

ECONOMIC COMMENTARY

Federal Reserve Bank of Cleveland

Fear and Loathing in Executive Pay

by Joseph G. Haubrich

For some reason, people take offense when a corporate executive begins to make as much money as a basketball star or swimsuit model. Though at first glance some might see this as another example of the ill-informed anti-business bias of the American public and media, the disgruntlement in fact arises from a serious concern: the connection between executive pay and company performance.

It's not hard to imagine that successfully running a major corporation is a skill as rare and valuable as the ability to hit three-point shots or to look photogenic in spandex. The trouble comes in when a CEO does not run the company very well. Is a pay cut or termination in order? The model has an incentive to stay slim. Is the CEO motivated to do as well?

This *Economic Commentary* looks at the economics of executive incentives, focusing on how companies choose to motivate their top officers. Perhaps surprisingly, it appears that CEO pay should not be extremely sensitive to company performance.

■ Incentive Schemes

Discussions about executive compensation frequently sound like a foreign language. Compensation schemes take many forms, at times designed as much to exploit provisions in the tax code as to motivate managers. But despite its complexities, compensation boils down to five elements: salaries, bonuses, stock ownership, stock options, and dismissal. In most cases where pay depends strongly on a firm's performance, the executive

has large stock holdings. Warren Buffet, who controls 45 percent of Berkshire Hathaway's stock, feels any change in the company's fortunes quite directly.

Several more involved forms of compensation also tie executive pay to a firm's performance level. For instance, a company may grant its executive an option to buy stock in the firm. Typically, he must wait 12 months before exercising the option (buying the stock), and at that time, can exercise only one-quarter of the options granted, with another quarter becoming vested at the beginning of each year. Some corporations grant bonuses at the discretion of the board of directors, while others establish objective performance goals.

The rewards for meeting these goals frequently, but not always, depend on the firm's stock price. Many companies use restricted stock awards, which give managers a fixed amount of stock that they cannot sell before the end of a given period. Others find that the rapidly developing derivatives market allows more exotic ways to compensate executives, such as through equity swaps.¹ Combining these elements leads to a wide range of possible compensation plans.²

Unsatisfactory performance can also result in dismissal. One study revealed that firms doing poorly (in the bottom 10 percent of the performance distribution) had roughly twice the CEO turnover of firms that were doing well (top 10 percent).³ Neither number was excessive, however — 6 percent versus 3 percent.

According to a well-known executive compensation critic, America's most overpaid CEO has pocketed \$91 million more than warranted by his company's performance since 1991. Many are understandably outraged by such reports, and there is a movement afoot in both the United States and Britain to rein in what is viewed as excessive executive pay. In this article, the author examines how U.S. companies choose to motivate their top officers and whether pay for performance is in fact desirable. Surprisingly, the evidence suggests that linking executive compensation too closely to firm performance may be a mistake.

In companies that did exceptionally badly (either defaulting on their bonds or going bankrupt), more than half of the CEOs lost their jobs.⁴

These complexities should not be allowed to obscure the ultimately simple relationship between executive compensation and firm performance. Any remuneration scheme, no matter how convoluted, reduces to a basic measure of incentives: How does the executive's wealth depend on the value of the firm? In other words, when the firm becomes more valuable (when the stock price rises), what does the CEO get? Below, I use a measure developed by two Harvard professors that attempts to assess precisely that. Called the performance/pay ratio, it measures how a CEO's wealth changes as the worth of a firm shifts.

