Paper: "Duration of Executive Compensation"

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Establishing an Executive Pay Duration Measure to Align with the Interests of Shareholders

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The global financial crisis was blamed in part on myopic managerial behavior and excessive risk taking, incentivized by executive compensation practices. While there is much debate about the dangers of short-term performance incentives, there has been no acceptable way to quantify the duration of executive compensation. To fill this void, researchers at Washington University's Olin Business School have created a simple measure of establishing pay duration and documented its relationship with various firm characteristics. Their findings are forthcoming in a research paper soon to be published in *The Journal of Finance*, a top journal in academic finance research. The paper can prove useful for those designing executive compensation to better align the interests of executives with their shareholders.

The financial crisis and the ensuing need for transparency have placed the topic of executive compensation in the spotlight. Over the past decades, the amount that executives make has dramatically risen, and the 2008–2009 global financial crisis highlights a growing dilemma about the short-term outlook that many executives are accused of adopting. Investors and shareholders alike worry that an excessive focus on the short term in executive compensation encourages executives to take short-run risks that do not reflect long-term company values or goals. Former Treasury Secretary Timothy Geithner encourages paying top executives "in ways that are tightly aligned with the long-term value and soundness of the firm." Similarly, 27 prominent figures in business, academia, and government endorsed the Aspen Institute's statement that argues that short-term agendas need to be curtailed and regulated. Supporters of this statement include Warren Buffett, John C. Bole, founder of The Vanguard Group, and Bill George, professor of management practice at the Harvard Business School.

However, designing compensation to encourage executives to focus on the here and now also has an upside. It may also induce them to be more vigilant about the company's current needs, allowing them to respond quickly to changing market conditions, rather than opting for the "quiet life" and making decisions whose consequences may not be revealed until after the executive's retirement. That is, there may be circumstances in which emphasizing short-term performance aligns the shareholders' and executive's goals more effectively than taking a more long-term approach.

While this debate rages on, there is a conspicuous absence of specificity when discussing the real extent of "short termism." One person may consider a year short term, while someone else thinks it's three. Without a specific measure

Despite all the talk about short-term executive compensation inducing myopic decision making, there has been no evidence, because there's been no way to measure the short- or long-term orientation of any compensation package. In this paper, a new way to measure this is introduced, called "pay duration."

of what constitutes duration, it is difficult to evaluate the merits of different positions on this important subject. This research on how to measure pay duration and its relationship with other firm characteristics helps fill the knowledge gap in the design of executive compensation.

What is short termism?

Short termism is an excessive short-term focus that can potentially manifest itself as myopic executive actions. Concentrating on short-term results with insufficient regard for long-term goals, such as research and development, may jeopardize shareholders' and executives' interests. Additionally, many point out that a side effect of this perspective can lead to unethical behavior, fraud, and financial damage in the long run. 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 and how to calculate it. Radhakrishnan Gopalan, Todd Milbourn, and Anjan V. Thakor from Olin Business School at Washington University in St. Louis, and Fenghua Song from Smeal College of Business, Pennsylvania State University, have developed a novel measure of executive 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. By developing this measure, the average pay duration for different industries sets a baseline and gives an idea of the extent to which compensation is short term.

Pay duration measure

Because all the elements in the executive's total compensation package—salary, bonus, restricted stocks, and stock options—have varying duration periods, this novel measure takes these vesting periods into account. A close cousin of the duration measure developed for bonds, the pay duration measure is computed as the weighted average of the vesting periods of each of the components. The weight for each component is the fraction of that component in the executive's total compensation package.

Pay duration, using this formula, is estimated as:

$$\text{Duration} = \frac{(\text{Salary}+\text{Bonus})\text{x}0}{\text{Total Compensation}} + \frac{\sum_{i=1}^{n_s} \text{Restricted Stock}_i \text{x} t_i}{\text{Total Compensation}} + \frac{\sum_{j=1}^{n_o} \text{Option}_j \text{x} t_j}{\text{Total Compensation}}$$

More specifically, when calculating the weighted average, researchers divided the component by the total compensation package and multiplied it by the vesting period, the time required before the employee gains absolute rights over the assets. It should also be noted that because duration is calculated relative to the year-end, Salary and Bonus have a vesting period of zero. With this measure, it is clear that what matters is not how much you pay, but how you pay.

