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**EMPLOYMENT HORIZON AND THE CHOICE
OF PERFORMANCE MEASURES:
EMPIRICAL EVIDENCE FROM ANNUAL
BONUS PLANS OF LOSS-MAKING ENTITIES**

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Employment Horizon and the Choice of Performance Measures: Empirical Evidence from Annual Bonus Plans of Loss-Making Entities

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Abstract

We examine the extent to which employment horizon concerns affect the relative emphasis on financial versus nonfinancial performance measures in annual bonus plans. We argue that managers of loss-making firms are likely to voluntarily or forcibly depart in the near future and consequently have a shorter employment horizon. Loss-making firms then need to increase the emphasis on forward-looking nonfinancial performance measures to motivate long-term effort of their managers. Thus, we hypothesize that the emphasis on nonfinancial performance measures is greater in loss-making than in profitable firms even after controlling for the informativeness of earnings. We find consistent support for our hypothesis using different (archival, survey, and field) data sources and various proxies for short employment horizon and the emphasis on nonfinancial performance measures.

Keywords: employment horizon problem; performance measurement; losses; bonus plans

1. Introduction

A fundamental question in accounting research concerns the choice of performance measures for evaluating executives. While firms have traditionally relied on financial metrics to evaluate performance, there has been an increase in the use of nonfinancial performance measures (Ittner et al. 1997). Prior literature shows that nonfinancial performance can compensate for “noise” and “goal incongruence” of financial performance measures (e.g., Datar et al. 2001, Feltham and Xie 1994, Banker and Datar 1989). There is also a stream of work examining the choice of performance measures in multi-period agency settings (Şabac 2007, Dutta and Reichelstein 2005, 2002, Sliwka 2002). This literature maintains that another desirable contracting attribute of nonfinancial measures is their ability to predict future performance and to facilitate intertemporal matching between current investments and future returns. If managers have a short employment horizon, particularly, it is difficult to motivate long-term effort without the reliance on some forward-looking performance measures (Dutta and Reichelstein 2003, Dikolli 2001).

Despite the extensive theoretical work in this area, there is little empirical evidence in support of the contracting benefits of forward-looking performance measures in the presence of employment horizon concerns. While there is prior literature examining sensitivity of CEO compensation to (forward-looking) stock returns as CEOs approach retirement (Dikolli et al. 2003, Bryan et al. 2000, Yermack 1995, Gibbons and Murphy 1992, Lewellen et al. 1987), the results are mixed possibly because stock compensation itself may be a source of managerial myopia (McAnally et al. 2008, Erickson et al. 2006, Cheng and Warfield 2005) or, alternatively, CEO concerns about post-retirement board service may alleviate the horizon problem (Brickley et al. 1999).

Our study differs from this literature in two important ways. First, we examine how compensation linked to nonfinancial performance measures (rather than stock returns) alleviates employment horizon issues. Second, we tap a novel empirical setting to identify firms with severe employment horizon problems. We argue (and corroborate with our data) that firms with several consecutive losses are characterized by high management turnover and, consequently, short-lived executive employment contracts. We then exploit the fact that it is increasingly common to find firms that report losses, several of which for a

number of consecutive periods (Joos and Plesko 2005, Skinner 2004). For example, in the 1997-2005 period, between 35% and 50% of the firms listed on Compustat reported negative earnings. Our tests compare the choice of performance measures in firms with one to five consecutive loss years (and a high likelihood of CEO turnover) to a control group of highly profitable firms where employment horizon issues are less severe. We predict that the emphasis on nonfinancial performance measures is greater in settings where the employment horizon is shorter.

We first estimate an empirical model of the likelihood of CEO turnover as a function of prior profit/loss history and other proxies for employment horizon such as proximity to normal retirement, stock ownership, and the CEO being the chairman/founder of the firm. We find that the probability of CEO departure is higher in loss-making firms and when CEOs approach normal retirement. The probability of departure is lower when CEOs hold more of their firm's stock or when they have been chairmen for 10 or more years. Predicted values from this model then reflect the ex ante probability of CEO turnover which we use as an aggregate proxy for short employment horizon. Consistently with our main hypothesis, we find a significant positive association between this proxy and the use of nonfinancial performance measures even after controlling for differences in informativeness of financial performance measures and differences in executive compensation disclosures (which we rely on to identify whether firms use nonfinancial performance measures).