■ The Facts

The data used here are taken from Michael Jensen and Kevin Murphy's "New Survey of Executive Compensation," in which they look at how the wealth of 430 American CEOs varies with changes in total shareholder wealth.⁵ In ascertaining performance pay, the authors add together salary and bonuses, other pay, expected lifetime salary and bonus change relative to current performance, threat of dismissal, stock options, restricted stock awards, and inside stock holdings. Table 1 shows how the different components of compensation contribute to total incentives. Notice the importance of stock, both as direct holdings and as options. Bear in mind, however, that the data come from statistical estimates and thus are subject to various types of error.⁶

In addition to these measures of compensation, the measure used for firm performance also deserves some degree of notice. Jensen and Murphy use the increase in total shareholder value, calculated as the change in stock price multiplied by the number of outstanding shares, instead of company profits or surveys of worker satisfaction. This decision reflects the vantage of modern corporate finance. Stockholders, or equityholders, legally own the firm, and the stock price reflects the market's valuation of the firm as an asset. The price should reflect both

TABLE 1 COMPONENTS OF EXECUTIVE COMPENSATION AND INCENTIVES^a

A \$1,000 change in shareholder wealth corresponds to:	Median	Middle 50 percent
Change in current salary and bonus	\$0.087	\$0.01 to 0.22
Present value of a two-year change in salary and bonuses	0.58	0.05 to 1.86
Change in value of stock options	1.58	0.08 to 1.35
Wealth effect of change in chance of dismissal	0.10	0.03 to 0.23
Total change in pay-related wealth	1.58	0.48 to 3.59
Change in value of direct stock holdings	0.96	0.32 to 3.02
Total change in CEO wealth	3.37	1.24 to 8.13

a. Estimates for CEOs of 430 large U.S. companies.

NOTE: Because the median of the sum does not equal the sum of the medians, the numbers do not add up. SOURCES: Michael C. Jensen and Kevin J. Murphy, "A New Survey of Executive Compensation" (footnote 5); and author's calculations.

current assets (factories, cash accounts) and expected future profits.

The numbers in table 1 hide huge differences across firms in the amount of incentives offered to chief executives. Figure 1 plots the estimated performance/pay ratio of all 430 CEOs. Not surprisingly, the largest incentives go to those who own a major portion of the firm — people such as Warren Buffet, Laurence Tisch of Loews Corporation, and An Wang of Wang Laboratories. If the stock value of Berkshire Hathaway increases by \$1,000, Warren Buffet's total compensation rises by \$447. If the stock of Wang Laboratories increases by \$1,000, An Wang's compensation rises by \$139. The results also show symmetry, meaning that a drop in stock value decreases these executives' wealth.

According to the estimates, some CEOs' pay depends *negatively* on firm performance. For every \$1,000 that Navistar International's stock dropped between 1979 and 1982 (when it plummeted from \$41 to \$4.25 per share), its CEO saw his compensation pick up by \$1.41. Likewise, the stock value of Sundstrand Corp. and the compensation of its chief executive moved in opposite directions over the 1975–89 period, with every \$1,000 decrease in stock price corresponding to a \$7.37 increase in pay.

Overall, the numbers show a small but positive response of CEO pay to firm

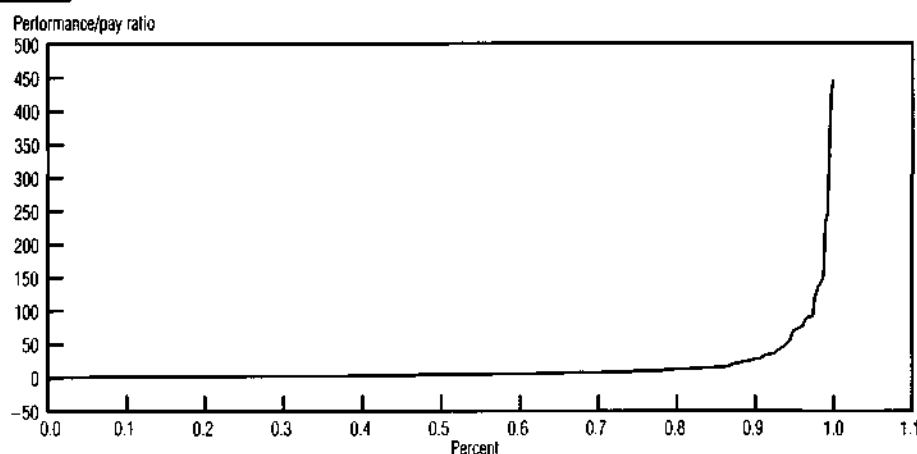
performance. For all 430 firms, the mean response is \$13.96 and the median is \$3.37. Salaries of the CEOs of the biggest 250 companies tend to show less of a response, mainly because fewer chief executives hold a truly large fraction of their company's stock: The median share attributable to stock holdings is \$2.59.

