

HARVARD BUSINESS SCHOOL NOM UNIT WORKING PAPER NO. 12-022  
USC MARSHALL SCHOOL OF BUSINESS WORKING PAPER NO. FBE 02-11

## CEO Bonus Plans: And How To Fix Them

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**November 19, 2011**

**NOTE TO OUR READERS:**

This paper is a draft of Chapter 8 in Jensen and Murphy with Wruck, *CEO Pay and What to Do About it: Restoring Integrity to both Executive Compensation and Capital-Market Relations*, forthcoming Harvard Business School Press.

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## Abstract

Almost all CEO and executive bonus plans have serious design flaws that limit their benefits dramatically. Such poorly designed executive bonus plans destroy value by providing incentives to manipulate the timing of earnings, mislead the board about organizational capabilities, take on excessive (or insufficient) risk, forgo profitable projects, and ignore the cost of capital. We describe the causes of the problems associated with widely prevalent executive bonus plans, and offer our recommendations for fixing them. We focus on choosing the right performance measure, determining how performance thresholds, targets, or benchmarks are set, and defining the pay-performance relation and how the relation changes over time. Finally we examine the role of banking bonuses in the recent financial crisis. While cultural and performance measurement issues certainly played a role in the recent crisis we find little or no evidence that banking bonuses per se were a major contributing factor.

## Acknowledgements

We are deeply indebted to our friend and colleague, Eric G. Wruck for his contributions to our ongoing research on executive compensation. Sadly, Eric passed away during the Spring of 2011.

We also thank Al Ehbar, Joel Stern and Bennett Stewart for valuable comments and suggestions.

# CEO Bonus Plans: And How To Fix Them

by Kevin J. Murphy and Michael C. Jensen

Our research and consulting experience leads us to conclude that almost all CEO and executive bonus plans are deeply flawed. These flaws lead to highly counterproductive incentives and actions that seriously harm most firms.

Discussions about incentives for US CEOs begin, and often end, with equity-based compensation. After all, stock options and (more recently) grants of restricted stock have comprised the bulk of CEO pay since the mid-1990s, and the changes in CEO wealth due to changes in company stock prices dwarf wealth changes from any other source. Too often overlooked in the discussion is the role of annual and multi-year bonus plans – based on accounting or other non-equity-based performance measures – in rewarding and directing the activities of CEOs and other executives. Consider the following:

- Incentive plans are ultimately effective only if the participants understand how their actions affect the payoffs they will receive and then act on those perceptions. While CEOs may understand how to increase return on assets (by increasing revenues, decreasing costs of goods sold, or reducing assets), they often do not understand how their actions affect company stock prices. Therefore, because the uncertainty between the executives' actions and the effects on his or her bonus may make the links between actions and ultimate rewards more or less clear bonus plans may well provide stronger incentives than equity-based plans, even when the magnitude of the payoff is smaller.
- Bonus plans can contain subjective elements not easily implemented in equity-based plans, and the immediacy and tangibility of cash awards can sometimes provide stronger incentives than distant and uncertain paper gains in unvested equity plans.
- Equity-based plans are at best appropriate for the CEO, very senior executives and others (perhaps, for example, some key engineering or technical employees) whose actions can directly affect company stock prices. Consistent with this, for lower-level executives and managers, bonuses represent the predominate form of incentive compensation.
- Finally, unlike equity-based plans (which by definition reward actions that lead to increases in stock-prices), performance measures in bonus plans can be customized to individuals, departments, or divisions throughout the organization.

Ultimately, however, the advantages of bonus-based reward plans are only going to be as good and as effective as the designers of those plans make them. While bonus plans can be structured to provide incentives focused on specific operational objectives that will lead to value creation, poorly designed plans can provide strong incentives for CEOs, other individuals and subunits of an organization to destroy rather than create value. For example, annual bonus plans can destroy value by providing incentives to withhold effort, to shift earnings and cash flow unproductively from one period to another, and to manipulate earnings counterproductively in other ways. Bonus plans also often create incentives for the organization to destroy information critical to the effective coordination of disparate parts of large complex firms. More importantly, bonus plans too often reward participants for lying and engaging in other out-of-integrity behaviors. All of these diminish integrity and thereby diminish the opportunity for performance in an organization, thereby leading to destruction of firm value.

In this paper, we describe many of the problems associated with traditional executive bonus plans, and offer our suggestions for how these plans can be vastly improved. Interspersed throughout this paper are recommendations and guidelines for improving both the governance and design of executive bonus plans (and, more broadly, executive compensation policies, processes, and practices). These recommendations, interspersed throughout this paper, are designated as R-1, R-2, etc. Some of our recommendations are specific prescriptions for designing efficient compensation plans. Others are better thought of as “guiding principles” that can be applied broadly across and within organizations.

We proceed as follows. In Section 1, we describe typical bonus plans and provides an overview of the potential problems. We then discuss problems (and solutions) associated with using the wrong pay-performance relations (Section 2), the wrong standards or targets (Section 3), or the wrong performance measures (Section 4). In Section 5, we discuss ex post adjustments to bonuses (including subjective assessments and clawbacks). In Section 6, we discuss the role of banking bonuses and the financial crisis. Section 7 summarizes our recommendations.

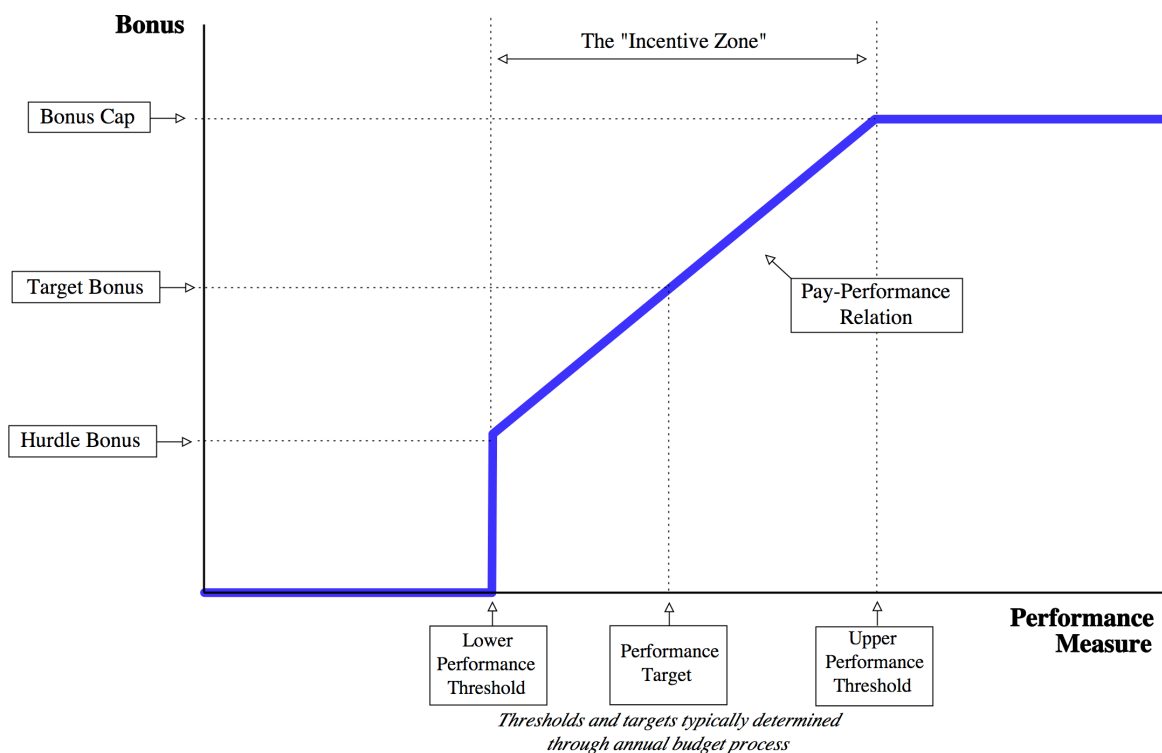
## 1. How executive bonus plans cause problems: Overview

In spite of substantial variability across companies and industries, short-term and long-term bonus plans can be characterized in terms of three basic components:

1. performance measures,
2. performance thresholds (that is, targets, benchmarks, bogeys, hurdles, caps, or standards), and
3. the structure of the pay-performance relation.

Figure 1 illustrates these basic components for a “typical” annual bonus plan. Under the typical plan, no bonus is paid until a lower performance threshold or hurdle is achieved, and a “hurdle bonus” is paid at this lower performance threshold. The bonus is usually capped at an upper performance threshold; after this point increased performance is not associated with an increase in the bonus. The thresholds are routinely determined by the firm’s annual budgeting process. The range between the lower and upper performance thresholds (labeled the “incentive zone” in the figure), is drawn as linear but could be convex (bowl-shaped) or concave (upside-down bowl-shaped). The “pay-performance relation” (denoted by the heavy black line) is the function that shows how the bonus varies throughout the entire range of possible performance outcomes.

The bonus plan illustrated in Figure 1 is replete with incentive problems that destroy value. We talked with a CEO who participated in a bonus plan similar to that depicted in Figure 1. His performance measure was return on equity (ROE), the upper performance threshold was set at 15%, and he had discovered that his firm could easily surpass this upper threshold. He told us, half seriously: “I’d have to be the stupidest CEO in the world to report an ROE of 18%. First, I wouldn’t get any bonus for any results above the cap. Second, I could have saved some of our earnings for next year. And third, [the board of directors] would increase my target performance for next year.” This CEO’s comments reflect not only his frustration with his bonus plan, but also reveal that he well understands how to game the compensation system to get higher bonuses. This plan creates value-destroying incentives because total performance in the two years is generally reduced by such activities (e.g., stopping work in the first period or delaying sales to the second period).

**Figure 1 A Typical Bonus Plan**

Typical bonus plan, often referred to by compensation consultants as an “80/120 plan”. A performance target and a target bonus for meeting that performance are set. Upper and lower performance thresholds are established which create an “incentive zone” within which the bonus increases with performance. Bonuses do not vary with performance outside the range established by the Lower and Upper Performance thresholds. A Hurdle Bonus is often paid when the executive reaches the lower performance threshold. The bonus can increase linearly with performance in the incentive zone (as shown here) or it can increase at a decreasing rate or an increasing rate (that is, the line can be convex or concave).

More generally, and as discussed in detail below, bonus plans such as that depicted in Figure 1 motivate executives to shift earnings from period to period (as we saw above in our CEO’s comments), and sometimes take a “big bath” in earnings so that they can do better next period. If you are going to miss the lower threshold in Figure 1 by a little it does not cost you any more to miss it by a lot, and doing that by, for example, moving expenses from the next period to this period will increase your likelihood of earning a bonus in the next period.

In addition, these plans teach CEOs and their subordinates to lie in annual budget negotiations: those who successfully low-ball the process get rewarded with less demanding performance thresholds and targets (while those who tell the truth are punished with higher thresholds and targets). These plans produce a focus on short-term results at the expense of value creation. The plans also penalize success, and virtually guarantee sustained mediocre performance. And yet, the bonus plan illustrated in Figure 1 is descriptive of the vast

majority of management bonus plans. We believe that the value losses from such plans are immense and they are reversible.

Improving executive bonus plans requires not only choosing the right performance measure, but determining how performance thresholds, targets, and benchmarks are set, how the pay-performance relation is defined, and how the relation changes over time. Our discussion and recommendations will focus on details, because therein lies the devil.

## **2. Using the wrong pay-performance relations**

### *2.1. Problems with Non-Linear Bonus Plans*

As Figure 1 illustrates, the typical pay-performance relation is flat below the lower performance threshold, jumps to a positive hurdle bonus at this threshold, and increases with performance until the upper performance threshold is reached. Such plans are commonly characterized by the “target performance” and the “target bonus” that the executive will be paid if he or she realizes the target performance. The range between the lower and upper performance thresholds (the “incentive zone”) is fairly narrow, typically covering performance from 80 percent to 120 percent of target performance. In fact, such percentages are sufficiently common that compensation consultants routinely refer to these arrangements as “80/120 plans.” The problems with these systems involve the counterproductive incentives that are introduced at any point the pay-performance relation is anything other than a straight line.

#### *2.1.1. Non-linear Bonus Plans and Earnings Management*

Consider the effect of the kink at the lower performance threshold. Executives who believe they cannot achieve at least this level of performance this period will either stop producing or “save” profits (assuming, for the moment, that profit is the measure of performance) for next period by delaying revenues or accelerating expenses. These are the forces that lie behind the commonly observed practice of managers delaying the delivery and/or invoicing of sales, or prepaying expenses that would normally be paid in the next period. Such behavior is motivated by the fact that these plans impose no penalty for missing the lower threshold by a lot instead of a little (as the figure shows). And if executives see that they are not going to make the bonus pool this year, they are better off to take an even bigger hit this period (at no additional cost to them in terms of their bonus) so they can do even

better next period—what accountants for years have called the “big bath” phenomenon. On the other hand, executives who are struggling to make the lower threshold, but still believe they can make that threshold, have incentives (provided by the threshold bonus) to do whatever is necessary to achieve the lower threshold. Their actions commonly include destroying value by “stuffing” the distribution channel so as to recognize revenues earlier, unwisely reducing R&D and required maintenance expenditures, and offering excessive sales discounts for purchases completed prior to the end of the period. Each of these actions shifts profits from next period to the current period, but does so at a cost to the firm.

At the other end of the “incentive zone,” executives capable of producing well above the upper performance threshold in any period have incentives to stop producing once they “max out” on their bonuses. In addition, they will do their best to transfer performance results that could have been realized this period into the next period. And as we have already pointed out such manipulation of sales and expenses almost always is associated with higher long-run costs and/or lower long-run revenues.

Moreover, incentive plans with upper performance thresholds (payout caps) can result in the loss of top talent. As a well-known example, consider Ross Perot (the Texas billionaire and one-time presidential candidate) who joined IBM as a salesman in 1957. IBM imposed a quota on how much any salesman could earn in one year. In 1962, Perot reached his quota before the end of the first month of the year and would not be able to earn any more commissions that year regardless of how much more he sold. So, he quit IBM and started his own business, Electronic Data Systems.<sup>1</sup>

Scholars have long studied how the shape of bonus plans affects executive decisions. Healy (1985) finds that executives use discretionary accrual charges to shift earnings to a later period whenever performance exceeds the upper performance threshold. Later work by Gaver, Gaver and Austin (1995) and Holthausen, Larcker and Sloan (1995) confirm that managers manipulate earnings downward when the upper threshold is exceeded, and also show that managers manipulate earnings *upward* (by booking income-increasing discretionary accruals) when earnings would otherwise be below the lower performance

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<sup>1</sup> According to Time Magazine (Dallas, “Ross Perot’s Days At Big Blue,” *Time Magazine*, (July 20, 1992)) Perot accomplished this by selling a large new machine to a new Texas college with no campus at the time. The machine was never installed but Perot received his commission anyway.



threshold.<sup>2</sup> And these last results are what we predict would happen when earnings are not “too far” below the lower performance threshold.

Moreover, as we discuss in a companion paper, Jensen and Murphy (2011), there is substantial evidence that this behavior also describes the financial reporting practices that many firms adopt in their relations with the capital markets. Companies routinely “smooth earnings” (by accelerating or delaying performance at the end of the year), and also take a big bath (through write-offs and other charges) in years of particularly poor performance that cannot be hidden from the market through smoothing activities. The plan illustrated in Figure 1 creates precisely these incentives. And we shall see that the way companies are rewarded and punished by the capital markets for meeting or beating the markets’ expectations of earnings looks like a smoothed version of Figure 1. In the capital-market case, as long as earnings expected by the market (that is, target performance) can be reached, it pays to just meet or beat the analysts’ consensus earnings forecast. But, if the target earnings can’t be reached, it pays managers in the short run to lower earnings even further by taking a big bath so as to be able to shift earnings to future years.

The costs of keeping performance within the incentive zone can be high, and examples are legion. In one case we know of, executives intent on satisfying a sales target to earn a bonus shipped unassembled parts to a warehouse near its customer overseas at the end of the year to conclude the sale. They then had to assemble the parts in the foreign environment at great cost to the firm to satisfy the customer. Profits next year went down, but the executives earned their bonus this year.

### *2.1.2. Non-linear Bonus Plans and Risk-Taking Incentives*

In the aftermath of the 2008-09 financial crisis, attention focused on whether bonus plans (especially those on Wall Street) create incentives to engage in excessive risk taking. There are two ways that bonuses – or incentive compensation more broadly – can create incentives for risk taking. The first way (to which we’ll return in Sections 5 and 7.2 below) is rewarding people using performance metrics that implicitly (or explicitly) reward risky

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<sup>2</sup> Healy’s conjecture about the shape of bonus plans (based on publicly available data at the time) ignored the discontinuous “jump” in bonus at the lower performance threshold in Figure 1 (the “hurdle bonus”) and he predicted firms would make income-decreasing accruals below the lower threshold. Gaver-Gaver-Austin find that firms make income-increasing (rather than income-decreasing) accruals below the threshold, and conclude that the results are driven by preferences to smooth income and not by the shape of the bonus plan. However, the Gaver-Gaver-Austin results are consistent with the incentives provided by the typical bonus plan depicted in Figure 1. Indeed, we believe that such bonus plans are a contributing factor as to why managers desire income-smoothing.

behavior, such as paying mortgage brokers based on the number of loans they write, rather than for writing loans that borrowers might actually pay back. The second way is through non-linear pay-performance plans: in particular, asymmetries in rewards for good performance and penalties for failure. When CEOs (or traders or brokers, etc.) receive rewards for upside risk, but are not penalized for downside risk, they will naturally take greater risks than if they faced symmetric consequences in both directions.