For example, imagine two managers both earning a total compensation package worth a million dollars. Manager 1 receives a $500,000 salary, $300,000 bonus, and $200,000 worth of restricted stocks that are vested after one year. Manager 2 receives a $300,000 salary with $100,000 bonus. Manager 2 also receives $300,000 worth of stock options, with $100,000 vested in three years and $200,000 vested in four years.

Manager 1

$500,000	Salary
+ $300,000	Bonus
+ $200,000	Restricted Stock, vests in one year
$1,000,000 total	

Manager 2

$300,000	Salary
+ $100,000	Bonus
+ $300,000	Restricted Stock, vests in 2 years
+ $300,000	Stock Options, with $100,000 vests in 3 years and $200,000 vests in 4 years
$1,000,000 total	

Calculate duration pay using this novel measure:

Manager 1

$$\left(\frac{500{,}000}{1{,}000{,}000}\text{x}0\right)+\left(\frac{300{,}000}{1{,}000{,}000}\text{x}0\right)+\left(\frac{200{,}000\text{x}1\,\textit{year}}{1{,}000{,}000}\right) = 0.2 \text{ years}$$

Manager 2

$$\left(\frac{300{,}000}{1{,}000{,}000}\text{x}0\right)+\left(\frac{100{,}000}{1{,}000{,}000}\text{x}0\right)+\left(\frac{300{,}000\text{x}2\,\text{years}}{1{,}000{,}000}\right)+\left[\left(\frac{100{,}000\text{x}3\,\text{years}}{1{,}000{,}000}\right)+\left(\frac{200{,}000\text{x}4\,\text{years}}{1{,}000{,}000}\right)\right] = 1.7 \text{ years}$$

Even though both managers had the same total compensation, their pay packages were designed with differing pay duration periods. Given the choice between the two managers' pay packages, an executive will most likely choose the shorter pay duration. But from a shareholder's point of view, rewarding managers with compensation tied to longer durations may help align shareholders' interests with the executive's actions.

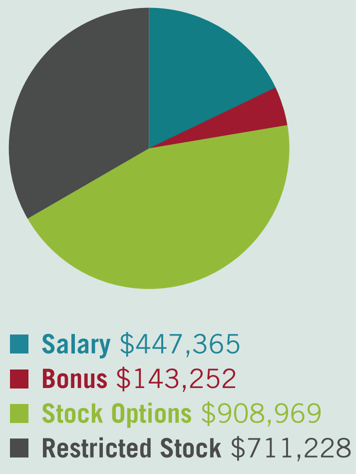
CEOs have longer pay durations than other executives

Using data for all executives of S&P 1500 companies during the years 2006-2009, the research found that average pay duration for all executives (including those below the CEO) is around 1.22 years, while CEO pay has a slightly longer duration, about 1.44 years. On average, executives with longer-duration contracts receive higher total compensation, but lower bonuses.

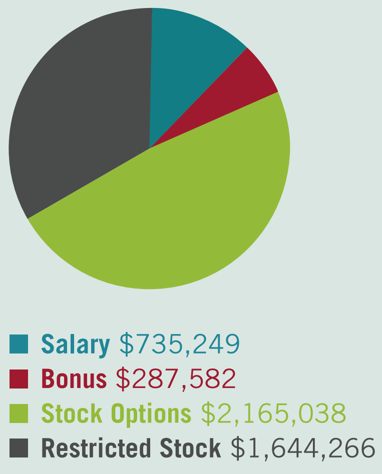
"This was the first result we had that gives us a sense of how long it is before executives can actually sell their shares in the market," said Gopalan from Olin Business School. "It's not long in comparison to the typical length of projects these firms undertake. If you were to give an executive stock options to incentivize investing in projects, then you would want the executive to be able to take these shares and sell them only when the project matures and the cash flows are available. Typically, cash projects are 5–10 years long, while these vesting periods are much shorter than that."

It is also important to note that average annual total compensation for the sample executive is $2,214,425, which consists of $447,365 of salary, $143,252 of bonus, $908,969 of stock options, and $711,228 of restricted stocks. For only CEOs, the average annual total compensation is $4,841,917, which consists of $735,249 of salary, $287,582 of bonus, $2,165,038 of stock options and $1,644,266 of restricted stocks.