On the surface, this looks like firm performance hardly matters for executive pay — a fact decried by several prominent observers. Corporate compensation critic Graef Crystal expressed his distaste this way: "The easy part of pay for performance is high pay for high performance; the hard part is no pay for no performance."⁷ Michael Jensen goes further and argues that in many sectors, public corporations have become obsolete and will be replaced by leveraged buyout associations — largely because of the executive compensation issue. He states, "It's not hard to understand why an executive who receives \$200 for every \$1,000 increase in shareholder value will unlock more value than an executive who receives \$3.25."⁸

■ The Economic View

Such comments, however, do not imply a broad consensus. The experts disagree dramatically about the appropriate size of executive incentives. One group, taking what may be called the "principal-agent" view, considers CEOs in need of substantial motivation. They believe that when compensation is not tied directly to firm

FIGURE 1 PERCENTILE PLOT OF PROFIT SHARES



SOURCES: Michael C. Jensen and Kevin J. Murphy, "A New Survey of Executive Compensation" (footnote 5); and author's calculations.

profits, the CEO is apt to redecorate the executive suite, beef up the fleet of corporate jets, and show excessive concern for clients in Jamaica, Cancun, and Hawaii. But the hefty profits from buying a new computer for the company engineers will make the sacrifice of a corporate jet worthwhile provided that the CEO shares in those profits. Jensen and Murphy explain: "Highly talented people who would succeed in any field are likely to shun the corporate sector, where pay and performance are weakly related."⁹

But even here, the matter is not cut and dried. Because corporate performance depends on many factors outside the control of the CEO (for instance, the general condition of the economy, oil shocks, wars, or new regulations), linking pay too closely with performance subjects CEOs to excessive risk. Indeed, in an earlier study I show that with even a small aversion to risk on the part of executives, the principal-agent view suggests low levels of performance pay.¹⁰

In contrast, adherents of the "underpricing" view lament that executive pay depends *too closely* on firm performance.¹¹ At the heart of their attitude is a different belief about CEOs' temptations, rooted in the outside market's inability to know everything about a firm. Insiders, most notably the CEO, understand their company's tremendous future profitability — a fact that outsiders

do not yet recognize. Consequently, the firm's stock is undervalued, as the current shareholders are sitting on a gold mine but don't realize it.

Under these conditions, let us consider a CEO's decision to expand the firm and take on a new project that is less profitable than those already in place (a natural consequence of declining marginal returns). With everyone perfectly informed, he would issue stock at the correct price, take on the project, and be done with it. As it is, though, the stock is undervalued, and new stockholders get not only a piece of the moderately profitable expansion project, but also a piece of the tremendously profitable current set. This means that old shareholders see the value of their stock diluted, since they must split the future stock price increases with the new shareholders.

One may shed a quiet tear for this pure wealth transfer and chalk it up to the perils of living in an imperfect world. However, if the CEO acts on behalf of the original stockholders, he will perceive the loss from the underpriced new shares and may cancel the new project. Compensation tied excessively closely to firm performance in effect makes the CEO an original shareholder — to the detriment of new investment.¹²

The underpricing view is a bit like basing your point guard's salary on his scoring. He might then neglect his passing, play calling, and defense, which are more val-

uable to the team. Clearly, there is a danger in giving people the wrong incentives.

Fortunately, there is a compromise view, since the real world possesses far greater complexity than any theory. The reality is that both problems — principal-agent and underpricing — exist, and often are combined in the same firm. Most companies lie between the archetypal mature cash cows, whose primary corporate governance issue is to prevent management featherbedding, and the archetypal start-ups, anxiously weighing new investments in unproven technologies. The diverse mixture of these two extremes explains the wide variation observed in CEO compensation.