Consider, for example, an investment opportunity with a 50% chance of making \$100 million in profit, and a 50% chance of losing \$200 million. This investment opportunity has an expected value of -\$50 million, and should be rejected. However, suppose that the CEO (or trader or broker, etc.) has an incentive plan that gives him a share of any positive profit, but is set at zero if profit is negative. From the perspective of this CEO (or trader or broker, etc.) with the asymmetric bonus plan, the investment opportunity has a positive expected value.

More generally, all “non-linearities” in the pay-performance relation affect incentives to take risks. When the pay-performance relation is convex (or bowl shaped) executives can increase their total bonus payouts by increasing the variability of their performance. We saw this illustrated in our discussion above of what happens when an executive is near the lower performance threshold: such an executive would clearly rather be just above the lower threshold some years and way below the lower threshold in other years, than be just slightly below the threshold in all years.

For example, assume that the world is such that a CEO cannot reach or exceed a lower performance threshold of \$100,000,000 in profit – say he could only reach \$95,000,000 but could attain that every year. Given the structure of the incentive system he could make himself better off by transferring some performance in this period to next period. Suppose by giving up \$10,000,000 in profit (thus yielding \$85,000,000 in profit this period) he could transfer \$6,000,000 in profit to next period (thus yielding profit next year of 101,000,000). The firm is worse off because its two-year profit is \$186,000,000 as compared to \$190,000,000 if the CEO had not shifted the profits. The CEO is clearly better off because he earns the hurdle bonus under this strategy every other year. But on average his contribution to firm performance goes down by \$4,000,000 per two-year period. Furthermore, if this situation is repeated every other year firm performance obviously becomes more variable from year to year than it would otherwise be.

On the other hand, in situations where the pay-performance relation is concave (or upside-down bowl shaped) in the relevant range, the opposite is true — CEOs have

incentives to smooth the variability in performance over time by withholding high performance this period and saving as much of it as possible for next period. This is the situation at the upper performance threshold: a CEO would clearly rather be just at the upper threshold in all years (earning the maximum bonus each year), than being significantly below the upper threshold some years and significantly above the threshold in other years. In this situation the CEO is motivated to reduce the variability of outcomes so that he would earn the maximum bonus each year even in situations where accomplishing this would mean he would turn in substantially lower performance on average and thereby harm the firm.

To reiterate, non-linear pay-performance relations provide incentives to either decrease the variability of performance when the pay-performance relation is concave, or increase variability when the pay-performance relation is convex. As an example of the latter, in 2001 Chrysler introduced a highly non-linear bonus plan that paid dealers a monthly bonus depending on how many cars they sold relative to a monthly sales target.<sup>3</sup> Under the plan, dealers received no bonus for selling fewer than 75% of the sales target, \$150 for each car sold between 75% to 99% of the sales target, \$250 for each car sold between 100% and 110% of the sales target, and \$500 for each car sold above 110% of target. So, for example, if the monthly sales target was 100, a dealer selling the target of 100 cars would receive a bonus of \$4,000, while a dealer selling 200 cars would receive a bonus of \$51,500.<sup>4</sup>

Begun in January 2001, the Chrysler program backfired three months later in April 2001 when dealers saw they were not hitting the sales target early in the month and cut back on sales and inventory in order to “save” sales for the next month. It is a good bet that as Chrysler dealers saw they were unlikely to earn the \$500 per car payments in April (when industry sales as a whole were down 10%) they took actions to delay sales from April to May (undoubtedly losing some in the process) to increase the total bonus payments they received for the two months taken together. As a result Chrysler’s sales fell 18%, 80% worse than the industry average in April. DaimlerChrysler’s CEO said at the time that the cut in orders was due to “miscommunication” between Chrysler and its dealers over how the incentive

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<sup>3</sup> The Chrysler plan is described in more detail in Jensen (2003).

<sup>4</sup> The dealer selling exactly 100 cars would receive  $\$150 \times 25 = \$3,750$  for the 75<sup>th</sup> through 99<sup>th</sup> car, and an additional \$250 for the 100<sup>th</sup> car. The dealer selling 200 would receive \$3,750 for the 75<sup>th</sup> through 99<sup>th</sup> car,  $\$250 \times 11 = \$2,750$  for the 100<sup>th</sup> through 110<sup>th</sup> car, plus  $\$500 \times 90 = \$45,000$  for the next 90 cars sold.

program worked. But the evidence suggests that dealers understood precisely how it worked, and how to game it.<sup>5</sup>

To see how the Chrysler arrangement provides incentives to increase the variability of sales, suppose that a dealer has a monthly target of 100 vehicles. If the dealer hits the target each month, he will receive a monthly bonus of \$4,000. But, if he alternates sales efforts (or falsifies sales documents) and sells zero vehicles in one month (receiving no bonus) and 200 vehicles in the next (receiving a bonus of \$51,500), his average monthly bonus increases more than six-fold to \$25,750.

Alternatively, suppose Chrysler had instead offered dealers a *concave* schedule such as \$250 for each vehicle sold up to the monthly sales target of 100 vehicles, and \$150 for each vehicle over 100. A dealer selling exactly 100 vehicles per month will receive a monthly bonus of \$25,000, while a dealer alternating between zero and 200 vehicles per month will receive an average monthly bonus of only \$20,000. So in this case the shape of the plan provides incentives for those subject to it to reduce the variability of sales, and in some cases to do so even when it must lower total sales to reduce the variability.

In conclusion, non-linearities in bonus plans can create incentives to take either too many or too few risks, depending on the exact nature of any asymmetries in rewards and penalties for good and poor performance. In either case, when CEOs are either increasing or reducing the variability of results to game the incentive system they are inevitably destroying value for the organization. What started out as a system to motivate higher performance ends up motivating counter-productive behavior and lower performance.

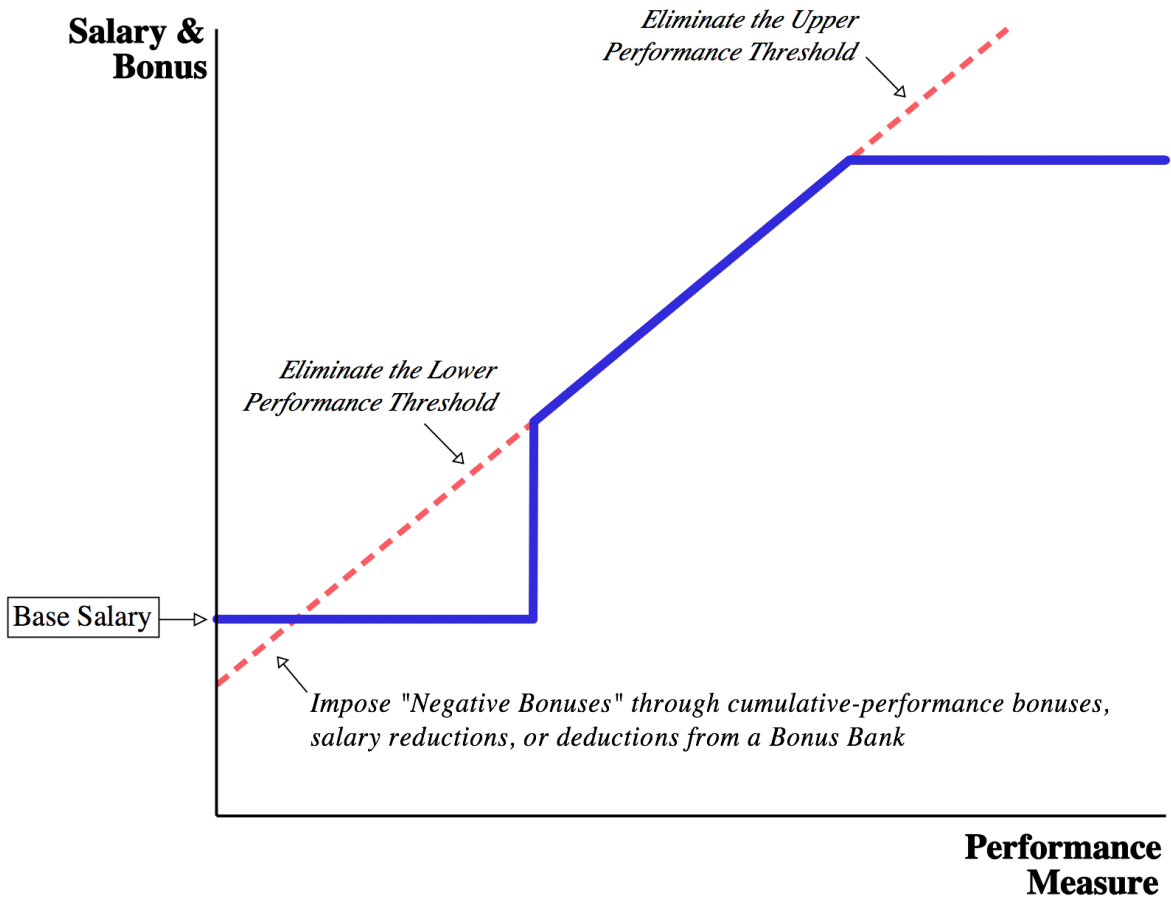
## 2.2. *Creating Linear Bonus Plans*

The problems associated with non-linear pay-performance relations can be partially solved by making the relation linear. For example, suppose that Chrysler paid dealers \$250 per vehicle sold, regardless of how few or how many vehicles were sold. Under this plan, a vehicle sold in one month provides the same bonus as a vehicle sold in any other month, and there is no temptation to manipulate the timing of sales or to concentrate efforts in any given

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<sup>5</sup> See New York Times, "Incentive Plan Hurts Chrysler," *New York Times* (2001) and Hyde, "Chrysler's Reward Program Backfires," *The Globe and Mail* (2001).

**Figure 2** The problems with typical bonus plans can be mitigated by making the plan linear



A linear incentive plan with no caps on bonuses and no floor or hurdle bonus (the latter achieved by a reduction in base salaries or by instituting a Bonus Bank that can be charged for negative bonuses in periods of low performance).

month.<sup>6</sup> Similarly, if IBM had instituted a fixed commission schedule (say, 5% of sales with no cap), it would have likely held onto its top salesman Ross Perot, at least for a time.

Figure 2 illustrates how a typical non-linear bonus plan can be transformed into a linear plan. First, the upper performance threshold (and bonus cap) would be eliminated, so that superior performance continues to be rewarded by higher bonuses. Second, the lower performance threshold would be dropped, thus eliminating the problematic discontinuous “jump” in the pay-performance relation. Finally, the plan is made linear by assuring that the slope of the pay-performance relation (that is, the incremental bonus associated with a given increase in performance) is constant regardless of the level of performance.

<sup>6</sup> Other than the temptation to realize the bonus earlier which will be small with short time intervals and low personal time preference for cash flows.

Linearity is most easily accomplished by defining the bonus as a percentage of whatever measure of performance is relevant to the situation. If it were net income or profit, for example, a good way to accomplish linearization would be to make the bonus a fixed percentage of profit, such as:

$$\text{Bonus} = 5\% \text{ of Profit.}$$

Successfully implemented (in conjunction with recommendations on performance measures and standards discussed later in this paper), linearity takes “timing” out of the equation.<sup>7</sup> For example, a CEO paid 5% of profit year after year will have no incentives to play accounting or other “games” with profit in the fourth quarter, since any increase in fourth quarter bonuses will be met with an equal but opposite decrease in bonuses in the following quarter. The CEO paid under a linear pay-performance plan also has no incentive to engage in excess risk-taking, since the rewards for positive profits are the same as the penalties for losses. Finally, another advantage of linear plans is that they are simple: non-linear bonus plans are typically needlessly complicated to implement (and often difficult to communicate to the participants). The simpler the plan, the more likely the incentive outcome.

**R-1. Design incentive plans with “linear” pay-performance relations.**

Non-linear pay-performance relations induce CEOs to manipulate financial results to game the incentive system. Linear plans not only mitigate dysfunctional incentives to destroy value but have the added advantage of being easy to communicate and implement.

In the Chrysler and IBM examples above, the performance measures (i.e., vehicles sold or revenues, respectively) are never negative, which means that the implied bonus is also never negative. However, formulas used in bonus plans are typically based on accounting numbers (such as profit) which can be negative as well as positive, suggesting that bonuses, too, can be negative as well as positive. Most companies simply truncate bonuses at zero. For example, a company might pay its CEO 5% of annual profit as long as that profit is positive, while the CEO receives no bonus if profit is negative:

$$\text{Bonus} = 5\% \text{ MAX}[0, \text{Profit}].$$

Truncating otherwise-negative bonuses at zero seems like a practical solution to the messy problem of imposing or enforcing negative bonuses on CEOs. However, protecting the CEO from negative bonuses (through “upside-only bonuses” set to zero when profit is

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<sup>7</sup> We are ignoring here any possible difference between a CEO’s personal rate of time preference for income and the cost of capital for the firm as well as any possibility that the CEO has a short horizon for employment at the firm.

negative) puts a non-linearity or “kink” or in the pay-performance relation at zero profit, which creates many of the problems discussed above. In particular, CEOs paid under this plan will have no incentives to improve profit this year when they see no way to generate positive profit. In addition, they will predictably attempt to shift profit from the current year to next year in this situation so that they can more be profitable next year. Finally, truncating bonuses at zero can also lead to excessive risk taking, since such plans reward CEOs for positive profit but do not penalize them for losses.

Solving the problems with upside-only bonuses involves designing (and enforcing) plans with negative bonuses. It is our experience (and perhaps common sense) that executives are loathe to write end-of-the-year “negative bonus” checks back to the company for sub-par performance. Indeed, in one case a CEO who enthusiastically agreed with the concept of linearity and eliminating the bonus cap greeted our recommendation for negative bonuses with “go back to your god-damned ivory tower.” Such reactions highlight the importance of having the compensation committee take full control of the compensation process, and not allow CEOs to initiate or dictate compensation programs. In this particular case, however, the compensation committee (chaired by the company’s primary outside investor) agreed that having the CEO liable for year-end payments back to the company was not a practical way to impose negative bonuses. Fortunately, there are alternative and palatable ways to introduce effect negative bonuses into executive bonus contracts that do not involve writing checks back to the company.

### *2.2.1. Negative Bonuses through Cumulative Performance*

As an example of how negative bonuses can be (imperfectly) implemented in practice, consider the bonus plan at Expeditors International of Washington, Inc. Founded in 1981 and located in Seattle, Expeditors provides global logistics services with 2010 revenues of about \$6 billion and a 2010 market cap of \$11.6 billion. Since 1985, executive officers have received quarterly bonuses from a pool set to 10% of that quarter’s pre-bonus operating income. Bonuses in any quarter can never be negative, which would seem on the surface to create critical non-linearity problems, especially since bonuses are determined quarterly (and it is even easier to shift income from one quarter to another quarter than from one year to another year). Expeditors’ mitigates this problem by requiring that any negative operating income results be fully made up before any future bonuses can be paid. Here is the stated policy:

“While the Company has never incurred an annual or quarterly operating loss since going public in September 1984, such a loss would result in a moratorium on any

kind of compensation payments under the non-equity incentive compensation program. The participants in the program would not be entitled to, nor would they expect, any form of payments under the program. More importantly, no further non-equity incentive compensation program payments would be due or payable to participating Executives until future operating income surpassed the operating loss previously incurred. At that time, non-equity incentive compensation would only be due for the portion of cumulative profitability beyond the value of the profits offsetting the operating loss. More simply put, any operating losses must be made up by operating profits, in the aggregate, before permitting further payments under the non-equity incentive compensation program. This also applies across yearly reporting cycles. Were the Company to incur an operating loss in the fourth quarter and record operating income in the first quarter of the ensuing year, the amount of pre-bonus operating income earned in the first quarter must exceed the amount of loss in the previous quarter before any non-equity incentive compensation would be due. This would also apply to a situation where operating income, for years which have previously been audited and reported upon, is subsequently adjusted downward. In that situation, no payments under the non-equity incentive compensation program would be due until future operating income results exceed the amount of the downward adjustment.” (Expeditors’ 2011 Proxy, p. 21)

The Expeditors’ example is “imperfect” because of the erosion in incentives that would occur if the firm experienced dramatic and unrecoverable losses. Presumably Expeditors would need to either re-set the contract (i.e., forgive the losses) or face a possible mass exodus of managerial talent; we can’t tell because (as indicated in the quote) the company has not incurred a quarterly operating loss in nearly 30 years as a public company. This imperfection reflects an inherent limitation on imposing negative bonuses: while it is feasible (and, we argue, optimal) to hold executives accountable for moderate losses through effective negative bonuses, it is neither feasible nor optimal to hold them accountable for low-probability devastating losses. Such accountability is likely not feasible because of bankruptcy and anti-slavery laws, and likely not optimal because risk-averse executives will demand much higher levels of expected compensation if they face enormous potential downside risks. Nonetheless, most companies are much too conservative (and insufficiently innovative) in devising plans that hold executives accountable for losses, and Expeditors offers a promising example to follow.

