

RECENT TRENDS IN COMPENSATION PRACTICES

by

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Abstract: According to some accounts, compensation practices have recently been undergoing marked changes, with an increasing number of firms said to be substituting lump-sum payments for regular pay increases, allowing for greater variability of remuneration across individuals or groups, and making greater use of profit sharing or stock options. Many of these practices are outside the scope of the typical measures of economywide compensation growth. Moreover, intensified use of these schemes ought to heighten the responsiveness of overall compensation costs to business conditions and could also, in theory, boost productivity.

We find that the spreading use of these practices could be leading to an understatement of the annual growth rate of actual employment costs (relative to the published employment cost index) that is not insignificant--perhaps on the order of three-tenths of a percentage point currently. Moreover, the changes have apparently helped to increase the flexibility of pay both across time and across workers. In addition, by linking pay more closely to performance, the firms we contacted seemed to think that their employees were working more efficiently and with an eye to enhancing the "bottom line" of the company.

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Recent Trends in Compensation Practices

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According to some accounts, hiring and compensation practices have recently undergone marked changes aimed at increasing the flexibility of business cost structures, linking workers' pay more closely to company performance, and enhancing incentives for productive behavior. In particular, an increasing number of firms are reported to be substituting lump-sum payments for regular pay increases, allowing for greater variability of remuneration across individuals or groups, and making greater use of profit sharing or stock options. Many of these practices are outside the scope of the measures of economywide compensation growth most typically watched by economists and policymakers.

The use of such compensation schemes raises more issues than just measurement. A fundamental shift in the way workers are paid could also have macroeconomic implications. Greater use of these schemes ought to heighten the responsiveness of overall compensation costs to business conditions. It could also, in theory, lead to a more-efficient allocation of labor and thereby boost productivity or reduce the level of the non-accelerating inflation rate of unemployment (NAIRU)--that is, the level of the national unemployment rate at which the overall inflation rate typically begins to increase.

To get a better handle on the dimensions of these developments, we visited a number of companies and discussed their compensation practices with senior executives in human resources. We also spoke at length with compensation specialists at several large consulting firms that design such pay plans. In addition, economists at the twelve Federal Reserve Banks made inquiries with businesses in their Districts during July and August of 1998.² This paper reports on what was learned from those discussions and inquiries: the prevalence of variable- and targeted-pay practices (who gets this kind of pay and how much they get), the possible cyclical sensitivity of variable pay, and the

1. Nellie Liang researched and wrote Appendix 1.

2. Appendix 2 provides a description of the types of firms contacted by the Reserve Banks.

importance of variable pay within the overall compensation picture. In that context, we have tried to assess the extent to which the use of these practices may be causing the BLS' employment cost index (ECI) to reflect only part of the actual increases in labor costs faced by employers. We find that the spreading use of these practices could be leading to an understatement of the annual growth rate of actual employment costs (relative to the published ECI) that is not insignificant--perhaps on the order of three-tenths of a percentage point currently. The paper ends with a discussion of the implications of our findings for the macroeconomic performance of the economy.

1. Aggregate measures of hourly compensation

The two primary measures of aggregate hourly compensation published by the Bureau of Labor Statistics are compensation per hour (CPH), which is part of the Bureau's productivity and cost program, and the employment cost index. Although both series are used for assessing changes in the average hourly pay (including benefits) received by workers, they are constructed quite differently. In addition, the way items are measured and the scope of coverage (that is, the types of pay and benefits that are included) differ between the two series in some important ways. Table 1 gives a summary comparison, and the remainder of this section details many of these differences. Because stock options are one of the most difficult benefits to measure, they receive special attention.

Employment Cost Index. The ECI is a measure of the change in the cost of labor that attempts to remove the influence of employment shifts among occupations and industries. As such, it is intended to reflect changes in labor costs associated with specific jobs. Data are collected on a sample of approximately 18,300 occupations within about 4,500 private-sector establishments. Fixed employment weights are used to calculate most aggregate ECI indexes.

For the purposes of this paper, the most important things to note about the ECI are the types of benefits that are either included or omitted from the survey. Paid leave, overtime and other types of premium pay, insurance benefits (life, health, and so forth), retirement benefits, and legally required benefits (for example, social security and workers' compensation) are among the benefits included. Survey respondents also report

nonproduction bonuses, such as lump-sum payments (including profit-sharing payments). Thus, most types of variable pay should, in theory, be in the ECI. One important exception is stock options; these are explicitly excluded from the ECI. Also excluded are many types of targeted pay, such as hiring, retention, and referral bonuses; in the ECI, these are considered to be recruiting costs for the firm rather than labor costs.

In light of the manner in which the ECI is constructed, the move toward greater use of nontraditional compensation schemes such as stock options or hiring bonuses could lead to a downward bias in ECI growth as a measure of “actual” changes in the remuneration received by workers during periods of rapid economic expansion and strong profitability.

