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INTERNATIONAL FINANCIAL MARKETS AND THE
U.S. EXTERNAL IMBALANCE

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Abstract

This paper analyzes movements in the U.S. external imbalance over the 1980s from the perspective of the capital account. It considers the empirical evidence on two competing hypotheses about the causes of the large and persistent net capital inflow during the decade: one that the capital inflow was induced by a substantial increase in the expected rate of return on real fixed investment in the United States relative to other countries, and the other that strong U.S. fiscal stimulus and a declining private savings rate boosted demand for credit in the United States.

The empirical evidence that we review on this score include the pattern and composition of capital inflows, trends in the components of U.S. domestic saving and investment, and movements in U.S. relative to foreign rates of return across different types of real and financial assets. The evidence strongly supports the view that the net capital inflow resulted from an increase in demand for credit, and not to any significant degree from an increase in the relative rate of return on real fixed investment in the United States.

We also consider the sustainability of the U.S. external imbalance. Available empirical evidence on this score suggests that over the short to medium term at least, continued large U.S. external deficits could be absorbed manageably into foreign portfolios. Nevertheless, if those deficits continue to finance U.S. government and private consumption rather than the increased rate of domestic investment that would be needed eventually to service the associated external debt, they are not sustainable in the long run.

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I. Introduction and Summary.

The deregulation and integration of national and international financial markets over the past two decades have resulted in a high degree of cross-border capital mobility, as evidenced by a tremendous increase in the volume of international financial transactions. The mobility of international capital, in turn, has increased the sensitivity of exchange rates and external balances to the fundamental factors determining relative rates of return as well as other arguments in asset demand functions.

In the case of the United States, the enhanced mobility of capital was one factor permitting the emergence of a very large external imbalance in the early 1980s. The global integration of financial markets was, however, only a facilitating factor, not a motivating factor behind the growth and persistence of the U.S. capital account surplus. Opinions on the primary underlying cause of this surplus vary: one view is that the capital inflow was induced by a substantial increase in the expected rate of return on real investment in the United States relative to other countries; another is that the strong U.S.

1. The authors are, respectively, Chief of the Banking and Money Market Analysis Section, Division of Monetary Affairs, and Assistant Director, Division of International Finance, Board of Governors of the Federal Reserve System. This paper was prepared for the BIS meeting of Central Bank Economists, November 15-16, 1989. The views expressed here are the authors', and do not necessarily reflect those of the Board of Governors or other members of its staff. We have benefitted from comments and suggestions by a number of our colleagues, especially Lois Stekler, Charles P. Thomas, and David H. Howard. We also thank Daniel W. Brodkey and Mark Glickman for their assistance.

fiscal stimulus early in the decade boosted this country's demand for credit.

This paper analyzes movements in the U.S. external accounts over the past decade from the perspective of the capital account-- namely, the huge net and gross flows of capital into the United States. The analysis begins with a review of the size and composition of those flows. Reported net capital inflows, of course, grew about in line with the deterioration of the current account. For much of the decade, foreign net purchases of U.S. financial instruments, particularly government and corporate bonds, accounted for the greatest portion of the net inflow. More recently, net direct investment inflows have come to play a prominent role, as foreigners have participated in U.S. corporate restructuring.

In the next section of the paper, we discuss the determinants of U.S. international capital flows. This discussion begins with an analysis of the fundamental determinants of the overall net flow of capital, which we approach via the accounting identity between savings and investment. In particular, we trace through the major shifts that have occurred in the behavior of saving and investment in the United States and abroad, and the macroeconomic policies underlying those shifts.

During the first half of the decade, expansionary fiscal policy in the United States coincided with contractionary fiscal moves in Japan and Germany, the two nations that posted correspondingly large current account surpluses. These policy impulses translated into a sharp decline in government saving in the United States and significant increases in the other two countries. Moreover, at least on an ex-post

basis, changes in the domestic private sector saving/investment balances reinforced the effects of the divergent fiscal impulses on the external accounts. In the United States, the change in the private sector balance stemmed not from an increase in the rate of domestic investment which did not shift significantly from its average of the 1970s--but from a downtrend in private saving.

From the underlying saving and investment trends, we then turn to the intermediate factors motivating capital flows, that is, the movements in the relative, expected rates of return on various real and financial assets at home and abroad. We find little evidence to suggest that the rate of return on real fixed investment in the United States increased significantly, either relative to the past or relative to abroad. However, relative real rates of return on U.S. financial assets did rise substantially during the first half of the 1980s, reflecting the effects of the decline in U.S. government and private saving, initially in the face of significant U.S. monetary restraint. These relative rates of return declined over the second half of the decade, partly reflecting the tightening of U.S. fiscal policy and a less restrictive monetary stance.

Changing relative rates of return had immediate effects on ex-ante demands for assets and on the composition of net capital flows. Their most visible initial impact was on the exchange rate, as predicted by the interest parity relationship. The dollar rose until midway through the decade, then fell, before strengthening somewhat in recent quarters. Several variants of the interest parity condition are examined empirically. Real interest parity for rates on long-term government bonds vis a vis Germany and the G-10 countries as a group is

shown to hold up tolerably well over much of the floating rate period. In the Japanese case, however, there seems to be more support for parity in terms of returns to corporate stocks than for bonds. But even for the reasonably close interest-parity relationship between the United States and the G-10 countries, the fit is far from perfect: the most notable lapse occurred during 1984 when the dollar rose strongly, despite generally declining U.S. relative interest rates. Such lapses, which some observers have labeled exchange market "bubbles," likely stem from a combination of risk premia, safe-haven considerations, changes in the expected equilibrium level of the dollar in the long run, and -- at least for the 1984 episode -- deregulation of Japanese capital outflows.

Of course, the total net capital flow responded more slowly to the shifts in relative rates of return than did the exchange rate, reflecting lags in the adjustment of goods markets and of ex-post domestic saving and investment to the initial shocks to the ex-ante savings/investment balance. The rise in the dollar and the relative increase in U.S. aggregate demand induced by the easy fiscal-tight money U.S. policy mix during the first half of the decade led to the eventual widening of the external deficit and the net capital inflow. As the dollar and relative U.S. growth declined in the second half of the decade, net capital inflows ebbed somewhat. However, the strengthening of the dollar during 1988-89 and the prospects for only moderate near-term reduction in the U.S. budget deficit suggest that significant further progress in reducing the external deficit could well be cut short.

We also consider several changes in government regulations and taxes that could have influenced the pattern of international capital

flows during the 1980s. With regard to flows into the United States, the most important of these microeconomic policy shifts were the relaxation of Japanese and U.K. capital controls in 1979, the further easing of restrictions on Japanese capital outflows during 1984-86, and the removal the U.S. interest withholding tax, which was followed by similar moves abroad.

In Section IV, we consider the sustainability of the U.S. external imbalance. As a result of the massive net capital inflow during the 1980s, the U.S. net international investment position has swung from that of a creditor to a debtor nation. The size of the swing and the speed with which the U.S. net position has continued to deteriorate have raised questions about the sustainability of the deficit. We review some evidence on this score, which suggests that over the short to medium term at least, continued large U.S. external deficits could be absorbed quite manageably into foreign portfolios. Nevertheless, if those deficits continue to finance U.S. government and private consumption rather than the increased rate of domestic investment that would be needed eventually to service the associated external debt, they will not be sustainable in the longer run.

Our conclusions are summarized in Section V.

II. U.S. International Capital Flows and Stocks in the 1980s.

A. Capital Flows.

Net international capital flows into the United States rose substantially between 1980 and 1987, roughly in line with the widening of the U.S. current account deficit. More recently, as the current

account deficit has narrowed, these capital flows have dropped off.

(See Table 1.)

Not only the size, but also the composition of the net and gross flows has changed substantially over the past decade. Official capital showed relatively little net flow, on average, during the first half of the 1980s, and then shifted to large net inflows during 1986-88. The inflows reflected heavy intervention by foreign and U.S. authorities (particularly during 1987), as the dollar declined sharply. During 1987, official inflows represented only part of the full magnitude of intervention, as foreign central banks placed a significant portion of their purchases of dollars in deposits abroad. These placements facilitated the substantial jump in private capital inflows reported by banks during 1987. While intervention activity was light during 1988, continued net official inflows that year resulted as foreign official holdings of dollars were moved from Eurodollar assets into U.S. Treasury securities and other assets in the United States. During the first half of 1989, official capital flowed out on balance, primarily as a result of intervention sales of dollars by U.S. and other G-10 authorities.

Net private capital flows shifted from sizable net outflows during 1980-82 to rapidly growing net inflows during 1983-85; this shift alone provided more than enough financing for the expanding current account deficit over that period. Net private inflows fell back a bit during 1986 and 1987, as did the dollar, and official capital inflows took on a larger role in financing the still growing deficit on the current account. Since the end of 1987, private inflows have again expanded, despite a narrowing of the current account deficit. Much of this overall pattern of expansion in net private capital inflows during

Table 1

Composition of U.S. Net International Capital Flows
(Annual Rates)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989-H1</u>
1. CURRENT ACCOUNT BALANCE <u>1</u>	2	8	-7	-44	-104	-113	-133	-144	-127	-114
2. OFFICIAL CAPITAL, NET	2	-5	-8	-0	-6	-8	34	55	38	-26
3. Foreign Official Assets in the U.S.	16	5	4	6	3	-1	36	45	39	5
4. Of which, G10 (including Switzerland)	-3	-11	-13	6	3	-0	31	39	16	-18
5. U.S. Official Reserve Assets	-7	-4	-5	-1	-3	-4	0	9	-4	-32
6. Other U.S. Government Assets	-5	-5	-6	-5	-6	-3	-2	1	3	1
7. PRIVATE CAPITAL, NET	-30	-23	-20	35	86	105	88	87	99	86
8. Net Inflow Reported by U.S. Banking Offices	-36	-42	-45	20	23	40	20	47	14	-6
9. Securities Transactions, Net	7	7	14	13	33	60	66	26	36	37
10. Private Foreign Net Purchases of										
U.S. Treasury Securities	3	3	7	9	23	20	4	-8	20	23
11. U.S. Corporate Bonds <u>2</u>	4	5	12	5	16	42	49	24	24	25
12. U.S. Corporate Stocks	4	5	3	6	-1	4	17	16	-1	7
13. U.S. Net Purchases of Foreign Securities	-4	-6	-8	-7	-5	-8	-4	-5	-8	-17
14. Direct Investment, Net <u>1</u>	-5	13	7	9	21	5	13	6	44	46
Foreign Direct Investment in U.S.	17	25	14	12	25	19	34	47	58	63
16. U.S. Direct Investment Abroad <u>2</u>	-22	-13	-7	-4	-5	-14	-21	-41	-15	-17
17. Excluding capital gains/losses	-24	-12	-10	-10	-14	-9	-13	-25	-15	-32
18. Other	4	-0	4	-7	10	1	-10	8	5	16
19. CAPITAL ACCOUNT BALANCE	-28	-28	-27	35	80	97	122	142	137	60
20. STATISTICAL DISCREPANCY	25	19	34	9	24	15	11	2	-11	53

1 Capital gains and losses are included in the direct investment receipts and payments components of the current account (line 1) and (with the opposite sign) in the direct investment capital flows (lines 13, 14, and 15).

2 Transactions with finance affiliates in the Netherlands Antilles have been excluded from direct investment outflows and added to foreign purchases of U.S. securities. Outflows to these affiliates were \$2.7 billion in 1988.

SOURCE: Survey of Current Business, U.S. International Transactions, Tables 1 and 6.

1980-85 and contraction during 1986-87 can be accounted for by changes in net private transactions in securities, particularly corporate and Treasury bonds. Net direct investment has played a larger part in the more recent expansion of private net inflows.

Foreign private net purchases of U.S. Treasury securities increased nearly ten-fold over the first half of the decade, then turned to net sales on average during 1986-87, and subsequently rebounded strongly. Net purchases by residents of Asian countries, particularly Japan, accounted for most of the 1980-87 pattern. The more recent growth, however, reflects an increase in net sales of Treasury securities through London; the identities of the final purchasers are unknown.

The growth in foreign net purchases of U.S. corporate bonds early in the 1980s was even stronger than that for Treasury securities, and it was maintained a year longer, through 1986. Corporate bond purchases dropped off in 1987 and 1988, then recovered somewhat in the first half of 1989. Sales through London accounted for nearly three-fourths of the foreign purchases of corporate bonds during the 1980s, while sales to residents of Japan accounted for much of the rest. (See the bottom panel of Table 2.) Sales through London largely reflected the issuance of Eurobonds by U.S. corporations through intermediaries located in the United Kingdom.

Foreign purchases of U.S. corporate stocks increased sharply in 1986 and remained strong through much of 1987, with especially large increases apparent in sales to Japanese residents. (See the top panel of Table 2.) However, for about a year after the October 1987 crash, foreign residents made no net purchases. In the first half of 1989,

Table 2

Foreign Private and Official Net Purchases
of U.S. Stocks and Corporate Bonds by Region of the World
(Billions of Dollars)

<u>STOCKS</u>	<u>1980</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989H1</u>
<u>NET PURCHASES</u>	5.4	5.4	-3.0	4.9	18.7	16.3	-2.0	5.0
Foreign Countries	5.4	5.3	-3.1	4.9	18.9	16.3	-1.8	5.2
Europe	3.1	4.0	-3.1	2.1	9.6	1.9	-3.4	.2
Germany	.2	1.0	-.1	.7	.3	-.1	.2	-.2
Switzerland	.3	1.3	-1.5	-.1	1.6	-1.1	-2.2	-2.0
U.K.	2.5	1.8	-.7	1.7	4.8	.6	-1.0	1.9
Canada	.9	1.2	1.7	.4	.8	1.0	1.1	.1
Japan	-.2	*	-.1	.3	3.3	11.4	1.9	.5
Other Asia	.2	.4	-.3	*	.6	1.5	-.5	-.2
Latin America and Caribbean	.1	.5	.5	1.7	3.0	1.3	1.2	2.5
Middle East	1.2	-.8	-2.0	.2	1.0	-1.4	-2.5	1.9
Africa	*	*	*	*	.3	.1	.2	.1
Other Countries	*	*	.2	.2	.4	.4	.1	.2
Nonmonetary International Organizations	*	.1	.1	.1	-.2	*	-.2	-.2
<u>BONDS a/</u>								
<u>NET PURCHASES</u>	5.4	.9	12.9	44.1	50.6	27.5	28.1	15.5
Foreign Countries	5.5	.9	12.6	44.2	49.8	26.8	28.6	15.2
Europe	1.6	.9	11.7	40.0	39.3	22.0	17.3	10.5
Germany	.2	.3	1.7	2.0	-.3	*	1.3	*
Switzerland	.1	.6	.6	4.0	4.5	1.6	.5	.1
U.K.	1.3	.4	8.4	32.8	33.9	19.8	13.1	9.3
Canada	.1	.1	-.1	.2	.5	1.3	.7	.5
Japan	.1	.5	1.4	5.4	9.6	1.6	7.7	1.5
Other Asia	*	.4	.4	.7	1.7	.4	1.2	1.4
Latin America and Caribbean	.2	.1	.4	.5	1.5	2.9	1.9	1.8
Middle East	3.5	-1.2	-1.2	-2.6	-3.0	-1.3	-.2	-.6
Africa	*	*	*	*	*	*	*	*
Other Countries	*	*	*	*	.1	-.1	-.1	.1
Nonmonetary International Organizations	-.1	*	.3	-.1	.7	.7	-.5	.3
MEMO:								
Net Purchases of Stocks and Corporate Bonds by Official Reserve Holders	--	-2.3	-2.7	-1.8	-2.1	.6	-1.2	1.7
Net Private Purchases of Stocks and Corporate Bonds	--	8.7	12.7	50.9	71.4	43.2	27.3	18.8

a/ Does not include Eurobonds issued by Netherlands Antilles finance affiliates of U.S. Corporations. Does include state and local government securities and securities of U.S. Government agencies and corporations.

*/ Less than \$50 million.

foreigners again became net purchasers of U.S. stocks, with stepped-up demand apparent through London and from Latin America and the Middle East.

U.S. net purchases of foreign securities remained in the relatively narrow range of \$4 billion to \$8 billion per year throughout most of the 1980s (line 13 in Table 1). However, these purchases rose to \$12 billion in the first eight months of 1989. The recent purchases primarily reflected acquisitions of bonds rather than stocks, and took place largely in Europe.

After showing large net outflows during the early 1980s, U.S. banks recorded sizable net inflows since 1984. In part, this shift reflects the retrenchment of U.S. banks in their lending to developing countries. Variations in net bank-reported flows from year to year also reflect fluctuations in bank's needs to raise wholesale funds and in the availability of funds in the Euromarkets -- as, for example, in 1987, when official dollar reserves were placed in that market.

In 1986, foreign direct investment began to flow into the United States at a rate more than double that earlier in the decade. Capital inflows from traditional investors in Europe, particularly the United Kingdom, have continued to account for most of the inflow, while Japanese investments grew especially rapidly between 1980 and 1988 (see Table 3). By sector, the largest inflow in recent years has been into manufacturing, accounting for nearly half of the total inflow since 1985. This investment appears to have been predominantly in the form of foreign acquisition of existing U.S. manufacturing firms; only a small percentage has been associated with the establishment of new firms. A portion of the pickup, at least through 1987, also reflects a

Table 3
Foreign Direct Investment in U.S. by Region of the World
(Billions of dollars)

	<u>1980</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989H1</u>
All Countries	16.9	11.9	25.4	19.0	34.1	46.9	58.4	31.5
Europe	9.8	9.1	14.7	12.8	21.7	40.4	29.8	23.5
Germany	.2	1.0	1.3	2.3	2.0	3.2	2.3	--
Netherlands	4.4	2.8	3.5	2.7	4.4	8.3	4.8	--
Switzerland	.7	.9	1.0	2.7	1.4	3.2	.8	--
U.K.	2.9	3.7	6.9	4.7	10.8	22.4	18.8	13.8
Canada	3.3	.2	3.3	.9	2.5	1.6	2.8	*
Japan	.9	1.7	4.3	3.4	7.3	7.5	17.8	4.4
Latin America and Caribbean	2.3	.5	.6	.7	-.3	-4.2	5.9	2.8
Middle East	.2	*	.8	-3.7	*	.1	.8	--
Other Asia and Africa	.3	.2	.4	.3	.2	.6	.9	.6
Other Countries	.1	.2	1.3	4.6	2.7	.9	.4	.2

Source: Survey of Current Business; various issues.

* / Less than \$50 million.

significant increase in plant and equipment expenditures by U.S. affiliates of foreign manufacturing firms.²

U.S. direct investment abroad has continued to expand, although more than half of the recorded rapid increase during 1985-87 was a result of capital gains associated largely with the depreciation of the dollar. Nevertheless, plant and equipment expenditures by foreign affiliates of U.S. companies, which had been stagnant since the early 1980s, returned to previous peak levels in 1988, and plans call for continued strength in 1989 and 1990.