■ Conclusion

Appropriate performance-based pay depends on many factors, including (but certainly not limited to) industry, relative size of the company, importance of research and development, competitive posture, and unionization. Even the age and personality of the CEO are apt to be important: Some may respond better to one type of incentive than another.

These incentives — not pay levels — are the real issue. Though a \$3.37 salary boost for every \$1,000 stock market jump may seem like very little motivation, such numbers should not be surprising. The economics of executive compensation predict as much, both because executives dislike bearing too much risk, and because linking their pay too closely to stock prices can lead to the neglect of profitable new projects.

The challenge is to get executive performance of the same caliber that leads to NBA championships and sells fashion magazines. But misunderstanding the problem can produce more than a poor season or flabby thighs: Just ask the nation's unemployed workers or bankrupt investors.

■ Footnotes

1. See Floyd Norris, "Keeping Votes as Stock Is Sold," *New York Times*, March 29, 1994.
2. See Stacey R. Kole, "The Bundling of Compensation Plans," University of Rochester, Simon School of Business, Working Paper, June 1993.

3. See Michael S. Weisbach, "Outside Directors and CEO Turnover," *Journal of Financial Economics*, vol. 20, nos. 1/2 (January/March 1988), pp. 431-60.

4. See Stuart C. Gilson, "Management Turnover and Financial Distress," *Journal of Financial Economics*, vol. 25, no. 2 (December 1989), pp. 241-62.

5. See Michael C. Jensen and Kevin J. Murphy, "A New Survey of Executive Compensation: Full Survey and Technical Appendix to 'CEO Incentives — It's Not How Much You Pay, But How,'" Harvard Business School, Division of Research, Working Paper 90-067, June 1990.

6. Jensen and Murphy use a variety of statistical techniques to calculate incentives from compensation data. They regress the change in salary and bonuses against current and lagged changes in shareholder wealth using data from 1974 to 1988. To convert this to a measure of CEO wealth, they add in other pay, assume that the changes in salary and bonuses are permanent, and take the present discounted value of the changes using an interest rate of 3 percent. They then regress the change in this wealth against current and lagged changes in

shareholder value. Dismissal probability is determined by regressing the log of CEO turnover odds against industry, company size, and relative performance, again from 1974 through 1988. Stock options are assumed to change by \$0.60 for every \$1.00 change in stock price. See Jensen and Murphy's original article on this subject, "CEO Incentives — It's Not How Much You Pay, But How," *Harvard Business Review*, vol. 68, no. 3 (May/June 1990), pp. 138-53.

7. See Alison Leigh Cowan, "The Gadfly C.E.O.'s Want to Swat," *New York Times*, February 2, 1992.

8. See Michael C. Jensen, "Eclipse of the Public Corporation," *Harvard Business Review*, vol. 67, no. 5 (September/October 1989), pp. 61-74.

9. See Michael C. Jensen and Kevin J. Murphy, "CEO Incentives" (footnote 6), p. 149.

10. See Joseph G. Haubrich, "Risk Aversion, Performance Pay, and the Principal-Agent Problem," *Journal of Political Economy*, vol. 102, no. 2 (April 1994), pp. 258-76.

11. For an excellent discussion of the underpricing view, see Stewart C. Myers and Nicholas S. Majluf, "Corporate Financing and Investment Decisions When Firms Have Information that Investors Do Not Have," *Journal of Financial Economics*, vol. 13, no. 2 (June 1984), pp. 187-221.

12. Two finer points deserve mention. First, not every firm can be an unrecognized gold mine all the time. The underpricing argument, then, should hold for some but not all firms. Second, aside from selling stock, companies could issue debt to raise funds. However, if the debt is risky, the underpricing argument still holds because now the new debtholders capture part of the initial stockholders' gain. The reason is that when the new information is released, the firm is seen to be more valuable (less likely to default on its debt), and the price of the debt rises.

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