Table 1
Treatment of Selected Compensation Components
in Measures of Labor Costs
(Included as wage, included as benefit, or excluded)

| Compensation component | ECI | Nonfarm CPH |
|---|----------|-------------------|
| Base wages and salaries | Wage | Wage |
| Commissions | Wage | Wage |
| Overtime, shift differentials ¹ | Benefit | Wage |
| Paid leave | Benefit | Wage |
| Tips | Excluded | Wage ² |
| Lump-sum payments, nonproduction bonuses, profit sharing | Benefit | Wage |
| Severance pay | Benefit | Wage |
| Hiring, retention, or referral bonuses | Excluded | Wage |
| Stock options | Excluded | Wage ³ |
| Payments in kind | Excluded | Wage ⁴ |
| Other benefits: Insurance, pension and retirement, legally required benefits | Benefit | Benefit |
| Retiree health insurance | Excluded | Benefit |

1. In the ECI, this reflects changes in the premium wage only. In nonfarm CPH and AHE, it also reflects changes in the number of hours worked at the premium wage.

2. Included to the extent that individuals report tips on their income tax returns.

3. Included when the options are exercised.

4. Included to the extent that firms report the cost of such payments in their unemployment insurance records.

Compensation per hour. The figures on compensation per hour that the BLS publishes as part of the productivity and cost release are designed to measure the total hourly labor costs incurred by establishments; as such, they are not adjusted to remove the influence of employment shifts among occupations and industries. In contrast to the ECI, the CPH data are not derived from a single survey. Rather, the numerator in the calculation--compensation of employees--comes from the national income and product accounts (NIPA) produced by the Commerce Department. For most industries, the historical data for wages and salaries are derived from tabulations of data for employees covered by state unemployment insurance. The historical data for benefits come from various sources: the Social Security Administration, the Health Care Financing Administration, the Department of Labor, the IRS, trade sources, and so forth. The denominator in the calculation--hours of work--comes primarily from the survey of establishments conducted by the BLS, which provides data on the number of jobs held by wage and salary workers and average weekly hours of production and nonsupervisory workers; average weekly paid hours of nonproduction and supervisory workers are estimated by the BLS.

In theory, CPH captures, one way or another, all of the methods of variable and targeted pay considered in this paper, even the ones that are excluded from the ECI. How well they are actually measured through the agglomeration of the various pieces of source data is another issue. Moreover, as discussed below, stock options in the CPH series are not included until the options are exercised; although this timing is appropriate in some ways for cost analysis, it is less than optimal for analyzing pay trends.

Stock options. Over the past few years, stock option grants to employees have become an increasingly common method of compensation. Firms can grant most options without any charge to reported earnings, even when the options are exercised. Current generally accepted accounting principles measure the value of an option by its intrinsic value--that is, the difference between the market price on the grant date and the exercise

price.³ When firms grant options with a fixed exercise price equal to or greater than the market price of the grant date (so-called fixed-plan options), the intrinsic value of the option, and thus the recorded expense, is zero.⁴ The vast majority of options granted are fixed-plan, owing at least in part to their more favorable accounting treatment.

From an economic perspective, stock options are a form of variable pay in which the amount of pay depends partly on the performance of the firm, and partly on the performance of the stock market in general. For employees below the top management, the stock price may not be as good a measure of their performance as other forms of variable pay. However, in part because of their favorable accounting treatment, the use of stock options has been growing rapidly in recent years, and they are now frequently provided to middle management.⁵

As mentioned previously, stock option grants never appear in the ECI. They do get captured in other measures of compensation, but not in an ideal fashion. Ideally, as with bonuses, the true value of the stock options (as gauged, for example, with the Black-Scholes model) ought to be considered as compensation on the issue date. Instead, in both the NIPA and the CPH series, stock options are not counted as compensation until the exercise date. Thus, during a period of rapid increases in the issuance of stock options, all of our remuneration measures will understate the true cost of labor.

2. A macroeconomic framework for the analysis

Standard microeconomic theory frequently assumes that wages are fully flexible-- that is, each worker's wage is set individually and fluctuates over time to clear labor markets. In practice, wages typically are not fully flexible: Pay is often set by formula, and variation in pay or pay increases across employees may be limited, perhaps because

3. This accounting cost ignores the substantial time value associated with the option holder's right to exercise at any time over the life of the option.

4. In contrast to fixed-plan options, variable-plan options have an undetermined exercise price on the grant date. The cost of the grant is recorded as the intrinsic value the option is *expected* to have when the exercise price ultimately is set, which is likely to be greater than zero since stock prices are expected to rise.

5. For employers, another advantage of stock option is their vesting feature, which helps firms retain employees.

doing so reduces salary administration costs or because large pay differentials for workers with the same job title or same tenure with the firm may be viewed as unfair by workers. Wage changes also are not so sensitive to economic conditions as standard theory assumes, in part because of lags in the adjustment process. Moreover, workers may have an “entitlement mentality,” such that they expect to receive annual increases in pay regardless of individual or firm performance.

The alternative compensation schemes we are examining appear to increase the flexibility of the wage-setting process.⁶ In this section, we discuss several ways in which these compensation schemes could affect the behavior of aggregate compensation and other macroeconomic variables. To help frame the discussion, we consider two dimensions across which compensation may become more flexible: over time and across individuals.

Flexibility over time. An increase in the prevalence of variable pay--that is, schemes that tie compensation more closely to the performance of the firm, such as profit sharing, annual bonuses, or stock options--ought to make compensation more flexible over time. When business is strong and profits are high, compensation will be higher than it would have been had variable pay been less prevalent; when business is weak, compensation will be lower than it would otherwise have been. Thus, if variable pay has become more prevalent, the most obvious consequence is that compensation ought to have become more cyclical than it otherwise would have been. Of course, as discussed below, to the extent that annual bonuses are linked to individual performance in addition to firm performance, such pay could add flexibility across individuals as well.