### 2.2.2. *Negative Bonuses through Bonus Banks*

Another way of achieving negative bonuses is through a “bonus bank” as pioneered by Stern Stewart and Co. and first implemented by Coca Cola and Briggs and Stratton in 1988



and 1989.<sup>8</sup> Bonus banks are structured so that a positive bonus is not paid out entirely in cash each period. Instead the bonus is deposited into the executive's bonus bank account. The executive receives a cash distribution equal to a fixed fraction of the account balance each year, while the remaining balance is "at risk" to fund negative bonuses in future years. To make this approach work, it helps if the formula produces positive bonuses over the first few years to build a healthy balance in the account. Alternatively, the executive could forgo some fraction of his base salary each year to pre-fund the bonus bank.

Negative bonuses can be made more palatable to executives and compensation committees by tying the potential of negative bonuses to the removal of the cap on bonuses. One reason companies impose bonus caps is the suspicion that performance above the upper threshold reflects manipulation. This concern can be mitigated by depositing bonuses above the former cap into a bonus bank that gets paid out over a fixed number of years and any negative bonuses incurred in the interim get charged to the bonus bank. This plan would protect against artificially inflating current-year performance at the expense of future performance.

### 2.2.3. *Negative Bonuses through Reduced Salaries and Bonus Thresholds*

Another indirect way to impose negative bonuses is by reducing base salaries and offering enhanced bonus opportunities (through reduced bonus thresholds). Consider a CEO with a competitive base salary of \$850,000 and an upside-only bonus equal to 1% of operating income in excess of \$75 million. Instead of offering the cash compensation contract:

$$\text{Salary \& Bonus} = \$850,000 + 1\% \text{ MAX}[\text{Operating Income} - \$75 \text{ million}, \$0],$$

we could reduce the base salary to \$100,000 while setting the bonus to 1% of all positive operating income (and not just income exceeding \$75 million):

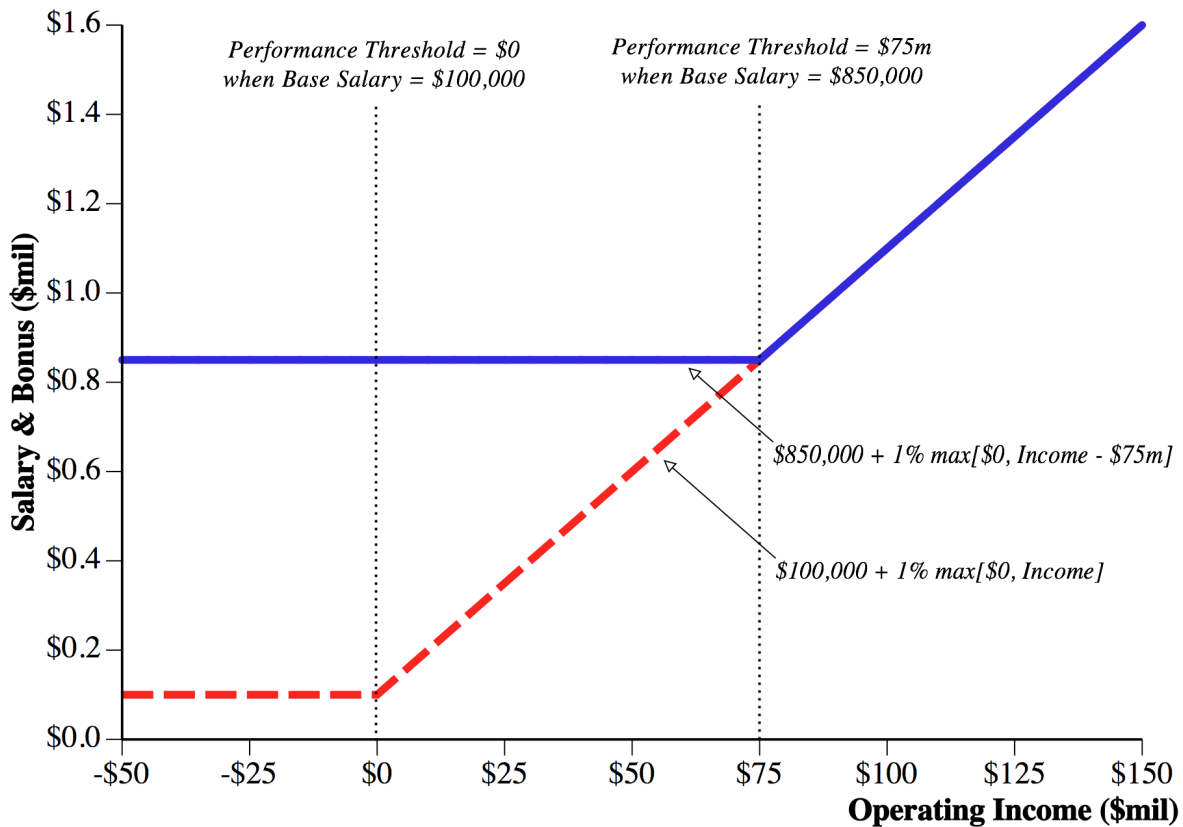
$$\text{Salary} + \text{Bonus} = \$100,000 + 1\% \text{ MAX}[\text{Operating Income}, \$0]$$

The payouts from these two contracts are illustrated in Figure 3. While these two contracts generate identical total payments for operating income above \$75 million, the second contract (depicted by the dotted line) provides *higher* bonuses but *lower* total compensation

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<sup>8</sup> The Stern Stewart bonus banks are described in Stewart (1990) and Stewart (1991). Under the typical Stern Stewart plan annual bonuses are deposited into the bonus bank and the executive draws one third of the bank balance each year.

**Figure 3 Imposing Negative Bonuses through Reductions in Salaries and Thresholds**



The figure shows how cash compensation varies with performance for a CEO who receives a bonus equal to 1% of Operating Income in excess of the performance threshold. The dotted line shows the pay-performance relation when base salary is lowered from \$850,000 to \$100,000 and the performance threshold is lowered from \$75 million to zero (in both cases the CEO receives a bonus equal to 1% of operating income). Negative bonuses can be indirectly achieved by lowering base salaries and increasing bonus opportunities (by lowering the threshold performance where bonuses are paid). In the figure,

for operating income below \$75 million. In comparison with the first contract (the solid line in Figure 3), the second contract extends the “incentive zone” (defined in Figure 1 as the range over which pay varies with performance) and effectively imposes a negative bonus for operating income between zero and \$75 million.

It likely seems counterintuitive to characterize enhanced bonus opportunities as a negative bonus, but consider the following. For each \$1 million reduction in profit below \$75 million, a CEO paid under the second contract (with the \$100,000 salary) receives \$10,000 less than he would have received under the first contract (with the \$850,000 salary). Although payments for performance between \$0 and \$75 million are reported as bonuses, in fact they are negative bonuses compared to the first contract.

As a concrete example, consider again the bonus plan at Expeditors International described above, where the quarterly bonus pool (to be allocated among the executive officers) is 10% of operating income. Since becoming CEO in 1988, Peter J. Rose's annual salary has been fixed at \$110,000, and he receives approximately one-tenth of the bonus pool (or, about 1% of Expeditors' operating income).<sup>9</sup> Therefore, the second contract in Figure 3 (dotted line) roughly describes how Mr. Rose's cash compensation varies with Expeditor's operating income. In addition, we estimate that the "competitive" 2010 base salary for a company with Expeditor's \$6 billion in total revenues is approximately \$850,000, therefore the first contract in Figure 3 (solid line) shows the hypothetical compensation Mr. Rose would receive if the company were to pay him the competitive base salary, while providing similar levels of cash compensation for high performance.<sup>10</sup>

Suppose that Expeditors realized annual operating income of \$50 million. Under Mr. Rose's actual contract, he would receive a bonus of approximately \$500,000 and total compensation of approximately \$610,000. Under the hypothetical "competitive contract," he would receive his base salary of \$850,000 but would not be eligible for a bonus. Therefore, while Expeditors would indeed report a *bonus* of \$500,000 for Mr. Rose, it would be more informative to understand that he actually received a *negative bonus* of \$240,000, representing the difference between his actual compensation and what he would have received if his base salary had been set at the competitive level of \$850,000.

### **3. Using budgets to determine threshold performance levels: paying people to lie**

The lower and upper performance thresholds in Figure 1 are routinely based on the outputs from the firm's annual budgeting process. Almost all firms go through an annual budget cycle in which CEOs, executives and lower-level managers submit budgets for targeted outputs in the following year. The budget projections are reviewed and negotiated with higher levels in the hierarchy, resulting in a final budget target for the firm, division, or department. As we pointed out earlier, the lower and upper performance thresholds in the bonus plans are often based on the budget target with the lower threshold often set at 80% of the targeted or budgeted performance and the upper threshold set at 120%.

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<sup>9</sup> Mr. Rose's share of the bonus pool has declined over time as the company has grown and added executive officers, but equaled 10.6% of the bonus pool (or 1.06% of Expeditors' operating income) in 2010.

<sup>10</sup> The competitive base salary is determined by estimating an ordinary least-squares regression of Log(2010 Salary) on Log(2010 Revenues) for all CEOs in Standard & Poor's ExecuComp Database.

CEOs and lower-level executives with bonuses tied to budgeted performance targets have strong incentives to low-ball the budget. Boards (and supervisors throughout the management hierarchy) understand these incentives and generally push for higher budgets than those suggested by executives. The result is a familiar and predictable “budget game” that ultimately reflects the relative negotiating power of the participants. Adizes (1989), pp. 90-91, for example, describes the typical budget-negotiation process:

“People try to ensure that they never end up below budget by aiming low. Management could stretch it from the top down by not accepting low budgets, but that has other negative long-term repercussions. It creates a climate of distrust. Subordinates (on any level) aim low because they know superiors (on any level) will bargain to raise the target. Superiors bargain to raise goals for the budget because they automatically assume subordinates have aimed low. This begins a group dynamic of mutual deception. The budget that is finally approved does not reflect the real capabilities of the organization or the real opportunities of the marketplace. It is merely a reflection of the trust or mistrust between the different levels in the organizational hierarchy.”

We believe tying bonuses to budgets not only distorts the budgeting process, but is one of the major forces leading to the general loss of integrity in organizations. By coupling bonuses and budgets, executives learn that those who tell the truth about what they can do get punished by getting more demanding targets. Those who can successfully low-ball the process get rewarded with less demanding targets. In effect managers in these organizations are taught to underpromise and overdeliver.<sup>11</sup> Moreover, since top-level executives understand that lower-level managers lie about what they *cannot* do, the top-level executives therefore lie about what lower-level managers *can* do. The result is a budgeting process based on deceptions and lies. And the consequent costs that are reflected in lower levels of performance are huge.

One source of the dramatic reduction in firm performance from these budget-based systems is the loss or outright destruction of the information critical to coordinating the disparate activities of a large complex organization. What is almost always unrecognized is that this destruction of critical information and the consequent reductions in performance are *invisible* to those participating in the system.

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<sup>11</sup> There are situations in which it can pay managers to overstate what they can produce next period. For example, suppose that if I promise to produce more I can get more resources (labor, capital, materials), and suppose further that if I do not actually produce what I promised I do not get punished. In this game there will be systematic overstatement of next period’s promised performance.

No one thinks of these budget games as lying, “it’s just a negotiation”. But think about it: almost no one in the system has incentives to tell the truth and reveal the critical information that they have (or can discover) about what can and should be done in the next period. Characterizing these bonus/budgeting systems as “paying people to lie” is, in fact, descriptively accurate, and we believe that eliminating such behavior in organizations can easily result in productivity improvements in the range of 50 to 100%.<sup>12</sup>

Although most executives and analysts understand that budget gaming is widespread, few understand the huge costs it imposes on organizations and how to eliminate those costs. The key lies not in eliminating budgeting systems (which can be extremely useful for planning and communication purposes) but in changing the way organizations pay people.<sup>13</sup> In particular, to stop this highly counter-productive behavior we must stop using budgets for targets in the compensation formulas and promotion systems for employees and executives.

## **R-2. Incentive payments should not be tied to achievement of budget targets.**

Tying annual or multi-year bonuses to budget targets induces game-playing and lying that destroys value and results in a system that is seriously out of integrity. In fact such systems pay people to lie and punish them for telling the truth. Importantly, the information critical to coordinating the disparate activities of a large complex organization gets unnecessarily muddled or destroyed in the process. By separating budgets from bonuses, integrity can be restored and productivity will increase dramatically.

Eliminating budget/target-induced gaming from the management system by purging all links between budgets and pay will eliminate one of the major forces leading to the general loss of integrity in organizations. Once taught to lie in these systems people generally cannot help but extend that behavior to all sorts of other relationships in the organization. Lower-level managers lie to employees and to upper-level managers, and this behavior cascades both up and down the organization. As the budget-gaming cascades up the organization to

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<sup>12</sup> See Jensen (2003) p. 390 and Jensen (2001)

<sup>13</sup> We are not necessarily arguing that companies should abolish budgets entirely, but rather eliminate the link between budgets and bonuses. Some do argue that budgets should be abolished, and the Consortium for Advanced Manufacturing International (CAM-I) has established a Beyond Budgeting Roundtable to understand and report on these developments. A number of large (and mostly Scandinavian companies) have abandoned budgets or are in the process of doing so, including Svenska Handelsbanken (Sweden’s largest bank which abandoned budgets in 1970), Air Liquide, SKF, Ericsson, Skania, Schlumberger, Skandia, Swedish Post, Tetrapak, Diageo, Borealis, Volvo Cars, IKEA, and Fokus Bank. Relevant references include Hope and Fraser (1997); Hope and Fraser (1999a); Hope and Fraser (1999b); Hope and Fraser (2000); Hope and Fraser (2003); Kersnar, “Re-Inventing the Budget,” *CFO Asia*, (July/August, 1999); Lester, “Monday Management: Managers Count Blessings As Budgets Begin To Lose Currency--Some Firms Long for Freedom from the Burden of Budgeting,” *Irish Times* (2000) and Thomas, “Toss Your Budget Out the Window,” *Business Review Weekly*, (September 8, 2000).

the CFO and CEO it also cascades to the board of directors and out to the relations between the firm and the capital markets. In Jensen and Murphy (2011) we discuss at length “earnings management” in which the CFO and CEO and outside analysts are locked in a game of manipulation and lying to each other – a game that has many of the same elements and counter-productive effects as the internal budget-gaming discussed here. Moreover, a climate is created in which managers and people at all levels become comfortable in lying to customers, suppliers, the public, regulators, the media and so on. The cost of this out-of-integrity behavior is huge, and again is generally invisible to the parties in the systems.

While compensation committees and boards are not generally involved in setting the compensation of everyone in an organization, they are ultimately accountable for the integrity of the organization. We argue that far too few boards take this responsibility seriously. In the end boards must be involved in eliminating these integrity-damaging budget-based gaming issues that sap the energy and performance of most organizations.

#### **4. Using the wrong targets, benchmarks, or standards**

We’ve just seen how tying pay to budget targets destroys integrity in organizations by rewarding lying and deception in the budgeting process. However, even those executives who do not participate in the budget process realize that their performance this year will affect next year’s targets (which, in turn, affect the lower and upper performance thresholds in Figure 1) An executive overproducing this year typically will be penalized next year with a higher and harder-to-achieve budget target. Thus, in most corporations the adage “no good deed goes unpunished,” is widely applicable. More generally, basing the performance thresholds in Figure 1 on *any* factors under the executives’ control causes large and predictable incentive problems.

Bonuses are usually based on performance compared to something the company might call a performance standard, bogey, target, hurdle, or benchmark. Henceforth, we use the term “benchmark” to refer to any or all of these commonly used terms. Examples include net income measured against budgeted net income, earnings-per-share (EPS) vs. last year’s EPS, sales growth (i.e., this year’s sales vs. last year’s sales), cash flow vs. a charge for capital, performance measured relative to peer-group performance, or performance measured against financial or nonfinancial strategic “milestones.” It’s useful to think of these benchmark alternatives as determining how the pay-performance relation depicted in Figure 1 is initially set, and how it shifts to the right or the left over time.

First let's recognize that when performance in a bonus plan is measured relative to a benchmark, there are two ways to achieve higher bonuses: increase the performance measure, or decrease the benchmark. Suppose that the performance measure is  $X$  and that the benchmark is  $B$  and bonuses are based on the difference between them ( $X - B$ ). The benchmark  $B$  might be budgeted performance, prior-year performance, strategic milestones, or the performance of other executives or an industry peer group. Because bonuses are increased either by increasing  $X$  or by decreasing  $B$ , the integrity of the plan is reduced whenever the people eligible to receive bonuses under the plan ("plan participants") can take actions that reduce  $B$ . And in most human systems plan participants in one way or another can and do influence the benchmark  $B$ .

#### 4.1. *Benchmarks based on relative performance*<sup>14</sup>

Consider an executive who is paid on the basis of how much her performance exceeds that of her fellow executives. There are two ways for this employee to get a bigger bonus. First, she can work harder and perform better (i.e., increase  $X$ ). Second, she can take actions that hurt the performance of her co-executives (and thereby decrease  $B$ ) through outright sabotage or more subtly through passive-aggressive behavior such as withholding information or collegiality. Working harder and performing better creates value for the organization while sabotaging co-executives or withholding cooperation destroys value. And yet both the value-creating and value-destroying activities are rewarded through a bonus calculated by comparing the relative performance of the executives.<sup>15</sup>

Overzealous and value-destroying competition in the executive suite is common, especially among executives competing to become the next CEO or competing for a bigger share of a fixed bonus pool. Compensation systems that induce destructive competition by rewarding relative performance are especially problematic when applied to top-level

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<sup>14</sup> Economists have long advocated relative performance evaluation (RPE) to reduce the noise in performance measures for individuals, groups, or organizations affected by a common shock, but much less attention has been paid to the *disadvantages* of RPE. See Gibbons and Murphy (1990) for a discussion of the costs and benefits of RPE, and an empirical examination of the use of RPE in CEO incentive contracts. Murphy (1999) summarizes the academic literature and provides a description of RPE measures in CEO bonus arrangements.

