower prices for payment and securities transactions for banks as well as for customers. M&As may result in stronger financial institutions, which are able to invest in risk-reducing technologies, and internal consolidation may allow banks to manage credit and liquidity risk better. However, there are also possible long-term negative effects with regard to competition, which are difficult to predict today. It cannot be ruled out that a decrease in the number of financial institutions or payment and settlement systems competing in the relevant

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<sup>326</sup> See Committee on Payment and Settlement Systems, Consultative Report on *Core Principles for Systemically Important Payment Systems*, Part 2 - Implementing the Core Principles, page 3.

markets may ultimately result in higher prices for settlement services and lower rates of innovation. Moreover, certain changes in the role of financial institutions in the field of payment and securities processing have the potential to affect the nature and the size of risks arising in connection with these activities which, in turn, may require oversight and supervisory authorities to adapt their policies.

The complexity and different effects of the consolidation processes taking place within the payment and settlement industry make it impossible to categorise consolidation either as purely positive or as purely negative from a social welfare viewpoint. Furthermore, consolidation cannot be analysed only from a payment and securities settlement or even central bank perspective. In general, at the present stage, it does not seem to be advisable for public authorities to interfere with the market competition between financial institutions or between payment and settlement systems. In fact, public authorities, as a public policy objective, may wish to remove potential obstacles to the consolidation process when it enables the market to develop initiatives aimed at reducing risks and enhancing efficiency in the field of payment and securities settlement.

However, authorities should carefully monitor the impact of consolidation in the field of payment and settlement businesses from a risk, efficiency and competition viewpoint. Authorities should not refrain from defining safety or access standards when appropriate, especially regarding the potential risks stemming, on the one hand, from very large players participating in payment systems and, on the other hand, from the emergence of consolidated systems. There are some issues related to consolidation of the payment and settlement system that might become key areas of interest for central banks in the coming years and which they – or public authorities in general – might need to examine more closely. First, the providers of payment and securities settlement systems (including central banks as providers of RTGS systems) might face an increasing demand for remote access from large correspondent and custody banks operating on a global basis. Closely related to the issue of remote access are the ideas of a global collateral pool and of an extension of the range of eligible collateral accepted by individual central banks, both of which are aimed at avoiding temporary liquidity tensions within and across payment systems, eg in connection with the operation of CLS.

Second, the increased entrance of non-bank service providers into a market which used to be occupied only by banks, and the development of the internet and e-commerce might increasingly affect central banks in discharging their responsibility to ensure the soundness and the efficiency of the payment system. Although the current developments might be regarded as improving competition, banks expect public authorities to ensure a level playing field in this area in terms of safety and soundness.

Third, the provision of payment and settlement services usually requires significant IT investments. This fosters the emergence of large, specialised service providers that, to some extent, can be considered as alternatives to traditional interbank payment and settlement systems. Consequently, there might be a shift from risks within interbank settlement systems to risks between customer banks and service providers. Banks should be aware of these risks and need to have well developed risk control mechanisms in place. A failure of a large service provider, or even a temporary technical problem in one of its IT systems, might have serious systemic liquidity and credit effects.

Fourth, a closely related issue is the fact that customer banks might perceive global correspondent and custodian banks as “too big to fail”. Consequently, moral hazard problems might occur in the market. This is an additional reason for central banks to insist on effective risk management procedures.

Fifth, the emergence of large bank and non-bank service providers and concentrated payment flows through these providers raises a question concerning the respective roles of overseers and banking supervisors and the suitability of the tools they currently use to fulfil their responsibilities. This issue has both functional and, owing to the increased cross-border consolidation, jurisdictional aspects. The appropriateness of the current cooperative



arrangements between central banks and supervisors – domestically and cross-border – should be carefully analysed to ensure the soundness and the efficiency of the payment and settlement systems and, at the same time, to strive for synergies.

## **Annex VI.1: TARGET<sup>327</sup>**

Before the start of economic and monetary union (EMU), separate RTGS systems existed in the EU countries. Some of them had been operating for several years, others were established only recently in view of the requirements of EMU. With the introduction of the euro, these individual RTGS systems were interconnected to form one single system: TARGET. TARGET is a decentralised system consisting of 15 national RTGS systems, the European Central Bank payment mechanism (EPM) and the Interlinking system, which is a telecommunications network (S.W.I.F.T.) interconnecting these systems. TARGET is needed under EMU in order to achieve – between the national central banks of the euro area – the same easy transferability of central bank money which had previously existed within the individual countries. The integration of the euro money market, made possible by TARGET, is a prerequisite for a single monetary stance in the euro area. Apart from the monetary policy considerations, TARGET also reflects the central banks' willingness, during the 1990s, to develop RTGS systems as a safe way of processing payments, minimising systemic risk and promoting the efficiency of cross-border payments.

The TARGET experience provides several lessons regarding the consolidation of payment infrastructure in the areas of market demands for further infrastructure consolidation, implications for liquidity management, and operational risks arising from interdependencies.

Today, participants consider TARGET to be one system rather than a hotchpotch of 15 different ones and they have requested further harmonisation. In particular larger banks (representing 70 to 80% of payment flows), which typically access TARGET through more than one national RTGS system, are strongly in favour of a more uniform service level. As consolidation in the European banking sector progresses, the pressures for further harmonisation of the TARGET system are likely to increase. The Eurosystem has recently started a discussion on the long-term evolution of TARGET in order to eliminate some existing shortcomings of the present system and to be able to adapt the system to meet future developments in technology and the financial sector in general.

The TARGET experience has also shown that banks needed some time to learn to manage their liquidity efficiently across several interlinked large-value payment systems operating in euros. Market conventions concerning the efficient movement of funds that, prior to TARGET, existed only at the national levels had to be developed for the euro area level. Further developments in liquidity management are expected as banks gain experience in euro markets.

In addition to changes in liquidity management, it became clear that consolidation raised important operational issues. An incident in one component of TARGET or at a major bank, for example, has repercussions across borders, given the interdependencies that exist. For instance, in 1999 there was a system error at one of the very large banks, which resulted in a breakdown in the control system for online applications on the mainframe. As a result, payment orders for foreign exchange and money market transactions, securities settlement and customer payments could not be processed. The backup system of this bank could not be used since it exhibited the same software error. As a consequence, various emergency and manual procedures were used. However, they were not sufficient to cope with the number of payments to be processed and, as a result, the execution of many large-value payment and securities orders had to be postponed until the next business day.

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<sup>327</sup> TARGET is the Trans-European Automated Real-time Gross settlement Express Transfer system. It processes over 190,000 payments each day valued at over EUR 1 trillion, of which more than 41,000 payments valued at over EUR 450 billion were cross-border payments.

TARGET represents a specific form of consolidation that originated from the central banks, rather than the markets, in order to facilitate the implementation of the single monetary policy of the Eurosystem. The TARGET experience demonstrates some of the implications from cross-border consolidation of national payment systems such as liquidity effects and operational dependencies. As consolidation of financial services continues, market participants are likely to put increasing pressure on the Eurosystem to further harmonise TARGET. Despite TARGET's central bank origins and objectives, the Eurosystem is being responsive to market needs by continuously seeking input and feedback on TARGET-related issues from the banking and financial community. At the national level this is done through regular TARGET User Group meetings. At the euro area level the Eurosystem has regular discussions with European banking associations and representatives of individual financial institutions.

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The integration of the individual chapters into a coherent whole was done under the guidance of Dean Amel and benefited from the efforts of Age Bakker, Gavin Bingham, Alex Bowen, Jean-Michel Godeffroy, Takatoshi Ito, Myron Kwast and Fabio Panetta.





## **Data Annex A: Patterns in consolidation transactions**

The data presented in this annex were obtained from the Securities Data Company (SDC) Merger and Acquisition (M&A) Database, which is produced by Thomson Financial Securities Services. The SDC database attempts to cover all transactions that involve at least 5% of one of the parties participating in the transaction. Before 1992, only transactions with no reported value or a reported value of at least USD 1 million were included in the sample, but no such limit has been used since that date. This methodological change may contribute to the observed rise in consolidation activity over the decade.

The information used to compile the database is collected regularly by SDC from prospectuses, more than 200 English and foreign language news sources, company regulatory filings, direct contact with financial institutions, and surveys of investment banks, lawyers and other advisers. Besides typical mergers and acquisitions of entire, healthy firms, the M&A database also includes some other deals such as spin-offs, purchases of failing firms and privatisations of state-owned institutions.

Only transactions announced between 1990 and 1999 were included in the analysis. The year that the deal was announced is used as the year of the merger, acquisition, joint venture or strategic alliance. Only deals that were completed or pending as of May 2000 were included in the sample. Transactions that were cancelled after being announced were excluded. If a deal involved more than two financial firms, it would typically be listed as several two-firm deals.

For inclusion in the tables, mergers and acquisitions were restricted to transactions that involved financial firms only. Likewise, joint ventures and strategic alliances were limited to deals where the jointly controlled entity was a financial firm. The industry of the “parents” was not taken into account, as the data do not lend themselves well to assessing the industries of the firms that own and control a joint venture.

Financial firms involved in mergers and acquisitions are classified as belonging to one of three segments of the financial sector: banking, insurance or securities/other. Banking comprises commercial banks, bank holding companies, credit institutions, real estate mortgage bankers and brokers, and savings and mutual savings banks. Insurance includes both life and non-life insurance firms. Lastly, as the name indicates, the third group consists of securities firms, including investment banks, securities and commodities firms, and all other financial firms, such as exchanges. With the joint venture and strategic alliance data, no distinction was made among the three categories of financial firms.

It should be noted that inspection of the M&A data revealed that some firms were not classified in the most appropriate groups. In large transactions where problems were identified, corrections were made to reflect the appropriate industry. However, it is highly likely that at least some firms are still improperly classified. Reported figures may also be influenced by similar problems with the country of transaction participants. Specifically, some firms may be classified as being located in the wrong country. As a result of improper classifications and other issues associated with obtaining accurate and consistent data, some of the figures reported in the tables in Annex A exhibit minor inconsistencies.

Two sets of tables are presented in this annex. The first and much larger set reports data on mergers and acquisitions. These transactions are defined as deals characterised by SDC as either mergers or acquisitions of majority interest (ie the acquirer’s ownership share of the target exceeded 50% as a result of the transaction). The second set of tables presents data on joint ventures and strategic alliances. Such deals are defined as agreements where two or more entities combined resources to form a new, mutually advantageous business arrangement to achieve predetermined objectives.

An important issue that may affect figures in the table is the lack of information on the transaction values for some deals. In the context of this chapter, deal value is a somewhat

ambiguous term, as SDC obtains its estimates from announcements available from public sources. In the case of share exchanges, deal value is based on the market price of shares. In the case of a merger of equals, transaction value is calculated as the value of shares that are exchanged. Values are also not necessarily based on a consistent date relative to the merger process, as the recorded transaction value may vary during the period between announcement and consummation of a deal as information becomes available or deal terms are changed during post-announcement negotiations. As a result of these issues surrounding value estimates, such figures are best used as indicators of the size of deals and the relative level of merger activity.

In about 40% of the cases that are included in our analysis of M&A activity, SDC was not able to collect data on the value of the deal. Therefore, that information is not included in the analysis for those transactions, even though the transactions themselves are included. Thus, in the mergers and acquisitions tables, reported figures for the total value of transactions actually refer to the total value for the subset of transactions for which values was reported. As a result, reported figures should understate the true total value. However, it is likely that the understatement is modest, because values should be available for most large deals.

Average value is based on the number of deals with an associated value. All deal values are reported in USD millions, with the exchange rate conversion based on the exchange rate at the time the deals were announced. In addition, value is reported in nominal terms, so changes over time are influenced at least somewhat by inflation. No deal value or analogous measure is available for joint ventures and strategic alliances.

Using a single database for all of the transactions data provides some consistency across countries and segments of the financial sector. However, consistency may come at the price of coverage not being universal or uniform across countries. Thomson relies on company disclosures and press reports to collect data, and although these sources are relatively thorough, they do not cover every transaction. As a result, smaller deals, which are less likely to be covered by the media or followed closely by investors and analysts, are more likely to be inadvertently excluded. In addition, differences in the nature of business reporting may influence the extent of coverage in different countries.

Although efforts are made to ensure that transactions data for each country are comparable, such a task is inherently difficult given differences in various financial sectors. Therefore, besides differences in coverage and ability to obtain value estimates, additional differences among countries may exist in the ability of SDC to consistently identify and classify deals.

Table A.1  
**All countries**  
All values in USD millions  
**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	213	403	473	532	583	605	602	635	620	594	5260
	Total value	17762.5	32606.4	31340.5	53605.7	43621.0	127777.9	73039.3	221869.8	354225.2	271276.8	1227125.1
	Ave value	158.6	174.4	141.2	169.1	114.5	350.1	202.3	514.8	803.2	788.6	388.2
Within border/ cross industry	Number	53	78	83	90	112	135	140	147	121	172	1131
	Total value	12295.8	4399.0	3604.7	6125.6	3679.8	8857.5	7174.3	38203.0	107903.6	21957.2	214200.5
	Ave value	396.6	125.7	94.9	113.4	62.4	142.9	99.6	444.2	1332.1	196.0	340.0
Cross-border/ within industry	Number	39	45	44	46	59	87	75	87	96	90	668
	Total value	6407.0	812.5	1291.5	5008.0	5074.9	11629.4	13353.2	25714.2	24975.5	48661.4	142927.6
	Ave value	400.4	67.7	86.1	263.6	169.2	290.7	381.5	547.1	480.3	1013.8	455.2
Cross-border/ cross industry	Number	19	23	16	14	19	29	25	32	37	31	245
	Total value	1536.4	382.0	2122.6	542.8	1027.3	3342.3	3410.0	7187.3	8011.5	11275.5	38837.7
	Ave value	192.1	42.4	235.8	90.5	114.1	222.8	284.2	378.3	320.5	593.4	296.5
<b>Deal type</b>												
Within border	Number	266	481	556	622	695	740	742	782	741	766	6391
	Total value	30058.3	37005.4	34945.2	59731.3	47300.8	136635.4	80213.6	260072.8	462128.8	293234.0	1441325.6
	Ave value	210.2	166.7	134.4	161.0	107.5	320.0	185.3	503.0	885.3	643.1	380.2
Cross-border	Number	58	68	60	60	78	116	100	119	133	121	913
	Total value	7943.4	1194.5	3414.1	5550.8	6102.2	14971.7	16763.2	32901.5	32987.0	59936.9	181765.3
	Ave value	331.0	56.9	142.3	222.0	156.5	272.2	356.7	498.5	428.4	894.6	408.5
<b>Deal type</b>												
Within industry	Number	252	448	517	578	642	692	677	722	716	684	5928
	Total value	24169.5	33418.9	32632.0	58613.7	48695.9	139407.3	86392.5	247584.0	379200.7	319938.2	1370052.7
	Ave value	188.8	167.9	137.7	174.4	118.5	344.2	218.2	518.0	769.2	816.2	394.3
Cross industry	Number	72	101	99	104	131	164	165	179	158	203	1376
	Total value	13832.2	4781.0	5727.3	6668.4	4707.1	12199.8	10584.3	45390.3	115915.1	33232.7	253038.2
	Ave value	354.7	108.7	121.9	111.1	69.2	158.4	126.0	432.3	1093.5	253.7	332.5
<b>Industry</b>												
Banking	Number	199	311	381	461	525	532	480	534	533	488	4444
	Total value	31041.2	31535.2	26653.4	29707.3	34556.7	136241.4	46370.9	187074.1	373030.6	270277.9	1166488.7
	Ave value	250.3	193.5	131.9	98.4	95.2	404.3	149.6	482.1	921.1	826.5	399.3
Insurance	Number	54	89	102	87	80	123	149	145	146	103	1078
	Total value	5039.5	3409.9	9003.8	16945.7	11499.1	6968.9	32966.7	55064.5	89270.8	44506.5	274675.4
	Ave value	210.0	106.6	191.6	434.5	267.4	131.5	439.6	724.5	1115.9	927.2	531.3
Securities/ Other	Number	71	149	133	134	168	201	213	222	195	296	1782
	Total value	1921.0	3254.8	2702.1	18629.1	7347.2	8396.8	17639.2	50835.7	32814.4	38386.5	181926.8
	Ave value	101.1	67.8	77.2	338.7	100.6	91.3	185.7	427.2	287.8	259.4	228.0
<b>Total</b>	Number	324	549	616	682	773	856	842	901	874	887	7304
	Total value	38001.7	38199.9	38359.3	65282.1	53403.0	151607.1	96976.8	292974.3	495115.8	353170.9	1623090.9
	Ave value	227.6	157.2	135.1	164.9	111.5	314.5	202.0	502.5	826.6	675.3	383.2
	GDP Value/GDP	16147400	17041128	18265215	18447147	19726512	21571033	21637942	21242306	21480085	22549762	198108531
		0.24%	0.22%	0.21%	0.35%	0.27%	0.70%	0.45%	1.38%	2.30%	1.57%	0.82%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/ within industry	Number	139	244	318	390	433	435	395	425	417	367	3563
	Total value	16765.9	27738.3	23652.0	26683.8	31016.0	122349.5	38919.3	172040.5	257247.1	241114.2	957526.6
	Ave value	182.2	216.7	135.9	100.7	97.2	429.3	148.0	529.4	781.9	976.2	394.5
Within border/ cross industry	Number	37	39	40	45	59	58	53	71	62	79	543
	Total value	10663.5	2999.9	922.7	1443.8	1539.6	4787.2	1653.0	4214.5	99532.1	8270.7	136027.0
	Ave value	484.7	136.4	54.3	55.5	57.0	171.0	55.1	110.9	2211.8	162.2	444.5
Cross-border/ within industry	Number	14	18	14	19	24	30	21	30	36	29	235
	Total value	2343.5	562.8	229.7	1159.7	1846.3	8511.8	3172.2	5699.9	13484.1	13790.1	50800.1
	Ave value	390.6	70.4	76.6	165.7	153.9	472.9	288.4	335.3	749.1	766.1	430.5
Cross-border/ cross industry	Number	9	10	9	7	9	9	11	8	18	13	103
	Ttl value	1268.3	234.2	1849.0	420.0	154.8	592.9	2626.4	5119.2	2767.3	7102.9	22135.0
	Ave value	317.1	46.8	264.1	105.0	31.0	98.8	437.7	639.9	212.9	645.7	320.8
<b>Insurance</b>												
Within border/ within industry	Number	30	56	63	57	46	68	89	72	83	44	608
	Total value	896.6	1836.6	5940.3	12296.4	8031.4	2534.0	25312.2	23363.1	71013.9	16374.0	167598.5
	Ave value	69.0	87.5	220.0	558.9	308.9	70.4	575.3	599.1	1775.3	861.8	584.0
Within border/ cross industry	Number	4	14	21	11	11	23	27	27	18	27	183
	Total value	17.6	1259.9	2124.3	1262.8	512.1	925.6	2513.1	18198.0	4401.8	585.5	31800.7
	Ave value	17.6	180.0	212.4	140.3	73.2	154.3	147.8	1299.9	440.2	45.0	338.3
Cross-border/ within industry	Number	17	15	16	16	21	30	30	39	40	27	251
	Total value	4032.7	211.2	939.2	3375.4	2929.6	1553.0	5019.3	13434.2	10023.4	27139.9	68657.9
	Ave value	448.1	105.6	93.9	482.2	325.5	172.6	386.1	639.7	371.2	2087.7	572.1
Cross-border/ cross industry	Number	3	4	2	3	2	2	3	7	5	5	36
	Total value	92.6	102.2	0.0	11.1	26.0	1956.3	122.1	69.2	3831.7	407.1	6618.3
	Ave value	92.6	51.1	0.0	11.1	26.0	978.2	122.1	34.6	1277.2	135.7	413.6
<b>Securities/ Other</b>												
Within border/ within industry	Number	44	103	92	85	104	102	118	138	120	183	1089
	Total value	100.0	3031.5	1748.2	14625.5	4573.6	2894.4	8807.8	26466.2	25964.2	13788.6	102000.0
	Ave value	14.3	79.8	87.4	487.5	127.0	65.8	163.1	395.0	360.6	176.8	228.7
Within border/ cross industry	Number	12	25	22	34	42	54	60	49	41	66	540
	Total value	1614.7	139.2	557.7	3419.0	1628.1	3144.7	3008.2	15790.5	3969.7	13101.0	46372.8
	Ave value	201.8	23.2	50.7	179.9	65.1	112.3	120.3	464.4	152.7	272.9	201.6
Cross-border/ Within industry	Number	8	12	14	11	14	27	24	18	20	34	182
	Total value	30.8	38.5	122.6	472.9	299.0	1564.6	5161.7	6580.1	1468.0	7731.4	23469.6
	Ave value	30.8	19.3	61.3	94.6	33.2	120.4	469.2	731.1	209.7	454.8	308.8
Cross-border/ cross industry	Number	7	9	5	4	8	18	11	17	14	13	106
	Total value	175.5	45.6	273.6	111.7	846.5	793.1	661.5	1998.9	1412.5	3765.5	10084.4
	Ave value	58.5	22.8	136.8	111.7	282.2	113.3	132.3	222.1	156.9	753.1	219.2
<b>Total</b>												
	Number	324	549	616	682	773	856	842	901	874	887	7304
	Total value	38001.7	38199.9	38359.3	65282.1	53403.0	151607.1	96976.8	292974.3	495115.8	353170.9	1623090.9
	Ave value	227.6	157.2	135.1	164.9	111.5	314.5	202.0	502.5	826.6	675.3	383.2

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	213	403	473	532	583	605	602	635	620	594	5260
	Total value	17762.5	32606.4	31340.5	53605.7	43621.0	127777.9	73039.3	221869.8	354225.2	271276.8	1227125.1
	Ave value	158.6	174.4	141.2	169.1	114.5	350.1	202.3	514.8	803.2	788.6	388.2
Within border/ cross industry	Number	53	78	83	90	112	135	140	147	121	172	1131
	Total value	12295.8	4399.0	3604.7	6125.6	3679.8	8857.5	7174.3	38203.0	107903.6	21957.2	214200.5
	Ave value	396.6	125.7	94.9	113.4	62.4	142.9	99.6	444.2	1332.1	196.0	340.0
Cross-border/ within industry	Number	51	58	53	54	79	121	103	112	138	146	915
	Total value	6923.0	914.4	3044.9	5298.1	4805.8	13366.1	15400.9	30063.1	28258.1	59362.8	167437.2
	Ave value	329.7	57.2	152.2	252.3	145.6	252.2	358.2	556.7	387.1	791.5	409.4
Cross-border/ cross industry	Number	20	26	21	16	18	40	33	42	54	58	328
	Total value	1698.4	441.9	2270.2	712.6	950.1	3600.3	3763.0	8836.6	8601.5	16403.6	47278.2
	Ave value	212.3	36.8	206.4	79.2	158.4	211.8	313.6	401.7	253.0	431.7	279.8
<b>Deal type</b>												
Within border	Number	266	481	556	622	695	740	742	782	741	766	6391
	Total value	30058.3	37005.4	34945.2	59731.3	47300.8	136635.4	80213.6	260072.8	462128.8	293234.0	1441325.6
	Ave value	210.2	166.7	134.4	161.0	107.5	320.0	185.3	503.0	885.3	643.1	380.2
Cross-border	Number	71	84	74	70	97	161	136	154	192	204	1243
	Total value	8621.4	1356.3	5315.1	6010.7	5755.9	16966.4	19163.9	38899.7	36859.6	75766.4	214715.4
	Ave value	297.3	48.4	171.5	200.4	147.6	242.4	348.4	511.8	344.5	670.5	371.5
<b>Deal type</b>												
Within industry	Number	264	461	526	586	662	726	705	747	758	740	6175
	Total value	24685.5	33520.8	34385.4	58903.8	48426.8	141144.0	88440.2	251932.9	382483.3	330639.6	1394562.3
	Ave value	185.6	165.1	142.1	174.3	117.0	337.7	218.9	519.4	744.1	789.1	390.6
Cross industry	Number	73	104	104	106	130	175	173	189	175	230	1459
	Total value	13994.2	4840.9	5874.9	6838.2	4629.9	12457.8	10937.3	47039.6	116505.1	38360.8	261478.7
	Ave value	358.8	103.0	119.9	108.5	71.2	157.7	130.2	435.6	1013.1	255.7	327.3
<b>Industry</b>												
Banking	Number	180	297	366	454	503	552	504	533	528	506	4423
	Total value	20028.0	29421.9	25430.6	32582.2	34189.3	135338.0	50166.6	204302.6	279260.5	274660.1	1085379.8
	Ave value	180.4	202.9	136.0	109.0	97.7	398.1	158.8	527.9	710.6	805.5	378.3
Insurance	Number	69	98	97	94	100	142	147	148	163	124	1182
	Total value	14913.0	2750.1	7486.0	16820.6	12391.7	5736.3	30853.9	52278.5	162714.5	59019.5	364964.1
	Ave value	451.9	83.3	149.7	410.3	229.5	92.5	489.7	697.0	1892.0	1035.4	658.8
Securities/ Other	Number	88	170	167	144	189	207	227	255	242	340	2029
	Total value	3738.7	6189.7	7343.7	16339.2	6475.7	12527.5	18357.0	42391.4	57013.4	35320.8	205697.1
	Ave value	133.5	86.0	138.6	267.9	87.5	131.9	168.4	323.6	380.1	206.6	217.9
<b>Total</b>	Number	337	565	630	692	792	901	878	936	933	970	7634
	Total value	38679.7	38361.7	40260.3	65742.0	53056.7	153601.8	99377.5	298972.5	498988.4	369000.4	1656041.0
	Ave value	224.9	153.4	138.4	163.9	110.8	309.1	203.6	504.2	793.3	648.5	379.0
	GDP	16147400	17041128	18265215	18447147	19726512	21571033	21637942	21242306	21480085	22549762	198108531
	Value/GDP	0.24%	0.23%	0.22%	0.36%	0.27%	0.71%	0.46%	1.41%	2.32%	1.64%	0.84%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	139	244	318	390	433	435	395	425	417	367	3563
	Total value	16765.9	27738.3	23652.0	26683.8	31016.0	122349.5	38919.3	172040.5	257247.1	241114.2	957526.6
	Ave value	182.2	216.7	135.9	100.7	97.2	429.3	148.0	529.4	781.9	976.2	394.4
Within border/cross industry	Number	13	25	22	35	36	52	60	49	45	72	409
	Total value	251.9	1126.5	516.0	4490.7	770.7	2088.4	5061.3	20339.0	5668.4	9705.2	50018.1
	Ave value	42.0	160.9	86.0	204.1	40.6	90.8	163.3	598.2	195.5	194.1	220.3
Cross-border/within industry	Number	22	20	19	22	25	44	34	42	51	50	329
	Total value	2834.7	368.3	989.0	1276.7	1652.6	10249.4	5122.3	10702.7	15498.3	20255.4	68949.4
	Ave value	283.5	61.4	197.8	141.9	150.2	379.6	301.3	509.7	596.1	613.8	415.4
Cross-border/cross industry	Number	6	8	7	7	9	21	15	17	15	17	122
	Total value	175.5	188.8	273.6	131.0	750.0	650.7	1063.7	1220.4	846.7	3585.3	8885.7
	Ave value	58.5	47.2	136.8	43.7	750.0	130.1	212.7	174.3	94.1	325.9	177.7
<b>Insurance</b>												
Within border/within industry	Number	30	56	63	57	46	68	89	72	83	44	608
	Total value	896.6	1836.6	5940.3	12296.4	8031.4	2534.0	25312.2	23363.1	71013.9	16374.0	167598.5
	Ave value	69.0	87.5	220.0	558.9	308.9	70.4	575.3	599.1	1775.3	861.8	584.0
Within border/cross industry	Number	13	9	11	17	20	23	13	20	12	17	155
	Total value	9107.5	227.1	532.2	508.5	1339.8	1402.4	212.2	9193.7	80912.7	5854.9	109291.0
	Ave value	1011.9	75.7	66.5	56.5	89.3	175.3	212.2	1021.5	13485.5	650.5	1419.4
Cross-border/within industry	Number	21	26	20	18	33	46	39	48	57	53	361
	Total value	4052.5	536.7	992.6	3478.7	2960.6	1772.7	5251.0	12793.2	9442.3	31305.9	72586.2
	Ave value	450.3	89.5	82.7	434.8	246.7	110.8	328.2	609.2	269.8	1361.1	459.4
Cross-border/cross industry	Number	5	7	3	2	1	5	6	8	11	10	58
	Total value	856.4	149.7	20.9	537.0	59.9	27.2	78.5	6928.5	1345.6	5484.7	15488.4
	Ave value	428.2	49.9	7.0	268.5	59.9	13.6	39.3	1154.8	269.1	914.1	484.0
<b>Securities/Other</b>												
Within border/within industry	Number	44	103	92	85	104	102	118	138	120	183	1089
	Total value	100.0	3031.5	1748.2	14625.5	4573.6	2894.4	8807.8	26466.2	25964.2	13788.6	102000.0
	Ave value	14.3	79.8	87.4	487.5	127.0	65.8	163.1	395.0	360.6	176.8	228.7
Within border/cross industry	Number	27	44	50	38	56	60	67	78	64	83	567
	Total value	2936.4	3045.4	2556.5	1126.4	1569.3	5366.7	1900.8	8670.3	21322.5	6397.1	54891.4
	Ave value	183.5	121.8	106.5	49.0	62.8	173.1	47.5	201.6	463.5	120.7	168.4
Cross-border/within industry	Number	8	12	14	14	21	31	30	22	30	43	225
	Total value	35.8	9.4	1063.3	542.7	192.6	1344.0	5027.6	6567.2	3317.5	7801.5	25901.6
	Ave value	17.9	2.4	354.4	135.7	21.4	134.4	502.8	547.3	276.5	410.6	304.7
Cross-border/cross industry	Number	9	11	11	7	8	14	12	17	28	31	148
	Total value	666.5	103.4	1975.7	44.6	140.2	2922.4	2620.8	687.7	6409.2	7333.6	22904.1
	Ave value	222.2	20.7	329.3	11.2	35.1	292.2	524.2	76.4	320.5	349.2	263.3
<b>Total</b>												
	Number	337	565	630	692	792	901	878	936	933	970	7634
	Total value	38679.7	38361.7	40260.3	65742.0	53056.7	153601.8	99377.5	298972.5	498988.4	369000.4	1656041.0
	Ave value	224.9	153.4	138.4	163.9	110.8	309.1	203.6	504.2	793.3	648.5	379.0

Source: Thomson Financial, SDC Platinum.

Table A.2  
**All North American countries**  
All values in USD millions  
**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	152	204	293	373	412	453	418	469	435	301	3510
	Total value	4839.7	21792.7	18773.4	29314.2	30706.6	71258.7	44591.6	171470.8	284734.3	76733.3	754215.3
	Ave value	56.9	162.6	103.7	111.5	95.1	230.6	154.8	477.6	818.2	335.1	299.4
Within border/ cross industry	Number	25	28	33	41	47	57	60	76	78	88	533
	Total value	392.2	659.6	2092.7	3675.6	1965.1	5803.8	4196.7	19806.3	87786.8	11889.6	138268.4
	Ave value	28.0	34.7	130.8	141.4	67.8	181.4	119.9	430.6	1567.6	201.5	416.5
Cross-border/ within industry	Number	14	11	6	12	11	19	19	21	27	26	166
	Total value	1487.0	291.2	9.8	815.7	1393.8	3974.2	8667.4	9035.8	15401.9	30935.1	72011.9
	Ave value	247.8	58.2	4.9	116.5	154.9	331.2	619.1	645.4	855.7	1933.4	699.1
Cross-border/ cross industry	Number	9	5	5	2	3	5	4	8	6	9	56
	Total value	49.0	48.5	88.2	25.8	789.7	2244.9	2801.6	2012.2	533.1	3447.3	12040.3
	Ave value	24.5	24.3	29.4	25.8	263.2	748.3	700.4	335.4	106.6	689.5	354.1
<b>Deal type</b>												
Within border	Number	177	232	326	414	459	510	478	545	513	389	4043
	Total value	5231.9	22452.3	20866.1	32989.8	32671.7	77062.5	48788.3	191277.1	372521.1	88622.9	892483.7
	Ave value	52.8	146.7	105.9	114.2	92.8	226.0	151.0	472.3	922.1	307.7	313.0
Cross-border	Number	23	16	11	14	14	24	23	29	33	35	222
	Total value	1536.0	339.7	98.0	841.5	2183.5	6219.1	11469.0	11048.0	15935.0	34382.4	84052.2
	Ave value	192.0	48.5	19.6	105.2	182.0	414.6	637.2	552.4	692.8	1637.3	613.5
<b>Deal type</b>												
Within industry	Number	166	215	299	385	423	472	437	490	462	327	3676
	Total value	6326.7	22083.9	18783.2	30129.9	32100.4	75232.9	53259.0	180506.6	300136.2	107668.4	826227.2
	Ave value	69.5	158.9	102.6	111.6	96.7	234.4	176.4	483.9	820.0	439.5	315.1
Cross industry	Number	34	33	38	43	50	62	64	84	84	97	589
	Total value	441.2	708.1	2180.9	3701.4	2754.8	8048.7	6998.3	21818.5	88319.9	15336.9	150308.7
	Ave value	27.6	33.7	114.8	137.1	86.1	230.0	179.4	419.6	1447.9	239.6	410.7
<b>Industry</b>												
Banking	Number	136	164	247	333	369	396	348	397	362	261	3013
	Total value	5153.1	21045.6	15075.4	18784.7	23204.4	73568.7	35076.8	139274.0	300112.2	80384.8	711679.7
	Ave value	56.6	175.4	93.1	74.8	75.6	263.7	134.9	428.5	965.0	370.4	306.4
Insurance	Number	26	39	48	39	41	59	74	64	79	50	519
	Total value	1451.8	1262.0	4986.9	6279.6	5792.5	5119.4	14752.4	19364.1	59114.2	23217.9	141340.8
	Ave value	121.0	63.1	172.0	314.0	231.7	142.2	335.3	586.8	1257.7	829.2	480.8
Securities/ Other	Number	38	45	42	56	63	79	79	113	105	113	733
	Total value	163.0	484.4	901.8	8767.0	5858.3	4593.5	10428.1	43687.0	29229.7	19402.6	123515.4
	Ave value	40.8	24.2	82.0	337.2	183.1	112.0	281.8	652.0	423.6	303.2	332.9
<b>Total</b>	Number	200	248	337	428	473	534	501	574	546	424	4265
	Total value	6767.9	22792.0	20964.1	33831.3	34855.2	83281.6	60257.3	202325.1	388456.1	123005.3	976535.9
	Ave value	63.3	142.5	103.8	113.9	95.8	233.9	176.7	476.1	909.7	398.1	326.8
	GDP	6384403	6582621	6897278	7204432	7616368	7988801	8424152	8935031	9368628	9901033	79302747
	Value/GDP	0.11%	0.35%	0.30%	0.47%	0.46%	1.04%	0.72%	2.26%	4.15%	1.24%	1.23%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/ within industry	Number	109	142	227	307	337	361	310	340	316	211	2660
	Total value	4618.9	20235.8	14924.1	17640.4	21678.8	66484.6	28836.1	131268.6	207302.6	62512.7	575502.6
	Ave value	60.0	194.6	98.2	75.1	75.3	262.8	124.3	455.8	751.1	339.7	275.5
Within border/ cross industry	Number	20	15	16	19	24	28	29	46	37	40	274
	Total value	297.2	513.7	63.1	375.6	279.6	3634.2	1163.5	2977.9	83336.2	4984.0	97625.0
	Ave value	27.0	46.7	9.0	34.1	23.3	191.3	58.2	110.3	2976.3	199.4	570.9
Cross-border/ within industry	Number	3	6	0	6	6	7	8	7	5	8	56
	Total value	188.0	286.1	0.0	742.9	1206.3	3449.9	2948.6	4707.6	9270.4	12502.5	35302.3
	Ave value	188.0	71.5	0.0	185.7	241.3	492.8	421.2	784.6	3090.1	2083.8	821.0
Cross-border/ cross industry	Number	4	1	4	1	2	0	1	4	4	2	23
	Total value	49.0	10.0	88.2	25.8	39.7	0.0	2128.6	319.9	203.0	385.6	3249.8
	Ave value	24.5	10.0	29.4	25.8	19.9	0.0	2128.6	80.0	50.8	192.8	162.5
<b>Insurance</b>												
Within border/ within industry	Number	18	29	33	30	33	44	57	45	54	20	363
	Total value	152.8	1214.9	3164.9	5281.2	5210.3	2372.0	8536.2	14603.5	53225.3	4741.5	98502.6
	Ave value	21.8	71.5	143.9	377.2	260.5	84.7	266.8	608.5	1774.2	395.1	478.2
Within border/ Cross industry	Number	0	7	11	6	6	7	9	9	11	19	85
	Total value	0.0	47.1	1812.2	953.7	462.4	481.3	1996.1	1670.8	838.7	200.7	8463.0
	Ave value	0.0	15.7	362.4	190.7	115.6	160.4	285.2	417.7	167.7	25.1	192.3
Cross-border/ within industry	Number	7	1	3	3	2	7	7	9	14	9	62
	Total value	1299.0	0.0	9.8	44.7	119.8	393.7	4098.0	3089.8	5050.2	18271.9	32376.9
	Ave value	259.8	0.0	4.9	44.7	119.8	98.4	1024.5	618.0	420.9	2610.3	789.7
Cross-border/ cross industry	Number	1	2	1	0	0	1	1	1	0	2	9
	Total value	0.0	0.0	0.0	0.0	0.0	1872.4	122.1	0.0	0.0	3.8	1998.3
	Ave value	0.0	0.0	0.0	0.0	0.0	1872.4	122.1	0.0	0.0	3.8	666.1
<b>Securities/ Other</b>												
Within border/ within industry	Number	25	33	33	36	42	48	51	84	65	70	487
	Total value	68.0	342.0	684.4	6392.6	3817.5	2402.1	7219.3	25598.7	24206.4	9479.1	80210.1
	Ave value	68.0	26.3	97.8	456.6	254.5	85.8	300.8	544.7	576.3	287.2	358.1
Within border/ cross industry	Number	5	6	6	16	17	22	22	21	30	29	174
	Total value	95.0	98.8	217.4	2346.3	1223.1	1688.3	1037.1	15157.6	3611.9	6704.9	32180.4
	Ave value	31.7	19.8	54.4	234.6	94.1	168.8	129.6	1010.5	157.0	257.9	275.0
Cross-border/ within industry	Number	4	4	3	3	3	5	4	5	8	9	48
	Total value	0.0	5.1	0.0	28.1	67.7	130.6	1620.8	1238.4	1081.3	160.7	4332.7
	Ave value	0.0	5.1	0.0	14.1	22.6	130.6	540.3	412.8	360.4	53.6	228.0
Cross-border/ cross industry	Number	4	2	0	1	1	4	2	3	2	5	24
	Total value	0.0	38.5	0.0	0.0	750.0	372.5	550.9	1692.3	330.1	3057.9	6792.2
	Ave value	0.0	38.5	0.0	0.0	750.0	186.3	275.5	846.2	330.1	1529.0	617.5
<b>Total</b>												
	Number	200	248	337	428	473	534	501	574	546	424	4265
	Total value	6767.9	22792.0	20964.1	33831.3	34855.2	83281.6	60257.3	202325.1	388456.1	123005.3	976535.9
	Ave value	63.3	142.5	103.8	113.9	95.8	233.9	176.7	476.1	909.7	398.1	326.8



### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	152	204	293	373	412	453	418	469	434	301	3509
	Total value	4839.7	21792.7	18773.4	29314.2	30706.6	71258.7	44591.6	171470.8	284684.3	76733.3	754165.3
	Ave value	56.9	162.6	103.7	111.5	95.1	230.6	154.8	477.6	820.4	335.1	299.5
Within border/ cross industry	Number	25	28	33	41	46	57	60	76	78	88	532
	Total value	392.2	659.6	2092.7	3675.6	1965.1	5803.8	4196.7	19806.3	87786.8	11889.6	138268.4
	Ave value	28.0	34.7	130.8	141.4	67.8	181.4	119.9	430.6	1567.6	201.5	416.5
Cross-border/ within industry	Number	9	15	7	17	23	37	32	46	57	37	280
	Total value	636.0	502.4	922.8	401.8	1121.7	4727.1	1390.3	10647.3	8395.3	8138.5	36883.2
	Ave value	127.2	71.8	307.6	67.0	112.2	278.1	106.9	409.5	299.8	406.9	273.2
Cross-border/ cross industry	Number	6	3	7	5	6	6	8	14	20	16	91
	Total value	254.6	10.6	264.1	27.0	39.7	222.0	693.0	1851.5	2870.5	2440.5	8673.5
	Ave value	254.6	5.3	132.1	6.8	19.9	111.0	173.3	205.7	179.4	221.9	163.7
<b>Deal type</b>												
Within border	Number	177	232	326	414	458	510	478	545	512	389	4041
	Total value	5231.9	22452.3	20866.1	32989.8	32671.7	77062.5	48788.3	191277.1	372471.1	88622.9	892433.7
	Ave value	52.8	146.7	105.9	114.2	92.8	226.0	151.0	472.3	924.2	307.7	313.1
Cross-border	Number	15	18	14	22	29	43	40	60	77	53	371
	Total value	890.6	513.0	1186.9	428.8	1161.4	4949.1	2083.3	12498.8	11265.8	10579.0	45556.7
	Ave value	148.4	57.0	237.4	42.9	96.8	260.5	122.5	357.1	256.0	341.3	242.3
<b>Deal type</b>												
Within industry	Number	161	219	300	390	435	490	450	515	491	338	3789
	Total value	5475.7	22295.1	19696.2	29716.0	31828.3	75985.8	45981.9	182118.1	293079.6	84871.8	791048.5
	Ave value	60.8	158.1	107.0	110.5	95.6	233.1	152.8	473.0	781.5	340.9	298.2
Cross industry	Number	31	31	40	46	52	63	68	90	98	104	623
	Total value	646.8	670.2	2356.8	3702.6	2004.8	6025.8	4889.7	21657.8	90657.3	14330.1	146941.9
	Ave value	43.1	31.9	130.9	123.4	64.7	177.2	125.4	393.8	1259.1	204.7	381.7
<b>Industry</b>												
Banking	Number	120	154	238	336	360	391	351	383	375	263	2971
	Total value	5233.6	20600.3	15197.0	21166.8	23082.4	71463.5	33481.0	143345.9	213168.8	74644.1	621383.4
	Ave value	63.8	182.3	98.0	83.7	76.2	266.7	131.3	450.8	685.4	334.7	272.4
Insurance	Number	24	38	39	41	48	71	73	76	84	41	535
	Total value	374.8	1612.8	3372.6	5460.2	6248.9	3245.7	8831.2	24935.1	138680.0	9076.8	201838.1
	Ave value	34.1	76.8	124.9	303.3	215.5	83.2	245.3	656.2	2666.9	394.6	686.5
Securities/ Other	Number	48	58	63	59	79	91	94	146	130	138	906
	Total value	514.1	752.2	3483.4	6791.6	4501.8	7302.4	8559.4	35494.9	31888.1	15481.0	114768.9
	Ave value	42.8	26.9	174.2	242.6	140.7	137.8	174.7	422.6	379.6	212.1	247.9
<b>Total</b>	Number	192	250	340	436	487	553	518	605	589	442	4412
	Total value	6122.5	22965.3	22053.0	33418.6	33833.1	82011.6	50871.6	203775.9	383736.9	99201.9	937990.4
	Ave value	58.3	141.8	109.2	111.8	92.9	227.8	149.6	463.1	858.5	311.0	308.8
	GDP	6384403	6582621	6897278	7204432	7616368	7988801	8424152	8935031	9368628	9901033	79302747
	Value/GDP	0.10%	0.35%	0.32%	0.46%	0.44%	1.03%	0.60%	2.28%	4.10%	1.00%	1.18%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	109	142	227	307	338	361	310	340	316	211	2661
	Total value	4618.9	20235.8	14924.1	17640.4	21678.8	66484.6	28836.1	131268.6	207302.6	62512.7	575502.6
	Ave value	60.0	194.6	98.2	75.1	75.3	262.8	124.3	455.8	751.1	339.7	275.5
Within border/cross industry	Number	5	5	7	18	15	17	25	20	34	37	183
	Total value	95.0	78.4	24.5	3182.8	470.6	1602.2	3019.9	7224.9	3315.5	6541.4	25555.2
	Ave value	31.7	15.7	12.3	265.2	42.8	228.9	232.3	516.1	132.6	225.6	211.2
Cross-border/within industry	Number	4	7	1	8	6	11	13	18	22	12	102
	Total value	519.7	286.1	0.0	324.3	933.0	3376.7	952.0	3953.2	2491.3	4901.7	17738.0
	Ave value	259.9	71.5	0.0	81.1	233.3	422.1	136.0	304.1	311.4	612.7	305.8
Cross-border/cross industry	Number	2	0	3	3	1	2	3	5	3	3	25
	Total value	0.0	0.0	248.4	19.3	0.0	0.0	673.0	899.2	59.4	688.3	2587.6
	Ave value	0.0	0.0	248.4	9.7	0.0	0.0	224.3	299.7	29.7	344.2	199.0
<b>Insurance</b>												
Within border/within industry	Number	18	29	33	30	32	44	57	45	53	20	361
	Total value	152.8	1214.9	3164.9	5281.2	5210.3	2372.0	8536.2	14603.5	53175.3	4741.5	98452.6
	Ave value	21.8	71.5	143.9	377.2	260.5	84.7	266.8	608.5	1833.6	395.1	480.3
Within border/cross industry	Number	2	3	4	6	8	10	5	9	7	7	61
	Total value	110.7	186.7	197.9	176.6	892.9	426.5	0.0	9044.0	80829.5	1608.8	93473.6
	Ave value	55.4	93.4	66.0	58.9	148.8	85.3	0.0	1808.8	16165.9	402.2	2670.7
Cross-border/within industry	Number	3	5	2	5	8	17	10	19	20	13	102
	Total value	111.3	211.2	9.8	2.4	145.7	447.2	295.0	763.2	4603.5	2726.5	9315.8
	Ave value	55.7	105.6	4.9	2.4	48.6	74.5	73.8	109.0	306.9	389.5	190.1
Cross-border/cross industry	Number	1	1	0	0	0	0	1	3	4	1	11
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	524.4	71.7	0.0	596.1
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	262.2	23.9	0.0	119.2
<b>Securities/Other</b>												
Within border/within industry	Number	25	33	33	36	42	48	51	84	65	70	487
	Total value	68.0	342.0	684.4	6392.6	3817.5	2402.1	7219.3	25598.7	24206.4	9479.1	80210.1
	Ave value	68.0	26.3	97.8	456.6	254.5	85.8	300.8	544.7	576.3	287.2	358.1
Within border/cross industry	Number	18	20	22	17	23	30	30	47	37	44	288
	Total value	186.5	394.5	1870.3	316.2	601.6	3775.1	1176.8	3537.4	3641.8	3739.4	19239.6
	Ave value	20.7	32.9	170.0	28.7	50.1	188.8	53.5	131.0	140.1	143.8	109.3
Cross-border/within industry	Number	2	3	4	4	9	9	9	9	15	12	76
	Total value	5.0	5.1	913.0	75.1	43.0	903.2	143.3	5930.9	1300.5	510.3	9829.4
	Ave value	5.0	5.1	913.0	75.1	14.3	301.1	71.7	988.5	260.1	102.1	351.1
Cross-border/cross industry	Number	3	2	4	2	5	4	4	6	13	12	55
	Total value	254.6	10.6	15.7	7.7	39.7	222.0	20.0	427.9	2739.4	1752.2	5489.8
	Ave value	254.6	5.3	15.7	3.9	19.9	111.0	20.0	107.0	249.0	194.7	156.9
<b>Total</b>	Number	192	250	340	436	487	553	518	605	589	442	4412
	Total value	6122.5	22965.3	22053.0	33418.6	33833.1	82011.6	50871.6	203775.9	383736.9	99201.9	937990.4
	Ave value	58.3	141.8	109.2	111.8	92.9	227.8	149.6	463.1	858.5	311.0	308.8

Source: Thomson Financial, SDC Platinum.