Compensation schemes such as hiring and retention bonuses--which, for the purposes of this paper, we call targeted pay--are temporary changes in compensation designed to help attract or retain workers in occupations that have labor shortages.⁷

6. In section 3, we speculate a bit on why firms might prefer to increase the flexibility of the wage-setting process.

7. Among human resources specialists, the term “targeted pay” often also includes differential base pay adjustments or merit bonuses for specific individuals who are deemed especially valuable to the firm. We discuss these in the next sub-section of the paper.

Although not directly linked to firm performance, such bonuses, by virtue of their temporary nature, may also add to the flexibility of compensation over time. These bonuses are not built into the level of compensation. Thus, a firm paying hiring bonuses, instead of increasing base pay for these workers, would find its labor costs easing if the economy turned down and the shortage of these key workers abated. As with some forms of variable pay, targeted pay plans also contain an important element of flexibility across individuals, the consequences of which will be discussed below.

One counterpart of increased cyclicalness of compensation could be a reduction in the cyclicalness of employment. If compensation per employee declines in a recession, firms have less reason to lay off workers (relative to their incentives under a more-rigid compensation scheme). Thus, increasing the use of variable or targeted pay could help alleviate the severity of employment fluctuations over the business cycle.⁸

Whether the increased cyclicalness of *compensation* would translate into a change in the cyclicalness of *prices*, however, is less clear: At least to some extent, firms appear to smooth through cyclical variations in unit labor costs when setting prices, whether these variations result from cyclical movements in productivity or from those in compensation. Thus, when an increase in compensation is observed, the implications for pricing may depend critically on the degree to which the increase is perceived as being temporary or permanent. If the increase is being driven by variable pay, then it may be expected to reverse if business turns down, whereas a rise in base pay is likely to be perceived as more persistent.⁹

One important reason that firms cite for moving toward variable pay is its potentially favorable effects on productivity. By giving workers a more direct stake in the fortunes of the firm, variable pay should improve workers' incentives to enhance the

8. This argument has been made most prominently by Martin Weitzman, *The Share Economy: Conquering Stagflation* (Harvard University Press, 1984).

9. Of course, in practice it may be very hard to divide a given compensation change into temporary and permanent components. Not all forms of variable pay will be very cyclical; some annual bonuses, for example, may depend more on individual performance than on firm performance or the business cycle. Similarly, firms making very large bonus payments in one year may reduce their other forms of compensation at the same time.

productivity of the firm. Indeed, a number of microeconomic studies have found that firms with profit-sharing programs are more productive than similar companies without such programs. However, it may be hard to distinguish the effects of profit sharing *per se* from other differences that often go along with profit sharing, such as encouraging greater worker participation in decisionmaking.¹⁰ Be that as it may, most estimates of the differential effect on the level of productivity are in the 2 percent to 10 percent range.¹¹

Flexibility across individuals. In recent years, many firms have made changes to their compensation systems that permit greater differentiation among employees. As discussed above, these changes include increasing the share of pay that is variable and related to individual (as opposed to firm) performance and making greater use of hiring bonuses, retention bonuses, and spot rewards for particularly meritorious performance. But this phenomenon also includes a broader trend toward differentiated pay. Merit pay increases are by now firmly established. Firms apparently have been increasing the band widths that determine the minimum and maximum pay associated with a particular job. In addition, outsourcing may be another way to allow individuals' pay to deviate from a firm's internal pay structure and thus to add more variability across individuals.

Such an increase in the flexibility of compensation across individuals could, in theory, tend to reduce unemployment and lower the NAIRU. Wage rigidities, perhaps including notions of fairness that lead to a compression of wages across individuals, could increase the unemployment of workers in relatively low demand whose wages are being held up by these rigidities. If such wage rigidities weaken, firms are more able to use pay to attract the right mix of workers. This flexibility permits firms to raise compensation for workers in high demand and to ensure that they can fill certain jobs. Similarly, the ability to lower wages for workers in low demand helps keep these workers

10. See, for example, Casey Ichniowski, Kathryn Shaw, and Giovanna Prennushi, "The Effects of Human Resource Management Practices on Productivity: A Study of Steel Finishing Lines," *American Economic Review*, vol. 83 (June 1997), pp. 291-313.

11. A summary of econometric evidence is given in Martin Weitzman and Douglas Kruse, "Profit Sharing and Productivity," in Alan S. Blinder, ed., *Paying for Productivity* (Washington, D.C.: The Brookings Institution, 1990), pp. 95-142.

employed. That is, the NAIRU could fall as the structural unemployment associated with wage rigidities is reduced.

Just as an increase in the flexibility of compensation across individuals could reduce the NAIRU, it, conceivably, could also have a favorable effect on labor productivity. The mix of workers in high and low demand initially may be weighted more toward low-demand workers than would be optimal. Relaxing the constraint on wages gives firms more leeway to choose the optimal mix of employees, with beneficial effects on productivity.

To summarize our discussion, if variable pay and targeted pay have become more prevalent, then hourly compensation costs ought to have become more cyclical. Elements of variable pay such as profit sharing could also boost productivity by increasing incentives for workers to perform well and to focus on productivity-enhancing changes to the work environment. And, to the extent that they make compensation across workers more flexible, these practices could help improve the match between labor supply and demand and between workers and jobs, tending to reduce the NAIRU and raise productivity.