<sup>15</sup> As an example from competitive sports, recall figure skater Tonya Harding, who became notorious for conspiring to injure rival Nancy Kerrigan in a practice session of the 1994 US Figure Skating Championship. The US Figure Skating Association (USFSA) ultimately stripped Harding of her title and banned her for life from participating in any USFSA-sanctioned events. More recently, University of Northern Colorado back-up punter Michael Cozad was charged with attempted first-degree murder after stabbing the starting punter in his kicking leg; police identified the motive as competition for the starting job. Mr. Cozad was ultimately convicted of second-degree assault and sentenced to seven years in prison. In these examples, Ms. Harding and Mr. Cozad were attempting to increase measured performance ( $X - B$ ) by decreasing  $B$  rather than by increasing  $X$ .

executive teams where cooperative teamwork and collegiality are critical to firm success. The board wants executives to take actions that increase the performance of the top-level team, while a compensation system that measures individual performance of the team member relative to other team members in fact rewards actions that decrease cooperation and therefore the performance of the entire executive team. The rule here is do not use relative performance measures as a basis for rewards in any situation where you want people to cooperate.

CEO bonuses are often based on performance measured relative to the performance of a selected industry peer group. CEOs can earn higher bonuses by working harder and performing better than their industry peers (thereby creating value). Alternatively CEOs can increase their bonuses by staying in a defective industry where they can perform relatively better than others in the industry or by strategically selecting “weak” industries or peers as their benchmark. To make this perfectly clear, executives playing the “relative-performance game” have incentives to stay in an industry where their profits are low but higher than their peers. Similarly, such executives have incentives to avoid moving into a more profitable industry where their profits would be higher than in their old industry, but lower than their peers in the new industry.

It is extremely difficult for a board and/or compensation committee to eliminate completely the ability of the CEO to influence the choice of the peer group. Indeed, it can be argued that the board and compensation committee have incentives to cooperate with the CEO to choose a low-performing peer group as a performance benchmark (and, incidentally, to choose a high-paid peer group when benchmarking CEO compensation).

In fact, there is substantial evidence that companies choose their peer groups strategically to make their performance appear more favorable. Under the SEC rules first adopted in 1992, companies were required to include a “performance graph” showing the cumulative five-year shareholder returns (price appreciation plus dividends) of the company measured relative to the average returns earned by other companies in the market or in their peer group.<sup>16</sup> Under the SEC rules, companies could initially exercise considerable discretion in selecting their first-disclosed industry peer group. It appears the SEC anticipated gaming in peer-group selection because they provided that changing the peer group in subsequent

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<sup>16</sup> From 1993 through 2006, the performance graph appeared in the company proxy statement. As part of its new disclosure rules introduced in 2006, the SEC “moved” the performance graph to the company’s annual report.



years required an explanation of the change and a demonstration of how the change affected the company's relative performance.

In the first year of the new disclosure rules, 65% of the largest 1,000 corporations reported beating their industry peer group over the previous five fiscal-year period (Murphy (1995)). This is highly surprising because the distribution of returns is positively skewed, and therefore by construction we expect *less* than 50% of firms to beat the *average* return of all firms in their industry.<sup>17</sup> This disproportionate frequency of "high-achievers" suggests that companies systematically selected peer groups whose performance they had beaten in the past five years. This hypothesis is supported by Soffer (1994) who finds that companies were particularly likely to select peer groups that performed less well than themselves in the two most recent years; selecting these peer groups therefore gave companies a great "head start" by increasing the probability of favorable historical five-year comparisons for the following three years. Obviously such behavior is out of integrity unless each company were to disclose that they were selecting a peer group that performed less well than themselves. That would, of course, undo the impression they were intending to leave with shareholders and analysts.

**R-3. Incentive payments should not be tied to management-selected industry peer groups.**

While benchmarks based on relative performance can be used effectively in organizations (and have many advantages over using "absolute" performance), the executives paid under the plan must not be responsible for selecting the comparison group.

*4.2. Benchmarks based on prior-year performance*

Another common example of the benchmark problem in executive incentive plans occurs when this year's benchmark depends on the performance in the prior year. The dependence can be explicit (such as performance measured as the difference between this year's EPS and last year's EPS) or implicit (such as a budgeting process that factors in last year's results in arriving at this year's targets). In either case, executives participating in these plans understand that good performance this year will increase the benchmark next year. Consider, for example, a CEO whose bonus is based on company net income compared to the prior-year net income. Increasing net income by \$1 million this year will increase this

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<sup>17</sup> Return distributions are positively skewed because the minimum return is -100% and there is no upper bound on the maximum return. Therefore, the *average* return of all firms in the industry will exceed the *median* return for firms in the industry. Note that the median return is that return for which 50% of firms in the industry earn less and 50% earn more. And, since the average is greater than the median, it must be that *fewer* than 50% of the firms earn more than the average return.

year's bonus, but will increase the benchmark next year by \$1 million and therefore make it harder to earn a bonus in the next year. Thus, increased performance this year is effectively penalized through an increase in next year's benchmark, and the CEO will naturally take account of these dynamics when deciding how hard to work and what projects to undertake in the current year.

For example suppose a CEO knows that industry conditions are such that the company can take actions that will raise this year's net income by \$5 million, but he also knows that this will be a one-time transitory increase because it was caused by transitory conditions in the industry (perhaps a major competitor suffered an outage in one of its plants that would be corrected within a year). It clearly would be advisable to take advantage of this opportunity, but if the CEO's bonus depends on beating last year's net income the CEO would realize that doing so this year would increase his target by \$5 million dollars for the next year when the opportunity would no longer exist. Therefore, his bonus for the following year will be smaller by exactly the additional bonus he receives this year (assuming linearity of the bonus plan). So on net over the two-year period the CEO receives no additional bonus for taking advantage of what is clearly a valuable opportunity for the firm.

**R-4. Incentive payments should not be tied to prior-year performance.**

Setting benchmarks based on prior-year performance ensures that executives are penalized next year for good performance this year.

Indeed, a litmus test for a good incentive plan is to ask whether the plan provides incentives for the CEO to pursue a project promising a one-time gain (as opposed to an annuity of future cash flows). If the answer is no, the plan is not providing appropriate incentives.

In summary, the general proposition here is that incentive plans based on benchmarks will fail whenever executives can affect the benchmark. In the example above, when benchmarks are based on prior-year performance, executives will tend to avoid unusually positive performance outcomes since exceptional current performance is penalized in the next period through an increased benchmark. Similarly, when benchmarks are based on meeting budget, executives have incentives to not only lie so as to negotiate easy budgets, but also to avoid actions this year that might have an undesirable effect on next year's budget. Benchmarks based on the performance of an industry peer group provide CEOs incentives to select "weak" industries and peers, and to stay in weak industries where they outperform their competitors even though they themselves are not creating value. In all these cases, CEOs can increase their bonuses either by taking actions that increase the performance

measure or by taking actions that decrease the benchmark. The latter set of actions (decreasing the benchmark in the current or future period) almost always destroys value.

Similarly, conventional wisdom suggests that bonus plans should be structured to reward performance consistent with the company's strategic objectives (e.g. targets for growth, market share, product innovation, etc.). However, while this conventional wisdom may be appropriate for employees charged with *implementing* the company's strategy, it is *wrong* when it comes to rewarding the executives responsible for *determining* the company's strategy. These latter executives must be held accountable for whether they chose the right strategy (and must have incentives to adjust or jettison the strategy when it turns out to be wrong). Moreover, paying these executives for progress towards a strategy they chose results in strategies that are easy to implement, but not necessarily those that are in the best interests of shareholders.

**R-5. More generally, incentive payments should not be tied to benchmarks that can be influenced by CEOs.**

When incentive payments are tied to benchmarks, incentive-plan participants can increase their bonus by improved performance or by reducing the benchmark. Efforts to reduce the benchmark are generally value destroying and divert resources from activities that could create value.

The problems with budget-based, strategy-based, and other internally manipulable benchmarks can be mitigated by "externalizing" the benchmark; that is, by basing the benchmark on objective measures beyond the direct control of CEOs – although CEOs will still have incentives to use value-destroying means to achieve the benchmark. For example, in leveraged buyouts (LBOs) and other highly leveraged organizations, the commonly used budget-based benchmark is replaced by the debt-service benchmark: that is, generating sufficient cash flow to service the debt. The debt-service schedule is pre-determined and does not change from year to year as a function of the realized operating results. Combined with the large equity holdings of LBO managers and directors, this yields a pay-performance relation that has only one non-linearity (at the point of default). Indeed, an effective way to understand this important advantage of the LBO organization is to see the debt negotiation with the outside supplier of credit as externalizing the budget-negotiation process and the determination of a multi-year benchmark.

Similarly, to the extent that budget-based internal control systems play a more important role in large diversified corporations, the focus on making budget is reduced following spin-offs and divestitures. In addition, in companies or divisions measured by Economic Profit (that is, cash flow minus a charge for the capital utilized during the period)

budget-based benchmarks are replaced by a charge for the capital employed in the activity. We discuss these economic profit plans more extensively in Section 5.3 below.

Another way to externalize the benchmark is through a predetermined “timeless standard” that doesn’t change based on actual performance. For example, suppose that the board would like the CEO to grow operating income from its current \$100 million to \$400 million over the next four years. Instead of basing bonuses on the growth in operating income (which creates the problems with “prior-year performance standards” discussed above), base bonuses on operating income minus a predetermined, but increasing benchmark, such as:

Year 1:	Bonus = 5% of (Operating Income - \$100 million)
Year 2:	Bonus = 5% of (Operating Income - \$200 million)
Year 3:	Bonus = 5% of (Operating Income - \$300 million)
Year 4:	Bonus = 5% of (Operating Income - \$400 million)

Note that, in each year, the CEO has incentives to maximize current operating income without concern that higher results this year will be penalized through higher benchmarks in the next.

Relative-performance incentive plans, which have become increasingly popular in utilities and cyclical industries, replace “making budget” with “beating the industry.” But when boards use relative benchmarks they must realize that once such beat-the-industry targets are put in place, the board (rather than the management team) must retain and exercise the decision rights over which industry the firm is to be in. Leaving these decision rights with management will, as we argued above, result in the management team being rewarded for staying in a flawed industry while destroying less value than the other firms in the industry. Failing to exit a flawed industry delays the competitive adjustment required to move resources to more highly valued uses, and thereby destroys social as well as private value.

To summarize, CEO bonus plans can be made substantially more effective by (1) taking all kinks, discontinuities and non-linearities out of the pay-for-performance profile, and (2) committing not to change the pay-for-performance profile from year to year based on budgets, prior-year performance, or any other metric influenced by CEOs in the current or prior years. This combination of linear formulas with externally determined benchmarks mitigates incentives to lie, to withhold and distort information, to shift earnings from period to period, to stop working when performance is too low (or too high), or to otherwise game the system.

## 5. Using the wrong performance measures

Business history is littered with firms that “got what they paid for.” Paying salespeople commissions based on revenues, for example, provides incentives to increase revenues regardless of the costs or relative margins of different products. Likewise, paying rank-and-file workers “piece rates” based on units produced provides incentives to maximize quantity irrespective of quality, and paying a division head based solely on divisional profit leads the division head to ignore the effects of his decisions on the profits of other divisions. Similarly, paying CEOs based on short-run accounting profits provides incentives to increase short-run profits (by, for example, cutting R&D) even if doing so reduces value in the long run. In each of these cases, employees will predictably take actions to increase their compensation, even if these actions are at the expense of long-run firm value. Indeed, many examples of dysfunctional compensation and incentive systems can be traced to inappropriate performance measures.

The problem of inappropriate performance measures is illustrated succinctly by the title of Steven Kerr’s famous 1975 article, “On the folly of rewarding A, while hoping for B”. For CEOs, well-intentioned compensation committees hope to increase firm value (“B”) by rewarding the executive on a variety of performance measures (“A”) that induce actions not perfectly correlated (or even inversely correlated) with the actions that increase firm value.<sup>18</sup>.

Conceptually, the “perfect” performance measure for a CEO is the CEO’s personal contribution to the value of the firm. This contribution includes the effect that the CEO has on the performance of others in the organization, and also the effects that the CEO’s actions this year have on performance in future periods. Unfortunately, the CEO’s contribution to firm value is almost never directly measurable; the available measures will inevitably not

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<sup>18</sup> In his classic paper on optimal contracts, Holmstrom (1979) considers a case where the principal (i.e., the shareholders) know precisely what action they want the agent (i.e., the CEO) to take, but cannot observe whether the CEO in fact took that action. Holmstrom shows that the optimal contract will include any performance measures that are useful (or “informative”) in determining whether the CEO took the prescribed action. This so-called “informativeness principle” was widely embraced by many academics who used it as the theoretical justification for analyzing performance measures used in CEO contracts. However, the informativeness principle is not applicable in the realistic case where the shareholders do not know precisely what actions they want the CEO to take: indeed, the reason shareholders entrust their money to self-interested CEOs is based on shareholder beliefs that CEOs have superior skill or information in making investment decisions. The informativeness principle is also not applicable when CEOs can “game” the system by increasing the observed performance measure while not increasing (or even decreasing) firm value. We believe that the academic infatuation with the informativeness principle – without understanding or questioning its underlying structure – took the profession down an ultimately unproductive path generating dozens of papers on executive compensation. It is worth noting that Holmstrom was among the first to get off this path by recognizing that agents can take a variety of actions that affect a variety of performance measures (Holmstrom and Milgrom (1991)) in which case the informativeness principle is in fact *uninformative*.

capture ways that the CEO creates value, and will capture the effects of factors not due to the efforts of the CEO, or fail to capture ways that the CEO destroys value. The challenge in designing incentive plans is to select performance measures that capture important aspects of the CEO's contributions to firm value, while recognizing that all performance measures are imperfect and therefore create unintended side effects.

We start this discussion by considering the counterproductive effects associated with using accounting performance measures, and the even-worse problems that are created when these measures are expressed as ratios or rates of return (such as EPS or ROE). We then move on to discuss the advantages and challenges associated with incorporating charges for the cost of capital into incentive plans, and conclude by outlining simple steps that can dramatically improve almost any existing bonus plan.

### *5.1. Accounting Profit*

While companies use a variety of financial and non-financial performance measures in their annual CEO bonus plans, almost all companies rely on some measure of accounting profit such as net income, pre-tax income, or operating profit. Accounting profit measured over short intervals is not, however, a good measure of the CEO's contribution to firm value, for several reasons.

First, CEOs routinely make decisions that will not show up in current accounting numbers. For example, a CEO's efforts in mentoring the top-management team and grooming a successor are critical for value creation but will not be reflected in short-run profits. In addition, some decisions (such as increasing R&D investments) will reduce short-run profits (because they are a direct deduction against this year's accounting income) while increasing longer-run profits. CEOs focused solely on short-run profits will avoid actions that decrease current profits, even if those actions would create long-run value.

Second, accounting profits are invariably influenced by factors outside of the control of the CEO, including the effects of business cycles, world oil prices, natural disasters, terrorist attacks, etc. Using performance measures that include such factors imposes additional risk on CEOs, who in turn will generally either receive lower-powered incentives or have to be compensated for bearing that risk through higher levels of expected compensation.<sup>19</sup>

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<sup>19</sup> As discussed below in Section 6.2, we argue it is a mistake to protect a CEO from such external factors when the CEO can take actions that mitigate the potential impact of those external factors on the firm. For example, while natural disasters such as hurricanes are beyond a CEO's control, he can reduce the probability

Third, measuring performance using accounting profits can reward CEOs for destroying value. Although the measures of accounting profits often used in bonus plans take into account both revenues and expenses, they ignore the opportunity cost of the capital employed. As discussed in detail below, use of these accounting measures provides incentives to invest in any project that earns positive accounting profits (not just those that earn more than the cost of capital), and provides no incentives to abandon projects earning positive accounting profits that are less than those required to cover their cost of capital.

Finally – although this is not so much a problem of using accounting measures but rather *how* those measures are used – expressing such a measure as a ratio (like EPS, ROA, ROE, etc.) causes predictable problems, to which we now turn.

## 5.2. *Ratio Performance Measures*

Incentive plans are routinely based on ratio measures such as the ratio of accounting profits to:

- shares outstanding (earnings per share, EPS)
- assets (return on assets, ROA)
- equity (return on equity, ROE) or
- invested capital (return on invested capital, ROC).

Using ratios as performance measures causes many problems. The fact that ratio performance measures are extremely common reflects the general lack of awareness of the dangers of such measures. For example, CEOs participating in such plans can increase their bonus either by increasing the numerator (accounting profits) or by decreasing the denominator (shares, assets, equity, invested capital). Generally value is destroyed when a CEO focuses on manipulating the denominator of a ratio performance measure.