Table A.3  
**All Pacific Rim countries**  
All values in USD millions  
**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	10	18	6	22	12	20	27	43	44	112	314
	Total value	8242.9	421.7	5.4	196.9	2074.0	34524.3	2896.8	1413.6	1661.2	78164.2	129601.0
	Ave value	1648.6	84.3	5.4	24.6	345.7	4315.5	482.8	176.7	103.8	2233.3	1322.5
Within border/ cross industry	Number	3	3	2	4	5	8	10	12	7	25	79
	Total value	221.3	164.7	34.1	998.9	160.9	202.5	666.5	848.6	239.8	1281.7	4819.0
	Ave value	73.8	82.4	34.1	249.7	40.2	101.3	133.3	121.2	60.0	91.6	104.8
Cross-border/ within industry	Number	1	6	7	3	7	12	7	5	7	12	67
	Total value	0.0	33.4	216.1	116.9	196.5	1515.5	124.2	62.8	1002.2	2305.8	5573.4
	Ave value	0.0	33.4	72.0	116.9	49.1	378.9	62.1	20.9	501.1	288.2	199.1
Cross-border/ cross industry	Number	0	2	0	3	1	8	4	3	6	3	30
	Total value	0.0	7.1	0.0	8.0	36.6	32.4	83.2	17.2	673.5	1388.3	2246.3
	Ave value	0.0	7.1	0.0	4.0	36.6	8.1	41.6	8.6	168.4	694.2	124.8
<b>Deal type</b>												
Within border	Number	13	21	8	26	17	28	37	55	51	137	393
	Total value	8464.2	586.4	39.5	1195.8	2234.9	34726.8	3563.3	2262.2	1901.0	79445.9	134420.0
	Ave value	1058.0	83.8	19.8	99.7	223.5	3472.7	323.9	150.8	95.1	1621.3	933.5
Cross-border	Number	1	8	7	6	8	20	11	8	13	15	97
	Total value	0.0	40.5	216.1	124.9	233.1	1547.9	207.4	80.0	1675.7	3694.1	7819.7
	Ave value	0.0	20.3	72.0	41.6	46.6	193.5	51.9	16.0	279.3	369.4	170.0
<b>Deal type</b>												
Within industry	Number	11	24	13	25	19	32	34	48	51	124	381
	Total value	8242.9	455.1	221.5	313.8	2270.5	36039.8	3021.0	1476.4	2663.4	80470.0	135174.4
	Ave value	1648.6	75.9	55.4	34.9	227.1	3003.3	377.6	134.2	148.0	1871.4	1072.8
Cross industry	Number	3	5	2	7	6	16	14	15	13	28	109
	Total value	221.3	171.8	34.1	1006.9	197.5	234.9	749.7	865.8	913.3	2670.0	7065.3
	Ave value	73.8	57.3	34.1	167.8	39.5	39.2	107.1	96.2	114.2	166.9	110.4
<b>Industry</b>												
Banking	Number	12	12	3	18	9	20	23	27	23	58	205
	Total value	8463.9	32.2	0.0	526.4	2246.5	35251.4	2817.2	1816.6	1392.9	76182.2	128729.3
	Ave value	1209.1	16.1	0.0	52.6	374.4	3916.8	402.5	227.1	154.8	3312.3	1589.3
Insurance	Number	1	4	5	4	2	8	5	5	6	12	52
	Total value	0.0	164.7	162.1	0.0	0.5	952.0	302.8	29.1	1946.9	3210.7	6768.8
	Ave value	0.0	82.4	54.0	0.0	0.5	317.3	151.4	29.1	486.7	535.1	307.7
Securities/ Other	Number	1	13	7	10	14	20	20	31	35	82	233
	Total value	0.3	430.0	93.5	794.3	221.0	71.3	650.7	496.5	236.9	3747.1	6741.6
	Ave value	0.3	86.0	46.8	158.9	27.6	11.9	108.5	45.1	18.2	124.9	77.5
<b>Total</b>	Number	14	29	15	32	25	48	48	63	64	152	490
	Total value	8464.2	626.9	255.6	1320.7	2468.0	36274.7	3770.7	2342.2	3576.7	83140.0	142239.7
	Ave value	1058.0	69.7	51.1	88.0	164.5	2015.3	251.4	117.1	137.6	1409.2	748.6
	GDP	3290581	3719670	4024401	4584213	5037737	5521440	5015633	4626124	4189702	4759985	44769487
	Value/GDP	0.26%	0.02%	0.01%	0.03%	0.05%	0.66%	0.08%	0.05%	0.09%	1.75%	0.32%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	8	12	2	11	3	8	15	19	12	43	133
	Total value	8242.6	32.2	0.0	173.9	2044.9	34363.3	2482.0	1131.0	93.3	74389.7	122952.9
	Ave value	2060.7	16.1	0.0	43.5	1022.5	8590.8	827.3	565.5	46.7	6199.1	3512.9
Within border/cross industry	Number	3	0	1	3	4	6	5	6	5	11	44
	Total value	221.3	0.0	0.0	227.6	149.8	202.5	329.6	655.9	239.8	533.4	2559.9
	Ave value	73.8	0.0	0.0	75.9	49.9	101.3	109.9	131.2	60.0	66.7	82.6
Cross-border/within industry	Number	1	0	0	1	2	3	1	2	3	3	16
	Total value	0.0	0.0	0.0	116.9	51.8	680.4	0.0	29.7	994.8	109.1	1982.7
	Ave value	0.0	0.0	0.0	116.9	51.8	680.4	0.0	29.7	994.8	54.6	283.2
Cross-border/cross industry	Number	0	0	0	3	0	3	2	0	3	1	12
	Total value	0.0	0.0	0.0	8.0	0.0	5.2	5.6	0.0	65.0	1150.0	1233.8
	Ave value	0.0	0.0	0.0	4.0	0.0	2.6	5.6	0.0	32.5	1150.0	154.2
<b>Insurance</b>												
Within border/within industry	Number	1	1	1	3	1	4	1	2	3	5	22
	Total value	0.0	0.0	0.0	0.0	0.5	134.9	0.0	29.1	1345.6	883.4	2393.5
	Ave value	0.0	0.0	0.0	0.0	0.5	67.5	0.0	29.1	672.8	441.7	299.2
Within border/cross industry	Number	0	2	1	0	0	1	2	3	0	3	12
	Total value	0.0	164.7	34.1	0.0	0.0	0.0	270.7	0.0	0.0	0.0	469.5
	Ave value	0.0	82.4	34.1	0.0	0.0	0.0	270.7	0.0	0.0	0.0	117.4
Cross-border/within industry	Number	0	1	3	1	1	3	2	0	2	3	16
	Total value	0.0	0.0	128.0	0.0	0.0	817.1	32.1	0.0	7.4	2089.0	3073.6
	Ave value	0.0	0.0	64.0	0.0	0.0	817.1	32.1	0.0	7.4	696.3	384.2
Cross-border/cross industry	Number	0	0	0	0	0	0	0	0	1	1	2
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	593.9	238.3	832.2
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	593.9	238.3	416.1
<b>Securities/Other</b>												
Within border/within industry	Number	1	5	3	8	8	8	11	22	29	64	159
	Total value	0.3	389.5	5.4	23.0	28.6	26.1	414.8	253.5	222.3	2891.1	4254.6
	Ave value	0.3	129.8	5.4	5.8	9.5	13.1	138.3	50.7	18.5	137.7	77.4
Within border/cross industry	Number	0	1	0	1	1	1	3	3	2	11	23
	Total value	0.0	0.0	0.0	771.3	11.1	0.0	66.2	192.7	0.0	748.3	1789.6
	Ave value	0.0	0.0	0.0	771.3	11.1	0.0	66.2	96.4	0.0	124.7	162.7
Cross-border/within industry	Number	0	5	4	1	4	6	4	3	2	6	35
	Total value	0.0	33.4	88.1	0.0	144.7	18.0	92.1	33.1	0.0	107.7	517.1
	Ave value	0.0	33.4	88.1	0.0	48.2	9.0	92.1	16.6	0.0	35.9	39.8
Cross-border/cross industry	Number	0	2	0	0	1	5	2	3	2	1	16
	Total value	0.0	7.1	0.0	0.0	36.6	27.2	77.6	17.2	14.6	0.0	180.3
	Ave value	0.0	7.1	0.0	0.0	36.6	13.6	77.6	8.6	14.6	0.0	22.5
<b>Total</b>												
	Number	14	29	15	32	25	48	48	63	64	152	490
	Total value	8464.2	626.9	255.6	1320.7	2468.0	36274.7	3770.7	2342.2	3576.7	83140.0	142239.7
	Ave value	1058.0	69.7	51.1	88.0	164.5	2015.3	251.4	117.1	137.6	1409.2	748.6

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	10	18	6	22	12	20	27	42	44	112	313
	Total value	8242.9	421.7	5.4	196.9	2074.0	34524.3	2896.8	1413.6	1661.2	78164.2	129601.0
	Ave value	1648.6	84.3	5.4	24.6	345.7	4315.5	482.8	176.7	103.8	2233.3	1322.5
Within border/ cross industry	Number	3	3	2	4	5	8	10	12	7	25	79
	Total value	221.3	164.7	34.1	998.9	160.9	202.5	666.5	848.6	239.8	1281.7	4819.0
	Ave value	73.8	82.4	34.1	249.7	40.2	101.3	133.3	121.2	60.0	91.6	104.8
Cross-border/ within industry	Number	5	4	7	5	6	10	8	5	7	12	69
	Total value	1661.2	3.4	980.8	34.6	137.2	1826.1	1316.9	1296.1	77.7	224.3	7558.3
	Ave value	553.7	3.4	326.9	17.3	34.3	456.5	439.0	648.1	25.9	44.9	251.9
Cross-border/ cross industry	Number	2	1	0	3	0	7	2	1	5	4	25
	Total value	48.0	0.0	0.0	25.8	0.0	103.4	77.6	9.3	3904.1	160.9	4329.1
	Ave value	48.0	0.0	0.0	25.8	0.0	25.9	77.6	9.3	976.0	160.9	333.0
<b>Deal type</b>												
Within border	Number	13	21	8	26	17	28	37	54	51	137	392
	Total value	8464.2	586.4	39.5	1195.8	2234.9	34726.8	3563.3	2262.2	1901.0	79445.9	134420.0
	Ave value	1058.0	83.8	19.8	99.7	223.5	3472.7	323.9	150.8	95.1	1621.3	933.5
Cross-border	Number	7	5	7	8	6	17	10	6	12	16	94
	Total value	1709.2	3.4	980.8	60.4	137.2	1929.5	1394.5	1305.4	3981.8	385.2	11887.4
	Ave value	427.3	3.4	326.9	20.1	34.3	241.2	348.6	435.1	568.8	64.2	276.5
<b>Deal type</b>												
Within industry	Number	15	22	13	27	18	30	35	47	51	124	382
	Total value	9904.1	425.1	986.2	231.5	2211.2	36350.4	4213.7	2709.7	1738.9	78388.5	137159.3
	Ave value	1238.0	70.9	246.6	23.2	221.1	3029.2	468.2	271.0	91.5	1959.7	1071.6
Cross industry	Number	5	4	2	7	5	15	12	13	12	29	104
	Total value	269.3	164.7	34.1	1024.7	160.9	305.9	744.1	857.9	4143.9	1442.6	9148.1
	Ave value	67.3	82.4	34.1	204.9	40.2	51.0	124.0	107.2	518.0	96.2	155.1
<b>Industry</b>												
Banking	Number	11	13	3	16	5	17	23	25	13	59	185
	Total value	9848.0	32.2	809.1	979.2	2096.7	36243.9	4103.7	2611.0	93.3	75142.9	131960.0
	Ave value	1969.6	16.1	809.1	163.2	698.9	5177.7	586.2	522.2	46.7	3954.9	2315.1
Insurance	Number	5	2	3	4	5	9	5	5	8	12	58
	Total value	137.6	0.0	83.6	0.0	14.8	162.1	109.7	47.2	1977.0	1010.7	3542.7
	Ave value	45.9	0.0	83.6	0.0	4.9	40.5	54.9	15.7	494.3	336.9	154.0
Securities/ Other	Number	4	11	9	14	13	19	19	30	42	82	243
	Total value	187.8	557.6	127.6	277.0	260.6	250.3	744.4	909.4	3812.5	3677.5	10804.7
	Ave value	47.0	92.9	42.5	30.8	32.6	35.8	124.1	90.9	181.5	111.4	101.0
<b>Total</b>	Number	20	26	15	34	23	45	47	60	63	153	486
	Total value	10173.4	589.8	1020.3	1256.2	2372.1	36656.3	4957.8	3567.6	5882.8	79831.1	146307.4
	Ave value	847.8	73.7	204.1	83.7	169.4	2036.5	330.5	198.2	217.9	1451.5	782.4
	GDP	3290581	3719670	4024401	4584213	5037737	5521440	5015633	4626124	4189702	4759985	44769487
	Value/GDP	0.31%	0.02%	0.03%	0.03%	0.05%	0.66%	0.10%	0.08%	0.14%	1.68%	0.33%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	8	12	2	11	3	8	15	19	12	43	133
	Total value	8242.6	32.2	0.0	173.9	2044.9	34363.3	2482.0	1131.0	93.3	74389.7	122952.9
	Ave value	2060.7	16.1	0.0	43.5	1022.5	8590.8	827.3	565.5	46.7	6199.1	3512.9
Within border/cross industry	Number	0	0	0	1	0	2	4	2	1	12	22
	Total value	0.0	0.0	0.0	771.3	0.0	0.0	336.9	183.9	0.0	748.3	2040.4
	Ave value	0.0	0.0	0.0	771.3	0.0	0.0	168.5	183.9	0.0	124.7	204.0
Cross-border/within industry	Number	3	0	1	3	2	4	4	4	0	2	23
	Total value	1605.4	0.0	809.1	34.0	51.8	1808.1	1284.8	1296.1	0.0	4.9	6894.2
	Ave value	1605.4	0.0	809.1	34.0	51.8	904.1	642.4	648.1	0.0	4.9	626.7
Cross-border/cross industry	Number	0	1	0	1	0	3	0	0	0	2	7
	Total value	0.0	0.0	0.0	0.0	0.0	72.5	0.0	0.0	0.0	0.0	72.5
	Ave value	0.0	0.0	0.0	0.0	0.0	72.5	0.0	0.0	0.0	0.0	72.5
<b>Insurance</b>												
Within border/within industry	Number	1	1	1	3	1	4	1	2	3	5	22
	Total value	0.0	0.0	0.0	0.0	0.5	134.9	0.0	29.1	1345.6	883.4	2393.5
	Ave value	0.0	0.0	0.0	0.0	0.5	67.5	0.0	29.1	672.8	441.7	299.2
Within border/cross industry	Number	1	1	0	0	2	2	0	2	1	2	11
	Total value	64.6	0.0	0.0	0.0	11.1	0.0	0.0	8.8	0.0	0.0	84.5
	Ave value	64.6	0.0	0.0	0.0	11.1	0.0	0.0	8.8	0.0	0.0	28.2
Cross-border/within industry	Number	1	0	2	1	2	1	2	0	3	4	16
	Total value	25.0	0.0	83.6	0.0	3.2	0.0	32.1	0.0	3.0	127.3	274.2
	Ave value	25.0	0.0	83.6	0.0	3.2	0.0	32.1	0.0	3.0	127.3	45.7
Cross-border/cross industry	Number	2	0	0	0	0	2	2	1	1	1	9
	Total value	48.0	0.0	0.0	0.0	0.0	27.2	77.6	9.3	628.4	0.0	790.5
	Ave value	48.0	0.0	0.0	0.0	0.0	13.6	77.6	9.3	628.4	0.0	131.8
<b>Securities/Other</b>												
Within border/within industry	Number	1	5	3	8	8	8	11	21	29	64	158
	Total value	0.3	389.5	5.4	23.0	28.6	26.1	414.8	253.5	222.3	2891.1	4254.6
	Ave value	0.3	129.8	5.4	5.8	9.5	13.1	138.3	50.7	18.5	137.7	77.4
Within border/cross industry	Number	2	2	2	3	3	4	6	8	5	11	46
	Total value	156.7	164.7	34.1	227.6	149.8	202.5	329.6	655.9	239.8	533.4	2694.1
	Ave value	78.4	82.4	34.1	75.9	49.9	101.3	109.9	131.2	60.0	66.7	81.6
Cross-border/within industry	Number	1	4	4	1	2	5	2	1	4	6	30
	Total value	30.8	3.4	88.1	0.6	82.2	18.0	0.0	0.0	74.7	92.1	389.9
	Ave value	30.8	3.4	88.1	0.6	41.1	9.0	0.0	0.0	37.4	30.7	30.0
Cross-border/cross industry	Number	0	0	0	2	0	2	0	0	4	1	9
	Total value	0.0	0.0	0.0	25.8	0.0	3.7	0.0	0.0	3275.7	160.9	3466.1
	Ave value	0.0	0.0	0.0	25.8	0.0	3.7	0.0	0.0	1091.9	160.9	577.7
<b>Total</b>												
	Number	20	26	15	34	23	45	47	60	63	153	486
	Total value	10173.4	589.8	1020.3	1256.2	2372.1	36656.3	4957.8	3567.6	5882.8	79831.1	146307.4
	Ave value	847.8	73.7	204.1	83.7	169.4	2036.5	330.5	198.2	217.9	1451.5	782.4

Source: Thomson Financial, SDC Platinum.

Table A.4  
**All European countries**  
All values in USD millions  
**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	51	181	174	137	159	132	157	123	141	181	1436
	Total value	4679.9	10392.0	12561.7	24094.6	10840.4	21994.9	25550.9	48985.4	67829.7	116379.3	343308.8
	Ave value	212.7	216.5	314.0	523.8	208.5	458.2	381.4	765.4	880.9	1454.7	631.1
Within border/ cross industry	Number	25	47	48	45	60	70	70	59	36	59	519
	Total value	11682.3	3574.7	1477.9	1451.1	1553.8	2851.2	2311.1	17548.1	19877.0	8785.9	71113.1
	Ave value	834.5	255.3	70.4	60.5	59.8	101.8	72.2	531.8	946.5	225.3	282.2
Cross-border/ within industry	Number	24	28	31	31	41	56	49	61	62	52	435
	Total value	4920.0	487.9	1065.6	4075.4	3484.6	6139.7	4561.6	16615.6	8571.4	15420.5	65342.3
	Ave value	492.0	81.3	106.6	370.5	205.0	255.8	240.1	553.9	267.9	642.5	357.1
Cross-border/ cross industry	Number	10	16	11	9	15	16	17	21	25	19	159
	Total value	1487.4	326.4	2034.4	509.0	201.0	1065.0	525.2	5157.9	6804.9	6439.9	24551.1
	Ave value	247.9	54.4	339.1	169.7	40.2	133.1	87.5	468.9	425.3	536.7	310.8
<b>Deal type</b>												
Within border	Number	76	228	222	182	219	202	227	182	177	240	1955
	Total value	16362.2	13966.7	14039.6	25545.7	12394.2	24846.1	27862.0	66533.5	87706.7	125165.2	414421.9
	Ave value	454.5	225.3	230.2	364.9	158.9	326.9	281.4	685.9	895.0	1051.8	520.6
Cross-border	Number	34	44	42	40	56	72	66	82	87	71	594
	Total value	6407.4	814.3	3100.0	4584.4	3685.6	7204.7	5086.8	21773.5	15376.3	21860.4	89893.4
	Ave value	400.5	67.9	193.8	327.5	167.5	225.1	203.5	531.1	320.3	607.2	343.1
<b>Deal type</b>												
Within industry	Number	75	209	205	168	200	188	206	184	203	233	1871
	Total value	9599.9	10879.9	13627.3	28170.0	14325.0	28134.6	30112.5	65601.0	76401.1	131799.8	408651.1
	Ave value	300.0	201.5	272.5	494.2	207.6	390.8	350.1	697.9	700.9	1267.3	562.1
Cross industry	Number	35	63	59	54	75	86	87	80	61	78	678
	Total value	13169.7	3901.1	3512.3	1960.1	1754.8	3916.2	2836.3	22706.0	26681.9	15225.8	95664.2
	Ave value	658.5	195.1	130.1	72.6	56.6	108.8	74.6	516.0	721.1	298.5	289.0
<b>Industry</b>												
Banking	Number	51	135	131	110	147	116	109	110	148	169	1226
	Total value	17424.2	10457.4	11578.0	10396.2	9105.8	27421.3	8476.9	45983.5	71525.5	113710.9	326079.7
	Ave value	670.2	255.1	289.5	253.6	182.1	559.6	197.1	836.1	841.5	1307.0	630.7
Insurance	Number	27	46	49	44	37	56	70	76	61	41	507
	Total value	3587.7	1983.2	3854.8	10666.1	5706.1	897.5	17911.5	35671.3	28209.7	18077.9	126565.8
	Ave value	299.0	198.3	257.0	561.4	335.7	64.1	617.6	849.3	972.7	1291.3	629.7
Securities/ Other	Number	32	91	84	68	91	102	114	78	55	101	816
	Total value	1757.7	2340.4	1706.8	9067.8	1267.9	3732.0	6560.4	6652.2	3347.8	15236.8	51669.8
	Ave value	125.6	101.8	77.6	377.8	38.4	82.9	126.2	162.2	104.6	282.2	152.0
<b>Total</b>	Number	110	272	264	222	275	274	293	264	264	311	2549
	Total value	22769.6	14781.0	17139.6	30130.1	16079.8	32050.8	32948.8	88307.0	103083.0	147025.6	504315.3
	Ave value	437.9	199.7	222.6	358.7	160.8	296.8	265.7	639.9	706.0	948.6	476.7
	GDP	6472416	6738836	7343535	6658502	7072407	8060793	8198157	7681151	7921755	7888743	74036296
	Value/GDP	0.35%	0.22%	0.23%	0.45%	0.23%	0.40%	0.40%	1.15%	1.30%	1.86%	0.68%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	22	90	89	72	93	66	70	66	89	113	770
	Total value	3904.4	7470.3	8727.9	8869.5	7292.3	21501.6	7601.2	39640.9	49851.2	104211.8	259071.1
	Ave value	354.9	339.6	396.7	341.1	251.5	767.9	271.5	1132.6	977.5	2043.4	855.0
Within border/cross industry	Number	14	24	23	23	31	24	19	19	20	28	225
	Total value	10145.0	2486.2	859.6	840.6	1110.2	950.5	159.9	580.7	15956.1	2753.3	35842.1
	Ave value	1268.1	226.0	86.0	70.1	92.5	135.8	22.8	96.8	1227.4	153.0	344.6
Cross-border/within industry	Number	10	12	14	12	16	20	12	21	28	18	163
	Total value	2155.5	276.7	229.7	299.9	588.2	4381.5	223.6	962.6	3218.9	1178.5	13515.1
	Ave value	431.1	69.2	76.6	150.0	98.0	438.2	55.9	96.3	229.9	117.9	198.8
Cross-border/cross industry	Number	5	9	5	3	7	6	8	4	11	10	68
	Total value	1219.3	224.2	1760.8	386.2	115.1	587.7	492.2	4799.3	2499.3	5567.3	17651.4
	Ave value	609.7	56.1	440.2	386.2	38.4	146.9	123.1	1199.8	357.0	695.9	430.5
<b>Insurance</b>												
Within border/within industry	Number	11	26	29	24	12	20	31	25	26	19	223
	Total value	743.8	621.7	2775.4	7015.2	2820.6	27.1	16776.0	8730.5	16443.0	10749.1	66702.4
	Ave value	124.0	155.4	555.1	876.9	564.1	4.5	1398.0	623.6	2055.4	2149.8	913.7
Within border/cross industry	Number	4	5	9	5	5	15	16	15	7	5	86
	Total value	17.6	1048.1	278.0	309.1	49.7	444.3	246.3	16527.2	3563.1	384.8	22868.2
	Ave value	17.6	524.1	69.5	77.3	16.6	148.1	27.4	1652.7	712.6	77.0	497.1
Cross-border/within industry	Number	10	13	10	12	18	20	21	30	24	15	173
	Total value	2733.7	211.2	801.4	3330.7	2809.8	342.2	889.2	10344.4	4965.8	6779.0	33207.4
	Ave value	683.4	105.6	133.6	555.1	351.2	85.6	111.2	646.5	354.7	2259.7	467.7
Cross-border/cross industry	Number	2	2	1	3	2	1	2	6	4	2	25
	Total value	92.6	102.2	0.0	11.1	26.0	83.9	0.0	69.2	3237.8	165.0	3787.8
	Ave value	92.6	51.1	0.0	11.1	26.0	83.9	0.0	34.6	1618.9	165.0	344.3
<b>Securities/Other</b>												
Within border/within industry	Number	18	65	56	41	54	46	56	32	26	49	443
	Total value	31.7	2300.0	1058.4	8209.9	727.5	466.2	1173.7	614.0	1535.5	1418.4	17535.3
	Ave value	6.3	104.5	88.2	684.2	40.4	33.3	43.5	40.9	85.3	59.1	105.0
Within border/cross industry	Number	7	18	16	17	24	31	35	25	9	26	208
	Total value	1519.7	40.4	340.3	301.4	393.9	1456.4	1904.9	440.2	357.8	5647.8	12402.8
	Ave value	303.9	40.4	48.6	37.7	35.8	80.9	119.1	25.9	119.3	353.0	121.6
Cross-border/within industry	Number	4	3	7	7	7	16	16	10	10	19	99
	Total value	30.8	0.0	34.5	444.8	86.6	1416.0	3448.8	5308.6	386.7	7463.0	18619.8
	Ave value	30.8	0.0	34.5	148.3	28.9	141.6	492.7	1327.2	96.7	678.5	423.2
Cross-border/cross industry	Number	3	5	5	3	6	9	7	11	10	7	66
	Total value	175.5	0.0	273.6	111.7	59.9	393.4	33.0	289.4	1067.8	707.6	3111.9
	Ave value	58.5	0.0	136.8	111.7	59.9	131.1	16.5	57.9	152.5	235.9	115.3
<b>Total</b>												
	Number	110	272	264	222	275	274	293	264	264	311	2549
	Total value	22769.6	14781.0	17139.6	30130.1	16079.8	32050.8	32948.8	88307.0	103083.0	147025.6	504315.3
	Ave value	437.9	199.7	222.6	358.7	160.8	296.8	265.7	639.9	706.0	948.6	476.7



### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	51	181	174	137	159	132	157	124	142	181	1438
	Total value	4679.9	10392.0	12561.7	24094.6	10840.4	21994.9	25550.9	48985.4	67879.7	116379.3	343358.8
	Ave value	212.7	216.5	314.0	523.8	208.5	458.2	381.4	765.4	870.3	1454.7	630.0
Within border/ cross industry	Number	25	47	48	45	61	70	70	59	36	59	520
	Total value	11682.3	3574.7	1477.9	1451.1	1553.8	2851.2	2311.1	17548.1	19877.0	8785.9	71113.1
	Ave value	834.5	255.3	70.4	60.5	59.8	101.8	72.2	531.8	946.5	225.3	282.2
Cross-border/ within industry	Number	37	39	39	32	50	74	63	61	74	97	566
	Total value	4625.8	408.6	1141.3	4861.7	3546.9	6812.9	12693.7	18119.7	19785.1	51000.0	122995.7
	Ave value	355.8	51.1	81.5	374.0	186.7	212.9	470.1	696.9	471.1	1020.0	504.1
Cross-border/ cross industry	Number	12	22	14	8	12	27	23	27	29	38	212
	Total value	1395.8	431.3	2006.1	659.8	910.4	3274.9	2992.4	6975.8	1826.9	13802.2	34275.6
	Ave value	232.6	43.1	222.9	165.0	227.6	297.7	427.5	581.3	130.5	530.9	332.8
<b>Deal type</b>												
Within border	Number	76	228	222	182	220	202	227	183	178	240	1958
	Total value	16362.2	13966.7	14039.6	25545.7	12394.2	24846.1	27862.0	66533.5	87756.7	125165.2	414471.9
	Ave value	454.5	225.3	230.2	364.9	158.9	326.9	281.4	685.9	886.4	1051.8	520.0
Cross-border	Number	49	61	53	40	62	101	86	88	103	135	778
	Total value	6021.6	839.9	3147.4	5521.5	4457.3	10087.8	15686.1	25095.5	21612.0	64802.2	157271.3
	Ave value	316.9	46.7	136.8	324.8	193.8	234.6	461.4	660.4	385.9	852.7	453.2
<b>Deal type</b>												
Within industry	Number	88	220	213	169	209	206	220	185	216	278	2004
	Total value	9305.7	10800.6	13703.0	28956.3	14387.3	28807.8	38244.6	67105.1	87664.8	167379.3	466354.5
	Ave value	265.9	192.9	253.8	490.8	202.6	360.1	406.9	745.6	730.5	1287.5	591.1
Cross industry	Number	37	69	62	53	73	97	93	86	65	97	732
	Total value	13078.1	4006.0	3484.0	2110.9	2464.2	6126.1	5303.5	24523.9	21703.9	22588.1	105388.7
	Ave value	653.9	166.9	116.1	75.4	82.1	157.1	136.0	545.0	620.1	347.5	296.9
<b>Industry</b>												
Banking	Number	49	130	125	102	138	144	130	125	140	184	1267
	Total value	4946.4	8789.4	9424.5	10436.2	9010.2	27630.6	12581.9	58345.7	65998.4	124873.1	332036.4
	Ave value	206.1	293.0	304.0	260.9	204.8	425.1	233.0	911.7	825.0	1261.3	625.3
Insurance	Number	40	58	55	49	47	62	69	67	71	71	589
	Total value	14400.6	1137.3	4029.8	11360.4	6128.0	2328.5	21913.0	27296.2	22057.5	48932.0	159583.3
	Ave value	757.9	94.8	183.2	493.9	278.5	122.6	876.5	802.8	735.3	1578.5	673.3
Securities /Other	Number	36	101	95	71	97	97	114	79	70	120	880
	Total value	3036.8	4879.9	3732.7	9270.6	1713.3	4974.8	9053.2	5987.1	21312.8	16162.3	80123.5
	Ave value	253.1	128.4	124.4	386.3	50.4	142.1	167.7	161.8	473.6	248.7	214.2
<b>Total</b>	Number	125	289	275	222	282	303	313	271	281	375	2736
	Total value	22383.8	14806.6	17187.0	31067.2	16851.5	34933.9	43548.1	91629.0	109368.7	189967.4	571743.2
	Ave value	407.0	185.1	204.6	357.1	166.8	293.6	327.4	678.7	705.6	974.2	499.8
	GDP	6472416	6738836	7343535	6658502	7072407	8060793	8198157	7681151	7921755	7888743	74036296
	Value/GDP	0.35%	0.22%	0.23%	0.47%	0.24%	0.43%	0.53%	1.19%	1.38%	2.41%	0.77%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	22	90	89	72	92	66	70	66	89	113	769
	Total value	3904.4	7470.3	8727.9	8869.5	7292.3	21501.6	7601.2	39640.9	49851.2	104211.8	259071.1
	Ave value	354.9	339.6	396.7	341.1	251.5	767.9	271.5	1132.6	977.5	2043.4	852.2
Within border/cross industry	Number	8	20	15	16	21	33	31	27	10	23	204
	Total value	156.9	1048.1	491.5	536.6	300.1	486.2	1704.5	12930.2	2352.9	2415.5	22422.5
	Ave value	52.3	524.1	122.9	59.6	37.5	30.4	106.5	680.5	588.2	161.0	233.6
Cross-border/within industry	Number	15	13	17	11	17	29	17	20	29	36	204
	Total value	709.6	82.2	179.9	918.4	667.8	5064.6	2885.5	5453.4	13007.0	15348.8	44317.2
	Ave value	101.4	41.1	45.0	229.6	111.3	297.9	360.7	908.9	722.6	639.5	456.9
Cross-border/cross industry	Number	4	7	4	3	8	16	12	12	12	12	90
	Total value	175.5	188.8	25.2	111.7	750.0	578.2	390.7	321.2	787.3	2897.0	6225.6
	Ave value	58.5	47.2	25.2	111.7	750.0	144.6	195.4	80.3	112.5	321.9	172.9
<b>Insurance</b>												
Within border/within industry	Number	11	26	29	24	13	20	31	25	27	19	225
	Total value	743.8	621.7	2775.4	7015.2	2820.6	27.1	16776.0	8730.5	16493.0	10749.1	66752.4
	Ave value	124.0	155.4	555.1	876.9	564.1	4.5	1398.0	623.6	1832.6	2149.8	902.1
Within border/cross industry	Number	10	5	7	11	10	11	8	9	4	8	83
	Total value	8932.2	40.4	334.3	331.9	435.8	975.9	212.2	140.9	83.2	4246.1	15732.9
	Ave value	1488.7	40.4	66.9	55.3	54.5	325.3	212.2	47.0	83.2	849.2	403.4
Cross-border/within industry	Number	17	21	16	12	23	28	27	29	34	36	243
	Total value	3916.2	325.5	899.2	3476.3	2811.7	1325.5	4923.9	12030.0	4835.8	28452.1	62996.2
	Ave value	652.7	81.4	99.9	496.6	351.5	132.6	447.6	859.3	254.5	1896.8	611.6
Cross-border/cross industry	Number	2	6	3	2	1	3	3	4	6	8	38
	Total value	808.4	149.7	20.9	537.0	59.9	0.0	0.9	6394.8	645.5	5484.7	14101.8
	Ave value	808.4	49.9	7.0	268.5	59.9	0.0	0.9	2131.6	645.5	914.1	671.5
<b>Securities/Other</b>												
Within border/within industry	Number	18	65	56	41	54	46	56	33	26	49	444
	Total value	31.7	2300.0	1058.4	8209.9	727.5	466.2	1173.7	614.0	1535.5	1418.4	17535.3
	Ave value	6.3	104.5	88.2	684.2	40.4	33.3	43.5	40.9	85.3	59.1	105.0
Within border/cross industry	Number	7	22	26	18	30	26	31	23	22	28	233
	Total value	2593.2	2486.2	652.1	582.6	817.9	1389.1	394.4	4477.0	17440.9	2124.3	32957.7
	Ave value	518.6	226.0	54.3	64.7	81.8	154.3	26.3	407.0	1090.1	111.8	281.7
Cross border/Within industry	Number	5	5	6	9	10	17	19	12	11	25	119
	Total value	0.0	0.9	62.2	467.0	67.4	422.8	4884.3	636.3	1942.3	7199.1	15682.3
	Ave value	0.0	0.5	62.2	233.5	16.9	84.6	610.5	106.1	388.5	654.5	356.4
Cross border/Cross industry	Number	6	9	7	3	3	8	8	11	11	18	84
	Total value	411.9	92.8	1960.0	11.1	100.5	2696.7	2600.8	259.8	394.1	5420.5	13948.2
	Ave value	206.0	30.9	392.0	11.1	50.3	385.2	650.2	52.0	65.7	492.8	303.2
<b>Total</b>												
	Number	125	289	275	222	282	303	313	271	281	375	2736
	Total value	22383.8	14806.6	17187.0	31067.2	16851.5	34933.9	43548.1	91629.0	109368.7	189967.4	571743.2
	Ave value	407.0	185.1	204.6	357.1	166.8	293.6	327.4	678.7	705.6	974.2	499.8

Source: Thomson Financial, SDC Platinum.

Table A.5

**Country: United States**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	145	192	280	358	401	441	401	437	414	273	3342
	Total value	4117.6	21742.1	18743.4	28702.8	30683.4	71135.4	43697.9	167025.3	284220.7	70105.0	740173.6
	Ave value	50.2	167.2	105.9	111.7	95.6	234.0	153.3	485.5	851.0	323.1	302.0
Within border/ cross industry	Number	21	17	28	36	42	52	50	65	68	77	456
	Total value	338.4	335.3	1870.8	3285.6	1665.7	5541.9	3627.0	19727.2	87616.8	9672.7	133681.4
	Ave value	28.2	30.5	143.9	136.9	61.7	178.8	134.3	458.8	1788.1	193.5	465.8
Cross-border/ within industry	Number	13	9	4	10	9	14	15	20	19	23	136
	Total value	1379.2	291.2	9.8	770.2	1267.7	3697.9	8530.4	9005.5	14124.1	28209.2	67285.2
	Ave value	275.8	58.2	4.9	154.0	181.1	369.8	775.5	692.7	1086.5	2169.9	801.0
Cross-border/ cross industry	Number	7	5	5	2	3	5	3	7	6	7	50
	Total value	49.0	48.5	88.2	25.8	789.7	2244.9	2679.5	1986.9	533.1	3438.7	11884.3
	Average value	24.5	24.3	29.4	25.8	263.2	748.3	893.2	397.4	106.6	859.7	383.4
<b>Deal type</b>												
Within border	Number	166	209	308	394	443	493	451	502	482	350	3798
	Total value	4456.0	22077.4	20614.2	31988.4	32349.1	76677.3	47324.9	186752.5	371837.5	79777.7	873855.0
	Ave value	47.4	156.6	108.5	113.8	93.0	228.9	151.7	482.6	970.9	298.8	319.2
Cross-border	Number	20	14	9	12	12	19	18	27	25	30	186
	Total value	1428.2	339.7	98.0	796.0	2057.4	5942.8	11209.9	10992.4	14657.2	31647.9	79169.5
	Ave value	204.0	48.5	19.6	132.7	205.7	457.1	800.7	610.7	814.3	1861.6	688.4
<b>Deal type</b>												
Within industry	Number	158	201	284	368	410	455	416	457	433	296	3478
	Total value	5496.8	22033.3	18753.2	29473.0	31951.1	74833.3	52228.3	176030.8	298344.8	98314.2	807458.8
	Ave value	63.2	163.2	104.8	112.5	97.4	238.3	176.4	493.1	859.8	427.5	318.5
Cross industry	Number	28	22	33	38	45	57	53	72	74	84	506
	Total value	387.4	383.8	1959.0	3311.4	2455.4	7786.8	6306.5	21714.1	88149.9	13111.4	145565.7
	Ave value	27.7	29.5	122.4	132.5	81.8	229.0	210.2	452.4	1632.4	242.8	457.8
<b>Industry</b>												
Banking	Number	131	152	243	326	365	390	334	374	348	248	2911
	Total value	4413.9	20780.1	15046.4	18540.0	23204.4	73260.7	34942.2	136957.6	299610.0	70414.5	697169.8
	Ave value	50.2	183.9	93.5	74.8	75.6	266.4	138.7	439.0	998.7	340.2	308.1
Insurance	Number	23	36	46	36	37	56	66	56	69	47	472
	Total value	1329.4	1262.0	4986.9	5744.6	5656.8	4973.7	13635.1	17218.1	58583.0	23172.1	136561.7
	Ave value	132.9	63.1	172.0	337.9	245.9	142.1	349.6	573.9	1394.8	891.2	503.9
Securities /Other	Number	32	35	28	44	53	66	69	99	90	85	601
	Total value	140.9	375.0	678.9	8499.8	5545.3	4385.7	9957.5	43569.2	28301.7	17839.0	119293.0
	Ave value	47.0	25.0	135.8	386.4	198.0	115.4	284.5	691.6	479.7	349.8	374.0
<b>Total</b>	Number	186	223	317	406	455	512	469	529	507	380	3984
	Total value	5884.2	22417.1	20712.2	32784.4	34406.5	82620.1	58534.8	197744.9	386494.7	111425.6	953024.5
	Ave value	58.3	151.5	106.2	114.2	96.1	237.4	179.6	488.3	963.8	392.3	334.0
	GDP	5803250	5986225	6318950	6642325	7054300	7400550	7813175	8300725	8759950	9256150	73335600
	Value/GDP	0.10%	0.37%	0.33%	0.49%	0.49%	1.12%	0.75%	2.38%	4.41%	1.20%	1.30%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	107	136	225	302	336	356	305	325	308	208	2608
	Total value	3911.4	20216.8	14924.1	17565.2	21678.8	66438.5	28826.2	128987.6	206908.6	56873.3	566330.5
	Ave value	52.2	198.2	98.2	75.4	75.3	265.8	124.8	465.7	766.3	312.5	274.9
Within border/cross industry	Number	17	9	14	17	21	27	22	38	31	32	228
	Total value	265.5	267.2	34.1	206.1	279.6	3372.3	1050.5	2942.5	83228.0	3351.9	94997.7
	Ave value	26.6	44.5	5.7	20.6	23.3	187.4	75.0	117.7	3618.6	176.4	664.3
Cross-border/within industry	Number	3	6	0	6	6	7	6	7	5	7	53
	Total value	188.0	286.1	0.0	742.9	1206.3	3449.9	2936.9	4707.6	9270.4	9812.3	32600.4
	Ave value	188.0	71.5	0.0	185.7	241.3	492.8	489.5	784.6	3090.1	1962.5	795.1
Cross-border/cross industry	Number	4	1	4	1	2	0	1	4	4	1	22
	Total value	49.0	10.0	88.2	25.8	39.7	0.0	2128.6	319.9	203.0	377.0	3241.2
	Ave value	24.5	10.0	29.4	25.8	19.9	0.0	2128.6	80.0	50.8	377.0	170.6
<b>Insurance</b>												
Within border/within industry	Number	16	28	33	28	30	43	52	38	51	19	338
	Total value	138.2	1214.9	3164.9	4790.9	5194.4	2372.0	7652.4	12487.8	53225.3	4713.9	94954.7
	Ave value	23.0	71.5	143.9	399.2	273.4	84.7	255.1	567.6	1774.2	428.5	482.0
Within border/cross industry	Number	0	6	10	6	6	7	8	9	8	18	78
	Total value	0.0	47.1	1812.2	953.7	462.4	481.3	1988.0	1670.8	779.0	182.5	8377.0
	Ave value	0.0	15.7	362.4	190.7	115.6	160.4	331.3	417.7	194.8	26.1	204.3
Cross-border/within industry	Number	6	0	2	2	1	5	6	8	10	9	49
	Total value	1191.2	0.0	9.8	0.0	0.0	248.0	3994.7	3059.5	4578.7	18271.9	31353.8
	Ave value	297.8	0.0	4.9	0.0	0.0	82.7	1331.6	764.9	572.3	2610.3	1011.4
Cross-border/cross industry	Number	1	2	1	0	0	1	0	1	0	1	7
	Total value	0.0	0.0	0.0	0.0	0.0	1872.4	0.0	0.0	0.0	3.8	1876.2
	Ave value	0.0	0.0	0.0	0.0	0.0	1872.4	0.0	0.0	0.0	3.8	938.1
<b>Securities/Other</b>												
Within border/within industry	Number	22	28	22	28	35	42	44	74	55	46	396
	Total value	68.0	310.4	654.4	6346.7	3810.2	2324.9	7219.3	25549.9	24086.8	8517.8	78888.4
	Ave value	68.0	28.2	218.1	528.9	272.2	89.4	300.8	567.8	708.4	354.9	406.6
Within border/cross industry	Number	4	2	4	13	15	18	20	18	29	27	150
	Total value	72.9	21.0	24.5	2125.8	923.7	1688.3	588.5	15113.9	3609.8	6138.3	30306.7
Cross-border/within industry	Ave value	36.5	10.5	12.3	236.2	84.0	168.8	84.1	1079.6	164.1	255.8	294.2
	Number	4	3	2	2	2	2	3	5	4	7	34
	Total value	0.0	5.1	0.0	27.3	61.4	0.0	1598.8	1238.4	275.0	125.0	3331.0
	Ave value	0.0	5.1	0.0	27.3	30.7	0.0	799.4	412.8	137.5	125.0	277.6
Cross-border/cross industry	Number	2	2	0	1	1	4	2	2	2	5	21
	Total value	0.0	38.5	0.0	0.0	750.0	372.5	550.9	1667.0	330.1	3057.9	6766.9
	Ave value	0.0	38.5	0.0	0.0	750.0	186.3	275.5	1667.0	330.1	1529.0	676.7
<b>Total</b>												
	Number	186	223	317	406	455	512	469	529	507	380	3984
	Total value	5884.2	22417.1	20712.2	32784.4	34406.5	82620.1	58534.8	197744.9	386494.7	111425.6	953024.5
	Ave value	58.3	151.5	106.2	114.2	96.1	237.4	179.6	488.3	963.8	392.3	334.0

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	145	192	280	358	401	441	401	437	413	272	3340
	Total value	4117.6	21742.1	18743.4	28702.8	30683.4	71135.4	43697.9	167025.3	284170.7	70105.0	740123.6
	Ave value	50.2	167.2	105.9	111.7	95.6	234.0	153.3	485.5	853.4	323.1	302.1
Within border/ cross industry	Number	21	17	28	36	41	52	50	65	68	77	455
	Total value	338.4	335.3	1870.8	3285.6	1665.7	5541.9	3627.0	19727.2	87616.8	9672.7	133681.4
	Ave value	28.2	30.5	143.9	136.9	61.7	178.8	134.3	458.8	1788.1	193.5	465.8
Cross-border/ within industry	Number	7	9	5	15	18	35	29	32	44	31	225
	Total value	448.0	437.2	922.8	397.4	747.8	4727.1	1182.2	8161.3	6537.9	8098.0	31659.7
	Ave value	112.0	109.3	307.6	79.5	93.5	278.1	107.5	583.0	311.3	449.9	301.5
Cross-border/ cross industry	Number	4	3	4	3	5	4	5	12	18	16	74
	Total value	254.6	10.6	248.4	19.3	10.6	222.0	3.0	1755.6	2807.2	2440.5	7771.8
	Ave value	254.6	5.3	248.4	9.7	10.6	111.0	3.0	219.5	187.1	221.9	176.6
<b>Deal type</b>												
Within border	Number	166	209	308	394	442	493	451	502	481	349	3795
	Total value	4456.0	22077.4	20614.2	31988.4	32349.1	76677.3	47324.9	186752.5	371787.5	79777.7	873805.0
	Ave value	47.4	156.6	108.5	113.8	93.0	228.9	151.7	482.6	973.3	298.8	319.3
Cross-border	Number	11	12	9	18	23	39	34	44	62	47	299
	Total value	702.6	447.8	1171.2	416.7	758.4	4949.1	1185.2	9916.9	9345.1	10538.5	39431.5
	Ave value	140.5	74.6	292.8	59.5	84.3	260.5	98.8	450.8	259.6	363.4	264.6
<b>Deal type</b>												
Within industry	Number	152	201	285	373	419	476	430	469	457	303	3565
	Total value	4565.6	22179.3	19666.2	29100.2	31431.2	75862.5	44880.1	175186.6	290708.6	78203.0	771783.3
	Ave value	53.1	165.5	109.3	111.1	95.5	236.3	151.6	489.3	821.2	332.8	302.1
Cross industry	Number	25	20	32	39	46	56	55	77	86	93	529
	Total value	593.0	345.9	2119.2	3304.9	1676.3	5763.9	3630.0	21482.8	90424.0	12113.2	141453.2
	Ave value	45.6	26.6	151.4	127.1	59.9	174.7	129.6	421.2	1412.9	198.6	427.4
<b>Industry</b>												
Banking	Number	113	142	235	327	356	381	339	361	362	255	2871
	Total value	4316.0	20471.0	15197.0	20866.7	22528.9	71417.4	32239.6	138935.1	212713.0	68393.8	607078.5
	Ave value	55.3	191.3	98.0	83.8	75.1	269.5	129.5	460.1	702.0	315.2	272.8
Insurance	Number	22	34	37	38	43	67	67	61	74	36	479
	Total value	360.2	1426.1	3179.7	4800.4	6113.2	2983.8	7844.1	22494.4	136854.6	7685.6	193742.1
	Ave value	36.0	75.1	127.2	320.0	226.4	78.5	237.7	703.0	2975.1	366.0	728.4
Securities/ Other	Number	42	45	45	47	66	84	79	124	107	105	744
	Total value	482.4	628.1	3408.7	6738.0	4465.4	7225.2	8426.4	35239.9	31565.0	14236.8	112415.9
	Ave value	43.9	29.9	243.5	280.8	148.8	141.7	200.6	469.9	457.5	245.5	284.6
<b>Total</b>	Number	177	221	317	412	465	532	485	546	543	396	4094
	Total value	5158.6	22525.2	21785.4	32405.1	33107.5	81626.4	48510.1	196669.4	381132.6	90316.2	913236.5
	Ave value	52.1	153.2	112.3	112.5	92.7	230.6	149.7	480.9	911.8	305.1	316.4
	GDP	5803250	5986225	6318950	6642325	7054300	7400550	7813175	8300725	8759950	9256150	73335600
	Value/GDP	0.09%	0.38%	0.34%	0.49%	0.47%	1.10%	0.62%	2.37%	4.35%	0.98%	1.25%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	107	136	225	302	337	356	305	325	308	208	2609
	Total value	3911.4	20216.8	14924.1	17565.2	21678.8	66438.5	28826.2	128987.6	206908.6	56873.3	566330.5
	Ave value	52.2	198.2	98.2	75.4	75.3	265.8	124.8	465.7	766.3	312.5	274.9
Within border/cross industry	Number	4	3	6	15	13	14	22	19	32	34	162
	Total value	72.9	28.2	24.5	2962.3	171.2	1602.2	2563.2	7224.9	3253.7	5956.6	23859.7
	Ave value	36.5	9.4	12.3	269.3	19.0	228.9	233.0	516.1	141.5	229.1	220.9
Cross border/within industry	Number	2	3	1	7	5	11	11	13	19	10	82
	Total value	331.7	226.0	0.0	319.9	678.9	3376.7	847.2	1823.4	2491.3	4875.6	14970.7
	Ave value	331.7	113.0	0.0	106.6	226.3	422.1	141.2	227.9	311.4	696.5	325.5
Cross-border/cross industry	Number	0	0	3	3	1	0	1	4	3	3	18
	Total value	0.0	0.0	248.4	19.3	0.0	0.0	3.0	899.2	59.4	688.3	1917.6
	Ave value	0.0	0.0	248.4	9.7	0.0	0.0	3.0	299.7	29.7	344.2	174.3
<b>Insurance</b>												
Within border/within industry	Number	16	28	33	28	29	43	52	38	50	19	336
	Total value	138.2	1214.9	3164.9	4790.9	5194.4	2372.0	7652.4	12487.8	53175.3	4713.9	94904.7
	Ave value	23.0	71.5	143.9	399.2	273.4	84.7	255.1	567.6	1833.6	428.5	484.2
Within border/cross industry	Number	2	0	2	5	8	8	5	6	7	5	48
	Total value	110.7	0.0	5.0	7.1	892.9	164.6	0.0	9000.3	80829.5	245.2	91255.3
	Ave value	55.4	0.0	5.0	3.6	148.8	41.2	0.0	2250.1	16165.9	81.7	3379.8
Cross-border/within industry	Number	3	5	2	5	6	16	9	14	14	11	85
	Total value	111.3	211.2	9.8	2.4	25.9	447.2	191.7	481.9	2778.1	2726.5	6986.0
	Ave value	55.7	105.6	4.9	2.4	13.0	74.5	63.9	120.5	308.7	389.5	183.8
Cross-border/cross industry	Number	1	1	0	0	0	0	1	3	3	1	10
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	524.4	71.7	0.0	596.1
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	262.2	23.9	0.0	119.2
<b>Securities/Other</b>												
Within border/within industry	Number	22	28	22	28	35	42	44	74	55	45	395
	Total value	68.0	310.4	654.4	6346.7	3810.2	2324.9	7219.3	25549.9	24086.8	8517.8	78888.4
	Ave value	68.0	28.2	218.1	528.9	272.2	89.4	300.8	567.8	708.4	354.9	406.6
Within border/cross industry	Number	15	14	20	16	20	30	23	40	29	38	245
	Total value	154.8	307.1	1841.3	316.2	601.6	3775.1	1063.8	3502.0	3533.6	3470.9	18566.4
	Ave value	19.4	38.4	184.1	28.7	50.1	188.8	66.5	140.1	168.3	165.3	122.1
Cross-border/within industry	Number	2	1	2	3	7	8	9	5	11	10	58
	Total value	5.0	0.0	913.0	75.1	43.0	903.2	143.3	5856.0	1268.5	495.9	9703.0
	Ave value	5.0	0.0	913.0	75.1	14.3	301.1	71.7	2928.0	317.1	124.0	462.0
Cross-border/cross industry	Number	3	2	1	0	4	4	3	5	12	12	46
	Total value	254.6	10.6	0.0	0.0	10.6	222.0	0.0	332.0	2676.1	1752.2	5258.1
	Ave value	254.6	5.3	0.0	0.0	10.6	111.0	0.0	110.7	267.6	194.7	187.8
<b>Total</b>												
	Number	177	221	317	412	465	532	485	546	543	396	4094
	Total value	5158.6	22525.2	21785.4	32405.1	33107.5	81626.4	48510.1	196669.4	381132.6	90316.2	913236.5
	Ave value	52.1	153.2	112.3	112.5	92.7	230.6	149.7	480.9	911.8	305.1	316.4

Source: Thomson Financial, SDC Platinum.