B. U.S. International Investment Position.

Movements in the stocks of U.S. claims on and liabilities to foreigners are shown in Table 4. Between 1980 and the the first half of 1989, the U.S. net international investment position fell by an estimated \$670 billion, from a sizable net creditor position, to an unprecedented net debt position. However, the net investment position data should be approached with some caution. While the downward trend is indisputable, the level is open to some question, as is discussed in section IV below.

It would appear that most of the decline in the U.S. net investment position represents a net increase in volume of dollar assets in foreign portfolios. As of the end of 1988, both the stock of foreign claims on the U.S. residents and the stock of U.S. claims on foreigners (other than direct investment holdings) were predominantly dollar-denominated. More than 90 percent of U.S. claims on foreigners reported

2. Stekler and Stevens (1989) discuss these developments in foreign direct investment in the United States in more detail.

Table 4
U.S. International Investment Position

	End of Period Stocks (Billions of Dollars)					Average Annual Change (Billions of Dollars)				
	1970	1975	1980	1985	1987	1988	1989H1 ^a	1980-85	1985-87	1987-89H1 ^b
1. U.S. Assets Abroad	165	295	607	949	1170	1254	1278	68	111	72
2. U.S. Official Reserve Assets	14	16	27	43	46	47	63	3	2	11
3. of which, Foreign Currency	*	*	10	13	13	17	33	1	0	13
4. Other U.S. Government Assets	32	42	64	88	89	85	86	5	1	-2
5. U.S. Private Assets Abroad	119	237	517	818	1035	1120	1129	60	109	63
6. Direct Investment	75	124	215	230	308	327	335	3	39	18
7. excluding Capital Gains	--	--	219	245	298	317	323	5	27	23
8. Corporate Stock	7	10	19	39	55	63	68	4	8	3
9. Bonds	14	25	43	73	92	94	97	6	10	9
10. Claims Reported by Banks	14	60	204	447	549	604	598	49	51	33
11. Other	9	18	35	29	31	33	31	-1	1	0
12. Foreign Assets in U.S.	107	221	501	1061	1548	1786	1843	112	244	197
13. Foreign Official Assets in the U.S.	26	87	176	203	284	322	325	5	41	2
14. Other Foreign Assets	81	134	325	858	1264	1464	1518	107	203	169
15. Direct Investment	13	27	83	185	272	329	360	20	44	59
16. Corporate Stocks	27	36	65	124	173	198	202	12	25	19
17. U.S. Treasury Securities	1	4	16	84	78	97	108	14	34	20
18. Other Securities	8	10	10	82	171	195	210	14	45	26
19. Liabilities reported by Banks	23	42	121	354	541	609	599	47	94	39
20. Other	9	14	30	29	29	36	39	*	0	7
21. Net Position	58	75	106	-112	-378	-533	-565	-44	-133	-125
22. Official Assets	-20	-29	-85	-72	-149	-190	-176	-3	-39	-18
23. Direct Investment	62	97	132	45	36	-2	-25	-17	-5	-41
24. Securities	-15	-15	-29	-178	-275	-333	-355	-30	-48	-53
25. Reported by Banks	-9	18	83	93	8	-5	-1	2	-43	-7
26. Other	*	4	5	*	2	-3	-8	-1	1	-6

Source: Survey of Current Business, various issues.

a/ Estimate based on 1988 end stock plus 1989H1 capital flow.

b/ Change computed from end of period stocks.

* Less than \$500 million.

by banks and corporations are known to be in dollars. Most U.S. holdings of foreign bonds probably also are dollar-denominated, although the exact percentage is unknown. The currency exposure of U.S. residents in the aggregate could be significantly affected by off-balance sheet transactions involving swaps options and futures contracts, though little hard information is available on the net impact of these off-balance sheet transactions on currency exposure. Nevertheless, we doubt that these transactions would reverse the above view of currency exposure.

III. Factors Underlying U.S International Capital Flows.

Net and gross international capital flows are influenced by a variety of factors. Ex-post net capital flows are ultimately determined by exogenous factors that influence domestic saving/investment imbalances across countries. We review these factors in the first subsection below. Movements in exchange rates and expected relative rates of return on domestic assets are proximate determinants of net and gross capital flows. Changes in relative rates of return on U.S. and foreign real and financial assets, and their impacts on exchange rates and net capital flows are discussed in the next three subsections. Capital flows can also be influenced by changes in capital and exchange controls; several such changes during the 1980s are discussed in the final subsection. Other factors that affect asset demands include the various classes of risk associated with holding assets denominated in foreign currencies or located in a foreign jurisdiction.³ We do not

³. These classes of risk include political or country risk, default risk, and foreign exchange risk.

attempt to measure risk directly; nevertheless we do consider episodes of significant deviations from interest parity in which risk factors may have played a role.⁴

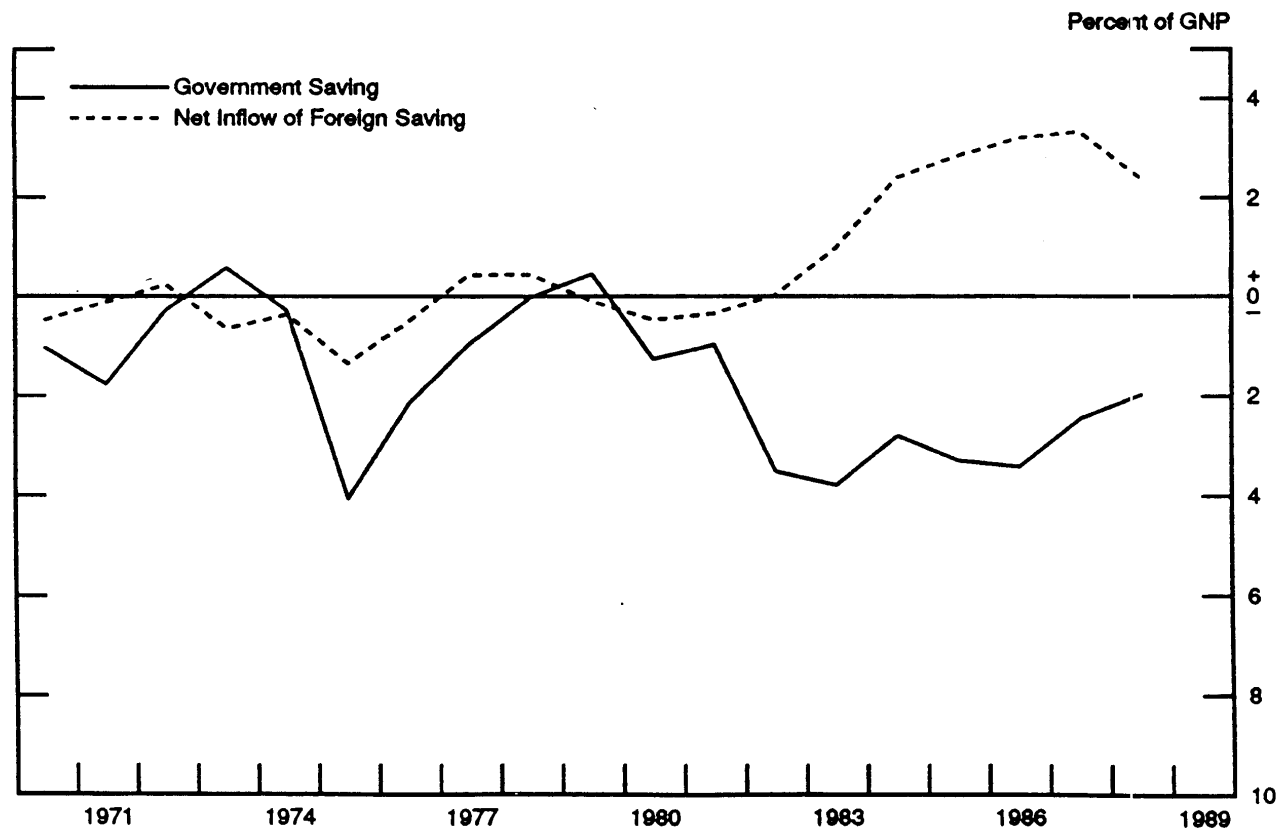
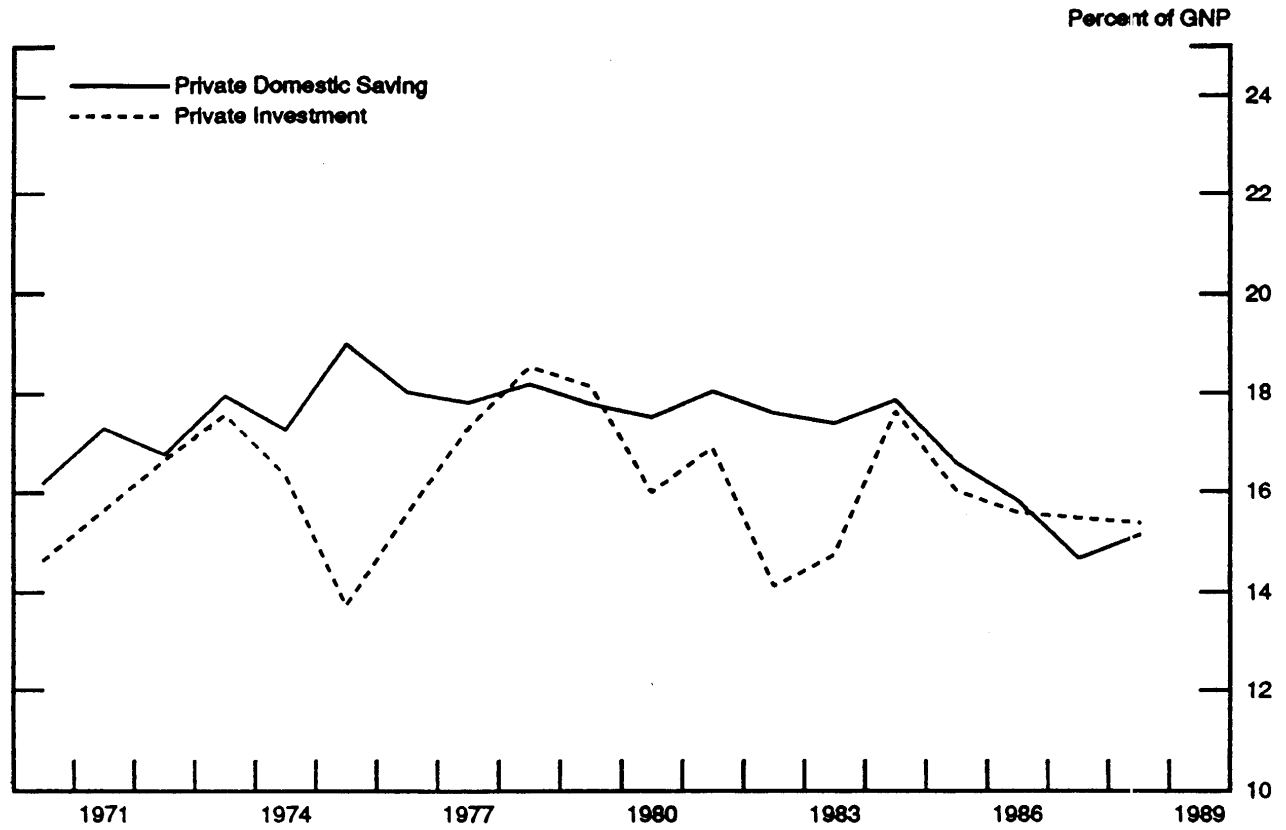
A. Saving/Investment Imbalances.

The huge surplus that emerged in the U.S. capital account in the 1980s was one component of a major change in the flow of saving and investment through the economy that occurred over those years. The net capital inflow represented an addition to U.S. national saving, in effect providing resources available for investment expenditure. This inflow had a beneficial effect on capital formation by allowing real interest rates to remain lower than they otherwise would have been. Focusing on the saving/investment identity highlights this result of the inflow; it also reveals an important basic cause of the inflow.

The ex-post constellation of U.S. saving and investment rates is shown in chart 1. The rapid growth and persistence of the net capital inflow is apparent in the swing in foreign saving from somewhat less than zero at the beginning of the decade to more than 3 percent of GNP by the mid-1980s. Relative to a private domestic saving rate of around 15 percent, this is a very significant magnitude. Moreover, with the government balance falling to a large deficit, the national saving

4. Transactions costs can affect asset demands as well. Among the major currencies, such costs may have increased with the increased volatility of exchange rates during the 1980s, but they are generally thought to have been too small to have influenced significantly the pattern or magnitude of U.S. international capital flows. See Frankel (1988) and Levich (1985). Frankel points out that while bid-ask spreads are generally too small to have much impact on international investment decisions, transactions costs may become significant in certain sectors if defined more broadly to include information costs.

US Saving and Investment



Source: BEA, National Income and Product Accounts

rate has been 2 to 4 percentage points below the private domestic saving rate.

Between 1980 and 1985, the U.S. federal budget deficit widened by more than \$135 billion, as fiscal stimulus was applied at an average rate of more than 1/2 percent of GNP per year. State and local government balances shaded this expansionary impulse downward only slightly. This increase in the structural budget deficit was not made up by a rise in private domestic saving, and a shortfall in national saving ensued. The large inflow of foreign funds enabled private investment in the United States to remain near its 1970s average. Thus the enhanced capital mobility of the 1980s allowed national saving to erode without a commensurate decline in domestic investment.

As a result of the large net capital flows of this decade, correlations between domestic saving and domestic investment have been weakened.⁵ One observer has ascribed the high correlation during the postwar period largely to government policy, specifically to official efforts to target current account balances near zero.⁶ Monetary policy in the U.S. case, at least, has been shown to be largely ineffectual in targeting the current account, since its effects on income and the exchange rate have approximately offsetting effects on the external balance. Therefore, fiscal policy is the relevant tool to look to for such targeting.

Whatever activist role U.S. fiscal policy may have taken at one time with respect to international payments imbalances, it can safely be

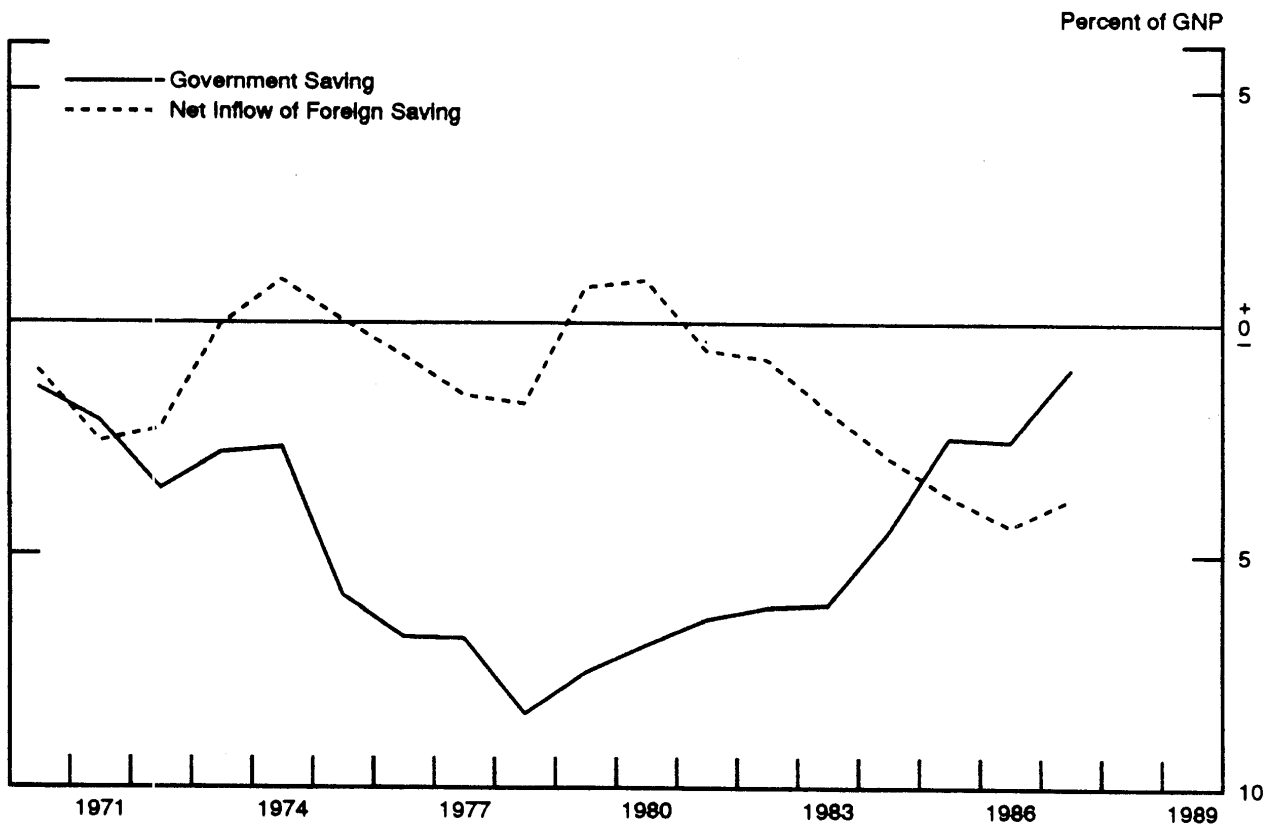
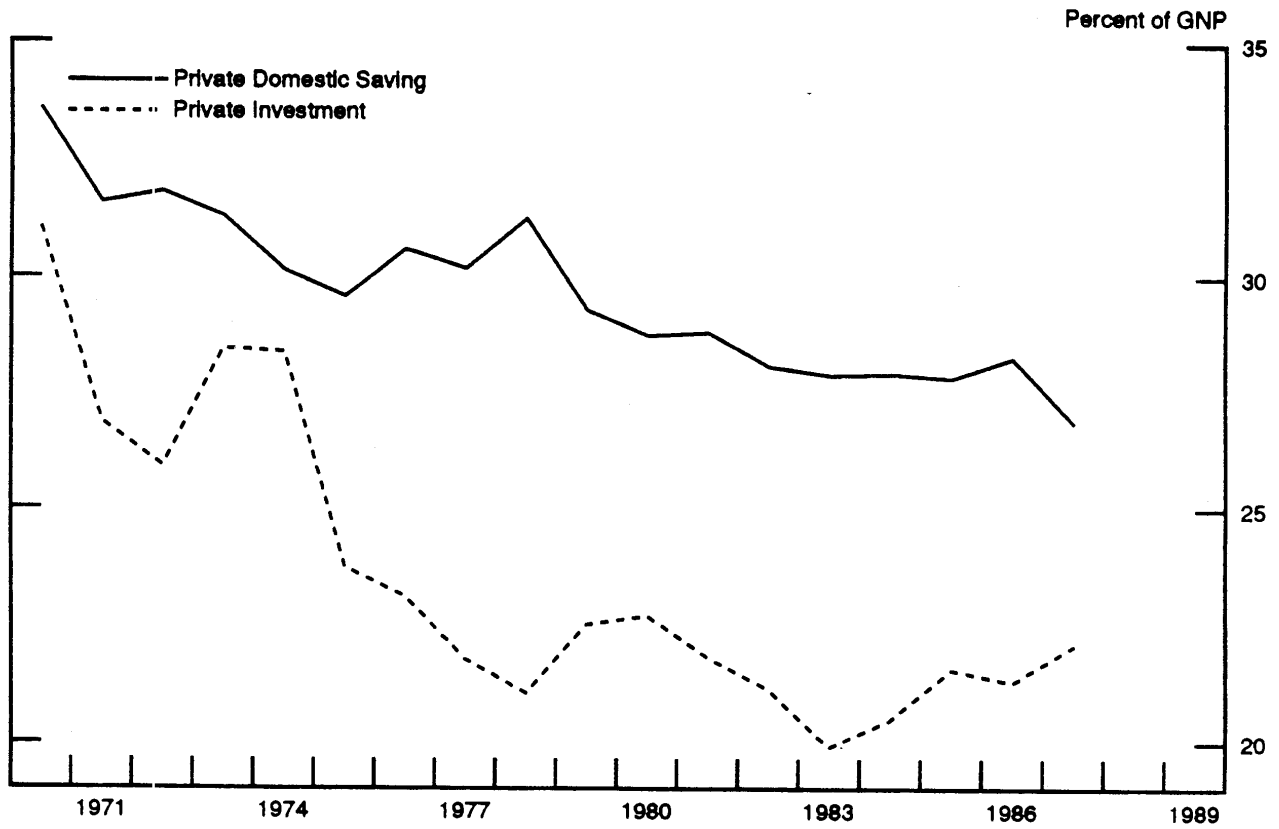
5. See Feldstein and Horioka (1980) for documentation of these correlations. See Frankel (1989a) on the more recent weakening of the relationship.