Consider a CEO with a bonus plan based on return on capital (ROC) faced with a variety of non-mutually exclusive investment projects with returns on capital ranging from 30% to 5%. If the cost of capital is 10%, the value-maximizing decision is to take all projects earning over 10%, and to forgo projects earning less than 10%. But, if bonuses are based on ROC, the CEO will rationally accept only the 30% ROC project, even if it is a very small project, and ignore all other projects that earn more than the cost of capital. By doing this he reduces the level of investment to that single project with the highest return and so maximizes the *return* on capital.

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of a hurricane by locating in areas less prone to hurricanes, and he can reduce the costs of a hurricane by constructing buildings designed to withstand hurricane forces.

For example, the CEO with the ROC-based bonus plan would refuse to take a \$1 billion project promising a 25% return (i.e., profits of \$250 million and profits in excess of capital costs of  $\$250 - \$100 = \$150$  million) because it would give him a lower ROC than investing in a \$10 million project generating a 30% return (i.e., profits of \$3 million and profits in excess of capital costs of  $\$3 - \$1 = \$2$  million). In effect the CEO would be manipulating the denominator (reducing it) so as to achieve a very high ROC. In general, the level of investment that maximizes *value* is not the same as the level of investment that maximizes *return*, and it is value, not percent return that we are interested in maximizing. In particular this CEO would have *sacrificed* \$148 million in firm value to maximize the firm's ROC and thus his bonus.

Similarly, CEOs fixated on earnings per share (EPS) will pursue investment, repurchase, acquisition, and divestiture activities that increase EPS and ignore those that reduce EPS. Again, this ratio performance measure will lead to incorrect decisions. For example, CEOs may attempt to increase EPS by reducing the number of shares outstanding; this action only creates value if the cash used to repurchase shares would have earned less than the company's cost of capital. Consider also Joel Stern's (1970, 1974) famous example illustrating the nonsense associated with EPS and Price/Earnings (P/E) ratios (defined as the ratio of a company's stock price to its EPS).

"The rhetoric in many business publications about acquisition analysis is outrageous. For instance, we are frequently told that companies should make acquisitions because of the "earnings leverage" that will result.

As an example, assume that company A sells at a price-earnings ratio (PE) of 20 and that company B sells at a PE of ten. Often, we are told that company A can offer B's shareholders a PE of, say, 15 – a 50 per cent premium—and that A can still increase its EPS. For each dollar of earnings A is buying, A has to give up shares earning only 75 cents. Thus if A uses its shares to buy B and form a new company AB, the new company's EPS will always exceed A's. Hence we are told that the acquisition of B is good for A's shareholders. And, apparently, it is good for B's shareholders since they obtain a 50 per cent premium above the market price of their shares.

However, if the example is turned around, the danger of using EPS becomes obvious. If B buys A to form BA, B will pay at least A's PE of 20. But now BA's EPS will be less than B's because the company with the lower PE must offer more shares per dollar of acquired earnings. The same people who tell us that AB is good for both A's and B's shareholders tell us that BA is bad for B's shareholders, even though AB and BA are the same company, most often with the same assets and earnings expectations and, even, the same management. Should we therefore expect AB and BA to sell at different market prices when they are really the same company?



A's acquisition of B or B's acquisition of A is in fact good for the buyer's shareholders only if synergism is expected. And the synergism must be at least large enough to justify the premium paid above the seller's current share price." Stern (1974), p. 39.

**R-6. Performance measures should not be ratios. Examples include both rates of return or earnings per share. Simply put: if it is a performance measure and a ratio, it's wrong.**

Using performance measures that are ratios will generally lead to decisions that destroy value. Typically the problems that arise with ratio performance measures occur when CEOs manage the denominator of the ratio rather than the numerator.

The negative consequences associated with the use of ratio performance measures will vary with the decision rights held by the executive. For example, paying bonuses based on return on assets will provide incentives to increase profits on existing capital, and provide dysfunctional incentives when the executive has the right to decrease capital committed to the business (as most CEOs do). Boards seldom recognize that if they use a return on capital number as a performance measure they must not allow the CEO to determine the scale of investment in the business.

### *5.3. Accounting Profit vs. Economic Profit*

There are four general ways to create value in organizations: (1) invest in projects that earn more than their cost of capital; (2) increase profits produced from existing capital; (3) reduce assets devoted to projects that earn less than their cost of capital; and (4) reduce the cost of capital. As noted above, although the measures of accounting profits often used in bonus plans take into account both revenues and expenses, they ignore the opportunity cost of the capital employed. Use of these accounting measures provides incentives to invest in any project that earns positive accounting profits (not just those that earn more than the cost of capital), and provides no incentives to divest or abandon "profitable" projects earning less than the cost of capital.

As an example of plans that ignore the cost of capital, consider the pre-1991 bonus plans for CEO Paul Fireman at Reebok International. From 1982 to 1985 Mr. Fireman received a \$65,000 base salary and a bonus equal to 10% of Reebok's pre-tax earnings in excess of \$100,000. From 1986 to 1991 Mr. Fireman received a base salary of \$350,000 plus bonuses that equaled 5% of annual pre-tax earnings in excess of \$20 million. Reebok's plans have many of the features that we applaud – including that they are linear over a wide range

of performance outcomes, they have no cap, they change infrequently over time, and are not a function of budgets or prior-year performance. When the company went public in 1984 Reebok had assets of about \$40 million. Since the plans did not include a charge for capital usage they provided incentives for Mr. Fireman to over-utilize capital – that is he would be rewarded with bonuses for increasing capital investments as long as those investments yielded positive returns, even if those returns were far below Reebok’s cost of capital. By 1990 Reebok’s capital assets had grown to \$1.4 billion and the average pre-tax return on Reebok’s assets fell from 53% in 1985 to 21% in 1990.<sup>20</sup>

Similarly, the bonus program at Expeditors International – which we applaud for its consistency and linearity – is based on operating income ignoring a charge for invested capital, which increased from \$8.5 million in 1984 to \$1.7 billion by 2010. Therefore, a downside to Expeditors’ plan is that executives can be rewarded for pursuing projects that earn profits that are positive but less than the cost of capital.

We note that performance measures that do not recognize the cost of capital can work just fine as long as the person subject to the compensation plan cannot affect the capital allocation decisions – either the amount of capital used or the specific projects to which it is allocated. In other words, the actions that maximize (Profit - Capital Charge) are the same as the actions that maximize Profit if, indeed, the person taking the action has no influence over either the cost of capital or the amount of capital. In the case of Reebok, had the board reserved all decision rights regarding capital to itself, Reebok’s compensation plan would provide its CEO incentives to increase revenues and decrease expenses without distorting capital decisions. But to do so the board would have to have all the relevant knowledge to make all capital expenditure decisions itself.

**R-7. Performance measures should provide incentives for executives to recognize both the cost of capital and the amount of capital consumed.**

Ignoring the cost of capital and the quantity of capital in designing performance measures is an invitation to value destruction for CEOs who can influence decisions over the quantity and allocation of capital.

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<sup>20</sup> Controversy surrounding Mr. Fireman’s annual bonuses (which averaged \$13.7 million from 1987 through 1990) resulted in a 1991 restructuring of his compensation that included a large one-time option grant of 2.5 million shares, bonus opportunities capped at \$1 million and based on annual targets set by the board, and an increase in his base salary from \$350,000 to \$1 million. (See Ramirez, “A 93% Pay Cut, To Just \$1 Million,” *New York Times* (1990).) These changes did not include the obvious improvement in the plan that could have been easily implemented by adding a charge for capital employed. In addition, the imposition of the bonus cap and the annual target setting by the board reduce the integrity and effectiveness of the bonus plan.

Adherence to the governing objective of maximizing firm value naturally leads to a class of value-based measures of economic profit, roughly characterized as:

$$\text{Economic Profit} = \text{Operating Profit} - (\text{Cost of Capital}) \times \text{Capital},$$

or, equivalently,

$$\text{Economic Profit} = (\text{Return on Capital} - \text{Cost of Capital}) \times \text{Capital}.$$

Note that Economic Profit is increased by increasing capital invested in projects earning more than the cost of capital, decreasing capital invested in projects earning less than the cost of capital, increasing profits on existing capital, and decreasing the cost of capital.<sup>21</sup> Measuring performance using Economic Profit has important advantages over using either nominal profits or rates of return. First, unlike measures based on operating profits without the capital charge, Economic Profit teaches executives that the cost of capital is greater than zero. Second, unlike comparisons based only on returns, Economic Profit contains a scale component that teaches executives that more capital investment is desirable when returns exceed the cost of capital, but that less capital investment is desirable when the return is less than the cost of capital. Third, unlike typical plans that measure profits relative to budget targets, Economic Profit “externalizes the target” by measuring profits relative to a capital charge that is determined by the capital markets.

Variations on Economic Profit have been used in executive bonus plans for nearly a century, including Dupont’s “Executive Trust Fund” in the 1920s and General Electric’s “Residual Income” in the 1950s.<sup>22</sup> More recently, consultants Stern Stewart & Co. has endorsed, and trademarked, their version of Economic Profit which they call Economic Value Added or EVA<sup>®</sup>. By now, most accounting firms, management consulting firms, and compensation consulting firms offer their own versions of Economic Profit. The various renditions of Economic Profit differ with respect to the definitions of three items:

- Operating profits (e.g., cash flows, pre-tax income, net income, or EBIT (earnings before interest and taxes)). And depending on whose version one is considering the definitions come with a variety of adjustments for research and development, capitalized leases, goodwill, depreciation, amortization, etc.

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<sup>21</sup> For expositional simplicity, we are ignoring differences between the “average” and “marginal” cost of capital, since the cost of capital can vary with the scale of the organization. Investment decisions should be based on a comparison of the returns on a project and its estimated cost of capital (and not on the average return on all of the firm’s projects and the firm’s average cost of capital).

<sup>22</sup> Christensen, Feltham and Wu (2002)

- Capital (e.g., net invested capital, assets, or equity capital), and the
- Cost of capital (e.g., the cost of equity capital or the weighted-average cost of debt and equity capital).

The adjustments to accounting data required to calculate Economic Profit depend on firm-specific circumstances, and generally a handful of adjustments are sufficient to improve the measure of operating profits for any given firm. However, the potential adjustments can be numerous: Stern Stewart, for example, identifies more than 160 possible adjustments (Ehrbar (1998), p. 164).

In spite of the obvious appeal of using Economic Profit as a performance measure, few companies have successfully implemented Economic Profit in their executive bonus plans.<sup>23</sup> Typical explanations for the failure to use Economic Profit in bonus plans is that the cost of capital calculations and the adjustments to accounting data are perceived as being “too complicated” and not easily understood by human-resource people who formulate and administer these plans (as opposed to finance people who generally understand them). In addition, Economic Profit tends to run counter to the performance measures traditionally used by financial analysts (who seem to be fixated on earnings per share) and the fact that many firms seem to have become addicted to particular measures in their bonus plans and resist changing them.

We believe the confusion over Economic Profit, and its lack of widespread adoption, reflects the fact that the various consulting firms compete by touting the superiority of their uniquely complex renditions and accounting adjustments relative to those offered by competitors. The focus, therefore, becomes on the adjustments rather than on the simple compelling logic (which cannot be trademarked or demand a premium in the marketplace). In reality, however, the adjustments are of second-order importance relative to the first-order importance of externalizing the benchmark and teaching executives that capital has a cost.

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<sup>23</sup> Murphy (1999) Tables 2 and 3, analyzes the 1995 bonus plans at 177 large US companies, and found only seven companies (4%) that use a measure of Economic Profit in their annual bonus plans. Six additional firms report considering the cost of capital when setting performance benchmarks. Similarly, O’Byrne and Young (2009) survey the universe of U.S. publicly traded corporations filing with the SEC’s EDGAR database (containing more than 5,000 firms) and find that only 103 firms use an economic profit measure in their bonus plans (or to assess CEO performance).

#### 5.4. *An Alternative Economic Profit Bonus Plan: EP-Lite*

The good news is that almost any plan can be “tweaked” to obtain the benefits of an Economic Profit plan, while keeping the company’s current measures and without making 164 adjustments to accounting data. We call these plans “EP-Lite” plans, because they deliver most all the advantages of full-blown EVA<sup>®</sup> plans, without the added complexity.

Consider, for example, a traditional bonus plan as depicted in Figure 1 where the performance measure is return on assets (ROA), with threshold performance of 80 percent of the budget-based target ROA and with bonuses capped at 120 percent of targeted ROA. This plan breaks all our rules: the plan is highly non-linear, the target is based on budgeted ROA, and performance is measured in rates of return (a ratio) rather than in dollars.

**Step One: Externalize the benchmark.** Instead of measuring ROA compared to budgeted ROA (or to prior-year ROA), use an external benchmark such as 10 percent. Or, better still, use an approximation for the average cost-of-capital which (in the absence of high expected inflation) would generally be on the order of 10 to 12 percent. It is important that the choice of the estimated average cost of capital not be related to a company’s past performance and that its choice be made by the compensation committee, not by the CEO and executive team.

Step one is a small tweak: the plan is still based on (ROA – Benchmark ROA), we’ve simply replaced “Benchmark ROA” with a measure of the average cost of capital that is not influenced by the executives. We’ve also begun teaching the CEO and other executives that capital has a cost; whether we get that cost “exactly right” is of second-order importance relative to teaching them that the cost is not zero.

**Step Two: Convert returns to dollars.** To convert returns to dollars, multiply by the denominator. In this case, multiply (ROA – Benchmark ROA) by Assets so that the new measure is:

$$(\text{ROA} - \text{Benchmark ROA}) \times \text{Assets}$$

or

$$\text{Net Income} - (\text{Benchmark ROA}) \times \text{Assets}$$

Step two is another small tweak: the plan is still based on (ROA – Benchmark ROA); we’ve simply changed it to dollars. But, by getting rid of the ratio measure, we’ve created better incentives to invest and divest.

**Step Three: Define a sharing rate.** Once a performance measure is expressed in dollars, we can decide what percentage of these dollars we pay out in bonuses. Call this fraction  $b$ , and we can now express the bonus formula as:

$$\text{Bonus} = (\text{Target Bonus}) + b \times (\text{ROA} - \text{Benchmark ROA}) \times \text{Assets},$$

where “Target Bonus” is the bonus paid when actual performance equals the externally determined benchmark cost of capital. In writing this equation in Step Three we have also linearized the plan by eliminating the kinks, discontinuities, floors and caps from the plan. Note that the CEO can receive a bonus that is positive (but below the target bonus) when the realized return on assets (ROA) is modestly below the Benchmark ROA. To an outside observer, this can appear as though the CEO is being rewarded for producing results that destroy value (that is, making investments where the ROA is less than the cost-of-capital-based Benchmark ROA). However, when the target bonus is set so that the CEO’s expected total compensation (salary plus target bonus plus the value of any other pecuniary or non-pecuniary compensation) is set to meet the total compensation that is available elsewhere (that is, the competitive labor market conditions) then realizing bonuses below the target bonus constitutes a penalty for poor performance.

In addition, our proposed bonus formula means the CEO will get negative bonuses when the realized return on assets (ROA) is sufficiently below the Benchmark ROA. As we discussed above it is desirable to institute some form of bonus bank to facilitate the payment of these negative bonuses, and/or to lower the fixed salary of the CEO and raise the Target Bonus by the same amount so the probability of a negative bonus goes down.