Annual total compensation for executives



Annual total compensation for CEOs

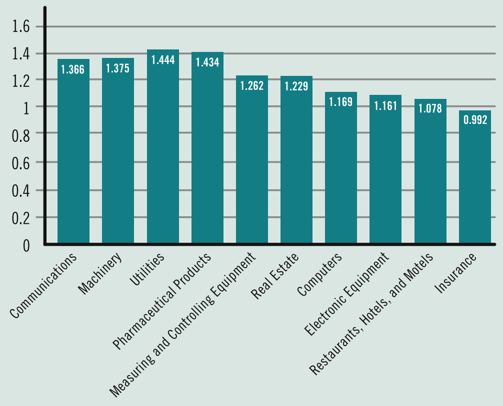


"We suspected that the finance industry would have one of the shortest pay durations if its compensation structures led to risk taking. We did not find that. We found that financials rank somewhere in the middle, and that was surprising to us."
– Radhakrishnan Gopalan

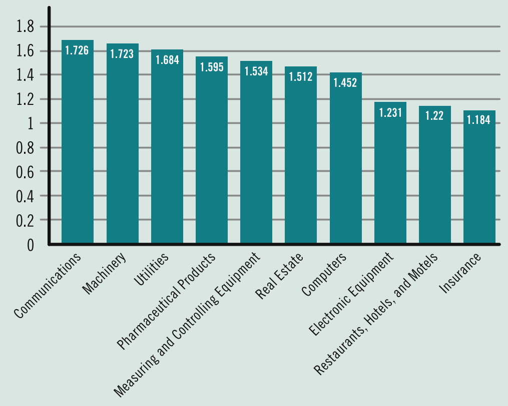
Pay duration across different industries

In order to illustrate the relationship between pay duration and industry, researchers calculated pay durations for all firms and categorized them into industries using the Fama-French 48 industry classifications. The graphs show the 10 industries with the most firms and the average pay duration in each industry.

Pay duration for executives in years



Pay duration for CEOs in years



Researchers found that industries such as defense, electrical equipment, and coal that have assets with longer duration are also those with longer executive pay duration for both CEOs and all executives. Interestingly, executives in the finance-trading industry have relatively long pay durations on average, ranking 11th among the 48 industries. Out of all firms in the finance-trading industry, banking firms have the shortest executive pay durations.

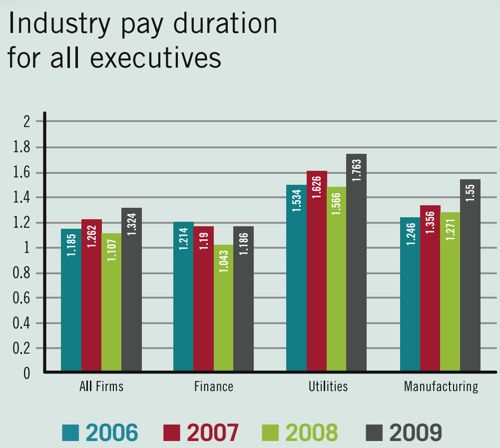
Gopalan explains, “We focused on finance-trading firms and how they stacked up against firms in other industries because there were questions about financial firms’ motivations to take risks. The idea is that firms in other industries were not taking these kinds of risks. We suspected that the finance industry would have one of the shortest pay durations if its compensation structures led to risk taking. We did not find that. We found that financials rank somewhere in the middle, and that was surprising to us.”

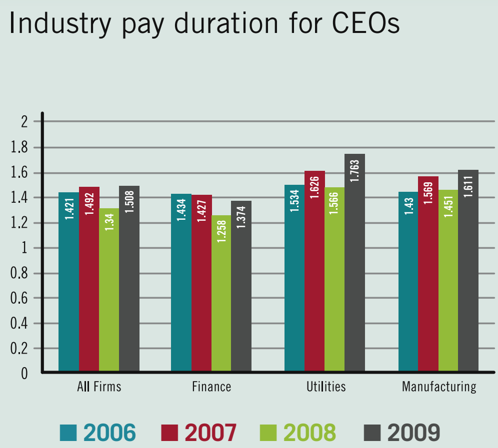
Pay duration and project duration

Executive pay duration is positively correlated with project and asset duration. Industries with longer duration projects, such as defense and utilities, offer longer-duration pay to their executives. “On average, if you look at firms with long- and short-duration projects, firms with long-duration projects seem to offer long-duration pay,” says Gopalan. “The same applies to short-duration projects. In some instances, firms seem to match the duration of executive compensation with the duration of the project.”

Pay duration over time

The average duration has increased from 1.185 years in 2006 to 1.324 years in 2009. But within broad industry groups, the increase in duration has been confined to firms in the utilities and manufacturing industries.





Who gets the long end of the stick?