6. See Bayoumi (1989).

said that the 1981 tax cut was unrelated to external considerations and that fiscal policy since then has been largely immobilized by the imperative of bringing the budget deficit down while answering to competing claims on government resources. Of course, a portion of the motivation for the ongoing deficit-reduction effort may come from concerns over the current account deficit. But the primary consideration is domestic. In particular, many see the government as unable to fund new and vital spending initiatives, crowding out private investment, and unfairly incurring debts for future generations to repay.

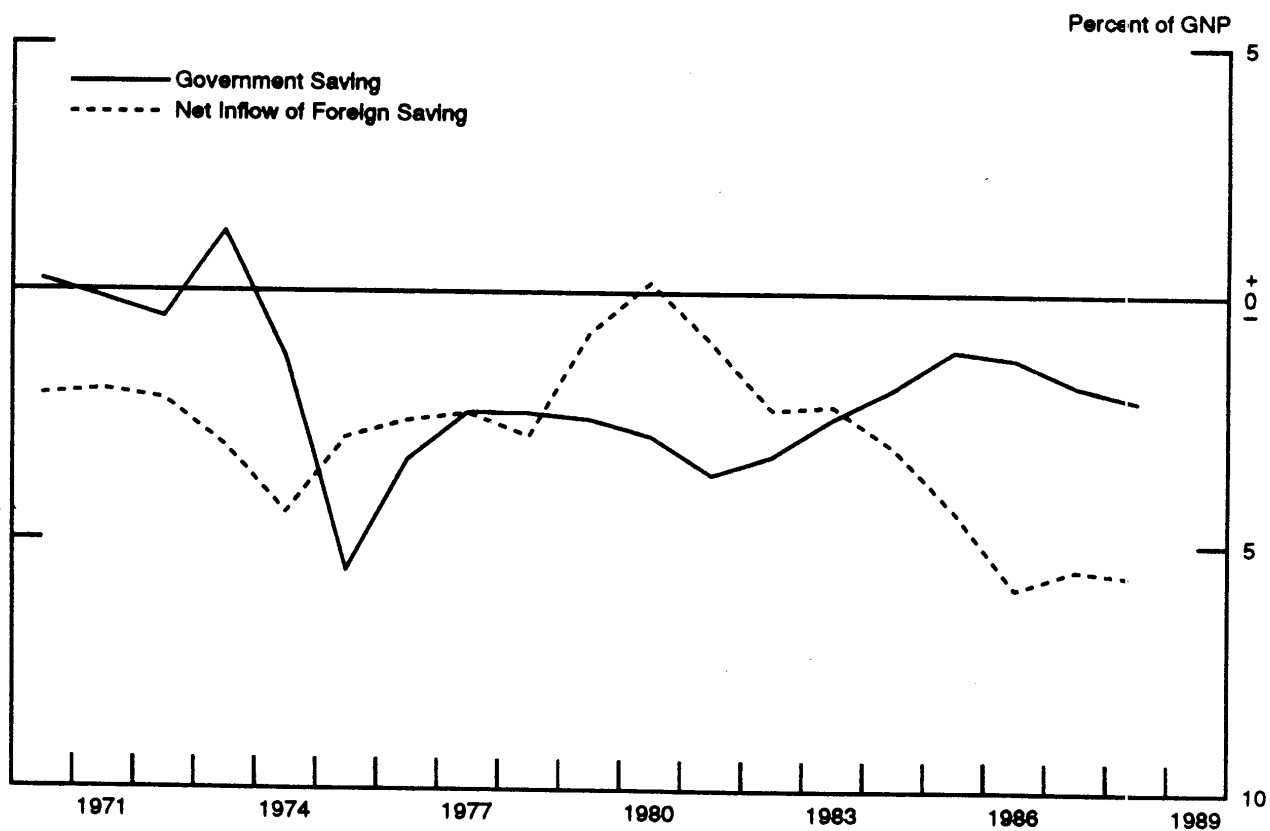
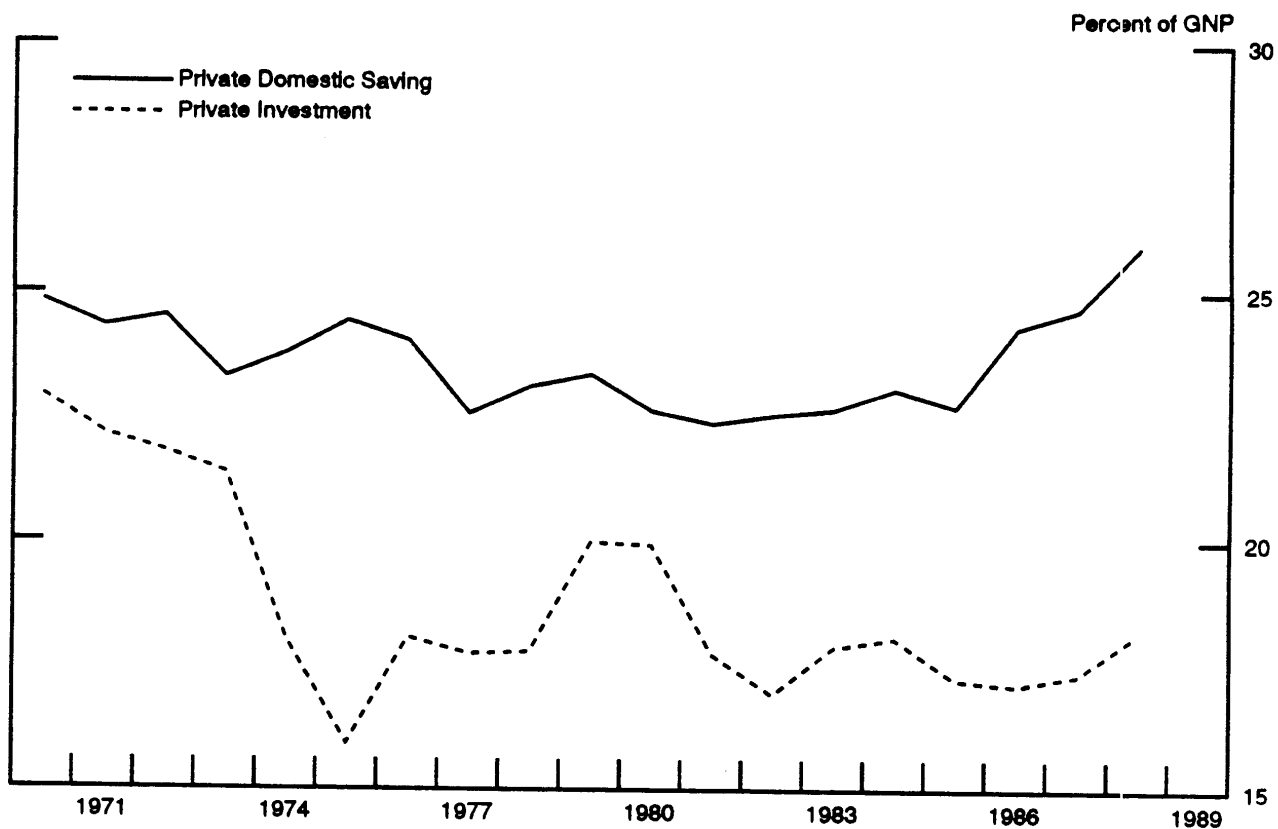
The fiscal easing in the United States during the early part of the 1980s contrasted with events abroad. At that time, other major industrial countries generally were moving fiscal policies toward restraint. In Japan and Germany, especially, government deficits were being reduced; the contractionary fiscal impulses in those two countries averaged better than 1/2 percent of their GNP per year over 1980-85. The trends in the major components of the saving/investment balances in Japan and Germany are shown in charts 2 and 3. Noteworthy points in these charts are the high levels of private domestic saving rates relative to that in the United States, the persistent excesses of private saving over private investment, and the significant uptrend in government saving and net capital outflows through much of the 1980s. The Canadian pattern (chart 4) looks somewhat more like the U.S. case, with a substantial decline in government saving over the first half of the decade and a significant capital inflow over much of the period. Canada's private saving and investment rates have been well above U.S. rates for much of the period, however.

Japanese Saving and Investment



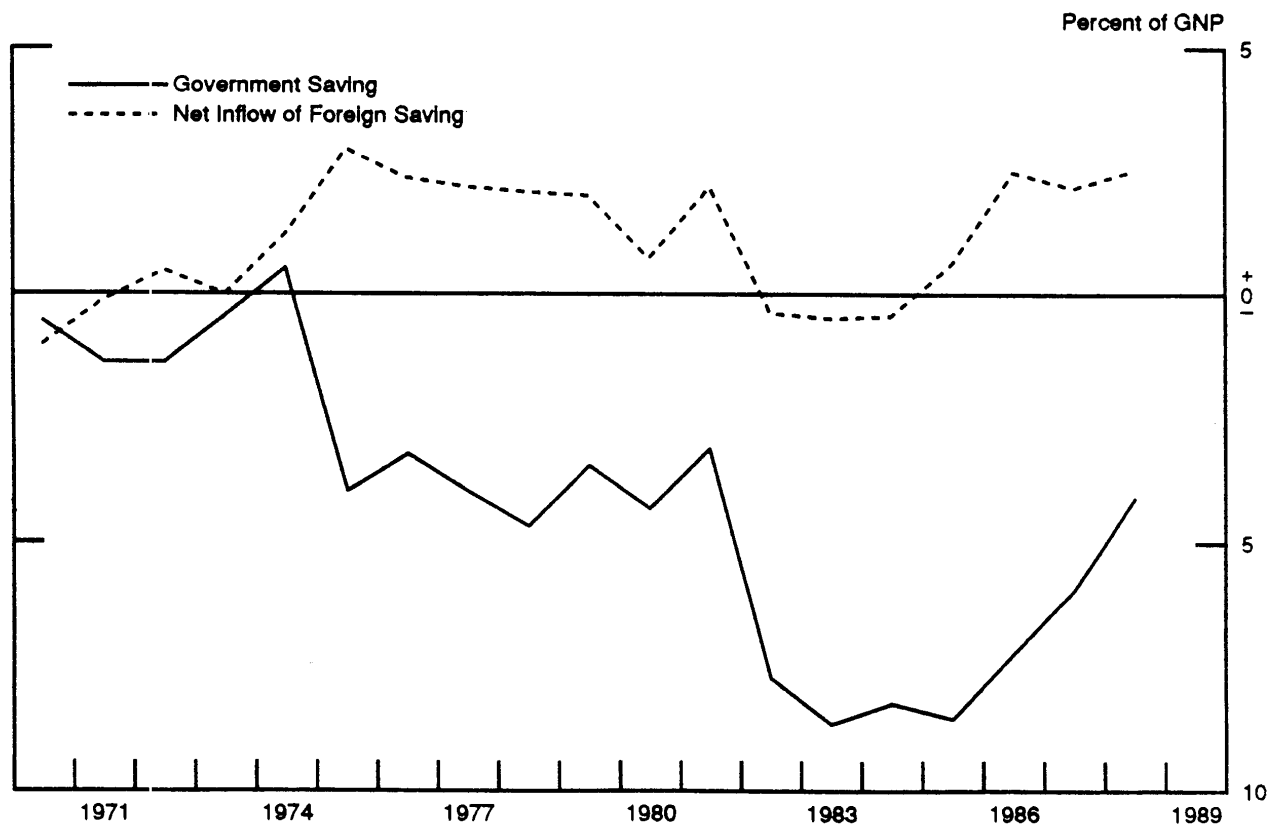
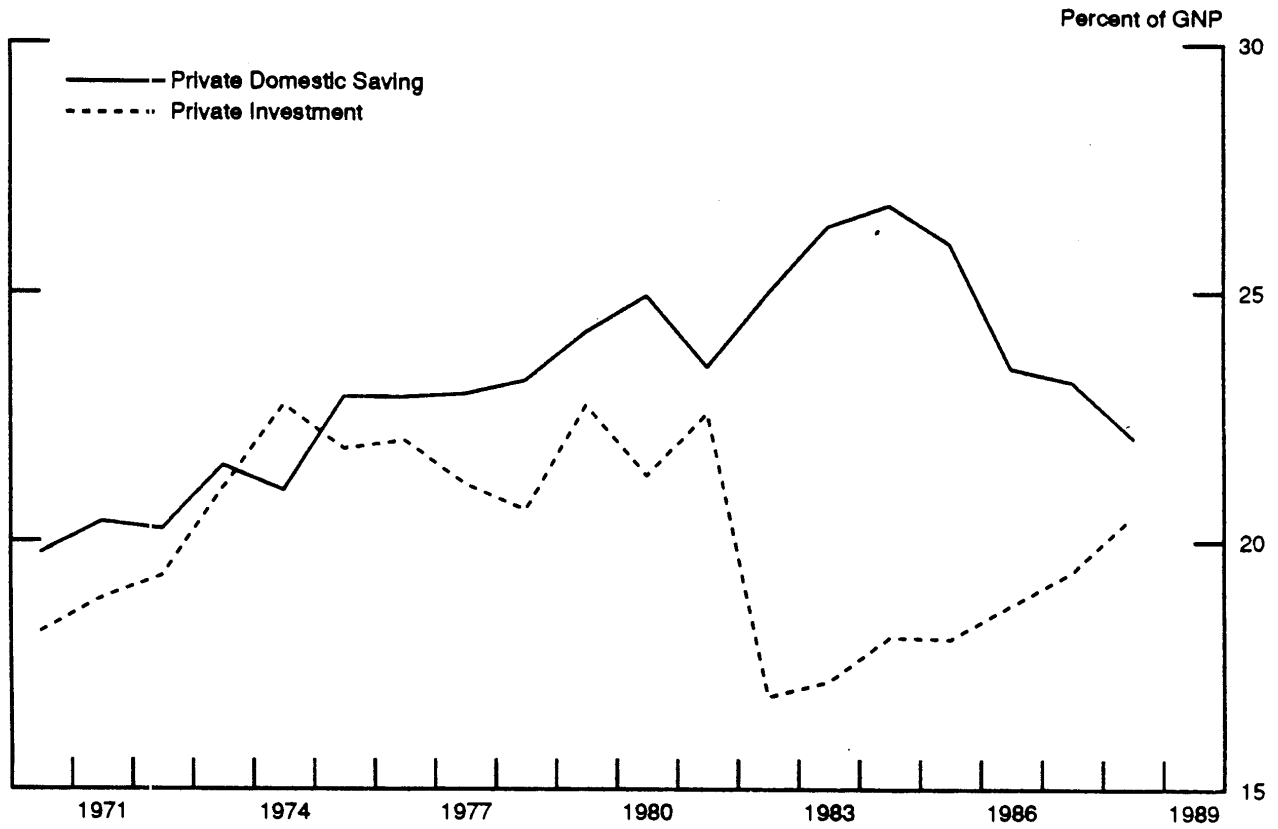
Source: OECD National Accounts

German Saving and Investment



Source: OECD National Accounts

Canadian Saving and Investment



Source: OECD National Accounts

Empirical work generally supports the conclusion that the fiscal stimulus in the United States, with assistance from fiscal restraint in several major foreign countries, was the major factor behind the emergence of the U.S. external imbalance in the 1980s. The stance of monetary policy, while not substantially affecting the size of the imbalance, had its influence on the immediate determinants of the imbalance, that is, on the real exchange rate and relative income growth. The combination of U.S. fiscal ease and a relatively restrictive U.S. monetary policy in the first half of the decade led to an increase in relative real interest rates in the United States, an increase in the exchange value of the dollar, stronger U.S. imports, and weaker U.S. exports. A recent study found that, in the context of mainstream econometric models, roughly two-thirds of the change in the external balance and in the dollar can be traced to the shifts in fiscal and monetary policy.⁷

It seems evident that the enlarged federal borrowing need, in combination with the tighter monetary stance, elevated real interest rates in the United States and drew in foreign funds. Nevertheless, some observers have asserted that it was instead the enhanced investment opportunities and the supply-side stimulus provided by deregulation and the 1981 tax cuts that attracted foreign capital.⁸ No doubt the buoyant economy fostered by the fiscal stimulus and the reduced rigidities in some sectors served as a magnet for capital. As we will see further below, however, statistical evidence provides little support

7. See Hooper and Mann (1989).

8. See, for example, Council of Economic Advisers (1985), Darby (1987), Poole (1989), and Roberts (1989).

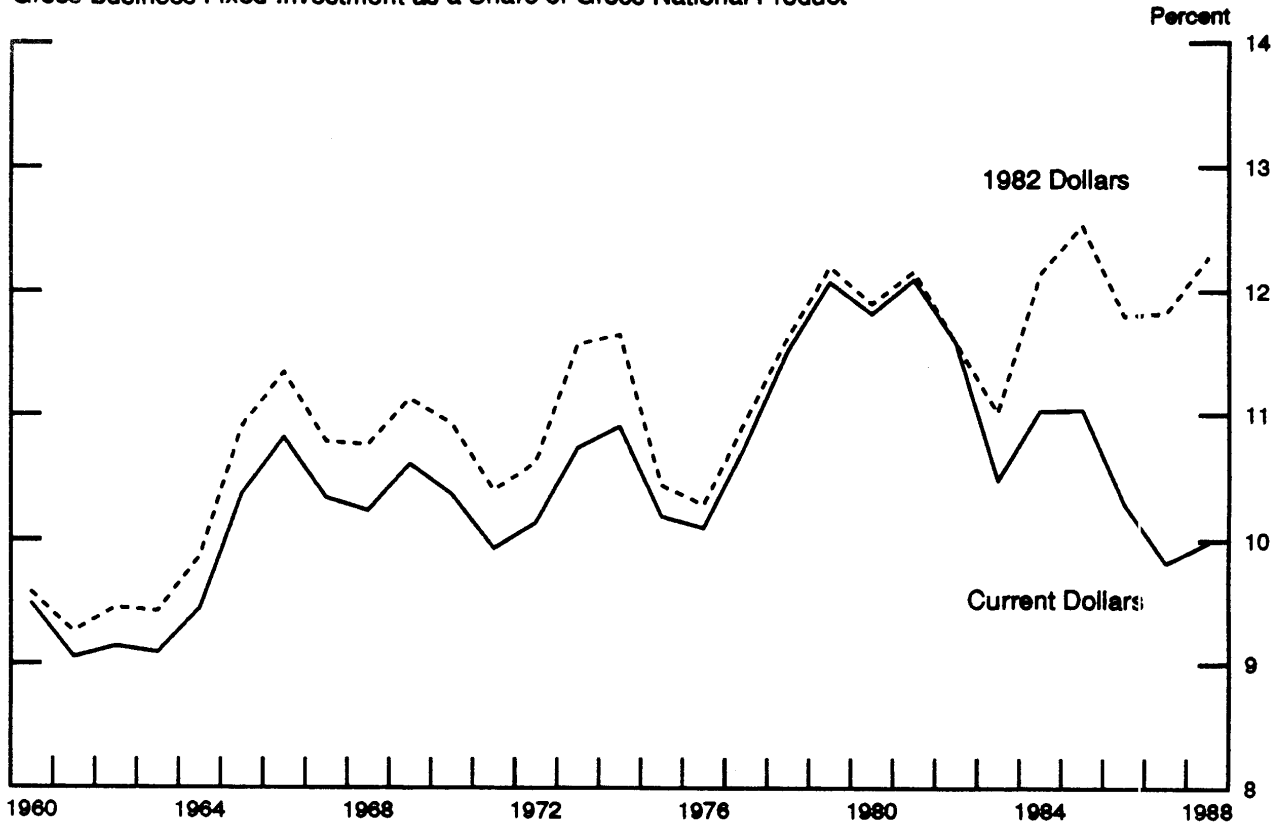
for this thesis as the predominant motivation for the surge in the net capital inflow.