**Step Four (optional):** To conclude we rewrite this equation in terms of a “Threshold ROA” (the ROA when bonuses are first paid), as:<sup>24</sup>

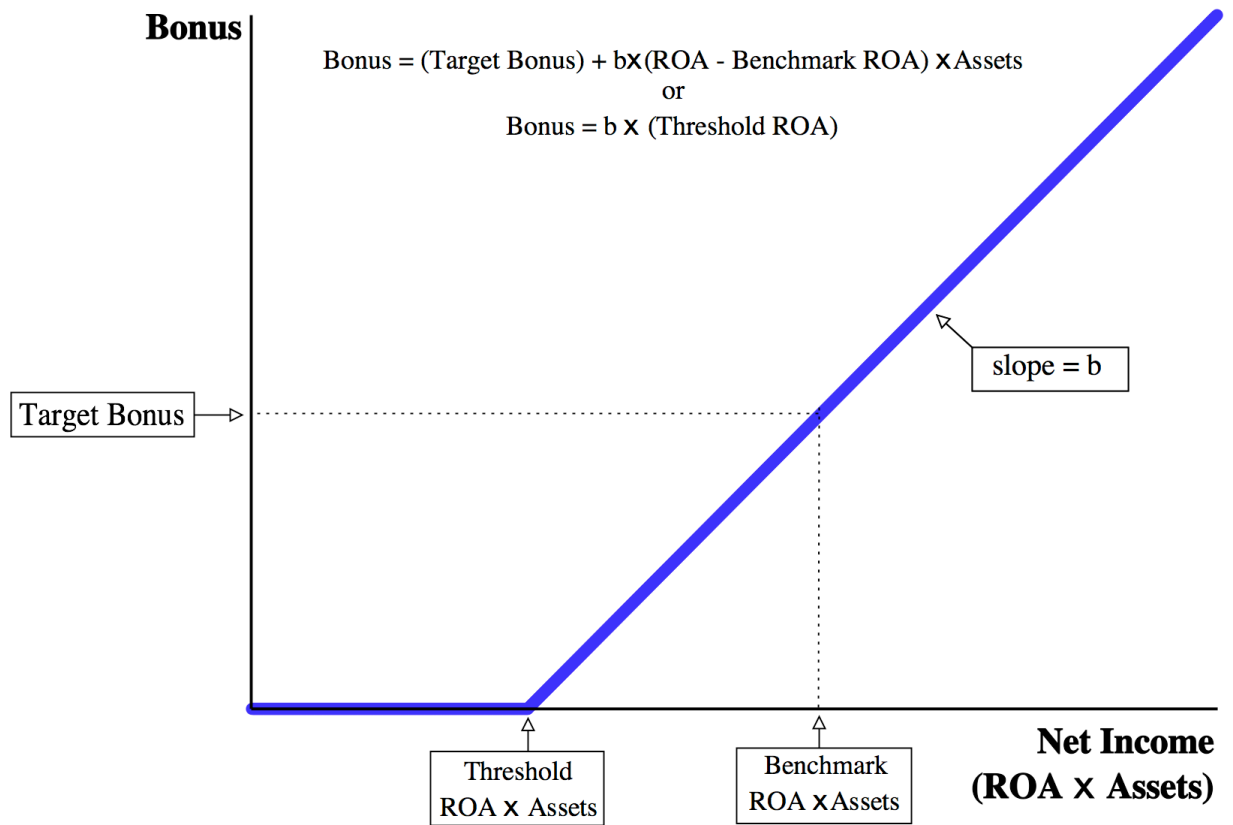
$$\text{Bonus} = b \times (\text{ROA} - \text{Threshold ROA}) \times \text{Assets}$$

In our experience, we have found that defining the bonus in this manner, although identical in function to the formulation in Step Three, substantially alters the psychologically perceived nature of the plan. The form of the plan in Step Four substantially reduces the tendencies of executives to stop performing once the Benchmark Bonus is achieved. It does this by eliminating the notion of a target bonus or a target performance level that is easily

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<sup>24</sup> To make these two renditions equivalent, we set the Bonus in the equation in Step Three equal to zero and solve for the Threshold ROA that gives us that zero bonus. This defines the Threshold ROA as the Benchmark ROA minus the Target Bonus divided by the quantity ( $b \times \text{Assets}$ ). Substituting this back into the Step Three Bonus equation gives us the Bonus equation written in terms of the Threshold ROA.

**Figure 4 Illustration of EP-Lite Bonus Plan**



Existing bonus plans can be converted to EP-Lite plans by (Step 1) linearizing the pay-performance relation; (Step 2) converting the performance measures to dollars (in this case by multiplying “ROA” by “Assets”); (Step 3 & 4) defining a sharing rate (in this case, “b”), and expressing the bonus either as:

$$\text{Bonus} = (\text{Target Bonus}) + b \times (\text{ROA} - \text{Benchmark ROA}) \times \text{Assets, or}$$

$$\text{Bonus} = b \times (\text{ROA} - \text{Threshold ROA}) \times \text{Assets}$$

interpreted by executives as the appropriate or acceptable level of performance. One disadvantage of rewriting the bonus equation as it is in *Step Four* is that the implied cost of capital faced by the executive in his bonus plan (i.e., Threshold ROA) is always less than the company’s actual cost of capital (i.e., Benchmark ROA). Therefore, we predict that executives paid based on Threshold ROA will invest too much and divest too little compared to the levels of these activities that create value.

Figure 4 illustrates our proposed EP-Lite plan created from an original plan based on ROA. Taken together, these three (or four) “small tweaks” creating the plan in Figure 1 have completely changed the nature of the plan to achieve the primary advantages of Economic Profit while mitigating the problems associated with non-linear pay-performance relations and budget-based benchmarks.

### 5.5. *A Mickey Mouse Example*

A good example of what we call “EP-Lite” is the plan Disney used for CEO Michael Eisner prior to its 1996 merger with Capital Cities/ABC. That plan paid Eisner 2% of the company’s net income in excess of an 11% return on equity:

$$\text{Bonus} = .02 \times (\text{Net Income} - .11 \times \text{Equity}).$$

The Disney plan solves many of the problems we’ve discussed in this paper. Because the plan is linear (with no cap) above the threshold of 11% of equity it provides no incentives for Eisner to game the system as long as he is above the 11% threshold. In particular he has no incentives to stop working or to shift earnings between periods to increase his bonus. Second, the plan uses a fixed benchmark (11% of Equity) rather than a benchmark based on budgets, prior-year performance, or any other metric that Eisner directly or indirectly influences. Third, the plan enforces the idea that the cost of equity capital is greater than zero.

No one would confuse this plan with a full-blown Economic Profit Plan. First, the performance measure is Net Income rather than for example, the “Adjusted After-Tax Net Operating Profit” used in EVA<sup>®</sup> or in several other Economic Profit renditions. Nonetheless, the plan provides incentives to increase revenues and decrease expenditures, which is the critical component of any profit-based plan.

Second, the plan uses 11%, which is almost certainly less than the true cost of Disney’s equity capital. While Eisner has no incentive to invest in projects that will earn less than 11% ROE, he may well have incentives to invest in projects earning more than 11% but less than Disney’s true cost of capital. But, the bad decisions made using 11% rather than the “true cost” are trivial compared to the bad decisions made by executives with plans that lead them to believe the cost of equity capital is zero. In any case, the potential error in the assumed cost of equity capital is undoubtedly small compared to the potential errors in predictions of future cash flows used to evaluate investment projects.

Third, the capital charge is based on only equity capital and not all capital (including debt). However, our concern that CEOs do not understand the cost of capital applies primarily to equity capital: CEOs understand that debt has a cost, because they are forced to



make (and account for) interest-rate payments each year. Indeed, ignoring taxes (for simplicity<sup>25</sup>), note that we can rewrite:

$$EP = \text{Operating Profit} - (\text{Cost of Capital}) \times \text{Capital},$$

as,

$$EP = (\text{Operating Profit} - \text{Interest Expense}) - (\text{Cost of Equity}) \times \text{Equity} \\ + \text{Interest Expense} - (\text{Cost of Debt}) \times \text{Debt}.$$

Suppose that the cost of debt capital is reasonably approximated by the interest charge on existing debt (so that Interest expense  $\approx$  (Cost of Debt)  $\times$  Debt)). Then, Economic Profit is reasonably approximated by:

$$EP \approx (\text{Operating Profit} - \text{Interest Expense}) - (\text{Cost of Equity}) \times \text{Equity},$$

which is the performance measure used in Disney's plan (assuming 11% for the cost of equity capital).

## 6. Failure To Make Ex Post Adjustments To Performance Measures and Compensation

It is generally impossible to create fool-proof objective and accurate measures of the contribution to firm value by an individual, department, or division. And this also applies to the performance measurement and compensation of the CEO. Therefore, every bonus system should allow for denial or adjustment of a bonus that is not earned by the CEO or is earned from actions that do not benefit the firm or even damage the firm. In addition it is important to include contributions of the CEO that do not show up in his or her objective performance measure. While explicitly allowing for such ex post adjustments creates its own problems and challenges we believe failing to confront these subjective issues results in greater mistakes than dealing with them directly.

Thus, we believe it is important for compensation committees to make after-the-fact ex post adjustments to both the measure of CEO performance and the compensation actually paid to the CEO. The three most important and common failings in this domain are: a) failing to make subjective assessments of CEO performance, b) protecting CEOs too much from factors beyond their control, and c) failing to clawback inappropriate rewards to the CEO.

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<sup>25</sup> Stern-Stewart's EVA<sup>®</sup> measures operating income *after* tax, to exclude the effects of the tax shield on debt.

### *6.1. Failing to make subjective assessments of CEO performance*

Every bonus plan throughout the organization should include a subjective component if for no other reason than to prevent value destruction by those who game the system. Every performance measure, benchmark, and pay-performance relation is subject to gaming. Every bonus system should allow for the board or compensation committee to impose discretionary penalties to reduce or eliminate bonus payments that are generated by inappropriate actions, actions that game the system, actions that harm others, or that punch a hole below the waterline.

On the other hand it is appropriate for compensation committees to also take into account and reward CEOs for actions they take to create value that do not show up in current performance measures. Examples would include CEO succession planning (hiring and grooming members of the executive team to become the future CEO), and workforce reductions or divestitures that reduce near-term profits but create long-run value.

#### **R-8. Incentive plans should include a subjective component.**

Every bonus system should allow for denial or adjustment of a bonus that is not earned or is earned from actions that are inappropriate, are out-of-integrity, game the system, harm others, or otherwise damage the firm. Similarly bonus systems should allow for subjectively based discretionary rewards for actions that create value that are not captured in the objective performance measures.

While we believe that every individual, department or division should have a subjective component to their bonuses there are reasons to be careful to not overemphasize subjectivity for the CEO's bonus. Arguing against subjective ex post adjustments to the CEO's performance measure and compensation is the fact that the compensation committee and the board do not generally have good access to the specific knowledge required to assess accurately the contributions of the CEO beyond what is reflected in the company-wide data. This knowledge problem is exacerbated by the fact that much of the knowledge that the board has regarding the CEO's performance is likely to be deeply influenced by the CEO or even be provided directly by the CEO.

Subjectivity in CEO bonuses is also potentially limited by tax considerations. In particular, corporations are only allowed to deduct from income all "reasonable" compensation expenses, and Section 162(m) of the Internal Revenue Code precludes deductions for compensation in excess of \$1 million unless that compensation is considered "performance-based" by the IRS. Payments considered performance-based include formula-based bonuses with predetermined performance goals, but exclude discretionary bonuses

based on ex post subjective assessments. One way to preserve deductibility under the new rules, which apply only to “proxy named” executives in publicly listed firms, is to have shareholders approve a formula-based plan that generates systematically high payouts, and to reduce this payout using IRS-allowed “negative discretion.” Indeed, many companies have created a formal shareholder-approved plan that qualifies under the IRS Section 162(m) while actually awarding bonuses under a different “shadow” plan that pays less than the maximum allowed under the shareholder-approved plan. And sometimes these shadow plans have little or nothing to do with the performance criteria specified in the shareholder-approved plans. While such shadow plans provide an opportunity for compensation committees to create superior plans that have better incentives and pay less than the approved plans it is easy to see how such arrangements could go awry. There is great danger under these shadow plans that compensation committees will end up paying the maximum allowed by the shareholder-approved plans even when that was not intended. Ultimately, we believe that this misguided tax policy has increased average bonuses, since directors are hesitant to decrease bonuses from the shareholder-approved amount.

We suspect that many compensation committees have welcomed the tax-related justification for not incorporating subjective assessments in executive reward systems. After all, no one likes receiving unfavorable performance evaluations, and few directors enjoy giving them. It is therefore not surprising that directors are often unwilling to devote the time and the personal effort and courage to provide accurate, frank and effective performance appraisals of CEOs and other top executives. But, by failing to make the appraisals, directors are breaching one of their most important duties to the firm.

## *6.2. Protecting CEOs “too much” from factors beyond their control*

A basic tenant of incentive design – often called the “controllability principle” in accounting – is that managers should not be held accountable for factors beyond their control.<sup>26</sup> The idea is that including such factors in performance measures imposes risk on managers, who in turn must be compensated for this increased risk. The controllability principle is one of the factors underlying the infatuation many academics have with relative performance evaluation: measuring performance relative to industry peers can eliminate common “shocks” from the measure (such as the effects of industry-wide changes in demand or changes in the cost of raw materials, or the effects of natural disasters, terrorist attacks, etc.).

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<sup>26</sup> See, for example Simons (2007); Merchant (1985); Merchant (1987).

We believe that strict adherence to the controllability principle often leads to excuses, irresponsible behavior, and extremely poor incentives. CEOs *should* be held *accountable* for factors that are out of their control *when* the CEO can control or affect the *impact* of those non-controllable factors on performance. For example, while bus drivers driving a predetermined route should not be punished for the rising price of gasoline, we would be foolish to ignore the affect of gasoline prices on the performance of a CEO managing a fleet of vehicles. We want that CEO to be cognizant of what will happen to the cost of running the fleet if the price of gasoline goes up or down substantially, and there are certainly things such a manager can do to help the firm prepare for, hedge against, and to adjust efficiently to major changes in gas prices. Such things might include investing in multiple fuel technology engines to provide more alternative sources of fuel, entering into long-term fuel supply contracts, and using more sophisticated routing technology to save on gas usage (such as UPS did in configuring its routes so its trucks only make right hand turns and therefore save much of the time and fuel spent waiting to complete left hand turns, saving more than \$10 million per year in fuel cost<sup>27</sup>). Holding the CEO accountable for the effects of changes in gas prices (and, more generally, shocks to world oil prices) will motivate her to be creative in managing the impact of those uncertain changes.

Similarly, while earthquakes are beyond a CEO's control, he can control the probability of an earthquake (by locating outside of earthquake-prone areas) and the expected cost of an earthquake (through seismic upgrades, disaster preparation, and contingency planning for disruptions in the supply chain). And, while the effects of terrorist attacks may have been a legitimate item to exclude from the CEO's performance evaluation prior to Sept. 11, 2001, it surely cannot be at this time when terrorism has become a world-wide possibility for most businesses.

**R-9. CEOs should be held accountable for factors that are beyond their control if they can control or affect the impact of those uncontrollable factors on performance.**

A CEO with a good compensation plan will be motivated to plan for surprises that he cannot control. Resourceful CEOs can take actions that will reduce the impact of uncontrollable factors on their performance, but they will tend not to do so if they are not held accountable for the effects of those factors.

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<sup>27</sup> Westhead, "Firms conserving energy, saving tonnes of green," *Toronto Star* (2008)

### 6.3. *Failing to Clawback Inappropriate Rewards to the CEO*

Compensation committees may often find that the executive bonus plan paid “too much” in a prior year, due to revisions in performance data not apparent until after the bonus was paid. Such revisions include, but are not limited to, formal restatements of accounting numbers such as earnings or revenues due to mistakes, over-optimistic assumptions, “managed earnings,” outright fraud or short-term oriented decisions by management that generated profits in an earlier period but lead to substantial long-run value destruction. Compensation committees must always reserve the right to recover or “claw back” the ill-gained rewards in these situations.

An inherent difficulty with clawback policies is recovering money from an employee (or often former employee) who has already spent or paid taxes on that money. A natural solution is to defer a portion of each year’s bonus into an account that is subject to forfeiture upon restatements or other revisions of the original performance data. Alternatively, the ill-gained reward can be deducted from nonqualified retirement benefits, deferred compensation accounts, or other funds under the control of the company. In addition, the “bonus banks” introduced in Section 2.2.2 (as a way to achieve the negative bonuses needed to make bonus plan linear) can also fund clawbacks.<sup>28</sup>

In the absence of “clawback” provisions, boards are rewarding and therefore providing incentives for CEOs and other executives to lie and game the system. Any compensation committee and board that fails to provide for the recovery of ill-gained rewards to its CEO and executives is breaching another of its important fiduciary duties to the firm.

**R-10. Every incentive system including bonuses, option and other equity-based programs should provide for recovery of rewards (including the profits on sale of options and equity) if and when there is future revision of critical indicators on which the rewards were based or received.**

When compensation committees find that executive rewards in prior periods were inappropriately high (due to reporting lags, subsequent revisions to performance data, manipulated data, “managed earnings”, fraud or short term prior decisions that generate substantial losses in the future) the committee should retain the right to recover the ill-gained rewards. The use of bonus banks or deferred compensation can facilitate the necessary clawbacks by offsets to future payments otherwise due to the responsible executives.

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<sup>28</sup> There is a subtle but important difference between “negative bonuses” and “clawbacks.” The former occur when the performance metrics appropriately indicate that bonuses should be negative instead of positive. The latter occur when employees receive bonuses based on performance data that are subsequently revised.

Section 304 of Sarbanes Oxley requires CEOs and CFOs to reimburse the company for any bonus or equity-based compensation received, and any profits realized from selling shares, in the twelve months commencing with the filing of financial statements that are subsequently restated as a result of corporate misconduct. This clawback provision of Sarbanes Oxley was notable mostly for its ineffectiveness. Indeed, in spite of the wave of accounting restatements that led to the initial passage of Sarbanes Oxley, the first individual clawback settlement under Section 304 did not occur until more than five years later, when UnitedHealth Groups former CEO William McGuire was forced to return \$600 million in compensation.<sup>29</sup> The SEC became more aggressive in 2009, launching two clawback cases (CSK Auto and Diebold, Inc.) where the targeted executives were not accused of personal wrongdoing.<sup>30</sup>

The Sarbanes Oxley clawback requirements were extended substantially for financial institutions participating in the Troubled Asset Relief Program (TARP). The initial October 2008 TARP bill went beyond Sarbanes Oxley by: (1) applying to the three highest-paid executive officers in addition to the CEO and CFO; (2) applying to both public and private financial institutions; (3) not being exclusively triggered by an accounting restatement; (4) not being limited to the twelve-month “recovery period”; and (5) covering not only material inaccuracies relating to financial reporting but also material inaccuracies relating to other performance metrics used to award bonuses and incentive compensation. The February 2009 amendments to the TARP bill extended the number of covered executives to 25.