To address the limitations of our archival data solely based on firms' proxy statement disclosures of their use of nonfinancial measures, we collect additional field and survey data containing detailed information on how different entities weigh the importance of nonfinancial measures for performance evaluation purposes. Based on our field study insights, we construct three different proxies for emphasis on nonfinancial performance measures (emphasis on nonfinancial measures in overall evaluations, in bonus plan formulas, and the extent to which performance evaluations are subjective). We find robust support for our main hypothesis using a sample of 141 profitable and loss-making entities participating in our survey. Specifically, loss-making entities expecting losses to persist and entities concerned about managerial re-

tion (i.e., entities where employment horizon is likely to be short) are significantly more likely to emphasize nonfinancial performance measures.

Our findings make three contributions to the literature. First, to our knowledge, our study is the first empirical examination of how firms use nonfinancial performance measures to alleviate employment horizon issues. We find evidence consistent with the theory that forward-looking performance measures reduce agency costs in dynamic settings and facilitate motivation of long-term effort when agents have short employment horizons (Dikolli 2001). Second, we replicate and extend several findings of Ittner et al. (1997) regarding the choice of performance measures and their relative informativeness. For example, we find that profit urgency and financial distress (which make financial performance measures more congruent with firm goals) are associated with a lower emphasis on nonfinancial performance measures, a result that Ittner et al. (1997) failed to empirically support. At the same time, we show that informativeness of earnings is unlikely to account for all the difference in the emphasis on nonfinancial performance measures between loss-making and profitable entities since the difference persists even after including common controls for noise and congruence of earnings. Finally, our findings help explain why the relationship between earnings and cash compensation disappears when earnings are negative (Leone et al. 2006, Gaver and Gaver 1998, Sloan 1993, Lambert and Larcker 1987). To the extent that nonfinancial performance measures are contemporaneously uncorrelated with earnings, our finding of a greater emphasis on nonfinancial measures in loss-making entities implies a weaker link between earnings and cash compensation.

The next section reviews the prior literature. Section 3 describes our archival data and discusses the main results, additional evidence, and various robustness tests. Section 4 presents additional insights based on our field and survey data. The last section summarizes and concludes.

2. Prior Literature and Hypothesis

It is well established that the emphasis placed on a performance measure for performance evaluation purposes should be greater when other measures are relatively more noisy (Banker and Datar 1989). The em-

phasis on a measure should also be greater if it increases the degree of congruence between firm value and the overall performance indicator of its manager (Datar et al. 2001, Lambert 2001, Baker 2000, Feltham and Xie 1994). Ittner et al. (1997) provide empirical evidence on the relative weights placed on financial and nonfinancial performance measures in CEO bonus contracts that is largely consistent with these theoretical predictions.

A related stream of theoretical work examines dynamic issues related to the choice of performance measures in multi-period agency models. This literature highlights a demand for intertemporal matching between current investment and future returns; i.e., a demand for forward-looking measures capturing how managers' current actions affect future value of the firm (Şabac 2007, Dutta and Reichelstein 2005, 2002). Specifically, Dutta and Reichelstein (2003) argue that, in the absence of a long-term commitment, it is crucial for employment contracts to include some forward-looking measures to generate investment incentives in the current period. Dikolli (2001) shows that the relative emphasis placed on forward-looking performance measures increases as the agent's employment horizon decreases. The intuition is that an agent who is likely to leave in the next period has weak incentives to exert long-term effort (which is costly now and generates benefits in the future) unless this effort can be rewarded with same-period compensation based on forward-looking measures.

Empirically, there is evidence that firm investment responds to the choice of performance measures in executive compensation contracts (e.g., Balachandran 2006). Specifically addressing employment horizon issues, Dechow and Sloan (1991) find that CEOs spend less on R&D during their final years in office while Cheng (2004) shows that stock option grants to CEOs approaching retirement can mitigate opportunistic reductions in R&D spending. Related to these findings, a stream of literature examines whether sensitivity of CEO compensation to stock returns (a forward-looking measure of performance) increases as CEOs approach retirement (Dikolli et al. 2003, Bryan et al. 2000, Yermack 1995, Gibbons and Murphy 1992, Lewellen et al. 1987). The results are mixed possibly because of inefficiencies in how stock-based incentives balance short-term and long-term managerial effort. Some argue that stock compensation itself may be a source of managerial myopia (McAnally et al. 2008, Erickson et al. 2006, Cheng and Warfield

2005) whereas others propose that nonfinancial performance measures can induce a desirable allocation of management effort between the short term and long term more efficiently than the stock price can (Dikolli and Vaysman 2006).

We contribute to this literature by examining how the employment horizon problem affects the emphasis placed on nonfinancial performance measures in executive compensation. Although the forward-looking nature of nonfinancial measures is well recognized (Nagar and Rajan 2005, Sliwka 2002, Banker et al. 2000), there is hardly any empirical evidence on the use of nonfinancial performance measures to mitigate employment horizon issues. As an exception, Farrell et al. (2007) provide experimental evidence that incentive contracts incorporating quality as a performance measure increase long-term efforts and that this effect is stronger for subjects with short employment horizon than for subjects with long employment horizon. Summarizing the foregoing discussion, we predict that:

HYPOTHESIS 1: The emphasis on nonfinancial performance measures is greater in settings where the employment horizon is shorter.