To begin with, an improved environment for investment is not particularly apparent in the figures on actual investment outlays. As we saw in chart 1, total investment by the private sector displayed little trend in the 1980s and little change on average from the 1970s. Eliminating inventory accumulation and residential construction from this series provides a truer picture of the climate for business investment. Unfortunately, the two ratios of gross business fixed investment to output depicted in the top panel of chart 5 provide somewhat differing evidence concerning the attractiveness of investing during the 1980s. Gross real fixed investment as a percent of real GNP showed a small upward trend from its peak in 1979-81, whereas nominal investment as a share of nominal GNP fell back to average levels of the early to mid-1970s. As a result, in real terms, gross business investment as a share of GNP during the 1980s has been about 1 percentage point above its 1970s average, while in nominal terms, the share has risen only slightly. This difference has arisen because the relative price of investment goods--most conspicuously, the relative price of computers--has been declining.

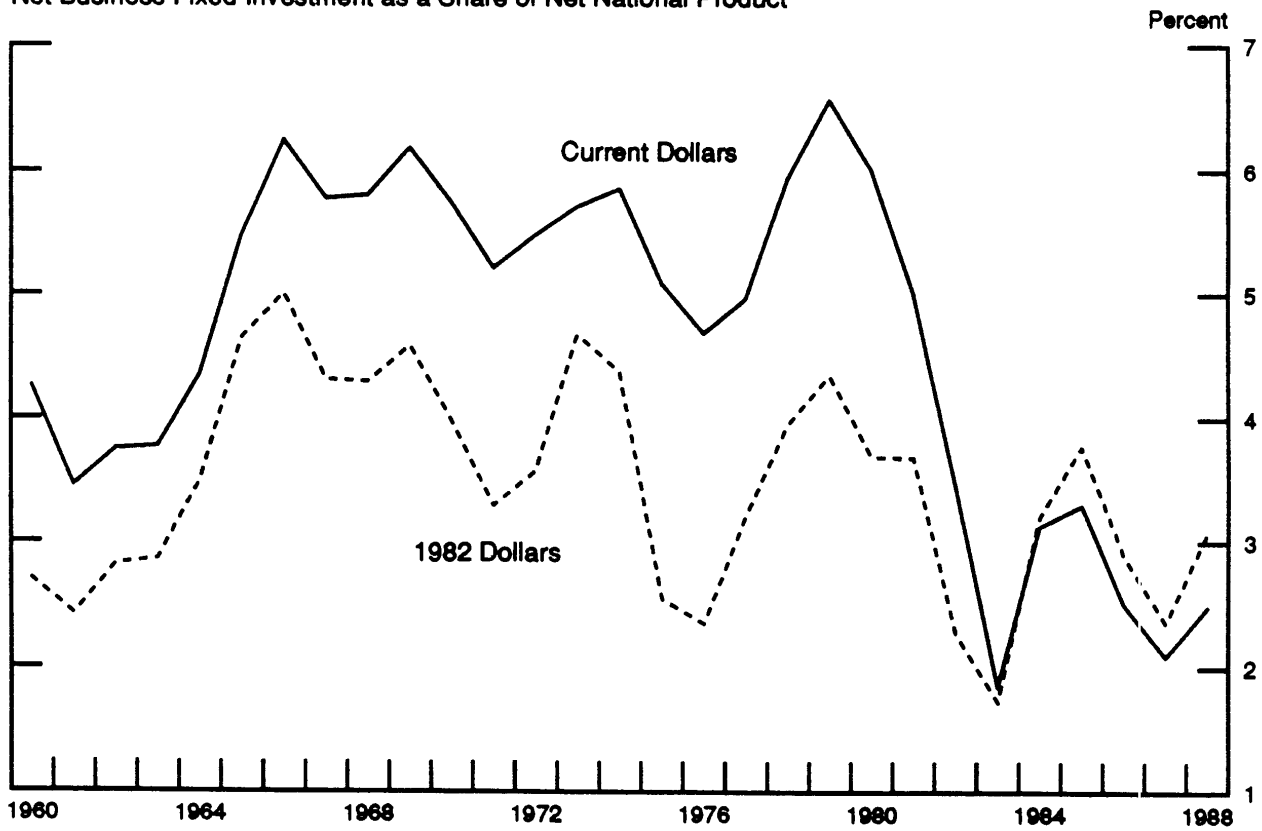
Any increase apparent in the gross investment shares is not, however, apparent in the ratios of net investment to net national product (shown in the bottom panel of chart 5). Net investment, at constant prices, fell to less than 3 percent of NNP on average over the first nine years of this decade. The divergence between net and gross trends reflects the shorter effective lives embodied in more of the

U.S. Business Fixed Investment

Gross Business Fixed Investment as a Share of Gross National Product



Net Business Fixed Investment as a Share of Net National Product



newer capital, in part owing to the continuing shift toward equipment rather than structures.

To abstract from some of the problems caused by the changing composition of U.S. investment spending, one recent study uses a BLS measure of the service flows from capital to evaluate trends in investment.⁹ Normalizing this measure of capital input by the size of the labor force yields a capital/labor ratio that can help gauge the relative strength of capital accumulation in the 1980s. This ratio indicates that private investment spending and capital accumulation, while stronger than during the 1973-79 period, have differed little from postwar averages. The capital/labor ratio during the 1980s has generally risen at a 1-1/2 to 2 percent annual rate, depending on the precise definition of capital; the increases are within 0.2 percentage points of their averages of the past 40 years.

In brief, our analysis in this section suggests that changes in the composition of the saving/investment balances in the United States and in the major capital-exporting nations are consistent with the thesis that differing fiscal stances provided much of the impetus for the huge external imbalances that arose in the first half of the 1980s.

B. Rates of Return on Real Fixed Investment.

A further place to look for a higher expected return on U.S. investment in the 1980s is directly in measures of the estimated returns to such investment. The measures can be compared both to earlier experience in the United States and to returns on investment abroad. For this analysis, the measures compiled include total returns on

9. See Oliner (1989).

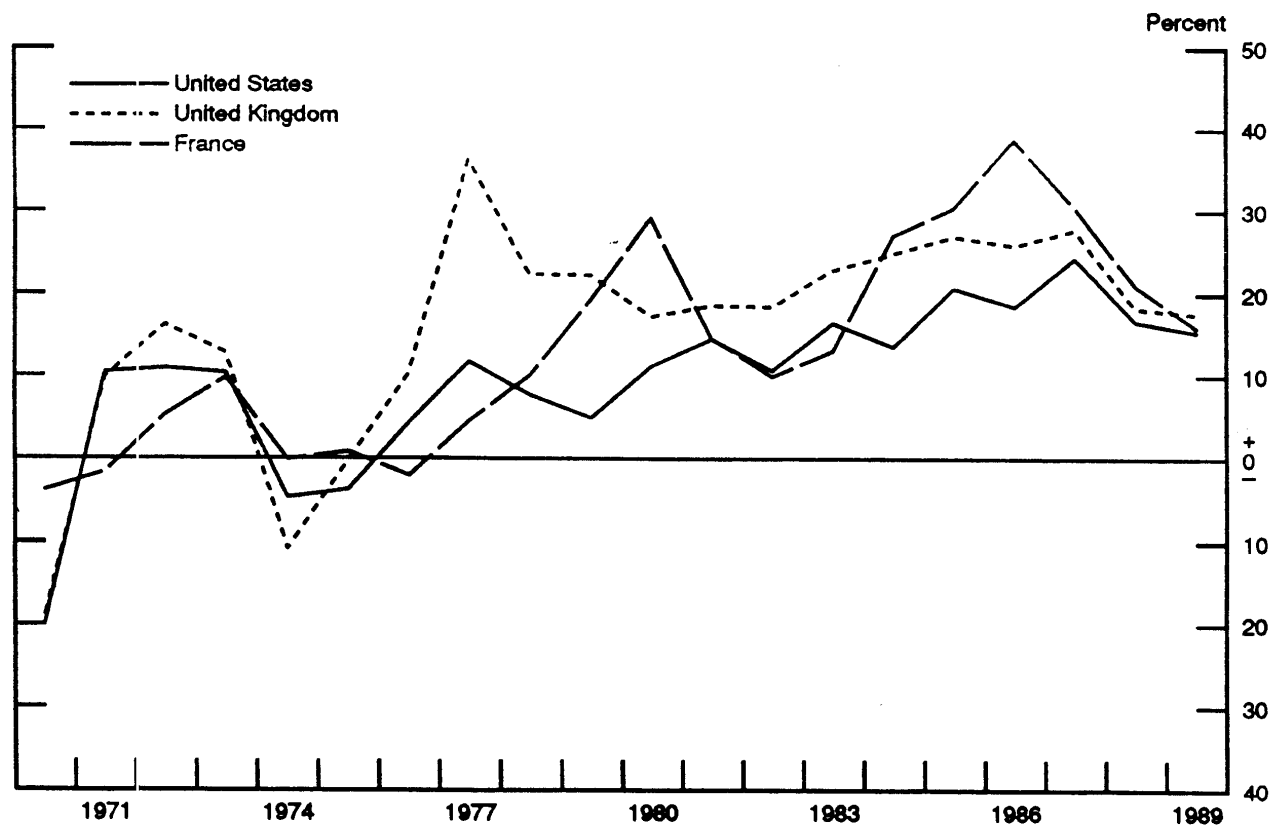
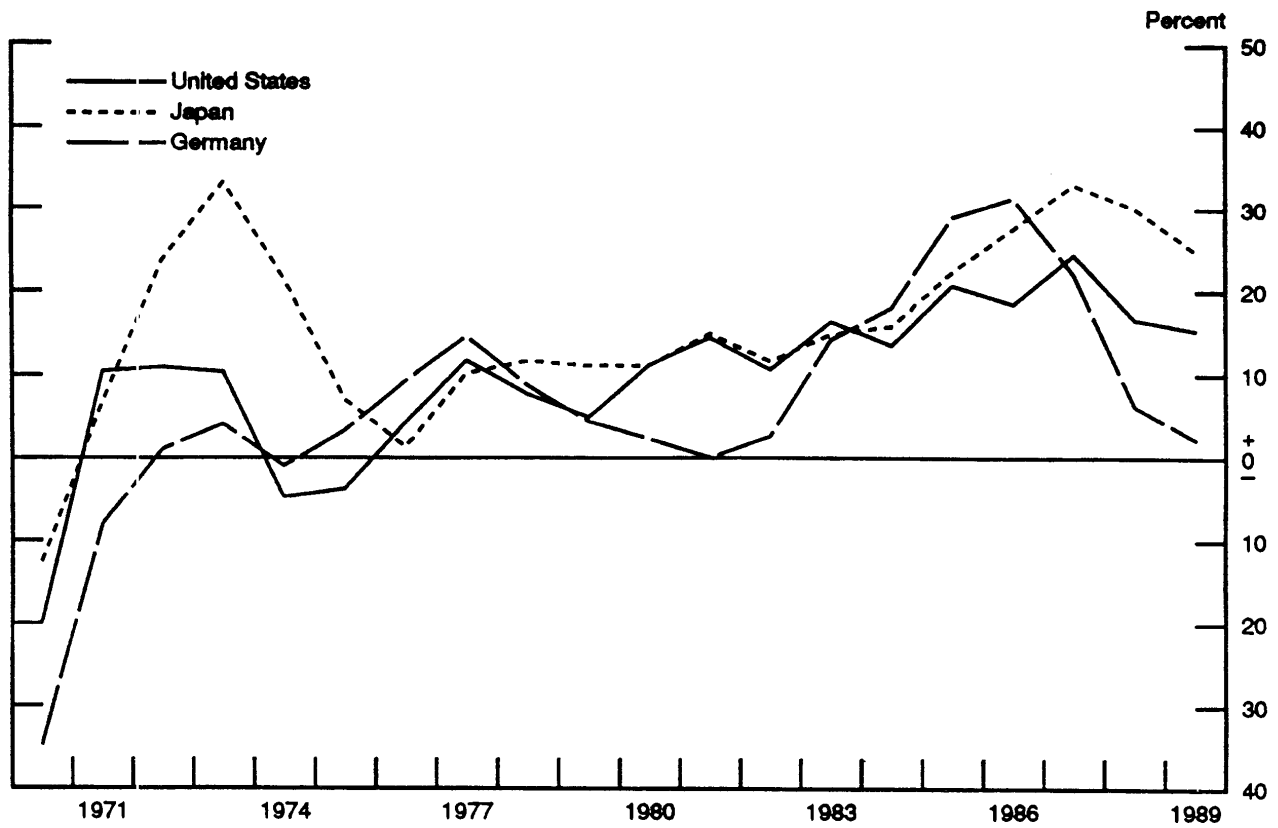
corporate stocks, corporate profit rates, and returns to direct investment. To anticipate a bit, in the cases where the measures provide support for the hypothesis that expected returns on investment have risen in the United States, they tend to support a similar message for returns to investment in other major industrial economies.

A three-year centered moving average of the total return to holding corporate stock is one proxy for the expected rate of return on real investment. Chart 6 displays this measure, which includes both capital gains and dividends, for the United States and four other countries. The bull markets of the 1982-87 period are evident in the large returns realized around that time. The improvement in the performance of the U.S. stock market relative to the 1970s could be taken as supporting the case for an enhanced expected return to investment in this country, but to conclude that this would draw in foreign capital requires further that the U.S. rate has increased relative to that abroad. This latter condition does not, in general, appear to have held; markets in other countries followed a path similar to that in the United States, with returns in the U.S. market among the lowest of those shown in the chart.

One also might consider the earnings-price ratios on corporate stocks as an indicator. However, earnings-price ratios are notoriously difficult to compare across countries -- even a comparison of trends is fraught with difficulties. Nevertheless, over the 1980s these ratios fell in the United States, as well as in Japan and Germany, in keeping with the climb in stock prices.

Several different measures of corporate profit rates for the U.S. manufacturing industry are displayed in the top panel of chart 7.

Expected Total Return on Corporate Stocks^a

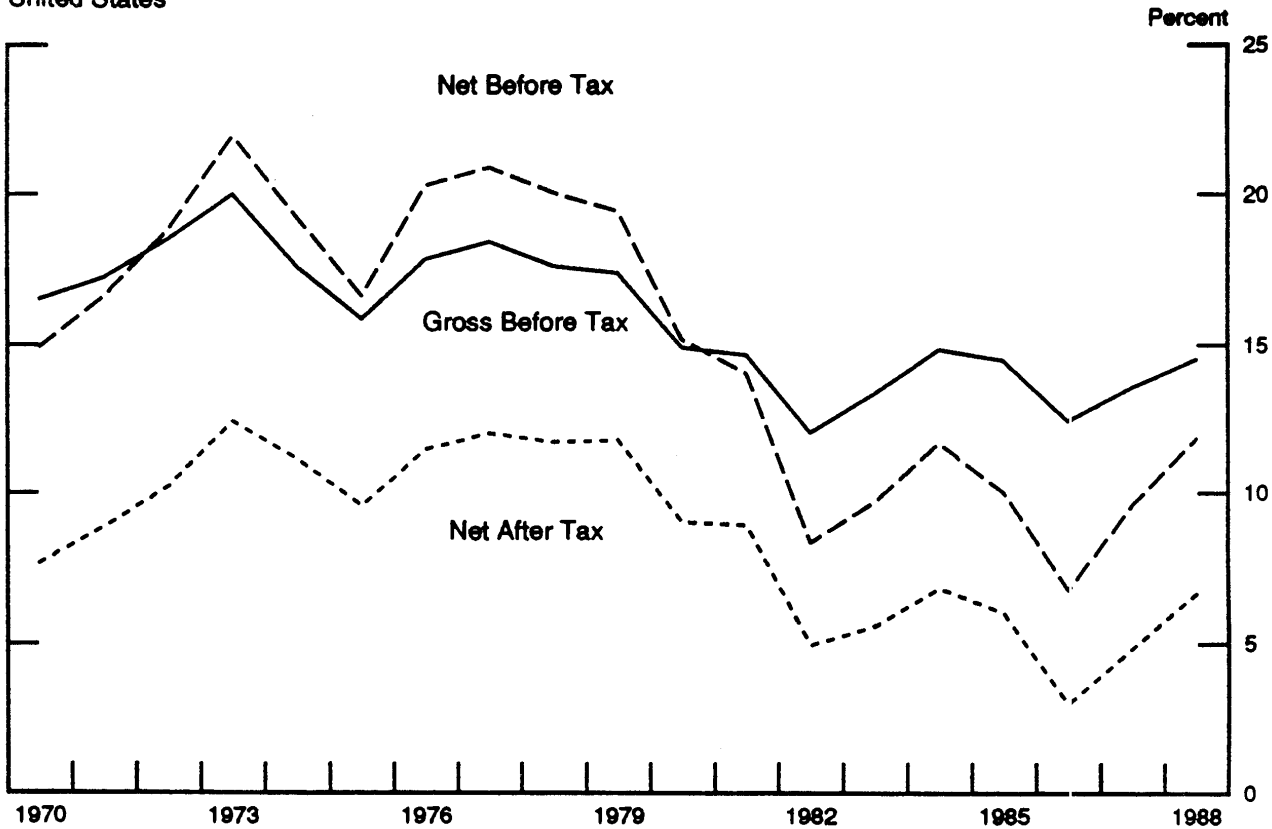


a. Three-year centered moving average of annual return to stocks including dividends.

