Abstract

While much is made of the ills of “short-termism” in executive compensation, in reality very little is known empirically about the extent of short-termism in CEO compensation. This paper develops a new measure of CEO pay duration that reflects the vesting periods of different components of compensation, thereby quantifying the extent to which compensation is short-term and the extent to which it is long-term. It also develops a theoretical model that generates three predictions for which we find strong empirical support using our measure of pay duration. First, optimal pay duration is decreasing in the extent of mispricing of the firm's stock. Second, optimal pay duration is longer in firms with poorer corporate governance. Third, CEOs with shorter pay durations are more likely to engage in myopic investment behavior, and this relationship is stronger when the extent of stock mispricing is larger.

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In the paper, *The Optimal Duration of Executive Compensation: Theory and Evidence*, we address the issue of how to measure the extent to which a particular executive compensation package is long-term in nature. Designing compensation contracts for top executives is one of the most important corporate finance decisions. A well-designed contract can help motivate and retain talent and align the interests of executives towards value maximization. On the other hand, a poorly designed contract can not only lead to value destruction, but in the current atmosphere of intense media scrutiny, can lead to significant negative publicity for the firm.

One of the long standing criticism in the press and among politicians and regulators is that executive compensation contracts sub-optimally reward short term performance. Such rewards can encourage executives to boost short term performance at the expense of long-term value. The importance of this issue has been heightened by the fact that the “short-termism” of the compensation of the CEOs of financial service firms is viewed by many as contributing to the crisis by creating incentives for reckless risk taking. Much of this discussion about executive compensation and its so-called weaknesses, however, has been in the form of assertions and not evidence based. The reason for the lack of evidence for such assertions is perhaps because there is no measure available that tells us whether executive compensation is short term or long term in nature. This has also precluded benchmarking contracts across firms and executives. It is this conceptualization and accompanying quantification that is one of the goals of our research. We hope our measure can help a variety of audiences. For example, boards of directors can use it to align the duration of the CEO’s compensation with strategic needs of the company. Bank regulators can use it to determine rigorously whether bank executive compensation is “too short-term” in nature. Compensation consultants can use it to improve their benchmarking of executive compensation.
To address this issue, we formulate a theoretical model and develop an empirically-useful and practically-implementable measure of the duration of executive compensation. The goal of the theory is to provide testable predictions on the determinants of executive pay duration, where duration is assessed with the new measure we propose. We test the model’s predictions in our empirical section. Our model has two features. First, the stock market can misprice a firm’s equity in the short-run. Second, the strategic needs of companies differ based on the industry the firm operates in and other factors. While some firms need to optimally invest in short-term projects and others in long-term projects (like R&D). This setting allows us to focus on the shareholders’ tradeoff between short-term and long-term pay for the CEO. Given the potential for short-term mispricing of the firm’s stock, awarding the CEO short-term stock compensation improves the CEO’s personal flexibility by giving her the option of selling (overvalued) stock, which effectively lowers the initial shareholders’ cost of compensating the CEO. However, exclusive reliance on short-term compensation also encourages the CEO to invest in short-term projects, which may not be optimal if the corporate strategy is to also focus on long-term projects. Thus, providing the CEO with long-term compensation may be necessary.

While the theoretical model is useful in providing a framework to think about how the board will determine the duration of executive compensation, and important contribution of our research is the development of a new empirical measure of executive pay duration to characterize the mix of short-term and long-term pay. This measure is a close cousin of the duration measure commonly used for bonds. We compute it as the weighted average of the vesting periods of the different components of executive compensation, with the weight for each component being equal to the fraction of that component in the executive’s total compensation. We use this measure with systematic data on the vesting schedules of restricted stock and stock options of all named executives of S&P 1500 firms during the years 2006-08 to empirically address the following important questions. How long does it take for a typical executive pay contract to vest, and how does this vary across different firms? Does the duration of executive compensation affect the firm’s
decisions and if so, how? We believe this is the first time that such comprehensive data have been brought to bear on these questions of great practical and policy relevance.

As for our first question, we find that the vesting periods for both restricted stock and stock options cluster around the three to five year period, with a large proportion of the grants vesting in a fractional (graded) manner during the vesting period. There is, however, significant cross-sectional variation in the vesting schedules. Industries with longer-duration projects, such as Defense, Utilities, and Coal, offer longer vesting schedules to their executives, suggesting an attempt at match executive pay duration to project and asset duration. We also find that firms in the financial services industry have some of the longest vesting schedules in their executive pay contracts. This is somewhat surprising in light of the recent and heavy criticism that short-termism in executive compensation at banks may have contributed to the 2007-09 financial crisis. Continuing with the empirical findings, we use stock liquidity and the extent of dispersion among analysts’ earnings forecast to identify stock mispricing, with lower liquidity and greater dispersion indicating a greater magnitude of mispricing. Consistent with our model’s prediction, we find that pay duration is decreasing in the extent of stock mispricing: it is longer for executives in firms with more liquid stocks (lower bid-ask spread and higher turnover) and in firms with less analyst earnings forecast dispersion.

Finally, turning to our second questions, we find evidence that executives with short-duration pay contracts tend to make investments with shorter paybacks. We find that firms that offer their CEOs shorter-duration pay contracts have higher levels of discretionary accruals. The positive association between CEO pay duration and discretionary accruals is only present for earnings-enhancing, positive accruals. We further find that firms that offer their CEOs shorter-duration pay contracts are more likely to cut R&D expenditure. This effect is stronger in the subsample of firms with less liquid stock where we anticipate the magnitude of mispricing to be greater. This is consistent with the notion that firms tend to lengthen the duration of executive compensation when greater focus on long-term projects is strategically important.
There has been a long-standing intuition in the executive compensation literature that the extent to which a CEO’s compensation is long-term or short-term will affect the investment and effort allocation decision of the CEO. However, lacking an empirical measure to quantify the extent to which compensation is short-term or long-term, it has not been possible to determine the validity of this intuition. We believe our paper is a first stop to fill such a gap in the literature.

We believe our paper has immediate relevance for practice. Boards of Directors can use our measure to calculate the duration of executive pay and better align it to the firm’s strategic needs. Pay consultants can use our measure to benchmark compensation contracts, while regulators can employ it to analyze bank executive compensation.

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