In the wake of the financial crisis in late 2008, several financial institutions introduced clawback provisions allowing the firm to recover bonuses paid to traders and other employees on profits that subsequently proved to be incorrect. In November 2008, UBS introduced a “bonus malus” system in which at least two-thirds of senior managers’ bonuses in good years are “banked” to offset possible losses in subsequent bad years.<sup>31</sup> In December 2008, Morgan Stanley introduced a clawback feature into its bonuses for 7,000 executives and employees, in which the company could recover a portion of bonuses for employees causing “a restatement of results, a significant financial loss or other reputational harm to the

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<sup>29</sup> Plitch, “Paydirt: Sarbanes-Oxley A Pussycat On ‘Clawbacks’,” *Dow Jones Newswires* (2006); Bowe and White, “Record Payback over Options,” *Financial Times* (2007).

<sup>30</sup> Berman, “The Game: New Frontier For the SEC: The Clawback,” *Wall Street Journal* (2010); Korn, “Diebold to Pay \$25 Million Penalty,” *Wall Street Journal* (2010). In November 2011, the former CEO of CSK Auto agreed to return \$2.8 million in bonuses and profits on sales of stock received while the company was committing accounting fraud, marking the SEC’s first clawback case against an individual who was not alleged to have otherwise violated the securities laws. See <http://www.sec.gov/news/press/2011/2011-243.htm>

<sup>31</sup> “UBS to change to the way it pays senior managers,” *Associated Press Newswires* (2008).

firm.”<sup>32</sup> And, in January 2009, Credit Suisse began paying bonuses in illiquid risky securities that lose value in bad years and could be forfeited if employees quit their job or were fired.<sup>33</sup>

While the TARP clawback provisions applied only to TARP recipients, the July 2010 Dodd-Frank Act extended the Sarbanes Oxley requirements to all publicly traded companies. In particular, Section 954 of the Dodd-Frank Act imposes a listing requirement that companies implement and report policies for recouping payments to executive based on restated financials, regardless of whether the restatement was the result of corporate misconduct.<sup>34</sup> The rule applies to any current or former executive officers (an expansion of Sarbanes Oxley, where only the CEO and CFO were subject to clawbacks), and applies to any payments made in the three-year period preceding the restatement (Sarbanes Oxley only applied for the twelve months following the filing of the inaccurate statement).

Our recommendation goes beyond both Sarbanes-Oxley and Dodd Frank in not being limited to restated financials and not being limited to current or former executive officers: every incentive plan for employees should provide for recovery for bonuses based on results that prove to be incorrect.

## 7. Banking Bonuses and the Financial Crisis

No discussion of executive bonus plans is complete without an analysis of the Wall Street “bonus culture” that has routinely been blamed for causing the recent financial crisis and the continuing problems in the economy. Public anger over banking bonuses surfaced in January 2009 amid reports that Wall Street bankers were set to receive nearly \$20 billion in bonuses for 2008 performance,<sup>35</sup> and heightened with revelations that bailout-recipient Merrill Lynch paid nearly \$4 billion in year-end bonuses just prior to completion of its acquisition by Bank of America.<sup>36</sup> Outrage further intensified following the March 2009 revelation that American International Group (AIG) was in the process of paying \$168

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<sup>32</sup> Farrell and Guerra, “Top Executives at Morgan Stanley and Merrill forgo their bonuses,” *Financial Times* (2008).

<sup>33</sup> Harrington, “Credit Suisse to loan cash bonuses,” *Sunday Telegraph* (2009).

<sup>34</sup> The SEC intends to propose and adopt rules regarding the recovery of executive compensation in late 2011.

<sup>35</sup> White, “What Red Ink? Wall St. Paid Hefty Bonuses,” *New York Times* (2009). The \$18.4 billion payout was estimated by the New York State comptroller based on personal income tax collections.

<sup>36</sup> Farrell and MacIntosh, “Merrill paid bonuses as losses mounted ahead of sale to BofA,” *Financial Times* (2009). The \$10 billion bailout to Merrill Lynch in October 2008 was ultimately delayed (pending the merger) and completed on January 9, 2009.

million in “retention bonuses” to its executives. These revelations – coupled with suspicions that the bonus culture facilitated excessive risk taking – led to an effective prohibition on cash bonuses for participants in the government’s Troubled Asset Relief Program (TARP) and to more-sweeping regulation of executive compensation as part of the July 2010 Dodd-Frank Wall Street Reform Act. While most of the regulations focuses on senior executive officers, the banking-specific provisions in Dodd-Frank were applicable to any employee that could expose the institution to substantial losses.

In this section, we analyze the bonus culture as it applies to three groups of banking employees: top-level executives, mortgage brokers, and traders. Ultimately, we find little evidence that the bonus culture provided incentives for excessive risk-taking for top-level executives; indeed, the general structure of low base salaries and high bonus opportunities paid in a combination of cash, stock, and options not only mitigates risk-taking but fulfills many of the “guiding principles” for bonus design espoused in this paper. However, we also identify design flaws in the performance measures used for mortgage brokers and loan officers, who were too often paid to write loans with little regard for the borrowers’ ability to repay. More importantly, we explore the unique incentive problems faced by traders and market makers, who inherently view their clients and customers as mere “counterparties,” committing only to provide “best execution” of their trades. As a motivating case study, we consider Goldman Sachs’ “Abacus” collateralized debt obligation, in which Goldman marketed and sold synthetic subprime mortgage securities to investors that were designed to fail. Ultimately, the Abacus deal imposed massive losses on Goldman’s investors, resulted in a record \$550 million fine to settle SEC fraud charges, and severely (and perhaps irreparably) damaged the firm’s once-sterling reputation.

### *7.1. Top-Management Incentives and the Wall Street Bonus Culture*

In Section 2.2, we discussed in detail the ways in which properly designed linear bonus plans dramatically improve incentives and provide for negative bonuses for poor performance. We also discussed how these plans are often misunderstood by outsiders and the press. Here we discuss how the banking bonus culture is another example of well-designed negative bonus plans accomplished through low base salaries, and how the widespread misinterpretation of these compensation plans has generated intense and erroneous criticism in the press and in political circles.

Indeed, the heavy reliance on bonuses has been a major element in the success of Wall Street banks and a defining feature of Wall Street compensation for decades, going back to



the days when investment banks were privately held partnerships. These privately held banks kept fixed costs under control by keeping base salaries low and paying most of the compensation in the form of uncapped cash bonuses that varied with profitability. This basic structure remained intact when the investment banks went public, but the cash bonuses were replaced with a combination of cash, restricted stock, and stock options. For example, since going public in 1985 and through 2005, base salaries for partners at Bear Stearns were limited to \$200,000 annually; base salaries were raised to \$250,000 in 2006. In comparison, Bear Stearns' CEO James Cayne received a 2006 bonus of \$33.6 million, comprised of cash (\$17 million), restricted shares (\$14.8 million based on the Dec. 20, 2006 grant-date price of \$165.32), and stock options (\$1.7 million); Mr. Cayne's base salary accounted for less than 1% of his total compensation. By the time of the company's collapse in March 2008 and "firesale" to JPMorgan Chase for \$10/share, the (not yet vested) stock Mr. Cayne had received as part of his 2006 bonus was worth only 6% of its grant-date value, and his options expired worthless.

Similarly, in 2007 (largely before the market crash), Goldman Sachs paid its CEO (Lloyd Blankfein) a salary of \$600,000 and a bonus of \$67.9 million for total compensation of \$68.5 million of which 40.4% (\$27.4 million) was paid in cash (including his \$600,000 base salary), 24.2% (\$16.440 million) was paid in options to purchase Goldman Sachs' shares exercisable in January 2011 at the December 19, 2007 grant date fair market price of \$204.16, and 36.2% (\$24.66 million) was paid in restricted stock units vesting in January 2011 (also valued at the grant-date stock price of \$204.16).<sup>37</sup> By January 2011, Goldman's stock price had risen to about \$170 (from its low of \$52 in November 2008), so that his stock became vested (and taxable) at about 80% of its initial value, and his options were underwater.

In both the Bear Stearns and Goldman Sachs' cases, bonuses for top executives were effectively linear with very low salaries relative to competitive total compensation levels in the industry, low bonus thresholds, wide incentive zones, and no caps. Murphy (2012) examines the top-management pay plans at all large investment banks and finds similar patterns. Moreover, (similar to Bear Stearns and Goldman) he finds that the Wall Street bonus culture is largely an equity culture: not only do most Wall Street executives hold

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<sup>37</sup> Source: Goldman Sach's 2008 and 2009 Proxy Statements. Mr. Blankfein's actual cash bonus was a bit lower, and his stock grant a bit higher, because he voluntarily elected to receive additional shares (at a discount) in lieu of cash compensation. Because of a quirk in SEC reporting rules, bonuses paid in cash for 2007 performance received after fiscal closing are reported as 2007 compensation in the 2008 proxy statement, but bonuses paid in stock or options for 2007 performance received after fiscal closing are reported as 2008 compensation and in the 2009 proxy statement.

substantial amounts of stock, but a major part of their bonuses are paid in the form of stock or stock options. Paying bonuses in unvested stock or options effectively reduces the value of bonuses when future firm performance is poor and therefore provides strong incentives for managers to consider the long-run future effects of their decisions on firm value. This culture, and these plans, in general create incentives to focus on long-run value creation rather than short-run gains. In addition, as discussed in Section 2.1.2, the primary way that compensation structures might encourage excessive risk taking is through asymmetric rewards and penalties; that is, high rewards for superior performance but no real penalties for failure. Financial services firms provide significant penalties for failure in their bonus plans by keeping salaries far below competitive market levels, so that earning a zero bonus represents a major penalty. Contrary to popular (and uninformed) opinion these plans reduce, rather than increase, incentives for risk taking

And yet, the Wall Street bonus culture came under attack in 2009, reflecting in part, the (largely uncorroborated) suspicion that banking bonuses created incentives for excessive risk taking that led to the meltdown of world financial markets.<sup>38</sup> The precise causes of the global financial crisis will be debated for decades (just as the precise causes of the 1930s depression are still being debated), and it is beyond both the scope of this article (and of our abilities) to provide a detailed account here. However, the evolving consensus of reasoned analysis based on careful research suggests that the risk-taking contributing to the financial crisis reflected a combination of factors (at least in the United States) including 1) governmental policies encouraging home ownership, 2) loose monetary policies, 3) “Too Big to Fail” guarantees, and 4) poorly implemented financial innovations such as exotic mortgages, securitization, and collateralized debt obligations. These factors, however, have nothing (or little) to do with the banking “bonus culture.”

Nonetheless, in response to the financial crisis, Congress attempted to destroy the bonus culture in February 2009 by forbidding incentive compensation for financial institutions participating in the US Treasury’s Troubled Asset Relief Program (TARP).<sup>39</sup> This draconian rule had the beneficial side effect of causing banks to repay TARP funds

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<sup>38</sup> In January 2011 the US Financial Crisis Inquiry Commission issued its report on the causes of the financial crisis (Angelides, et al. (2011)). While providing no direct evidence that pay practices were complicit in the crisis, the report takes a “guilt by association” approach, documenting a widening pay gap between bankers and non-bankers and (without evidence) criticizing banking bonuses for being too short-term oriented. As we have argued, there is nothing in the data for compensation of the top executives in Wall Street firms that is consistent with the conclusions and implications of the Commission report.

<sup>39</sup> See Murphy (2011) and Murphy (2010) for a chronology and assessment of executive pay restrictions for TARP recipients.

much sooner than anyone imagined. Congress then enacted the 2010 Dodd-Frank Wall Street Reform and Consumer Protection Act (or “Dodd-Frank Act”) which prohibits *all* financial institutions from using any incentive-based compensation arrangements that could lead to material financial loss, or that provides an executive officer, employee, director, or principal shareholder of the covered financial institution with excessive compensation, fees, or benefits.

However, the facts that (1) the financial meltdown involved banks, (2) banks rely heavily on bonuses, and (3) pay levels in banks are high, do not imply that banking bonuses caused the crisis and need to be reformed. Ultimately, we believe that much of the outrage over bonuses in financial services reflects the fact that, in most industries, a “bonus” connotes an extraordinary reward for extraordinary performance added on top of generous above-market salaries. But, when salaries are purposely set *far below* market levels, what is called a “bonus” is in reality variable compensation that is a fundamental component of competitive compensation. Take away the bonuses, and the banks will have to raise salaries dramatically or find other ways to pay, or they will lose their top talent.

## 7.2. *Broker incentives are broken*

While the structure of bonuses for top-level banking executives is generally consistent with what we consider “best practice” in incentive design, there were clearly examples of remarkably poorly designed performance measurement and pay systems.

For example, in the years leading up to its dramatic collapse and acquisition by JPMorgan Chase at fire-sale prices, Washington Mutual (“WaMu”) was a leader in providing subprime mortgages to virtually anyone who applied.<sup>40</sup> WaMu mortgage brokers were rewarded for writing loans with little or no verification of the borrowers assets or income, and received especially high commissions when selling more-profitable adjustable-rate (as opposed to fixed-rate) mortgages. However, after launching the “Power of Yes” campaign in January 2003, the revenue from the bank’s home-lending unit grew from \$700 million to almost \$2 billion in less than a year, and its adjustable-rate loans grew from 25% of WaMu’s new home loans in 2003 to over 70% by 2006. Most of WaMu-originated loans were packaged and sold to Wall Street. In addition, WaMu routinely pressured appraisers to generate inflated property values so that these packaged loans would appear less risky.

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<sup>40</sup> The information in this paragraph is based on Goodman and Morgenson, “By Saying Yes, WaMu Built Empire on Shaky Loans,” *New York Times* (2008).

Nonetheless, in a single year the value of bad loans on WaMu's books grew from \$4.2 billion in mid-2007 to over \$11.5 billion in mid-2008.

The basic incentive problem at WaMu was a culture and reward system that paid people to write loans rather than to write "good loans" – that is, loans with a decent chance of actually being paid back. In the end, WaMu got what it paid for: bad loans. In September 2008, the CEO, Kerry Killinger was fired. Later that month – in what was by far the largest bank failure in U.S. history – regulators seized the bank and sold the bulk of its operations to JPMorgan for \$1.9 billion.<sup>41</sup> At its peak in January 2006, WaMu's market capitalization had exceeded \$44.6 billion.

Personally, Mr. Killinger's financial results were mixed. Between the start of the "Power of Yes" campaign in January 2003 and its ultimate collapse, Mr. Killinger pocketed \$17.5 million in salaries and cash bonuses, and realized another \$30.7 from exercising options. On the other hand, most of his non-cash bonuses were paid in the form of company shares which became worthless. His total holdings (including shares from the incentive plans) fell in value from \$88 million at the end of 2006 to near zero (though he did sell a small fraction of his shares through a programmed trading plan in 2007). In addition, the intrinsic value of his unexercised options fell from \$82 million at the end of 2006 to zero by the end of 2007.

Similar scenarios to that at WaMu were being played out at Countrywide Finance, Wachovia, and scores of smaller lenders who collectively were not concerned about default risk as long as home prices kept increasing and as long as they could keep packaging and selling their loans to Wall Street. But, home prices could not continue to increase when prices were being artificially bid up by borrowers who could not realistically qualify for or repay their loans. The record number of foreclosures in 2008, and the associated crash in home values, helped send the U.S. economy (and ultimately the global economy) into a tailspin.

In the current anti-banker environment, it has become fashionable to characterize plans such as those at Washington Mutual as promoting excessive risk taking. But, the problems with paying loan officers on the quantity rather than the quality of loans is conceptually identical to the well-known problem we discussed above in Section 5 of paying a piece-rate worker based on the quantity rather than the quality of output. Put simply, these are

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<sup>41</sup> Sidel, Enrich and Fitzpatrick, "WaMu Is Seized, Sold Off to J.P. Morgan, In Largest Failure in U.S. Banking History," *Wall Street Journal* (2008).

performance-measurement problems, not risk-taking problems, and characterizing them as the latter leads to impressions that the problems are somehow unique or more important in the banking sector, when in fact they are universal. Performance-measurement problems do not discriminate between non-financial and financial firms.

### 7.3. *The Trouble with Traders*

#### 7.3.1. *Limited Penalties for Extreme Losses*

As discussed above in Section 2.1.2, compensation provides incentives to take risk when executives receive rewards for positive profits, but are not penalized for losses. In Section 7.1, we concluded that the pay structure for Wall Street executives (high stock ownership coupled with low base salaries and high bonus opportunities paid in stock and options) were effectively linear and therefore provided incentives to avoid rather than pursue excessive risk-taking. Our conclusions, however, do not necessarily apply to traders below the top-executive level.

First, while anecdotal information suggests that a substantial portion of trading bonuses are deferred or paid in stock and options, we know relatively little about whether the overall structure is effectively linear (which would deter risk taking) or convex (which would encourage risk taking). It seems plausible that traders, on average, hold less wealth in company stock and options than do senior-level executives, which would reduce the downside from trading losses and therefore encourage risk taking, all else equal.