3. What have we learned about variable pay?

As indicated in the introduction to this paper, press reports have suggested that some firms are changing the mix of pay over time--decreasing their reliance on base wage adjustments and substituting bonuses, stock options, and other forms of variable compensation that are tied to company performance. Our discussions with the compensation specialists at the consulting firms we contacted confirmed that companies are aggressively adding pay-for-performance programs. The eligibility for such programs is greatest for the highest-income groups, although eligibility is rapidly being spread throughout the organization. In addition, the compensation consultants said that they perceive a move toward greater use of "long-term" incentives--such as stock options--for lower-level employees and less reliance on "annual" plans--for example, bonuses or profit sharing.

Even though eligibility has been rising for lower-income job classes, the size of awards (as a percent of base salary) has not been increasing. According to a survey by a

major compensation consulting firm, average awards for entry-level professionals have remained at less than 10 percent of base salary in recent years. Average awards for executives, however, have climbed markedly--from 45 percent of base salary in 1993 to 65 percent in 1998. Nevertheless, the cost of incentive programs, as a share of the total compensation bill of surveyed organizations, was only a little more than 10 percent.

Because most variable-pay schemes are related to performance, we asked our contacts what types of performance measures are typically used. We were told that for lower-level occupations, variable pay usually is tied to the performance of the plant, division, or company as measured by production, sales, or profitability. For higher-level employees, there is often also a component of variable pay that is tied to individual performance.

Within firms, our contacts noted a trend toward decentralizing compensation decisions to lower levels in the firm. They view decentralization as an important change in the practice of compensation management. In effect, big companies are trying to act like small companies. This behavior has led to a proliferation of types of variable-pay plans--by team, by product line, and by division, for example. They feel that decentralization has also made implementing incentive pay plans easier.

If firms have been making increased use of variable-pay plans, why have they been doing so? We asked that question in our company visits, and although we had this discussion with only a few firms, we received some useful responses. First, firms hope that variable pay will boost productivity by raising workers' incentives to work harder and smarter. Second, firms suggested that they prefer to pay more when they can afford to do so--presumably because they would like to smooth corporate earnings over time, and perhaps even forestall bankruptcy when business turns down.¹² Finally, firms seemed to indicate that they are moving toward variable pay in part because other firms are doing so; therefore, to some extent, as one compensation specialist put it, variable pay may be something of a "fad du jour."

12. Although one might wonder whether some firms expect that, when all is said and done, compensation will be lower, on average, when the variable pay component is substantial, no firm that we spoke with mentioned this expectation as a reason.

3.1 How prevalent is the use of variable pay?

According to the 1998-99 salary survey conducted by the American Compensation Association (ACA), 63 percent of respondent firms currently use some form of variable pay. Other evidence, too, suggests that the use of variable pay is fairly widespread. As shown in table 2, among the firms contacted by the Federal Reserve Banks, nearly 90 percent had some form of variable-pay component in their compensation scheme in 1998.¹³ Although the firms contacted by the Reserve Banks may not be representative of all firms in the national economy, the findings are broadly consistent with evidence from other sources that recent compensation developments are likely to be quantitatively important for macroeconomic analysis.

Because so many of the Reserve Bank contacts offer some type of variable pay, there is little variation by size of firm. Nonetheless, the data show that typically larger or faster-growing firms are more likely to offer variable pay. And variable pay is most likely to be offered to managers and professional workers. Among the firms contacted by the Federal Reserve Banks, more than half reported that they offer variable pay only to these upper-level workers.

Table 2
Variable-Pay Practices
(Percent of firms)

| Practice | All | Size of firm | | Growth of firm | | Occupation | |
|-------------------------------|------|--------------------|-------|----------------|-------------------|--------------------|-------|
| | | Large ¹ | Small | Fast | Slow ² | Upper ³ | Lower |
| 1. Any type of variable pay | 88.4 | 96.7 | 85.0 | 92.6 | 87.6 | 85.3 | 69.4 |
| 2. Profit sharing | 50.1 | 52.1 | 49.3 | 61.8 | 47.8 | 48.4 | 43.6 |
| 3. Stock options ⁴ | 34.0 | 58.7 | 23.8 | 44.1 | 32.0 | 32.8 | 6.7 |
| 4. Performance bonus | 75.2 | 82.6 | 72.1 | 82.3 | 73.8 | 69.4 | 41.4 |

1. More than 1,000 employees

2. Moderate growth, no growth, or contracting.

3. Managers and professionals.

4. Other than programs only for executives.

Source: Discussions with business contacts by researchers at the Federal Reserve Banks.

13. The ACA and Reserve Bank figures exclude variable-pay programs limited to senior management and executive programs.

The most widespread forms of variable pay are either profit sharing or annual bonuses that are tied to some measure of individual or business-unit performance. About three-fourths of the firms contacted by the Reserve Banks use annual performance bonuses as part of their compensation package, and half offer profit sharing to at least some of their employees.¹⁴ In contrast to bonuses and profit sharing, stock options (other than programs limited only to executives) are offered by a smaller share of firms (about one-third) and typically are restricted to managers, especially those of very large firms.