Chart 7

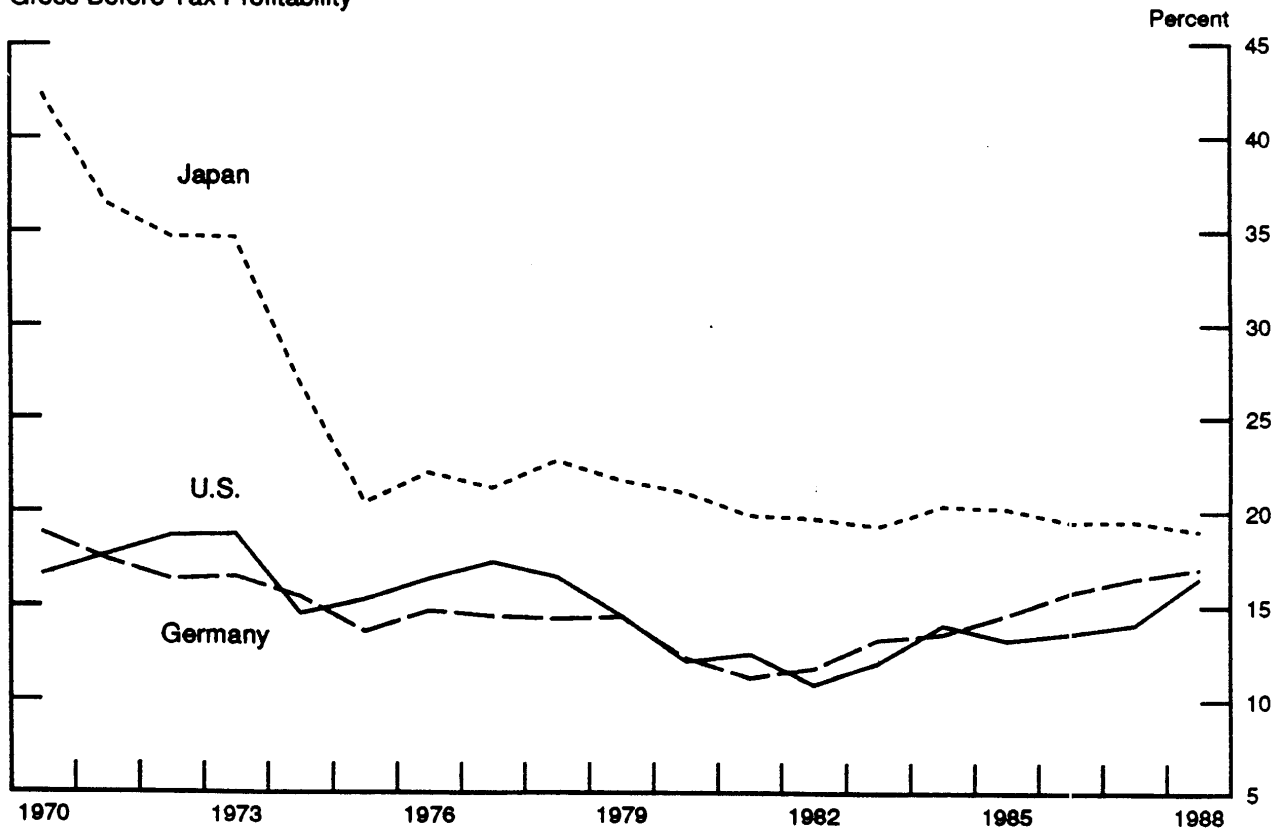
Profitability of Manufacturing

United States ^a



Source: BEA National Income and Product Accounts.

Gross Before Tax Profitability ^b



Source: OECD National Income Accounts.

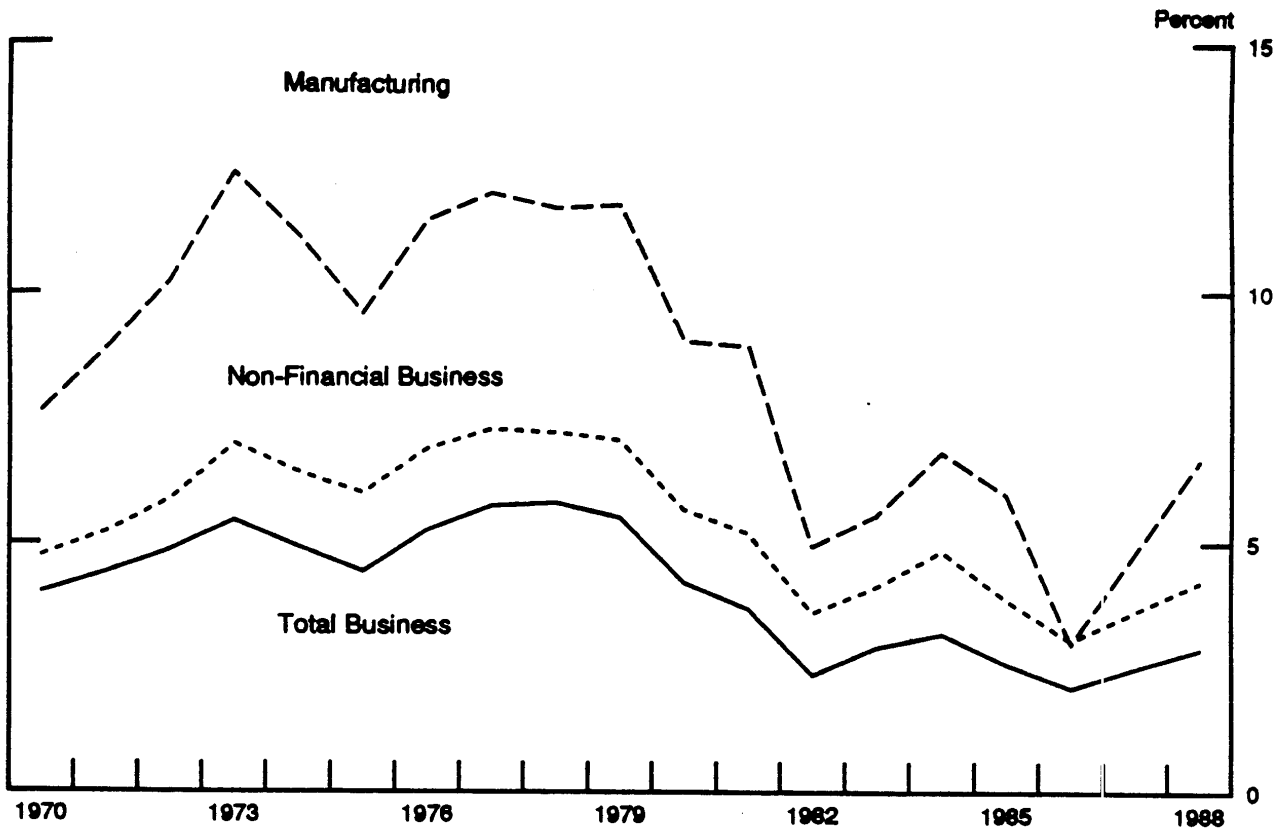
^a Defined as the ratio of profits to fixed assets, either net or gross of depreciation.

^b Defined as the ratio of gross operating surplus (before tax) to gross fixed capital stock.

These measures, which are shown gross, net, and before and after taxes, generally exhibit similar trends: they rise somewhat from the recession lows reached in 1982, but on average remain lower in the 1980s than in the 1970s. In a cross-country context, displayed in the bottom panel, gross profit rates in manufacturing in the United States and Germany have paced each other fairly closely, with the U.S. rate averaging slightly below the German rate in the 1980s, after having been slightly above it during the 1970s. The Japanese rate has remained remarkably steady since the mid-1970s, and well above both the U.S. and German levels, though the gap has narrowed in recent years. Of course, the relative profitability of the U.S. manufacturing sector, ex-post, may have been depressed by the tougher competitive environment that the traded goods sector faced with the strength of the dollar in the 1980s. One could also argue that the average rate of return to capital is at best an imperfect proxy for the expected marginal rate of return on new investment. Nevertheless, the general decline in profitability of U.S. fixed capital between the 1970s and 1980s tends to hold up for broad definitions of the U.S. business sector -- shown in the top panel of chart 8 -- as well as for the manufacturing sector alone. This suggests that there may have been little basis for expecting a major upturn in the marginal rate of return to capital in the United States during the 1980s.

Finally, as another gauge of the expected rate of return on investment in the United States, we present in the bottom panel of chart 8 some estimates of the average rates of return on foreign direct

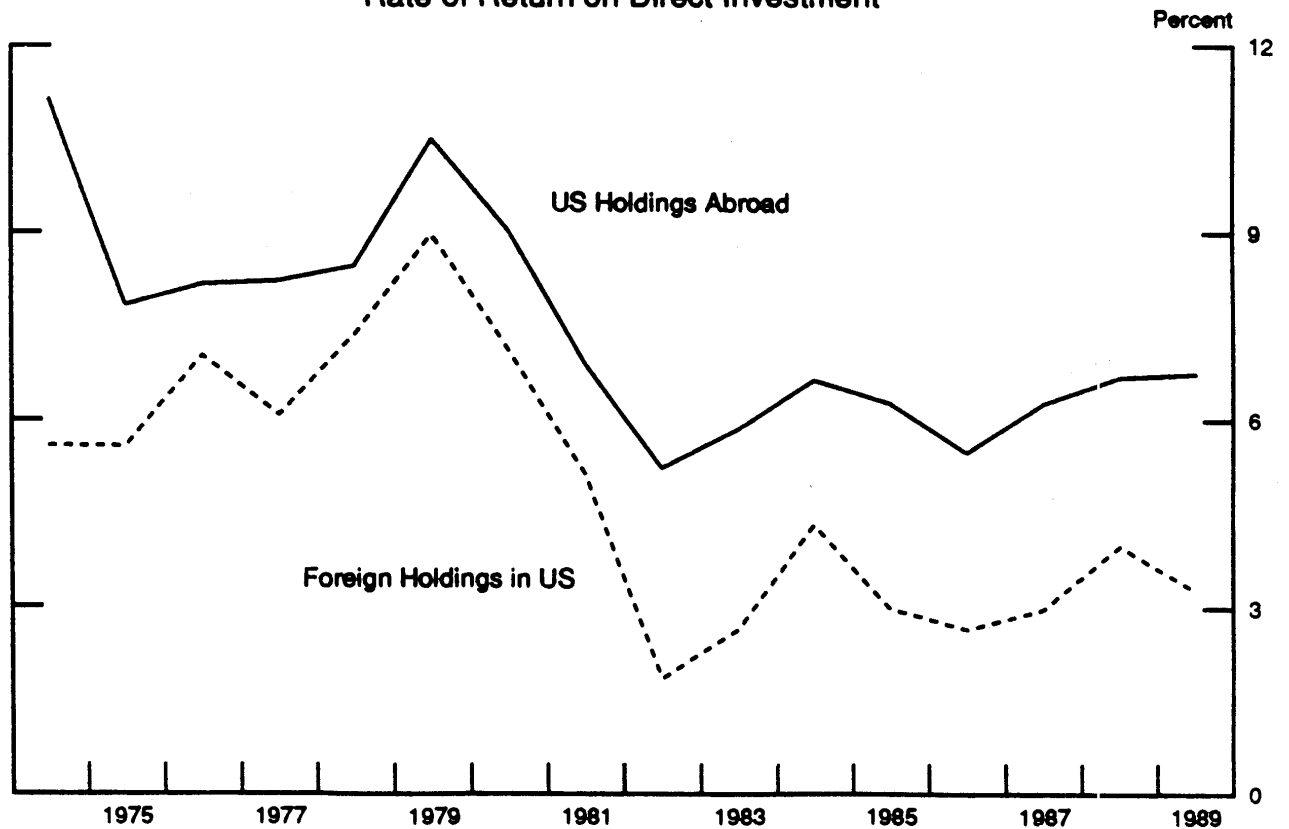
U.S. Net After-Tax Return to Capital ^a



Source: BEA National Income and Product Accounts.

^a Defined as after-tax profits (ex. CCA and IVA), divided by net stock of fixed assets.

Rate of Return on Direct Investment ^a



^a Earnings (excluding currency-translation gains and losses) divided by assets adjusted (approximately) to market value.

investment in the United States and abroad.¹⁰ These estimates indicate that the rate of return on foreign holdings in the United States and on U.S. direct investment abroad roughly parallel each other over the past 15 years. However, the return on foreign investment in the United States has remained well below that on U.S. investments abroad, and, if anything, the gap has widened somewhat in recent years. Of course, the recent widening of the gap may reflect the recent, rapid increase in foreign direct investment assets in the United States and the likelihood that direct investment yields relatively little of its benefits early on.

In sum, a review of a variety of indicators yields no evidence that an enhanced relative rate of return on real investment in the United States was a major motivating factor for the growth of net capital inflows.

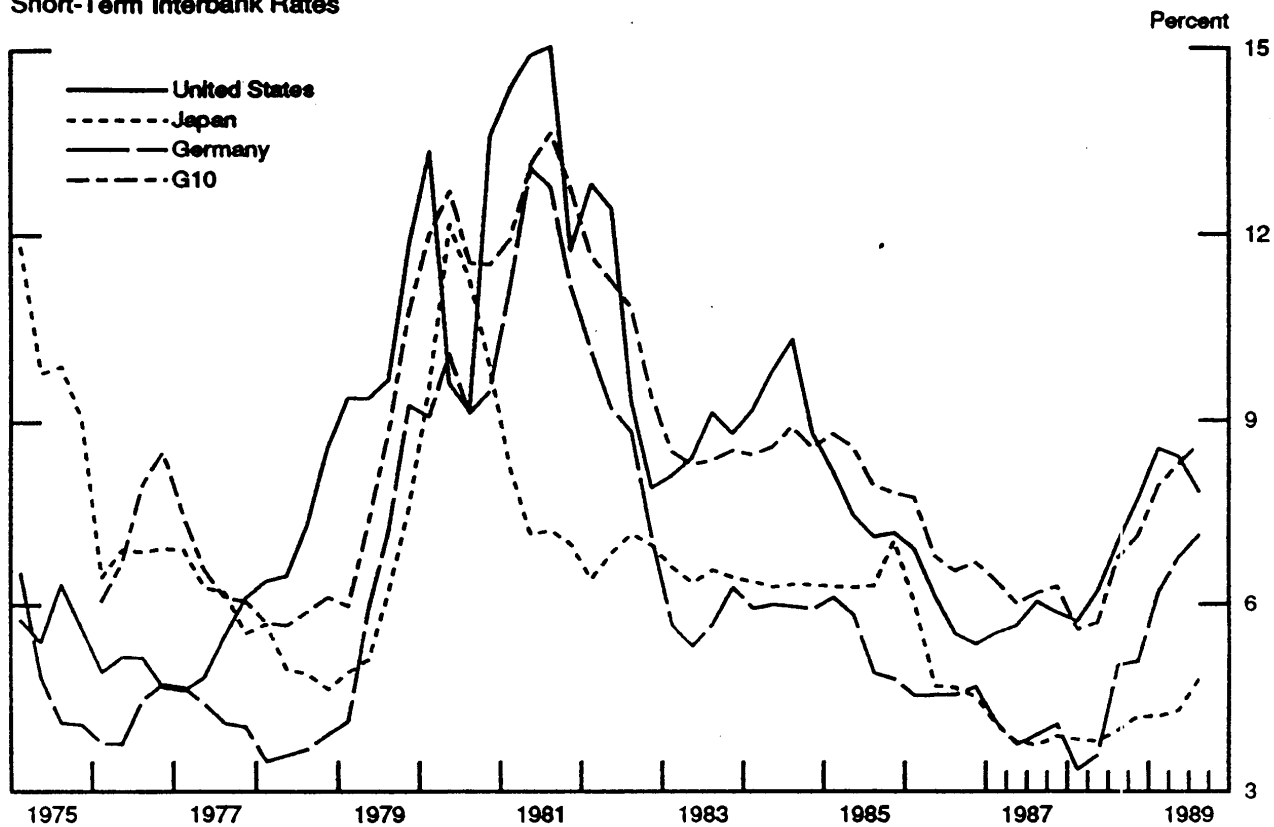
C. Relative Rates of Return on Financial Assets.

While rates of return on real fixed assets in the United States appear to have declined in the 1980s (relative both to their levels in the 1970s and to average levels abroad), rates of return on U.S. financial assets have done just the opposite. Both short and long-term U.S. nominal interest rates were generally below those in other major industrial countries until the late-1970s, when they began to rise sharply. (See chart 9.) Throughout the 1980s, while declining from their peak levels in 1981, U.S. nominal interest rates have remained generally above those in other major countries.