Table A.6

**Country: Canada**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	7	12	13	15	11	12	17	32	21	28	168
	Total value	722.1	50.6	30.0	611.4	23.2	123.3	893.7	4445.5	513.6	6628.3	14041.7
	Ave value	240.7	12.7	7.5	101.9	11.6	24.7	297.9	296.4	36.7	552.4	206.5
Within border/ cross industry	Number	4	11	5	5	5	5	10	11	10	11	77
	Total value	53.8	324.3	221.9	390.0	299.4	261.9	569.7	79.1	170.0	2216.9	4587.0
	Ave value	26.9	40.5	74.0	195.0	149.7	261.9	71.2	26.4	24.3	246.3	101.9
Cross-border/ within industry	Number	1	2	2	2	2	5	4	1	8	3	30
	Total value	107.8	0.0	0.0	45.5	126.1	276.3	137.0	30.3	1277.8	2725.9	4726.7
	Ave value	107.8	0.0	0.0	22.8	63.1	138.2	45.7	30.3	255.6	908.6	248.8
Cross-border/ cross industry	Number	2	0	0	0	0	0	1	1	0	2	6
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	122.1	25.3	0.0	8.6	156.0
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	122.1	25.3	0.0	8.6	52.0
<b>Deal type</b>												
Within border	Number	11	23	18	20	16	17	27	43	31	39	245
	Total value	775.9	374.9	251.9	1001.4	322.6	385.2	1463.4	4524.6	683.6	8845.2	18628.7
	Ave value	155.2	31.2	36.0	125.2	80.7	64.2	133.0	251.4	32.6	421.2	164.9
Cross-border	Number	3	2	2	2	2	5	5	2	8	5	36
	Total value	107.8	0.0	0.0	45.5	126.1	276.3	259.1	55.6	1277.8	2734.5	4882.7
	Ave value	107.8	0.0	0.0	22.8	63.1	138.2	64.8	27.8	255.6	683.6	221.9
<b>Deal type</b>												
Within industry	Number	8	14	15	17	13	17	21	33	29	31	198
	Total value	829.9	50.6	30.0	656.9	149.3	399.6	1030.7	4475.8	1791.4	9354.2	18768.4
	Ave value	207.5	12.7	7.5	82.1	37.3	57.1	171.8	279.7	94.3	623.6	215.7
Cross industry	Number	6	11	5	5	5	5	11	12	10	13	83
	Total value	53.8	324.3	221.9	390.0	299.4	261.9	691.8	104.4	170.0	2225.5	4743.0
	Ave value	26.9	40.5	74.0	195.0	149.7	261.9	76.9	26.1	24.3	222.6	98.8
<b>Industry</b>												
Banking	Number	5	12	4	7	4	6	14	23	14	13	102
	Total value	739.2	265.5	29.0	244.7	0.0	308.0	134.6	2316.4	502.2	9970.3	14509.9
	Ave value	246.4	37.9	29.0	81.6	0.0	77.0	16.8	178.2	45.7	997.0	241.8
Insurance	Number	3	3	2	3	4	3	8	8	10	3	47
	Total value	122.4	0.0	0.0	535.0	135.7	145.7	1117.3	2146.0	531.2	45.8	4779.1
	Ave value	61.2	0.0	0.0	178.3	67.9	145.7	223.5	715.3	106.2	22.9	207.8
Securities/ Other	Number	6	10	14	12	10	13	10	14	15	28	132
	Total value	22.1	109.4	222.9	267.2	313.0	207.8	470.6	117.8	928.0	1563.6	4222.4
	Ave value	22.1	21.9	37.2	66.8	78.3	69.3	235.3	29.5	92.8	120.3	81.2
<b>Total</b>	Number	14	25	20	22	18	22	32	45	39	44	281
	Total value	883.7	374.9	251.9	1046.9	448.7	661.5	1722.5	4580.2	1961.4	11579.7	23511.4
	Ave value	147.3	31.2	36.0	104.7	74.8	82.7	114.8	229.0	75.4	463.2	174.2
	GDP	581153	596396	578328	562107	562068	588251	610977	634306	608678	644883	5967147
	Value/GDP	0.15%	0.06%	0.04%	0.19%	0.08%	0.11%	0.28%	0.72%	0.32%	1.80%	0.39%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/ within industry	Number	2	6	2	5	1	5	5	15	8	3	52
	Total value	707.5	19.0	0.0	75.2	0.0	46.1	9.9	2281.0	394.0	5639.4	9172.1
	Ave value	353.8	9.5	0.0	37.6	0.0	15.4	9.9	207.4	65.7	2819.7	316.3
Within border/ cross industry	Number	3	6	2	2	3	1	7	8	6	8	46
	Total value	31.7	246.5	29.0	169.5	0.0	261.9	113.0	35.4	108.2	1632.1	2627.3
	Ave value	31.7	49.3	29.0	169.5	0.0	261.9	18.8	17.7	21.6	272.0	93.8
Cross-border/ within industry	Number	0	0	0	0	0	0	2	0	0	1	3
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	11.7	0.0	0.0	2690.2	2701.9
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	11.7	0.0	0.0	2690.2	1351.0
Cross-border/ cross industry	Number	0	0	0	0	0	0	0	0	0	1	1
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	8.6
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	8.6
<b>Insurance</b>												
Within border/ within industry	Number	2	1	0	2	3	1	5	7	3	1	25
	Total value	14.6	0.0	0.0	490.3	15.9	0.0	883.8	2115.7	0.0	27.6	3547.9
	Ave value	14.6	0.0	0.0	245.2	15.9	0.0	441.9	1057.9	0.0	27.6	394.2
Within border/ cross industry	Number	0	1	1	0	0	0	1	0	3	1	7
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	8.1	0.0	59.7	18.2	86.0
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	8.1	0.0	59.7	18.2	28.7
Cross-border/ within industry	Number	1	1	1	1	1	2	1	1	4	0	13
	Total value	107.8	0.0	0.0	44.7	119.8	145.7	103.3	30.3	471.5	0.0	1023.1
	Ave value	107.8	0.0	0.0	44.7	119.8	145.7	103.3	30.3	117.9	0.0	102.3
Cross-border/ cross industry	Number	0	0	0	0	0	0	1	0	0	1	2
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	122.1	0.0	0.0	0.0	122.1
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	122.1	0.0	0.0	0.0	122.1
<b>Securities/ Other</b>												
Within border/ within industry	Number	3	5	11	8	7	6	7	10	10	24	91
	Total value	0.0	31.6	30.0	45.9	7.3	77.2	0.0	48.8	119.6	961.3	1321.7
	Ave value	0.0	15.8	7.5	23.0	7.3	38.6	0.0	24.4	15.0	106.8	44.1
Within border/ cross industry	Number	1	4	2	3	2	4	2	3	1	2	24
	Total value	22.1	77.8	192.9	220.5	299.4	0.0	448.6	43.7	2.1	566.6	1873.7
	Ave value	22.1	25.9	96.5	220.5	149.7	0.0	448.6	43.7	2.1	283.3	133.8
Cross-border/ within industry	Number	0	1	1	1	1	3	1	0	4	2	14
	Total value	0.0	0.0	0.0	0.8	6.3	130.6	22.0	0.0	806.3	35.7	1001.7
	Ave value	0.0	0.0	0.0	0.8	6.3	130.6	22.0	0.0	806.3	17.9	143.1
Cross-border/ cross industry	Number	2	0	0	0	0	0	0	1	0	0	3
	Total value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.3	0.0	0.0	25.3
	Ave value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.3	0.0	0.0	25.3
<b>Total</b>												
Total	Number	14	25	20	22	18	22	32	45	39	44	281
	Total value	883.7	374.9	251.9	1046.9	448.7	661.5	1722.5	4580.2	1961.4	11579.7	23511.4
	Ave value	147.3	31.2	36.0	104.7	74.8	82.7	114.8	229.0	75.4	463.2	174.2



**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ within industry	Number	7	12	13	15	11	12	17	32	21	29	169
	Total value	722.1	50.6	30.0	611.4	23.2	123.3	893.7	4445.5	513.6	6628.3	14041.7
	Ave value	240.7	12.7	7.5	101.9	11.6	24.7	297.9	296.4	36.7	552.4	206.5
Within border/ cross industry	Number	4	11	5	5	5	5	10	11	10	11	77
	Total value	53.8	324.3	221.9	390.0	299.4	261.9	569.7	79.1	170.0	2216.9	4587.0
	Ave value	26.9	40.5	74.0	195.0	149.7	261.9	71.2	26.4	24.3	246.3	101.9
Cross-border/ within industry	Number	2	6	2	2	5	2	3	14	13	6	55
	Total value	188.0	65.2	0.0	4.4	373.9	0.0	208.1	2486.0	1857.4	40.5	5223.5
	Ave value	188.0	21.7	0.0	4.4	187.0	0.0	104.1	207.2	265.3	20.3	174.1
Cross-border/ cross industry	Number	2	0	3	2	1	2	3	2	2	0	17
	Total value	0.0	0.0	15.7	7.7	29.1	0.0	690.0	95.9	63.3	0.0	901.7
	Ave value	0.0	0.0	15.7	3.9	29.1	0.0	230.0	95.9	63.3	0.0	7
<b>Deal type</b>												
Within border	Number	11	23	18	20	16	17	27	43	31	40	246
	Total value	775.9	374.9	251.9	1001.4	322.6	385.2	1463.4	4524.6	683.6	8845.2	18628.7
	Ave value	155.2	31.2	36.0	125.2	80.7	64.2	133.0	251.4	32.6	421.2	164.9
Cross-border	Number	4	6	5	4	6	4	6	16	15	6	72
	Total value	188.0	65.2	15.7	12.1	403.0	0.0	898.1	2581.9	1920.7	40.5	6125.2
	Ave value	188.0	21.7	15.7	4.0	134.3	0.0	179.6	198.6	240.1	20.3	157.1
<b>Deal type</b>												
Within industry	Number	9	18	15	17	16	14	20	46	34	35	224
	Total value	910.1	115.8	30.0	615.8	397.1	123.3	1101.8	6931.5	2371.0	6668.8	19265.2
	Ave value	227.5	16.5	7.5	88.0	99.3	24.7	220.4	256.7	112.9	476.3	196.6
Cross industry	Number	6	11	8	7	6	7	13	13	12	11	94
	Total value	53.8	324.3	237.6	397.7	328.5	261.9	1259.7	175.0	233.3	2216.9	5488.7
	Ave value	26.9	40.5	59.4	99.4	109.5	261.9	114.5	43.8	29.2	246.3	101.6
<b>Industry</b>												
Banking	Number	7	12	3	9	4	10	12	22	13	8	100
	Total value	917.6	129.3	0.0	300.1	553.5	46.1	1241.4	4410.8	455.8	6250.3	14304.9
	Ave value	229.4	21.6	0.0	75.0	184.5	15.4	206.9	275.7	57.0	1041.7	255.4
Insurance	Number	2	4	2	3	5	4	6	15	10	5	56
	Total value	14.6	186.7	192.9	659.8	135.7	261.9	987.1	2440.7	1825.4	1391.2	8096.0
	Ave value	14.6	93.4	96.5	219.9	67.9	261.9	329.0	406.8	304.2	695.6	289.1
Securities/ Other	Number	6	13	18	12	13	7	15	22	23	33	162
	Total value	31.7	124.1	74.7	53.6	36.4	77.2	133.0	255.0	323.1	1244.2	2353.0
	Ave value	31.7	17.7	12.5	13.4	18.2	38.6	19.0	28.3	21.5	82.9	34.6
<b>Total</b>	Number	15	29	23	24	22	21	33	59	46	46	318
	Total value	963.9	440.1	267.6	1013.5	725.6	385.2	2361.5	7106.5	2604.3	8885.7	24753.9
	Ave value	160.7	29.3	33.5	92.1	103.7	64.2	147.6	229.2	89.8	386.3	162.9
	GDP	581153	596396	578328	562107	562068	588251	610977	634306	608678	644883	5967147
	Value/GDP	0.17%	0.07%	0.05%	0.18%	0.13%	0.07%	0.39%	1.12%	0.43%	1.38%	0.41%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/within industry	Number	2	6	2	5	1	5	5	15	8	3	52
	Tot Value	707.5	19.0	0.0	75.2	0.0	46.1	9.9	2281.0	394.0	5639.4	9172.1
	Ave Value	353.8	9.5	0.0	37.6	0.0	15.4	9.9	207.4	65.7	2819.7	316.3
Within border/cross industry	Number	1	2	1	3	2	3	3	1	2	3	21
	Tot Value	22.1	50.2	0.0	220.5	299.4	0.0	456.7	0.0	61.8	584.8	1695.5
	Ave Value	22.1	25.1	0.0	220.5	149.7	0.0	228.4	0.0	30.9	194.9	130.4
Cross-border/within industry	Number	2	4	0	1	1	0	2	5	3	2	20
	Tot Value	188.0	60.1	0.0	4.4	254.1	0.0	104.8	2129.8	0.0	26.1	2767.3
	Ave Value	188.0	30.1	0.0	4.4	254.1	0.0	104.8	426.0	0.0	26.1	230.6
Cross-border/cross industry	Number	2	0	0	0	0	2	2	1	0	0	7
	Tot Value	0.0	0.0	0.0	0.0	0.0	0.0	670.0	0.0	0.0	0.0	670.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	335.0	0.0	0.0	0.0	335.0
<b>Insurance</b>												
Within border/within industry	Number	2	1	0	2	3	1	5	7	3	1	25
	Tot Value	14.6	0.0	0.0	490.3	15.9	0.0	883.8	2115.7	0.0	27.6	3547.9
	Ave Value	14.6	0.0	0.0	245.2	15.9	0.0	441.9	1057.9	0.0	27.6	394.2
Within border/cross industry	Number	0	3	2	1	0	2	0	3	0	2	13
	Tot Value	0.0	186.7	192.9	169.5	0.0	261.9	0.0	43.7	0.0	1363.6	2218.3
	Ave Value	0.0	93.4	96.5	169.5	0.0	261.9	0.0	43.7	0.0	1363.6	277.3
Cross-border/within industry	Number	0	0	0	0	2	1	1	5	6	2	17
	Tot Value	0.0	0.0	0.0	0.0	119.8	0.0	103.3	281.3	1825.4	0.0	2329.8
	Ave Value	0.0	0.0	0.0	0.0	119.8	0.0	103.3	93.8	304.2	0.0	211.8
Cross-border/cross industry	Number	0	0	0	0	0	0	0	0	1	0	1
	Tot Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Securities/Other</b>												
Within border/within industry	Number	3	5	11	8	7	6	7	10	10	25	92
	Total value	0.0	31.6	30.0	45.9	7.3	77.2	0.0	48.8	119.6	961.3	1321.7
	Ave Value	0.0	15.8	7.5	23.0	7.3	38.6	0.0	24.4	15.0	106.8	44.1
Within border/cross industry	Number	3	6	2	1	3	0	7	7	8	6	43
	Total value	31.7	87.4	29.0	0.0	0.0	0.0	113.0	35.4	108.2	268.5	673.2
	Ave Value	31.7	21.9	29.0	0.0	0.0	0.0	18.8	17.7	21.6	53.7	28.1
Cross-border/within industry	Number	0	2	2	1	2	1	0	4	4	2	18
	Total value	0.0	5.1	0.0	0.0	0.0	0.0	0.0	74.9	32.0	14.4	126.4
	Ave Value	0.0	5.1	0.0	0.0	0.0	0.0	0.0	18.7	32.0	14.4	18.1
Cross-border/cross industry	Number	0	0	3	2	1	0	1	1	1	0	9
	Total value	0.0	0.0	15.7	7.7	29.1	0.0	20.0	95.9	63.3	0.0	231.7
	Ave Value	0.0	0.0	15.7	3.9	29.1	0.0	20.0	95.9	63.3	0.0	33.1
<b>Total</b>												
	Number	15	29	23	24	22	21	33	59	46	46	318
	Total value	963.9	440.1	267.6	1013.5	725.6	385.2	2361.5	7106.5	2604.3	8885.7	24753.9
	Ave Value	160.7	29.3	33.5	92.1	103.7	64.2	147.6	229.2	89.8	386.3	162.9

Source: Thomson Financial, SDC Platinum.

Table A.7												
Country: Japan												
All values in USD millions												
Deals classified by country and sector of target firm												
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	4	9	4	7	2	7	15	29	27	94	198
Within industry	Total Value	8092.5	0.0	0.0	0.0	2000.3	33797.5	0.0	0.0	81.1	75931.7	119903.1
	Ave Value	8092.5	0.0	0.0	0.0	2000.3	16898.8	0.0	0.0	13.5	3615.8	3867.8
Within border/	Number	1	2	0	2	0	1	2	1	2	12	23
Cross industry	Total Value	66.1	164.7	0.0	961.9	0.0	0.0	14.7	0.0	0.0	27.3	1234.7
	Ave Value	66.1	82.4	0.0	481.0	0.0	0.0	14.7	0.0	0.0	9.1	137.2
Cross border/	Number	0	0	1	0	1	1	0	1	4	3	11
Within industry	Total Value	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	1002.2	2024.4	3028.9
	Ave Value	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	501.1	1012.2	605.8
Cross border/	Number	0	0	0	0	0	0	1	1	2	2	6
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	593.9	1388.3	1982.2
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	593.9	694.2	660.7
<b>Deal type</b>												
Within border	Number	5	11	4	9	2	8	17	30	29	106	221
	Total Value	8158.6	164.7	0.0	961.9	2000.3	33797.5	14.7	0.0	81.1	75959.0	121137.8
	Ave Value	4079.3	82.4	0.0	481.0	2000.3	16898.8	14.7	0.0	13.5	3165.0	3028.4
Cross border	Number	0	0	1	0	1	1	1	2	6	5	17
	Total Value	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	1596.1	3412.7	5011.1
	Ave Value	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	532.0	853.2	626.4
<b>Deal type</b>												
Within industry	Number	4	9	5	7	3	8	15	30	31	97	209
	Total Value	8092.5	0.0	0.0	0.0	2002.6	33797.5	0.0	0.0	1083.3	77956.1	122932.0
	Ave Value	8092.5	0.0	0.0	0.0	1001.3	16898.8	0.0	0.0	135.4	3389.4	3414.8
Cross-industry	Number	1	2	0	2	0	1	3	2	4	14	29
	Total Value	66.1	164.7	0.0	961.9	0.0	0.0	14.7	0.0	593.9	1415.6	3216.9
	Ave Value	66.1	82.4	0.0	481.0	0.0	0.0	14.7	0.0	593.9	283.1	268.1
<b>Industry</b>												
Banking	Number	5	8	2	6	1	4	9	14	10	49	108
	Total Value	8158.6	0.0	0.0	190.6	2000.3	33787.7	14.7	0.0	994.8	75617.0	120763.7
	Ave Value	4079.3	0.0	0.0	190.6	2000.3	33787.7	14.7	0.0	994.8	4726.1	5250.6
Insurance	Number	0	2	0	0	0	0	2	2	3	7	16
	Total Value	0.0	164.7	0.0	0.0	0.0	0.0	0.0	0.0	601.3	2192.7	2958.7
	Ave Value	0.0	82.4	0.0	0.0	0.0	0.0	0.0	0.0	300.7	1096.4	493.1
Securities/Other	Number	0	1	3	3	2	5	7	16	22	55	114
	Total Value	0.0	0.0	0.0	771.3	2.3	9.8	0.0	0.0	81.1	1562.0	2426.5
	Ave Value	0.0	0.0	0.0	771.3	2.3	9.8	0.0	0.0	13.5	156.2	127.7
<b>Total</b>	Number	5	11	5	9	3	9	18	32	35	111	238
	Total Value	8158.6	164.7	0.0	961.9	2002.6	33797.5	14.7	0.0	1677.2	79371.7	126148.9
	Ave Value	4079.3	82.4	0.0	481.0	1001.3	16898.8	14.7	0.0	186.4	2834.7	2628.1
	GDP Value/GDP	2982567	3408808	3719360	4287023	4698160	5157826	4607412	4217808	3824738	4365415	41269118
		0.27%	0.00%	0.00%	0.02%	0.04%	0.66%	0.00%	0.00%	0.04%	1.82%	0.31%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within	Number	4	8	2	5	1	4	7	13	8	42	94
border/	Total Value	8092.5	0.0	0.0	0.0	2000.3	33787.7	0.0	0.0	0.0	74369.7	118250.2
Within	Ave Value	8092.5	0.0	0.0	0.0	2000.3	33787.7	0.0	0.0	0.0	6760.9	8446.4
industry												
Within	Number	1	0	0	1	0	0	1	0	0	5	8
border/	Total Value	66.1	0.0	0.0	190.6	0.0	0.0	14.7	0.0	0.0	27.3	298.7
Cross	Ave Value	66.1	0.0	0.0	190.6	0.0	0.0	14.7	0.0	0.0	9.1	49.8
industry												
Cross	Number	0	0	0	0	0	0	0	1	2	1	4
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	994.8	70.0	1064.8
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	994.8	70.0	532.4
industry												
Cross	Number	0	0	0	0	0	0	1	0	0	1	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1150.0	1150.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1150.0	1150.0
industry												
<b>Insurance</b>												
Within	Number	0	0	0	0	0	0	1	1	1	2	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
Within	Number	0	2	0	0	0	0	1	1	0	3	7
border/	Total Value	0.0	164.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	164.7
Cross	Ave Value	0.0	82.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	82.4
industry												
Cross	Number	0	0	0	0	0	0	0	0	1	1	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	1954.4	1961.8
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	1954.4	980.9
industry												
Cross	Number	0	0	0	0	0	0	0	0	1	1	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	593.9	238.3	832.2
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	593.9	238.3	416.1
industry												
<b>Securities/ Other</b>												
Within	Number	0	1	2	2	1	3	7	15	18	50	99
border/	Total Value	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	81.1	1562.0	1652.9
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	13.5	156.2	97.2
industry												
Within	Number	0	0	0	1	0	1	0	0	2	4	8
border/	Total Value	0.0	0.0	0.0	771.3	0.0	0.0	0.0	0.0	0.0	0.0	771.3
Cross	Ave Value	0.0	0.0	0.0	771.3	0.0	0.0	0.0	0.0	0.0	0.0	771.3
industry												
Cross	Number	0	0	1	0	1	1	0	0	1	1	5
border/	Total Value	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	2.3
Within	Ave Value	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	2.3
industry												
Cross	Number	0	0	0	0	0	0	0	1	1	0	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Total</b>												
	Number	5	11	5	9	3	9	18	32	35	111	238
	Total Value	8158.6	164.7	0.0	961.9	2002.6	33797.5	14.7	0.0	1677.2	79371.7	126148.9
	Ave Value	4079.3	82.4	0.0	481.0	1001.3	16898.8	14.7	0.0	186.4	2834.7	2628.1

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within	Number	4	9	4	7	2	7	15	28	27	94	197
border/	Total Value	8092.5	0.0	0.0	0.0	2000.3	33797.5	0.0	0.0	81.1	75931.7	119903.1
Within	Ave Value	8092.5	0.0	0.0	0.0	2000.3	16898.8	0.0	0.0	13.5	3615.8	3867.8
industry												
Within	Number	1	2	0	2	0	1	2	1	2	12	23
border/	Total Value	66.1	164.7	0.0	961.9	0.0	0.0	14.7	0.0	0.0	27.3	1234.7
Cross	Ave Value	66.1	82.4	0.0	481.0	0.0	0.0	14.7	0.0	0.0	9.1	137.2
industry												
Cross	Number	0	1	1	3	2	1	1	1	7	4	21
border/	Total Value	0.0	0.0	0.0	34.6	24.5	0.0	0.0	0.0	77.7	0.2	137.0
Within	Ave Value	0.0	0.0	0.0	17.3	24.5	0.0	0.0	0.0	25.9	0.2	19.6
industry												
Cross	Number	1	1	0	1	0	0	0	0	0	2	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Deal type</b>												
Within	Number	5	11	4	9	2	8	17	29	29	106	220
border	Total Value	8158.6	164.7	0.0	961.9	2000.3	33797.5	14.7	0.0	81.1	75959.0	121137.8
	Ave Value	4079.3	82.4	0.0	481.0	2000.3	16898.8	14.7	0.0	13.5	3165.0	3028.4
Cross	Number	1	2	1	4	2	1	1	1	7	6	26
border	Total Value	0.0	0.0	0.0	34.6	24.5	0.0	0.0	0.0	77.7	0.2	137.0
	Ave Value	0.0	0.0	0.0	17.3	24.5	0.0	0.0	0.0	25.9	0.2	19.6
<b>Deal type</b>												
Within	Number	4	10	5	10	4	8	16	29	34	98	218
industry	Total Value	8092.5	0.0	0.0	34.6	2024.8	33797.5	0.0	0.0	158.8	75931.9	120040.1
	Ave Value	8092.5	0.0	0.0	17.3	1012.4	16898.8	0.0	0.0	17.6	3451.5	3159.0
Cross	Number	2	3	0	3	0	1	2	1	2	14	28
industry	Total Value	66.1	164.7	0.0	961.9	0.0	0.0	14.7	0.0	0.0	27.3	1234.7
	Ave Value	66.1	82.4	0.0	481.0	0.0	0.0	14.7	0.0	0.0	9.1	137.2
<b>Industry</b>												
Banking	Number	4	9	2	9	2	6	8	14	9	48	111
	Total Value	8092.5	0.0	0.0	805.3	2000.3	33787.7	0.0	0.0	0.0	74369.7	119055.5
	Ave Value	8092.5	0.0	0.0	402.7	2000.3	33787.7	0.0	0.0	0.0	6760.9	7441.0
Insurance	Number	1	0	0	0	0	0	1	1	5	6	14
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	3.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	3.0
Securities/ Other	Number	1	4	3	4	2	3	9	15	22	58	121
	Total Value	66.1	164.7	0.0	191.2	24.5	9.8	14.7	0.0	155.8	1589.5	2216.3
	Ave Value	66.1	82.4	0.0	95.6	24.5	9.8	14.7	0.0	19.5	113.5	73.9
<b>Total</b>	Number	6	13	5	13	4	9	18	30	36	112	246
	Total Value	8158.6	164.7	0.0	996.5	2024.8	33797.5	14.7	0.0	158.8	75959.2	121274.8
	Ave Value	4079.3	82.4	0.0	249.1	1012.4	16898.8	14.7	0.0	17.6	3038.4	2580.3
	GDP	2982567	3408808	3719360	4287023	4698160	5157826	4607412	4217808	3824738	4365415	41269118
	Value/GDP	0.27%	0.00%	0.00%	0.02%	0.04%	0.66%	0.00%	0.00%	0.00%	1.74%	0.29%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within	Number	4	8	2	5	1	4	7	13	8	42	94
border/	Total Value	8092.5	0.0	0.0	0.0	2000.3	33787.7	0.0	0.0	0.0	74369.7	118250.2
Within	Ave Value	8092.5	0.0	0.0	0.0	2000.3	33787.7	0.0	0.0	0.0	6760.9	8446.4
industry												
Within	Number	0	0	0	1	0	1	0	0	1	5	8
border/	Total Value	0.0	0.0	0.0	771.3	0.0	0.0	0.0	0.0	0.0	0.0	771.3
Cross	Ave Value	0.0	0.0	0.0	771.3	0.0	0.0	0.0	0.0	0.0	0.0	771.3
industry												
Cross	Number	0	0	0	2	1	1	1	1	0	0	6
border/	Total Value	0.0	0.0	0.0	34.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0
Within	Ave Value	0.0	0.0	0.0	34.0	0.0	0.0	0.0	0.0	0.0	0.0	34.0
industry												
Cross	Number	0	1	0	1	0	0	0	0	0	1	3
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Insurance</b>												
Within	Number	0	0	0	0	0	0	1	1	1	2	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
Within	Number	0	0	0	0	0	0	0	0	1	2	3
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
Cross	Number	0	0	0	0	0	0	0	0	3	1	4
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	3.0
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	3.0
industry												
Cross	Number	1	0	0	0	0	0	0	0	0	1	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
Within	Number	0	1	2	2	1	3	7	14	18	50	98
border/	Total Value	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	81.1	1562.0	1652.9
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	13.5	156.2	97.2
industry												
Within	Number	1	2	0	1	0	0	2	1	0	5	12
border/	Total Value	66.1	164.7	0.0	190.6	0.0	0.0	14.7	0.0	0.0	27.3	463.4
Cross	Ave Value	66.1	82.4	0.0	190.6	0.0	0.0	14.7	0.0	0.0	9.1	57.9
industry												
Cross	Number	0	1	1	1	1	0	0	0	4	3	11
border/	Total Value	0.0	0.0	0.0	0.6	24.5	0.0	0.0	0.0	74.7	0.2	100.0
Within	Ave Value	0.0	0.0	0.0	0.6	24.5	0.0	0.0	0.0	37.4	0.2	20.0
industry												
Cross	Number	0	0	0	0	0	0	0	0	0	0	0
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Total</b>												
	Number	6	13	5	13	4	9	18	30	36	112	246
	Total Value	8158.6	164.7	0.0	996.5	2024.8	33797.5	14.7	0.0	158.8	75959.2	121274.8
	Ave Value	4079.3	82.4	0.0	249.1	1012.4	16898.8	14.7	0.0	17.6	3038.4	2580.3

Source: Thomson Financial, SDC Platinum.

Table A.8												
Country: Australia												
All values in USD millions												
Deals classified by country and sector of target firm												
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	6	9	2	15	10	13	12	14	17	18	116
Within industry	Total Value	150.4	421.7	5.4	196.9	73.7	726.8	2896.8	1413.6	1580.1	2232.5	9697.9
	Ave Value	37.6	84.3	5.4	24.6	14.7	121.1	482.8	176.7	158.0	159.5	144.7
Within border/	Number	2	1	2	2	5	7	8	11	5	13	56
Cross industry	Total Value	155.2	0.0	34.1	37.0	160.9	202.5	651.8	848.6	239.8	1254.4	3584.3
	Ave Value	77.6	0.0	34.1	18.5	40.2	101.3	163.0	121.2	60.0	114.0	96.9
Cross border/	Number	1	6	6	3	6	11	7	4	3	9	56
Within industry	Total Value	0.0	33.4	216.1	116.9	194.2	1515.5	124.2	62.8	0.0	281.4	2544.5
	Ave Value	0.0	33.4	72.0	116.9	64.7	378.9	62.1	20.9	0.0	46.9	110.6
Cross border/	Number	0	2	0	3	1	8	3	2	4	1	24
Cross industry	Total Value	0.0	7.1	0.0	8.0	36.6	32.4	83.2	17.2	79.6	0.0	264.1
	Ave Value	0.0	7.1	0.0	4.0	36.6	8.1	41.6	8.6	26.5	0.0	17.6
<b>Deal type</b>												
Within border	Number	8	10	4	17	15	20	20	25	22	31	172
	Total Value	305.6	421.7	39.5	233.9	234.6	929.3	3548.6	2262.2	1819.9	3486.9	13282.2
	Ave Value	50.9	84.3	19.8	23.4	26.1	116.2	354.9	150.8	130.0	139.5	127.7
Cross border	Number	1	8	6	6	7	19	10	6	7	10	80
	Total Value	0.0	40.5	216.1	124.9	230.8	1547.9	207.4	80.0	79.6	281.4	2808.6
	Ave Value	0.0	20.3	72.0	41.6	57.7	193.5	51.9	16.0	26.5	46.9	73.9
<b>Deal type</b>												
Within industry	Number	7	15	8	18	16	24	19	18	20	27	172
	Total Value	150.4	455.1	221.5	313.8	267.9	2242.3	3021.0	1476.4	1580.1	2513.9	12242.4
	Ave Value	37.6	75.9	55.4	34.9	33.5	224.2	377.6	134.2	158.0	125.7	136.0
Cross industry	Number	2	3	2	5	6	15	11	13	9	14	80
	Total Value	155.2	7.1	34.1	45.0	197.5	234.9	735.0	865.8	319.4	1254.4	3848.4
	Ave Value	77.6	7.1	34.1	11.3	39.5	39.2	122.5	96.2	45.6	114.0	74.0
<b>Industry</b>												
Banking	Number	7	4	1	12	8	16	14	13	13	9	97
	Total Value	305.3	32.2	0.0	335.8	246.2	1463.7	2802.5	1816.6	398.1	565.2	7965.6
	Ave Value	61.1	16.1	0.0	37.3	49.2	183.0	467.1	227.1	49.8	80.7	137.3
Insurance	Number	1	2	5	4	2	8	3	3	3	5	36
	Total Value	0.0	0.0	162.1	0.0	0.5	952.0	302.8	29.1	1345.6	1018.0	3810.1
	Ave Value	0.0	0.0	54.0	0.0	0.5	317.3	151.4	29.1	672.8	254.5	238.1
Securities/Other	Number	1	12	4	7	12	15	13	15	13	27	119
	Total Value	0.3	430.0	93.5	23.0	218.7	61.5	650.7	496.5	155.8	2185.1	4315.1
	Ave Value	0.3	86.0	46.8	5.8	31.2	12.3	108.5	45.1	22.3	109.3	63.5
<b>Total</b>	Number	9	18	10	23	22	39	30	31	29	41	252
	Total Value	305.6	462.2	255.6	358.8	465.4	2477.2	3756.0	2342.2	1899.5	3768.3	16090.8
	Ave Value	50.9	66.0	51.1	27.6	35.8	154.8	268.3	117.1	111.7	121.6	113.3
	GDP Value/GDP	308014	310862	305040	297190	339577	363613	408222	408317	364964	394570	3500370
		0.10%	0.15%	0.08%	0.12%	0.14%	0.68%	0.92%	0.57%	0.52%	0.96%	0.46%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	4	4	0	6	2	4	8	6	4	1	39
Within industry	Total Value	150.1	32.2	0.0	173.9	44.6	575.6	2482.0	1131.0	93.3	20.0	4702.7
	Ave Value	50.0	16.1	0.0	43.5	44.6	191.9	827.3	565.5	46.7	20.0	223.9
Within border/	Number	2	0	1	2	4	6	4	6	5	6	36
Cross industry	Total Value	155.2	0.0	0.0	37.0	149.8	202.5	314.9	655.9	239.8	506.1	2261.2
	Ave Value	77.6	0.0	0.0	18.5	49.9	101.3	157.5	131.2	60.0	101.2	90.4
Cross border/	Number	1	0	0	1	2	3	1	1	1	2	12
Within industry	Total Value	0.0	0.0	0.0	116.9	51.8	680.4	0.0	29.7	0.0	39.1	917.9
	Ave Value	0.0	0.0	0.0	116.9	51.8	680.4	0.0	29.7	0.0	39.1	183.6
Cross border/	Number	0	0	0	3	0	3	1	0	3	0	10
Cross industry	Total Value	0.0	0.0	0.0	8.0	0.0	5.2	5.6	0.0	65.0	0.0	83.8
	Ave Value	0.0	0.0	0.0	4.0	0.0	2.6	5.6	0.0	32.5	0.0	12.0
<b>Insurance</b>												
Within border/	Number	1	1	1	3	1	4	0	1	2	3	17
Within industry	Total Value	0.0	0.0	0.0	0.0	0.5	134.9	0.0	29.1	1345.6	883.4	2393.5
	Ave Value	0.0	0.0	0.0	0.0	0.5	67.5	0.0	29.1	672.8	441.7	299.2
Within border/	Number	0	0	1	0	0	1	1	2	0	0	5
Cross industry	Total Value	0.0	0.0	34.1	0.0	0.0	0.0	270.7	0.0	0.0	0.0	304.8
	Ave Value	0.0	0.0	34.1	0.0	0.0	0.0	270.7	0.0	0.0	0.0	152.4
Cross border/	Number	0	1	3	1	1	3	2	0	1	2	14
Within industry	Ave Value	0.0	0.0	64.0	0.0	0.0	817.1	32.1	0.0	0.0	67.3	185.3
	Number	0	0	0	0	0	0	0	0	0	0	0
Cross border/	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross industry												
<b>Securities/ Other</b>												
Within border/	Number	1	4	1	6	7	5	4	7	11	14	60
Within industry	Total Value	0.3	389.5	5.4	23.0	28.6	16.3	414.8	253.5	141.2	1329.1	2601.7
	Ave Value	0.3	129.8	5.4	5.8	9.5	16.3	138.3	50.7	23.5	120.8	68.5
Within border/	Number	0	1	0	0	1	0	3	3	0	7	15
Cross industry	Total Value	0.0	0.0	0.0	0.0	11.1	0.0	66.2	192.7	0.0	748.3	1018.3
	Ave Value	0.0	0.0	0.0	0.0	11.1	0.0	66.2	96.4	0.0	124.7	101.8
Cross border/	Number	0	5	3	1	3	5	4	3	1	5	30
Within industry	Total Value	0.0	33.4	88.1	0.0	142.4	18.0	92.1	33.1	0.0	107.7	514.8
	Ave Value	0.0	33.4	88.1	0.0	71.2	9.0	92.1	16.6	0.0	35.9	42.9
Cross border/	Number	0	2	0	0	1	5	2	2	1	1	14
Cross industry	Total Value	0.0	7.1	0.0	0.0	36.6	27.2	77.6	17.2	14.6	0.0	180.3
	Ave Value	0.0	7.1	0.0	0.0	36.6	13.6	77.6	8.6	14.6	0.0	22.5
<b>Total</b>												
	Number	9	18	10	23	22	39	30	31	29	41	252
	Total Value	305.6	462.2	255.6	358.8	465.4	2477.2	3756.0	2342.2	1899.5	3768.3	16090.8
	Ave Value	50.9	66.0	51.1	27.6	35.8	154.8	268.3	117.1	111.7	121.6	113.3



### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within industry	Number	6	9	2	15	10	13	12	14	17	18	116
	Total Value	150.4	421.7	5.4	196.9	73.7	726.8	2896.8	1413.6	1580.1	2232.5	9697.9
	Ave Value	37.6	84.3	5.4	24.6	14.7	121.1	482.8	176.7	158.0	159.5	144.7
Within border/ Cross industry	Number	2	1	2	2	5	7	8	11	5	13	56
	Total Value	155.2	0.0	34.1	37.0	160.9	202.5	651.8	848.6	239.8	1254.4	3584.3
	Ave Value	77.6	0.0	34.1	18.5	40.2	101.3	163.0	121.2	60.0	114.0	96.9
Cross border/ Within industry	Number	5	3	6	2	4	9	7	4	0	8	48
	Total Value	1661.2	3.4	980.8	0.0	112.7	1826.1	1316.9	1296.1	0.0	224.1	7421.3
	Ave Value	553.7	3.4	326.9	0.0	37.6	456.5	439.0	648.1	0.0	56.0	322.7
Cross border/ Cross industry	Number	1	0	0	2	0	7	2	1	5	2	20
	Total Value	48.0	0.0	0.0	25.8	0.0	103.4	77.6	9.3	3904.1	160.9	4329.1
	Ave Value	48.0	0.0	0.0	25.8	0.0	25.9	77.6	9.3	976.0	160.9	333.0
<b>Deal type</b>												
Within border	Number	8	10	4	17	15	20	20	25	22	31	172
	Total Value	305.6	421.7	39.5	233.9	234.6	929.3	3548.6	2262.2	1819.9	3486.9	13282.2
	Ave Value	50.9	84.3	19.8	23.4	26.1	116.2	354.9	150.8	130.0	139.5	127.7
Cross border	Number	6	3	6	4	4	16	9	5	5	10	68
	Total Value	1709.2	3.4	980.8	25.8	112.7	1929.5	1394.5	1305.4	3904.1	385.0	11750.4
	Ave Value	427.3	3.4	326.9	25.8	37.6	241.2	348.6	435.1	976.0	77.0	326.4
<b>Deal type</b>												
Within industry	Number	11	12	8	17	14	22	19	18	17	26	164
	Total Value	1811.6	425.1	986.2	196.9	186.4	2552.9	4213.7	2709.7	1580.1	2456.6	17119.2
	Ave Value	258.8	70.9	246.6	24.6	23.3	255.3	468.2	271.0	158.0	136.5	190.2
Cross industry	Number	3	1	2	4	5	14	10	12	10	15	76
	Total Value	203.2	0.0	34.1	62.8	160.9	305.9	729.4	857.9	4143.9	1415.3	7913.4
	Ave Value	67.7	0.0	34.1	20.9	40.2	51.0	145.9	107.2	518.0	117.9	158.3
<b>Industry</b>												
Banking	Number	7	4	1	7	3	11	15	11	4	11	74
	Total Value	1755.5	32.2	809.1	173.9	96.4	2456.2	4103.7	2611.0	93.3	773.2	12904.5
	Ave Value	438.9	16.1	809.1	43.5	48.2	409.4	586.2	522.2	46.7	96.7	314.7
Insurance	Number	4	2	3	4	5	9	4	4	3	6	44
	Total Value	137.6	0.0	83.6	0.0	14.8	162.1	109.7	47.2	1974.0	1010.7	3539.7
	Ave Value	45.9	0.0	83.6	0.0	4.9	40.5	54.9	15.7	658.0	336.9	160.9
Securities/ Other	Number	3	7	6	10	11	16	10	15	20	24	122
	Total Value	121.7	392.9	127.6	85.8	236.1	240.5	729.7	909.4	3656.7	2088.0	8588.4
	Ave Value	40.6	98.2	42.5	12.3	33.7	40.1	145.9	90.9	281.3	109.9	111.5
<b>Total</b>	Number	14	13	10	21	19	36	29	30	27	41	240
	Total Value	2014.8	425.1	1020.3	259.7	347.3	2858.8	4943.1	3567.6	5724.0	3871.9	25032.6
	Ave Value	201.5	70.9	204.1	23.6	28.9	178.7	353.1	198.2	318.0	129.1	178.8
	GDP Value/GDP	308014 0.65%	310862 0.14%	305040 0.33%	297190 0.09%	339577 0.10%	363613 0.79%	408222 1.21%	408317 0.87%	364964 1.57%	394570 0.98%	3500370 0.72%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	4	4	0	6	2	4	8	6	4	1	39
Within industry	Total Value	150.1	32.2	0.0	173.9	44.6	575.6	2482.0	1131.0	93.3	20.0	4702.7
	Ave Value	50.0	16.1	0.0	43.5	44.6	191.9	827.3	565.5	46.7	20.0	223.9
Within border/	Number	0	0	0	0	0	1	4	2	0	7	14
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	336.9	183.9	0.0	748.3	1269.1
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	168.5	183.9	0.0	124.7	141.0
Cross border/	Number	3	0	1	1	1	3	3	3	0	2	17
Within industry	Total Value	1605.4	0.0	809.1	0.0	51.8	1808.1	1284.8	1296.1	0.0	4.9	6860.2
	Ave Value	1605.4	0.0	809.1	0.0	51.8	904.1	642.4	648.1	0.0	4.9	686.0
Cross border/	Number	0	0	0	0	0	3	0	0	0	1	4
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	72.5	0.0	0.0	0.0	0.0	72.5
	Ave Value	0.0	0.0	0.0	0.0	0.0	72.5	0.0	0.0	0.0	0.0	72.5
<b>Insurance</b>												
Within border/	Number	1	1	1	3	1	4	0	1	2	3	17
Within industry	Total Value	0.0	0.0	0.0	0.0	0.5	134.9	0.0	29.1	1345.6	883.4	2393.5
	Ave Value	0.0	0.0	0.0	0.0	0.5	67.5	0.0	29.1	672.8	441.7	299.2
Within border/	Number	1	1	0	0	2	2	0	2	0	0	8
Cross industry	Total Value	64.6	0.0	0.0	0.0	11.1	0.0	0.0	8.8	0.0	0.0	84.5
	Ave Value	64.6	0.0	0.0	0.0	11.1	0.0	0.0	8.8	0.0	0.0	28.2
Cross border/	Number	1	0	2	1	2	1	2	0	0	3	12
Within industry	Total Value	25.0	0.0	83.6	0.0	3.2	0.0	32.1	0.0	0.0	127.3	271.2
	Ave Value	25.0	0.0	83.6	0.0	3.2	0.0	32.1	0.0	0.0	127.3	54.2
Cross border/	Number	1	0	0	0	0	2	2	1	1	0	7
Cross industry	Total Value	48.0	0.0	0.0	0.0	0.0	27.2	77.6	9.3	628.4	0.0	790.5
	Ave Value	48.0	0.0	0.0	0.0	0.0	13.6	77.6	9.3	628.4	0.0	131.8
<b>Securities/ Other</b>												
Within border/	Number	1	4	1	6	7	5	4	7	11	14	60
Within industry	Total Value	0.3	389.5	5.4	23.0	28.6	16.3	414.8	253.5	141.2	1329.1	2601.7
	Ave Value	0.3	129.8	5.4	5.8	9.5	16.3	138.3	50.7	23.5	120.8	68.5
Within border/	Number	1	0	2	2	3	4	4	7	5	6	34
Cross industry	Total Value	90.6	0.0	34.1	37.0	149.8	202.5	314.9	655.9	239.8	506.1	2230.7
	Ave Value	90.6	0.0	34.1	18.5	49.9	101.3	157.5	131.2	60.0	101.2	89.2
Cross border/	Number	1	3	3	0	1	5	2	1	0	3	19
Within industry	Total Value	30.8	3.4	88.1	0.0	57.7	18.0	0.0	0.0	0.0	91.9	289.9
	Ave Value	30.8	3.4	88.1	0.0	57.7	9.0	0.0	0.0	0.0	46.0	36.2
Cross border/	Number	0	0	0	2	0	2	0	0	4	1	9
Cross industry	Total Value	0.0	0.0	0.0	25.8	0.0	3.7	0.0	0.0	3275.7	160.9	3466.1
	Ave Value	0.0	0.0	0.0	25.8	0.0	3.7	0.0	0.0	1091.9	160.9	577.7
<b>Total</b>												
	Number	14	13	10	21	19	36	29	30	27	41	240
	Total Value	2014.8	425.1	1020.3	259.7	347.3	2858.8	4943.1	3567.6	5724.0	3871.9	25032.6
	Ave Value	201.5	70.9	204.1	23.6	28.9	178.7	353.1	198.2	318.0	129.1	178.8

Source: Thomson Financial, SDC Platinum.

Table A.9												
Country: Belgium												
All values in USD millions												
Deals classified by country and sector of target firm												
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within industry	Number	0	4	4	1	2	4	4	2	5	6	32
	Total Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	7335.5	37.7	7394.5
	Ave Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	1833.9	18.9	1056.4
Within border/ Cross industry	Number	1	5	1	2	3	2	0	1	2	2	19
	Total Value	0.0	0.0	0.0	2.3	57.7	15.3	0.0	0.0	12298.5	93.6	12467.4
	Ave Value	0.0	0.0	0.0	2.3	57.7	15.3	0.0	0.0	12298.5	93.6	2493.5
Cross border/ Within industry	Number	1	4	3	7	4	3	4	1	6	4	37
	Total Value	2269.8	25.8	140.7	279.8	184.8	197.1	3119.8	6.7	912.9	49.1	7186.5
	Ave Value	2269.8	25.8	70.4	70.0	92.4	98.6	1559.9	6.7	912.9	49.1	422.7
Cross border/ Cross industry	Number	1	1	0	2	1	2	1	1	4	0	13
	Total Value	131.0	40.4	0.0	386.2	0.0	0.0	0.0	4516.0	823.6	0.0	5897.2
	Ave Value	131.0	40.4	0.0	386.2	0.0	0.0	0.0	4516.0	411.8	0.0	982.9
<b>Deal type</b>												
Within border	Number	1	9	5	3	5	6	4	3	7	8	51
	Total Value	0.0	21.3	0.0	2.3	57.7	15.3	0.0	0.0	19634.0	131.3	19861.9
	Ave Value	0.0	21.3	0.0	2.3	57.7	15.3	0.0	0.0	3926.8	43.8	1655.2
Cross border	Number	2	5	3	9	5	5	5	2	10	4	50
	Total Value	2400.8	66.2	140.7	666.0	184.8	197.1	3119.8	4522.7	1736.5	49.1	13083.7
	Ave Value	1200.4	33.1	70.4	133.2	92.4	98.6	1559.9	2261.4	578.8	49.1	568.9
<b>Deal type</b>												
Within industry	Number	1	8	7	8	6	7	8	3	11	10	69
	Total Value	2269.8	47.1	140.7	279.8	184.8	197.1	3119.8	6.7	8248.4	86.8	14581.0
	Ave Value	2269.8	23.6	70.4	70.0	92.4	98.6	1559.9	6.7	1649.7	28.9	607.5
Cross industry	Number	2	6	1	4	4	4	1	2	6	2	32
	Total Value	131.0	40.4	0.0	388.5	57.7	15.3	0.0	4516.0	13122.1	93.6	18364.6
	Ave Value	131.0	40.4	0.0	194.3	57.7	15.3	0.0	4516.0	4374.0	93.6	1669.5
<b>Industry</b>												
Banking	Number	0	3	3	4	4	7	3	4	8	6	42
	Total Value	0.0	61.7	140.7	406.3	18.8	212.4	50.0	4522.7	20276.0	49.1	25737.7
	Ave Value	0.0	30.9	70.4	203.2	18.8	70.8	50.0	2261.4	4055.2	49.1	1354.6
Insurance	Number	1	5	2	5	3	1	4	0	4	3	28
	Total Value	2269.8	25.8	0.0	259.7	166.0	0.0	0.0	0.0	912.9	93.6	3727.8
	Ave Value	2269.8	25.8	0.0	86.6	166.0	0.0	0.0	0.0	912.9	93.6	466.0
Securities/ ther	Number	2	6	3	3	3	3	2	1	5	3	31
	Total Value	131.0	0.0	0.0	2.3	57.7	0.0	3069.8	0.0	181.6	37.7	3480.1
	Ave Value	131.0	0.0	0.0	2.3	57.7	0.0	3069.8	0.0	90.8	18.9	435.0
<b>Total</b>	Number	3	14	8	12	10	11	9	5	17	12	101
	Total Value	2400.8	87.5	140.7	668.3	242.5	212.4	3119.8	4522.7	21370.5	180.4	32945.6
	Ave Value	1200.4	29.2	70.4	111.4	80.8	70.8	1559.9	2261.4	2671.3	45.1	941.3
	GDP	197942	202715	226620	215192	233668	275781	268210	243686	250640	248505	2362960
	Value/GDP	1.21%	0.04%	0.06%	0.31%	0.10%	0.08%	1.16%	1.86%	8.53%	0.07%	1.39%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within	Number	0	1	0	1	0	2	2	2	3	3	14
border/	Total Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	7332.0	0.0	7353.3
Within	Ave Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	2444.0	0.0	1838.3
industry												
Within	Number	0	1	0	0	2	2	0	0	1	1	7
border/	Total Value	0.0	0.0	0.0	0.0	0.0	15.3	0.0	0.0	12298.5	0.0	12313.8
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	15.3	0.0	0.0	12298.5	0.0	6156.9
industry												
Cross	Number	0	0	3	2	1	2	1	1	1	2	13
border/	Total Value	0.0	0.0	140.7	20.1	18.8	197.1	50.0	6.7	0.0	49.1	482.5
Within	Ave Value	0.0	0.0	70.4	20.1	18.8	98.6	50.0	6.7	0.0	49.1	53.6
industry												
Cross	Number	0	1	0	1	1	1	0	1	3	0	8
border/	Total Value	0.0	40.4	0.0	386.2	0.0	0.0	0.0	4516.0	645.5	0.0	5588.1
Cross	Ave Value	0.0	40.4	0.0	386.2	0.0	0.0	0.0	4516.0	645.5	0.0	1397.0
industry												
<b>Insurance</b>												
Within	Number	0	1	2	0	0	0	1	0	0	1	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
Within	Number	0	0	0	0	0	0	0	0	0	1	1
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.6	93.6
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.6	93.6
industry												
Cross	Number	1	4	0	4	3	1	2	0	4	1	20
border/	Total Value	2269.8	25.8	0.0	259.7	166.0	0.0	0.0	0.0	912.9	0.0	3634.2
Within	Ave Value	2269.8	25.8	0.0	86.6	166.0	0.0	0.0	0.0	912.9	0.0	519.2
industry												
Cross	Number	0	0	0	1	0	0	1	0	0	0	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Securities/ Other</b>												
Within	Number	0	2	2	0	2	2	1	0	2	2	13
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	37.7	41.2
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.9	13.7
industry												
Within	Number	1	4	1	2	1	0	0	1	1	0	11
border/	Total Value	0.0	0.0	0.0	2.3	57.7	0.0	0.0	0.0	0.0	0.0	60.0
Cross	Ave Value	0.0	0.0	0.0	2.3	57.7	0.0	0.0	0.0	0.0	0.0	30.0
industry												
Cross	Number	0	0	0	1	0	0	1	0	1	1	4
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	3069.8	0.0	0.0	0.0	3069.8
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	3069.8	0.0	0.0	0.0	3069.8
industry												
Cross	Number	1	0	0	0	0	1	0	0	1	0	3
border/	Total Value	131.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	178.1	0.0	309.1
Cross	Ave Value	131.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	178.1	0.0	154.6
industry												
<b>Total</b>												
	Number	3	14	8	12	10	11	9	5	17	12	101
	Total Value	2400.8	87.5	140.7	668.3	242.5	212.4	3119.8	4522.7	21370.5	180.4	32945.6
	Ave Value	1200.4	29.2	70.4	111.4	80.8	70.8	1559.9	2261.4	2671.3	45.1	941.3

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within	Number	0	4	4	1	2	4	4	3	5	6	33
border/	Total Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	7335.5	37.7	7394.5
Within	Ave Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	1833.9	18.9	1056.4
industry												
Within	Number	1	5	1	2	4	2	0	1	2	2	20
border/	Total Value	0.0	0.0	0.0	2.3	57.7	15.3	0.0	0.0	12298.5	93.6	12467.4
Cross	Ave Value	0.0	0.0	0.0	2.3	57.7	15.3	0.0	0.0	12298.5	93.6	2493.5
industry												
Cross	Number	2	5	0	2	2	5	4	1	5	10	36
border/	Total Value	0.0	0.0	0.0	20.1	0.0	928.2	175.4	0.0	912.9	10175.0	12211.6
Within	Ave Value	0.0	0.0	0.0	20.1	0.0	309.4	87.7	0.0	912.9	1695.8	939.4
industry												
Cross	Number	1	0	0	0	0	2	2	2	1	3	11
border/	Total Value	0.0	0.0	0.0	0.0	0.0	133.3	0.0	0.0	645.5	61.1	839.9
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	133.3	0.0	0.0	645.5	30.6	210.0
industry												
<b>Deal type</b>												
Within	Number	1	9	5	3	6	6	4	4	7	8	53
border	Total Value	0.0	21.3	0.0	2.3	57.7	15.3	0.0	0.0	19634.0	131.3	19861.9
	Ave Value	0.0	21.3	0.0	2.3	57.7	15.3	0.0	0.0	3926.8	43.8	1655.2
Cross	Number	3	5	0	2	2	7	6	3	6	13	47
border	Total Value	0.0	0.0	0.0	20.1	0.0	1061.5	175.4	0.0	1558.4	10236.1	13051.5
	Ave Value	0.0	0.0	0.0	20.1	0.0	265.4	87.7	0.0	779.2	1279.5	767.7
<b>Deal type</b>												
Within	Number	2	9	4	3	4	9	8	4	10	16	69
industry	Total Value	0.0	21.3	0.0	20.1	0.0	928.2	175.4	0.0	8248.4	10212.7	19606.1
	Ave Value	0.0	21.3	0.0	20.1	0.0	309.4	87.7	0.0	1649.7	1276.6	980.3
Cross	Number	2	5	1	2	4	4	2	3	3	5	31
industry	Total Value	0.0	0.0	0.0	2.3	57.7	148.6	0.0	0.0	12944.0	154.7	13307.3
	Ave Value	0.0	0.0	0.0	2.3	57.7	74.3	0.0	0.0	6472.0	51.6	1478.6
<b>Industry</b>												
Banking	Number	2	10	1	4	0	7	5	5	6	8	48
	Total Value	0.0	21.3	0.0	22.4	0.0	1061.5	50.0	0.0	7332.0	1220.4	9707.6
	Ave Value	0.0	21.3	0.0	11.2	0.0	265.4	50.0	0.0	2444.0	305.1	647.2
Insurance	Number	1	1	2	1	3	2	4	0	4	7	25
	Total Value	0.0	0.0	0.0	0.0	57.7	0.0	125.4	0.0	1558.4	2884.6	4626.1
	Ave Value	0.0	0.0	0.0	0.0	57.7	0.0	125.4	0.0	779.2	961.5	660.9
Securities/ Other	Number	1	3	2	0	5	4	1	2	3	6	27
	Total Value	0.0	0.0	0.0	0.0	0.0	15.3	0.0	0.0	12302.0	6262.4	18579.7
	Ave Value	0.0	0.0	0.0	0.0	0.0	15.3	0.0	0.0	6151.0	1565.6	2654.2
<b>Total</b>	Number	4	14	5	5	8	13	10	7	13	21	100
	Total Value	0.0	21.3	0.0	22.4	57.7	1076.8	175.4	0.0	21192.4	10367.4	32913.4
	Ave Value	0.0	21.3	0.0	11.2	57.7	215.4	87.7	0.0	3027.5	942.5	1134.9
	GDP Value/GDP	197942 0.00%	202715 0.01%	226620 0.00%	215192 0.01%	233668 0.02%	275781 0.39%	268210 0.07%	243686 0.00%	250640 8.46%	248505 4.17%	2362960 1.39%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within	Number	0	1	0	1	0	2	2	2	3	3	14
border/	Total Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	7332.0	0.0	7353.3
Within	Ave Value	0.0	21.3	0.0	0.0	0.0	0.0	0.0	0.0	2444.0	0.0	1838.3
industry												
Within	Number	1	4	1	2	0	0	0	1	1	0	10
border/	Total Value	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	2.3
Cross	Ave Value	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	2.3
industry												
Cross	Number	1	5	0	1	0	3	1	1	2	5	19
border/	Total Value	0.0	0.0	0.0	20.1	0.0	928.2	50.0	0.0	0.0	1220.4	2218.7
Within	Ave Value	0.0	0.0	0.0	20.1	0.0	309.4	50.0	0.0	0.0	305.1	246.5
industry												
Cross	Number	0	0	0	0	0	2	2	1	0	0	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	133.3	0.0	0.0	0.0	0.0	133.3
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	133.3	0.0	0.0	0.0	0.0	133.3
industry												
<b>Insurance</b>												
Within	Number	0	1	2	0	0	0	1	0	0	1	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
Within	Number	0	0	0	0	1	0	0	0	0	1	2
border/	Total Value	0.0	0.0	0.0	0.0	57.7	0.0	0.0	0.0	0.0	0.0	57.7
Cross	Ave Value	0.0	0.0	0.0	0.0	57.7	0.0	0.0	0.0	0.0	0.0	57.7
industry												
Cross	Number	1	0	0	1	2	2	3	0	3	2	14
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	125.4	0.0	912.9	2823.5	3861.8
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	125.4	0.0	912.9	2823.5	1287.3
industry												
Cross	Number	0	0	0	0	0	0	0	0	1	3	4
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	645.5	61.1	706.6
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	645.5	30.6	235.5
industry												
<b>Securities/ Other</b>												
Within	Number	0	2	2	0	2	2	1	1	2	2	14
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	37.7	41.2
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.9	13.7
industry												
Within	Number	0	1	0	0	3	2	0	0	1	1	8
border/	Total Value	0.0	0.0	0.0	0.0	0.0	15.3	0.0	0.0	12298.5	93.6	12407.4
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	15.3	0.0	0.0	12298.5	93.6	4135.8
industry												
Cross	Number	0	0	0	0	0	0	0	0	0	3	3
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6131.1	6131.1
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6131.1	6131.1
industry												
Cross	Number	1	0	0	0	0	0	0	1	0	0	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Total</b>												
	Number	4	14	5	5	8	13	10	7	13	21	100
	Total Value	0.0	21.3	0.0	22.4	57.7	1076.8	175.4	0.0	21192.4	10367.4	32913.4
	Ave Value	0.0	21.3	0.0	11.2	57.7	215.4	87.7	0.0	3027.5	942.5	1134.9

Source: Thomson Financial, SDC Platinum.