3.2 Has the use of variable pay been increasing?

The use of variable pay has become more important recently. For example, as shown in table 3, nearly one-quarter of the variable-pay programs used by the Reserve Bank contacts during the summer of 1998 had been introduced within the past two years (line 1) and more than one-third had broadened eligibility recently (line 4). The businesses and consulting firms we spoke with confirmed this impression. The most rapid expansion and broadening has been for stock option plans, especially at fast-growing firms. It should be remembered, however, that stock options, though having expanded in recent years, are still not so widespread as the other programs. Indeed, fewer than 10 percent of the firms contacted by the Reserve Banks had stock option programs that were available to employees below the managerial and professional level (table 2, line 3, last column). Bonus programs, which are quite widespread, also have been broadened recently at a sizable number of firms.

3.3 How variable is variable pay?

Although the details of variable-pay programs vary considerably across companies, most programs put a small but appreciable share of pay at risk for the employee. A common formula specifies "target" bonus shares for different categories of workers, for example, 5 percent of annual pay for nonexempt workers and 10 percent for exempt workers; actual payouts may be zero to three times the target share, depending on specified measures of performance. Typically, performance is measured in terms of a few

14. Typically, if a firm offers a profit-sharing plan, most workers are eligible to participate. According to a Chamber of Commerce survey, about two-thirds of the firms that report having profit-sharing plans actually make some payment under the plan in any given year.

Table 3
Expansion of Variable-Pay Programs
 (Percent of firms answering “yes,” among firms having that type of variable pay)

| Action | Any program | Profit sharing | Stock options | Bonus |
|---|-------------|----------------|---------------|-------|
| <i>Introduced variable pay plan in the past two years</i> | | | | |
| 1. All firms | 23.4 | 8.2 | 17.7 | 13.8 |
| 2. Fast growing | 30.2 | 14.3 | 26.7 | 16.1 |
| 3. Slow growing ¹ | 22.0 | 6.6 | 15.3 | 13.3 |
| <i>Broadened eligibility in the past two years</i> | | | | |
| 4. All firms | 37.1 | 16.3 | 36.9 | 29.5 |
| 5. Fast growing | 52.4 | 21.4 | 50.0 | 39.3 |
| 6. Slow growing ¹ | 33.9 | 15.1 | 33.3 | 27.3 |

1. Moderate growth, no growth, or contracting.

Source: Discussions with business contacts by researchers at the Federal Reserve Banks.

key items such as profits, productivity, and indicators of customer satisfaction.

Performance is often measured at the level of the business unit, possibly also with some link to company performance.

Because business performance generally has been strong in recent years, the question arises whether companies will actually allow pay to decline when business conditions weaken. The executives with whom we spoke viewed the downside risk to workers’ pay as real. In introducing variable pay, most companies had stressed the need for workers to take on some of the risk in order to share in the rewards of improved performance. Several executives pointed to business units within their company that failed to meet objectives in certain years, resulting in no or low bonuses; employees in those units reportedly reacted with acceptance, having known how the bonus would be set. Nevertheless, some of the specialists at compensation consulting firms expressed concern that employees have come to view bonuses as an entitlement because, as one executive familiar with the software industry put it, “Almost everyone here has seen only

success.” Accordingly, they felt that companies might move to offset part of possible reductions in variable pay that could be associated with an economywide downturn in demand.

4. What have we learned about targeted pay?

We also asked the compensation specialists we interviewed about the extent to which firms are treating employees differently--that is, moving away from standard firmwide compensation increases and toward pay increases targeted at specific skill groups or individuals. We were told that some firms use a limited form of targeting for production workers. This practice is sometimes labeled “pay for teams” or “pay for competencies.” Nevertheless, in most occupations the use of this practice is still very narrow.

The story is different, however, for new hires in information technology (IT) occupations. For those workers, compensation is increasingly being determined on the “spot market” independent of a company’s pay ladder. These workers are not particularly risk averse, and many are willing to work for start-up companies. Outside of IT, firms still rely heavily on established internal structures to set hiring pay. Nonetheless, there seems to be more flexibility now than in the past. We were told, for example, that hiring bonuses have gone from being virtually nonexistent to being used selectively.

Most firms have well-defined pay hierarchies. The compensation specialists we spoke with indicated a desire to adhere over time to established pay structures. Apparently, this desire does not, however, carry over to one-time bonuses that are not permanently built into pay. Among the firms contacted by the Reserve Banks, almost half said that they used a type of targeted pay for at least some jobs (table 4, line 1). Two-thirds of these firms had introduced targeted pay in the past two years (line 6). Hiring and referral bonuses were the most common types of targeted pay, used by 32 and 30 percent of the Reserve Bank contacts, respectively; also, about one-quarter offered some form of retention bonus. Surprisingly, according to Reserve Bank contacts, targeted pay is used only slightly more frequently for IT positions than for other types of positions: for example, 29 percent said they used hiring bonuses frequently for IT positions, while 24 percent reported frequent use for other types of jobs.

Table 4
Targeted-Pay Practices

| Item | Any targeted pay | Bonuses | | |
|---|------------------|---------|----------|-----------|
| | | Hiring | Referral | Retention |
| 1. Percent of firms using this type of targeted pay | 49 | 32 | 30 | 24 |
| <i>Percentage of firms in line 1 that replied yes to the following:</i> | | | | |
| 2. Use practice frequently for IT jobs | 33 | 29 | 33 | 26 |
| 3. Use practice frequently for jobs other than IT | 29 | 24 | 29 | 16 |
| 4. Give bonus of more than 10 percent of annual base pay | 25 | 24 | 2 | 33 |
| 5. Give bonus of 5 to 10 percent of annual base pay | 33 | 36 | 11 | 30 |
| 6. Introduced program in the past two years | 65 | 58 | 53 | 59 |

Source: Discussions with business contacts by researchers at the Federal Reserve Banks.