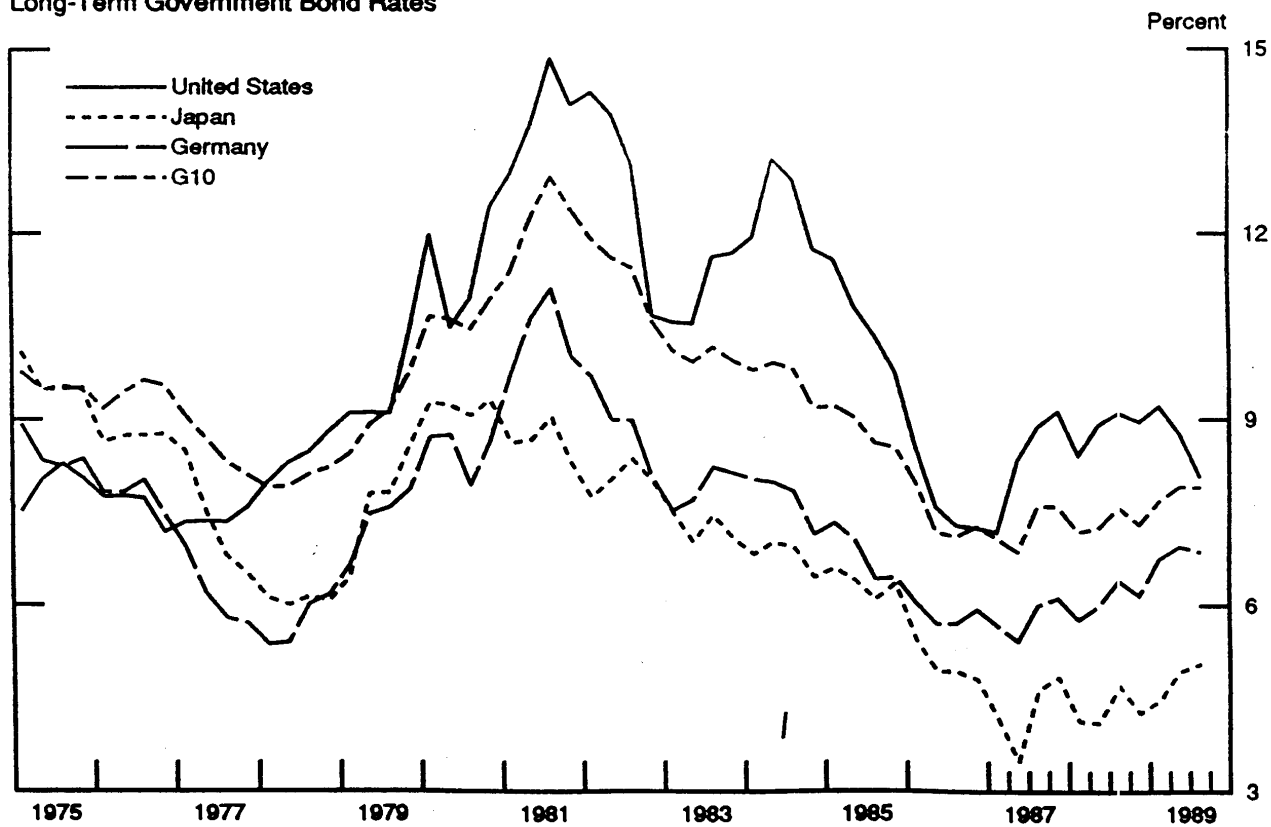
¹⁰. The methodology used in calculating these rates of return is described in Helkie and Stekler (1987), and Stekler and Helkie (1989).

Nominal Interest Rates

Short-Term Interbank Rates^a



Long-Term Government Bond Rates^b



a. Three-month rates.

b. Yield on ten-year (approximate) bonds.

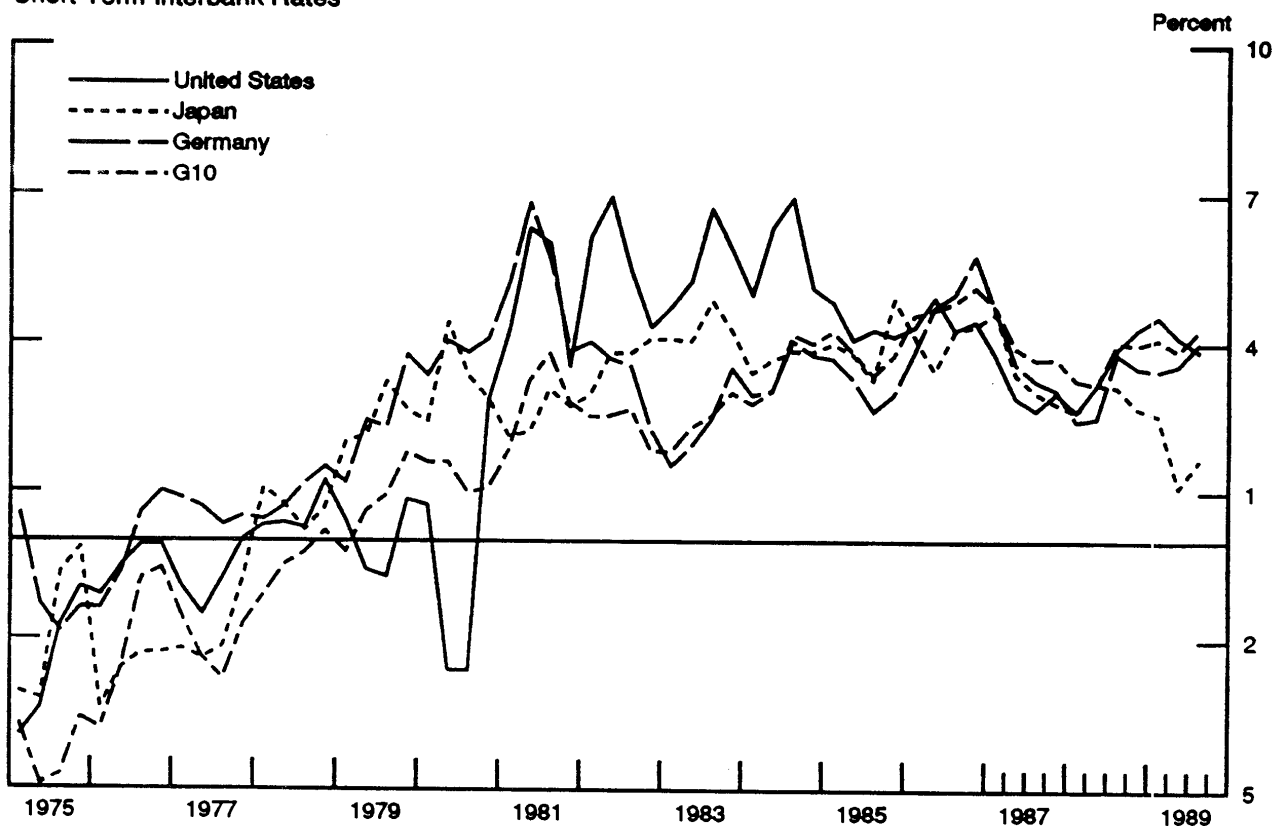
When expressed in real terms (using crude proxies for inflation expectations), the increase in interest rates on U.S. financial assets between the 1970s and 1980s is even more dramatic, as indicated in chart 10.¹¹ Between mid-1980 and mid-1981, U.S. real interest rates rose sharply relative to real rates abroad, and they remained well above foreign rates over the first half of the decade. Since the mid-1980s, U.S. real interest rates have declined to a level roughly in line with the average in other G-10 countries, though still noticeably above Japanese rates.

Thus, movements in relative rates of return on financial assets clearly were consistent with the movement of net capital inflows. On the surface, however, the relationship is far from perfect. As indicated in Charts 9 and 10, the substantial increase in U.S. interest rates relative to foreign rates took place as early as 1980-81. But, as we saw in Section II, net capital inflows did not take place on a significant scale until after mid-1983, more than two years later. The lagged relationship between the change in interest rates and the change in net capital flows can be explained as follows. U.S. interest rates rose, boosting ex-ante demands for dollar assets and causing the dollar to appreciate. The ex-post capital inflow could not take place until

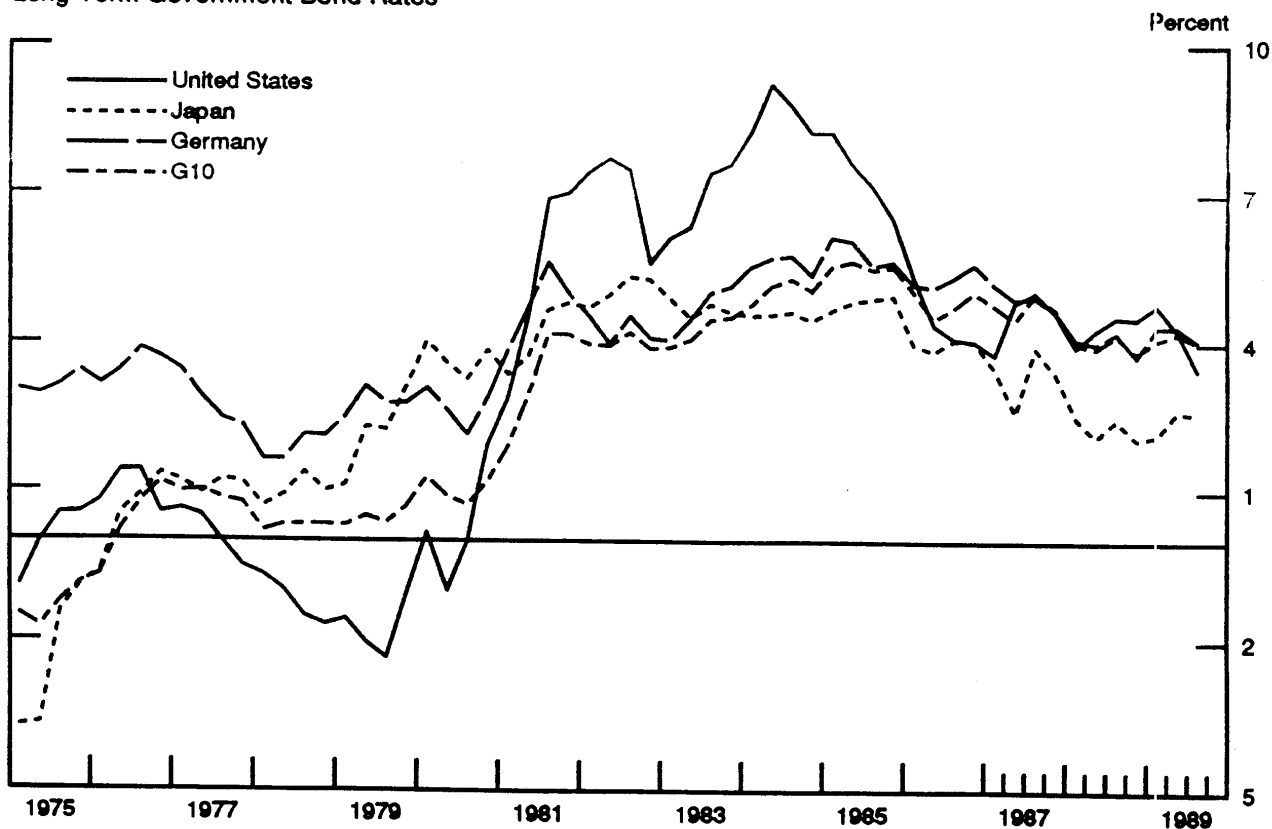
11. Short-term real interest rates were proxied by subtracting CPI inflation over the preceding 4 quarters from the nominal 3-month interest rate. Long-term real rates were calculated as the difference between 10-year government bond yields and 12-quarter centered moving averages of CPI inflation. The latter measure of U.S. inflation expectations is compared with the the Hoey survey of 10-year inflation expectations in the top panel of chart 11. The bottom panel compares movements in U.S. real long-term interest rates constructed with the two measures of inflation expectations. Inflation survey data show a less pronounced swing in U.S. long-term inflation expectations and a smaller rise in real interest rates during the 1980s. They were not used in the earlier international comparison chart, however, because comparable survey data are not available for the other industrial countries.

- 20a -
Chart 10
Real Interest Rates

Short-Term Interbank Rates ^a



Long-Term Government Bond Rates ^b

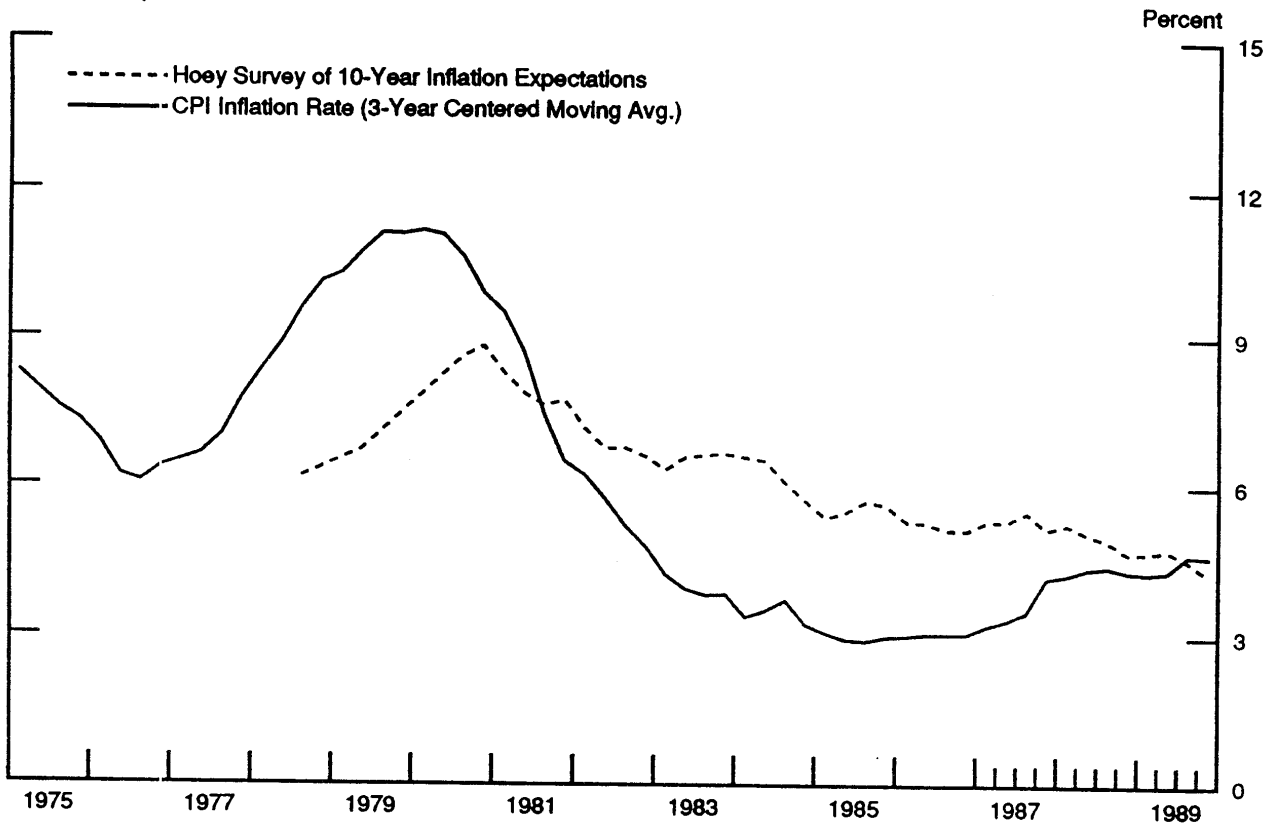


a. Three-month rates minus actual inflation rates over the preceding year.

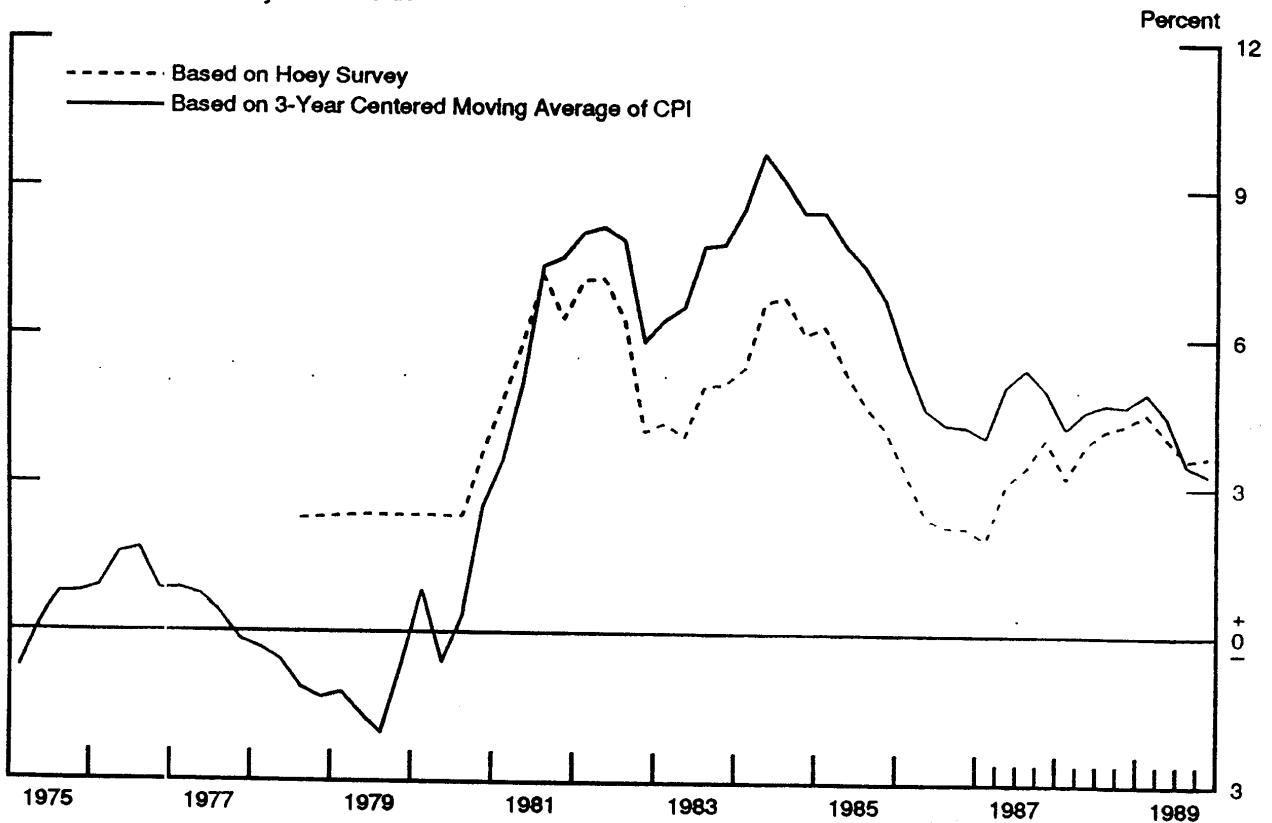
b. Yield on ten-year (approximate) bonds, minus three-year centered moving averages of inflation.

U.S. Inflation Expectations and Real Long-Term Interest Rates

Inflation Expectations



Real 10-Year Treasury Note Yields



domestic saving and investment and the current account began to adjust, much more slowly, to the higher interest rates and the higher dollar.