Tests of Hypothesis 1 based on publicly-available data face several empirical challenges related to measurement of the main constructs. The first challenge is that commonly-used proxies for severity of the employment horizon problem based on proximity to normal retirement age may be weaker than previously thought since concerns about post-retirement board service are an important source of CEO performance incentives in the final years before retirement (Brickley et al. 1999). Moreover, the decision of which performance measures to include in incentive contracts is a structural choice unlikely to change from year to year (Jensen and Meckling 1992). Given this persistence in performance measure choices, a test of Hypothesis 1 necessitates a setting where employment horizon issues are also persistent from year to year.

To identify such a setting, we rely on prior literature documenting that CEO turnover is more likely to occur in loss-making than in profitable firms (e.g., Huson et al. 2001) and that it has become increasingly common for firms to report several consecutive losses (Hayn 1995). Further, Joos and Plesko (2005) provide evidence that the longer the consecutive loss sequence the higher the ex ante expected probability of

another loss. Thus, we expect that the likelihood of a voluntary or forced CEO departure is increasing in the number of consecutive loss years. It follows that CEOs in firms with consecutive loss years have a persistently shorter employment horizon than CEOs in highly profitable firms experiencing little turnover (we discuss corroborative evidence in Section 3.4).¹

The second empirical challenge when testing Hypothesis 1 with publicly-available data is that proxies for the emphasis on nonfinancial performance measures hinge on the quality of firms' proxy statement disclosures about the design of executive incentive contracts. Moreover, prior literature suggests that firms use disclosures to strategically manage the perception of their earnings and that the amount and quality of disclosure depends on firm performance (Rogers and Stocken 2005, Miller 2002, Schrand and Walther 2000, Frost 1997). Whereas we are not aware of any study specifically addressing disclosures regarding executive compensation, Li (2006) provides evidence that annual reports of loss-making firms are longer. A plausible explanation is that managers of poorly performing firms are more likely to offer explanations for their poor earnings and blame external factors beyond their control (Hutton et al. 2003, Baginski et al. 2000).

Despite novel features of our archival research design (described in more detail in the next section), any test solely based on publicly-available data is bound to be imperfect. Therefore, we also collect field and survey data (described in Section 4) to corroborate that our results based on archival data are not unduly influenced by imperfect measurement of our main constructs.

¹ The failure to achieve long-term sustainable results can be either due to poor management or due to adverse environmental factors uncontrollable by management. In the former case, the board of directors is likely to replace the CEO, while in the latter case, the CEO is likely to search for an alternative (more rewarding) employment opportunity. Thus, regardless of the cause, firms with consecutive losses are more likely to suffer from employment horizon issues than firms which deliver sufficiently large returns.

3. Archival Data

3.1 Sample Selection

As discussed above, a test of Hypothesis 1 requires a setting where some firms have an ex ante high likelihood of a departure of a key executive (CEO) and, consequently, face an employment horizon problem. In this study, we use the number of consecutive loss years as a proxy for such ex ante likelihood of CEO turnover (Joos and Plesko 2005, Huson et al. 2001).² Therefore, we select loss-making firms with one to five consecutive loss years based on the rationale (which we corroborate empirically) that firms with repeated losses are likely to suffer to an increasing extent from the employment horizon problem. We match these loss-making firms with a sample of clearly profitable firms (with average return on equity greater than 10%). We use highly-profitable firms as the control group based on the rationale that firms with positive but low returns may face similar employment horizon issues as loss-making firms. To corroborate this conjecture, however, we also separately consider profitable firms excluded from our control group; i.e., firms where earnings are greater than zero but possibly below satisfactory levels.

Specifically, in the first stage, we sample from the Compustat population of firms with negative earnings per share (EPS) in 2001, sales over \$10 million, and a loss pattern falling into one of the following: (i) a loss in 2001 and profits in each year 1997-2000 (LOSS1: 405 firms in the population); (ii) losses in 2000-2001 and profits in 1997-1999 (LOSS2: 228 firms); (iii) losses in 1999-2001 and profits in 1997-1998 (LOSS3: 151 firms); (iv) losses in 1998-2001 and a profit in 1997 (LOSS4: 142 firms); and (v) losses in 1997-2001 (LOSS5: 420 firms). We retain all firms in the LOSS3 and LOSS4 groups (151 and

² Prior literature commonly uses three types of earnings thresholds as an indication of underperformance: losses, earnings decreases, and failure to meet analysts' forecasts (DeGeorge et al. 1999, Burgstahler and Dichev 1997). Given that the selection of performance measures for incentive contracts is a structural choice unlikely to change from year to year, we use zero earnings as a threshold because losses tend to be serially correlated and several consecutive loss years may warrant redesigning of incentive contracts. In contrast, prior earnings and analysts' forecasts are "moving targets" and failure to achieve them is not necessarily correlated over time which makes these thresholds less suited for identification of firms suffering from a persistent employment horizon problem.

