

What Are Profits Worth to CEOs?

A recent study by Marc Chopin provides interesting insights into the nature of the compensation of chief executive officers of major US firms. The study provides a very detailed description of compensation contracts for specific CEOs in industries ranging from the automobile industry to retail department stores. Although the data span several decades, it is useful to present some general results reported for all U.S. industries in 1988.

To examine the impact of firms' performances on the compensation of CEOs, Chopin performed a least squares regression of total compensation (including bonuses) on two very broad measures of performance: profits and sales. The regression results for 1988 were

$$W = \$690,000 + 634\pi + 11.05S,$$

(20.67) (5.5) (1.27)

where W is total CEO compensation (including salary and bonuses), π denotes profits (in millions of dollars), and S is sales (in millions of dollars). The t -statistics for the coefficients are reported in parentheses under the coefficient estimates.

The results of the regression reveal several interesting insights. First, note that the constant in the regression is the compensation that does not vary with firm performance. Thus, the constant—\$690,000—represents the fixed component of the average Fortune 500 CEO's compensation in 1988—the amount that does not vary with the firm's performance. Indeed, it is profitable to climb to the top of the corporate ladder!

Second, note that the coefficient on π is 634. This means that for every \$1 million the firm earns in profits, the average CEO receives a bo-

nus of \$634. This reward is quite sizable, particularly for firms earning millions or billions in profits. Furthermore, note that the t -statistic is 5.5, which reveals that profits are a very important determinant of CEOs' total compensation. By structuring contracts that reward CEOs based on profitability, shareholders can reduce to some extent the principal-agent problem.

Finally, notice that the coefficient on sales is 11.05. This means that for every \$1 million in firm sales, the CEO receives \$11.25. There is some incentive for CEOs to boost sales, although not nearly as strong as the incentive to improve profits. Furthermore, notice that the t -statistic associated with the coefficient on S is less than 2, suggesting that sales were not a statistically significant component of CEO incentive contracts.

In short, the empirical evidence suggests that shareholders indeed recognize the principal-agent problem and reward CEOs based largely on profits. On average, a Fortune 500 firm with sales of \$2 billion and profits of \$1 billion pays total compensation to the CEO of

$$\begin{aligned} W &= \$690,000 + 634(1,000) + 11.05(2,000) \\ &= \$690,000 + \$634,000 + \$22,100 \\ &= \$1,346,100. \end{aligned}$$

On average, a CEO who earns \$1,346,100 in a year receives almost half of her or his earnings from bonuses that are tied to the performance of the firm.

Source: Marc C. Chopin, *Market Structure, Compensation and Incentives: An Empirical Analysis of CEO Compensation*, Ph.D. dissertation, Texas A&M University, August 1991.