In the next part of the paper we consider in more detail one of the key links between movements in interest rates and ex post net capital flows: the relationship between interest rates and exchange rates. Another of the links, the importance of the rise in the dollar as a factor underlying the U.S. external deficit and the inflow of capital, has been addressed elsewhere, in several recent empirical studies. These studies suggest that among the major partial-equilibrium determinants of the U.S. external deficit (including U.S. and foreign income and relative prices), the appreciation of the dollar during the first half of the 1980s was clearly the most important factor, accounting for over half of the widening of the deficit.¹²

D. Interest Parity.

Under a flexible exchange rate regime, a starting point for assessing the relationship between relative interest rates and exchange rates is open interest parity, which equates the interest differential with the expected change in the exchange rate over a consistent horizon:

$$(1) s_t^e - s_t = \gamma(i_t^* - i_t)$$

where

s_t = log of the nominal spot exchange rate (foreign
currency/home currency) in period t .

s_t^e = expected value of s γ years ahead

12. See, for example, Hooper and Mann (1989), who also present earlier estimates by Helkie and Hooper and by Krugman and Baldwin.

i_t = log of 1 plus the annual rate of interest on home-currency
bonds with a term of γ years

"*" denotes foreign variable,

"e" denotes expectations.

The key assumptions underlying this relationship are, of course, that international capital is unhindered by controls (so that covered interest parity holds), and that risk premia are insignificant. We will return to these assumptions below.

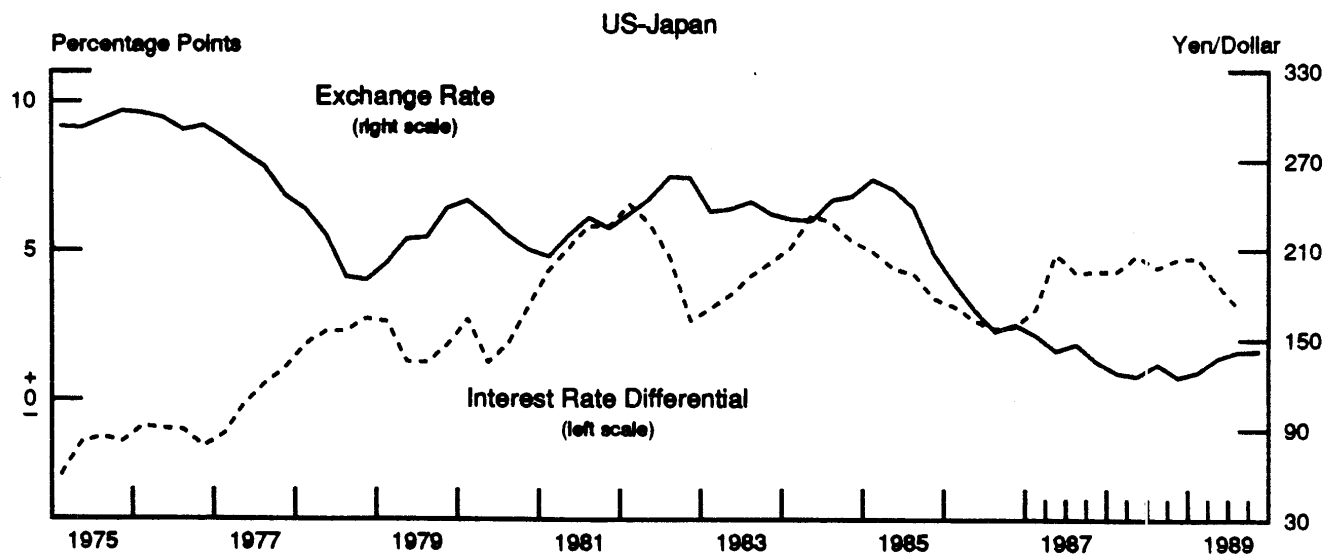
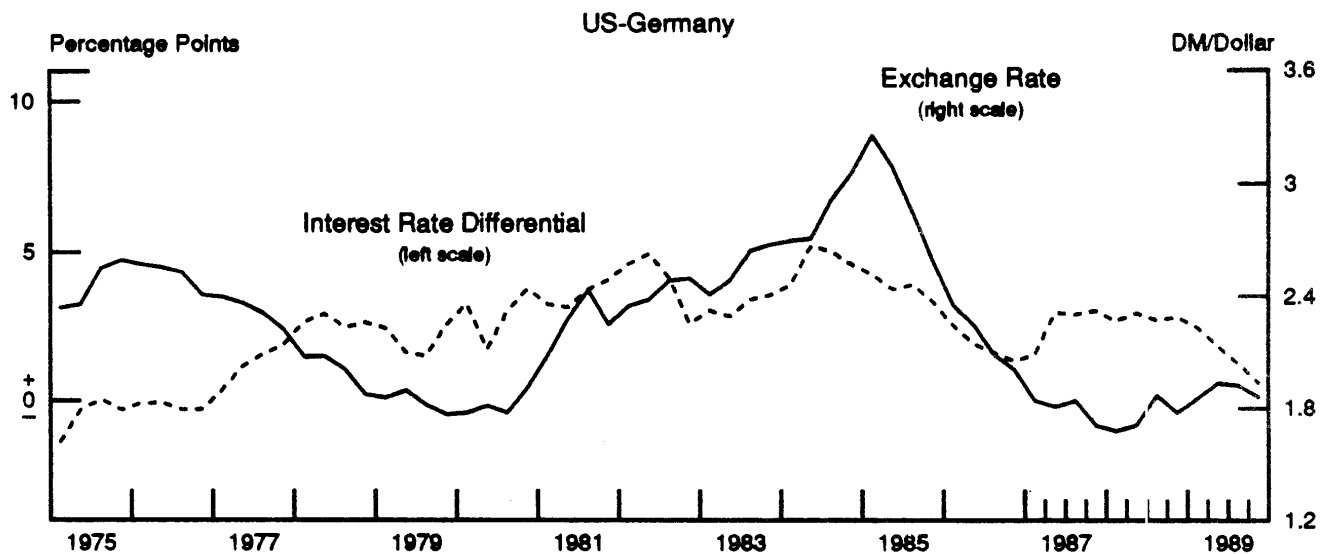
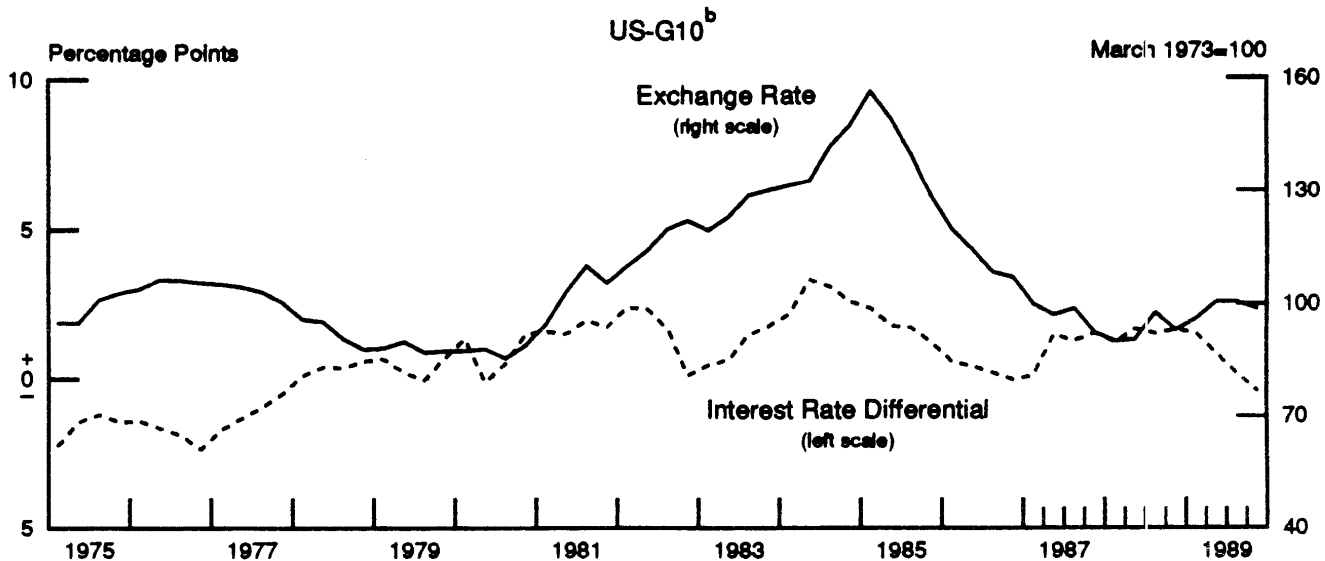
By rearranging (1), we can derive an expression for the spot rate in terms of the expected future rate and the interest differential. If the expected future rate were constant, the spot rate would be expected to move in line with γ times the interest differential. One way to tie down the expected rate is to focus on long-term interest differentials, under the presumption that the exchange rate fluctuates around some constant long-run equilibrium level. This variant of long-run open interest parity has not held up well empirically, however, as indicated in chart 12.

Given the existence of significant inflation differentials across countries, it is reasonable to assume that movements in the nominal exchange rate will be influenced, at least in the long run, by inflation differentials. In this case, the expected exchange rate can be defined:

$$(2) s_t^e = p_t^{*e} - p_t^e + q_t^e$$

where p_t^{*e} and p_t^e are log values of expectations in the current period about the levels of foreign prices and home prices, respectively, γ years ahead, and q_t^e is the constant expected long-run equilibrium value

Exchange Rates and Long-Term Interest Rate Differentials^a



^a All interest rate differentials are US minus foreign; all exchange rates are foreign currency per dollar.

^b G-10 countries plus Switzerland, weighted by shares in world trade.

of the real exchange rate. Substituting current price levels and expected average annual rates of inflation (π) for expected future prices levels in (2), we have:

$$(3) s_t^e = p_t^* + \gamma \pi_t^{*e} - (p_t + \gamma \pi_t^e) + q_t^e$$

Substituting the right hand side of (3) for s_t^e in (1), and rearranging yields:

$$(4) s_t - p_t^* + p_t = q_t^e + \gamma(i_t - \pi_t^e - i_t^* + \pi_t^{*e}),$$

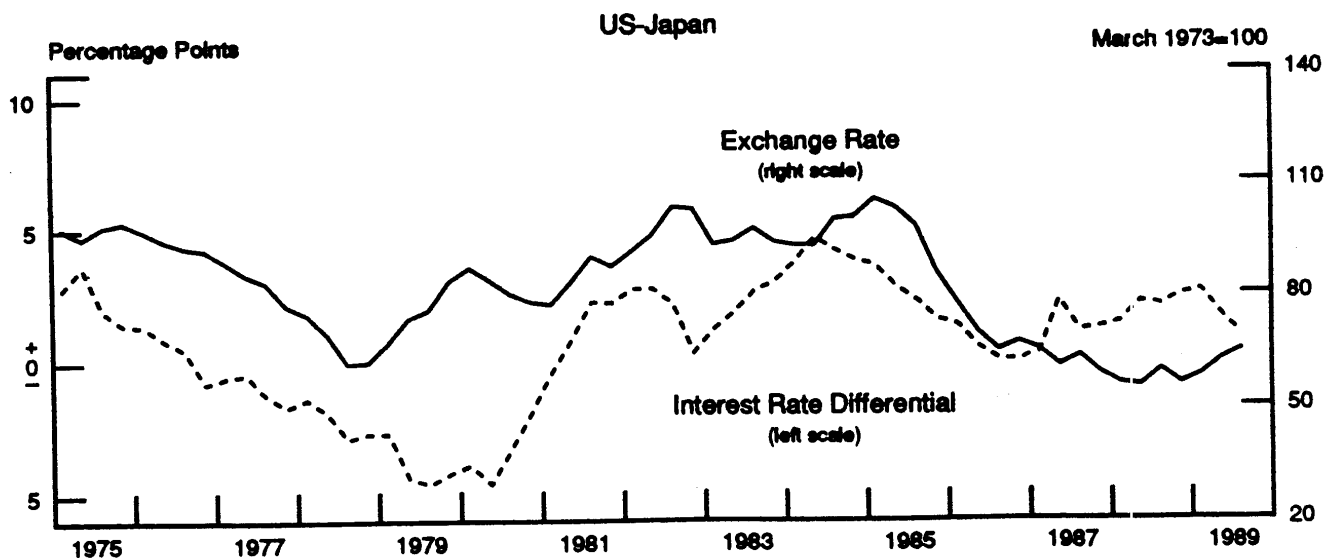
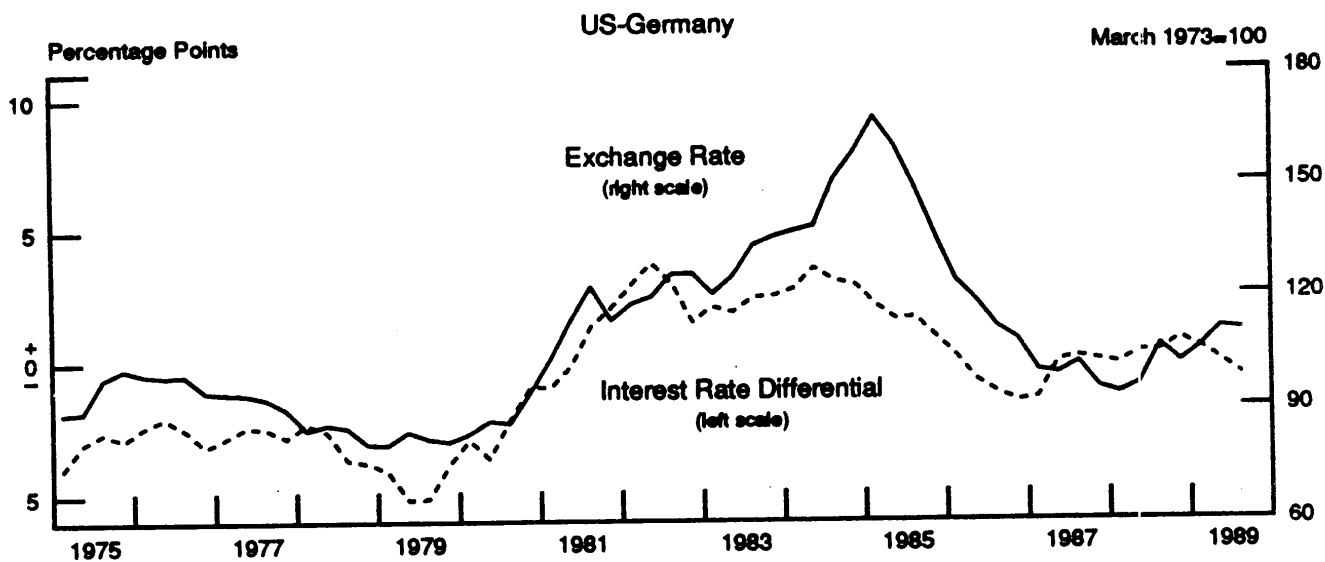
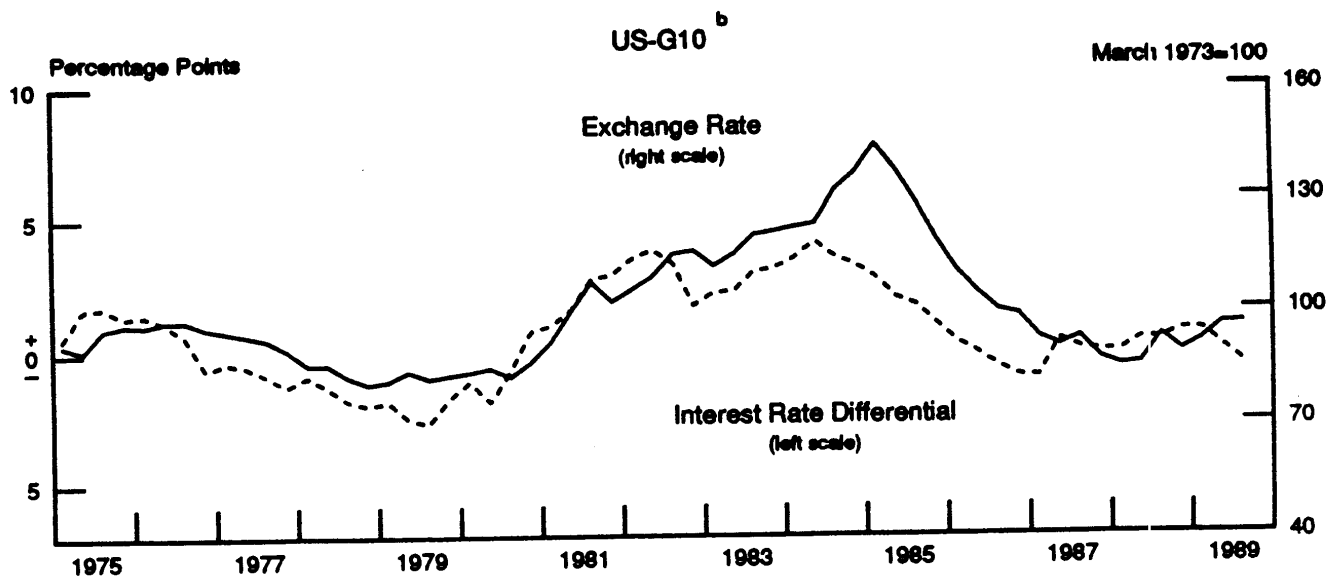
which expresses the log of the real exchange rate as a function of the expected real exchange rate in the long run and the real interest rate differential. Again, the horizon γ is defined as being long enough for q_t^e to be considered constant.

An empirical representation of the relationship in equation (4) is given in chart 13. The top panel of the chart shows the real dollar against G-10 currencies and a measure of the difference between U.S. and foreign (G-10) long-term real government bond yields. The next two panels show the same pictures for bilateral real exchange rates and real interest rate differentials vis-a-vis Germany and Japan. The real interest rates were computed using three-year centered moving averages of CPI inflation rates.

Movements in the dollar's real exchange rate against both the G-10 average and the DM have been at least roughly correlated with the corresponding long-term real interest rate differentials over much of the floating-rate period.¹³ The decline in the dollar during the 1970s was in line with a general downtrend in the interest differentials. The relationship also held up reasonably well during 1979-83, and again

13. The simple correlation between the two series shown in the top panel of the chart is .85 for the period 1973-83, and .78 for the entire period shown.

Real Exchange Rates and Real Long-Term Interest Rate Differentials ^a



^a All real interest rate differentials are U.S. minus foreign.

Real exchange rates are foreign currency per dollar rates divided by relative consumer prices.