Table A.10  
**Country: France**  
All values in USD millions  
**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	10	47	27	28	16	24	21	6	18	12	209
Within industry	Total Value	194.8	605.9	498.3	15978.8	38.8	444.8	13443.1	558.1	7876.8	14509.2	54148.6
	Ave Value	48.7	75.7	166.1	1997.4	9.7	63.5	2240.5	279.1	562.6	2418.2	873.4
Within border/	Number	4	19	12	11	9	14	9	6	5	5	94
Cross industry	Total Value	207.6	491.5	208.9	265.4	20.5	2034.5	45.8	4357.5	462.1	115.2	8209.0
	Ave Value	69.2	98.3	52.2	66.4	10.3	254.3	22.9	1452.5	154.0	28.8	216.0
Cross border/	Number	2	4	8	1	7	14	7	15	13	8	79
Within industry	Total Value	0.0	0.0	0.0	0.0	189.4	1784.1	166.9	2823.4	2430.8	6482.4	13877.0
	Ave Value	0.0	0.0	0.0	0.0	63.1	356.8	41.7	352.9	243.1	1620.6	408.1
Cross border/	Number	0	3	2	1	3	2	2	5	4	4	26
Cross industry	Total Value	0.0	91.0	861.1	111.7	0.0	217.2	323.7	322.7	831.7	321.0	3080.1
	Ave Value	0.0	91.0	861.1	111.7	0.0	108.6	323.7	80.7	207.9	107.0	181.2
<b>Deal type</b>												
Within border	Number	14	66	39	39	25	38	30	12	23	17	303
	Total Value	402.4	1097.4	707.2	16244.2	59.3	2479.3	13488.9	4915.6	8338.9	14624.4	62357.6
	Ave Value	57.5	84.4	101.0	1353.7	9.9	165.3	1686.1	983.1	490.5	1462.4	623.6
Cross border	Number	2	7	10	2	10	16	9	20	17	12	105
	Total Value	0.0	91.0	861.1	111.7	189.4	2001.3	490.6	3146.1	3262.5	6803.4	16957.1
	Ave Value	0.0	91.0	861.1	111.7	63.1	285.9	98.1	262.2	233.0	971.9	332.5
<b>Deal type</b>												
Within industry	Number	12	51	35	29	23	38	28	21	31	20	288
	Total Value	194.8	605.9	498.3	15978.8	228.2	2228.9	13610.0	3381.5	10307.6	20991.6	68025.6
	Ave Value	48.7	75.7	166.1	1997.4	32.6	185.7	1361.0	338.2	429.5	2099.2	708.6
Cross industry	Number	4	22	14	12	12	16	11	11	9	9	120
	Total Value	207.6	582.5	1070.0	377.1	20.5	2251.7	369.5	4680.2	1293.8	436.2	11289.1
	Ave Value	69.2	97.1	214.0	75.4	10.3	225.2	123.2	668.6	184.8	62.3	205.3
<b>Industry</b>												
Banking	Number	8	39	23	26	17	22	15	10	27	13	200
	Total Value	256.2	955.8	1390.5	5834.5	156.7	2865.6	2755.8	871.9	8274.1	15124.2	38485.3
	Ave Value	51.2	95.6	278.1	833.5	31.3	286.6	689.0	174.4	394.0	1374.9	463.7
Insurance	Number	1	4	2	4	1	8	7	13	6	4	50
	Total Value	0.0	91.0	0.0	2741.4	0.0	98.4	10785.9	7117.7	3133.5	0.0	23967.9
	Ave Value	0.0	91.0	0.0	2741.4	0.0	32.8	1797.7	790.9	626.7	0.0	958.7
Securities/	Number	7	30	24	11	17	24	17	9	7	12	158
Other	Total Value	146.2	141.6	177.8	7780.0	92.0	1516.6	437.8	72.1	193.8	6303.6	16861.5
	Ave Value	73.1	47.2	59.3	1556.0	23.0	168.5	145.9	24.0	38.8	1050.6	392.1
<b>Total</b>	Number	16	73	49	41	35	54	39	32	40	29	408
	Total Value	402.4	1188.4	1568.3	16355.9	248.7	4480.6	13979.5	8061.7	11601.4	21427.8	79314.7
	Ave Value	57.5	84.9	196.0	1258.1	27.6	203.7	1075.3	474.2	374.2	1260.5	525.3
	GDP	1219313	1224258	1347451	1277003	1352306	1555093	1554895	1406827	1448918	1432218	13818281
	Value/GDP	0.03%	0.10%	0.12%	1.28%	0.02%	0.29%	0.90%	0.57%	0.80%	1.50%	0.57%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/ industry	Number	5	28	14	18	9	11	9	3	11	6	114
	Total Value	181.8	464.3	498.3	5624.3	16.3	172.5	2432.1	558.1	4890.7	14495.8	29334.2
	Ave Value	60.6	92.9	166.1	1124.9	8.2	43.1	810.7	279.1	543.4	2899.2	715.5
Within border/ Cross industry	Number	2	9	3	7	4	4	2	1	3	1	36
	Total Value	74.4	491.5	31.1	210.2	6.6	909.2	0.0	0.0	395.2	7.1	2125.3
	Ave Value	37.2	98.3	31.1	105.1	6.6	454.6	0.0	0.0	197.6	7.1	132.8
Cross border/ Within industry	Number	1	2	5	1	4	7	3	4	11	3	41
	Total Value	0.0	0.0	0.0	0.0	133.8	1783.9	0.0	53.0	2243.8	300.3	4514.8
	Ave Value	0.0	0.0	0.0	0.0	66.9	446.0	0.0	53.0	280.5	150.2	265.6
Cross border/ Cross industry	Number	0	0	1	0	0	0	1	2	2	3	9
	Total Value	0.0	0.0	861.1	0.0	0.0	0.0	323.7	260.8	744.4	321.0	2511.0
	Ave Value	0.0	0.0	861.1	0.0	0.0	0.0	323.7	130.4	372.2	107.0	279.0
<b>Insurance</b>												
Within border/ Within industry	Number	0	1	0	4	0	2	2	1	2	2	14
	Total Value	0.0	0.0	0.0	2741.4	0.0	14.3	10605.4	0.0	2919.4	0.0	16280.5
	Ave Value	0.0	0.0	0.0	2741.4	0.0	14.3	10605.4	0.0	1459.7	0.0	3256.1
Within border/ Cross industry	Number	0	1	2	0	0	1	1	3	1	0	9
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	13.6	4352.9	0.0	0.0	4366.5
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	13.6	2176.5	0.0	0.0	1455.5
Cross border/ Within industry	Number	1	1	0	0	1	4	4	8	2	2	23
	Total Value	0.0	0.0	0.0	0.0	0.0	0.2	166.9	2764.4	187.0	0.0	3118.5
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.2	41.7	460.7	93.5	0.0	239.9
Cross border/ Cross industry	Number	0	1	0	0	0	1	0	1	1	0	4
	Total Value	0.0	91.0	0.0	0.0	0.0	83.9	0.0	0.4	27.1	0.0	202.4
	Ave Value	0.0	91.0	0.0	0.0	0.0	83.9	0.0	0.4	27.1	0.0	50.6
<b>Securities/ Other</b>												
Within border/ Within industry	Number	5	18	13	6	7	11	10	2	5	4	81
	Total Value	13.0	141.6	0.0	7613.1	22.5	258.0	405.6	0.0	66.7	13.4	8533.9
	Ave Value	13.0	47.2	0.0	3806.6	11.3	129.0	202.8	0.0	22.2	13.4	533.4
Within border/ Cross industry	Number	2	9	7	4	5	9	6	2	1	4	49
	Total Value	133.2	0.0	177.8	55.2	13.9	1125.3	32.2	4.6	66.9	108.1	1717.2
	Ave Value	133.2	0.0	59.3	27.6	13.9	187.6	32.2	4.6	66.9	36.0	90.4
Cross border/ Within industry	Number	0	1	3	0	2	3	0	3	0	3	15
	Total Value	0.0	0.0	0.0	0.0	55.6	0.0	0.0	6.0	0.0	6182.1	6243.7
	Ave Value	0.0	0.0	0.0	0.0	55.6	0.0	0.0	6.0	0.0	3091.1	1560.9
Cross border/ Cross industry	Number	0	2	1	1	3	1	1	2	1	1	13
	Total Value	0.0	0.0	0.0	111.7	0.0	133.3	0.0	61.5	60.2	0.0	366.7
	Ave Value	0.0	0.0	0.0	111.7	0.0	133.3	0.0	61.5	60.2	0.0	91.7
<b>Total</b>												
	Number	16	73	49	41	35	54	39	32	40	29	408
	Total Value	402.4	1188.4	1568.3	16355.9	248.7	4480.6	13979.5	8061.7	11601.4	21427.8	79314.7
	Ave Value	57.5	84.9	196.0	1258.1	27.6	203.7	1075.3	474.2	374.2	1260.5	525.3



### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within Industry	Number	10	47	27	28	16	24	21	6	18	12	209
	Total Value	194.8	605.9	498.3	15978.8	38.8	444.8	13443.1	558.1	7876.8	14509.2	54148.6
	Ave Value	48.7	75.7	166.1	1997.4	9.7	63.5	2240.5	279.1	562.6	2418.2	873.4
Within border/ Cross industry	Number	3	19	12	11	9	14	9	6	5	5	93
	Total Value	74.4	491.5	208.9	265.4	20.5	2034.5	45.8	4357.5	462.1	115.2	8075.8
	Ave Value	37.2	98.3	52.2	66.4	10.3	254.3	22.9	1452.5	154.0	28.8	218.3
Cross border/ Within industry	Number	11	4	8	9	7	10	8	8	16	10	91
	Total Value	315.2	82.2	79.0	3435.6	674.4	1193.7	3368.0	80.6	1899.5	2932.1	14060.3
	Ave Value	78.8	41.1	39.5	1145.2	168.6	199.0	842.0	40.3	211.1	488.7	334.8
Cross border/ Cross industry	Number	4	5	4	1	1	3	8	8	4	4	42
	Total Value	586.4	102.2	918.3	0.0	0.0	244.2	15.5	275.2	278.9	300.6	2721.3
	Ave Value	146.6	51.1	306.1	0.0	0.0	122.1	15.5	91.7	93.0	150.3	136.1
<b>Deal type</b>												
Within border	Number	13	66	39	39	25	38	30	12	23	17	302
	Total Value	269.2	1097.4	707.2	16244.2	59.3	2479.3	13488.9	4915.6	8338.9	14624.4	62224.4
	Ave Value	44.9	84.4	101.0	1353.7	9.9	165.3	1686.1	983.1	490.5	1462.4	628.5
Cross border	Number	15	9	12	10	8	13	16	16	20	14	133
	Total Value	901.6	184.4	997.3	3435.6	674.4	1437.9	3383.5	355.8	2178.4	3232.7	16781.6
	Ave Value	112.7	46.1	199.5	1145.2	168.6	179.7	676.7	71.2	181.5	404.1	270.7
<b>Deal type</b>												
Within industry	Number	21	51	35	37	23	34	29	14	34	22	300
	Total Value	510.0	688.1	577.3	19414.4	713.2	1638.5	16811.1	638.7	9776.3	17441.3	68208.9
	Ave Value	63.8	68.8	115.5	1764.9	89.2	126.0	1681.1	159.7	425.1	1453.4	655.9
Cross industry	Number	7	24	16	12	10	17	17	14	9	9	135
	Total Value	660.8	593.7	1127.2	265.4	20.5	2278.7	61.3	4632.7	741.0	415.8	10797.1
	Ave Value	110.1	84.8	161.0	66.4	10.3	227.9	20.4	772.1	123.5	69.3	189.4
<b>Industry</b>												
Banking	Number	13	40	26	24	17	26	22	13	22	14	217
	Total Value	484.4	637.5	601.0	5636.4	49.0	1015.4	2464.3	1373.0	6700.0	14906.7	33867.7
	Ave Value	60.6	79.7	120.2	939.4	12.3	78.1	616.1	228.8	418.8	1490.7	423.3
Insurance	Number	7	4	4	12	6	8	6	8	9	6	70
	Ave Value	69.8	0.0	43.4	1012.4	215.5	322.0	3631.6	108.2	737.6	983.1	773.2
Securities/ Other	Number	8	31	21	13	10	17	18	7	12	11	148
	Total Value	476.9	644.3	929.8	7968.8	38.2	1291.9	3513.4	3682.0	866.8	984.2	20396.3
	Ave Value	159.0	71.6	309.9	2656.3	12.7	258.4	585.6	1841.0	96.3	164.0	416.3
<b>Total</b>	Number	28	75	51	49	33	51	46	28	43	31	435
	Total Value	1170.8	1281.8	1704.5	19679.8	733.7	3917.2	16872.4	5271.4	10517.3	17857.1	79006.0
	Ave Value	83.6	75.4	142.0	1312.0	73.4	170.3	1297.9	527.1	362.7	992.1	490.7
	GDP Value/GDP	1219313 0.10%	1224258 0.10%	1347451 0.13%	1277003 1.54%	1352306 0.05%	1555093 0.25%	1554895 1.09%	1406827 0.37%	1448918 0.73%	1432218 1.25%	13818281 0.57%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	5	28	14	18	9	11	9	3	11	6	114
Within industry	Total Value	181.8	464.3	498.3	5624.3	16.3	172.5	2432.1	558.1	4890.7	14495.8	29334.2
	Ave Value	60.6	92.9	166.1	1124.9	8.2	43.1	810.7	279.1	543.4	2899.2	715.5
Within border/	Number	1	9	7	3	5	8	5	2	2	4	46
Cross industry	Total Value	0.0	0.0	102.7	12.1	13.9	414.3	32.2	671.3	66.9	108.1	1421.5
	Ave Value	0.0	0.0	51.4	12.1	13.9	82.9	32.2	671.3	66.9	36.0	94.8
Cross border/	Number	4	2	5	3	2	5	3	4	7	4	39
Within industry	Total Value	127.1	82.2	0.0	0.0	18.8	309.1	0.0	80.6	1727.8	302.8	2648.4
	Ave Value	63.6	41.1	0.0	0.0	18.8	103.0	0.0	40.3	345.6	151.4	155.8
Cross border/	Number	3	1	0	0	1	2	5	4	2	0	18
Cross industry	Total Value	175.5	91.0	0.0	0.0	0.0	119.5	0.0	63.0	14.6	0.0	463.6
	Ave Value	58.5	91.0	0.0	0.0	0.0	119.5	0.0	63.0	14.6	0.0	66.2
<b>Insurance</b>												
Within border/	Number	0	1	0	4	0	2	2	1	2	2	14
Within industry	Total Value	0.0	0.0	0.0	2741.4	0.0	14.3	10605.4	0.0	2919.4	0.0	16280.5
	Ave Value	0.0	0.0	0.0	2741.4	0.0	14.3	10605.4	0.0	1459.7	0.0	3256.1
Within border/	Number	1	1	1	5	2	1	1	1	0	0	13
Cross industry	Total Value	21.4	0.0	75.1	253.3	6.6	711.0	0.0	4.6	0.0	0.0	1072.0
	Ave Value	21.4	0.0	75.1	84.4	6.6	711.0	0.0	4.6	0.0	0.0	134.0
Cross border/	Number	6	2	2	3	4	5	2	4	7	3	38
Within industry	Total Value	188.1	0.0	79.0	3079.9	639.9	884.6	289.3	0.0	31.1	1966.2	7158.1
	Ave Value	94.1	0.0	39.5	1540.0	320.0	294.9	144.7	0.0	15.6	983.1	421.1
Cross border/	Number	0	0	1	0	0	0	1	2	0	1	5
Cross industry	Total Value	0.0	0.0	19.6	0.0	0.0	0.0	0.0	211.8	0.0	0.0	231.4
	Ave Value	0.0	0.0	19.6	0.0	0.0	0.0	0.0	211.8	0.0	0.0	115.7
<b>Securities/ Other</b>												
Within border/	Number	5	18	13	6	7	11	10	2	5	4	81
Within industry	Total Value	13.0	141.6	0.0	7613.1	22.5	258.0	405.6	0.0	66.7	13.4	8533.9
	Ave Value	13.0	47.2	0.0	3806.6	11.3	129.0	202.8	0.0	22.2	13.4	533.4
Within border/	Number	1	9	4	3	2	5	3	3	3	1	34
Cross industry	Total Value	53.0	491.5	31.1	0.0	0.0	909.2	13.6	3681.6	395.2	7.1	5582.3
	Ave Value	53.0	98.3	31.1	0.0	0.0	454.6	13.6	3681.6	197.6	7.1	398.7
Cross border/	Number	1	0	1	3	1	0	3	0	2	3	14
Within industry	Total Value	0.0	0.0	0.0	355.7	15.7	0.0	3078.7	0.0	140.6	663.1	4253.8
	Ave Value	0.0	0.0	0.0	355.7	15.7	0.0	1539.4	0.0	70.3	331.6	531.7
Cross border/	Number	1	4	3	1	0	1	2	2	2	3	19
Cross industry	Total Value	410.9	11.2	898.7	0.0	0.0	124.7	15.5	0.4	264.3	300.6	2026.3
	Ave Value	410.9	11.2	449.4	0.0	0.0	124.7	15.5	0.4	132.2	150.3	184.2
<b>Total</b>	Number	28	75	51	49	33	51	46	28	43	31	435
	Total Value	1170.8	1281.8	1704.5	19679.8	733.7	3917.2	16872.4	5271.4	10517.3	17857.1	79006.0
	Ave Value	83.6	75.4	142.0	1312.0	73.4	170.3	1297.9	527.1	362.7	992.1	490.7

Source: Thomson Financial, SDC Platinum.

Table A.11

**Country: Germany**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	6	12	18	14	36	29	30	21	28	44	238
Within industry	Total Value	787.2	1575.0	2547.8	0.0	2826.2	0.0	223.9	11063.1	24.3	310.5	19358.0
	Ave Value	393.6	787.5	509.6	0.0	942.1	0.0	112.0	5531.6	24.3	103.5	967.9
Within border/	Number	1	2	5	6	15	17	9	7	6	8	76
Cross industry	Total Value	0.0	0.0	556.8	452.3	49.6	425.2	0.0	0.0	2076.7	337.1	3897.7
	Ave Value	0.0	0.0	185.6	226.2	16.5	425.2	0.0	0.0	2076.7	337.1	354.3
Cross border/	Number	0	3	2	4	2	5	2	3	8	8	37
Within industry	Total Value	0.0	0.0	407.7	0.0	0.0	377.2	122.5	5075.1	313.7	1162.9	7459.1
	Ave Value	0.0	0.0	407.7	0.0	0.0	94.3	122.5	5075.1	313.7	290.7	621.6
Cross border/	Number	1	0	1	1	4	4	4	3	1	3	22
Cross industry	Total Value	0.0	0.0	888.4	0.0	0.0	124.7	0.0	194.8	0.0	4040.8	5248.7
	Ave Value	0.0	0.0	888.4	0.0	0.0	124.7	0.0	194.8	0.0	2020.4	1049.7
<b>Deal type</b>												
Within border	Number	7	14	23	20	51	46	39	28	34	52	314
	Total Value	787.2	1575.0	3104.6	452.3	2875.8	425.2	223.9	11063.1	2101.0	647.6	23255.7
	Ave Value	393.6	787.5	388.1	226.2	479.3	425.2	112.0	5531.6	1050.5	161.9	750.2
Cross border	Number	1	3	3	5	6	9	6	6	9	11	59
	Total Value	0.0	0.0	1296.1	0.0	0.0	501.9	122.5	5269.9	313.7	5203.7	12707.8
	Ave Value	0.0	0.0	648.1	0.0	0.0	100.4	122.5	2635.0	313.7	867.3	747.5
<b>Deal type</b>												
Within industry	Number	6	15	20	18	38	34	32	24	36	52	275
	Total Value	787.2	1575.0	2955.5	0.0	2826.2	377.2	346.4	16138.2	338.0	1473.4	26817.1
	Ave Value	393.6	787.5	492.6	0.0	942.1	94.3	115.5	5379.4	169.0	210.5	838.0
Cross industry	Number	2	2	6	7	19	21	13	10	7	11	98
	Total Value	0.0	0.0	1445.2	452.3	49.6	549.9	0.0	194.8	2076.7	4377.9	9146.4
	Ave Value	0.0	0.0	361.3	226.2	16.5	275.0	0.0	194.8	2076.7	1459.3	571.7
<b>Industry</b>												
Banking	Number	6	10	13	13	33	24	23	21	31	44	218
	Total Value	202.8	0.0	1064.4	432.4	126.0	124.7	127.2	7001.2	24.3	4493.2	13596.2
	Ave Value	202.8	0.0	354.8	432.4	42.0	124.7	63.6	7001.2	24.3	641.9	679.8
Insurance	Number	1	3	7	7	6	15	8	8	9	8	72
	Total Value	584.4	0.0	2706.0	19.9	2738.0	558.4	219.2	9137.0	2390.4	963.0	19316.3
	Ave Value	584.4	0.0	541.2	19.9	1369.0	279.2	219.2	4568.5	1195.2	963.0	1136.3
Securities/	Number	1	4	6	5	18	16	14	5	3	11	83
Other	Total Value	0.0	1575.0	630.3	0.0	11.8	244.0	0.0	194.8	0.0	395.1	3051.0
	Ave Value	0.0	787.5	315.2	0.0	11.8	81.3	0.0	194.8	0.0	197.6	277.4
<b>Total</b>	Number	8	17	26	25	57	55	45	34	43	63	373
	Total Value	787.2	1575.0	4400.7	452.3	2875.8	927.1	346.4	16333.0	2414.7	5851.3	35963.5
	Ave Value	393.6	787.5	440.1	226.2	479.3	154.5	115.5	4083.3	804.9	585.1	749.2
	GDP Value/GDP	1679079 0.05%	1780793 0.09%	2021775 0.22%	1955203 0.02%	2095849 0.14%	2459378 0.04%	2384235 0.01%	2119601 0.77%	2151383 0.11%	2108903 0.28%	20756200 0.17%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/ Within industry	Number	4	8	8	6	21	15	18	16	22	33	151
	Total Value	202.8	0.0	8.0	0.0	97.3	0.0	4.7	7001.2	24.3	252.5	7590.8
	Ave Value	202.8	0.0	8.0	0.0	97.3	0.0	4.7	7001.2	24.3	126.3	948.9
Within border/ Cross industry	Number	1	1	3	3	8	7	0	5	3	4	35
	Total Value	0.0	0.0	168.0	432.4	28.7	0.0	0.0	0.0	0.0	0.0	629.1
	Ave Value	0.0	0.0	168.0	432.4	14.4	0.0	0.0	0.0	0.0	0.0	157.3
Cross border/ Within industry	Number	0	1	1	3	2	0	1	0	5	4	17
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	122.5	0.0	0.0	199.9	322.4
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	122.5	0.0	0.0	66.6	80.6
Cross border/ Cross industry	Number	1	0	1	1	2	2	4	0	1	3	15
	Total Value	0.0	0.0	888.4	0.0	0.0	124.7	0.0	0.0	0.0	4040.8	5053.9
	Ave Value	0.0	0.0	888.4	0.0	0.0	124.7	0.0	0.0	0.0	2020.4	1263.5
<b>Insurance</b>												
Within border/ Within industry	Number	1	0	5	4	4	7	6	5	4	5	41
	Total Value	584.4	0.0	2046.9	0.0	2717.1	0.0	219.2	4061.9	0.0	0.0	9629.5
	Ave Value	584.4	0.0	682.3	0.0	2717.1	0.0	219.2	4061.9	0.0	0.0	1375.6
Within border/ Cross industry	Number	0	1	1	2	1	6	2	0	2	0	15
	Total Value	0.0	0.0	251.4	19.9	20.9	425.2	0.0	0.0	2076.7	0.0	2794.1
	Ave Value	0.0	0.0	251.4	19.9	20.9	425.2	0.0	0.0	2076.7	0.0	558.8
Cross border/ Within industry	Number	0	2	1	1	0	2	0	2	3	3	14
	Total Value	0.0	0.0	407.7	0.0	0.0	133.2	0.0	5075.1	313.7	963.0	6892.7
	Ave Value	0.0	0.0	407.7	0.0	0.0	133.2	0.0	5075.1	313.7	963.0	1378.5
Cross border/ Cross industry	Number	0	0	0	0	1	0	0	1	0	0	2
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Securities/ Other</b>												
Within border/ Within industry	Number	1	4	5	4	11	7	6	0	2	6	46
	Total Value	0.0	1575.0	492.9	0.0	11.8	0.0	0.0	0.0	0.0	58.0	2137.7
	Ave Value	0.0	787.5	492.9	0.0	11.8	0.0	0.0	0.0	0.0	58.0	427.5
Within border/ Cross industry	Number	0	0	1	1	6	4	7	2	1	4	26
	Total Value	0.0	0.0	137.4	0.0	0.0	0.0	0.0	0.0	0.0	337.1	474.5
	Ave Value	0.0	0.0	137.4	0.0	0.0	0.0	0.0	0.0	0.0	337.1	237.3
Cross border/ Within industry	Number	0	0	0	0	0	3	1	1	0	1	6
	Total Value	0.0	0.0	0.0	0.0	0.0	244.0	0.0	0.0	0.0	0.0	244.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	81.3	0.0	0.0	0.0	0.0	81.3
Cross border/ Cross industry	Number	0	0	0	0	1	2	0	2	0	0	5
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.8	0.0	0.0	194.8
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	194.8	0.0	0.0	194.8
<b>Total</b>												
	Number	8	17	26	25	57	55	45	34	43	63	373
	Total Value	787.2	1575.0	4400.7	452.3	2875.8	927.1	346.4	16333.0	2414.7	5851.3	35963.5
	Ave Value	393.6	787.5	440.1	226.2	479.3	154.5	115.5	4083.3	804.9	585.1	749.2

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	6	12	18	14	36	29	30	21	28	44	238
Within industry	Total Value	787.2	1575.0	2547.8	0.0	2826.2	0.0	223.9	11063.1	24.3	310.5	19358.0
	Ave Value	393.6	787.5	509.6	0.0	942.1	0.0	112.0	5531.6	24.3	103.5	967.9
Within border/	Number	1	2	5	6	15	17	9	7	6	8	76
Cross industry	Total Value	0.0	0.0	556.8	452.3	49.6	425.2	0.0	0.0	2076.7	337.1	3897.7
	Ave Value	0.0	0.0	185.6	226.2	16.5	425.2	0.0	0.0	2076.7	337.1	354.3
Cross border/	Number	3	1	5	2	9	16	9	3	9	20	77
Within industry	Total Value	424.8	0.0	124.7	153.5	814.4	1806.5	4006.9	146.5	9625.8	1985.9	19089.0
	Ave Value	424.8	0.0	62.4	76.8	203.6	451.6	1335.6	146.5	2406.5	220.7	636.3
Cross border/	Number	0	3	0	1	3	3	4	2	7	5	28
Cross industry	Total Value	0.0	78.6	0.0	111.7	0.0	300.0	145.2	23.9	188.8	3434.9	4283.1
	Ave Value	0.0	78.6	0.0	111.7	0.0	300.0	72.6	23.9	62.9	1145.0	356.9
<b>Deal type</b>												
Within border	Number	7	14	23	20	51	46	39	28	34	52	314
	Total Value	787.2	1575.0	3104.6	452.3	2875.8	425.2	223.9	11063.1	2101.0	647.6	23255.7
	Ave Value	393.6	787.5	388.1	226.2	479.3	425.2	112.0	5531.6	1050.5	161.9	750.2
Cross border	Number	3	4	5	3	12	19	13	5	16	25	105
	Total Value	424.8	78.6	124.7	265.2	814.4	2106.5	4152.1	170.4	9814.6	5420.8	23372.1
	Ave Value	424.8	78.6	62.4	88.4	203.6	421.3	830.4	85.2	1402.1	451.7	556.5
<b>Deal type</b>												
Within industry	Number	9	13	23	16	45	45	39	24	37	64	315
	Total Value	1212.0	1575.0	2672.5	153.5	3640.6	1806.5	4230.8	11209.6	9650.1	2296.4	38447.0
	Ave Value	404.0	787.5	381.8	76.8	520.1	451.6	846.2	3736.5	1930.0	191.4	768.9
Cross industry	Number	1	5	5	7	18	20	13	9	13	13	104
	Total Value	0.0	78.6	556.8	564.0	49.6	725.2	145.2	23.9	2265.5	3772.0	8180.8
	Ave Value	0.0	78.6	185.6	188.0	16.5	362.6	72.6	23.9	566.4	943.0	355.7
<b>Industry</b>												
Banking	Number	6	12	13	9	31	28	27	18	33	42	219
	Total Value	627.6	0.0	521.5	131.6	179.9	1952.2	16.9	7001.2	11314.3	1130.3	22875.5
	Ave Value	313.8	0.0	104.3	65.8	90.0	488.1	8.5	7001.2	1885.7	188.4	762.5
Insurance	Number	3	1	8	6	9	21	16	11	10	18	103
	Total Value	584.4	0.0	2046.9	153.5	3436.4	0.0	4226.1	4208.4	507.5	4432.0	19595.2
	Ave Value	584.4	0.0	682.3	76.8	1145.5	0.0	1056.5	2104.2	253.8	738.7	852.0
Securities/	Number	1	5	7	8	23	16	9	4	7	17	97
Other	Total Value	0.0	1653.6	660.9	432.4	73.9	579.5	133.0	23.9	93.8	506.1	4157.1
	Ave Value	0.0	551.2	330.5	432.4	14.8	289.8	133.0	23.9	93.8	126.5	207.9
<b>Total</b>	Number	10	18	28	23	63	65	52	33	50	77	419
	Total Value	1212.0	1653.6	3229.3	717.5	3690.2	2531.7	4376.0	11233.5	11915.6	6068.4	46627.8
	Ave Value	404.0	551.2	322.9	143.5	369.0	422.0	625.1	2808.4	1324.0	379.3	638.7
	GDP value/GDP	1679079 0.07%	1780793 0.09%	2021775 0.16%	1955203 0.04%	2095849 0.18%	2459378 0.10%	2384235 0.18%	2119601 0.53%	2151383 0.55%	2108903 0.29%	20756200 0.22%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	4	8	8	6	21	15	18	16	22	33	151
Within industry	Total Value	202.8	0.0	8.0	0.0	97.3	0.0	4.7	7001.2	24.3	252.5	7590.8
	Ave Value	202.8	0.0	8.0	0.0	97.3	0.0	4.7	7001.2	24.3	126.3	948.9
Within border/	Number	0	1	2	2	5	6	4	0	2	4	26
Cross industry	Total Value	0.0	0.0	388.8	19.9	0.0	0.0	0.0	0.0	2076.7	337.1	2822.5
	Ave Value	0.0	0.0	194.4	19.9	0.0	0.0	0.0	0.0	2076.7	337.1	564.5
Cross border/	Number	2	1	3	0	3	4	3	1	4	4	25
Within industry	Total Value	424.8	0.0	124.7	0.0	82.6	1652.2	0.0	0.0	9118.3	540.7	11943.3
	Ave Value	424.8	0.0	62.4	0.0	82.6	550.7	0.0	0.0	4559.2	180.2	995.3
Cross border/	Number	0	2	0	1	2	3	2	1	5	1	17
Cross industry	Total Value	0.0	0.0	0.0	111.7	0.0	300.0	12.2	0.0	95.0	0.0	518.9
	Ave Value	0.0	0.0	0.0	111.7	0.0	300.0	12.2	0.0	47.5	0.0	103.8
<b>Insurance</b>												
Within border/	Number	1	0	5	4	4	7	6	5	4	5	41
Within industry	Total Value	584.4	0.0	2046.9	0.0	2717.1	0.0	219.2	4061.9	0.0	0.0	9629.5
	Ave Value	584.4	0.0	682.3	0.0	2717.1	0.0	219.2	4061.9	0.0	0.0	1375.6
Within border/	Number	1	1	1	0	1	5	3	4	1	0	17
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross border/	Number	1	0	2	2	4	9	6	2	4	11	41
Within industry	Total Value	0.0	0.0	0.0	153.5	719.3	0.0	4006.9	146.5	507.5	1374.1	6907.8
	Ave Value	0.0	0.0	0.0	76.8	359.7	0.0	1335.6	146.5	253.8	343.5	493.4
Cross border/	Number	0	0	0	0	0	0	1	0	1	2	4
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3057.9	3057.9
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1529.0	1529.0
<b>Securities/ Other</b>												
Within border/	Number	1	4	5	4	11	7	6	0	2	6	46
Within industry	Total Value	0.0	1575.0	492.9	0.0	11.8	0.0	0.0	0.0	0.0	58.0	2137.7
	Ave Value	0.0	787.5	492.9	0.0	11.8	0.0	0.0	0.0	0.0	58.0	427.5
Within border/	Number	0	0	2	4	9	6	2	3	3	4	33
Cross industry	Total Value	0.0	0.0	168.0	432.4	49.6	425.2	0.0	0.0	0.0	0.0	1075.2
	Ave Value	0.0	0.0	168.0	432.4	16.5	425.2	0.0	0.0	0.0	0.0	179.2
Cross border/	Number	0	0	0	0	2	3	0	0	1	5	11
Within industry	Total Value	0.0	0.0	0.0	0.0	12.5	154.3	0.0	0.0	0.0	71.1	237.9
	Ave Value	0.0	0.0	0.0	0.0	12.5	154.3	0.0	0.0	0.0	35.6	59.5
Cross border/	Number	0	1	0	0	1	0	1	1	1	2	7
Cross industry	Total Value	0.0	78.6	0.0	0.0	0.0	0.0	133.0	23.9	93.8	377.0	706.3
	Ave Value	0.0	78.6	0.0	0.0	0.0	0.0	133.0	23.9	93.8	377.0	141.3
<b>Total</b>												
	Number	10	18	28	23	63	65	52	33	50	77	419
	Total Value	1212.0	1653.6	3229.3	717.5	3690.2	2531.7	4376.0	11233.5	11915.6	6068.4	46627.8
	Ave Value	404.0	551.2	322.9	143.5	369.0	422.0	625.1	2808.4	1324.0	379.3	638.7

Source: Thomson Financial, SDC Platinum.

Table A.12

**Country: Italy**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	7	28	37	20	35	21	20	14	22	27	231
Within industry	Total Value	2616.7	6163.8	2056.7	5755.5	3446.4	1074.1	1532.1	5425.6	31736.9	33116.9	92924.7
	Ave Value	523.3	474.1	257.1	959.3	382.9	153.4	170.2	678.2	1983.6	2759.7	999.2
Within border/	Number	4	3	9	8	11	5	14	9	6	13	82
Cross industry	Total Value	96.5	78.3	256.7	262.1	590.6	0.0	777.6	73.8	557.9	1257.3	3950.8
	Ave Value	96.5	78.3	85.6	65.5	73.8	0.0	194.4	36.9	186.0	157.2	116.2
Cross border/	Number	3	3	2	4	6	5	2	7	3	4	39
Within industry	Total Value	80.3	44.0	0.0	279.8	750.3	154.3	376.4	375.2	64.3	156.8	2281.4
	Ave Value	80.3	44.0	0.0	279.8	187.6	154.3	376.4	125.1	32.2	156.8	152.1
Cross border/	Number	1	3	2	1	2	2	0	3	2	2	18
Cross industry	Total Value	0.0	0.0	273.6	0.0	26.0	175.7	0.0	0.0	237.2	750.6	1463.1
	Ave Value	0.0	0.0	136.8	0.0	26.0	175.7	0.0	0.0	237.2	750.6	243.9
<b>Deal type</b>												
Within border	Number	11	31	46	28	46	26	34	23	28	40	313
	Total Value	2713.2	6242.1	2313.4	6017.6	4037.0	1074.1	2309.7	5499.4	32294.8	34374.2	96875.5
	Ave Value	452.2	445.9	210.3	601.8	237.5	153.4	177.7	549.9	1699.7	1718.7	762.8
Cross border	Number	4	6	4	5	8	7	2	10	5	6	57
	Total Value	80.3	44.0	273.6	279.8	776.3	330.0	376.4	375.2	301.5	907.4	3744.5
	Ave Value	80.3	44.0	136.8	279.8	155.3	165.0	376.4	125.1	100.5	453.7	178.3
<b>Deal type</b>												
Within industry	Number	10	31	39	24	41	26	22	21	25	31	270
	Total Value	2697.0	6207.8	2056.7	6035.3	4196.7	1228.4	1908.5	5800.8	31801.2	33273.7	95206.1
	Ave Value	449.5	443.4	257.1	862.2	322.8	153.6	190.9	527.3	1766.7	2559.5	881.5
Cross industry	Number	5	6	11	9	13	7	14	12	8	15	100
	Total Value	96.5	78.3	530.3	262.1	616.6	175.7	777.6	73.8	795.1	2007.9	5413.9
	Ave Value	96.5	78.3	106.1	65.5	68.5	175.7	194.4	36.9	198.8	223.1	135.3
<b>Industry</b>												
Banking	Number	7	20	32	20	34	21	17	15	26	36	228
	Total Value	2632.1	5790.4	2309.0	2915.9	3778.8	1234.4	1002.1	5096.3	32322.7	24423.3	81505.0
	Ave Value	526.4	723.8	256.6	364.5	343.5	176.3	143.2	566.3	1795.7	1436.7	823.3
Insurance	Number	7	2	6	4	6	5	11	11	3	3	58
	Total Value	161.4	473.3	2.3	3378.6	853.8	0.0	896.6	778.3	65.9	10187.5	16797.7
	Ave Value	80.7	236.7	2.3	1689.3	170.8	0.0	224.2	194.6	22.0	5093.8	671.9
Securities/	Number	1	15	12	9	14	7	8	7	4	7	84
Other	Total Value	0.0	22.4	275.7	2.9	180.7	169.7	787.4	0.0	207.7	670.8	2317.3
	Ave Value	0.0	4.5	91.9	2.9	30.1	84.9	262.5	0.0	207.7	223.6	96.6
<b>Total</b>	Number	15	37	50	33	54	33	36	33	33	46	370
	Total Value	2793.5	6286.1	2587.0	6297.4	4813.3	1404.1	2686.1	5874.6	32596.3	35281.6	100620.0
	Ave Value	399.1	419.1	199.0	572.5	218.8	156.0	191.9	451.9	1481.7	1603.7	679.9
	GDP Value/GDP	1105131	1163743	1236492	995684	1026576	1097756	1233298	1165163	1192002	1171635	11387480
		0.25%	0.54%	0.21%	0.63%	0.47%	0.13%	0.22%	0.50%	2.73%	3.01%	0.88%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within	Number	5	15	28	16	29	19	12	11	22	25	182
border/	Total Value	2535.6	5668.1	2054.6	2617.2	3359.5	1058.7	997.7	5055.6	31736.9	22937.3	78021.2
Within	Ave Value	633.9	944.7	293.5	523.4	419.9	176.5	166.3	722.2	1983.6	2085.2	1026.6
industry												
Within	Number	2	1	4	2	4	1	4	3	2	7	30
border/	Total Value	96.5	78.3	254.4	18.9	419.3	0.0	4.4	39.2	348.6	578.6	1838.2
Cross	Ave Value	96.5	78.3	127.2	9.5	139.8	0.0	4.4	39.2	348.6	144.7	114.9
industry												
Cross	Number	0	2	0	2	1	0	1	1	1	3	11
border/	Total Value	0.0	44.0	0.0	279.8	0.0	0.0	0.0	1.5	0.0	156.8	482.1
Within	Ave Value	0.0	44.0	0.0	279.8	0.0	0.0	0.0	1.5	0.0	156.8	120.5
industry												
Cross	Number	0	2	0	0	0	1	0	0	1	1	5
border/	Total Value	0.0	0.0	0.0	0.0	0.0	175.7	0.0	0.0	237.2	750.6	1163.5
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	175.7	0.0	0.0	237.2	750.6	387.8
industry												
<b>Insurance</b>												
Within	Number	2	2	3	3	2	0	6	1	0	1	20
border/	Total Value	81.1	473.3	0.0	3138.3	86.9	0.0	508.4	370.0	0.0	10179.6	14837.6
Within	Ave Value	81.1	236.7	0.0	3138.3	86.9	0.0	254.2	370.0	0.0	10179.6	1648.6
industry												
Within	Number	2	0	2	1	1	2	4	4	1	1	18
border/	Total Value	0.0	0.0	2.3	240.3	21.6	0.0	11.8	34.6	1.6	7.9	320.1
Cross	Ave Value	0.0	0.0	2.3	240.3	21.6	0.0	11.8	34.6	1.6	7.9	45.7
industry												
Cross	Number	2	0	1	0	2	3	1	6	2	1	18
border/	Total Value	80.3	0.0	0.0	0.0	719.3	0.0	376.4	373.7	64.3	0.0	1614.0
Within	Ave Value	80.3	0.0	0.0	0.0	359.7	0.0	376.4	186.9	32.2	0.0	201.8
industry												
Cross	Number	1	0	0	0	1	0	0	0	0	0	2
border/	Total Value	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0	0.0	0.0	26.0
Cross	Ave Value	0.0	0.0	0.0	0.0	26.0	0.0	0.0	0.0	0.0	0.0	26.0
industry												
<b>Securities/ Other</b>												
Within	Number	0	11	6	1	4	2	2	2	0	1	29
border/	Total Value	0.0	22.4	2.1	0.0	0.0	15.4	26.0	0.0	0.0	0.0	65.9
Within	Ave Value	0.0	4.5	2.1	0.0	0.0	15.4	26.0	0.0	0.0	0.0	8.2
industry												
Within	Number	0	2	3	5	6	2	6	2	3	5	34
border/	Total Value	0.0	0.0	0.0	2.9	149.7	0.0	761.4	0.0	207.7	670.8	1792.5
Cross	Ave Value	0.0	0.0	0.0	2.9	37.4	0.0	380.7	0.0	207.7	223.6	163.0
industry												
Cross	Number	1	1	1	2	3	2	0	0	0	0	10
border/	Total Value	0.0	0.0	0.0	0.0	31.0	154.3	0.0	0.0	0.0	0.0	185.3
Within	Ave Value	0.0	0.0	0.0	0.0	15.5	154.3	0.0	0.0	0.0	0.0	61.8
industry												
Cross	Number	0	1	2	1	1	1	0	3	1	1	11
border/	Total Value	0.0	0.0	273.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	273.6
Cross	Ave Value	0.0	0.0	136.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	136.8
industry												
<b>Total</b>												
	Number	15	37	50	33	54	33	36	33	33	46	370
	Total Value	2793.5	6286.1	2587.0	6297.4	4813.3	1404.1	2686.1	5874.6	32596.3	35281.6	100620.0
	Ave Value	399.1	419.1	199.0	572.5	218.8	156.0	191.9	451.9	1481.7	1603.7	679.9



### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within industry	Number	7	28	37	20	34	21	20	14	22	27	230
	Total Value	2616.7	6163.8	2056.7	5755.5	3446.4	1074.1	1532.1	5425.6	31736.9	33116.9	92924.7
	Ave Value	523.3	474.1	257.1	959.3	382.9	153.4	170.2	678.2	1983.6	2759.7	999.2
Within border/ Cross industry	Number	4	3	9	8	11	5	14	8	6	13	81
	Total Value	96.5	78.3	256.7	262.1	590.6	0.0	777.6	73.8	557.9	1257.3	3950.8
	Ave Value	96.5	78.3	85.6	65.5	73.8	0.0	194.4	36.9	186.0	157.2	116.2
Cross border/ Within industry	Number	2	6	8	4	7	7	2	7	5	5	53
	Total Value	285.0	0.0	448.4	279.8	1164.5	0.0	6.4	7039.7	1715.4	156.8	11096.0
	Ave Value	285.0	0.0	224.2	279.8	1164.5	0.0	6.4	1005.7	571.8	156.8	652.7
Cross border/ Cross industry	Number	0	1	3	0	1	0	0	2	1	2	10
	Total Value	0.0	38.5	862.1	0.0	59.9	0.0	0.0	49.0	1.2	1389.5	2400.2
	Ave Value	0.0	38.5	431.1	0.0	59.9	0.0	0.0	49.0	1.2	694.8	300.0
<b>Deal type</b>												
Within border	Number	11	31	46	28	45	26	34	22	28	40	311
	Total Value	2713.2	6242.1	2313.4	6017.6	4037.0	1074.1	2309.7	5499.4	32294.8	34374.2	96875.5
	Ave Value	452.2	445.9	210.3	601.8	237.5	153.4	177.7	549.9	1699.7	1718.7	762.8
Cross border	Number	2	7	11	4	8	7	2	9	6	7	63
	Total Value	285.0	38.5	1310.5	279.8	1224.4	0.0	6.4	7088.7	1716.6	1546.3	13496.2
	Ave Value	285.0	38.5	327.6	279.8	612.2	0.0	6.4	886.1	429.2	515.4	539.8
<b>Deal type</b>												
Within industry	Number	9	34	45	24	41	28	22	21	27	32	283
	Total Value	2901.7	6163.8	2505.1	6035.3	4610.9	1074.1	1538.5	12465.3	33452.3	33273.7	104020.7
	Ave Value	483.6	474.1	250.5	862.2	461.1	153.4	153.9	831.0	1760.6	2559.5	945.6
Cross industry	Number	4	4	12	8	12	5	14	10	7	15	91
	Total Value	96.5	116.8	1118.8	262.1	650.5	0.0	777.6	122.8	559.1	2646.8	6351.0
	Ave Value	96.5	58.4	223.8	65.5	72.3	0.0	194.4	40.9	139.8	264.7	151.2
<b>Industry</b>												
Banking	Number	7	18	37	23	36	25	21	18	28	35	248
	Total Value	2535.6	5706.6	2095.3	3140.2	3474.1	1058.7	1558.7	5456.0	31946.2	24080.3	81051.7
	Ave Value	633.9	815.2	261.9	392.5	315.8	176.5	194.8	606.2	1774.8	1416.5	844.3
Insurance	Number	3	7	6	5	10	3	7	7	3	3	54
	Total Value	366.1	473.3	408.7	3148.4	1468.6	0.0	720.6	7043.9	66.8	10218.6	23915.0
	Ave Value	183.1	236.7	204.4	1574.2	244.8	0.0	240.2	1006.3	33.4	5109.3	854.1
Securities/ Other	Number	3	13	14	4	7	5	8	6	3	9	72
	Total Value	96.5	100.7	1119.9	8.8	318.7	15.4	36.8	88.2	1998.4	1621.6	5405.0
	Ave Value	96.5	16.8	224.0	8.8	159.4	15.4	12.3	44.1	666.1	405.4	193.0
<b>Total</b>	Number	13	38	57	32	53	33	36	31	34	47	374
	Total Value	2998.2	6280.6	3623.9	6297.4	5261.4	1074.1	2316.1	12588.1	34011.4	35920.5	110371.7
	Ave Value	428.3	418.7	241.6	572.5	276.9	153.4	165.4	699.3	1478.8	1561.8	726.1
	GDP Value/GDP	1105131 0.27%	1163743 0.54%	1236492 0.29%	995684 0.63%	1026576 0.51%	1097756 0.10%	1233298 0.19%	1165163 1.08%	1192002 2.85%	1171635 3.07%	11387480 0.97%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	5	15	28	16	28	19	12	11	22	25	181
Within industry	Total Value	2535.6	5668.1	2054.6	2617.2	3359.5	1058.7	997.7	5055.6	31736.9	22937.3	78021.2
	Ave Value	633.9	944.7	293.5	523.4	419.9	176.5	166.3	722.2	1983.6	2085.2	1026.6
Within border/	Number	2	2	3	5	5	4	8	5	4	5	43
Cross industry	Total Value	0.0	0.0	0.0	243.2	114.6	0.0	561.0	34.6	209.3	678.7	1841.4
	Ave Value	0.0	0.0	0.0	121.6	38.2	0.0	280.5	34.6	104.7	169.7	131.5
Cross border/	Number	0	0	5	2	3	2	1	1	2	4	20
Within industry	Total Value	0.0	0.0	40.7	279.8	0.0	0.0	0.0	365.8	0.0	156.8	843.1
	Ave Value	0.0	0.0	40.7	279.8	0.0	0.0	0.0	365.8	0.0	156.8	210.8
Cross border/	Number	0	1	1	0	0	0	0	1	0	1	4
Cross industry	Total Value	0.0	38.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	307.5	346.0
	Ave Value	0.0	38.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	307.5	173.0
<b>Insurance</b>												
Within border/	Number	2	2	3	3	2	0	6	1	0	1	20
Within industry	Total Value	81.1	473.3	0.0	3138.3	86.9	0.0	508.4	370.0	0.0	10179.6	14837.6
	Ave Value	81.1	236.7	0.0	3138.3	86.9	0.0	254.2	370.0	0.0	10179.6	1648.6
Within border/	Number	0	0	0	2	3	0	1	0	1	2	9
Cross industry	Total Value	0.0	0.0	0.0	10.1	157.3	0.0	212.2	0.0	0.0	39.0	418.6
	Ave Value	0.0	0.0	0.0	10.1	52.4	0.0	212.2	0.0	0.0	39.0	69.8
Cross border/	Number	1	5	2	0	4	3	0	6	2	0	23
Within industry	Total Value	285.0	0.0	407.7	0.0	1164.5	0.0	0.0	6673.9	66.8	0.0	8597.9
	Ave Value	285.0	0.0	407.7	0.0	1164.5	0.0	0.0	1112.3	33.4	0.0	781.6
Cross border/	Number	0	0	1	0	1	0	0	0	0	0	2
Cross industry	Total Value	0.0	0.0	1.0	0.0	59.9	0.0	0.0	0.0	0.0	0.0	60.9
	Ave Value	0.0	0.0	1.0	0.0	59.9	0.0	0.0	0.0	0.0	0.0	30.5
<b>Securities/ Other</b>												
Within border/	Number	0	11	6	1	4	2	2	2	0	1	29
Within industry	Total Value	0.0	22.4	2.1	0.0	0.0	15.4	26.0	0.0	0.0	0.0	65.9
	Ave Value	0.0	4.5	2.1	0.0	0.0	15.4	26.0	0.0	0.0	0.0	8.2
Within border/	Number	2	1	6	1	3	1	5	3	1	6	29
Cross industry	Total Value	96.5	78.3	256.7	8.8	318.7	0.0	4.4	39.2	348.6	539.6	1690.8
	Ave Value	96.5	78.3	85.6	8.8	159.4	0.0	4.4	39.2	348.6	179.9	120.8
Cross border/	Number	1	1	1	2	0	2	1	0	1	1	10
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	1648.6	0.0	1655.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0	1648.6	0.0	827.5
Cross border/	Number	0	0	1	0	0	0	0	1	1	1	4
Cross industry	Total Value	0.0	0.0	861.1	0.0	0.0	0.0	0.0	49.0	1.2	1082.0	1993.3
	Ave Value	0.0	0.0	861.1	0.0	0.0	0.0	0.0	49.0	1.2	1082.0	498.3
<b>Total</b>	Number	13	38	57	32	53	33	36	31	34	47	374
	Total Value	2998.2	6280.6	3623.9	6297.4	5261.4	1074.1	2316.1	12588.1	34011.4	35920.5	110371.7
	Ave Value	428.3	418.7	241.6	572.5	276.9	153.4	165.4	699.3	1478.8	1561.8	726.1

Source: Thomson Financial, SDC Platinum.