Bonuses are often appreciable relative to annual base pay. Among the Reserve Bank contacts offering hiring bonuses, 60 percent had typical bonuses amounting to 5 percent or more of annual base pay (column 2, lines 4 and 5); the figure for retention bonuses was comparable (column 4). Referral bonuses are generally more modest, with only 13 percent of those offering such bonuses having typical amounts of 5 percent or more. In discussing reasons for the growing use of targeted pay, most company executives stressed the need to respond to tight labor market conditions while avoiding hefty permanent increases in base pay. Many also mentioned the need to attract and retain personnel for Y2K and other limited-duration projects without permanently distorting the pay structure.

5. What have we learned about the productivity implications?

Many of the firms we spoke with said that one reason for moving toward variable-pay plans was the hope that, by giving employees more of a stake in the firm's fortunes, employees would have more incentive to suggest productivity-enhancing changes. And,

as we noted above, the literature contains some empirical support for the view that firms with profit-sharing plans are more productive than other firms.

Our informal discussions with compensation professionals also seemed to point to a cautious optimism about the success of the experiments in variable pay. In some cases, firms seemed clearly to believe that these incentives to promote cost-consciousness on the part of employees were bearing fruit. For example, one executive referred to an employee who saved money on airline tickets, saying that she was “acting like a shareholder.” Similarly, we met with representatives of two manufacturing firms (in quite different lines of business) who told nearly identical stories about workers suggesting that work gloves be re-used rather than being discarded each day. In other cases, the benefits were less tangible. Some firms suggested that productivity was improving; but the extent to which the improvement was due to the variable compensation schemes was hard to determine.

None of the firm representatives we spoke with said that they think variable pay has harmed productivity. In the case of one firm, however, an earlier attempt at variable pay was canceled because of worker dissatisfaction--which, one can guess, may have had adverse productivity consequences. More recently, this firm has established a new form of variable pay, and its senior compensation official strongly believes the plan is boosting productivity. But this example argues for remaining cautious because, were the economy to weaken and workers' receipts of variable pay to turn down, workers could become less enchanted with variable-pay schemes, and productivity could suffer as a result.

One issue that emerged from our discussions, and is reflected in some academic studies as well, is that disentangling the effect of pay practices *per se* from other aspects of the work relationship can be difficult. Workers are more likely to make valuable suggestions when management actively welcomes such suggestions, and when procedures are in place to encourage them. Thus, one firm we spoke with believes that the combination of financial incentives with an intensified focus on creating a “partnership” with the union has been highly successful.

6. Conclusions

Measurement bias. As section 1 indicates, the most likely sources of measurement bias arise because many targeted-pay devices and the granting of stock options are outside the scope of the ECI. In terms of the effect of targeted-pay increases on the ECI, the following example illustrates the possible magnitude of importance: The average hiring bonus, which is about 8 percent of base pay, is given by 32 percent of employers. Assume that, in a tight labor market, 10 percent of the employees in firms that give hiring bonuses receive one in a given year.¹⁵ This implies that hiring bonuses would represent about 0.25 percent of total annual cash compensation ($[(.08 \times .32 \times .10] \times 100 = .25$). If, for the sake of argument, we make the extreme assumption that these payments were zero five years ago, then their growth would lead to a downward bias in the change in the ECI of 0.05 percent per year.

We also offer, as an example, some extremely rough calculations of the possible effect on the ECI of stock option grants (see box 1 for the details). Nellie Liang has examined information on stock options in the annual reports of the 125 nonfinancial corporations in the S&P 500 with the largest market capitalization.¹⁶ Based on that examination, she estimates that the average stock option grant per employee in those firms was valued (in Black-Scholes terms) at \$565 in 1994. Furthermore, the average value of stock options granted at these firms grew at a whopping 31 percent annual rate, on average, between 1994 and 1998. To calculate the effect of these grants on the ECI, we note that roughly 40 percent of private employment is in publicly traded firms and so,

15. Studies suggest that the average turnover rate of manufacturing establishments is about 12 percent per year. In a tight labor market, turnover rates and employment growth at firms that give hiring bonuses might lead to a larger new hire rate--say, 20 percent--with perhaps half receiving a hiring bonus.

16. See Appendix 1, "Estimating the Value of Stock Option Grants for Public Companies," by Nellie Liang. The estimate is derived from information in the footnotes to company annual reports on fixed-plan stock options granted during the year (both executive and nonexecutive). The options values are estimated using a Black-Scholes model, are net of expected cancellations, and are then divided by the number of employees in the firm.

in principle, could receive stock options.¹⁷ If we assume that option use by these 125 firms is representative of all publicly traded firms--a strong assumption about which we know little--then stock option grants would have added \$226 per employee ($\565×0.40) to total private compensation in 1994, and \$659 in 1998. Adding these figures to total private compensation per employee--which was \$35,640 in 1994 and, according to the ECI, rose 3.1 percent per year over this period--suggests that had stock option grants been included in the ECI they might have added about a quarter of a percentage point to annual ECI growth between 1994 and 1998.