To determine the characteristics of executives with long pay durations, researchers calculated the pay duration for all executives and split the data into groups with above- and below-median pay duration to compare the characteristics across the two subsamples.

Executives with above-median pay duration have a higher annual total compensation, which is reflected in three components of pay, but most noticeably in the values of option and restricted stock grants. Interestingly, executives with longer-duration pay contracts receive about $62,523 less bonus on average.

Firms with longer pay durations are usually larger and have lower leverage, higher stock returns in the recent past, and more liquid stock. These longer contracts are more likely to be offered to the CEO than to other executives. Firms awarding longer-duration pay contracts also have higher sales growth, higher market-to-book ratios, a higher proportion of long-term assets, and higher R&D expenditures as a proportion of total assets. This indicates that firms experiencing faster growth and facing greater growth opportunities offer longer-duration pay contracts.

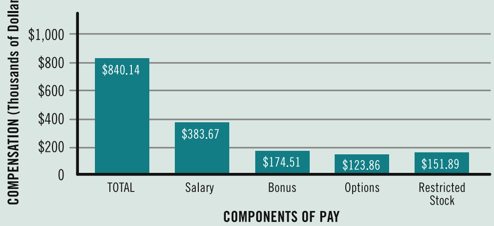
Pay duration and incentives to manipulate short-term performance

Earnings management is the use of accounting techniques to make earnings look more favorable to investors and shareholders. This research used the level of abnormal accruals to measure the manager's attempt to manipulate short-term performance. Firms with high (low) abnormal accruals will have high (low) current period earnings and low (high) future earnings.

Researchers found that firms offering shorter-duration pay contracts to their CEOs have higher abnormal accruals in the current period. This relationship is even stronger for small firms, young firms, and firms with less liquid stocks, since the idea is that it would be easier for managers to mislead the market. Firms that offer longer-duration pay contracts to their CEOs are associated with lower levels of abnormal accruals. Researchers noted that this indicates that longer-duration pay contracts reduce a CEO's incentive to engage in earnings-enhancing accruals.

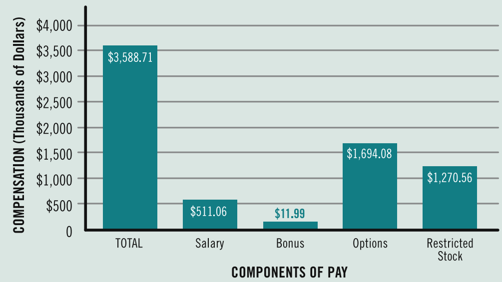
According to Thakor of Olin Business School, "Right now, all of the discussion in terms of executive compensation at the board level is about two dimensions: level of compensation and the sensitivity to performance. There is a third dimension to think about when setting executives' compensation, and that is pay duration and how it is matched with a firms' strategy and project duration. For example, if

Pay for all executives with short duration



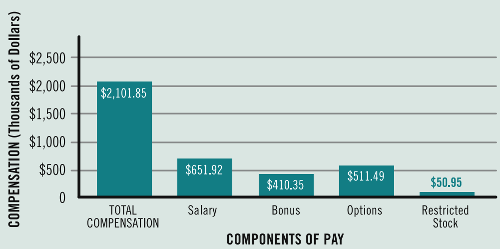
Duration: 0.421 years

Pay for all executives with long duration



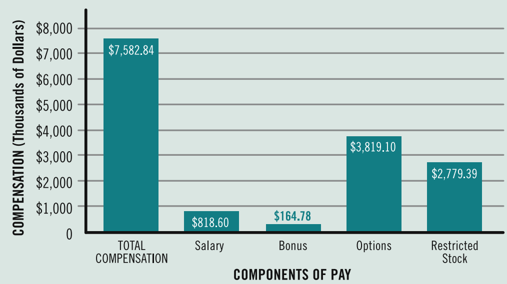
Duration: 2.016 years

Pay for CEOs with short duration



Duration: 0.615 years

Pay for CEOs with long duration



Duration: 2.265 years

I'm designing compensation for somebody in AT&T who is responsible for transmission and telecommunications, they will have projects that have payback periods of some 15 years, or however long it takes for the investment to be recovered through cash flows. Well, I certainly would want longer pay duration for these guys than for someone who's running consumer electronics. If the board of directors wants to align the interests of the CEO with the interests of the shareholders, then they want pay duration to match the duration of projects. So when somebody says, well, executive compensation induces myopia, or it causes CEOs to be short-term oriented, we can at least ask what that means."

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