Table A.13

**Country: Netherlands**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	3	23	18	17	9	2	7	5	2	5	91
Within industry	Total Value	53.5	13.3	0.0	358.9	0.0	0.0	101.2	0.0	0.0	1299.8	1826.7
	Ave Value	53.5	13.3	0.0	179.5	0.0	0.0	50.6	0.0	0.0	1299.8	261.0
Within border/	Number	5	2	4	2	3	5	2	2	3	2	30
Cross industry	Total Value	9871.6	0.0	0.0	57.8	0.0	0.2	282.0	37.6	2036.3	1000.4	13285.9
	Ave Value	4935.8	0.0	0.0	57.8	0.0	0.2	282.0	37.6	2036.3	500.2	1476.2
Cross border/	Number	4	2	0	2	2	3	6	2	4	3	28
Within industry	Total Value	78.1	185.4	0.0	3035.2	0.0	731.1	266.1	47.0	326.1	0.0	4669.0
	Ave Value	78.1	185.4	0.0	3035.2	0.0	731.1	133.1	47.0	108.7	0.0	466.9
Cross border/	Number	1	3	0	0	1	0	1	2	2	0	10
Cross industry	Total Value	18.5	81.6	0.0	0.0	0.0	0.0	0.0	1.9	65.6	0.0	167.6
	Ave Value	18.5	40.8	0.0	0.0	0.0	0.0	0.0	1.9	65.6	0.0	33.5
<b>Deal type</b>												
Within border	Number	8	25	22	19	12	7	9	7	5	7	121
	Total Value	9925.1	13.3	0.0	416.7	0.0	0.2	383.2	37.6	2036.3	2300.2	15112.6
	Ave Value	3308.4	13.3	0.0	138.9	0.0	0.2	127.7	37.6	2036.3	766.7	944.5
Cross border	Number	5	5	0	2	3	3	7	4	6	3	38
	Total Value	96.6	267.0	0.0	3035.2	0.0	731.1	266.1	48.9	391.7	0.0	4836.6
	Ave Value	48.3	89.0	0.0	3035.2	0.0	731.1	133.1	24.5	97.9	0.0	322.4
<b>Deal type</b>												
Within industry	Number	7	25	18	19	11	5	13	7	6	8	119
	Total Value	131.6	198.7	0.0	3394.1	0.0	731.1	367.3	47.0	326.1	1299.8	6495.7
	Ave Value	65.8	99.4	0.0	1131.4	0.0	731.1	91.8	47.0	108.7	1299.8	382.1
Cross industry	Number	6	5	4	2	4	5	3	4	5	2	40
	Total Value	9890.1	81.6	0.0	57.8	0.0	0.2	282.0	39.5	2101.9	1000.4	13453.5
	Ave Value	3296.7	40.8	0.0	57.8	0.0	0.2	282.0	19.8	1051.0	500.2	961.0
<b>Industry</b>	Number	7	10	4	4	3	3	3	5	4	1	44
	Total Value	9949.7	81.6	0.0	109.6	0.0	731.3	0.0	84.6	2078.6	1299.8	14335.2
	Ave Value	3316.6	40.8	0.0	54.8	0.0	365.7	0.0	42.3	692.9	1299.8	955.7
Insurance	Number	4	10	8	7	5	3	4	3	4	1	49
	Total Value	53.5	185.4	0.0	3035.2	0.0	0.0	21.1	0.0	283.8	0.0	3579.0
	Ave Value	53.5	185.4	0.0	3035.2	0.0	0.0	21.1	0.0	283.8	0.0	715.8
Securities/	Number	2	10	10	10	7	4	9	3	3	8	66
Other	Total Value	18.5	13.3	0.0	307.1	0.0	0.0	628.2	1.9	65.6	1000.4	2035.0
	Ave Value	18.5	13.3	0.0	307.1	0.0	0.0	157.1	1.9	65.6	500.2	185.0
<b>Total</b>	Number	13	30	22	21	15	10	16	11	11	10	159
	Total Value	10021.7	280.3	0.0	3451.9	0.0	731.3	649.3	86.5	2428.0	2300.2	19949.2
	Ave Value	2004.3	70.1	0.0	863.0	0.0	365.7	129.9	28.8	485.6	766.7	643.5
	GDP	296315	302903	335803	326033	352361	415052	411850	376818	391875	393887	3602897
	Value/GDP	3.38%	0.09%	0.00%	1.06%	0.00%	0.18%	0.16%	0.02%	0.62%	0.58%	0.55%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	1	5	2	2	1	0	2	2	1	1	17
Within industry	Total Value	0.0	0.0	0.0	51.8	0.0	0.0	0.0	0.0	0.0	1299.8	1351.6
	Ave Value	0.0	0.0	0.0	51.8	0.0	0.0	0.0	0.0	0.0	1299.8	675.8
Within border/	Number	4	2	2	2	1	1	1	1	1	0	15
Cross industry	Total Value	9871.6	0.0	0.0	57.8	0.0	0.2	0.0	37.6	2036.3	0.0	12003.5
	Ave Value	4935.8	0.0	0.0	57.8	0.0	0.2	0.0	37.6	2036.3	0.0	2000.6
Cross border/	Number	2	1	0	0	0	2	0	2	2	0	9
Within industry	Total Value	78.1	0.0	0.0	0.0	0.0	731.1	0.0	47.0	42.3	0.0	898.5
	Ave Value	78.1	0.0	0.0	0.0	0.0	731.1	0.0	47.0	21.2	0.0	179.7
Cross border/	Number	0	2	0	0	1	0	0	0	0	0	3
Cross industry	Total Value	0.0	81.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.6
	Ave Value	0.0	40.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.8
<b>Insurance</b>												
Within border/	Number	2	9	7	5	2	1	1	2	1	0	30
Within industry	Total Value	53.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.5
	Ave Value	53.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.5
Within border/	Number	1	0	1	0	1	1	0	0	0	0	4
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross border/	Number	1	1	0	2	2	1	2	0	2	1	12
Within industry	Total Value	0.0	185.4	0.0	3035.2	0.0	0.0	21.1	0.0	283.8	0.0	3525.5
	Ave Value	0.0	185.4	0.0	3035.2	0.0	0.0	21.1	0.0	283.8	0.0	881.4
Cross border/	Number	0	0	0	0	0	0	1	1	1	0	3
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Securities/ Other</b>												
Within border/	Number	0	9	9	10	6	1	4	1	0	4	44
Within industry	Total Value	0.0	13.3	0.0	307.1	0.0	0.0	101.2	0.0	0.0	0.0	421.6
	Ave Value	0.0	13.3	0.0	307.1	0.0	0.0	50.6	0.0	0.0	0.0	105.4
Within border/	Number	0	0	1	0	1	3	1	1	2	2	11
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	282.0	0.0	0.0	1000.4	1282.4
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	282.0	0.0	0.0	500.2	427.5
Cross border/	Number	1	0	0	0	0	0	4	0	0	2	7
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	245.0	0.0	0.0	0.0	245.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	245.0	0.0	0.0	0.0	245.0
Cross border/	Number	1	1	0	0	0	0	0	1	1	0	4
Cross industry	Total Value	18.5	0.0	0.0	0.0	0.0	0.0	0.0	1.9	65.6	0.0	86.0
	Ave Value	18.5	0.0	0.0	0.0	0.0	0.0	0.0	1.9	65.6	0.0	28.7
<b>Total</b>												
	Number	13	30	22	21	15	10	16	11	11	10	159
	Total Value	10021.7	280.3	0.0	3451.9	0.0	731.3	649.3	86.5	2428.0	2300.2	19949.2
	Ave Value	2004.3	70.1	0.0	863.0	0.0	365.7	129.9	28.8	485.6	766.7	643.5

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	3	23	18	17	9	2	7	5	2	5	91
Within industry	Total Value	53.5	13.3	0.0	358.9	0.0	0.0	101.2	0.0	0.0	1299.8	1826.7
	Ave Value	53.5	13.3	0.0	179.5	0.0	0.0	50.6	0.0	0.0	1299.8	261.0
Within border/	Number	5	3	4	2	3	5	2	2	3	2	31
Cross industry	Total Value	9871.6	555.5	0.0	57.8	0.0	0.2	282.0	37.6	2036.3	1000.4	13841.4
	Ave Value	4935.8	555.5	0.0	57.8	0.0	0.2	282.0	37.6	2036.3	500.2	1384.1
Cross border/	Number	2	3	2	7	5	8	10	7	7	8	59
Within industry	Total Value	2305.5	0.0	284.9	929.8	2.3	382.7	2292.6	2746.4	1099.7	10954.8	20998.7
	Ave Value	1152.8	0.0	142.5	232.5	1.2	127.6	764.2	1373.2	219.9	3651.6	807.6
Cross border/	Number	2	3	1	3	4	4	3	1	4	3	28
Cross industry	Total Value	0.0	125.3	0.0	537.0	93.4	291.3	323.7	4516.0	0.0	2348.1	8234.8
	Ave Value	0.0	62.7	0.0	268.5	93.4	291.3	323.7	4516.0	0.0	1174.1	823.5
<b>Deal type</b>												
Within border	Number	8	26	22	19	12	7	9	7	5	7	122
	Total Value	9925.1	568.8	0.0	416.7	0.0	0.2	383.2	37.6	2036.3	2300.2	15668.1
	Ave Value	3308.4	284.4	0.0	138.9	0.0	0.2	127.7	37.6	2036.3	766.7	921.7
Cross border	Number	4	6	3	10	9	12	13	8	11	11	87
	Total Value	2305.5	125.3	284.9	1466.8	95.7	674.0	2616.3	7262.4	1099.7	13302.9	29233.5
	Ave Value	1152.8	62.7	142.5	244.5	31.9	168.5	654.1	2420.8	219.9	2660.6	812.0
<b>Deal type</b>												
Within industry	Number	5	26	20	24	14	10	17	12	9	13	150
	Total Value	2359.0	13.3	284.9	1288.7	2.3	382.7	2393.8	2746.4	1099.7	12254.6	22825.4
	Ave Value	786.3	13.3	142.5	214.8	1.2	127.6	478.8	1373.2	219.9	3063.7	691.7
Cross industry	Number	7	6	5	5	7	9	5	3	7	5	59
	Total Value	9871.6	680.8	0.0	594.8	93.4	291.5	605.7	4553.6	2036.3	3348.5	22076.2
	Ave Value	4935.8	226.9	0.0	198.3	93.4	145.8	302.9	2276.8	2036.3	837.1	1103.8
<b>Industry</b>												
Banking	Number	3	8	5	6	7	9	8	4	6	5	61
	Total Value	35.7	578.6	0.0	670.3	0.0	9.1	2574.6	0.0	366.6	2339.3	6574.2
	Ave Value	35.7	289.3	0.0	223.4	0.0	9.1	643.7	0.0	122.2	584.8	346.0
Insurance	Number	6	14	9	10	3	5	5	6	5	3	66
	Total Value	9780.8	102.2	284.9	794.8	0.0	145.7	0.0	7262.4	583.1	13128.4	32082.3
	Ave Value	3260.3	102.2	142.5	198.7	0.0	145.7	0.0	2420.8	583.1	6564.2	1887.2
Securities/	Number	3	10	11	13	11	5	9	5	5	10	82
Other	Total Value	2414.1	13.3	0.0	418.4	95.7	519.4	424.9	37.6	2186.3	135.4	6245.1
	Ave Value	2414.1	13.3	0.0	209.2	47.9	173.1	141.6	37.6	1093.2	67.7	367.4
<b>Total</b>	Number	12	32	25	29	21	19	22	15	16	18	209
	Total Value	12230.6	694.1	284.9	1883.5	95.7	674.2	2999.5	7300.0	3136.0	15603.1	44901.6
	Ave Value	2446.1	173.5	142.5	209.3	31.9	134.8	428.5	1825.0	522.7	1950.4	847.2
	GDP	296315	302903	335803	326033	352361	415052	411850	376818	391875	393887	3602897
	Value/GDP	4.13%	0.23%	0.08%	0.58%	0.03%	0.16%	0.73%	1.94%	0.80%	3.96%	1.25%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	1	5	2	2	1	0	2	2	1	1	17
Within industry	Total Value	0.0	0.0	0.0	51.8	0.0	0.0	0.0	0.0	0.0	1299.8	1351.6
	Ave Value	0.0	0.0	0.0	51.8	0.0	0.0	0.0	0.0	0.0	1299.8	675.8
Within border/	Number	1	1	2	0	2	1	1	1	1	2	12
Cross industry	Total Value	0.0	555.5	0.0	0.0	0.0	0.0	282.0	0.0	0.0	1000.4	1837.9
	Ave Value	0.0	555.5	0.0	0.0	0.0	0.0	282.0	0.0	0.0	500.2	459.5
Cross border/	Number	1	1	0	4	1	5	4	1	3	1	21
Within industry	Total Value	35.7	0.0	0.0	618.5	0.0	9.1	2292.6	0.0	366.6	39.1	3361.6
	Ave Value	35.7	0.0	0.0	309.3	0.0	9.1	764.2	0.0	122.2	39.1	280.1
Cross border/	Number	0	1	1	0	3	3	1	0	1	1	11
Cross industry	Total Value	0.0	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.1
	Ave Value	0.0	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.1
<b>Insurance</b>												
Within border/	Number	2	9	7	5	2	1	1	2	1	0	30
Within industry	Total Value	53.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.5
	Ave Value	53.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.5
Within border/	Number	3	1	0	1	0	3	1	0	1	0	10
Cross industry	Total Value	7457.5	0.0	0.0	57.8	0.0	0.0	0.0	0.0	0.0	0.0	7515.3
	Ave Value	7457.5	0.0	0.0	57.8	0.0	0.0	0.0	0.0	0.0	0.0	3757.7
Cross border/	Number	1	2	2	2	1	1	3	3	1	2	18
Within industry	Total Value	2269.8	0.0	284.9	200.0	0.0	145.7	0.0	2746.4	583.1	10790.7	17020.6
	Ave Value	2269.8	0.0	142.5	200.0	0.0	145.7	0.0	1373.2	583.1	10790.7	1891.2
Cross border/	Number	0	2	0	2	0	0	0	1	2	1	8
Cross industry	Total Value	0.0	102.2	0.0	537.0	0.0	0.0	0.0	4516.0	0.0	2337.7	7492.9
	Ave Value	0.0	102.2	0.0	268.5	0.0	0.0	0.0	4516.0	0.0	2337.7	1498.6
<b>Securities/ Other</b>												
Within border/	Number	0	9	9	10	6	1	4	1	0	4	44
Within industry	Total Value	0.0	13.3	0.0	307.1	0.0	0.0	101.2	0.0	0.0	0.0	421.6
	Ave Value	0.0	13.3	0.0	307.1	0.0	0.0	50.6	0.0	0.0	0.0	105.4
Within border/	Number	1	1	2	1	1	1	0	1	1	0	9
Cross industry	Total Value	2414.1	0.0	0.0	0.0	0.0	0.2	0.0	37.6	2036.3	0.0	4488.2
	Ave Value	2414.1	0.0	0.0	0.0	0.0	0.2	0.0	37.6	2036.3	0.0	1122.1
Cross border/	Number	0	0	0	1	3	2	3	3	3	5	20
Within industry	Total Value	0.0	0.0	0.0	111.3	2.3	227.9	0.0	0.0	150.0	125.0	616.5
	Ave Value	0.0	0.0	0.0	111.3	2.3	227.9	0.0	0.0	150.0	125.0	123.3
Cross border/	Number	2	0	0	1	1	1	2	0	1	1	9
Cross industry	Total Value	0.0	0.0	0.0	0.0	93.4	291.3	323.7	0.0	0.0	10.4	718.8
	Ave Value	0.0	0.0	0.0	0.0	93.4	291.3	323.7	0.0	0.0	10.4	179.7
<b>Total</b>	Number	12	32	25	29	21	19	22	15	16	18	209
	Total Value	12230.6	694.1	284.9	1883.5	95.7	674.2	2999.5	7300.0	3136.0	15603.1	44901.6
	Ave Value	2446.1	173.5	142.5	209.3	31.9	134.8	428.5	1825.0	522.7	1950.4	847.2

Source: Thomson Financial, SDC Platinum.

Table A.14												
Country: Spain												
All values in USD millions												
Deals classified by country and sector of target firm												
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	3	14	23	6	3	4	7	17	17	16	110
Within industry	Total Value	21.3	1164.3	991.1	172.1	2287.1	928.1	506.5	118.0	4131.7	23762.4	34082.6
	Ave Value	10.7	291.1	247.8	57.4	2287.1	309.4	126.6	14.8	590.2	3960.4	811.5
Within border/	Number	0	3	4	1	1	3	1	3	1	3	20
Cross industry	Total Value	0.0	555.5	148.9	102.8	0.0	13.4	0.0	30.5	50.6	248.8	1150.5
	Ave Value	0.0	555.5	49.6	102.8	0.0	13.4	0.0	30.5	50.6	248.8	127.8
Cross border/	Number	4	5	7	3	4	3	3	4	5	8	46
Within industry	Total Value	336.3	38.2	383.4	0.0	469.7	0.0	0.0	359.5	59.5	608.3	2254.9
	Ave Value	336.3	38.2	95.9	0.0	234.9	0.0	0.0	179.8	29.8	101.4	125.3
Cross border/	Number	1	0	2	3	1	0	0	0	2	3	12
Cross industry	Total Value	410.9	0.0	1.0	11.1	93.4	0.0	0.0	0.0	109.5	33.0	658.9
	Ave Value	410.9	0.0	1.0	11.1	93.4	0.0	0.0	0.0	54.8	33.0	94.1
<b>Deal type</b>												
Within border	Number	3	17	27	7	4	7	8	20	18	19	130
	Total Value	21.3	1719.8	1140.0	274.9	2287.1	941.5	506.5	148.5	4182.3	24011.2	35233.1
	Ave Value	10.7	344.0	162.9	68.7	2287.1	235.4	126.6	16.5	522.8	3430.2	690.8
Cross border	Number	5	5	9	6	5	3	3	4	7	11	58
	Total Value	747.2	38.2	384.4	11.1	563.1	0.0	0.0	359.5	169.0	641.3	2913.8
	Ave Value	373.6	38.2	76.9	11.1	187.7	0.0	0.0	179.8	42.3	91.6	116.6
<b>Deal type</b>												
Within industry	Number	7	19	30	9	7	7	10	21	22	24	156
	Total Value	357.6	1202.5	1374.5	172.1	2756.8	928.1	506.5	477.5	4191.2	24370.7	36337.5
	Ave Value	119.2	240.5	171.8	57.4	918.9	309.4	126.6	47.8	465.7	2030.9	605.6
Cross industry	Number	1	3	6	4	2	3	1	3	3	6	32
	Total Value	410.9	555.5	149.9	113.9	93.4	13.4	0.0	30.5	160.1	281.8	1809.4
	Ave Value	410.9	555.5	37.5	57.0	93.4	13.4	0.0	30.5	53.4	140.9	113.1
<b>Industry</b>												
Banking	Number	2	14	18	8	6	6	6	6	11	12	89
	Total Value	410.9	1202.5	384.6	271.2	2574.6	928.1	477.5	413.7	4203.5	23807.0	34673.6
	Ave Value	410.9	240.5	64.1	90.4	858.2	309.4	159.2	103.4	467.1	3401.0	788.0
Insurance	Number	3	6	11	4	3	4	5	7	12	9	64
	Total Value	348.4	555.5	1110.0	14.8	275.6	13.4	29.0	38.7	101.6	130.5	2617.5
	Ave Value	174.2	555.5	222.0	7.4	275.6	13.4	29.0	9.7	50.8	65.3	124.6
Securities/	Number	3	2	7	1	0	0	0	11	2	9	35
Other	Total Value	9.2	0.0	29.8	0.0	0.0	0.0	0.0	55.6	46.2	715.0	855.8
	Ave Value	9.2	0.0	29.8	0.0	0.0	0.0	0.0	18.5	46.2	143.0	77.8
<b>Total</b>	Number	8	22	36	13	9	10	11	24	25	30	188
	Total Value	768.5	1758.0	1524.4	286.0	2850.2	941.5	506.5	508.0	4351.3	24652.5	38146.9
	Ave Value	192.1	293.0	127.0	57.2	712.6	235.4	126.6	46.2	362.6	1760.9	501.9
	GDP Value/GDP	515624	552741	604403	501850	506180	584887	608914	558806	583037	596094	5612537
		0.15%	0.32%	0.25%	0.06%	0.56%	0.16%	0.08%	0.09%	0.75%	4.14%	0.68%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/ Within industry	Number	0	12	11	4	3	4	5	3	8	8	58
	Total Value	0.0	1164.3	234.7	168.4	2287.1	928.1	477.5	54.2	4131.7	23756.3	33202.3
	Ave Value	0.0	291.1	117.4	84.2	2287.1	309.4	159.2	27.1	590.2	4751.3	1144.9
Within border/ Cross industry	Number	0	1	4	1	1	0	1	1	0	1	10
	Total Value	0.0	0.0	148.9	102.8	0.0	0.0	0.0	0.0	0.0	0.0	251.7
	Ave Value	0.0	0.0	49.6	102.8	0.0	0.0	0.0	0.0	0.0	0.0	62.9
Cross border/ Within industry	Number	1	1	2	2	1	2	0	2	2	2	15
	Total Value	0.0	38.2	0.0	0.0	194.1	0.0	0.0	359.5	8.5	50.7	651.0
	Ave Value	0.0	38.2	0.0	0.0	194.1	0.0	0.0	179.8	8.5	25.4	93.0
Cross border/ Cross industry	Number	1	0	1	1	1	0	0	0	1	1	6
	Total Value	410.9	0.0	1.0	0.0	93.4	0.0	0.0	0.0	63.3	0.0	568.6
	Ave Value	410.9	0.0	1.0	0.0	93.4	0.0	0.0	0.0	63.3	0.0	142.2
<b>Insurance</b>												
Within border/ Within industry	Number	1	1	6	1	0	0	2	5	8	5	29
	Total Value	12.1	0.0	726.6	3.7	0.0	0.0	29.0	38.7	0.0	6.1	816.2
	Ave Value	12.1	0.0	726.6	3.7	0.0	0.0	29.0	9.7	0.0	6.1	90.7
Within border/ Cross industry	Number	0	1	0	0	0	3	0	0	1	0	5
	Total Value	0.0	555.5	0.0	0.0	0.0	13.4	0.0	0.0	50.6	0.0	619.5
	Ave Value	0.0	555.5	0.0	0.0	0.0	13.4	0.0	0.0	50.6	0.0	206.5
Cross border/ Within industry	Number	2	4	5	1	3	1	3	2	3	3	27
	Total Value	336.3	0.0	383.4	0.0	275.6	0.0	0.0	0.0	51.0	124.4	1170.7
	Ave Value	336.3	0.0	95.9	0.0	275.6	0.0	0.0	0.0	51.0	124.4	146.3
Cross border/ Cross industry	Number	0	0	0	2	0	0	0	0	0	1	3
	Total Value	0.0	0.0	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	11.1
	Ave Value	0.0	0.0	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	11.1
<b>Securities/ Other</b>												
Within border/ Within industry	Number	2	1	6	1	0	0	0	9	1	3	23
	Total Value	9.2	0.0	29.8	0.0	0.0	0.0	0.0	25.1	0.0	0.0	64.1
	Ave Value	9.2	0.0	29.8	0.0	0.0	0.0	0.0	12.6	0.0	0.0	16.0
Within border/ Cross industry	Number	0	1	0	0	0	0	0	2	0	2	5
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0	248.8	279.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0	248.8	139.7
Cross border/ Within industry	Number	1	0	0	0	0	0	0	0	0	3	4
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	433.2	433.2
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	144.4	144.4
Cross border/ Cross industry	Number	0	0	1	0	0	0	0	0	1	1	3
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.2	33.0	79.2
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.2	33.0	39.6
<b>Total</b>												
	Number	8	22	36	13	9	10	11	24	25	30	188
	Total Value	768.5	1758.0	1524.4	286.0	2850.2	941.5	506.5	508.0	4351.3	24652.5	38146.9
	Ave Value	192.1	293.0	127.0	57.2	712.6	235.4	126.6	46.2	362.6	1760.9	501.9



**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal Type</b>												
Within border/ Within industry	Number Total Value Ave Value	3 21.3 10.7	14 1164.3 291.1	23 991.1 247.8	6 172.1 57.4	3 2287.1 2287.1	4 928.1 309.4	7 506.5 126.6	17 118.0 14.8	17 4131.7 590.2	16 23762.4 3960.4	110 34082.6 811.5
Within border/ Cross industry	Number Total Value Ave Value	0 0.0 0.0	2 0.0 0.0	4 148.9 49.6	1 102.8 102.8	1 0.0 0.0	3 13.4 13.4	1 0.0 0.0	3 30.5 30.5	1 50.6 50.6	3 248.8 248.8	19 595.0 74.4
Cross border/ Within industry	Number Total Value Ave Value	2 0.0 0.0	6 0.0 0.0	1 72.7 72.7	0 0.0 0.0	3 0.0 0.0	5 534.9 178.3	6 427.6 106.9	4 32.6 16.3	8 1749.5 349.9	8 1880.7 470.2	43 4698.0 247.3
Cross border/ Cross industry	Number Total Value Ave Value	0 0.0 0.0	0 0.0 0.0	2 168.4 84.2	0 0.0 0.0	0 0.0 0.0	2 135.2 67.6	2 378.5 378.5	0 0.0 0.0	4 675.7 225.2	4 1886.6 471.7	14 3244.4 270.4
<b>Deal type</b>												
Within border	Number Total Value Ave Value	3 21.3 10.7	16 1164.3 291.1	27 1140.0 162.9	7 274.9 68.7	4 2287.1 2287.1	7 941.5 235.4	8 506.5 126.6	20 148.5 16.5	18 4182.3 522.8	19 24011.2 3430.2	129 34677.6 693.6
Cross border	Number Total Value Ave Value	2 0.0 0.0	6 0.0 0.0	3 241.1 80.4	0 0.0 0.0	3 0.0 0.0	7 670.1 134.0	8 806.1 161.2	4 32.6 16.3	12 2425.2 303.2	12 3767.3 470.9	57 7942.4 256.2
<b>Deal type</b>												
Within industry	Number Total Value Ave Value	5 21.3 10.7	20 1164.3 291.1	24 1063.8 212.8	6 172.1 57.4	6 2287.1 2287.1	9 1463.0 243.8	13 934.1 116.8	21 150.6 15.1	25 5881.2 490.1	24 25643.1 2564.3	153 38780.6 635.7
Cross industry	Number Total Value Ave Value	0 0.0 0.0	2 0.0 0.0	6 317.3 63.5	1 102.8 102.8	1 0.0 0.0	5 148.6 49.5	3 378.5 378.5	3 30.5 30.5	5 726.3 181.6	7 2135.4 427.1	33 3839.4 192.0
<b>Industry</b>												
Banking	Number Total Value Ave Value	2 0.0 0.0	14 1164.3 291.1	12 259.9 86.6	4 168.4 84.2	4 2287.1 2287.1	10 1450.3 290.1	9 1245.4 207.6	7 111.7 27.9	17 6556.9 437.1	19 27751.5 2134.7	98 40995.5 773.5
Insurance	Number Total Value Ave Value	1 12.1 12.1	6 0.0 0.0	7 799.3 399.7	1 3.7 3.7	2 0.0 0.0	1 12.7 12.7	6 67.2 22.4	6 38.7 9.7	10 0.0 0.0	7 6.1 6.1	47 939.8 72.3
Securities/ Other	Number Total Value Ave Value	2 9.2 9.2	2 0.0 0.0	11 321.9 64.4	2 102.8 102.8	1 0.0 0.0	3 148.6 49.5	1 0.0 0.0	11 30.7 10.2	3 50.6 50.6	5 20.9 20.9	41 684.7 45.6
<b>Total</b>	Number Total Value Ave Value  GDP Value/GDP	5 21.3 10.7  515624 0.00%	22 1164.3 291.1  552741 0.21%	30 1381.1 138.1  604403 0.23%	7 274.9 68.7  501850 0.05%	7 2287.1 2287.1  506180 0.45%	14 1611.6 179.1  584887 0.28%	16 1312.6 145.8  608914 0.22%	24 181.1 16.5  558806 0.03%	30 6607.5 413.0  583037 1.13%	31 27778.5 1851.9  596094 4.66%	186 42620.0 526.2  5612537 0.76%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	0	12	11	4	3	4	5	3	8	8	58
Within industry	Total Value	0.0	1164.3	234.7	168.4	2287.1	928.1	477.5	54.2	4131.7	23756.3	33202.3
	Ave Value	0.0	291.1	117.4	84.2	2287.1	309.4	159.2	27.1	590.2	4751.3	1144.9
Within border/	Number	0	1	0	0	0	2	0	2	0	2	7
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0	248.8	279.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.0	248.8	139.7
Cross border/	Number	2	1	0	0	1	4	2	2	6	5	23
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	522.2	389.4	27.0	1749.5	1859.8	4547.9
	Ave Value	0.0	0.0	0.0	0.0	0.0	261.1	194.7	27.0	349.9	619.9	349.8
Cross border/	Number	0	0	1	0	0	0	2	0	3	4	10
Cross industry	Total Value	0.0	0.0	25.2	0.0	0.0	0.0	378.5	0.0	675.7	1886.6	2966.0
	Ave Value	0.0	0.0	25.2	0.0	0.0	0.0	378.5	0.0	225.2	471.7	329.6
<b>Insurance</b>												
Within border/	Number	1	1	6	1	0	0	2	5	8	5	29
Within industry	Total Value	12.1	0.0	726.6	3.7	0.0	0.0	29.0	38.7	0.0	6.1	816.2
	Ave Value	12.1	0.0	726.6	3.7	0.0	0.0	29.0	9.7	0.0	6.1	90.7
Within border/	Number	0	0	0	0	0	0	0	0	0	0	0
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross border/	Number	0	5	1	0	2	1	4	1	2	2	18
Within industry	Total Value	0.0	0.0	72.7	0.0	0.0	12.7	38.2	0.0	0.0	0.0	123.6
	Ave Value	0.0	0.0	72.7	0.0	0.0	12.7	19.1	0.0	0.0	0.0	30.9
Cross border/	Number	0	0	0	0	0	0	0	0	0	0	0
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Securities/ Other</b>												
Within border/	Number	2	1	6	1	0	0	0	9	1	3	23
Within industry	Total Value	9.2	0.0	29.8	0.0	0.0	0.0	0.0	25.1	0.0	0.0	64.1
	Ave Value	9.2	0.0	29.8	0.0	0.0	0.0	0.0	12.6	0.0	0.0	16.0
Within border/	Number	0	1	4	1	1	1	1	1	1	1	12
Cross industry	Total Value	0.0	0.0	148.9	102.8	0.0	13.4	0.0	0.0	50.6	0.0	315.7
	Ave Value	0.0	0.0	49.6	102.8	0.0	13.4	0.0	0.0	50.6	0.0	52.6
Cross border/	Number	0	0	0	0	0	0	0	1	0	1	2
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.0	20.9	26.5
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.6	0.0	20.9	13.3
Cross border/	Number	0	0	1	0	0	2	0	0	1	0	4
Cross industry	Total Value	0.0	0.0	143.2	0.0	0.0	135.2	0.0	0.0	0.0	0.0	278.4
	Ave Value	0.0	0.0	143.2	0.0	0.0	67.6	0.0	0.0	0.0	0.0	92.8
<b>Total</b>	Number	5	22	30	7	7	14	16	24	30	31	186
	Total Value	21.3	1164.3	1381.1	274.9	2287.1	1611.6	1312.6	181.1	6607.5	27778.5	42620.0
	Ave Value	10.7	291.1	138.1	68.7	2287.1	179.1	145.8	16.5	413.0	1851.9	526.2

Source: Thomson Financial, SDC Platinum.

Table A.15

**Country: Sweden**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	1	8	9	8	8	4	10	8	6	5	67
Within industry	Total Value	0.0	0.0	135.2	24.4	539.6	182.0	3450.4	2723.7	1250.2	288.0	8593.5
	Ave Value	0.0	0.0	67.6	12.2	134.9	60.7	862.6	389.1	250.0	144.0	296.3
Within border/	Number	1	7	4	3	3	1	4	2	1	2	28
Cross industry	Total Value	0.0	1904.5	234.1	211.9	409.3	172.5	208.4	2262.3	0.0	34.3	5437.3
	Ave Value	0.0	476.1	234.1	211.9	204.7	172.5	69.5	1131.2	0.0	34.3	362.5
Cross border/	Number	1	0	2	0	2	2	0	2	2	2	13
Within industry	Total Value	0.0	0.0	0.0	0.0	0.3	0.0	0.0	284.5	6.4	490.1	781.3
	Ave Value	0.0	0.0	0.0	0.0	0.3	0.0	0.0	284.5	3.2	245.1	130.2
Cross border/	Number	0	0	0	0	1	1	0	2	0	1	5
Cross industry	Total Value	0.0	0.0	0.0	0.0	7.1	119.5	0.0	31.2	0.0	269.1	426.9
	Ave Value	0.0	0.0	0.0	0.0	7.1	119.5	0.0	15.6	0.0	269.1	85.4
<b>Deal type</b>												
Within border	Number	2	15	13	11	11	5	14	10	7	7	95
	Total Value	0.0	1904.5	369.3	236.3	948.9	354.5	3658.8	4986.0	1250.2	322.3	14030.8
	Ave Value	0.0	476.1	123.1	78.8	158.2	88.6	522.7	554.0	250.0	107.4	318.9
Cross border	Number	1	0	2	0	3	3	0	4	2	3	18
	Total Value	0.0	0.0	0.0	0.0	7.4	119.5	0.0	315.7	6.4	759.2	1208.2
	Ave Value	0.0	0.0	0.0	0.0	3.7	119.5	0.0	105.2	3.2	253.1	109.8
<b>Deal type</b>												
Within industry	Number	2	8	11	8	10	6	10	10	8	7	80
	Total Value	0.0	0.0	135.2	24.4	539.9	182.0	3450.4	3008.2	1256.6	778.1	9374.8
	Ave Value	0.0	0.0	67.6	12.2	108.0	60.7	862.6	376.0	179.5	194.5	267.9
Cross industry	Number	1	7	4	3	4	2	4	4	1	3	33
	Total Value	0.0	1904.5	234.1	211.9	416.4	292.0	208.4	2293.5	0.0	303.4	5864.2
	Ave Value	0.0	476.1	234.1	211.9	138.8	146.0	69.5	573.4	0.0	151.7	293.2
<b>Industry</b>												
Banking	Number	1	8	9	5	6	2	7	8	4	4	54
	Total Value	0.0	1864.1	234.1	0.0	435.6	155.9	3452.6	2814.5	822.4	908.5	10687.7
	Ave Value	0.0	621.4	117.1	0.0	108.9	78.0	863.2	469.1	274.1	227.1	381.7
Insurance	Number	2	1	2	0	0	2	1	1	2	0	11
	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	153.5	2204.2	425.6	0.0	2783.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	153.5	2204.2	212.8	0.0	695.8
Securities/	Number	0	6	4	6	8	4	6	5	3	6	48
Other	Total Value	0.0	40.4	135.2	236.3	520.7	318.1	52.7	283.0	8.6	173.0	1768.0
	Ave Value	0.0	40.4	135.2	78.8	130.2	106.0	26.4	56.6	4.3	86.5	76.9
<b>Total</b>	Number	3	15	15	11	14	8	14	14	9	10	113
	Total Value	0.0	1904.5	369.3	236.3	956.3	474.0	3658.8	5301.7	1256.6	1081.5	15239.0
	Ave Value	0.0	476.1	123.1	78.8	119.5	94.8	522.7	441.8	179.5	180.3	277.1
	GDP Value/GDP	238444	248486	256736	192684	207289	240682	261813	237474	237789	238579	2359974
		0.00%	0.77%	0.14%	0.12%	0.46%	0.20%	1.40%	2.23%	0.53%	0.45%	0.65%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	0	3	5	3	1	2	6	6	3	1	30
Within industry	Total Value	0.0	0.0	0.0	0.0	38.8	155.9	3449.4	2530.0	822.4	183.4	7179.9
	Ave Value	0.0	0.0	0.0	0.0	38.8	78.0	1149.8	506.0	274.1	183.4	448.7
Within border/	Number	1	5	4	2	2	0	1	0	1	1	17
Cross industry	Total Value	0.0	1864.1	234.1	0.0	389.4	0.0	3.2	0.0	0.0	34.3	2525.1
	Ave Value	0.0	621.4	234.1	0.0	389.4	0.0	3.2	0.0	0.0	34.3	360.7
Cross border/	Number	0	0	0	0	2	0	0	2	0	1	5
Within industry	Total Value	0.0	0.0	0.0	0.0	0.3	0.0	0.0	284.5	0.0	421.7	706.5
	Ave Value	0.0	0.0	0.0	0.0	0.3	0.0	0.0	284.5	0.0	421.7	235.5
Cross border/	Number	0	0	0	0	1	0	0	0	0	1	2
Cross industry	Total Value	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0	269.1	276.2
	Ave Value	0.0	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0	269.1	138.1
<b>Insurance</b>												
Within border/	Number	1	1	0	0	0	0	0	0	1	0	3
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	422.3	0.0	422.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	422.3	0.0	422.3
Within border/	Number	0	0	0	0	0	0	1	1	0	0	2
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	153.5	2204.2	0.0	0.0	2357.7
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	153.5	2204.2	0.0	0.0	1178.9
Cross border/	Number	1	0	2	0	0	2	0	0	1	0	6
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	3.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	3.3
Cross border/	Number	0	0	0	0	0	0	0	0	0	0	0
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Securities/ Other</b>												
Within border/	Number	0	4	4	5	7	2	4	2	2	4	34
Within industry	Total Value	0.0	0.0	135.2	24.4	500.8	26.1	1.0	193.7	5.5	104.6	991.3
	Ave Value	0.0	0.0	135.2	12.2	166.9	26.1	1.0	96.9	5.5	104.6	82.6
Within border/	Number	0	2	0	1	1	1	2	1	0	1	9
Cross industry	Total Value	0.0	40.4	0.0	211.9	19.9	172.5	51.7	58.1	0.0	0.0	554.5
	Ave Value	0.0	40.4	0.0	211.9	19.9	172.5	51.7	58.1	0.0	0.0	92.4
Cross border/	Number	0	0	0	0	0	0	0	0	1	1	2
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	68.4	71.5
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	68.4	35.8
Cross border/	Number	0	0	0	0	0	1	0	2	0	0	3
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	119.5	0.0	31.2	0.0	0.0	150.7
	Ave Value	0.0	0.0	0.0	0.0	0.0	119.5	0.0	15.6	0.0	0.0	50.2
<b>Total</b>												
	Number	3	15	15	11	14	8	14	14	9	10	113
	Total Value	0.0	1904.5	369.3	236.3	956.3	474.0	3658.8	5301.7	1256.6	1081.5	15239.0
	Ave Value	0.0	476.1	123.1	78.8	119.5	94.8	522.7	441.8	179.5	180.3	277.1

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within industry	Number	1	8	9	8	8	4	10	8	6	4	66
	Total Value	0.0	0.0	135.2	24.4	539.6	182.0	3450.4	2723.7	1250.2	288.0	8593.5
	Ave Value	0.0	0.0	67.6	12.2	134.9	60.7	862.6	389.1	250.0	144.0	296.3
Within border/ Cross industry	Number	1	7	4	3	3	1	4	2	1	2	28
	Total Value	0.0	1904.5	234.1	211.9	409.3	172.5	208.4	2262.3	0.0	34.3	5437.3
	Ave Value	0.0	476.1	234.1	211.9	204.7	172.5	69.5	1131.2	0.0	34.3	362.5
Cross border/ Within industry	Number	2	3	0	0	2	1	1	4	3	3	19
	Total Value	34.7	1.3	0.0	0.0	0.0	810.6	0.0	4292.0	67.2	4030.0	9235.8
	Ave Value	34.7	0.7	0.0	0.0	0.0	810.6	0.0	4292.0	22.4	2015.0	923.6
Cross border/ Cross industry	Number	1	3	0	0	0	0	0	1	0	6	11
	Total Value	808.4	43.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2714.1	3565.9
	Ave Value	808.4	21.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	678.5	509.4
<b>Deal type</b>												
Within border	Number	2	15	13	11	11	5	14	10	7	6	94
	Total Value	0.0	1904.5	369.3	236.3	948.9	354.5	3658.8	4986.0	1250.2	322.3	14030.8
	Ave Value	0.0	476.1	123.1	78.8	158.2	88.6	522.7	554.0	250.0	107.4	318.9
Cross border	Number	3	6	0	0	2	1	1	5	3	9	30
	Total Value	843.1	44.7	0.0	0.0	0.0	810.6	0.0	4292.0	67.2	6744.1	12801.7
	Ave Value	421.6	11.2	0.0	0.0	0.0	810.6	0.0	4292.0	22.4	1124.0	753.0
<b>Deal type</b>												
Within industry	Number	3	11	9	8	10	5	11	12	9	7	85
	Total Value	34.7	1.3	135.2	24.4	539.6	992.6	3450.4	7015.7	1317.4	4318.0	17829.3
	Ave Value	34.7	0.7	67.6	12.2	134.9	248.2	862.6	877.0	164.7	1079.5	457.2
Cross industry	Number	2	10	4	3	3	1	4	3	1	8	39
	Total Value	808.4	1947.9	234.1	211.9	409.3	172.5	208.4	2262.3	0.0	2748.4	9003.2
	Ave Value	808.4	324.7	234.1	211.9	204.7	172.5	69.5	1131.2	0.0	549.7	409.2
<b>Industry</b>												
Banking	Number	1	5	5	4	2	3	7	12	3	5	47
	Total Value	34.7	0.0	0.0	211.9	58.7	966.5	3501.1	9084.3	822.4	366.1	15045.7
	Ave Value	34.7	0.0	0.0	211.9	29.4	322.2	875.3	1135.5	274.1	183.1	601.8
Insurance	Number	3	5	2	1	1	1	1	1	3	1	19
	Total Value	808.4	81.3	234.1	0.0	0.0	172.5	0.0	0.0	486.4	3847.3	5630.0
	Ave Value	808.4	27.1	234.1	0.0	0.0	172.5	0.0	0.0	162.1	3847.3	563.0
Securities/ Other	Number	1	11	6	6	10	2	7	2	4	9	58
	Total Value	0.0	1867.9	135.2	24.4	890.2	26.1	157.7	193.7	8.6	2853.0	6156.8
	Ave Value	0.0	373.6	135.2	12.2	222.6	26.1	52.6	96.9	4.3	475.5	236.8
<b>Total</b>	Number	5	21	13	11	13	6	15	15	10	15	124
	Total Value	843.1	1949.2	369.3	236.3	948.9	1165.1	3658.8	9278.0	1317.4	7066.4	26832.5
	Ave Value	421.6	243.7	123.1	78.8	158.2	233.0	522.7	927.8	164.7	785.2	439.9
	GDP Value/GDP	238444 0.35%	248486 0.78%	256736 0.14%	192684 0.12%	207289 0.46%	240682 0.48%	261813 1.40%	237474 3.91%	237789 0.55%	238579 2.96%	2359974 1.14%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	0	3	5	3	1	2	6	6	3	1	30
Within industry	Total Value	0.0	0.0	0.0	0.0	38.8	155.9	3449.4	2530.0	822.4	183.4	7179.9
	Ave Value	0.0	0.0	0.0	0.0	38.8	78.0	1149.8	506.0	274.1	183.4	448.7
Within border/	Number	0	1	0	1	1	0	1	2	0	1	7
Cross industry	Total Value	0.0	0.0	0.0	211.9	19.9	0.0	51.7	2262.3	0.0	0.0	2545.8
	Ave Value	0.0	0.0	0.0	211.9	19.9	0.0	51.7	1131.2	0.0	0.0	509.2
Cross border/	Number	1	1	0	0	0	1	0	3	0	2	8
Within industry	Total Value	34.7	0.0	0.0	0.0	0.0	810.6	0.0	4292.0	0.0	182.7	5320.0
	Ave Value	34.7	0.0	0.0	0.0	0.0	810.6	0.0	4292.0	0.0	182.7	1330.0
Cross border/	Number	0	0	0	0	0	0	0	1	0	1	2
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Insurance</b>												
Within border/	Number	1	1	0	0	0	0	0	0	1	0	3
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	422.3	0.0	422.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	422.3	0.0	422.3
Within border/	Number	0	2	2	1	0	1	1	0	0	0	7
Cross industry	Total Value	0.0	40.4	234.1	0.0	0.0	172.5	0.0	0.0	0.0	0.0	447.0
	Ave Value	0.0	40.4	234.1	0.0	0.0	172.5	0.0	0.0	0.0	0.0	149.0
Cross border/	Number	1	1	0	0	1	0	0	1	2	1	7
Within industry	Total Value	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	64.1	3847.3	3911.9
	Ave Value	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	32.1	3847.3	978.0
Cross border/	Number	1	1	0	0	0	0	0	0	0	0	2
Cross industry	Total Value	808.4	40.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	848.8
	Ave Value	808.4	40.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	424.4
<b>Securities/ Other</b>												
Within border/	Number	0	4	4	5	7	2	4	2	2	3	33
Within industry	Total Value	0.0	0.0	135.2	24.4	500.8	26.1	1.0	193.7	5.5	104.6	991.3
	Ave Value	0.0	0.0	135.2	12.2	166.9	26.1	1.0	96.9	5.5	104.6	82.6
Within border/	Number	1	4	2	1	2	0	2	0	1	1	14
Cross industry	Total Value	0.0	1864.1	0.0	0.0	389.4	0.0	156.7	0.0	0.0	34.3	2444.5
	Ave Value	0.0	621.4	0.0	0.0	389.4	0.0	78.4	0.0	0.0	34.3	349.2
Cross border/	Number	0	1	0	0	1	0	1	0	1	0	4
Within industry	Total Value	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	3.9
	Ave Value	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	2.0
Cross border/	Number	0	2	0	0	0	0	0	0	0	5	7
Cross industry	Total Value	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2714.1	2717.1
	Ave Value	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	678.5	543.4
<b>Total</b>												
	Number	5	21	13	11	13	6	15	15	10	15	124
	Total Value	843.1	1949.2	369.3	236.3	948.9	1165.1	3658.8	9278.0	1317.4	7066.4	26832.5
	Ave Value	421.6	243.7	123.1	78.8	158.2	233.0	522.7	927.8	164.7	785.2	439.9

Source: Thomson Financial, SDC Platinum.