A similar calculation could be made to estimate the effects on nonfarm compensation per hour of including stock option *exercises* rather than *grants*. At the 125 corporations examined by Liang, gains from exercising stock options increased from \$450 per employee in 1994 to \$3,699 in 1998-- nearly a 70 percent annual rate of increase (appendix table A-1). Assuming again that options use by the 125 firms in Liang's sample is representative of all publicly traded corporations, and using the 40 percent employment share of that sector, inclusion of stock option *exercises* would have boosted growth of nonfarm compensation per hour about 3/4 percentage point per year from 1994 to 1998--roughly half a percentage point more than compensation growth that includes stock option *grants*.

These calculations assume that stock options granted by the largest nonfinancial firms are representative of the entire publicly traded sector. How reasonable is this assumption? Regarding financial corporations, anecdotal information suggests that these firms make widespread use of stock options; indeed, among the Reserve Bank contacts, the share of financial companies offering stock options was higher than for firms overall. Regarding smaller nonfinancial firms, the (scant) evidence is mixed. On the one hand, within Liang's sample of 125 corporations, those with fewer employees tended to have relatively large stock option grants per employee; taken at face value, this could imply that the remainder of publicly traded corporations, which have fewer employees on

17. Employees in privately held corporations may also receive stock options, but because the market value of privately held firms is relatively small, total grant values also are probably small.

average than the 125 firms in the sample, might have stock option grants that are larger than the figures used in our calculations.¹⁸ On the other hand, because the sample only includes firms with large market capitalization, it probably is skewed toward firms that had an unusually large rise in share values between 1994 and 1998; by the nature of stock-option valuation, grant values at these firms may have increased considerably more rapidly than average. All told, the effect on aggregate compensation measures of including stock option grants--and, especially, the value of stock-option exercises--is highly uncertain, but our calculations suggest that in recent years stock options have been a not-insignificant part of actual overall compensation growth.

Macroeconomic implications. Our study has suggested that both variable pay and targeted pay have become more prevalent in recent years. The macroeconomic framework from section 2 pointed to certain predicted consequences of an increase in the prevalence of these pay schemes. First, all else equal, greater use of flexible pay practices ought to make compensation more responsive to changes in business conditions. Thus, the implication is that in the recent strong economy compensation ought to have been higher than it otherwise would have been had there been less use of variable pay. This implication may seem peculiar, because, if anything, compensation growth has appeared, on balance, to be rather restrained in the past few years. Nevertheless, the logic of variable pay is that compensation would have been even more restrained if not for this change in compensation practices. At some point in the future, when economic activity slows significantly or contracts, we shall see whether variable pay in fact contributes to a noticeable drop-off in compensation growth.

Second, the increased cyclicity of compensation suggests that employment fluctuations might be attenuated. To date, we have not been able to find any clear evidence that they have been. Again, it will be interesting to observe in a future economic downturn whether variable-pay plans reduce labor costs sufficiently to lead to smaller layoffs than would otherwise have occurred.

18. Furthermore, data from the 125 firms in Liang's sample cover the firms' activities and employment in all countries; the value of grants to *domestic* employees of the firms could well be higher.

Box 1: An Example of How the Inclusion of Stock Options Might Affect the ECI

The table below lays out the arithmetic of the example discussed in the text. Line 1 shows the average value of stock options per employee as calculated by Liang. The value of average private industry compensation in 1994 (\$35,640) is taken from tables 6.2 and 6.5 of the national income and product accounts. The values for subsequent years are assumed to grow at the rate of increase in the published ECI (line 4). The difference between the growth rates of the published ECI and our hypothetical ECI, which includes the value of stock options, is 0.3 percentage points during the period from 1994 to 1998 (line 10).

| | 1994 | 1995 | 1996 | 1997 | 1998 | 1994-98 |
|--|--------|--------|--------|--------|--------|---------|
| Publicly traded companies | | | | | | |
| 1. Average value of stock options per employee, net of expected cancellations (dollars) ¹ | 565 | 688 | 996 | 1,336 | 1,648 | |
| 2. Growth rate (percent, annual rate) | n.a. | 21.8 | 44.8 | 34.1 | 23.4 | 30.7 |
| Total private business | | | | | | |
| 3. Average private industry compensation per employee (dollars) ² | 35,640 | 36,567 | 37,700 | 38,982 | 40,346 | |
| 4. ECI growth rate (percent, annual rate) | n.a. | 2.6 | 3.1 | 3.4 | 3.5 | 3.1 |
| 5. Average value of stock options (equals line 1 times 40 percent) ³ | 226 | 275 | 398 | 534 | 659 | |
| 6. Average compensation per employee including the value of stock options (line 3 plus line 5) | 35,866 | 36,842 | 38,099 | 39,516 | 41,006 | |
| 7. Growth rate (percent, annual rate) | n.a. | 2.7 | 3.4 | 3.7 | 3.8 | 3.4 |
| Memo: | | | | | | |
| 8. ECI growth rate (equals line 4) | n.a. | 2.6 | 3.1 | 3.4 | 3.5 | 3.1 |
| 9. Hypothetical ECI growth rate, including the value of stock options (equals line 7) | n.a. | 2.7 | 3.4 | 3.7 | 3.8 | 3.4 |
| 10. Difference (percentage points) | n.a. | .1 | .3 | .3 | .3 | .3 |

n.a. Not applicable.

1. Source: Nellie Liang, as reported in appendix 1 of this report.

2. Source: National income and product account tables 6.2 (Compensation of Employees by Industry) and 6.5 (Full-time Equivalent Employees by Industry).