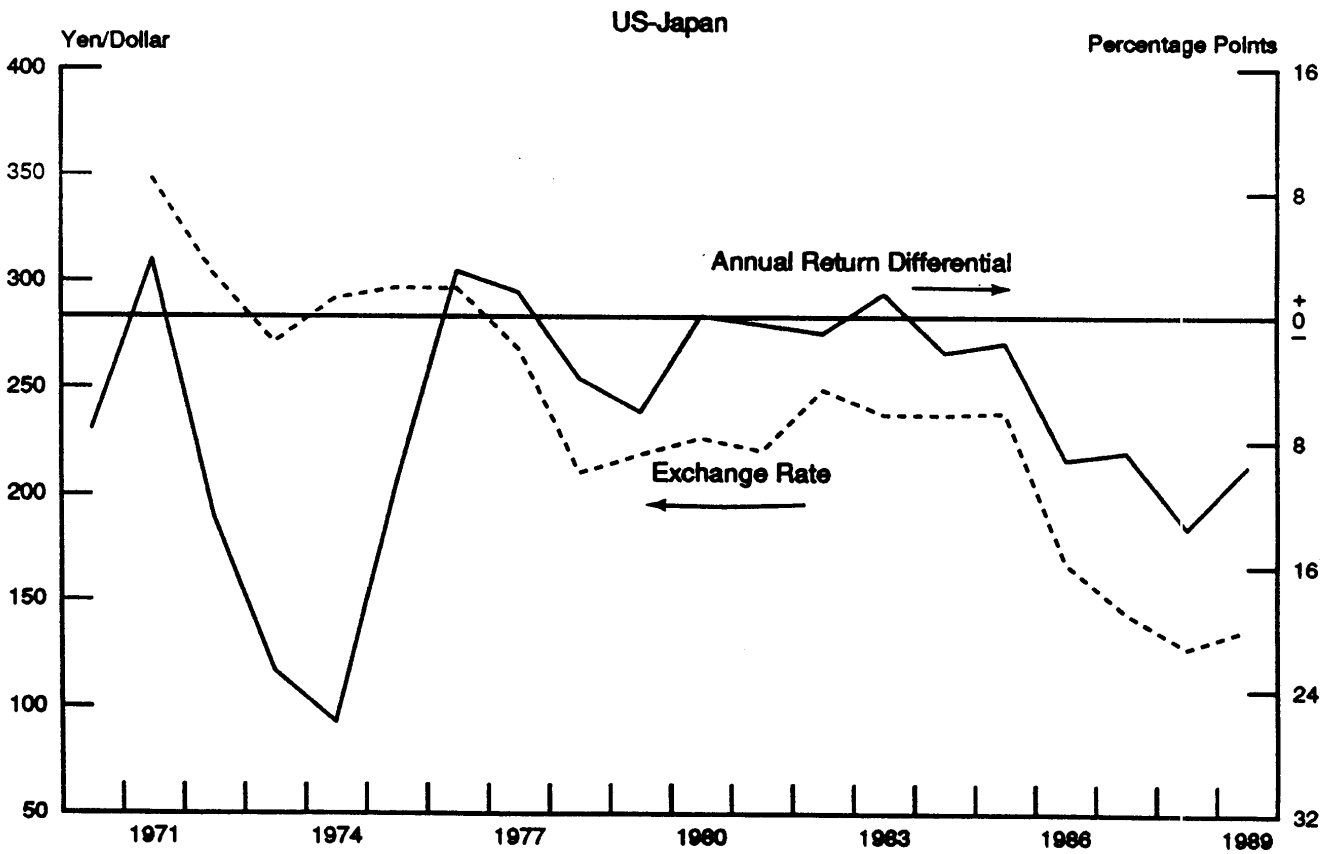
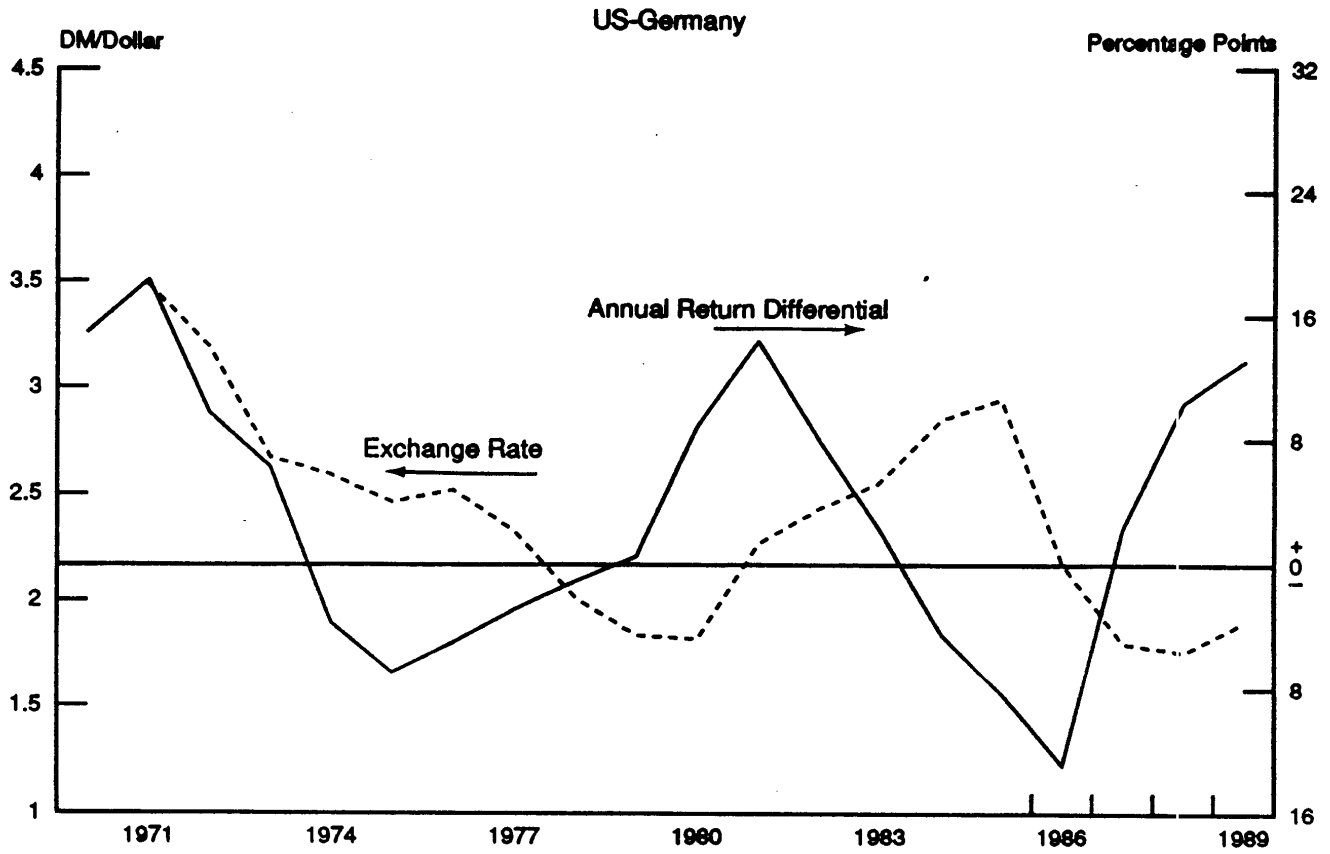
^b G-10 countries plus Switzerland, weighted by shares in world trade.

during 1985-87, when the dollar first rose strongly and then fell rapidly with the interest differentials. During 1984, however, the dollar continued to rise after U.S. real interest rates had turned sharply downward relative to those abroad; the same thing happened in 1989, though less extreme. Moreover, the relationship in the case of the yen/dollar rate has been ill-fitting over most of the period shown in the chart.

Deviations between the exchange rate and the interest differential might be traced to a number of possible factors, including measurement errors in the data (especially inflation expectations), and violation of the assumptions underlying open interest parity. With respect to measurement problems, not much can be done about the insufficiency of data on long-term inflation expectations. However, we can investigate measures of real returns on alternative types of assets. Chart 14 shows the relationship between real exchange rates and the differences between the U.S. and German, and U.S. and Japanese, expected stock market yields that were presented in chart 6. This variant of real interest parity (or "real return parity") performs quite poorly in the German case, but much better in the Japanese case. Since the late 1970s, the real yen/dollar rate has followed movements in the U.S.-Japan stock market return differential surprisingly closely. We present this result, at this point, simply as an interesting correlation that may warrant further investigation.

With respect to the violation of assumptions underlying open interest parity, the two key conditions under which that relationship holds are that covered interest parity holds and that risk premia are insignificant. Empirical analysis indicates that covered interest

Exchange Rates and Expected Stock Market Return Differentials



parity has held to a reasonable approximation, although there have been exceptions. In particular, regulation of Japanese financial markets and capital flows through much of the floating rate period may help to explain the relatively poor fit in the dollar-yen case. The much better fit in the German case may well reflect the greater degree of freedom of German financial markets over much of this period. Also, as noted further below, the removal of controls on Japanese capital outflows may have contributed to a surge in demand for dollar-denominated assets and the run-up in the dollar during 1984.

Evidence on the existence of risk premia are mixed. One branch of the literature has found forward exchange rates to be biased predictors of realized spot rates, which, under the assumption of rational expectations, suggests the existence of risk premia. Attempts to identify significant risk premia in structural modeling, however, generally have failed. Moreover, recent empirical work employing survey data on exchange rate expectations suggests that the forward exchange rate bias is probably due more to movements in exchange rate expectations than to the existence of risk premia.¹⁴

Frankel and Froot's (1989) results indicate that foreign exchange markets are subject to periods when extrapolative expectations dominate the rational assessment of market fundamentals, and that 1984 was such a period. Levine (1989) finds that changes in expectations

14. See Frankel and Froot (1988), and Levine (1989).

about the real exchange rate can explain much of the apparent forward-rate bias. It seems unlikely that the expected level of the dollar's long-run equilibrium exchange rate would have been rising during 1984, when the U.S. current account deficit was expanding rapidly. In 1989, however, news about the trade deficit was generally favorable, and may have contributed to a shift in expectations about the equilibrium real rate that would have been consistent with some appreciation of the dollar.

In brief, the relationship between interest rates and exchange rates embodied in long-term real open interest parity has held up tolerably well for the dollar's effective exchange rate over much of the floating rate period. Deviations from that relationship appear to have reflected episodes of extrapolative market expectations, or changes in expectations about the equilibrium real exchange rate. Changes in risk premia, or "safe-haven" considerations, as well as changes in capital controls also may have contributed.

E. Changes in Controls and Taxes.

Capital flows generated simply by changes in regulations and taxes likely have had only at most only a relatively minor direct impact on international payments imbalances over the past decade. Had such controls been widespread and significantly binding, they would have manifested themselves in significant covered interest differentials or differentials between domestic and Euro interest rates. Such differentials have been found to be trending downward during the 1930s from levels that were generally small to begin with early in the

decade.¹⁵ Nevertheless, changes in controls or taxes may have influenced the composition of gross capital flows significantly in particular instances. Moreover, the relatively free movement of capital engendered by the earlier removal of controls was important in allowing international asset demands to respond freely to changes in risk/return incentives during the 1980s.

On the U.S. side, one change in controls and taxes that may have influenced capital flows during the 1980s was the elimination of the withholding tax on interest payments to foreigners on U.S. long-term bonds in mid-1984. This shift appears to have been a factor contributing to the substantial increase in foreign purchases of U.S. Treasury securities during 1984-85. Foreign purchases of U.S. corporate bonds were not affected, inasmuch as close substitutes not subject to the withholding tax already were available on the Eurodollar market. However, U.S. corporations did shift the issuance of Eurobonds from their finance affiliates in the Netherlands Antilles to their home offices, changing the location of these flows in the balance of payments accounts from direct investment to securities transactions. Similarly, the establishment of International Banking Facilities in the U.S. market at the end of 1981 had only a minor impact on net banking flows, but it resulted in a significant shift in the booking of assets and liabilities to the United States from abroad.

Removal of U.K. controls on capital outflows and Japanese controls on capital inflows, both in 1979, undoubtedly had some impact on U.S. capital flows during the 1980s. Other industrial countries also participated, to a greater or lesser degree, in the liberalization of

¹⁵. See Frankel (1989b).

capital markets in recent years. Perhaps the most visible impact of a recent change in foreign regulations came from the further easing of Japanese ceilings on foreign investments by regulated financial institutions in 1984 and 1986. These moves facilitated a substantial increase in Japanese purchases of U.S. Treasury and corporate securities during 1985-87.

IV. Sustainability of the U.S External Deficit and the Dollar.

Having analyzed the various factors underlying the tremendous increase in the net inflow of capital to the United States during the 1980s, we now consider, briefly, whether that net inflow is sustainable. Various factors point to sustainability in the short to medium term, but not in the longer term.

To begin with, the results of several recent studies suggest that the U.S. external position may well be sustainable or "manageable" for a number of years to come. First, a 1989 study by the BIS suggests that the gross financial claims on the United States held by private residents of foreign industrial countries amounted to less than 3 percent of the total business-sector financial assets of those countries at the end of 1988, leaving considerable potential for further increases.¹⁶ Moreover, if the U.S. current account deficit persists at its 1988 rate of about \$125 billion, with no change in the pattern of U.S. capital flows, the share of claims on the United States in the financial portfolios of businesses in industrial countries would still be less than 4-1/2 percent by 1993.

16. See Dealtry and Van't dack (1989).

Other observers have noted that the U.S. net foreign investment position may well be substantially understated in the official U.S. statistics.¹⁷ The major problem is that direct investment assets are recorded at book value, which greatly understates their current market value. U.S. assets abroad are larger and have been around longer than foreign assets in the United States, so that the U.S. net direct investment position is understated by \$300 billion or more. Other factors may offset this understatement to some degree. A significant portion of the cumulative \$150 billion statistical discrepancy in the U.S. international accounts during the 1980s may have represented unrecorded capital inflows. Also, the value of some U.S. bank loans to foreign countries likely is overstated. On balance, however, it appears that the overall U.S. net investment position may be understated by something on the order of \$200 billion. This would put net foreign claims on the United States at an even lower percentage of private foreign wealth than cited above.

Moreover, despite its large and growing net international debt position, the United States has continued to enjoy a relatively favorable flow of net investment income. Net foreign investment income turned negative for the first time in the second quarter of 1989. Growing net portfolio investment income payments to foreigners continue to be offset by large net direct investment income receipts. As we noted earlier, the rate of return on U.S. direct investment assets abroad (excluding capital gains and losses) continues to exceed that on foreign direct investment assets in the United States by a significant

17. See Eisner and Pieper (1988), Stekler (1989), and Ulan and Dewald (1989).

margin. The United States also enjoys a higher rate of return on its portfolio claims than it does on its portfolio liabilities. So long as these differences in rates of return persist, and so long as both gross U.S. claims on foreigners and liabilities to foreigners continue to grow, increases in U.S. investment income payments will continue to lag the expansion of U.S. net foreign debt.¹⁸

In brief, these observations suggest that while the absolute magnitude of the growing U.S. net indebtedness is unprecedented, it will not necessarily be unmanageable for a number of years to come. However, several other types of observations bring one to a more negative view of the prospects for sustainability in the longer run.

A necessary condition for sustainability in the long run is that the inflow of capital generate enough income to service the associated, growing debt. It is clear that U.S. domestic investment has been higher than it would have been in the absence of the inflow of capital over the 1980s, *ceteris paribus*. However, as we saw above, the rate of investment has not been above its historical norm, and it would appear that the inflow of capital, thus far, has merely replaced the supply of domestic funds that has been reduced by the drop in the U.S. domestic saving rate. Should this pattern of saving and investment persist, the future standard of living in the United States will have to be reduced to service the debt.

A more formal definition of sustainability in the long run is that the ratio of net external debt to domestic income or GNP cannot

18. A recent simulation study by Stekler and Helkie (1989), which considers this issue in more detail, suggests that the effective rate of payment on the U.S. net foreign debt over the decade ahead would remain under 4 percent, well below assumed nominal rates of interest on U.S. financial instruments.

expand indefinitely. A minimum requirement for the ratio to stop expanding is for the rate of growth of GNP to be no less than the rate of return paid on the debt, and for the non-investment-income portion of the current account balance to equal zero.¹⁹ Doubts about sustainability hinge less on the first condition than the second. With respect to the first condition, we noted earlier that the effective rate of return paid on the U.S. external debt now falls well short of the growth in U.S. nominal GNP. Nevertheless, it is quite possible that the favorable tradeoff in relative rates of return could begin to shift against the United States in the period ahead, with foreigners earning more on their investments here and U.S. residents less on their investments abroad.

Evidence on the second condition for sustainability can be gleaned from partial-equilibrium simulation analyses by Stekler and Helkie (1989) and Howard (1989a) using a fairly standard model of the U.S. current account. These analyses suggest that if the dollar stays at about its average level of the first half of 1989, and if U.S. and foreign economies grow at about their potentials, both the U.S. current account deficit and U.S. net foreign debt would continue to expand faster than GNP. This result depends importantly on the existence of income elasticities in trade equations that are well in excess of one.²⁰ Moreover, the combination of a growing external deficit and continued

19. See Horne (1988), or Howard (1989b) for a more explicit presentation of these criteria for sustainability. Horne reviews a number of other criteria as well.

20. In the typical simulation, with the dollar unchanged in real terms, it is growth in income that determines the course of the external balance. With U.S. and foreign growth assumed to be about the same over time, and with income elasticities of imports and exports both in the neighborhood of 2.0, imports, exports, and the trade deficit all grow about twice as fast as GNP.

strong domestic demand would imply a continued downtrend in the sum of U.S. government and private saving relative to investment.

V. Conclusions.

Our analysis suggests, first, that the U.S. fiscal expansion and, to a lesser extent, a decline in U.S. private saving rates were ultimately responsible for the widening of the U.S. external deficit and the net inflow of capital. Fiscal contraction in some other major industrial nations also contributed to the payments imbalance. By contrast, increases in the expected rate of return in real fixed investment in the United States probably did not play a significant role.

We base this conclusion on the observed composition of capital inflows, on trends in the components of U.S. domestic saving and investment, and on movements in relative rates of return across different types of assets. The swing to strong net capital inflows during 1980-87 showed up primarily in net purchases of fixed-income securities and in flows through commercial banks. It was not until late in the decade that net inflows went more prominently into corporate stocks and direct investment -- assets in which foreign funds might have profited most directly from an enhanced return to real investment. Even then, most of the inflow of direct investment from abroad went into takeovers rather than into new fixed investment. Data on aggregate U.S. domestic investment expenditures display no conclusive evidence of an investment boom consonant with the investment-opportunity theory of the U.S. capital inflow. And various measures of relative rates of return on fixed capital in the United States show little evidence of an upturn

during the 1980s, whereas relative real yields on government bonds rose sharply.

The experience of the 1980s also suggests that the appropriate magnitude of a country's external imbalance should probably be judged by a new standard. The world economy and world financial markets are now capable of coping with net capital flows of a size that would have been unthinkable earlier in the postwar period. With the increased degree of financial integration, as apparent on a number of measures, we may see saving/investment imbalances sustained for significantly longer periods. The continued net inflow of capital into the United States at recent rates appears to be manageable for a number of years to come, at least relative to the magnitudes of foreign portfolios. Nevertheless, to the extent that the capital inflow continues to finance increased U.S. government and private consumption rather than increased private investment, the servicing of the associated debt will represent a greater drain on the income of U.S. residents in the future. It likely will take a return of U.S. government and private saving rates to historically more normal levels before the capital inflow recedes. Some downward movement in U.S. real interest rates and the dollar's real exchange rate could very well play a significant role in that equilibration process.

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