Table A.16

**Country: Switzerland**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	3	12	16	12	18	6	8	5	2	5	87
Within industry	Total Value	0.0	36.5	129.3	1356.5	1034.3	637.4	102.7	23036.5	0.0	95.2	26428.4
	Ave Value	0.0	36.5	32.3	339.1	129.3	318.7	34.2	7678.8	0.0	47.6	978.8
Within border/	Number	0	1	1	0	2	3	3	2	0	1	13
Cross industry	Total Value	0.0	0.0	0.0	0.0	61.0	0.0	0.0	9661.7	0.0	943.8	10666.5
	Ave Value	0.0	0.0	0.0	0.0	61.0	0.0	0.0	9661.7	0.0	943.8	3555.5
Cross border/	Number	4	1	1	2	3	5	7	6	4	6	39
Within industry	Total Value	104.6	0.0	0.0	0.0	1164.5	48.9	0.2	0.0	0.0	0.0	1318.2
	Ave Value	104.6	0.0	0.0	0.0	1164.5	48.9	0.2	0.0	0.0	0.0	329.6
Cross border/	Number	2	2	1	1	1	2	1	2	0	1	13
Cross industry	Total Value	0.0	0.0	0.0	0.0	59.9	0.0	20.0	0.0	0.0	0.0	79.9
	Ave Value	0.0	0.0	0.0	0.0	59.9	0.0	20.0	0.0	0.0	0.0	40.0
<b>Deal type</b>												
Within border	Number	3	13	17	12	20	9	11	7	2	6	100
	Total Value	0.0	36.5	129.3	1356.5	1095.3	637.4	102.7	32698.2	0.0	1039.0	37094.9
	Ave Value	0.0	36.5	32.3	339.1	121.7	318.7	34.2	8174.6	0.0	346.3	1236.5
Cross border	Number	6	3	2	3	4	7	8	8	4	7	52
	Total Value	104.6	0.0	0.0	0.0	1224.4	48.9	20.2	0.0	0.0	0.0	1398.1
	Ave Value	104.6	0.0	0.0	0.0	612.2	48.9	10.1	0.0	0.0	0.0	233.0
<b>Deal type</b>												
Within industry	Number	7	13	17	14	21	11	15	11	6	11	126
	Total Value	104.6	36.5	129.3	1356.5	2198.8	686.3	102.9	23036.5	0.0	95.2	27746.6
	Ave Value	104.6	36.5	32.3	339.1	244.3	228.8	25.7	7678.8	0.0	47.6	895.1
Cross industry	Number	2	3	2	1	3	5	4	4	0	2	26
	Total Value	0.0	0.0	0.0	0.0	120.9	0.0	20.0	9661.7	0.0	943.8	10746.4
	Ave Value	0.0	0.0	0.0	0.0	60.5	0.0	20.0	9661.7	0.0	943.8	2149.3
<b>Industry</b>												
Banking	Number	7	12	19	13	19	6	10	11	3	7	107
	Total Value	104.6	0.0	129.3	255.4	1034.3	637.4	120.9	23036.5	0.0	1039.0	26357.4
	Ave Value	104.6	0.0	32.3	85.1	129.3	318.7	40.3	7678.8	0.0	346.3	976.2
Insurance	Number	1	2	0	1	1	3	3	3	2	3	19
	Total Value	0.0	0.0	0.0	1101.1	1164.5	0.0	0.0	9661.7	0.0	0.0	11927.3
	Ave Value	0.0	0.0	0.0	1101.1	1164.5	0.0	0.0	9661.7	0.0	0.0	3975.8
Securities/	Number	1	2	0	1	4	7	6	1	1	3	26
Other	Total Value	0.0	36.5	0.0	0.0	120.9	48.9	2.0	0.0	0.0	0.0	208.3
	Ave Value	0.0	36.5	0.0	0.0	60.5	48.9	1.0	0.0	0.0	0.0	34.7
<b>Total</b>	Number	9	16	19	15	24	16	19	15	6	13	152
	Total Value	104.6	36.5	129.3	1356.5	2319.7	686.3	122.9	32698.2	0.0	1039.0	38493.0
	Ave Value	104.6	36.5	32.3	339.1	210.9	228.8	24.6	8174.6	0.0	346.3	1069.3
	GDP Value/GDP	229998	232928	244140	236850	262286	307784	296128	256204	262572	259092	2587982
		0.05%	0.02%	0.05%	0.57%	0.88%	0.22%	0.04%	12.76%	0.00%	0.40%	1.49%

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within	Number	2	9	16	11	16	2	4	5	1	4	70
border/	Total Value	0.0	0.0	129.3	255.4	1034.3	637.4	100.9	23036.5	0.0	95.2	25289.0
Within	Ave Value	0.0	0.0	32.3	85.1	129.3	318.7	50.5	7678.8	0.0	47.6	1053.7
industry												
Within	Number	0	1	1	0	1	2	2	1	0	1	9
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	943.8	943.8
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	943.8	943.8
industry												
Cross	Number	3	0	1	2	2	2	3	5	2	2	22
border/	Total Value	104.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.6
Within	Ave Value	104.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	104.6
industry												
Cross	Number	2	2	1	0	0	0	1	0	0	0	6
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	20.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	20.0
industry												
<b>Insurance</b>												
Within	Number	0	1	0	1	0	2	2	0	1	0	7
border/	Total Value	0.0	0.0	0.0	1101.1	0.0	0.0	0.0	0.0	0.0	0.0	1101.1
Within	Ave Value	0.0	0.0	0.0	1101.1	0.0	0.0	0.0	0.0	0.0	0.0	1101.1
industry												
Within	Number	0	0	0	0	0	0	0	1	0	0	1
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9661.7	0.0	0.0	9661.7
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9661.7	0.0	0.0	9661.7
industry												
Cross	Number	1	1	0	0	1	1	1	0	1	3	9
border/	Total Value	0.0	0.0	0.0	0.0	1164.5	0.0	0.0	0.0	0.0	0.0	1164.5
Within	Ave Value	0.0	0.0	0.0	0.0	1164.5	0.0	0.0	0.0	0.0	0.0	1164.5
industry												
Cross	Number	0	0	0	0	0	0	0	2	0	0	2
border/	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
industry												
<b>Securities/ Other</b>												
Within	Number	1	2	0	0	2	2	2	0	0	1	10
border/	Total Value	0.0	36.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	38.3
Within	Ave Value	0.0	36.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	19.2
industry												
Within	Number	0	0	0	0	1	1	1	0	0	0	3
border/	Total Value	0.0	0.0	0.0	0.0	61.0	0.0	0.0	0.0	0.0	0.0	61.0
Cross	Ave Value	0.0	0.0	0.0	0.0	61.0	0.0	0.0	0.0	0.0	0.0	61.0
industry												
Cross	Number	0	0	0	0	0	2	3	1	1	1	8
border/	Total Value	0.0	0.0	0.0	0.0	0.0	48.9	0.2	0.0	0.0	0.0	49.1
Within	Ave Value	0.0	0.0	0.0	0.0	0.0	48.9	0.2	0.0	0.0	0.0	24.6
industry												
Cross	Number	0	0	0	1	1	2	0	0	0	1	5
border/	Total Value	0.0	0.0	0.0	0.0	59.9	0.0	0.0	0.0	0.0	0.0	59.9
Cross	Ave Value	0.0	0.0	0.0	0.0	59.9	0.0	0.0	0.0	0.0	0.0	59.9
industry												
<b>Total</b>												
	Number	9	16	19	15	24	16	19	15	6	13	152
	Total Value	104.6	36.5	129.3	1356.5	2319.7	686.3	122.9	32698.2	0.0	1039.0	38493.0
	Ave Value	104.6	36.5	32.3	339.1	210.9	228.8	24.6	8174.6	0.0	346.3	1069.3



**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within industry	Number	3	12	16	12	18	6	8	5	2	5	87
	Total Value	0.0	36.5	129.3	1356.5	1034.3	637.4	102.7	23036.5	0.0	95.2	26428.4
	Ave Value	0.0	36.5	32.3	339.1	129.3	318.7	34.2	7678.8	0.0	47.6	978.8
Within border/ Cross industry	Number	1	1	1	0	2	3	3	3	0	1	15
	Total Value	133.2	0.0	0.0	0.0	61.0	0.0	0.0	9661.7	0.0	943.8	10799.7
	Ave Value	133.2	0.0	0.0	0.0	61.0	0.0	0.0	9661.7	0.0	943.8	2699.9
Cross border/ Within industry	Number	3	5	3	4	4	5	5	9	5	12	55
	Total Value	0.0	324.0	0.0	0.0	275.6	6.9	461.7	539.5	2252.2	197.1	4057.0
	Ave Value	0.0	162.0	0.0	0.0	275.6	6.9	230.9	539.5	563.1	65.7	289.8
Cross border/ Cross industry	Number	2	3	1	3	1	4	0	6	5	2	27
	Total Value	0.0	0.0	0.0	11.1	750.0	1872.4	0.0	1923.3	12.8	675.0	5244.6
	Ave Value	0.0	0.0	0.0	11.1	750.0	1872.4	0.0	641.1	6.4	675.0	582.7
<b>Deal type</b>												
Within border	Number	4	13	17	12	20	9	11	8	2	6	102
	Total Value	133.2	36.5	129.3	1356.5	1095.3	637.4	102.7	32698.2	0.0	1039.0	37228.1
	Ave Value	133.2	36.5	32.3	339.1	121.7	318.7	34.2	8174.6	0.0	346.3	1200.9
Cross border	Number	5	8	4	7	5	9	5	15	10	14	82
	Total Value	0.0	324.0	0.0	11.1	1025.6	1879.3	461.7	2462.8	2265.0	872.1	9301.6
	Ave Value	0.0	162.0	0.0	11.1	512.8	939.7	230.9	615.7	377.5	218.0	404.4
<b>Deal type</b>												
Within industry	Number	6	17	19	16	22	11	13	14	7	17	142
	Total Value	0.0	360.5	129.3	1356.5	1309.9	644.3	564.4	23576.0	2252.2	292.3	30485.4
	Ave Value	0.0	120.2	32.3	339.1	145.5	214.8	112.9	5894.0	563.1	58.5	743.5
Cross industry	Number	3	4	2	3	3	7	3	9	5	3	42
	Total Value	133.2	0.0	0.0	11.1	811.0	1872.4	0.0	11585.0	12.8	1618.8	16044.3
	Ave Value	133.2	0.0	0.0	11.1	405.5	1872.4	0.0	2896.3	6.4	809.4	1234.2
<b>Industry</b>												
Banking	Number	4	10	19	14	21	6	6	14	2	8	104
	Total Value	133.2	0.0	129.3	255.4	1845.3	637.4	100.9	32954.5	2.0	774.5	36832.5
	Ave Value	133.2	0.0	32.3	85.1	184.5	318.7	50.5	5492.4	2.0	193.6	1116.1
Insurance	Number	2	6	1	3	1	5	5	6	7	7	43
	Total Value	0.0	324.0	0.0	1101.1	275.6	0.0	461.7	2206.5	2252.2	1068.2	7689.3
	Ave Value	0.0	162.0	0.0	1101.1	275.6	0.0	230.9	1103.3	563.1	534.1	549.2
Securities/ Other	Number	3	5	1	2	3	7	5	3	3	5	37
	Total Value	0.0	36.5	0.0	11.1	0.0	1879.3	1.8	0.0	10.8	68.4	2007.9
	Ave Value	0.0	36.5	0.0	11.1	0.0	939.7	1.8	0.0	10.8	68.4	286.8
<b>Total</b>	Number	9	21	21	19	25	18	16	23	12	20	184
	Total Value	133.2	360.5	129.3	1367.6	2120.9	2516.7	564.4	35161.0	2265.0	1911.1	46529.7
	Ave Value	133.2	120.2	32.3	273.5	192.8	629.2	112.9	4395.1	377.5	273.0	861.7
	GDP Value/GDP	229998 0.06%	232928 0.15%	244140 0.05%	236850 0.58%	262286 0.81%	307784 0.82%	296128 0.19%	256204 13.72%	262572 0.86%	259092 0.74%	2587982 1.80%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	2	9	16	11	16	2	4	5	1	4	70
Within industry	Total Value	0.0	0.0	129.3	255.4	1034.3	637.4	100.9	23036.5	0.0	95.2	25289.0
	Ave Value	0.0	0.0	32.3	85.1	129.3	318.7	50.5	7678.8	0.0	47.6	1053.7
Within border/	Number	1	0	0	0	1	1	1	1	0	0	5
Cross industry	Total Value	133.2	0.0	0.0	0.0	61.0	0.0	0.0	9661.7	0.0	0.0	9855.9
	Ave Value	133.2	0.0	0.0	0.0	61.0	0.0	0.0	9661.7	0.0	0.0	3285.3
Cross border/	Number	0	0	2	1	3	1	1	5	0	3	16
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	4.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	4.3
Cross border/	Number	1	1	1	2	1	2	0	3	1	1	13
Cross industry	Total Value	0.0	0.0	0.0	0.0	750.0	0.0	0.0	256.3	2.0	675.0	1683.3
	Ave Value	0.0	0.0	0.0	0.0	750.0	0.0	0.0	128.2	2.0	675.0	336.7
<b>Insurance</b>												
Within border/	Number	0	1	0	1	0	2	2	0	1	0	7
Within industry	Total Value	0.0	0.0	0.0	1101.1	0.0	0.0	0.0	0.0	0.0	0.0	1101.1
	Ave Value	0.0	0.0	0.0	1101.1	0.0	0.0	0.0	0.0	0.0	0.0	1101.1
Within border/	Number	0	0	0	0	0	0	0	1	0	1	2
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	943.8	943.8
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	943.8	943.8
Cross border/	Number	2	4	1	2	1	2	3	4	5	6	30
Within industry	Total Value	0.0	324.0	0.0	0.0	275.6	0.0	461.7	539.5	2252.2	124.4	3977.4
	Ave Value	0.0	162.0	0.0	0.0	275.6	0.0	230.9	539.5	563.1	124.4	361.6
Cross border/	Number	0	1	0	0	0	1	0	1	1	0	4
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1667.0	0.0	0.0	1667.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1667.0	0.0	0.0	1667.0
<b>Securities/ Other</b>												
Within border/	Number	1	2	0	0	2	2	2	0	0	1	10
Within industry	Total Value	0.0	36.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	38.3
	Ave Value	0.0	36.5	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	19.2
Within border/	Number	0	1	1	0	1	2	2	1	0	0	8
Cross industry	Total Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ave Value	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cross border/	Number	1	1	0	1	0	2	1	0	0	3	9
Within industry	Total Value	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	68.4	75.3
	Ave Value	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	68.4	37.7
Cross border/	Number	1	1	0	1	0	1	0	2	3	1	10
Cross industry	Total Value	0.0	0.0	0.0	11.1	0.0	1872.4	0.0	0.0	10.8	0.0	1894.3
	Ave Value	0.0	0.0	0.0	11.1	0.0	1872.4	0.0	0.0	10.8	0.0	631.4
<b>Total</b>	Number	9	21	21	19	25	18	16	23	12	20	184
	Total Value	133.2	360.5	129.3	1367.6	2120.9	2516.7	564.4	35161.0	2265.0	1911.1	46529.7
	Ave Value	133.2	120.2	32.3	273.5	192.8	629.2	112.9	4395.1	377.5	273.0	861.7

Source: Thomson Financial, SDC Platinum.

Table A.17

**Country: United Kingdom**

All values in USD millions

**Deals classified by country and sector of target firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/	Number	18	33	22	31	32	38	50	45	41	61	371
Within industry	Total Value	1006.4	811.9	6203.3	448.4	668.0	18728.5	6191.0	6060.4	15474.3	42959.6	98551.8
	Ave Value	125.8	45.1	443.1	21.4	29.0	720.3	167.3	178.2	515.8	933.9	383.5
Within border/	Number	9	5	8	12	13	20	28	27	12	23	157
Cross industry	Total Value	1506.6	544.9	72.5	96.5	365.1	190.1	997.3	1124.7	2394.9	4755.4	12048.0
	Ave Value	188.3	181.6	10.4	9.7	40.6	12.7	45.3	48.9	217.7	237.8	94.1
Cross border/	Number	5	6	6	8	11	16	18	21	17	9	117
Within industry	Total Value	2050.9	194.5	133.8	480.6	725.6	2847.0	509.7	7644.2	4457.7	6470.9	25514.9
	Ave Value	410.2	97.3	44.6	96.1	181.4	284.7	63.7	588.0	405.2	1078.5	380.8
Cross border/	Number	3	4	3	0	1	3	8	3	10	5	40
Cross industry	Total Value	927.0	113.4	10.3	0.0	14.6	427.9	181.5	91.3	4737.3	1025.4	7528.7
	Ave Value	309.0	56.7	10.3	0.0	14.6	142.6	45.4	45.7	789.6	256.4	289.6
<b>Deal type</b>												
Within border	Number	27	38	30	43	45	58	78	72	53	84	528
	Total Value	2513.0	1356.8	6275.8	544.9	1033.1	18918.6	7188.3	7185.1	17869.2	47715.0	110599.8
	Ave Value	157.1	64.6	298.8	17.6	32.3	461.4	121.8	126.1	435.8	723.0	287.3
Cross border	Number	8	10	9	8	12	19	26	24	27	14	157
	Total Value	2977.9	307.9	144.1	480.6	740.2	3274.9	691.2	7735.5	9195.0	7496.3	33043.6
	Ave Value	372.2	77.0	36.0	96.1	148.0	251.9	57.6	515.7	540.9	749.6	355.3
<b>Deal type</b>												
Within industry	Number	23	39	28	39	43	54	68	66	58	70	488
	Total Value	3057.3	1006.4	6337.1	929.0	1393.6	21575.5	6700.7	13704.6	19932.0	49430.5	124066.7
	Ave Value	235.2	50.3	372.8	35.7	51.6	599.3	148.9	291.6	486.1	950.6	382.9
Cross industry	Number	12	9	11	12	14	23	36	30	22	28	197
	Total Value	2433.6	658.3	82.8	96.5	379.7	618.0	1178.8	1216.0	7132.2	5780.8	19576.7
	Ave Value	221.2	131.7	10.4	9.7	38.0	34.3	45.3	48.6	419.5	240.9	127.1
<b>Industry</b>												
Banking	Number	13	19	10	17	25	25	25	30	34	46	244
	Total Value	3867.9	501.3	5925.4	170.9	981.0	20531.5	490.8	2142.1	3523.9	42566.8	80701.6
	Ave Value	386.8	45.6	658.4	11.4	65.4	1080.6	25.8	93.1	141.0	1182.4	443.4
Insurance	Number	7	13	11	12	12	15	27	30	19	10	156
	Total Value	170.2	652.2	36.5	115.4	508.2	227.3	5806.2	6733.7	20896.0	6703.3	41849.0
	Ave Value	34.0	163.1	9.1	14.4	72.6	28.4	387.1	320.7	1607.4	837.9	450.0
Securities/	Number	15	16	18	22	20	37	52	36	27	42	285
Other	Total Value	1452.8	511.2	458.0	739.2	284.1	1434.7	1582.5	6044.8	2644.3	5941.2	21092.8
	Ave Value	161.4	51.1	38.2	56.9	18.9	53.1	42.8	215.9	132.2	185.7	103.9
<b>Total</b>	Number	35	48	39	51	57	77	104	96	80	98	685
	Total Value	5490.9	1664.7	6419.9	1025.5	1773.3	22193.5	7879.5	14920.6	27064.2	55211.3	143643.4
	Ave Value	228.8	66.6	256.8	28.5	47.9	411.0	111.0	207.2	466.6	726.5	300.5
	GDP	990570	1030268	1070115	958004	1035891	1124381	1178814	1316570	1403540	1439832	11547985
	Value/GDP	0.55%	0.16%	0.60%	0.11%	0.17%	1.97%	0.67%	1.13%	1.93%	3.83%	1.24%

### Deals classified by country and sector of target firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	5	9	5	11	13	11	12	18	18	32	134
Within industry	Total Value	984.2	152.3	5803.0	152.4	459.0	18549.0	138.9	1405.3	913.2	41191.5	69748.8
	Ave Value	328.1	25.4	1160.6	15.2	57.4	1686.3	13.9	93.7	76.1	1716.3	670.7
Within border/	Number	4	3	2	6	8	7	8	7	9	12	66
Cross industry	Total Value	102.5	52.3	23.1	18.5	266.2	25.8	152.3	503.9	877.5	1189.5	3211.6
	Ave Value	34.2	26.2	11.6	3.7	53.2	8.6	30.5	126.0	109.7	108.1	66.9
Cross border/	Number	3	5	2	0	3	5	3	4	4	1	30
Within industry	Total Value	1972.8	194.5	89.0	0.0	241.2	1669.4	51.1	210.4	924.3	0.0	5352.7
	Ave Value	657.6	97.3	89.0	0.0	241.2	556.5	25.6	70.1	308.1	0.0	297.4
Cross border/	Number	1	2	1	0	1	2	2	1	3	1	14
Cross industry	Total Value	808.4	102.2	10.3	0.0	14.6	287.3	148.5	22.5	808.9	185.8	2388.5
	Ave Value	808.4	102.2	10.3	0.0	14.6	143.7	74.3	22.5	404.5	185.8	199.0
<b>Insurance</b>												
Within border/	Number	4	10	6	6	4	8	11	11	9	5	74
Within industry	Total Value	12.7	148.4	1.9	30.7	16.6	12.8	5414.0	4259.9	13101.3	563.4	23561.7
	Ave Value	6.4	74.2	1.9	7.7	5.5	2.6	773.4	532.5	2620.3	187.8	589.0
Within border/	Number	1	2	3	2	2	2	8	6	2	3	31
Cross industry	Total Value	17.6	492.6	24.3	48.9	7.2	5.7	67.4	273.8	1434.2	283.3	2655.0
	Ave Value	17.6	492.6	12.2	24.5	7.2	5.7	11.2	54.8	717.1	94.4	110.6
Cross border/	Number	1	0	1	4	6	5	8	12	6	1	44
Within industry	Total Value	47.3	0.0	10.3	35.8	484.4	208.8	324.8	2131.2	3149.8	5691.6	12084.0
	Ave Value	47.3	0.0	10.3	17.9	161.5	104.4	162.4	304.5	630.0	5691.6	503.5
Cross border/	Number	1	1	1	0	0	0	0	1	2	1	7
Cross industry	Total Value	92.6	11.2	0.0	0.0	0.0	0.0	0.0	68.8	3210.7	165.0	3548.3
	Ave Value	92.6	11.2	0.0	0.0	0.0	0.0	0.0	68.8	3210.7	165.0	709.7
<b>Securities/ Other</b>												
Within border/	Number	9	14	11	14	15	19	27	16	14	24	163
Within industry	Total Value	9.5	511.2	398.4	265.3	192.4	166.7	638.1	395.2	1459.8	1204.7	5241.3
	Ave Value	3.2	51.1	49.8	37.9	16.0	16.7	31.9	35.9	112.3	63.4	46.4
Within border/	Number	4	0	3	4	3	11	12	14	1	8	60
Cross industry	Total Value	1386.5	0.0	25.1	29.1	91.7	158.6	777.6	347.0	83.2	3282.6	6181.4
	Ave Value	346.6	0.0	8.4	9.7	30.6	14.4	70.7	24.8	83.2	547.1	110.4
Cross border/	Number	1	1	3	4	2	6	7	5	7	7	43
Within industry	Total Value	30.8	0.0	34.5	444.8	0.0	968.8	133.8	5302.6	383.6	779.3	8078.2
	Ave Value	30.8	0.0	34.5	148.3	0.0	193.8	33.5	1767.5	127.9	155.9	323.1
Cross border/	Number	1	1	1	0	0	1	6	1	5	3	19
Cross industry	Total Value	26.0	0.0	0.0	0.0	0.0	140.6	33.0	0.0	717.7	674.6	1591.9
	Ave Value	26.0	0.0	0.0	0.0	0.0	140.6	16.5	0.0	239.2	337.3	176.9
<b>Total</b>	Number	35	48	39	51	57	77	104	96	80	98	685
	Total Value	5490.9	1664.7	6419.9	1025.5	1773.3	22193.5	7879.5	14920.6	27064.2	55211.3	143643.4
	Ave Value	228.8	66.6	256.8	28.5	47.9	411.0	111.0	207.2	466.6	726.5	300.5

### Deals classified by country and sector of acquiring firm

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Deal type</b>												
Within border/ Within industry	Number Total Value Ave Value	18 1006.4 125.8	33 811.9 45.1	22 6203.3 443.1	31 448.4 21.4	33 668.0 29.0	38 18728.5 720.3	50 6191.0 167.3	45 6060.4 178.2	42 15524.3 500.8	62 42959.6 933.9	374 98601.8 382.2
Within border/ Cross industry	Number Total Value Ave Value	9 1506.6 188.3	5 544.9 181.6	8 72.5 10.4	12 96.5 9.7	13 365.1 40.6	20 190.1 12.7	28 997.3 45.3	27 1124.7 48.9	12 2394.9 217.7	23 4755.4 237.8	157 12048.0 94.1
Cross border/ Within industry	Number Total Value Ave Value	10 1260.6 315.2	6 1.1 0.6	12 131.6 26.3	4 42.9 21.5	11 615.7 88.0	17 1149.4 104.5	18 1955.1 244.4	18 3242.4 324.2	16 462.9 57.9	21 18687.6 1168.0	133 27549.3 377.4
Cross border/ Cross industry	Number Total Value Ave Value	2 1.0 1.0	4 43.3 21.7	3 57.3 28.7	0 0.0 0.0	2 7.1 7.1	9 298.5 99.5	4 2129.5 1064.8	5 188.4 62.8	3 24.0 24.0	9 992.3 165.4	41 3741.4 178.2
<b>Deal type</b>												
Within border	Number Total Value Ave Value	27 2513.0 157.1	38 1356.8 64.6	30 6275.8 298.8	43 544.9 17.6	46 1033.1 32.3	58 18918.6 461.4	78 7188.3 121.8	72 7185.1 126.1	54 17919.2 426.6	85 47715.0 723.0	531 110649.8 286.7
Cross border	Number Total Value Ave Value	12 1261.6 252.3	10 44.4 11.1	15 188.9 27.0	4 42.9 21.5	13 622.8 77.9	26 1447.9 103.4	22 4084.6 408.5	23 3430.8 263.9	19 486.9 54.1	30 19679.9 894.5	174 31290.7 332.9
<b>Deal type</b>												
Within industry	Number Total Value Ave Value	28 2267.0 188.9	39 813.0 40.7	34 6334.9 333.4	35 491.3 21.4	44 1283.7 42.8	55 19877.9 537.2	68 8146.1 181.0	63 9302.8 211.4	58 15987.2 409.9	83 61647.2 994.3	507 126151.1 381.1
Cross industry	Number Total Value Ave Value	11 1507.6 167.5	9 588.2 117.6	11 129.8 14.4	12 96.5 9.7	15 372.2 37.2	29 488.6 27.1	32 3126.8 130.3	32 1313.1 50.5	15 2418.9 201.6	32 5747.7 221.1	198 15789.4 106.0
<b>Industry</b>												
Banking	Number Total Value Ave Value	11 1095.2 156.5	13 681.1 85.1	7 5817.5 969.6	14 199.6 15.4	20 1116.1 79.7	30 19479.5 721.5	25 1070.0 46.5	34 2365.0 78.8	23 958.0 63.9	48 52304.0 1341.1	225 85086.0 467.5
Insurance	Number Total Value Ave Value	14 2639.3 329.9	14 156.5 39.1	16 82.2 10.3	10 84.3 12.0	12 243.2 30.4	16 387.7 35.2	19 5417.3 601.9	22 6319.9 451.4	20 13652.6 1137.7	19 11380.6 948.4	162 40363.6 434.0
Securities/ Other	Number Total Value Ave Value	14 40.1 6.7	21 563.6 43.4	22 565.0 40.4	23 303.9 23.4	27 296.6 16.5	38 499.3 29.4	56 4785.6 129.3	39 1931.0 74.3	30 3795.5 158.1	48 3710.3 100.3	318 16490.9 80.4
<b>Total</b>	Number Total Value Ave Value  GDP Value/GDP	39 3774.6 179.7  990570 0.38%	48 1401.2 56.0  1030268 0.14%	45 6464.7 230.9  1070115 0.60%	47 587.8 17.8  958004 0.06%	59 1655.9 41.4  1035891 0.16%	84 20366.5 370.3  1124381 1.81%	100 11272.9 163.4  1178814 0.96%	95 10615.9 151.7  1316570 0.81%	73 18406.1 360.9  1403540 1.31%	115 67394.9 765.9  1439832 4.68%	705 141940.5 295.7  11547985 1.23%

**Deals classified by country and sector of acquiring firm**

		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
<b>Banking</b>												
Within border/	Number	5	9	5	11	13	11	12	18	18	32	134
Within industry	Total Value	984.2	152.3	5803.0	152.4	459.0	18549.0	138.9	1405.3	913.2	41191.5	69748.8
	Ave Value	328.1	25.4	1160.6	15.2	57.4	1686.3	13.9	93.7	76.1	1716.3	670.7
Within border/	Number	2	1	0	3	2	11	11	13	0	5	48
Cross industry	Total Value	23.7	492.6	0.0	47.2	90.7	71.9	777.6	269.8	0.0	42.4	1815.9
	Ave Value	11.9	492.6	0.0	15.7	45.4	6.5	70.7	20.8	0.0	10.6	38.6
Cross border/	Number	4	2	2	0	4	4	2	2	5	8	33
Within industry	Total Value	87.3	0.0	14.5	0.0	566.4	833.2	153.5	688.0	44.8	11042.2	13429.9
	Ave Value	43.7	0.0	14.5	0.0	141.6	208.3	76.8	688.0	14.9	1380.3	537.2
Cross border/	Number	0	1	0	0	1	4	0	1	0	3	10
Cross industry	Total Value	0.0	36.2	0.0	0.0	0.0	25.4	0.0	1.9	0.0	27.9	91.4
	Ave Value	0.0	36.2	0.0	0.0	0.0	25.4	0.0	1.9	0.0	9.3	15.2
<b>Insurance</b>												
Within border/	Number	4	10	6	6	5	8	11	11	10	5	76
Within industry	Total Value	12.7	148.4	1.9	30.7	16.6	12.8	5414.0	4259.9	13151.3	563.4	23611.7
	Ave Value	6.4	74.2	1.9	7.7	5.5	2.6	773.4	532.5	2191.9	187.8	575.9
Within border/	Number	5	0	3	2	3	1	1	3	1	4	23
Cross industry	Total Value	1453.3	0.0	25.1	10.7	214.2	92.4	0.0	136.3	83.2	3263.3	5278.5
	Ave Value	363.3	0.0	8.4	10.7	71.4	92.4	0.0	68.2	83.2	1087.8	293.3
Cross border/	Number	4	2	6	2	4	5	6	8	8	9	54
Within industry	Total Value	1173.3	1.0	54.9	42.9	12.4	282.5	2.4	1923.7	418.1	7525.9	11437.1
	Ave Value	586.7	1.0	18.3	21.5	6.2	56.5	2.4	480.9	83.6	1505.2	381.2
Cross border/	Number	1	2	1	0	0	2	1	0	1	1	9
Cross industry	Total Value	0.0	7.1	0.3	0.0	0.0	0.0	0.9	0.0	0.0	28.0	36.3
	Ave Value	0.0	7.1	0.3	0.0	0.0	0.0	0.9	0.0	0.0	28.0	9.1
<b>Securities/ Other</b>												
Within border/	Number	9	14	11	14	15	19	27	16	14	25	164
Within industry	Total Value	9.5	511.2	398.4	265.3	192.4	166.7	638.1	395.2	1459.8	1204.7	5241.3
	Ave Value	3.2	51.1	49.8	37.9	16.0	16.7	31.9	35.9	112.3	63.4	46.4
Within border/	Number	2	4	5	7	8	8	16	11	11	14	86
Cross industry	Total Value	29.6	52.3	47.4	38.6	60.2	25.8	219.7	718.6	2311.7	1449.7	4953.6
	Ave Value	14.8	26.2	11.9	6.4	15.1	8.6	20.0	89.8	231.2	111.5	78.6
Cross border/	Number	2	2	4	2	3	8	10	8	3	4	46
Within industry	Total Value	0.0	0.1	62.2	0.0	36.9	33.7	1799.2	630.7	0.0	119.5	2682.3
	Ave Value	0.0	0.1	62.2	0.0	36.9	16.9	359.8	126.1	0.0	39.8	149.0
Cross border/	Number	1	1	2	0	1	3	3	4	2	5	22
Cross industry	Total Value	1.0	0.0	57.0	0.0	7.1	273.1	2128.6	186.5	24.0	936.4	3613.7
	Ave Value	1.0	0.0	57.0	0.0	7.1	136.6	2128.6	93.3	24.0	468.2	328.5
<b>Total</b>	Number	39	48	45	47	59	84	100	95	73	115	705
	Total Value	3774.6	1401.2	6464.7	587.8	1655.9	20366.5	11272.9	10615.9	18406.1	67394.9	141940.5
	Ave Value	179.7	56.0	230.9	17.8	41.4	370.3	163.4	151.7	360.9	765.9	295.7

Source: Thomson Financial, SDC Platinum.

**Table A.18**  
**Number of joint ventures and strategic alliances (by country)**

<b>Country</b>	<b>Deal type</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>Total</b>
<b>United States</b>	Within border	22	25	36	48	85	134	67	160	318	241	1136
	Cross border	25	32	12	11	24	33	28	42	75	57	339
	Total	47	57	48	59	109	167	95	202	393	298	1475
<b>Canada</b>	Within border	5	5	0	1	3	7	3	11	21	28	84
	Cross border	3	5	1	4	3	5	6	9	29	16	81
	Total	8	10	1	5	6	12	9	20	50	44	165
<b>Japan</b>	Within border	4	2	5	4	5	4	1	4	20	47	96
	Cross border	7	9	2	5	4	6	4	17	64	65	183
	Total	11	11	7	9	9	10	5	21	84	112	279
<b>Australia</b>	Within border	0	3	3	5	12	21	5	11	33	52	145
	Cross border	2	1	2	4	7	18	9	12	21	42	118
	Total	2	4	5	9	19	39	14	23	54	94	263
<b>Belgium</b>	Within border	0	0	0	0	1	1	1	1	1	1	6
	Cross border	1	1	2	1	3	1	1	0	2	3	15
	Total	1	1	2	1	4	2	2	1	3	4	21
<b>France</b>	Within border	2	2	4	1	4	3	2	4	1	4	27
	Cross border	9	3	7	4	3	5	3	6	12	11	63
	Total	11	5	11	5	7	8	5	10	13	15	90
<b>Germany</b>	Within border	2	4	4	8	2	3	0	5	8	4	40
	Cross border	3	7	1	6	5	6	2	4	16	6	56
	Total	5	11	5	14	7	9	2	9	24	10	96
<b>Italy</b>	Within border	1	2	13	2	2	2	0	1	1	3	27
	Cross border	4	2	9	4	2	4	1	10	8	8	52
	Total	5	4	22	6	4	6	1	11	9	11	79
<b>Netherlands</b>	Within border	0	2	2	2	1	3	1	1	1	2	15
	Cross border	1	4	2	1	1	2	1	1	7	6	26
	Total	1	6	4	3	2	5	2	2	8	8	41
<b>Spain</b>	Within border	0	0	2	2	2	0	0	0	1	2	9
	Cross border	4	8	5	2	5	2	2	2	5	5	40
	Total	4	8	7	4	7	2	2	2	6	7	49
<b>Sweden</b>	Within border	2	0	0	0	0	0	1	0	0	0	3
	Cross border	1	2	0	0	1	0	1	0	4	4	13
	Total	3	2	0	0	1	0	2	0	4	4	16
<b>Switzerland</b>	Within border	1	1	1	1	5	3	0	0	0	4	16
	Cross border	2	1	0	0	3	0	0	2	3	3	14
	Total	3	2	1	1	8	3	0	2	3	7	30
<b>United Kingdom</b>	Within border	7	13	3	8	11	39	11	25	29	47	193
	Cross border	11	15	7	5	17	24	15	16	38	60	208
	Total	18	28	10	13	28	63	26	41	67	107	401

**Number of joint ventures and strategic alliances (by region)**

<b>Region</b>	<b>Deal type</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>Total</b>
<b>North America</b>	Within border	27	30	36	49	88	141	70	171	339	269	1220
	Cross border	28	37	13	15	27	38	34	51	104	73	420
	Total	55	67	49	64	115	179	104	222	443	342	1640
<b>Pacific Rim</b>	Within border	4	5	8	9	17	25	6	15	53	99	241
	Cross border	9	10	4	9	11	24	13	29	85	107	301
	Total	13	15	12	18	28	49	19	44	138	206	542
<b>Europe</b>	Within border	15	24	29	24	28	54	16	37	42	67	336
	Cross border	36	43	33	23	40	44	26	41	95	106	487
	Total	51	67	62	47	68	98	42	78	137	173	823

**Number of joint ventures and strategic alliances (all countries)**

<b>Global</b>	<b>Deal type</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>Total</b>
	Within border	46	59	73	82	133	220	92	223	434	435	1797
	Cross border	73	90	50	47	78	106	73	121	284	286	1208
	Total	119	149	123	129	211	326	165	344	718	721	3005

Source: Thomson Financial, SDC Platinum.





## Data Annex B: Patterns in the structure of the financial sector

The primary data used to prepare most of the tables in this annex provide information on the banking and insurance industries in each of the 13 reference countries. The data are oriented towards measuring the number, condition and performance of the institutions in those industries.

Data were obtained from a variety of sources. Much of the banking and insurance information was collected from the 1999 edition of *Bank Profitability*, the 1998 edition of *Institutional Investors Statistical Yearbook* and *Insurance Statistics Yearbook 1990-1997*. All three of these publications are compiled annually by the Organisation for Economic Co-operation and Development (OECD). The most recent information in the publications generally reflects 1997 or 1998.

The OECD, acting on behalf of the Patterns task force, also requested additional data from its contacts. These data tended to be either from more recent years than the information available from the publications or were items not reported in those publications. Although OECD sources provided much of the banking and insurance data in the annex, some data were obtained directly from national authorities without the assistance of the OECD, and certain other data were collected from miscellaneous publications.

Unless noted otherwise, banking and insurance definitions and classifications are generally consistent with the three OECD publications. Concentration data are measured by deposits for banks and, unless noted otherwise, by assets for insurance companies. Data are generally not aggregated to the organisation level: each institution, regardless of any common ownership, is examined independently. Gross domestic product figures were obtained from the International Monetary Fund's *International Financial Statistics*, May 2000.

The data are not well suited for extensive international comparisons. The OECD states in *Bank Profitability* that "international comparisons in the field of income and expenditure accounts of banks are particularly difficult due to considerable differences in OECD countries as regards structural and regulatory features of national banking systems, accounting rules and practices, and reporting methods."<sup>328</sup> Comparisons of insurance data are similarly difficult.

Some specific notes must be made regarding the data collected for individual countries. In some cases, financial figures for Japanese commercial banks exceed those for all Japanese banks. This apparent contradiction arises due to the data coming from different sources. The figures for Japanese commercial and large commercial banks come from the OECD, whereas the all banks figures were compiled by the Bank of Japan from the Bank of Japan Economic Statistics Quarterly. It is noted that the figures up to 1994 were for "all banks", but that after that, the figures are for "domestically licensed banks". They define "all banks" as member banks of the Federation of Bankers Associations of Japan (excluding Trust Banks that opened in or after October 1993) and "domestically licensed banks" as banks which are established and licensed under Japanese legislation.

In the United States, all banks include all insured commercial banks and thrifts. Commercial banks include commercial banks, private banks and non-deposit trust companies. Thrifts include savings banks and savings and loan associations. The number of new bank entrants is the number of new charters granted to FDIC-insured commercial banks and savings institutions. The number of branches is the number of offices, which equals the number of branches plus the number of institutions (the methodology implicitly assumes that each bank has one head office, which is not classified as a branch). Concentration data take into account common ownership.

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<sup>328</sup> OECD (1999a).

Insurance data were collected from various years of Best's Aggregates and Averages, Life-Health and Best's Aggregates and Averages, Property-Casualty, which are published by AM Best. Life insurance includes life and health companies, and non-life insurance includes property and casualty companies. In Canada, both all banks and all commercial banks include all domestic and foreign banks.

Finally, different data were collected for the last two tables of the annex. First, data were collected from various issues of *The Banker* to identify the home countries of the world's largest banking organisations. Rankings were based on year-end asset figures. Second, estimates of the notional size of the global OTC derivatives market were obtained from *Swaps Monitor*. These figures were rounded to the nearest USD 0.1 trillion and reflect balances as of year-end. Currency forwards include unmatured spot transactions and other derivatives consist of equity, commodity and credit swaps, options and forwards. Excluded from the numbers are exchange-traded instruments and internal trades. All numbers have been adjusted to eliminate double-counting.

Table B.1

**Country: United States**

(concentration figures in percent, monetary values in USD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	18,711	15,304	15,043	13,859	13,090	12,422	11,790	11,280	10,758	10,305	10,070
Number of new entrants		171	107	73	67	59	111	156	200	222	
Number of branches	58,491	72,346	76,484	72,082	71,546	73,397	74,637	75,768	76,753	77,796	78,928
Number of employees		1863,000	1785,000	1766,000	1769,000	1731,000	1711,000	1719,000	1760,000	1841,000	1876,000
Total deposits	2109.8	3664.2	3591.9	3517.7	3505.1	3572.3	3717.3	3876.7	4076.1	4,326	4472.6
Year-end total assets	2614.3	4,691	4553.4	4535.2	4686.9	4,976	5273.8	5542.6	5972.8	6449.8	6783.5
Average total assets	2505.8	4750.5	4622.2	4544.3	4,611	4831.4	5124.9	5408.2	5757.7	6211.3	6616.6
Year-end capital and reserves	148.9	264	293.2	329.9	365.7	387.4	430.1	455.2	501.3	550.1	567.2
Deposits to assets	80.7%	78.1%	78.9%	77.6%	74.8%	71.8%	70.5%	69.9%	68.2%	67.1%	65.9%
Capital to assets	5.7%	5.6%	6.4%	7.3%	7.8%	7.8%	8.2%	8.2%	8.4%	8.5%	8.4%
Pre-tax income	19	18.67	26.03	48.75	66.9	71.42	79.56	85.48	96.32	98.28	116.31
Pre-tax ROAA	0.76%	0.39%	0.56%	1.07%	1.45%	1.48%	1.55%	1.58%	1.67%	1.58%	1.76%
Gross Domestic Product (GDP)	2795.6	5803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8,759.9	9,248.45
Year-end assets to GDP	93.5%	80.8%	76.1%	71.8%	70.6%	70.5%	71.3%	70.9%	72.0%	73.6%	73.3%
<b>Large Commercial Banks</b>											
Number of institutions	100	100	100	100	100	100	100	100	100	100	100
Number of new entrants											
Number of branches	10,330	15,833	16,733	17,616	18,572	19,998	21,321	24,321	29,325	31,778	32,827
Number of employees	578	662	649	667	695	696	722	781	885	992	1030
Total deposits	759.4	1251.8	1266.1	1282.1	1355.4	1467.1	1575.8	1807.7	2126.4	2367.7	2505.9
Year-end total assets	1,007	1713.6	1735.8	1809.7	1984.5	2234.6	2467.4	2807.1	3366.9	3761.5	3995.2
Average total assets	962.1	1694.7	1724.7	1772.7	1897.1	2109.5	2351	2637.2	3087	3564.2	3878.3
Year-end capital and reserves	44	92.8	99.8	123.7	146.7	158.5	180.6	210.1	259	300.6	318.2
Deposits to assets	75.4%	73.1%	72.9%	70.8%	68.3%	65.7%	63.9%	64.4%	63.2%	62.9%	62.7%
Capital to assets	4.4%	5.4%	5.7%	6.8%	7.4%	7.1%	7.3%	7.5%	7.7%	8.0%	8.0%
Pre-tax income	8.27	9.27	10.65	22.77	33.96	36.1	42.37	48.32	59.93	61.92	78.26
Pre-tax ROAA	0.86%	0.55%	0.62%	1.28%	1.79%	1.71%	1.80%	1.83%	1.94%	1.74%	2.02%
Gross Domestic Product (GDP)	2795.6	5803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8759.9	9248.45
Year-end assets to GDP	36.0%	29.5%	29.0%	28.6%	29.9%	31.7%	33.3%	35.9%	40.6%	42.9%	43.2%

Sources: See notes to Annex B.

Table B.1 (continued)

**Country: United States**

(concentration figures in percent, monetary values in USD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions	14,406	12,195	11,791	11,348	10,867	10,359	9,854	9,446	9,065	8,698	8,505
Number of new entrants	205	165	106	72	61	50	102	145	188	194	n/a
Number of branches	50,804	61,377	62,494	62,842	63,317	65,211	66,518	67,389	69,185	70,304	71,383
Number of employees	1,478	1,500	1,471	1,462	1,478	1,471	1,466	1,469	1,518	1,607	1,635
Total deposits	1475.7	2,624.9	2665.5	2674.8	2730.1	2845.7	2996.5	3,163	3387.5	3640.1	3780.2
Year-end total assets	1848.9	3,359	3403.4	3475.8	3673.8	3972.1	4,270	4523.6	4955.2	5370.2	5643.4
Average total assets	1767.4	3,317.1	3381.2	3439.6	3574.8	3822.9	4,121	4369.8	4739.4	5162.7	5506.8
Year-end capital and reserves	107.1	216.3	229.3	260.7	293.6	308.8	345.8	370.2	412	455.5	472.2
Deposits to assets	79.8%	78.1%	78.3%	77.0%	74.3%	71.6%	70.2%	69.9%	68.4%	67.8%	67.0%
Capital to assets	5.8%	6.4%	6.7%	7.5%	8.0%	7.8%	8.1%	8.2%	8.3%	8.5%	8.4%
Pre-tax income	18.55	23.44	25.84	46.04	62.42	66.54	74.3	79.75	89.72	92.05	109.08
Pre-tax ROAA	1.05%	0.71%	0.76%	1.34%	1.75%	1.74%	1.80%	1.83%	1.89%	1.78%	1.98%
Gross Domestic Product (GDP)	2,795.6	5,803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8759.9	9248.45
Year-end assets to GDP	66.1%	57.9%	56.9%	55.0%	55.3%	56.3%	57.7%	57.9%	59.7%	61.3%	61.0%
<b>Concentration-Banks</b>											
Largest	4.23	3.73	4.02	4.04	4.2	4.45	4.68	4.94	4.87	8.57	8.18
Largest 5	14.24	11.3	13.92	15.14	15.89	16.52	16.66	19.87	20.61	26.19	26.56
Largest 10	20.32	17.27	20.11	21.21	23.02	24.24	25.23	28.86	29.31	35.63	36.7
Largest 15	24.2	22.08	24.86	25.83	27.89	29.61	31.25	34.76	35.43	41.38	42.55

Sources: See notes to Annex B

Table B.1 (continued)

**Country: United States**

(concentration figures in percent, monetary values in USD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions		1,409	1,350	1,316	1,262	1,241	1,201	1,150	1,134	1,109	
Number of new entrants											
Number of employees											
Gross direct premiums written		184.55	185.67	195.99	210.64	229.43	241.36	244.58	254.75	268.33	
Year-end total assets		1420.1	1,538	1658.1	1824.1	1945.7	2148.2	2,316	2575.8	2,824	
Year-end liabilities		1342.6	1450.4	1562.4	1718.6	1,832	2022.7	2,177	2418.4	2659.7	
Capital to assets		5.5%	5.7%	5.8%	5.8%	5.8%	5.8%	6.0%	6.1%	5.8%	
Pre-tax income		14.87	16.03	18.3	21.48	20.26	23.77	25.63	28.18		
Pre-tax return on average assets			1.08%	1.15%	1.23%	1.07%	1.16%	1.15%	1.15%		
Gross Domestic Product (GDP)	2795.6	5803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8759.9	9248.45
Assets to GDP		24.5%	25.7%	26.2%	27.5%	27.6%	29.0%	29.6%	31.0%	32.2%	
<b>Non-Life Insurance</b>											
Number of institutions	1,575	2,406	2,423	2,409	2,387	2,411	2,430	2,418	2,456	2,499	
Number of new entrants											
Number of employees											
Gross direct premiums written	99.06	230.76	235.63	240.41	253.85	263.75	273.16	280.46	288.22	298.88	
Year-end total assets	197.66	556.31	601.45	637.31	671.54	704.6	765.23	802.31	870.06	925.71	
Year-end liabilities	145.46	417.91	442.79	474.23	489.26	511.25	535.23	546.78	561.58	588.85	
Capital to assets	26.4%	24.9%	26.4%	25.6%	27.1%	27.4%	30.1%	31.8%	35.5%	36.4%	
Pre-tax income						13.27	25.46	30.04	46.28	41.4	
Pre-tax return on average assets						1.93%	3.46%	3.83%	5.53%	4.61%	
Gross Domestic Product (GDP)	2795.6	5803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8759.9	9248.45
Assets to GDP	7.1%	9.6%	10.0%	10.1%	10.1%	10.0%	10.3%	10.3%	10.5%	10.6%	
<b>Concentration – Life Insurance</b>											
Largest				9.7	9.45	8.93	8.69	8.06	7.97	7.47	
Largest 5				28.16	27.45	25.96	25.32	25.73	25.54	25.19	
Largest 10				40.19	39.55	38.28	38.35	39.83	39.66	39.42	
Largest 15				48.73	48.78	47.59	48.08	51.32	51.76	52.01	
<b>Concentration – Non-Life Insurance</b>											
Largest	8.09	8.03	8.47	8.39	8.62	8.54	8.77	9.22	9.53	9.61	
Largest 5	23.83	23.53	23.69	23.08	23.26	23.31	25.52	26.54	27.57	29.72	
Largest 10	36.89	37.45	37.08	36.98	36.41	36.39	38.63	40.69	42.12	44.45	
Largest 15	45.9	46.35	46.09	46.28	45.48	44.97	47.02	48.97	50.32	52.14	

Sources: See notes to Annex B

Table B.2  
**Country: Canada**

(concentration figures in percent, monetary values in CAD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	11	66	67	71	68	65	61	52	53	54	53
Number of new entrants	0	3	0	4	0	0	0	1	4	2	1
Number of branches		7397	7583	7623	7744	8038	8038	8067	8140	8211	8423
Number of employees		172484	173090	172776	170808	209460	206800	207150	213000	221000	222000
Total deposits					362	387.4	417	431.1	469	471	503.5
Year-end total assets	281.2	609	635	677.6	756	841.9	913.8	1107.4	1322.1	1433.6	1399.4
Average total assets	254.3	576	612.5	653.5	707.2	796.7	868.5	985.2	1199.2	1377.5	1390.8
Year-end capital and reserves	8	31	34.7	35.3	38.8	42	45.4	47.6	54.7	62.1	68.2
Deposits to assets					47.9%	46.0%	45.6%	38.9%	35.5%	32.9%	36.0%
Capital to assets		5.1%	5.5%	5.2%	5.1%	5.0%	5.0%	4.3%	4.1%	4.3%	4.9%
Pre-tax income	1.6	6	6	2.3	4.6	7.3	8.7	10.8	12.9	11.8	14.2
Pre-tax ROAA		1.04%	0.98%	0.35%	0.65%	0.92%	1.00%	1.10%	1.08%	0.86%	1.02%
Gross Domestic Product (GDP)	309.89	669.51	676.48	698.54	724.96	767.51	807.09	833.92	873.95	895.7	
Year-end assets to GDP	90.7%	91.0%	93.9%	97.0%	104.3%	109.7%	113.2%	132.8%	151.3%	160.1%	
<b>Domestic Commercial Banks</b>											
Number of institutions	11	10	11	12	12	12	12	9	11	11	11
Number of new entrants	0	0	0	1	0	0	0	0	1	0	0
Number of branches		6,918	7,009	7,054	7,136	7,400	7,389	7,379	7,411	7,508	7,705
Number of employees											
Total deposits					344.9	369.6	395	408.4	445.4	445.6	474
Year-end total assets	281.2	550	575.9	618.3	695.2	777.1	845.8	1029.5	1229.9	1341.3	1317.5
Average total assets	254.3	517.9	553	593	646.3	732.7	799.7	909.5	1112.5	1281.4	1299.1
Year-end capital and reserves	8	27.1	30.9	31.6	35	38.1	41.1	43.3	49.8	56.5	61.6
Deposits to assets					49.6%	47.6%	46.7%	39.7%	36.2%	33.2%	36.0%
Capital to assets		4.9%	5.4%	5.1%	5.0%	4.9%	4.9%	4.2%	4.0%	4.2%	4.7%
Pre-tax income	1.6	5.7	5.9	2.92	4.68	7.13	8.32	10.32	12.26	11.44	13.6
Pre-tax ROAA		1.10%	1.07%	0.49%	0.72%	0.97%	1.04%	1.13%	1.10%	0.89%	1.05%
Gross Domestic Product (GDP)	309.89	669.51	676.48	698.54	724.96	767.51	807.09	833.92	873.95	895.7	
Year-end assets to GDP	90.7%	82.1%	85.1%	88.5%	95.9%	101.2%	104.8%	123.5%	140.7%	149.7%	

Sources: See notes to Annex B

Table B.2 (continued)

**Country: Canada**

(concentration figures in percent, monetary values in CAD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions	11	66	67	71	68	65	61	52	53	54	53
Number of new entrants	0	3	0	4	0	0	0	1	4	2	1
Number of branches		7,397	7,583	7,623	7,744	8,038	8,038	8,067	8,140	8,211	8,423
Number of employees		172,484	173,090	172,776	170,808	209,460	206,800	207,150	213,000	221,000	222,000
Total deposits					362	387.4	417	431.1	469	471	503.5
Year-end total assets	281.2	609	635	677.6	756	841.9	913.8	1107.4	1322.1	1433.6	1399.4
Average total assets	254.3	576	612.5	653.5	707.2	796.7	868.5	985.2	1199.2	1377.5	1390.8
Year-end capital and reserves	8	31	34.7	35.3	38.8	42	45.4	47.6	54.7	62.1	68.2
Deposits to assets					47.9%	46.0%	45.6%	38.9%	35.5%	32.9%	36.0%
Capital to assets		5.1%	5.5%	5.2%	5.1%	5.0%	5.0%	4.3%	4.1%	4.3%	4.9%
Pre-tax income	1.6	6	6	2.3	4.6	7.3	8.7	10.8	12.9	11.8	14.2
Pre-tax ROAA		1.04%	0.98%	0.35%	0.65%	0.92%	1.00%	1.10%	1.08%	0.86%	1.02%
Gross Domestic Product (GDP)	309.89	669.51	676.48	698.54	724.96	767.51	807.09	833.92	873.95	895.7	
Year-end assets to GDP	90.7%	91.0%	93.9%	97.0%	104.3%	109.7%	113.2%	132.8%	151.3%	160.1%	
<b>Concentration-Banks</b>											
Largest		17	17.5	17.6	21.5	20.8	21.2	21.4	21.3	21.5	20.7
Largest 5		60.2	61.7	63.6	70.2	73	73.4	74.2	77.8	77.7	77.1
Largest 10		84.5	85.1	85.5	90.5	93.5	94.4	94.8	95.7	95.4	94.9
Largest 15		91.2	91.9	92.3	93.9	95.4	95.9	96.3	96.8	96.6	96.5

Sources: See notes to Annex B

Table B.2 (continued)

**Country: Canada**

(concentration figures in percent, monetary values in CAD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions							147	146	151	150	146
Number of new entrants								3	5	1	1
Number of employees											
Gross direct premiums written					33.91	34.56	36.18	33.55	36.61	38.47	42.32
Year-end total assets					233.7	236.79	241.25	256.23	263.74	279.92	280.48
Year-end liabilities					181.14	185.2	189.02	195.41	219.87	231.07	231.16
Capital to assets					22.5%	21.8%	21.6%	23.7%	16.6%	17.5%	
Pre-tax income					2.22	2.50	3.27	3.62	4.27	3.47	5.19
Pre-tax return on average assets					1.90%	1.06%	1.37%	1.46%	1.64%	1.28%	
Gross Domestic Product (GDP)	309.89	669.51	676.48	698.54	724.96	767.51	807.09	833.92	873.95	895.7	
Assets to GDP					32.2%	30.9%	29.9%	30.7%	30.2%	31.3%	
<b>Non-Life Insurance</b>											
Number of institutions							212	224	218	213	210
Number of new entrants								12	4	2	4
Number of employees											
Gross direct premiums written		12.67	12.77	13.16	13.5	14.32	15.84	16.11	16.42	16.62	16.83
Year-end total assets		29.75	30.59	31.04	32.6	34.21	37.11	45.93	48.45	50.68	53.68
Year-end liabilities		18.83	19.46	20.06	20.69	21.57	23	30.03	31.41	32.62	34.28
Capital to assets					36.5%	36.9%	38.0%	34.6%	35.2%	35.6%	
Pre-tax income		1.07	1.05	0.87	1.25	0.92	1.73	2.38	2.71	1.52	1.47
Pre-tax return on average assets					3.93%	2.75%	4.85%	5.73%	5.74%	3.07%	
Gross Domestic Product (GDP)	309.89	669.51	676.48	698.54	724.96	767.51	807.09	833.92	873.95	895.7	
Assets to GDP		4.4%	4.5%	4.4%	4.5%	4.5%	4.6%	5.5%	5.5%	5.7%	
<b>Concentration – Life Insurance</b>											
Largest							17.9	18.9	18.6	18.5	18.6
Largest 5							65.6	68.4	70.6	73.1	73.3
Largest 10							82.8	86.1	80.0	82.0	82.1
Largest 15							86.9	89.5	83.1	85.1	85.0
<b>Concentration – Non-Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											

Sources: See notes to Annex B



**Table B.3**  
**Country: Japan**

(concentration figures in percent, monetary values in JPY billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	157	154	153	151	150	150	173	175	174	170	
Number of new entrants											
Number of branches											
Number of employees											
Total deposits	186,300	462,400	450,300	432,300	454,200	458,500	504,500	507,100	512,100	518,800	
Year-end total assets	272,400	746,600	745,900	718,400	719,500	719,300	745,800	746,700	772,400	763,900	
Average total assets	251,400	736,800	746,300	732,200	719,000	719,400	732,600	746,300	759,600	768,200	
Year-end capital and reserves	8,150	28,600	30,100	30,950	31,620	32,110	31,810	28,970	28,790	35,660	
Deposits to assets	68.4%	61.9%	60.4%	60.2%	63.1%	63.7%	67.6%	67.9%	66.3%	67.9%	
Capital to assets	3.0%	3.8%	4.0%	4.3%	4.4%	4.5%	4.3%	3.9%	3.7%	4.7%	
Pre-tax income	570	3370	2930	2210	1510	800					
Pre-tax ROAA	0.23%	0.46%	0.39%	0.30%	0.21%	0.11%	0.00%	0.00%	0.00%	0.00%	
Gross Domestic Product (GDP)	240,176	430,040	458,299	471,064	475,381	479,260	483,220	500,310	507,852	495,211	
Year-end assets to GDP	113.4%	173.6%	162.8%	152.5%	151.4%	150.1%	154.3%	149.2%	152.1%	154.3%	
<b>Large Commercial Banks</b>											
Number of institutions	13	12	11	11	11	11	11	10	9	9	
Number of new entrants											
Number of branches	2,751	3,249	3,280	3,293	3,238	3,224	3,199	3,174	2,955	2,807	
Number of employees	172,647	152,000	154,000	157,000	158,000	155,000	149,000	139,400	128,600	124,525	
Total deposits	113,200	353,600	329,200	308,800	306,000	303,500	306,900	307,300	288,900	264,100	
Year-end total assets	158,000	491,600	475,000	436,100	425,800	419,300	426,300	434,000	427,200	389,600	
Average total assets	151,700	500,000	483,300	455,500	431,000	422,600	422,800	430,200	430,600	408,400	
Year-end capital and reserves	3,240	14,410	14,850	14,990	15,220	14,960	13,140	13,430	10,330	17,710	
Deposits to assets	71.6%	71.9%	69.3%	70.8%	71.9%	72.4%	72.0%	70.8%	67.6%	67.8%	
Capital to assets	2.1%	2.9%	3.1%	3.4%	3.6%	3.6%	3.1%	3.1%	2.4%	4.5%	
Pre-tax income	240	1,640	1,440	940	560	60	-1340	20	-2,830	-4,040	
Pre-tax ROAA	0.16%	0.33%	0.30%	0.21%	0.13%	0.01%	-0.32%	0.00%	-0.66%	-0.99%	
Gross Domestic Product (GDP)	240,176	430,040	458,299	471,064	475,381	479,260	483,220	500,310	507,852	495,211	
Year-end assets to GDP	65.8%	114.3%	103.6%	92.6%	89.6%	87.5%	88.2%	86.7%	84.1%	78.7%	