3. The 40 percent figure is the estimated share of private employment accounted for by publicly traded companies, based on Compustat data.

Third, to the extent that greater use of flexible-pay plans has led to a more-efficient allocation of labor by making compensation more elastic across individuals, the NAIRU could have been reduced. Certainly, the very low unemployment rates and subdued inflation observed in recent years are suggestive of such a reduction in the NAIRU. But we are hesitant to draw this conclusion too strongly. The most convincing evidence we found for increased flexibility of compensation across individuals was an increase in targeted pay--bonuses that are explicitly temporary. Firms seemed hesitant to allow permanent changes in the salary structure. We suspect that the allocative efficiency benefits of compensation flexibility would be greater if those changes were permanent.

All in all, the changes in compensation practices that many firms have introduced recently have apparently helped to increase the flexibility of pay both across time and across workers. In addition, by linking pay more closely to performance, the firms we contacted seemed to think (although they usually were hard-pressed to prove it) that their employees were working more efficiently and with an eye to enhancing the "bottom line" of the company.

Appendix 1

Estimating the Value of Stock Option Grants¹⁹

To examine stock option activity, data were collected on fixed-plan stock option grants and exercises at the largest domestic nonfinancial corporations for which sufficient data were available. The sample of companies included 125 of the largest nonfinancial corporations in the S&P 500 Composite index, ranked by market value, as of year-end 1997. Data were collected for the years 1994 to 1998 for each of the corporations, but because of less standard reporting in 1994 and because of corporate restructurings, the sample included only 111 companies in 1994, and 120 companies in 1998. The 125 corporations in the sample represented about three-quarters of the earnings and market capitalization of nonfinancial corporations in the S&P 500 index in 1997.

Stock option grant values were estimated using a Black-Scholes pricing model which does not incorporate vesting and selling restrictions unique to employee stock options. To address these restrictions, option grants were reduced by the number expected to be forfeited, and the expected life of the option was shortened from its contractual term; both are adjustments that would be permitted by accounting standards. Other possible considerations that raise the value of options, however, are not addressed. For example, while not widespread, the practice of repricing options--that is, lowering the strike price on previously granted options when share prices fall substantially--is not incorporated. Assumptions about expected stock price volatility, option life, dividend yield, and the risk free rate were taken from the financial statements. For 1997, the sample averages were 26 percent for the expected stock price volatility, 1.6 percent for the dividend yield, 5.3 years for the option life, and 6 percent for the risk-free rate.

The estimated net value of options granted by the sample of firms roughly tripled from \$45 million per firm in 1994 to \$142 million in 1998. The value of stock option grants per employee also rose substantially over the sample period--from \$565 per

19. This appendix was researched and prepared by Nellie Liang.

employee in 1994 to \$1,648 in 1998 (table A-1, upper panel).²⁰ Technology firms--about one-third of the market value of the sample--accounted for much of the overall growth of option grants. The sharp increase in the value of stock options for all 125 firms in Liang's sample is due to an increase in the number of options granted and to the large stock price increases for these corporations. In contrast, the ratio of the value of option grants to market value, which rose from 1994 to 1996, has been roughly steady at 0.36 percent of market value since then.

20. Employees are the total number of employees and not just those that receive options. Market value is the average of previous and current year market value. The number of employees and the market value are from Compustat.

Table A-1
Value of Stock Option Grants and Exercises for 125
S&P Nonfinancial Corporations
(Average across sample)

| | 1994 | 1995 | 1996 | 1997 | 1998 |
|--|------|------|-------|-------|-------|
| Stock Option Grants | | | | | |
| Value per employee (dollars) | 565 | 688 | 996 | 1,336 | 1,648 |
| Grant value to market value (percent) | .28 | .30 | .34 | .36 | .36 |
| Stock Option Exercises | | | | | |
| Value per employee (dollars) | 450 | 852 | 1,414 | 2,069 | 3,699 |
| Exercise value to market value (percent) | .25 | .37 | .48 | .56 | .76 |

Source: See text of Appendix 1.

Appendix 2
Description of Firms Contacted by Federal Reserve Banks

The Reserve Banks contacted a total of 415 businesses in their Districts during late July and early August 1998. The table below shows the distribution of firms by employment level, employment growth (a proxy for the firm's overall business conditions), and industry. As can be seen, the bulk of the businesses had fewer than a thousand employees and had moderate (if any) employment growth. Nearly half were manufacturers of durable goods.

Table A-2
Summary Description of Reserve Bank Contacts

| Firm characteristic | Number of firms | Percent of total |
|----------------------------------|-----------------|------------------|
| All firms | 415 | 100.0 |
| <i>By employment</i> | | |
| < 200 | 136 | 33.1 |
| 200-999 | 154 | 37.5 |
| 1,000-9,999 | 76 | 18.5 |
| 10,000+ | 45 | 10.9 |
| <i>By employment growth</i> | | |
| Rapid | 68 | 16.5 |
| Moderate | 159 | 38.7 |
| Same | 120 | 29.2 |
| Declining | 64 | 15.6 |
| <i>By industry</i> | | |
| Durable manufacturing | 205 | 49.4 |
| Nondurable manufacturing | 50 | 12.0 |
| Trans., commun., wholesale trade | 58 | 14.2 |
| Retail trade | 52 | 12.5 |
| Other | 50 | 12.0 |

Source: Discussions with business contacts by researchers at the Federal Reserve Banks.