Second, to fully mitigate excessive risk taking, the compensation structure must be linear across the full range of outcomes, including large losses. Given prohibitions against servitude, torture, and murder – coupled with individual-friendly bankruptcy protection – the penalties that can be imposed on traders for huge losses is largely limited to loss of employment, reputation, and existing wealth (including bonus banks and deferred accounts). Given these incentives, it is not surprising that many so-called “rogue” traders are relatively young low-level traders with less wealth to lose. For example, UBS’s Kweku Adoboli was only 31 years old when his unauthorized trades in various S&P 500, DAX, and EuroStoxx index futures in 2011 resulted in a loss to UBS of \$2.4 billion.<sup>42</sup> Similarly, Société Générale’s Jérôme Kerviel

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<sup>42</sup> Cimilluca, Ball and Mollenkamp, “UBS Raises Tally on Losses --- Details Emerge Behind \$2.3 Billion ‘Rogue’ Trading; Small Problem Got Bigger,” *Wall Street Journal* (2011).

was 31 years old when his unauthorized unhedged trades on stock-index futures in 2006-07 resulted in a loss of \$7.2 billion.<sup>43</sup>

In both the UBS and Société Générale cases, the traders were charged with criminal fraud and that they were taking unauthorized actions that violated company policy (although there is some evidence in both cases that monitoring was lax). The larger point is that no bonus system in the world can adequately punish a trader (or any employee) for generating huge billions of dollars in losses.<sup>44</sup> This fact, however, does not justify a condemnation of the banking bonus culture, but rather emphasizes that high-powered incentives must always be coupled with continuous monitoring systems and risk control systems to ensure that outsized bets never be allowed to occur, and that measured and rewarded performance reflects actions that create rather than destroy value.

### 7.3.2. *Clients vs. Counterparties*

While modern large investment banks provide myriad services to institutions, corporations, governments, and wealthy individuals, their primary activities include underwriting (creating and marketing securities), consulting (often related to mergers and acquisitions), and trading (on behalf of the bank or its clients). In its underwriting and consulting activities – which we refer to collectively as the “advisory side” of the business – the investment bank generates profits by providing services for well-defined customers or clients. The advisors providing these services inevitably become privy to valuable inside information from their clients (e.g., clients who are potential targets or acquirers in M&A transactions). While we have no doubt that abuses and violations occur, the advisors are generally precluded from profiting on this information by virtue of securities laws, formal non-disclosure and confidentiality agreements, and (perhaps most importantly) reputational concerns.

Like the bankers on the advisory side of the business, the traders (especially those involved in market making) also become privy to valuable information, in this case via the order flow and (equally important) the identities of the buyers and sellers (i.e., distinguishing “smart money” from “dumb money”). However, unlike the advisory side, the traders cannot

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<sup>43</sup> Gauthier-Villars, Mollenkamp and MacDonald, “French Bank Rocked by Rogue Trader --- Societe Generale Blames \$7.2 Billion in Losses On a Quiet 31-Year-Old,” *Wall Street Journal* (2008).

<sup>44</sup> When Kerviel was sentenced to three years in prison in October 2010, the judge ordered him to repay his former employer \$6.7 billion; news accounts at the time noted that it would take him 180,000 years to pay at his current salary (Gauthier-Villars, “Rogue French Trader Sentenced to 3 Years --- Kerviel Is Ordered to Repay Societe Generale \$6.7 Billion,” *Wall Street Journal* (2010)).

honor confidentiality commitments simply by *not* trading: the traders (whose commitment is to make trades happen and whose objective is to make a profit on every transaction) don't have a choice. Moreover, instead of having customers or clients, the traders have "counterparties" (that is, the parties on the other side of the transaction). The formal commitments traders make to their counterparties are minimal, often amounting to little more than a commitment to provide "best execution" of their trades.

It is in the long-run interest of the investment bank for the trader to refrain from trading opportunistically on inside information obtained in the course of business from counterparties. An example of opportunism is "front running" where the trader buys (or sells) for his own account before executing a large buy (or sell) order from a counterparty. While this activity is illegal in highly liquid stock markets, it is legal or generally difficult to monitor or enforce for illiquid securities. In these latter cases, the primary deterrent against front running is the reputational concern that the counterparty will refuse to deal with the trader (and his firm) in future transactions.

### 7.3.3. *Treating Clients as Counterparties: The Goldman-Abacus Case*

The conflict of interest between traders and their counterparties is well understood: the objective of each party is to make a profits at the expense of the other, but not by doing something so blatant or opportunistic that it would jeopardize the future relationship. But, what happens when the clients and customers of the advisory businesses are treated like counterparties?

According to the complaint filed by the SEC in April 2010, hedge-fund manager John Paulson approached Goldman Sachs in January 2007 seeking counterparties and mechanisms that would allow Paulson to "short" various Residential Mortgage-Backed Securities (RMBS) that he believed were overvalued and would default in the near future.<sup>45</sup> Paulson would ultimately become famous (and extremely wealthy) from his negative bets on the subprime mortgage market.<sup>46</sup> Working with Goldman's 31-year old Vice President Fabrice Tourre (there's that age again!), Paulson helped select a list of RMBS candidates. Tourre and Goldman then approached ACA Management, LLC, to serve as the "Portfolio Selection Agent" for the \$2 billion synthetic collateralized debt obligation (CDO) named Abacus 2007-

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<sup>45</sup> The SEC complaint is available at <http://www.sec.gov/litigation/complaints/2010/comp21489.pdf>.

<sup>46</sup> Zuckerman, "Trader Made Billions on Subprime – John Paulson Bet Big on Drop in Housing Values," *Wall Street Journal* (2008)

**Figure 5** Cover page from Goldman Sachs-ACA PowerPoint “Pitch Book” for Abacus offering**CONFIDENTIAL – INDICATIVE TERMS**

## **ABACUS 2007-AC1**

*\$2 Billion Synthetic CDO*

*Referencing a static RMBS Portfolio*

*Selected by ACA Management, LLC*

February 26, 2007

The information contained herein is indicative only and the actual terms of any transaction will be set forth in the definitive Offering Circular.  
Capitalized terms but not defined herein shall have the meanings set forth in the definitive Offering Circular.



Note: The 66-page PowerPoint Pitch Book was leaked to the media on April 16, 2010, and can be found in various places on the Internet including <http://documents.nytimes.com/goldman-mortgage-document>

AC1, telling ACA about Paulson’s involvement but suggesting that Paulson would be investing \$200 million in a long (rather than short) position.

Among the SEC’s chief exhibits was a 66-page electronic “Pitch Book” produced by Goldman and ACA in February 2007 to attract investors to the Abacus CDO. The cover page from the Pitch Book, reproduced in Figure 5, states that the securities were selected by ACA; there is no mention in the 66 pages of Paulson’s intention to short the Abacus securities, his role in selecting the securities, or that he paid Goldman \$15 million for putting the deal together. Each of the 66 pages of the Pitch Book included logos from both Goldman Sachs and ACA Capital implying that Goldman endorsed the securities, notwithstanding a four-page (and 1,077-words) disclaimer essentially saying that nothing in the Pitch Book can be relied on for anything.



The Abacus deal closed on April 26, 2007. According to the SEC complaint, 83% of the portfolio securities had been downgraded by October 2007, and 99% had been downgraded by January 2008. Abacus 2007AC1 investors lost over \$1 billion, while Paulson gained approximately the same amount.

On April 16, 2010 Goldman Sachs and Fabrice Tourre were charged by the SEC with fraud in violating security laws in the structuring and marketing of Abacus 2007-AC1. The *New York Times* noted that the Abacus deal “was one of 25 such vehicles that Goldman created so the bank and some of its clients could bet against the housing market.”<sup>47</sup> In addition, the SEC emphasized that Goldman Sachs failed to reveal that:

- Paulson and Co. Inc. paid it approximately \$15 million for structuring and marketing Abacus 2007-AC1;
- It allowed Paulson and company to play an important role in selecting the securities from which the components of the Abacus portfolio were primarily selected by ACA;
- Paulson and company intended to sell the Abacus CDO short;
- Goldman’s Vice President, Fabrice Tourre, was well aware that the Abacus CDO was being constructed to fail.

On July 15, 2010 Goldman Sachs settled the SEC charges against Goldman in the Abacus case for \$550 million – \$300 million to the U.S. government and \$250 million to investors – the largest fine ever extracted by the SEC. In settlement papers submitted to the U.S. District Court for the Southern District of New York, Goldman made the following acknowledgement:

“Goldman acknowledges that the marketing materials for the ABACUS 2007-AC1 transaction contained incomplete information. In particular, it was a mistake for the Goldman marketing materials to state that the reference portfolio was “selected by” ACA Management LLC without disclosing the role of Paulson & Co. Inc. in the portfolio selection process and that Paulson’s economic interests were adverse to CDO investors. Goldman regrets that the marketing materials did not contain that disclosure.”<sup>48</sup>

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<sup>47</sup> Story and Morgenson, “S.E.C. Accuses Goldman Of Fraud in Housing Deal,” *New York Times* (2010).

<sup>48</sup> Securities and Exchange Commission, “Goldman Sachs to Pay Record \$550 Million to Settle SEC Charges Related to Subprime Mortgage CDO: Firm Acknowledges CDO Marketing Materials Were Incomplete and Should Have Revealed Paulson’s Role. July 15, 2010. <http://sec.gov/news/press/2010/2010-123.htm>

#### 7.3.4. *The Abacus Scandal: Why did Goldman create and promote Abacus 2007-AC1?*

Since its creation in 1869, Goldman Sachs has maintained a stellar reputation as one of the top, and most trustworthy, investment banks on Wall Street and in the world. Goldman publishes on its website its Goldman Business Principles that contains Goldman's commitments to its clients and to itself – they are Goldman's word to the world and to itself and its employees. Clients worldwide expected Goldman to adhere to its 14 fundamental business principles, topped by “Our Clients' Interest Always Come First.” Taking the SEC complaint at face value (and noting that Goldman paid a record fine to settle), it appears that Goldman violated 7 of its 14 business principles.

The seven principles below are those that Goldman violated (taken directly from the 14 Goldman Business Principles website<sup>49</sup> maintaining the original numbering and edited to highlight the points relevant to the issues here):

**1. OUR CLIENTS' INTERESTS ALWAYS COME FIRST.**

Our experience shows that if we serve our clients well, our own success will follow.

**2. OUR ASSETS ARE OUR PEOPLE, CAPITAL AND REPUTATION.**

. . . We are dedicated to complying fully with the letter and spirit of the laws, rules and ethical principles that govern us.

**5. WE STRESS CREATIVITY AND IMAGINATION IN EVERYTHING WE DO.**

. . . we constantly strive to find a better solution to a client's problems.

**8. WE STRESS TEAMWORK IN EVERYTHING WE DO.**

We have no room for those who put their personal interests ahead of the interests of the firm and its clients.

**11. WE CONSTANTLY STRIVE TO ANTICIPATE THE RAPIDLY CHANGING NEEDS OF OUR CLIENTS AND TO DEVELOP NEW SERVICES TO MEET THOSE NEEDS.**

**12. WE REGULARLY RECEIVE CONFIDENTIAL INFORMATION AS PART OF OUR NORMAL CLIENT RELATIONSHIPS.**

To breach a confidence or to use confidential information improperly or carelessly would be unthinkable.

**14. INTEGRITY AND HONESTY ARE AT THE HEART OF OUR BUSINESS.**

We expect our people to maintain high ethical standards in everything they do, both in their work for the firm and in their personal lives.

There is no evidence that Goldman's violations of seven of its business principles can be explained by incentives provided by its executive bonus system. Bonuses were paid in stock and options (as well as cash), and all the senior executives held huge ownership

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<sup>49</sup> For a full statement of Goldman's 14 business principles, see <http://www2.goldmansachs.com/who-we-are/business-standards/business-principles/index.html>

positions in Goldman equity. For example, by year-end 2007, the five named executives in Goldman's proxy statement held illiquid equity and options on Goldman Sachs with a total value of \$1.8 billion. Therefore, those executives on balance had no monetary incentives to take actions that would increase Goldman's short-term earnings at the expense of Goldman's long-term equity value. More broadly, we cannot find any short-term monetary gains for these executives that would cause them to rationally choose to take the actions Goldman did in the Abacus deal.

Determining why Goldman violated its own principles and risked its reputation in the Abacus deal will be debated for years, but we believe the root causes involve Goldman's 1999 going-public decision and the more-recent shift of power from its advisory services to its traders. After Goldman became a publicly held corporation in 1999 its access to large amounts of outside capital enabled its traders to significantly expand their operations and generate substantial profits. These trading activities now are the major source of Goldman's profits, and Goldman is now essentially run by the traders; the CEO, Lloyd Blankfein is a trader.

As discussed above, an interesting and important aspect of traders is that unlike the advisory side of the business they by and large have no "clients," only counterparties, and their primary commitment to their counterparties is not much more than to provide "best execution" of their trades. Therefore, to the traders, the first of Goldman's Business Principles, "Our clients interests always come first" is essentially meaningless, and so too were the remaining 6 business principles meaningless to those who approved, executed and marketed the Abacus CDO deal. This worldview or what some might call a "cultural" difference between the advisory and trading sides of the business is a very serious and potentially damaging source of conflict inside the firm.

We believe that under the management of the traders, Goldman lost its way. What Goldman missed was as simple as this: When Goldman collaborated in the creation and sale of the Abacus securities, it was treating the buyers of those securities as if they were counterparties rather than "clients" and thus violating its core business principles. Participating in the creation and sale of such investment vehicles as Abacus and selling them to their clients under the Goldman logo is a dramatically different role than simply making a market in securities that someone else has created. Goldman was in effect "giving its word" to its client-buyers of Abacus that the value of such securities is equal to or better than the price they are charging for them. And Goldman was out of integrity by failing to inform purchasers of the Abacus CDO that it was constructed so it had maximum probability of

failing. We will not go through each of the remaining 6 Goldman Business Principles to elucidate how Goldman's actions in the Abacus deal violated each of those but we recommend the reader do that now.

It is a substantial mistake to not see that the production and sale and trading of such instruments as Abacus under its own Goldman brand name is a dramatically different activity than simply putting buyer and seller together in an impersonal market-making or trading role. Although the 1,077-word fine print in the four-page Pitch Book Disclaimer pages carried warnings and denials that Goldman was making any recommendations, the prominent use of the Goldman logo, coupled with the long-time pledge of "Our Clients' Interests Always Come First" amount to Goldman giving its word to the purchasers of these securities that Goldman was putting them first.

Moreover, all this was being done in a context in which Goldman believed the residential mortgage market was likely to experience steep declines in value. Consequently the firm as a whole was betting that home mortgages would decline in value – what was known within the firm as the "big short."<sup>50</sup> Simultaneously creating mortgage-backed securities which its clients would purchase while Goldman was engaging in the "big short" to bet against the housing market, without notifying its clients that it was shorting the subprime market, violated the trust of long-time clients who were, indeed, customers and not counterparties.

When Goldman violated its word by taking actions in the Abacus CDO that were inconsistent with 7 of its 14 Goldman Sachs Business Principles (given above) it was both out of integrity and inauthentic. What we mean by inauthentic is acting in a way that is inconsistent with who Goldman holds itself out to be for itself and for its clients.

Given that it is impossible to find anything in the compensation and bonus system for Goldman's top-level managers that motivated or rewarded the disastrous policies it implemented in the Abacus 2007-AC1 deal, it is important to notice that compensation and bonus plans cannot solve all organizational problems. Indeed, note that both the top-level officers at Goldman and the managers that implemented the Abacus deal were subject to large penalties imposed through the loss in value of their mandated equity holdings and stock options as well as lower cash bonuses. Goldman's behavior in this subprime meltdown served its own narrowly defined self interest at the expense of its clients. And the damage to

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<sup>50</sup> Goldfarb, "Cheers at Goldman as housing market fell; Senate Panel Releases E-Mails; Executives Revealed In Bets Made Against market," *Washington Post* (2010).

Goldman's brand brought about by the losses imposed by its actions and the embarrassing congressional hearings will surely be much larger than the \$550 million penalty it agreed to pay to settle the issue.

## 8. Conclusion

While compensation committees know how *much* they pay in bonuses and are generally aware of performance measures used in CEO bonus plans, relatively little attention is paid to the *design* of the bonus plan or the unintended consequences associated with common design flaws. In this paper, we have described how to improve CEO bonus plans, based on basic guiding principles. In particular, bonus plans *should not* provide incentives to:

- shift earnings from one period to another, or to realize performance today at the expense of (even larger) performance tomorrow;
- mislead the board about organizational capabilities, or otherwise “game the system;”
- increase or decrease the volatility of cash flows (e.g., take on excessive or insufficient risk);
- forgo a profitable project that delivers only a one-time gain (as opposed to an annuity of future cash flows);
- ignore the cost of capital (especially equity capital) required for any investment;
- improve a “ratio” performance measure (e.g., ROA, EPS, ROE, etc.) by manipulating the denominator of the ratio (e.g., Assets, Shares, Equity, etc.).

Our recommendations for improving executive bonus plans focus on choosing the right performance measure, determining how performance thresholds, targets, or benchmarks are set, and defining the pay-performance relation and how the relation changes over time. While our recommendations focus on details and may appear to be complicated, they can be summarized and implemented in five simple steps:

- First, use only performance measures that are in dollars (e.g., operating income, net income, economic profit). For executives involved in capital decisions, it is important that performance measure includes a direct or indirect capital charge.

- Second, use only performance benchmarks (or standards, targets, etc.) that are not controlled by the executives in the plan, or that do not change based on prior-year performance.
- Third, give managers an uncapped percentage share of performance (measured in dollars relative to the benchmark).
- Fourth, introduce direct or indirect “negative bonus” opportunities through using cumulative performance, bonus banks, or salary reductions coupled with enhanced bonus opportunities.
- Finally, always reserve the right to make ex post adjustments to bonuses (including recovery of already-paid bonuses).

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