Sources: See notes to Annex B

Table B.3 (continued)

**Country: Japan**

(concentration figures in percent, monetary values in JPY billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions	147	144	143	141	140	140	139	136	136	130	
Number of new entrants											
Number of branches		14,325	14,632	14,782	14,804	14,823	14,693	14,597	14,395	13,817	
Number of employees		399,000	406,000	412,000	417,000	414,000	399,600	383,000	367,100	350,879	
Total deposits	201,700	573,700	555,400	535,700	536,300	539,400	541,300	542,200	522,100	495,500	
Year-end total assets	264,100	753,300	744,700	699,600	692,400	688,800	696,100	702,000	696,500	655,000	
Average total assets	253,800	758,300	749,000	722,100	696,000	690,600	692,500	699,100	699,300	675,800	
Year-end capital and reserves	6,740	23,970	24,900	25,390	25,860	25,800	23,310	23,890	19,650	28,600	
Deposits to assets	76.4%	76.2%	74.6%	76.6%	77.5%	78.3%	77.8%	77.2%	75.0%	75.6%	
Capital to assets	2.6%	3.2%	3.3%	3.6%	3.7%	3.7%	3.3%	3.4%	2.8%	4.4%	
Pre-tax income	470	2,710	2,370	1,870	1,290	790	-1170	2370	-3480	-5120	
Pre-tax ROAA	0.19%	0.36%	0.32%	0.26%	0.19%	0.11%	-0.17%	0.34%	-0.50%	-0.76%	
Gross Domestic Product (GDP)	240,176	430,040	458,299	471,064	475,381	479,260	483,220	500,310	507,852	495,211	
Year-end assets to GDP	110.0%	175.2%	162.5%	148.5%	145.7%	143.7%	144.1%	140.3%	137.1%	132.3%	
<b>Concentration-Banks</b>											
Largest	6.3	7.1	7	6.7	6.3	6.5	6.5	6.2	8.3	8.9	8.4
Largest 5	28.5	31.8	31.7	30.7	30.2	30.3	29.5	29.2	31	30.9	29.8
Largest 10	49	52.3	53.8	53	51.8	51.7	51	50.6	52.3	51	48.8
Largest 15	61.7	64	63.7	63.2	61.8	61.3	61	60.4	60	58.2	56

Sources: See notes to Annex B

Table B.3 (continued)

**Country: Japan**

(concentration figures in percent, monetary values in JPY billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions	22	30	30	30	30	31	31	44	45	46	47
Number of new entrants	1	0	0	0	0	1	0	13	1	1	2
Number of employees	397,862	447,000	571,000	548,000	672,225	655,871	655,449	858,875	1151969	1070601	
Gross direct premiums written	8,230	27,170	28,210	29,500	30,360	30,450	30,720	29,310	30320	28840	
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	240,176	430,040	458,299	471,064	475,381	479,260	483,220	500,310	507852	495211	
Assets to GDP											
<b>Non-Life Insurance</b>											
Number of institutions	62	59	59	58	55	56	58	64	65	65	64
Number of new entrants	1	0	2	0	0	1	2	7	1	3	2
Number of employees	793,938	1150,000	1217,000	1227,000	1165,990	1195,637	1191,987	1286,662	1272078	1279957	
Gross direct premiums written	5,580	9,100	9,380	9,530	10,140	10,180	10470	10,900	10600	10500	
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	240,176	430,040	458,299	471,064	475,381	479,260	483,220	500,310	507852	495211	
Assets to GDP											
<b>Concentration – Life Insurance</b>											
Largest	23.8	21.1	20.8	20.8	20.8	20.9	21.1	21.2	22.2	22.6	
Largest 5	66.9	63.9	63.6	63.8	63.8	64.1	64.2	63.7	65.1	53.8	
Largest 10	88.6	85.4	85.1	84.9	84.7	84.8	84.8	83.7	85.0	73.6	
Largest 15	97.5	96.6	96.6	96.6	96.6	96.6	96.4	94.8	94.9	82.8	
<b>Concentration – Non-Life Insurance</b>											
Largest	17.1	17.4	17.3	17.4	17.1	16.9	17.0	16.9	17.2	17.3	
Largest 5	48.7	55.2	55.0	54.6	54.0	53.8	53.9	53.6	53.7	53.7	
Largest 10	74.5	79.7	79.3	78.9	78.5	78.5	78.7	77.9	77.4	77.2	
Largest 15	92.7	94.3	94.2	94.2	94.2	94.3	94.4	93.3	92.4	92.2	

Sources: See notes to Annex B

Table B.4

**Country: Australia**

(concentration figures in percent, monetary values in AUD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	16	34	31	31	33	42	42	42	42	45	44
Number of new entrants				1	2	13	3	6	5	5	
Number of branches	5,900	6,921	6,917	6,920	7,064	6,747	6,655	6,508	6,121	5,615	5,358
Number of employees											
Total deposits	48	195.4	201.1	217.7	229.4	253.3	276.9	304.6	324.8	355.7	392.1
Year-end total assets	59	348.8	360.7	374.2	393.8	426.2	472.7	520.3	569.4	629.4	697.1
Average total assets			354.75	367.45	384	410	449.45	496.5	544.85	599.4	663.25
Year-end capital and reserves	4	23.3	26.7	28.1	29.1	30.1	31.8	35.5	36	37.1	
Deposits to assets	81.4%	56.0%	55.8%	58.2%	58.3%	59.4%	58.6%	58.5%	57.0%	56.5%	56.2%
Capital to assets	6.8%	6.7%	7.4%	7.5%	7.4%	7.1%	6.7%	6.8%	6.3%	5.9%	
Pre-tax income	0.8	3.3	3.3	1.3	4.1	5.8	5.9	7.9	7.9	8.5	
Pre-tax ROAA			0.93%	0.35%	1.07%	1.41%	1.31%	1.59%	1.45%	1.42%	
Gross Domestic Product (GDP)	137.23	393.66	399.89	416.11	438.11	464.14	491.59	521.7	549.29	579.14	
Year-end assets to GDP	43.0%	88.6%	90.2%	89.9%	89.9%	91.8%	96.2%	99.7%	103.7%	108.7%	
<b>Large Commercial Banks</b>											
Number of institutions	6	4	4	4	4	4	4	4	4	4	4
Number of new entrants											
Number of branches	4,500	4,961	5,481	5,626	5,468	5,125	4,966	4,783	4,398	4,147	3,960
Number of employees											
Total deposits	38.7	127.5	144.6	150.1	154.7	164.9	176.1	192.1	206.7	231.3	256.0
Year-end total assets	42.7	227.1	259.0	256.2	263.6	279.0	307.1	334.5	363.6	410.6	455.1
Average total assets			243.05	257.60	259.90	271.30	293.05	320.80	349.05	387.10	432.85
Year-end capital and reserves	3.0	19.0	22.0	23.2	23.4	24.1	25.7	26.5	25.0	27.1	
Deposits to assets	90.6%	56.1%	55.8%	58.6%	58.7%	59.1%	57.3%	57.4%	56.8%	56.3%	56.3%
Capital to assets	7.0%	8.4%	8.5%	9.1%	8.9%	8.6%	8.4%	7.9%	6.9%	6.6%	
Pre-tax income	0.8	3.6	2.4	0.7	2.9	4.6	4.5	6.2	6.5	7.0	
Pre-tax ROAA			0.99%	0.27%	1.12%	1.70%	1.54%	1.93%	1.86%	1.81%	
Gross Domestic Product (GDP)	137.23	393.66	399.89	416.11	438.11	464.14	491.59	521.7	549.29	579.14	
Year-end assets to GDP	31.1%	57.7%	64.8%	61.6%	60.2%	60.1%	62.5%	64.1%	66.2%	70.9%	

Sources: See notes to Annex B

Table B.4 (continued)

**Country: Australia**

(concentration figures in percent, monetary values in AUD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions											
Number of new entrants											
Number of branches											
Number of employees											
Total deposits											
Year-end total assets											
Average total assets											
Year-end capital and reserves											
Deposits to assets											
Capital to assets											
Pre-tax income											
Pre-tax ROAA											
Gross Domestic Product (GDP)	137.23	393.66	399.89	416.11	438.11	464.14	491.59	521.7	549.29	579.14	
Year-end assets to GDP											
<b>Concentration-Banks</b>											
Largest	27.3	19.8	25.5	23.4	23.4	21.8	20.3	20.5	20.4	20.8	21.2
Largest 5	76.5	72.1	75.1	73.0	71.8	69.5	67.8	68.6	75.0	73.9	73.9
Largest 10	96.7	85.1	86.5	86.8	85.0	83.2	81.7	83.7	86.7	86.5	87.0
Largest 15	99.7	91.0	91.8	92.7	92.0	89.8	88.5	89.6	91.7	91.9	92.8

Sources: See notes to Annex B

Table B.4 (continued)

**Country: Australia**

(concentration figures in percent, monetary values in AUD billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions	48	60	59	54	48	50	50	50	48	46	
Number of new entrants			1	2		1	2				
Number of employees											
Gross direct premiums written	2.2	18.9	18.1	18	19.9	25.3	20.8	21.2	29.2	35.2	
Year-end total assets	18.6	77.9	85.3	92.9	99.2	101.4	109.3	115.1	166	164.6	
Year-end liabilities									148.6	153	
Capital to assets									10.5%	7.0%	
Pre-tax income	3.2	25.3	24.6	24.7	26.1	31.5	27.7	28.7	49.3	48.5	
Pre-tax return on average assets			30.15%	27.72%	27.17%	31.41%	26.29%	25.58%	35.08%	29.34%	
Gross Domestic Product (GDP)	137.23	393.66	399.89	416.11	438.11	464.14	491.59	521.7	549.29	579.14	
Assets to GDP	13.6%	19.8%	21.3%	22.3%	22.6%	21.8%	22.2%	22.1%	30.2%	28.4%	
<b>Non-Life Insurance</b>											
Number of institutions	201	166	157	160	161	162	166	170	172	172	
Number of new entrants	5			17	6	6	11	10	12	4	
Number of employees											
Gross direct premiums written	2.7	8.1	8.1	8.4	8.9	10.1	10.9	12.0	15.5	16.1	
Year-end total assets	5.7	20.0	22.2	23.2	31.5	34.3	38.0	42.9	50.8	56.2	
Year-end liabilities	4.4	14.5	15.5	16.7	22.6	25.2	27.7	31.4	37.0	42.1	
Capital to assets									27.2%	25.1%	
Pre-tax income	0.1	0.4	0.5	0.6	1.3	0.1	1.1	1.4	2.4	0.3	
Pre-tax return on average assets			2.37%	2.64%	4.75%	0.30%	3.04%	3.46%	5.12%	0.56%	
Gross Domestic Product (GDP)	137.23	393.66	399.89	416.11	438.11	464.14	491.59	521.7	549.29	579.14	
Assets to GDP	4.2%	5.1%	5.6%	5.6%	7.2%	7.4%	7.7%	8.2%	9.2%	9.7%	
<b>Concentration – Life Insurance</b>											
Largest	37.2	32.4	33.0	28.3	28.9	26.6	27.2	25.9	32.7	27.9	
Largest 5	82.2	73.5	70.9	65.8	64.1	61.5	60.0	58.3	61.6	60.0	
Largest 10	91.8	87.1	85.0	81.5	80.6	78.4	76.2	76.3	76.9	76.3	
Largest 15	94.9	92.6	91.8	90.7	90.5	88.3	86.7	87.2	87.1	87.7	
<b>Concentration – Non-Life Insurance</b>											
Largest		9.9	12.0	13.9	11.5	11.5	11.7	11.3	11.3	11.2	
Largest 5		34.2	31.9	38.7	28.5	29.3	26.5	26.3	27.1	26.6	
Largest 10		48.7	41.7	44.2	39.9	44.7	41.2	40.8	37.5	40.9	
Largest 15		58.9	55.2	75.2	62.4	57.4	51.7	52.3	50.3	50.9	

Sources: See notes to Annex B

**Table B.5**  
**Country: Belgium**

(concentration figures in percent, monetary values in BEF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions		115	119	121	150	147	143	140	131	119	117
Number of new entrants											
Number of branches		18,389	17,078	16,405	19,888	19,159	18,304	17,963	17,259		
Number of employees		79,000	77,000	76,000	76,300	76,200	76,500	76,900	76,900		
Total deposits		6,366	6,807	7,410	7,488	7,759	8,255	9,182	10,321	10,972	11,635
Year-end total assets		18,695	19,162	20,445	22,709	23,374	24,852	27,062	29,205	29,349	31,102
Average total assets		18,150	18,928	19,804	22,338	23,450	24,804	26,844	29,991	30,197	31,384
Year-end capital and reserves		632.7	722.0	809.0	577.6	606.3	632.5	682.4	759.0	904.9	959.4
Deposits to assets		34.1%	35.5%	36.2%	33.0%	33.2%	33.2%	33.9%	35.3%	37.4%	37.4%
Capital to assets		3.4%	3.8%	4.0%	2.5%	2.6%	2.5%	2.5%	2.6%	3.1%	3.1%
Pre-tax income		52.5	46.8	46.1	81.6	80.2	81.6	104.2	114.8	132.7	
Pre-tax ROAA		0.29%	0.25%	0.23%	0.37%	0.34%	0.33%	0.39%	0.38%	0.44%	
Gross Domestic Product (GDP)	3508.4	6,593	6,909	7,273	7431	7,793	8,129	8,304	8712	9,089	
Year-end assets to GDP		283.6%	277.3%	281.1%	305.6%	299.9%	305.7%	325.9%	335.2%	322.9%	
<b>Large Commercial Banks</b>											
Number of institutions					7	7	7	7	7	6	5
Number of new entrants											
Number of branches											
Number of employees											
Total deposits					5,198	5,421	5,828	6,515	7,603	7,960	8,330
Year-end total assets					13,004	13,898	15,588	17,514	19,715	21,067	23,941
Average total assets					12,833	13,802	15,117	17,008	19,657	21,137	23,693
Year-end capital and reserves					363.1	385.6	408.7	451.9	538.3	667.3	728.3
Deposits to assets					40.0%	39.0%	37.4%	37.2%	38.6%	37.8%	34.8%
Capital to assets					2.8%	2.8%	2.6%	2.6%	2.7%	3.2%	3.0%
Pre-tax income					51.1	52.2	60.4	75.4	82.2	90.9	
Pre-tax ROAA					0.40%	0.38%	0.40%	0.44%	0.42%	0.43%	
Gross Domestic Product (GDP)	3508.4	6,593	6,909	7,273	7431	7793	8129	8304	8712	9,089	
Year-end assets to GDP					175.0%	178.3%	191.8%	210.9%	226.3%	231.8%	

Sources: See notes to Annex B

Table B.5 (continued)

**Country: Belgium**

(concentration figures in percent, monetary values in BEF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions					112	107	104	100	93	74	70
Number of new entrants											
Number of branches											
Number of employees											
Total deposits					6,971	7,281	7,789	8,691	9,761	10,276	11,004
Year-end total assets					18,228	19,326	21,066	23,228	25,153	26,205	28,792
Average total assets					18,029	19,269	20,695	22,806	25,575	26,463	28,701
Year-end capital and reserves					545.9	575.7	607.0	657.7	735.6	867.2	971.9
Deposits to assets					38.2%	37.7%	37.0%	37.4%	38.8%	39.2%	38.2%
Capital to assets					3.0%	3.0%	2.9%	2.8%	2.9%	3.3%	3.4%
Pre-tax income					18.9	20.9	15.8	25.9	28.7	27.8	
Pre-tax ROAA					0.10%	0.11%	0.08%	0.11%	0.11%	0.11%	
Gross Domestic Product (GDP)	3508.4	65930	69,090	72,730	7,431	7793.0	8,129	8,304	8,712	9,089	
Year-end assets to GDP					245.3%	248.0%	259.1%	279.7%	288.7%	288.3%	
<b>Concentration-Banks</b>											
Largest											
Largest 5	53.4	48		60.9	60.2	59.9	59.9	59.9	62.8	66.7	71.6
Largest 10	69.4	65.4		75.1	75.2	75.4	75.7	76.5	78.9	80.2	82.5
Largest 15				82.3	82.4	82.4	82.8	82.8	84.8	86.3	87.8

Sources: See notes to Annex B



Table B.5 (continued)

**Country: Belgium**

(concentration figures in percent, monetary values in BEF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions		38	40	43	42	31	30	27	27		
Number of new entrants											
Number of employees											
Gross direct premiums written		104.7	114.3	122.4	137	161.9	184.4	214.3	254.3		
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	3508.4	6,593	6,909	7,273	7,431	7,793	8,129	8,304	8,712	9,089	
Assets to GDP											
<b>Non-Life Insurance</b>											
Number of institutions		176	176	169	163	93	90	92	93		
Number of new entrants											
Number of employees											
Gross direct premiums written		200.2	214.4	233.9	244.6	241.7	248.3	252.6	249.4		
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	3508.4	6,593	6,909	7,273	7,431	7,793	8,129	8,304	8,712	9,089	
Assets to GDP											
<b>Concentration – Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											
<b>Concentration – Non-Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											

Sources: See notes to Annex B

**Table B.6**  
**Country: France**

(concentration figures in percent, monetary values in FRF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions		1,981	1,823	1,701	1,635	1,618	1,453	1,404	1,288	1,242	
Number of new entrants							20	15	20	17	
Number of branches		26,124	25,431	25,357	26,291	26,200	26,606	26,303	26,386	26,689	
Number of employees		440,000	433,600	425,000	406,100	409,200	407,700	404,200	397,300	398,444	
Total deposits		3,420	3,710	3,860	4,270	4,580	5,000	5,330	6,010	6,140	
Year-end total assets		15,100	15,500	16,300	16,600	16,900	17,800	18,800	20,200	20,500	
Average total assets		14,300	15,800	16,100	17,500	17,800	18,600	20,100	22,200	23,700	
Year-end capital and reserves		509.0	595.5	655.1	748.3	744.8	785.5	773.8	807.0	838.1	
Deposits to assets		22.6%	23.9%	23.7%	25.7%	27.1%	28.1%	28.4%	29.8%	30.0%	
Capital to assets		3.4%	3.8%	4.0%	4.5%	4.4%	4.4%	4.1%	4.0%	4.1%	
Pre-tax income		51.7	62.2	45.4	21.5	3.8	28.5	37.0	61.8	83.2	
Pre-tax ROAA		0.36%	0.39%	0.28%	0.12%	0.02%	0.15%	0.18%	0.28%	0.35%	
Gross Domestic Product (GDP)	2808.3	6509.5	6776.2	6999.6	7077.1	7389.7	7752.4	7951.4	8224.9	8564.7	
Year-end assets to GDP		232.0%	228.7%	232.9%	234.6%	228.7%	229.6%	236.4%	245.6%	239.4%	
<b>Large Commercial Banks</b>											
Number of institutions		5	5	5	5	5	5	5	5	5	5
Number of new entrants											
Number of branches											
Number of employees											
Total deposits		2,160	1,700	1,890	2,010	2,000	2,070	2,250	2,480	2,720	
Year-end total assets		5360	5,630	6,420	6,750	6,410	6,620	7,250	8,210	8,430	
Average total assets		5040	5,500	6,030	6,590	6,580	6,510	6,930	7,730		
Year-end capital and reserves		128.3	144.6	156.3	248.7	242.6	231.2	234.0	250.0	267.0	
Deposits to assets		40.3%	30.2%	29.4%	29.8%	31.2%	31.3%	31.0%	30.2%	32.3%	
Capital to assets		2.4%	2.6%	2.4%	3.7%	3.8%	3.5%	3.2%	3.0%	3.2%	
Pre-tax income		19.4	19.2	12.5	8.7	3.6	11.3	24.0	31.5	26.6	
Pre-tax ROAA		0.38%	0.35%	0.21%	0.13%	0.05%	0.17%	0.35%	0.41%		
Gross Domestic Product (GDP)	2808.3	6509.5	6776.2	6999.6	7077.1	7389.7	7752.4	7951.4	8224.9	8564.7	
Year-end assets to GDP		82.3%	83.1%	91.7%	95.4%	86.7%	85.4%	91.2%	99.8%	98.4%	

Sources: See notes to Annex B

Table B.6 (continued)

**Country: France**

(concentration figures in percent, monetary values in FRF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions		408	414	409	415	421	413	400	398	383	
Number of new entrants											
Number of branches		10,166	10,177	10,081	10,451	10,131	10,320	10,240	9,983	10,118	
Number of employees		243,100	238,700	232,300	219,200	218,000	213,600	208,700	207,900	206,630	
Total deposits		1,660	1,770	1,840	2,000	2,060	2,240	2,420	2,860	2,910	
Year-end total assets		7,890	8,060	9,000	9,190	9,080	9,430	10,160	11,590	11,570	
Average total assets		7,490	8,190	8,580	10,070	10,190	10,400	11,270	13,420	15,040	
Year-end capital and reserves		203.7	235.3	276.2	303.9	308.2	307.6	315.2	340.0	394.5	
Deposits to assets		21.0%	22.0%	20.4%	21.8%	22.7%	23.8%	23.8%	24.7%	25.2%	
Capital to assets		2.6%	2.9%	3.1%	3.3%	3.4%	3.3%	3.1%	2.9%	3.4%	
Pre-tax income		16.04	20.08	5.52	-3.01	-18.82	9.80	3.81	15.47	27.58	
Pre-tax ROAA		0.21%	0.25%	0.06%	-0.03%	-0.18%	0.09%	0.03%	0.12%	0.18%	
Gross Domestic Product (GDP)	2808.3	6509.5	6776.2	6999.6	7077.1	7389.7	7752.4	7951.4	8224.9	8564.7	
Year-end assets to GDP		121.2%	118.9%	128.6%	129.9%	122.9%	121.6%	127.8%	140.9%	135.1%	
<b>Concentration-Banks</b>											
Largest											
Largest 5		51.9	67.8	67.2	67.5	68.1	68.1	68.8	70.2	70.2	69.3
Largest 10		65.6	82.8	82.5	83.4	84.1	84.1	84.6	85.3	85.2	84.6
Largest 15											

Sources: See notes to Annex B

Table B.6 (continued)

**Country: France**

(concentration figures in percent, monetary values in FRF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions	80	141	149	147	143	138	138	140	138	135	126
Number of new entrants											
Number of employees											
Gross direct premiums written	29.5	206.3	235.3	269.7	331.9	399.1	443.1	493.6	539.4	458.6	524.1
Year-end total assets	115.3	970.0	1,188.1	1,391.7	1,691.9	2,002.4	2,259.9	2,722.9	3,199.8	3,586.4	4,251.1
Year-end liabilities	112.1	927.5	1,129.4	1,335.7	1,620.7	1,905.9	2,266.2	2,680.9	3,158.7	3,529.4	4,076.5
Capital to assets		4.4%	4.9%	4.0%	4.2%	4.8%	-0.3%	1.5%	1.3%	1.6%	
Pre-tax income	1.5	9.2	10.1	9.8	9.7	9.0	8.1	8.7	14.0	15.2	19.5
Pre-tax return on average assets		1.70%	0.94%	0.76%	0.63%	0.49%	0.38%	0.35%	0.47%	0.45%	0.50%
Gross Domestic Product (GDP)	2808.3	6509.5	6776.2	6999.6	7077.1	7389.7	7752.4	7951.4	8224.9	8564.7	
Assets to GDP	4.1%	14.9%	17.5%	19.9%	23.9%	27.1%	29.2%	34.2%	38.9%	41.9%	
<b>Non-Life Insurance</b>											
Number of institutions	388	463	489	467	466	356	345	343	312	307	300
Number of new entrants											
Number of employees											
Gross direct premiums written	86.1	201.8	214.6	234.2	250.8	268.9	278.2	277.6	274.4	271.2	278.0
Year-end total assets	108.2	364.6	386.9	431.3	456.3	486.3	465.0	479.7	550.6	553.7	596.0
Year-end liabilities	126.3	323.5	339.4	383.4	401.8	415.1	432.4	448.3	470.6	492.7	550.8
Capital to assets		11.3%	12.3%	11.1%	11.9%	14.6%	7.0%	6.5%	14.5%	11.0%	
Pre-tax income	1.7	12.2	5.2	1.6	1.5	1.0	7.3	14.0	15.1	8.6	11.0
Pre-tax return on average assets		5.16%	1.38%	0.39%	0.34%	0.21%	1.53%	2.96%	2.93%	1.56%	1.91%
Gross Domestic Product (GDP)	2808.3	6509.5	6776.2	6999.6	7077.1	7389.7	7752.4	7951.4	8224.9	8564.7	
Assets to GDP	3.9%	5.6%	5.7%	6.2%	6.4%	6.6%	6.0%	6.0%	6.7%	6.5%	
<b>Concentration – Life Insurance</b>											
Largest		12.8	15.0	15.6	18.0	17.8	18.4	19.8	19.7	22.0	20.0
Largest 5		48.2	48.9	51.3	49.2	48.5	49.6	53.9	53.2	58.4	56.0
Largest 10		68.3	68.8	75.5	69.7	68.9	69.7	73.4	75.5	80.2	79.0
Largest 15		78.9	79.3	87.5	80.3	79.8	81.8	84.8	86.5	91.6	90.0
<b>Concentration – Non-Life Insurance</b>											
Largest		10.0	9.9	9.9	9.4	9.8	10.7	16.4	16.7	15.5	16.0
Largest 5		41.6	41.1	40.6	39.9	40.9	42.9	46.1	56.2	58.0	56.0
Largest 10		62.0	61.4	60.1	59.2	60.6	65.4	66.8	75.5	77.0	75.0
Largest 15		76.2	75.5	73.5	72.9	74.4	80.2	80.6	85.0	86.5	85.0

<sup>1</sup> Estimate.

Sources: See notes to Annex B

Table B.7

**Country: Germany**

(concentration figures in percent, monetary values in DEM billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions		4,719	4,460	4,200	4,038	3,872	3,784	3,674	3,577	3,403	3,167
Number of new entrants									9	21	
Number of branches		44,345	44,863	49,186	49,118	48,721	48,224	47,741	47,026	45,227	44,443
Number of employees		695,900					756,100	750,100	751,100	750,800	
Total deposits		2,010	2,198	2,354	2,784	2,850	3,002	3,286	3,567	3,820	
Year-end total assets		3,861	4,202	4,573	5,451	5,812	6,380	7,083	7,909	8,734	
Average total assets		3,626	3,993	4,360	5,062	5,561	5,951	6,693	7,507	8,388	
Year-end capital and reserves		146.4	161.7	187.4	217.6	246.5	267.6	287.9	321.6	340.7	
Deposits to assets		52.1%	52.3%	51.5%	51.1%	49.0%	47.1%	46.4%	45.1%	43.7%	
Capital to assets		3.8%	3.8%	4.1%	4.0%	4.2%	4.2%	4.1%	4.1%	3.9%	
Pre-tax income		17.47	23.30	24.67	29.58	29.04	33.63	35.43	35.06	59.21	
Pre-tax ROAA		0.48%	0.58%	0.57%	0.58%	0.52%	0.57%	0.53%	0.47%	0.71%	
Gross Domestic Product (GDP)	1470.9	2429.40	2936.87	3075.60	3234.74	3394.32	3520.52	3584.62	3667.23	3784.37	
Year-end assets to GDP		158.9%	143.1%	148.7%	168.5%	171.2%	181.2%	197.6%	215.7%	230.8%	
<b>Large Commercial Banks</b>											
Number of institutions		6	4	4	3	3	3	3	3	4	4
Number of new entrants										1	
Number of branches		3,105	3,043	3,036	3,598	3,621	3,624	3,579	3,553	4,353	
Number of employees											
Total deposits		343.8	402.1	423.6	473.3	431.9	473.1	570.8	682.3	719.9	
Year-end total assets		604.3	670.3	717.3	808.2	851.6	988.6	1149.9	1412.9	1738.9	
Average total assets		563.2	641.3	694.4	768.8	829.9	911.8	1099.4	1340.1	1665.6	
Year-end capital and reserves		31.3	34.26	38.06	42.12	46.45	50.52	55.27	65.15	67.36	
Deposits to assets		56.9%	60.0%	59.1%	58.6%	50.7%	47.9%	49.6%	48.3%	41.4%	
Capital to assets		5.2%	5.1%	5.3%	5.2%	5.5%	5.1%	4.8%	4.6%	3.9%	
Pre-tax income		4.67	4.79	4.88	4.40	4.81	4.24	5.47	3.80	22.42	
Pre-tax ROAA		0.83%	0.75%	0.70%	0.57%	0.58%	0.47%	0.50%	0.28%	1.35%	
Gross Domestic Product (GDP)	1470.9	2429.40	2936.87	3075.6	3234.74	3394.32	3520.52	3584.62	3667.23	3784.37	
Year-end assets to GDP		24.9%	22.8%	23.3%	25.0%	25.1%	28.1%	32.1%	38.5%	45.9%	

Sources: See notes to Annex B

Table B.7 (continued)

**Country: Germany**

(concentration figures in percent, monetary values in DEM billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions		274	281	276	270	273	266	258	249	244	230
Number of new entrants									4	19	
Number of branches						7,086	7,004	7,002	6,791	6,758	6,795
Number of employees		215,000	218,000	223,000	221,000	220,000	218,000	213,000	216,000	217,000	
Total deposits		634.5	727.2	784.3	885.6	849.7	892.1	1032.6	1181.1	1260.2	
Year-end total assets		1286.6	1421.5	1563.5	1,822	1913.6	2139.4	2436.7	2808.8	3167.0	
Average total assets		1203.3	1350.9	1495.9	1697.1	1852.7	1981	2297.7	2666.5	3107.5	
Year-end capital and reserves		64.92	72.36	82.29	91.35	106.07	114.43	120.55	135.89	137.6	
Deposits to assets		49.3%	51.2%	50.2%	48.6%	44.4%	41.7%	42.4%	42.0%	39.8%	
Capital to assets		5.0%	5.1%	5.3%	5.0%	5.5%	5.3%	4.9%	4.8%	4.3%	
Pre-tax income		7.58	7.88	7.07	9.26	10.09	10.12	11.31	10.83	33.10	
Pre-tax ROAA		0.63%	0.58%	0.47%	0.55%	0.54%	0.51%	0.49%	0.41%	1.07%	
Gross Domestic Product (GDP)	1470.9	2429.40	2936.87	3075.6	3234.74	3394.32	3520.52	3584.62	3667.23	3784.37	
Year-end assets to GDP		53.0%	48.4%	50.8%	56.3%	56.4%	60.8%	68.0%	76.6%	83.7%	
<b>Concentration-Banks</b>											
Largest											
Largest 5 (all large banks, varies from 3-6)		17.1	18.3	18.0	17.0	15.2	15.8	17.4	19.1	18.8	
Largest 10											
Largest 15											

Sources: See notes to Annex B

Table B.7 (continued)

**Country: Germany**

(concentration figures in percent, monetary values in DEM billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions	381	338	342	326	327	319	323	320	319	318	314
Number of new entrants	4	n/a	n/a	n/a	3	3	7	5	4	4	5
Number of employees		64,792	68,462	66,492	66,926	64,145	62,822	63,350	57,733	60,023	61,838
Gross direct premiums written	32.63	60.10	67.60	72.84	80.16	87.46	92.26	97.63	102.27	106.66	116.47
Year-end total assets	207.10	531.12	584.34	619.72	680.11	739.58	801.80	875.34	948.72	1027.10	1116.98
Year-end liabilities	192.42	510.43	562.65	600.13	656.77	715.97	778.29	848.15	919.94	994.14	1074.17
Capital to assets	7.1%	3.9%	3.7%	3.2%	3.4%	3.2%	2.9%	3.1%	3.0%	3.2%	3.8%
Pre-tax income		0.72	1.00	1.00	1.00	2.00	2.00	2.00	3.00	3.00	2.31
Pre-tax return on average assets			0.23%	0.24%	0.19%	0.26%	0.26%	0.18%	0.28%	0.29%	0.22%
Gross Domestic Product (GDP)	1470.90	2429.40	2936.87	3075.60	3234.74	3394.32	3520.52	3584.62	3667.23	3784.37	
Assets to GDP	14.1%	21.9%	19.9%	20.1%	21.0%	21.8%	22.8%	24.4%	25.9%	27.1%	
<b>Non-Life Insurance</b>											
Number of institutions	395	399	407	410	403	334	337	334	331	328	327
Number of new entrants	7	n/a	n/a	n/a	6	7	3	8	5	12	8
Number of employees	n/a	158,966	181,014	183,207	183,246	181,510	164,531	155,122	152,733	150,858	160,398
Gross direct premiums written	46.24	83.48	97.29	106.78	117.87	126.79	134.18	136.69	138.39	137.73	144.59
Year-end total assets	60.66	132.88	141.10	153.47	169.76	190.68	216.23	242.34	265.89	289.83	312.09
Year-end liabilities	47.94	132.97	144.53	157.58	174.14	192.67	215.99	241.02	263.02	283.7	305.22
Capital to assets	21.0%	-0.1%	-2.4%	-2.7%	-2.6%	-1.0%	0.1%	0.5%	1.1%	2.1%	2.2%
Pre-tax income	n/a	3.874	2.674	2.928	4.120	5.456	6.946	8.122	9.208	9.744	11.518
Pre-tax return on average assets			1.95%	1.99%	2.55%	3.03%	3.41%	3.54%	3.62%	3.51%	3.83%
Gross Domestic Product (GDP)	1470.90	2429.40	2936.87	3075.60	3234.74	3394.32	3520.52	3584.62	3667.23	3784.37	
Assets to GDP	4.1%	5.5%	4.8%	5.0%	5.2%	5.6%	6.1%	6.8%	7.3%	7.7%	
<b>Concentration – Life Insurance</b>											
Largest		12.1	11.7	11.8	12.3	12.4	12.3	12.2	12.2	13.4	13.2
Largest 5		29.9	29.1	29.4	29.6	29.5	29.5	29.1	28.9	29.9	29.4
Largest 10		43.9	42.5	43.4	43.6	43.5	44.3	43.9	43.6	45.5	43.8
Largest 15		54.2	52.5	53.4	54.2	54.2	54.9	54.0	54.2	55.8	54.6
<b>Concentration – Non-Life Insurance</b>											
Largest		8.2	8.0	7.6	7.5	7.4	7.1	7.1	6.9	9.2	9.1
Largest 5		20.5	20.0	19.7	19.5	19.5	19.4	19.9	20.1	22.7	22.5
Largest 10		31.7	31.3	30.9	30.8	31.1	31.1	31.4	31.3	33.1	33.5
Largest 15		40.3	40.1	40.0	40.0	40.5	40.2	40.0	39.7	41.0	41.3

Sources: See notes to Annex B

**Table B.8**  
**Country: Italy**

(concentration figures in percent, monetary values in ITL billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions		379	368	351	335	284	271	264	255	248	239
Number of new entrants											
Number of branches		14,711	16,309	17,582	18,926	19,925	20,840	21,438	22,323	23,217	24,048
Number of employees		330,900	336,600	337,300	340,000	338,500	337,500	327,100	322,200	316,600	311,000
Total deposits		751,260	819,280	851,220	919,110	922,390	934,380	949,690	880,490	876,194	898,900
Year-end total assets		1699,000	1938,100	2254,100	2412,200	2464,900	2530,000	2680,600	2810,600	2859,700	3046,200
Average total assets		1547,600	1705,300	2033,400	2250,000	2363,900	2408,600	2504,100	2658,200	2807,000	2844,300
Year-end capital and reserves		92,700	122,100	147,900	155,300	165,600	164,300	168,800	174,800	186,900	201,800
Deposits to assets		44.2%	42.3%	37.8%	38.1%	37.4%	36.9%	35.4%	31.3%	30.6%	29.5%
Capital to assets		5.5%	6.3%	6.6%	6.4%	6.7%	6.5%	6.3%	6.2%	6.5%	6.6%
Pre-tax income		15,460	159,90	14,290	18,200	6,590	8,620	12480	8730	25,200	29,300
Pre-tax ROAA		1.00%	0.94%	0.70%	0.81%	0.28%	0.36%	0.50%	0.33%	0.90%	1.03%
Gross Domestic Product (GDP)	387,670	1310,660	1427,570	1502,490	1550,300	1638,670	1772,250	1872,630	1950,680	2034,560	
Year-end assets to GDP		129.6%	135.8%	150.0%	155.6%	150.4%	142.8%	143.1%	144.1%	140.6%	
<b>Large Commercial Banks</b>											
Number of institutions		26	25	26	26	26	24	24	24	24	24
Number of new entrants											
Number of branches		7,059	7,976	8,939	10,088	10,881	11,456	11,803	12,334	12,566	12,770
Number of employees		184,100	190,200	193,600	194,300	200,500	205,900	201,700	195,300	191,400	184,000
Total deposits		387,176	425,571	453,402	463,734	518,852	546,011	569,070	535,553	540,420	549,670
Year-end total assets		851,326	941,527	1131,501	1200,268	1347,600	1528,410	1635,772	1700,250	1745,496	1868,810
Average total assets		829,485	696,427	1036,514	1165,885	1273,934	1455,612	1545,469	1620,708	1708,720	1775,870
Year-end capital and reserves		47,161	68,188	82,951	86,394	93,758	94,432	98,466	101,642	108,230	118,384
Deposits to assets		45.5%	45.2%	40.1%	38.6%	38.5%	35.7%	34.8%	31.5%	31.0%	29.4%
Capital to assets		5.5%	7.2%	7.3%	7.2%	7.0%	6.2%	6.0%	6.0%	6.2%	6.3%
Pre-tax income		7,105	7,074	5,901	8,709	1,996	2,802	4,960	1870	15,982	20,549
Pre-tax ROAA		0.86%	1.02%	0.57%	0.75%	0.16%	0.19%	0.32%	0.12%	0.94%	1.16%
Gross Domestic Product (GDP)	387,670	1310,660	1427,570	1502,490	1550,300	1638,670	1772,250	1872,630	1950,680	2034,560	
Year-end assets to GDP		65.0%	66.0%	75.3%	77.4%	82.2%	86.2%	87.4%	87.2%	85.8%	

Sources: See notes to Annex B



Table B.8 (continued)

**Country: Italy**

(concentration figures in percent, monetary values in ITL billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions											
Number of new entrants											
Number of branches											
Number of employees											
Total deposits											
Year-end total assets											
Average total assets											
Year-end capital and reserves											
Deposits to assets											
Capital to assets											
Pre-tax income											
Pre-tax ROAA											
Gross Domestic Product (GDP)	387,670	1310,660	1427,570	1502,490	1550,300	1638,670	1772,250	1872,630	1950,680	2034,560	
Year-end assets to GDP											
<b>Concentration-Banks</b>											
Largest											
Largest 5				25.9	26.9	27.7	33.8	33.6	32.8	38.3	39.3
Largest 10				37.5	38.5	40.1	49.7	50.0	48.8	54.6	56.7
Largest 15				46.2	47.3	48.8	58.4	59.1	57.8	62.3	65.0

Sources: See notes to Annex B

Table B.8 (continued)

**Country: Italy**

(concentration figures in percent, monetary values in ITL billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions			62	71	74	76	77	83	87		
Number of new entrants											
Number of employees											
Gross direct premiums written		8.677	10.957	12.508	15.143	18.625	23.055	25.817	36.682		
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	387,670	1310,660	1427,570	1502,490	1550,300	1638,670	1772,250	1872,630	1950,680	2034,560	
Assets to GDP											
<b>Non-Life Insurance</b>											
Number of institutions		164	166	162	166	155	154	156	143		
Number of new entrants											
Number of employees											
Gross direct premiums written		25.509	29.157	32.845	35.110	36.793	38.761	40.855	43.618		
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	387,670	1310,660	1427,570	1502,490	1550,300	1638,670	1772,250	1872,630	1950,680	2034,560	
Assets to GDP											
<b>Concentration – Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											
<b>Concentration – Non-Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											

Sources: See notes to Annex B

Table B.9

**Country: Netherlands**

(concentration figures in percent, monetary values in NLG billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	198	180	173	177	175	173	174	172	169	162	169
Number of new entrants	6	17	9	23	42	47	30	32	33	36	14
Number of branches	6655	7992	7,827	7518	7167	7,269	6,729	6,822	7,032	6,792	N/A
Number of employees	99285	122,900	119,900	119,900	115,400	109,000	111,400	115,900	120,400	128,800	N/A
Total deposits	193.9	510.7	535.2	581.0	618.8	740.3	784.4	878.2	1026.8	1234.9	1404.0
Year-end total assets	396.6	1122.5	1167.7	1255.5	1363.9	1382.0	1503.1	1757.0	2169.9	2659.1	3012.7
Average total assets	370.8	1005.0	1145.1	1211.6	1309.7	1373.0	1442.5	1630.0	1963.5	2414.5	2835.9
Year-end capital and reserves	13	45.0	47.6	50.5	56.0	63.6	68.8	80.4	91.7	102.8	124.5
Deposits to assets		45.5%	45.8%	46.3%	45.4%	53.6%	52.2%	50.0%	47.3%	46.4%	46.6%
Capital to assets		4.0%	4.1%	4.0%	4.1%	4.6%	4.6%	4.6%	4.2%	3.9%	4.1%
Pre-tax income	N/A	5.54	6.06	7.00	8.90	9.65	10.88	12.57	14.33	14.71	22.30
Pre-tax ROAA		0.55%	0.53%	0.58%	0.68%	0.70%	0.75%	0.77%	0.73%	0.61%	0.79%
Gross Domestic Product (GDP)	336.74	516.27	542.22	566.1	579.04	608.42	639.74	661.83	703.39	750.55	
Year-end assets to GDP		217.4%	215.4%	221.8%	235.5%	227.1%	235.0%	265.5%	308.5%	354.3%	
<b>Large Commercial Banks</b>											
Number of institutions		3	3	3	3	3	3	3	3	3	3
Number of new entrants		0	1	0	0	0	0	0	0	0	0
Number of branches		6,618	6,563	6,185	6,019	5,813	5,681	5,465	5,481	5,412	N/A
Number of employees		101.9	99.7	99.4	97.7	94.5	92.3	94.6	99.2	108.2	108.5
Total deposits		359.1	483.5	530.2	561.2	556.9	607.0	647.9	804.6	999.0	1,156
Year-end total assets		565.2	819	889.9	960.9	992.1	1092.0	1240.4	1629.5	2107.8	2379.7
Average total assets			692.1	854.5	925.4	976.5	1042.0	1166.2	1,435	1868.7	2243.8
Year-end capital and reserves		22.0	32.2	34.3	39.0	41.5	44.5	50.0	64.7	62.7	70.3
Deposits to assets		63.5%	59.0%	59.6%	58.4%	56.1%	55.6%	52.2%	49.4%	47.4%	48.6%
Capital to assets		3.9%	3.9%	3.9%	4.1%	4.2%	4.1%	4.0%	4.0%	3.0%	3.0%
Pre-tax income		4.1	4.7	5.1	6.1	6.7	7.5	9.1	11.2	11.3	17.9
Pre-tax ROAA			0.68%	0.60%	0.66%	0.69%	0.72%	0.78%	0.78%	0.60%	0.80%
Gross Domestic Product (GDP)	336.74	516.27	542.22	566.10	579.04	608.42	639.74	661.83	703.39	750.55	
Year-end assets to GDP		109.5%	151.0%	157.2%	165.9%	163.1%	170.7%	187.4%	231.7%	280.8%	

Sources: See notes to Annex B

Table B.9 (continued)

**Country: Netherlands**

(concentration figures in percent, monetary values in NLG billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions											
Number of new entrants											
Number of branches											
Number of employees											
Total deposits											
Year-end total assets											
Average total assets											
Year-end capital and reserves											
Deposits to assets											
Capital to assets											
Pre-tax income											
Pre-tax ROAA											
Gross Domestic Product (GDP)	336.74	516.27	542.22	566.1	579.04	608.42	639.74	661.83	703.39	750.55	
Year-end assets to GDP											
<b>Concentration-Banks</b>											
Largest		50.0	66.4	66.9	66.2	65.7	65.4	64.7	67.7	70.7	69.1
Largest 5		73.7	77.9	77.9	77.0	76.7	76.1	75.4	79.4	81.7	82.2
Largest 10		84.0	85.8	86.8	86.2	86.2	85.6	84.9	87.9	90.2	90.8
Largest 15		87.8	89.3	90.7	90.1	90.2	89.7	89.6	92.0	93.9	94.1

Sources: See notes to Annex B

Table B.9 (continued)

**Country: Netherlands**

(concentration figures in percent, monetary values in NLG billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions	84	96	96	97	98	95	96	99	107	108	109
Number of new entrants	2	0	4	2	5	5	3	6	9	3	4
Number of employees											
Gross direct premiums written	7.29	21.08	24.10	25.15	25.50	27.47	30.13	33.18	37.54	42.75	
Year-end total assets	67.86	190.46	215.15	235.14	267.02	286.19	315.49	351.92	402.71	458.00	
Year-end liabilities	63.04	178.26	199.95	218.36	242.81	262.42	285.83	311.27	351.59	394.82	
Capital to assets											
Pre-tax income	1.24	1.95	2.19	2.37	2.62	2.87	3.67	4.25	4.79	5.20	
Pre-tax return on average assets											
Gross Domestic Product (GDP)	336.74	516.27	542.22	566.1	579.04	608.42	639.74	661.83	703.39	750.55	
Assets to GDP	20.2	36.9	39.7	41.5	46.1	47.0	49.3	53.2	57.3	61.0	
<b>Non-Life Insurance</b>											
Number of institutions	372	385	385	391	393	314	280	288	286	294	291
Number of new entrants	5	12	9	11	9	19	10	16	8	15	11
Number of employees											
Gross direct premiums written	8.58	19.65	20.23	22.09	23.96	26.08	27.38	28.74	30.08	31.93	
Year-end total assets	10.52	29.60	31.56	33.38	36.66	39.87	46.47	53.03	59.94	65.54	
Year-end liabilities	8.01	20.58	21.65	22.77	25.05	27.70	33.03	36.85	40.24	42.96	
Capital to assets											
Pre-tax income	0.84	1.17	1.39	1.05	0.57	0.95	2.00	2.04	2.460	1.75	
Pre-tax return on average assets											
Gross Domestic Product (GDP)	336.74	516.27	542.22	566.10	579.04	608.42	639.74	661.83	703.39	750.55	
Assets to GDP	3.1	5.7	5.8	5.9	6.3	6.6	7.3	8.0	8.5	8.7	
<b>Concentration – Life Insurance</b>											
Largest		25.9	25.0	25.7	25.9	26.2	25.4	26.5	26.0	26.3	
Largest 5		65.7	63.3	63.6	63.3	63.1	61.4	60.5	59.0	57.7	
Largest 10		77.5	75.3	76.1	75.9	76.0	74.6	74.3	73.0	71.7	
Largest 15		83.5	81.6	82.8	83.2	83.8	82.9	82.8	81.3	79.8	
<b>Concentration – Non-Life Insurance</b>											
Largest		13.2	12.1	11.6	10.3	9.3	10.4	11.0	11.5	11.8	
Largest 5		38.7	35.4	33.9	30.1	27.2	29.1	29.6	31.1	30.1	
Largest 10		57.5	52.6	50.4	44.7	40.5	42.5	43.0	44.0	43.1	
Largest 15		70.9	64.9	62.1	55.1	49.9	51.3	52.4	53.2	52.3	

Sources: See notes to Annex B

Table B.10  
Country: Spain

(concentration figures in percent, monetary values in ESP billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions		327	323	319	316	316	318	313	307		
Number of new entrants											
Number of branches		35,234	34,873	35,429	35,193	35,544	36,251	37,079	37,634		
Number of employees		252,000	256,000	253,000	247,000	246,000	245,000	242,000	242,000		
Total deposits		44,500	48,380	51,280	56,330	60,800	67,670	71,110	74,610		
Year-end total assets		70,140	78,870	86,910	103,350	110,690	120,220	126,280	134,950		
Average total assets		66,810	74,500	82,890	95,130	109,100	115,460	123,250	130,610		
Year-end capital and reserves		6,450	8,230	8,430	9,160	10,220	10,370	10,860	11,580		
Deposits to assets		63.4%	61.3%	59.0%	54.5%	54.9%	56.3%	56.3%	55.3%		
Capital to assets		9.2%	10.4%	9.7%	8.9%	9.2%	8.6%	8.6%	8.6%		
Pre-tax income		876	1028	898	344	838	951	1,055	1,229		
Pre-tax ROAA		1.31%	1.38%	1.08%	0.36%	0.77%	0.82%	0.86%	0.94%		
Gross Domestic Product (GDP)	15168.1	50145.2	54927.3	59105.0	60952.6	64811.5	69780.1	73743.3	77896.6	82650.4	
Year-end assets to GDP		139.9%	143.6%	147.0%	169.6%	170.8%	172.3%	171.2%	173.2%		
<b>Large Commercial Banks</b>											
Number of institutions		3	3	3	3	3	3	3	3	3	3
Number of new entrants		0	1	0	0	0	0	0	0	0	0
Number of branches		6616	6563	6165	6019	5813	5681	5465	5481	5412	N/A
Number of employees		101.9	99.7	99.4	97.7	94.5	92.3	94.5	99.2	108.2	108.5
Total deposits		359.1	483.5	530.2	561.2	556.9	607	647.9	804.6	999	1156
Year-end total assets											
Average total assets											
Year-end capital and reserves											
Deposits to assets											
Capital to assets											
Pre-tax income											
Pre-tax ROAA											
Gross Domestic Product (GDP)	15168.1	50145.2	54927.3	59105.0	60952.6	64811.5	69780.1	73743.3	77896.6	82650.4	
Year-end assets to GDP											

Sources: See notes to Annex B

Table B.10 (continued)

**Country: Spain**

(concentration figures in percent, monetary values in ESP billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions		154	160	164	164	165	170	165	159		
Number of new entrants											
Number of branches		16,917	17,824	18,058	17,636	17,557	17,842	17,674	17,530		
Number of employees		157,000	162,000	159,000	153,000	151,000	149,000	143,000	139,000		
Total deposits		23,800	26,140	26,650	28,840	30,470	34,550	34,920	36,360		
Year-end total assets		42,640	49,690	53,530	66,710	70,400	75,960	78,050	82,950		
Average total assets		40,690	46,160	51,610	60,120	70,630	73,180	77,000	80,500		
Year-end capital and reserves		4,230	5,720	5,640	6,000	6,640	6,560	6,560	6,740		
Deposits to assets		55.8%	52.6%	49.8%	43.2%	43.3%	45.5%	44.7%	43.8%		
Capital to assets		9.9%	11.5%	10.5%	9.0%	9.4%	8.6%	8.4%	8.1%		
Pre-tax income		620	720	580	6	480	530	560	640		
Pre-tax ROAA		1.52%	1.56%	1.12%	0.01%	0.68%	0.72%	0.73%	0.80%		
Gross Domestic Product (GDP)	15168.1	50145.2	54927.3	59105.0	60952.6	64811.5	69780.1	73743.3	77896.6	82650.4	
Year-end assets to GDP		85.0%	90.5%	90.6%	109.4%	108.6%	108.9%	105.8%	106.5%		
<b>Concentration-Banks</b>											
Largest											
Largest 5	38.1	38.3	46.3	45.6	43.6	48.5	48.2	48.4	47.2		
Largest 10	56.4	60.2	58.3	61.8	61.3	60.4	62.0	62.0	62.4	61.8	
Largest 15											

Sources: See notes to Annex B

Table B.10 (continued)

**Country: Spain**

(concentration figures in percent, monetary values in ESP billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions		72	75	68	61	62	59	58	57		
Number of new entrants											
Number of employees											
Gross direct premiums written		546.9	767.0	811.8	878.3	1441.6	1372.6	1635.6	1908.0		
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	15168.1	50145.2	54927.3	59105.0	60952.6	64811.5	69780.1	73743.3	77896.6	82650.4	
Assets to GDP											
<b>Non-Life Insurance</b>											
Number of institutions		294	338	315	299	278	254	246	236		
Number of new entrants											
Number of employees											
Gross direct premiums written		1225.1	1398.6	1606.2	1742.1	1865.0	1980.7	2080.5	2122.9		
Year-end total assets											
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	15168.1	50145.2	54927.3	59105.0	60952.6	64811.5	69780.1	73743.3	77896.6	82650.4	
Assets to GDP											
<b>Concentration – Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											
<b>Concentration – Non-Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											

Sources: See notes to Annex B



Table B.11

**Country: Sweden**

(concentration figures in percent, monetary values in SEK billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	598	498	450	108	109	112	116	124	124	126	
Number of new entrants				1	1	7	7	6	3	4	
Number of branches	3,659	3,251	3,064	2,910	2,825	2,690	2,601	2,530	2,522	2,197	
Number of employees		45,329	45,520	44,216	41,329	43,203	43,305	43,328	43,201	43,531	
Total deposits		666	702	705	735	752	765	838	904	947	
Year-end total assets		1,630	1,596	1,519	1,455	1,457	1,585	1,862	2,145	2,410	
Average total assets		1,536	1,593	1,577	1,482	1,491	1,515	1,799	2,047	2,353	
Year-end capital and reserves		97	87	75	83	82	97	98	122	129	
Deposits to assets		40.9%	44.0%	46.4%	50.5%	51.6%	48.3%	45.0%	42.1%	39.3%	
Capital to assets		6.0%	5.5%	4.9%	5.7%	5.6%	6.1%	5.3%	5.7%	5.4%	
Pre-tax income		3	49	13	5	16	21	23	14	21	
Pre-tax ROAA		0.20%	3.08%	0.82%	0.34%	1.07%	1.39%	1.28%	0.68%	0.89%	
Gross Domestic Product (GDP)	528.26	1359.88	1447.33	1441.72	1446.20	1531.10	1649.90	1688.20	1738.90	1800.58	
Year-end assets to GDP		119.9%	110.3%	105.4%	100.6%	95.2%	96.1%	110.3%	123.4%	133.8%	
<b>Large Commercial Banks</b>											
Number of institutions											
Number of new entrants											
Number of branches											
Number of employees											
Total deposits											
Year-end total assets											
Average total assets											
Year-end capital and reserves											
Deposits to assets											
Capital to assets											
Pre-tax income											
Pre-tax ROAA											
Gross Domestic Product (GDP)	528.26	1359.88	1447.33	1441.72	1446.20	1531.10	1649.90	1688.20	1738.90	1800.58	
Year-end assets to GDP											

Sources: See notes to Annex B

Table B.11 (continued)

**Country: Sweden**

(concentration figures in percent, monetary values in SEK billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions	14	12	9	8	9	10	13	15	15	16	
Number of new entrants	0	0	0	0	0	2	3	1	1	1	
Number of branches	1,493	1,345	1,288	1,872	2,474	2,327	2,239	2,202	2,165	1,823	
Number of employees	20,058	25,000	25,100	28,400	37,200	39,100	39,000	39,000	39,200	38,647	
Total deposits	165	440.7	504	536	717.8	731.9	754.9	788.3	860.7	866.1	
Year-end total assets	297	1264.6	1207.7	1153.5	1353.8	1344.6	1459.4	1730.4	1987	2188.6	
Average total assets		1202.6	1254.8	1209.5	1383.1	1383.4	1431.4	1670.2	1897.4	2153.1	
Year-end capital and reserves	13	71.3	65.4	52.9	73.3	72.5	86	85	105.6	109.9	
Deposits to assets		34.8%	41.7%	46.5%	53.0%	54.4%	51.7%	45.6%	43.3%	39.6%	
Capital to assets		5.6%	5.4%	4.6%	5.4%	5.4%	5.9%	4.9%	5.3%	5.0%	
Pre-tax income	0.8	2.6	35.7	3	2.1	13.5	19	21.7	11.8	19.1	
Pre-tax ROAA		0.22%	2.85%	0.25%	0.15%	0.98%	1.33%	1.30%	0.62%	0.89%	
Gross Domestic Product (GDP)	528.26	1359.88	1447.33	1441.72	1446.2	1531.1	1649.9	1688.2	1738.9	1800.58	
Year-end assets to GDP	56.2%	93.0%	83.4%	80.0%	93.6%	87.8%	88.5%	102.5%	114.3%	121.5%	
<b>Concentration-Banks</b>											
Largest	22	18	19	22	22	24	21	21	26	22	
Largest 5		62	67	86	85	86	84	81	87	84	
Largest 10		76	83	93	93	93	92	90	91	90	
Largest 15		82	90	95	95	95	94	92	93	92	

Sources: See notes to Annex B

Table B.11 (continued)

**Country: Sweden**

(concentration figures in percent, monetary values in SEK billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions	15	30	30	32	31	29	28	29	30	37	40
Number of new entrants		8	0	3	2	2	3	1	4	4	4
Number of employees									4,700	4,500	
Gross direct premiums written	11.00	39.69	44.83	42.03	42.41	52.79	53.95	60.04	64.71	75.14	93.55
Year-end total assets	85	403	462	492	562	568	552	851	1,017	1,182	
Year-end liabilities	61.0	216.0	291.0	329.0	365.0	359.0	399.0	415.0	481.6	535.7	
Capital to assets	28.2%	46.4%	37.0%	33.1%	35.1%	36.8%	27.7%	51.2%	52.6%	54.7%	
Pre-tax income		20.0	36.0	17.6	58.5	21.2	54.0	124.0	68.8	115.7	
Pre-tax return on average assets		8.20%	8.32%	3.69%	11.10%	3.75%	9.64%	17.68%	7.37%	10.52%	
Gross Domestic Product (GDP)	528.26	1359.88	1447.33	1441.72	1446.20	1531.10	1649.90	1688.20	1738.90	1800.58	
Assets to GDP	16.1%	29.6%	31.9%	34.1%	38.9%	37.1%	33.5%	50.4%	58.5%	65.6%	
<b>Non-Life Insurance</b>											
Number of institutions	73	97	99	100	112	109	111	99	100	120	120
Number of new entrants	0	13	2	10	17	3	3	8	2	2	3
Number of employees									11800	12000	
Gross direct premiums written	10.5	31.49	37.11	37.17	46.40	35.81	36.31	35.20	36.40	36.10	41.10
Year-end total assets	33.0	145.0	159.0	151.0	170.0	230.0	237.0	295.0	328.0	371.4	
Year-end liabilities	27	75	87	89	99	1486	144	168	182	185	
Capital to assets	18.2%	48.3%	45.3%	41.1%	41.8%	-546.1%	39.2%	43.1%	44.5%	50.2%	
Pre-tax income		2	-0.3	-1.4	9.9	1.9	11.2	19.6	16	21	
Pre-tax return on average assets		2.25%	-0.20%	-0.90%	6.17%	0.95%	4.80%	7.37%	5.14%	6.01%	
Gross Domestic Product (GDP)	528.26	1359.88	1447.33	1441.72	1446.20	1531.1	1649.90	1688.20	1738.90	1800.58	
Assets to GDP	6.2%	10.7%	11.0%	10.5%	11.8%	15.0%	14.4%	17.5%	18.9%	20.6%	
<b>Concentration – Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											
<b>Concentration – Non-Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											

Sources: See notes to Annex B

**Table B.12**  
**Country: Switzerland**

(concentration figures in percent, monetary values in CHF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions		457	444	434	419	393	382	370	360		
Number of new entrants											
Number of branches		4191	4,190	4,111	3,991	3,807	3,727	3,600	3,395		
Number of employees		121,400	120,900	118,500	117,100	116,500	116,000	116,000	115,100		
Total deposits		510.7	534.7	557.1	588.3	613.8	627.2	713.9	793.0		
Year-end total assets		1032.8	1073.3	1112.2	1177.8	1182.8	1300.7	1467.5	1746.8		
Average total assets		1005.6	1053.0	1092.8	1145.0	1180.3	1241.8	1384.1	1607.1		
Year-end capital and reserves		67.3	69.4	72.2	78.0	80.5	82.9	87.6	89.7		
Deposits to assets		49.4%	49.8%	50.1%	49.9%	51.9%	48.2%	48.6%	45.4%		
Capital to assets		6.5%	6.5%	6.5%	6.6%	6.8%	6.4%	6.0%	5.1%		
Pre-tax income		5.24	5.70	5.52	8.04	6.00	6.96	1.45	4.65		
Pre-tax ROAA		0.52%	0.54%	0.51%	0.70%	0.51%	0.56%	0.10%	0.29%		
Gross Domestic Product (GDP)	180.10	317.30	333.66	342.36	349.80	357.46	363.33	365.83	371.59	380.01	
Year-end assets to GDP		325.5%	321.7%	324.9%	336.7%	330.9%	358.0%	401.1%	470.1%		
<b>Large Commercial Banks</b>											
Number of institutions		4	4	4	4	4	4	4	4		
Number of new entrants											
Number of branches		969	983	969	923	955	943	935	840		
Number of employees		62,400	62,500	61,900	61,200	62,000	63,000	64,000	63,000		
Total deposits		271.7	285.2	303.5	314.0	335.9	341.9	404.5	458.4		
Year-end total assets		523.5	543.2	567.3	611.8	622.0	730.6	869.4	1121.2		
Average total assets		516.6	533.4	555.2	589.6	616.9	676.3	800.0	995.3		
Year-end capital and reserves		33.2	34.2	35.2	39.5	42.3	43.9	41.8	42.4		
Deposits to assets		51.9%	52.5%	53.5%	51.3%	54.0%	46.8%	46.5%	40.9%		
Capital to assets		6.3%	6.3%	6.2%	6.5%	6.8%	6.0%	4.8%	3.8%		
Pre-tax income		2.74	3.25	3.25	4.26	3.36	3.43	-2.26	-0.67		
Pre-tax ROAA		0.53%	0.61%	0.59%	0.72%	0.54%	0.51%	-0.28%	-0.07%		
Gross Domestic Product (GDP)	180.10	317.30	333.66	342.36	349.80	357.46	363.33	365.83	371.59	380.01	
Year-end assets to GDP		165.0%	162.8%	165.7%	174.9%	174.0%	201.1%	237.7%	301.7%		

Sources: See notes to Annex B

Table B.12 (continued)

**Country: Switzerland**

(concentration figures in percent, monetary values in CHF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions		222	226	231	234	230	229	226	218		
Number of new entrants											
Number of branches		1,556	1,590	1,561	1,501	1,516	1,507	1,488	1,390		
Number of employees		91,300	90,600	88,700	87,900	88,600	89,000	90,000	89,000		
Total deposits		335.6	352.9	372.8	389.6	412.0	419.8	495.4	564.8		
Year-end total assets		691.2	715.4	744.0	798.6	806.1	917.1	1077.0	1349.7		
Average total assets		677.3	703.4	729.7	771.4	802.4	861.6	997.1	1213.4		
Year-end capital and reserves		53.2	54.8	57.0	62.4	64.9	67.0	66.8	67.7		
Deposits to assets		48.6%	49.3%	50.1%	48.8%	51.1%	45.8%	46.0%	41.8%		
Capital to assets		7.7%	7.7%	7.7%	7.8%	8.1%	7.3%	6.2%	5.0%		
Pre-tax income		4.16	4.68	4.93	7.08	5.35	5.92	0.41	3.39		
Pre-tax ROAA		0.61%	0.67%	0.68%	0.92%	0.67%	0.69%	0.04%	0.28%		
Gross Domestic Product (GDP)	180.10	317.30	333.66	342.36	349.80	357.46	363.33	365.83	371.59	380.01	
Year-end assets to GDP		217.8%	214.4%	217.3%	228.3%	225.5%	252.4%	294.4%	363.2%		
<b>Concentration-Banks</b>											
Largest											
Largest 5		53.2	53.3	54.5	53.4	54.7	54.5	56.7	57.8		
Largest 10											
Largest 15											

Sources: See notes to Annex B

Table B.12 (continued)

**Country: Switzerland**

(concentration figures in percent, monetary values in CHF billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions		29	29	30	30	30	31	31	32	31	32
Number of new entrants											
Number of employees								16,269	17,579	15,031	
Gross direct premiums written		14.21	15.86	17.00	18.94	21.09	24.10	27.16	30.87	34.96	
Year-end total assets								210.56	231.05	259.19	
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	180.1	317.30	333.66	342.36	349.80	357.46	363.33	365.83	371.59	380.01	
Assets to GDP								57.6%	62.2%	68.2%	
<b>Non-Life Insurance</b>											
Number of institutions		89	93	93	95	98	96	96	100	105	106
Number of new entrants											
Number of employees								58,609	41,093	35,973	
Gross direct premiums written		11.23	11.77	12.36	12.81	13.20	13.44	13.62	13.37	13.17	
Year-end total assets								73.06	78.15	80.06	
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	180.1	317.30	333.66	342.36	349.80	357.46	363.33	365.83	371.59	380.01	
Assets to GDP								20.0%	21.0%	21.1%	
<b>Concentration – Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											
<b>Concentration – Non-Life Insurance</b>											
Largest											
Largest 5											
Largest 10											
Largest 15											

Sources: See notes to Annex B

**Table B.13**  
**Country: United Kingdom**  
(concentration figures in percent, monetary values in GBP billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Banks</b>											
Number of institutions	346	507	491	469	462	458	484	467	468	448	418
Number of new entrants		15	25	26	10	11	13	15	18	10	11
Number of branches											
Number of employees											
Total deposits	197	868	843	977	1,039	1,097	1,261	1,198	1,486	1,579	1,590
Year-end total assets	303	1266	1,224	1,398	1,459	1,552	1,767	1,877	2,449	2,587	2,640
Average total assets	284	1250	1,245	1,311	1,428	1,505	1,659	1,822	2,163	2,518	2,614
Year-end capital and reserves	16	82	85	90	94	101	109	117	195	213	224
Deposits to assets	65.0%	68.6%	68.9%	69.9%	71.2%	70.7%	71.4%	63.8%	60.7%	61.0%	60.2%
Capital to assets	5.3%	6.5%	6.9%	6.4%	6.4%	6.5%	6.2%	6.2%	8.0%	8.2%	8.5%
Pre-tax income		9.3	6.6	13.6	8.5	17.3	13.5	14.0	16.8	23.0	
Pre-tax ROAA		0.74%	0.53%	1.04%	0.60%	1.15%	0.81%	0.77%	0.78%	0.91%	
Gross Domestic Product (GDP)	229.58	554.49	582.95	606.58	637.82	676.04	712.55	754.6	803.89	843.73	
Year-end assets to GDP	132.0%	228.3%	210.0%	230.5%	228.7%	229.6%	248.0%	248.7%	304.6%	306.6%	
<b>Large Commercial Banks</b>											
Number of institutions		47	41	39	37	37	40	44	44	44	42
Number of new entrants											
Number of branches		12,994	12,306	11,751	11,445	11,075	10,601	12,070	11,743	11,479	11,274
Number of employees		411,500	399,900	401,200	371,700	386,500	382,700	416,100	41,4100	40,4700	40,9825
Total deposits		453.1	465.4	476.2	493.9	379.6	420.5	548.6	593.3	622.2	665.5
Year-end total assets		515.4	532.4	646.9	690.1	721.9	806.2	1015.1	1129.5	1198.8	1298.9
Average total assets		504.1	523.9	589.6	668.5	706.0	763.9	952.6	1072.3	1164.2	1167.1
Year-end capital and reserves		24.6	24.4	24.5	26.2	29.5	31.3	43.5	47.9	51.0	57.7
Deposits to assets		87.9%	87.4%	73.6%	71.6%	52.6%	52.2%	54.0%	52.5%	51.9%	51.2%
Capital to assets		4.8%	4.6%	3.8%	3.8%	4.1%	3.9%	4.3%	4.2%	4.3%	4.4%
Pre-tax income		3.54	2.10	1.80	5.05	8.08	8.94	11.13	12.37	14.26	16.92
Pre-tax ROAA		0.70%	0.40%	0.31%	0.76%	1.14%	1.17%	1.17%	1.15%	1.22%	
Gross Domestic Product (GDP)	229.58	554.49	582.95	606.58	637.82	676.04	712.55	754.60	803.89	843.73	
Year-end assets to GDP		93.0%	91.3%	106.6%	108.2%	106.8%	113.1%	134.5%	140.5%	142.1%	

Sources: See notes to Annex B

Table B.13 (continued)

**Country: United Kingdom**

(concentration figures in percent, monetary values in GBP billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All Commercial Banks</b>											
Number of institutions											
Number of new entrants											
Number of branches											
Number of employees											
Total deposits											
Year-end total assets											
Average total assets											
Year-end capital and reserves											
Deposits to assets											
Capital to assets											
Pre-tax income											
Pre-tax ROAA											
Gross Domestic Product (GDP)	229.58	554.49	582.95	606.58	637.82	676.04	712.55	754.60	803.89	843.73	
Year-end assets to GDP											
<b>Concentration-Banks</b>											
Largest		12.40					11.41	12.67	9.17	9.17	
Largest 5		43.54					43.62	55.27	43.24	35.20	
Largest 10		55.67					61.48	65.56	58.94	58.89	
Largest 15		61.11					64.67	73.57	64.93	63.41	

Sources: See notes to Annex B



Table B.13 (continued)

**Country: United Kingdom**

(concentration figures in percent, monetary values in GBP billion)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Life Insurance</b>											
Number of institutions		205	202	196	194	191	174	177	177	176	
Number of new entrants		9	4	3	4	2	6	2	2	12 <sup>1</sup>	
Number of employees		240.3	246.9	234.2	222.0	219.7	213.2	213.6	228.5	230.8	
Gross direct premiums written		33.6	39.6	43.4	46.3	43.1	44.9	53.9	61.4	72.4	
Year-end total assets		256.3	306.4	364.6	464.4	465.4	554.8	601.9	718.8	827.0	
Year-end liabilities		224.3	266.9	317.7	391.5	418.1	482.5	539.4	637.5	739.3	
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	2795.6	5803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8759.9	9248.45
Assets to GDP		4.4%	5.1%	5.8%	7.0%	6.6%	7.5%	7.7%	8.7%	9.4%	
<b>Non-Life Insurance</b>											
Number of institutions		570	571	566	576	574	594	578	599	594	
Number of new entrants		15	8	8	18	3	1	11	5	12 <sup>1</sup>	
Number of employees		240.3	246.9	234.2	222.0	219.7	213.2	213.6	228.5	230.8	
Gross direct premiums written		30.7	34.7	40.8	42.1	42.1	41.6	39.6	41.2	40.9	
Year-end total assets		52.3	56.6	66.7	74.8	77.1	87.1	88.8	100.4	113.2	
Year-end liabilities											
Capital to assets											
Pre-tax income											
Pre-tax return on average assets											
Gross Domestic Product (GDP)	2795.6	5803.2	5986.2	6318.9	6642.3	7054.3	7400.5	7813.2	8300.8	8759.9	9248.45
Assets to GDP		0.9%	0.9%	1.1%	1.1%	1.1%	1.2%	1.1%	1.2%	1.3%	
<b>Concentration – Life Insurance</b>											
Largest		13.0	12.1	13.6	13.3	14.6	13.0	15.2	13.4	13.2	
Largest 5		36.3	35.3	34.2	38.1	35.9	34.7	35.6	34.8	38.6	
Largest 10		50.5	50.5	49.5	53.5	51.3	49.1	52.1	51.1	58.0	
Largest 15		62.3	61.8	60.5	64.4	62.2	61	63.2	61	72.8	
<b>Concentration – Non-Life Insurance</b>											
Largest		12.7	11.8	11.4	11.6	11.6	12.9	18.1	17.9	24.0	
Largest 5		48.0	48.8	48.2	49.9	49.6	50.4	54.3	53.7	68.1	
Largest 10		65.6	68.0	65.7	66.1	65.4	65.3	66.0	65.5	77.7	
Largest 15		73.1	75.4	72.8	72.9	71.6	71.1	71.9	70.5	82.8	

<sup>1</sup> Sector total (no separation available)

Sources: See notes to Annex B

Table B.14  
Key measures for all countries

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>All banks</b>											
<b>Number of institutions</b>											
United States	18,711	15,304	15,043	13,859	13,090	12,422	11,790	11,280	10,758	10,305	10,070
Canada	11	66	67	71	68	65	61	52	53	54	53
Japan	157	154	153	151	150	150	173	175	174	170	
Australia	16	34	31	31	33	42	42	42	42	45	44
Belgium		115	119	121	150	147	143	140	131	119	117
France		1,981	1,823	1,701	1,635	1,618	1,453	1,404	1,288	1,242	
Germany		4,719	4,460	4,200	4,038	3,872	3,784	3,674	3,577	3,403	3,167
Italy		379	368	351	335	284	271	264	255	248	239
Netherlands	198	180	173	177	175	173	174	172	169	162	169
Spain		327	323	319	316	316	318	313	307		
Sweden	598	498	450	108	109	112	116	124	124	126	
Switzerland		457	444	434	419	393	382	370	360		
United Kingdom	346	507	491	469	462	458	484	467	468	448	418
<b>Large commercial banks<sup>1</sup></b>											
<b>Number of institutions</b>											
United States	100	100	100	100	100	100	100	100	100	100	100
Canada	11	10	11	12	12	12	12	9	11	11	11
Japan	13	12	11	11	11	11	11	10	9	9	
Australia	6	4	4	4	4	4	4	4	4	4	4
Belgium					7	7	7	7	7	6	5
France		5	5	5	5	5	5	5	5	5	5
Germany		6	4	4	3	3	3	3	3	4	4
Italy		26	25	26	26	26	24	24	24	24	24
Netherlands		3	3	3	3	3	3	3	3	3	3
Spain											
Sweden											
Switzerland		4	4	4	4	4	4	4	4		
United Kingdom		47	41	39	37	37	40	44	44	44	42

<sup>1</sup> Canadian figures reflect domestic commercial banks. Sources: See notes to Annex B

<b>Life insurance</b>											
<b>Number of institutions</b>											
United States		1409	1,350	1,316	1,262	1,241	1,201	1,150	1,134	1,109	
Canada							147	146	151	150	146
Japan	22	30	30	30	30	31	31	44	45	46	47
Australia	48	60	59	54	48	50	50	50	48	46	
Belgium		38	40	43	42	31	30	27	27		
France	80	141	149	147	143	138	138	140	138	135	126
Germany	381	338	342	326	327	319	323	320	319	318	314
Italy			62	71	74	76	77	83	87		
Netherlands	84	96	96	97	98	95	96	99	107	108	109
Spain											
Sweden	15	30	30	32	31	29	28	29	30	37	40
Switzerland		29	29	30	30	30	31	31	32	31	32
United Kingdom		205	202	196	194	191	174	177	177	176	

Sources: See notes to Annex B

Table B.14 (continued)  
Key measures for all countries

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Non-life insurance</b>											
<b>Number of institutions</b>											
United States	1,575	2,406	2,423	2,409	2,387	2,411	2,430	2,418	2,456	2,499	
Canada							212	224	218	213	210
Japan	62	59	59	58	55	56	58	64	65	65	64
Australia	201	166	157	160	161	162	166	170	172	172	
Belgium		176	176	169	163	93	90	92	93		
France	388	463	489	467	466	356	345	343	312	307	300
Germany	395	399	407	410	403	334	337	334	331	328	327
Italy		164	166	162	166	155	154	156	143		
Netherlands	372	385	385	391	393	314	280	288	286	294	291
Spain		294	338	315	299	278	254	246	236		
Sweden	73	97	99	100	112	109	111	99	100	120	120
Switzerland		89	93	93	95	98	96	96	100	105	106
United Kingdom		570	571	566	576	574	594	578	599	594	
<b>Concentration-banks</b>											
<b>Largest</b>											
United States	4.23	3.73	4.02	4.04	4.20	4.45	4.68	4.94	4.87	8.57	8.18
Canada		17.0	17.5	17.6	21.5	20.8	21.2	21.4	21.3	21.5	20.7
Japan	6.3	7.1	7.0	6.7	6.3	6.5	6.5	6.2	8.3	8.9	8.4
Australia	27.3	19.8	25.5	23.4	23.4	21.8	20.3	20.5	20.4	20.8	21.2
Belgium											
France											
Germany											
Italy											
Netherlands		50.0	66.4	66.9	66.2	65.7	65.4	64.7	67.7	70.7	69.1
Spain											
Sweden	22	18	19	22	22	24	21	21	26	22	
Switzerland											
United Kingdom		12.40					11.41	12.67	9.17	9.17	
<b>Largest 5</b>											
United States	14.24	11.3	13.92	15.14	15.89	16.52	16.66	19.87	20.61	26.19	26.56
Canada		60.2	61.7	63.6	70.2	73.0	73.4	74.2	77.8	77.7	77.1
Japan	28.5	31.8	31.7	30.7	30.2	30.3	29.5	29.2	31.0	30.9	29.8
Australia	76.5	72.1	75.1	73.0	71.8	69.5	67.8	68.6	75.0	73.9	73.9
Belgium	53.4	48.0		60.9	60.2	59.9	59.9	59.9	62.8	66.7	71.6
France		51.9	67.8	67.2	67.5	68.1	68.1	68.8	70.2	70.2	69.3
Germany		17.1	18.3	18.0	17.0	15.2	15.8	17.4	19.1	18.8	
Italy				25.9	26.9	27.7	33.8	33.6	32.8	38.3	39.3
Netherlands		73.7	77.9	77.9	77.0	76.7	76.1	75.4	79.4	81.7	82.2
Spain	38.1	38.3	46.3	45.6	43.6	48.5	48.2	48.4	47.2		
Sweden		62.0	67.0	86.0	85.0	86.0	84.0	81.0	87.0	84.0	
Switzerland		53.2	53.3	54.5	53.4	54.7	54.5	56.7	57.8		
United Kingdom		43.54					43.62	55.27	43.24	35.2	

Sources: See notes to Annex B

Table B.14 (continued)  
Key measures for all countries

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Concentration – banks</b>											
<b>Largest 10</b>											
United States	20.32	17.27	20.11	21.21	23.02	24.24	25.23	28.86	29.31	35.63	36.70
Canada		84.5	85.1	85.5	90.5	93.5	94.4	94.8	95.7	95.4	94.9
Japan	49.0	52.3	53.8	53.0	51.8	51.7	51.0	50.6	52.3	51.0	48.8
Australia	96.7	85.1	86.5	86.8	85.0	83.2	81.7	83.7	86.7	86.5	87.0
Belgium	69.4	65.4		75.1	75.2	75.4	75.7	76.5	78.9	80.2	82.5
France		65.6	82.8	82.5	83.4	84.1	84.1	84.6	85.3	85.2	84.6
Germany											
Italy				37.5	38.5	40.1	49.7	50.0	48.8	54.6	56.7
Netherlands		84.0	85.8	86.8	86.2	86.2	85.6	84.9	87.9	90.2	90.8
Spain	56.4	60.2	58.3	61.8	61.3	60.4	62.0	62.0	62.4	61.8	
Sweden		76.0	83.0	93.0	93.0	93.0	92.0	90.0	91.0	90.0	
Switzerland											
United Kingdom		55.67					61.48	65.56	58.94	58.89	
<b>Largest 15</b>											
United States	24.20	22.08	24.86	25.83	27.89	29.61	31.25	34.76	35.43	41.38	42.55
Canada		91.2	91.9	92.3	93.9	95.4	95.9	96.3	96.8	96.6	96.5
Japan	61.7	64.0	63.7	63.2	61.8	61.3	61.0	60.4	60.0	58.2	56.0
Australia	99.7	91.0	91.8	92.7	92.0	89.8	88.5	89.6	91.7	91.9	92.8
Belgium				82.3	82.4	82.4	82.8	82.8	84.8	86.3	87.8
France											
Germany											
Italy				46.2	47.3	48.8	58.4	59.1	57.8	62.3	65.0
Netherlands		87.8	89.3	90.7	90.1	90.2	89.7	89.6	92.0	93.9	94.1
Spain											
Sweden		82.0	90.0	95.0	95.0	95.0	94.0	92.0	93.0	92.0	
Switzerland											
United Kingdom		61.11					64.67	73.57	64.93	63.41	
<b>Concentration life insurance:</b>											
<b>Largest</b>											
United States				9.7	9.45	8.93	8.69	8.06	7.97	7.47	
Canada							17.9	18.9	18.6	18.5	18.6
Japan	23.8	21.1	20.8	20.8	20.8	20.9	21.1	21.2	22.2	22.6	
Australia	37.2	32.4	33	28.3	28.9	26.6	27.2	25.9	32.7	27.9	
Belgium											
France		12.8	15	15.6	18	17.8	18.4	19.8	19.7	22	20
Germany		12.1	11.7	11.8	12.3	12.4	12.3	12.2	12.2	13.4	13.2
Italy											
Netherlands		25.9	25.0	25.7	25.9	26.2	25.4	26.5	26.0	26.3	
Spain											
Sweden											
Switzerland											
United Kingdom		13	12.1	13.6	13.3	14.6	13	15.2	13.4	13.2	

Sources: See notes to Annex B

Table B.14 (continued)  
Key measures for all countries

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Concentration – life insurance</b>											
<b>Largest 5</b>											
United States				28.16	27.45	25.96	25.32	25.73	25.54	25.19	73.3
Canada							65.6	68.4	70.6	73.1	
Japan	66.9	63.9	63.6	63.8	63.8	64.1	64.2	63.7	65.1	53.8	
Australia	82.2	73.5	70.9	65.8	64.1	61.5	60	58.3	61.6	60	
Belgium											
France		48.2	48.9	51.3	49.2	48.5	49.6	53.9	53.2	58.4	56
Germany		29.9	29.1	29.4	29.6	29.5	29.5	29.1	28.9	29.9	29.4
Italy											
Netherlands		65.7	63.3	63.6	63.3	63.1	61.4	60.5	59.0	57.7	
Spain											
Sweden											
Switzerland											
United Kingdom		36.3	35.3	34.2	38.1	35.9	34.7	35.6	34.8	38.6	
<b>Largest 10</b>											
United States				40.19	39.55	38.28	38.35	39.83	39.66	39.42	82.1
Canada							82.8	86.1	80.0	82.0	
Japan	88.6	85.4	85.1	84.9	84.7	84.8	84.8	83.7	85	73.6	
Australia	91.8	87.1	85	81.5	80.6	78.4	76.2	76.3	76.9	76.3	
Belgium											
France		68.3	68.8	75.5	69.7	68.9	69.7	73.4	75.5	80.2	79
Germany		43.9	42.5	43.4	43.6	43.5	44.3	43.9	43.6	45.5	43.8
Italy											
Netherlands		77.5	75.3	76.1	75.9	76.0	74.6	74.3	73.0	71.7	
Spain											
Sweden											
Switzerland											
United Kingdom		50.5	50.5	49.5	53.5	51.3	49.1	52.1	51.1	58	
<b>Largest 15</b>											
United States				48.73	48.78	47.59	48.08	51.32	51.76	52.01	85.0
Canada							86.9	89.5	83.1	85.1	
Japan	97.5	96.6	96.6	96.6	96.6	96.6	96.4	94.8	94.9	82.8	
Australia	94.9	92.6	91.8	90.7	90.5	88.3	86.7	87.2	87.1	87.7	
Belgium											
France		78.9	79.3	87.5	80.3	79.8	81.8	84.8	86.5	91.6	90
Germany		54.2	52.5	53.4	54.2	54.2	54.9	54	54.2	55.8	54.6
Italy											
Netherlands		83.5	81.6	82.8	83.2	83.8	82.9	82.8	81.3	79.8	
Spain											
Sweden											
Switzerland											
United Kingdom		62.3	61.8	60.5	64.4	62.2	61	63.2	61	72.8	

Sources: See notes to Annex B

Table B.14 (continued)  
Key measures for all countries

<b>Concentration – non-life insurance</b>											
<b>Largest</b>											
United States	8.09	8.03	8.47	8.39	8.62	8.54	8.77	9.22	9.53	9.61	
Canada											
Japan	17.1	17.4	17.3	17.4	17.1	16.9	17	16.9	17.2	17.3	
Australia		9.9	12	13.9	11.5	11.5	11.7	11.3	11.3	11.2	
Belgium											
France		10	9.9	9.9	9.4	9.8	10.7	16.4	16.7	15.5	16
Germany		8.2	8	7.6	7.5	7.4	7.1	7.1	6.9	9.2	9.1
Italy											
Netherlands		13.2	12.1	11.6	10.3	9.3	10.4	11.0	11.5	11.8	
Spain											
Sweden											
Switzerland											
United Kingdom		12.7	11.8	11.4	11.6	11.6	12.9	18.1	17.9	24	
<b>Largest 5</b>											
United States	23.83	23.53	23.69	23.08	23.26	23.31	25.52	26.54	27.57	29.72	
Canada											
Japan	48.7	55.2	55	54.6	54	53.8	53.9	53.6	53.7	53.7	
Australia		34.2	31.9	38.7	28.5	29.3	26.5	26.3	27.1	26.6	
Belgium											
France		41.6	41.1	40.6	39.9	40.9	42.9	46.1	56.2	58	56
Germany		20.5	20	19.7	19.5	19.5	19.4	19.9	20.1	22.7	22.5
Italy											
Netherlands		38.7	35.4	33.9	30.1	27.2	29.1	29.6	31.1	30.1	
Spain											
Sweden											
Switzerland											
United Kingdom		48	48.8	48.2	49.9	49.6	50.4	54.3	53.7	68.1	
<b>Largest 10</b>											
United States	36.89	37.45	37.08	36.98	36.41	36.39	38.63	40.69	42.12	44.45	
Canada											
Japan	74.5	79.7	79.3	78.9	78.5	78.5	78.7	77.9	77.4	77.2	
Australia		48.7	41.7	44.2	39.9	44.7	41.2	40.8	37.5	40.9	
Belgium											
France		62	61.4	60.1	59.2	60.6	65.4	66.8	75.5	77	75
Germany		31.7	31.3	30.9	30.8	31.1	31.1	31.4	31.3	33.1	33.5
Italy											
Netherlands		57.5	52.6	50.4	44.7	40.5	42.5	43.0	44.0	43.1	
Spain											
Sweden											
Switzerland											
United Kingdom		65.6	68	65.7	66.1	65.4	65.3	66	65.5	77.7	

Sources: See notes to Annex B

Table B.14 (continued)  
Key measures for all countries

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Concentration non-life insurance</b>											
<b>Largest 15</b>											
United States	45.9	46.35	46.09	46.28	45.48	44.97	47.02	48.97	50.32	52.14	
Canada											
Japan	92.7	94.3	94.2	94.2	94.2	94.3	94.4	93.3	92.4	92.2	
Australia		58.9	55.2	75.2	62.4	57.4	51.7	52.3	50.3	50.9	
Belgium											
France		76.2	75.5	73.5	72.9	74.4	80.2	80.6	85	86.5	85
Germany		40.3	40.1	40	40	40.5	40.2	40	39.7	41	41.3
Italy											
Netherlands		70.9	64.9	62.1	55.1	49.9	51.3	52.4	53.2	52.3	
Spain											
Sweden											
Switzerland											
United Kingdom		73.1	75.4	72.8	72.9	71.6	71.1	71.9	70.5	82.8	
<b>All Banks</b>											
<b>Year-end assets to GDP</b>											
United States	93.5	80.8	76.1	71.8	70.6	70.5	71.3	70.9	72.0	73.6	73.3
Canada	90.7	91.0	93.9	97.0	104.3	109.7	113.2	132.8	151.3	160.1	
Japan	113.4	173.6	162.8	152.5	151.4	150.1	154.3	149.2	152.1	154.3	
Australia	43.0	88.6	90.2	89.9	89.9	91.8	96.2	99.7	103.7	108.7	
Belgium		283.6	277.3	281.1	305.6	299.9	305.7	325.9	335.2	322.9	
France		232.0	228.7	232.9	234.6	228.7	229.6	236.4	245.6	239.4	
Germany		158.9	143.1	148.7	168.5	171.2	181.2	197.6	215.7	230.8	
Italy		129.6	135.8	150.0	155.6	150.4	142.8	143.1	144.1	140.6	
Netherlands	117.8	217.4	215.4	221.8	235.5	227.1	235.0	265.5	308.5	354.3	
Spain		139.9	143.6	147.0	169.6	170.8	172.3	171.2	173.2		
Sweden		119.9	110.3	105.4	100.6	95.2	96.1	110.3	123.4	133.8	
Switzerland		325.5	321.7	324.9	336.7	330.9	358.0	401.1	470.1		
United Kingdom	132.0	228.3	210.0	230.5	228.7	229.6	248.0	248.7	304.6	306.6	

Sources: See notes to Annex B

Table B.14 (continued)  
**Key measures for all countries**  
(in percent)

	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<b>Large commercial banks</b>											
<b>Year-end assets to GDP</b>											
United States	36.0	29.5	29.0	28.6	29.9	31.7	33.3	35.9	40.6	42.9	43.2
Canada	90.7	82.1	85.1	88.5	95.9	101.2	104.8	123.5	140.7	149.7	
Japan	65.8	114.3	103.6	92.6	89.6	87.5	88.2	86.7	84.1	78.7	
Australia	31.1	57.7	64.8	61.6	60.2	60.1	62.5	64.1	66.2	70.9	
Belgium					175.0	178.3	191.8	210.9	226.3	231.8	
France		82.3	83.1	91.7	95.4	86.7	85.4	91.2	99.8	98.4	
Germany		24.9	22.8	23.3	25.0	25.1	28.1	32.1	38.5	45.9	
Italy		65.0	66.0	75.3	77.4	82.2	86.2	87.4	87.2	85.8	
Netherlands		109.5	151.0	157.2	165.9	163.1	170.7	187.4	231.7	280.8	
Spain											
Sweden											
Switzerland		165.0	162.8	165.7	174.9	174.0	201.1	237.7	301.7		
United Kingdom		93.0	91.3	106.6	108.2	106.8	113.1	134.5	140.5	142.1	
<b>Life insurance</b>											
<b>Assets to GDP</b>											
United States		24.5	25.7	26.2	27.5	27.6	29.0	29.6	31.0	32.2	
Canada					32.2	30.9	29.9	30.7	30.2	31.3	
Japan											
Australia	13.6	19.8	21.3	22.3	22.6	21.8	22.2	22.1	30.2	28.4	
Belgium											
France	4.1	14.9	17.5	19.9	23.9	27.1	29.2	34.2	38.9	41.9	
Germany	14.1	21.9	19.9	20.1	21.0	21.8	22.8	24.4	25.9	27.1	
Italy											
Netherlands	20.2	36.9	39.7	41.5	46.1	47.0	49.3	53.2	57.3	61.0	
Spain											
Sweden	16.1	29.6	31.9	34.1	38.9	37.1	33.5	50.4	58.5	65.6	
Switzerland								57.6	62.2	68.2	
United Kingdom		4.4	5.1	5.8	7.0	6.6	7.5	7.7	8.7	9.4	
<b>Non-life insurance</b>											
<b>Assets to GDP</b>											
United States	7.1	9.6	10.0	10.1	10.1	10.0	10.3	10.3	10.5	10.6	
Canada		4.4	4.5	4.4	4.5	4.5	4.6	5.5	5.5	5.7	
Japan											
Australia	4.2	5.1	5.6	5.6	7.2	7.4	7.7	8.2	9.2	9.7	
Belgium											
France	3.9	5.6	5.7	6.2	6.4	6.6	6.0	6.0	6.7	6.5	
Germany	4.1	5.5	4.8	5.0	5.2	5.6	6.1	6.8	7.3	7.7	
Italy											
Netherlands	3.1	5.7	5.8	5.9	6.3	6.6	7.3	8.0	8.5	8.7	
Spain											
Sweden	6.2	10.7	11.0	10.5	11.8	15.0	14.4	17.5	18.9	20.6	
Switzerland								20.0	21.0	21.1	
United Kingdom		0.9	0.9	1.1	1.1	1.1	1.2	1.1	1.2	1.3	

Sources: See notes to Annex B



Table B.15  
**Number of banks from various countries among the ten largest banks**  
 (by assets)

Year	United States	Japan	France	Germany	UK	Other*
1969	7	0	0	0	2	1
1970	6	0	0	0	1	2
1971	4	1	1	1	2	1
1972	3	1	2	1	2	1
1973	3	3	1	1	2	0
1974	3	1	3	1	2	0
1975	3	1	4	1	1	0
1976	3	1	4	1	0	1
1977	3	0	4	2	0	1
1978	4	1	3	2	0	0
1979	2	1	4	2	1	0
1980	2	1	4	1	2	0
1981	2	1	4	1	2	0
1982	2	2	4	0	2	0
1983	2	5	2	0	1	0
1984	2	5	3	0	0	0
1985	2	5	3	0	0	0
1986	1	7	2	0	0	0
1987	1	7	2	0	0	0
1988	0	9	1	0	0	0
1989	1	7	2	0	0	0
1990	0	7	3	0	0	0
1991	0	8	2	0	0	0
1992	0	8	1	1	0	0
1993	0	8	1	0	0	1
1994	0	9	0	1	0	0
1995	0	7	1	1	0	1
1996	0	6	1	1	1	1
1997	0	4	2	1	1	2
1998	2	1	2	1	1	3

Source: *The Banker*, various issues (June or July of every year).

\* Other includes Italy (1969-72), Canada (1970), Brazil (1976-77), China (1993, 1995-97), Switzerland (1997, 1998 (2 of them)) and the Netherlands (1998).

Table B.16  
**Activity levels and market shares of various securities markets, 1999**  
(Values are in USD million, shares are in percent and based on value)

International Equities			
Bank Name	Value	Number	Share
Morgan Stanley Dean Witter	24,059.66	79	16.22
Goldman Sachs & Co	22,197.88	91	14.96
Merrill Lynch & Co	16,286.10	85	10.98
Credit Suisse First Boston	11,309.10	130	7.62
Warburg Dillon Read	9,585.89	50	6.46
Salomon Smith Barney Int	7,352.32	36	4.96
Deutsche Bank	7,268.58	67	4.90
Lehman Brothers	5,377.54	50	3.62
ABN AMRO	4,653.17	39	3.14
Dresdner Kleinwort Benson	4,324.06	29	2.91
International European Equities			
Morgan Stanley Dean Witter	15,895.55	27	19.17
Goldman Sachs & Co	11,621.10	40	14.01
Merrill Lynch & Co	8,017.31	26	9.67
Deutsche Bank	6,520.87	38	7.86
Credit Suisse First Boston	6,396.87	36	7.71
Warburg Dillon Read	6,368.04	29	7.68
Dresdner Kleinwort Benson	3,961.34	26	4.78
HSBC	3,287.05	16	3.96
Lehman Brothers	2,657.83	18	3.20
ABN AMRO	2,626.44	33	3.17
International US Equities			
Morgan Stanley Dean Witter	3,667.70	39	23.85
Credit Suisse First Boston	3,213.19	78	20.89
Goldman Sachs & Co	3,012.60	30	19.59
Merrill Lynch & Co	2,297.11	25	14.93
Deutsche Bank	703.45	28	4.57
Salomon Smith Barney Int	687.93	11	4.47
Lehman Brothers	472.11	16	3.07
JP Morgan	363.34	5	2.36
Bear Stearns & Co	259.05	6	1.68
Toronto-Dominion Bank	176.40	1	1.15

Source: Capital Data – Bondware.

Table B.16 (continued)

**Activity levels and market shares of various securities markets, 1999**

(Values are in USD million, shares are in percent and based on value)

<b>International IPOs</b>			
<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
Merrill Lynch & Co	7,795.87	32	15.90
Goldman Sachs & Co	7,663.52	38	15.63
Morgan Stanley Dean Witter	5,491.35	35	11.20
Credit Suisse First Boston	4,359.81	76	8.89
Warburg Dillon Read	3,648.56	15	7.44
Deutsche Bank	2,127.57	44	4.34
Mediobanca	1,774.57	2	3.62
Lehman Brothers	1,712.20	27	3.49
Credit Lyonnais	1,463.89	5	2.99
Salomon Smith Barney Int	1,283.60	11	2.62

Source: Capital Data – Bondware

<b>US market IPOs<sup>1</sup></b>			
Goldman Sachs & Co	12,912.00	53	20.70
Morgan Stanley Dean Witter	12,836.00	47	20.50
Merrill Lynch & Co	6,826.00	36	10.90
Credit Suisse First Boston	5,872.00	58	9.40
Donaldson Lufkin & Jenrette	3,892.00	39	6.20
Lehman Brothers	2,854.00	30	4.60
Fleet Boston	2,696.00	45	4.30
Salomon Smith Barney Int	2,531.00	22	4.10
Deutsche Bank	2,088.00	27	3.30
Bear Stearns & Co	2,087.00	26	3.30

<sup>1</sup> Data for 1997 exclude closed-end funds and unit issues; data for 1999 exclude closed-end funds and rank ineligible issues.

Source: Thomson Financial Securities Data

<b>Top financial advisers in M&amp;As (all completed involving US targets)</b>			
<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
Goldman Sachs & Co	612,482.60	222	47.60
MSDW	355,500.50	189	27.60
Merrill Lynch & Co	295,620.80	169	23.00
DLJ	253,386.80	228	19.70
Salomon Smith Barney Int	223,797.60	170	17.40
CSFB	221,275.70	139	17.20
JP Morgan	178,586.60	75	13.90
Lehman Brothers	78,206.80	118	6.10
Chase Manhattan Corp	77,278.50	114	6.00
Bear Stearns & Co	68,251.00	74	5.30
Deutsche Bank	61,374.40	101	4.80
Wasserstein Perella	48,892.20	42	3.80
Lazard Houses	38,016.70	44	3.00
Warburg Dillon Read	31,756.40	58	2.50
Houlihan L, H, & Zukin	23,940.20	71	1.90

Source: Investment Dealers' Digest.

Table B.16 (continued)  
**Activity levels and market shares of various securities markets, 1999**  
(Values are in USD million, shares are in percent and based on value)

<b>Top financial advisors (all completed involving European targets)</b>			
<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
Goldman Sachs & Co	239,749.90	72	31.30
MSDW	230,962.40	110	30.10
Merrill Lynch & Co	171,641.90	83	22.40
JP Morgan	143,095.60	75	18.70
CSFB	129,420.90	94	16.90
Lazard Houses	125,198.00	90	16.30
Rothschild	108,027.60	142	14.10
Warburg Dillon Read	106,905.70	100	13.90
Lehman Brothers	91,461.10	47	11.90
Dresdner KB	88,604.00	68	11.60
BNP Paribas	59,357.30	75	7.70
DLJ	58,925.30	58	7.70
Enskilda Securities	54,018.90	58	7.00
Deutsche Bank	51,673.50	91	6.70
Schroders	50,775.00	86	6.60

Source: Investment Dealers' Digest

<b>Top advisers – all global transactions (all completed deals)</b>			
Goldman Sachs & Co	912,948.70	357	39.50
MSDW	608,930.10	364	26.30
Merrill Lynch & Co	518,674.10	336	22.40
CSFB	382,446.50	300	16.50
JP Morgan	361,899.10	229	15.70
DLJ	326,060.80	309	14.10
Salomon Smith Barney Int	291,841.40	248	12.60
Lehman Brothers	182,056.20	182	7.90
Lazard Houses	163,926.50	136	7.10
Warburg Dillon Read	155,616.10	239	6.70
Chase Manhattan Corp	131,049.40	175	5.70
Deutsche Bank	130,764.20	248	5.70
Rothschild	126,092.60	201	5.50
Dresdner KB	99,529.60	97	4.30
Wasserstein Perella	78,821.20	55	3.40

Source: Thomson Financial Securities Data

Table B.16 (continued)

**Activity levels and market shares of various securities markets, 1999**

(Values are in USD million, shares are in percent and based on value)

**Syndicated Loans Arrangers – Euromarkets**

<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
Barclays	43,200.64	159	7.98
Citigroup Inc	38,910.68	145	7.19
Deutsche Bank AG	34,490.87	128	6.37
ABN-AMRO Bank NV	22,644.55	106	4.18
Banque Nationale de Paris	22,093.50	63	4.08
Chase Manhattan Corp	21,932.06	88	4.05
HSBC	20,502.58	74	3.79
Warburg Dillon Read	19,144.48	24	3.54
Dresdner Bank AG	18,451.10	85	3.41
SG	17,192.57	95	3.18
ING Barings	16,295.33	45	3.01
Greenwich NatWest	16,287.08	62	3.01
WestLB	14,562.71	67	2.69
BankAmerica Corp	13,439.75	32	2.48
Credit Agricole	12,165.33	46	2.25
Commerzbank AG	11,479.80	80	2.12
Royal Bank of Scotland plc	11,331.26	46	2.09
Morgan Stanley Dean Witter	11,100.61	8	2.05
JP Morgan & Co	9,896.73	24	1.83
Goldman Sachs & Co	9,468.87	10	1.75

Source: Capital Data – Loanware

**Syndicated Loans Arrangers – US markets**

<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
BankAmerica Corp	208,918.84	1076	19.25
Chase Manhattan Corp	206,699.48	735	19.04
Citigroup Inc	114,002.33	374	10.50
Bank One Corp	74,029.92	446	6.82
JP Morgan & Co	46,991.68	130	4.33
Deutsche Bank AG	36,285.39	171	3.34
First Union Corp	31,316.80	307	2.89
FleetBoston Financial	31,070.65	305	2.86
Bank of New York	30,488.88	139	2.81
Scotia Capital	23,910.88	138	2.20
ABN-AMRO Bank NV	23,108.01	135	2.13
Credit Suisse First Boston	21,361.00	89	1.97
Goldman Sachs & Co	17,092.08	33	1.57
Commerzbank AG	14,031.01	53	1.29
Wachovia Corp	11,767.77	78	1.08
CIBC World Markets	11,667.35	109	1.07
Toronto-Dominion Bank	11,414.13	64	1.05
Donaldson Lufkin & Jenrette	11,094.82	54	1.02
Lehman Bros Holdings Inc	10,750.11	48	0.99
Wells Fargo Bank NA	9,794.25	100	0.90

Source: Capital Data – Loanware

Table B.16 (continued)

**Activity levels and market shares of various securities markets, 1999**

(Values are in USD million, shares are in percent and based on value)

<b>International bonds</b>			
<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
Merrill Lynch & Co	123.48	612	8.94
Morgan Stanley Dean Witter	110.73	517	8.02
Deutsche Bank	104.62	548	7.57
Salomon Smith Barney Int	102.50	295	7.42
Credit Suisse First Boston	79.77	292	5.77
Goldman Sachs & Co	77.37	194	5.60
Warburg Dillon Read	77.22	400	5.59
JP Morgan	69.65	218	5.04
Lehman Brothers	68.87	248	4.99
ABN AMRO	59.73	263	4.32
Dresdner Kleinwort Benson	57.02	303	4.13
Paribas	42.07	164	3.05
Barclays Capital	37.89	168	2.74
Commerzbank AG	28.72	170	2.08
Bear Stearns & Co	27.24	76	1.97
HypoVereinsbank	24.54	166	1.78
CDC Marches	20.47	96	1.48
Nomura Securities Co Ltd	19.38	96	1.40
HSBC	18.01	110	1.30
Chase Manhattan Corp	17.09	67	1.24

Source: Capital Data – Loanware

<b>Public euro and global bonds</b>			
<b>Bank Name</b>	<b>Value</b>	<b>Number</b>	<b>Share</b>
Merrill Lynch & Co	123.20	462	10.02
Morgan Stanley Dean Witter	106.35	406	8.65
Salomon Smith Barney Int	101.64	285	8.27
Deutsche Bank	88.48	389	7.20
Goldman Sachs & Co	78.22	195	6.36
Credit Suisse First Boston	73.41	254	5.97
JP Morgan	69.68	215	5.67
Lehman Brothers	68.67	252	5.59
Warburg Dillon Read	68.44	274	5.57
ABN AMRO	46.39	168	3.77
Paribas	41.45	148	3.37
Dresdner Kleinwort Benson	39.90	150	3.25
Barclays Capital	35.28	154	2.87
Bear Stearns & Co	27.24	76	2.22
Nomura Securities Co Ltd	18.21	93	1.48
Commerzbank AG	17.55	63	1.43
Societe Generale	17.03	70	1.39
Chase Manhattan Corp	15.01	66	1.22
CDC Marches	14.61	48	1.19
HSBC	13.52	53	1.10

Source: Capital Data – Loanware

Table B.17  
**Notional Size of the OTC Derivatives Markets (in USD trillions)**

		<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
Interest rate derivatives	Swaps	7.4	9.7	14.0	18.4	24.0	30.2	47.0	52.0
	Options	2.1	3.3	4.0	5.2	6.9	8.3	12.0	12.3
	Forwards	2.9	3.2	4.4	4.5	5.0	6.1	7.0	8.3
Currency derivatives	Swaps	1.3	1.5	1.7	2.0	2.4	2.6	3.2	3.6
	Options	1.6	1.7	2.2	2.8	3.6	5.0	4.3	3.1
	Forwards	9.1	10.2	12.4	11.8	13.3	13.5	13.3	11.0
Other OTC derivatives	Total	0.2	0.3	0.6	0.9	1.4	1.9	3.4	4.3
Currency derivatives	Total	12.4	16.2	22.4	28.1	35.9	44.6	66.0	72.6
Interest rate derivatives	Total	12.0	13.4	16.3	16.6	19.3	21.1	20.8	17.7
Other OTC derivatives	Total	0.2	0.3	0.6	0.9	1.4	1.9	3.4	4.3
<b>All OTC derivatives</b>	<b>Total</b>	<b>24.6</b>	<b>29.9</b>	<b>39.3</b>	<b>45.6</b>	<b>56.6</b>	<b>67.6</b>	<b>90.2</b>	<b>94.6</b>

Source: Swaps Monitor estimates.