142 firms, respectively) and randomly select firms in the other groups. After excluding firms with missing 2001 proxy statement information, we obtain a sample of 500 loss-making firms: 92, 93, 100, 85, and 99 firms in the LOSS1-5 groups, respectively. We find that 469 (94%) of the 500 loss-making firms have annual bonus plans. The remaining 6% of firms offer only salary and long-term (typically equity-based) compensation to their CEOs.

In the second stage, we obtain a sample of highly-profitable firms (PROF_H) defined as Compustat firms with sales over \$10 million, positive EPS in each year, and an average ratio of earnings (as in EPS) to shareholder equity during 1997-2001 exceeding 10% (a population of 1,707 firms). We select a random sample of these firms stratified by 3-digit SIC codes to match the industry composition of the loss-making sample of 500 firms. After excluding firms with missing proxy statement information, we obtain a sample of 307 profitable firms out of which 295 (96%) offer their CEOs annual bonuses.

Finally, in the third stage, we sample from the Compustat population of firms with low profitability (PROF_L) defined as the profitable group above except that the average return on equity during 1997-2001 is below 10% (615 firms). We select a random sample of 140 firms stratified by industry. After excluding firms with missing information, we obtain 109 firms with low profitability out of which 105 (96%) offer their CEOs annual bonuses. Thus, the total combined sample consists of 869 firms with annual bonus plans (469 loss-making, 295 highly-profitable firms, and 105 firms with low profits).

We collect data on CEO turnover to verify that loss-making firms with a higher number of consecutive loss years are more likely to experience voluntary or forced departure of executives; i.e., suffer more from the employment horizon problem. As expected, we find that the proportion of firms that experienced CEO turnover at least once during the 1997-2001 period is increasing in the number of consecutive loss years. The proportion (untabulated) is 39% in PROF_H firms, 35% in PROF_L firms, 34% in LOSS1 firms, 49% in LOSS2 firms, 53% in LOSS3 firms, 55% in LOSS4 firms, and 57% in LOSS5 firms (using a two-sample *t*-test with unequal variances we find that the average proportion in profitable firms is significantly lower than the average in loss-making firms; $p < 0.01$).

3.2 Variable Measurement

We construct a proxy for the emphasis on nonfinancial performance measures using public data from firms' proxy statement disclosures.

Emphasis placed on nonfinancial performance measures (NONFIN). We code a dummy variable NONFIN that equals one if the 2001 proxy statement disclosure pertaining to the CEO's annual bonus explicitly mentions at least one of the following: (i) 'nonfinancial' or 'qualitative' measures; (ii) financial and other performance measures (e.g., financial and operational performance); (iii) nonfinancial and 'hard-to-quantify' performance dimensions (such as leadership, recruiting of employees, vision, or work ethic); or (iv) individual performance measures as determinants of CEO compensation. Section 3.6 shows that alternative coding choices do not materially affect our conclusions.

Next, we capture differences in employment horizon by comparing firms with consecutive loss years to a control group of highly-profitable firms as described in the previous section. We also include three additional variables that are likely to correlate with the likelihood of CEO departure in the near future (and thus proxy for employment horizon). For each of the three variables below, most of the data are hand-collected from firms' proxy statements, but whenever available, we use data from Execucomp.

CEO age (AGE). Prior literature commonly uses proximity to normal retirement at age 65 as a proxy for short employment horizon (Brickley et al. 1999, Gibbons and Murphy 1992, Dechow and Sloan 1991). Following this literature, we define AGE as a dummy variable equal to one if the CEO is 60 years of age or older in 2001 (using 62 or 65 as alternative cutoffs does not materially affect the results).

CEO stock ownership (PSHO). Prior studies (Cheng et al. 2005, Chen 2004, Morck et al. 1988) argue that ownership stakes disproportionately increase managerial influence and yield substantial benefits of entrenchment (such as a reduced likelihood of a dismissal). Entrenchment benefits also reduce the likelihood of a voluntary departure because they make an alternative offer from a firm where the CEO does not own stock less attractive. Moreover, a high ownership stake may proxy for accumulated non-vested equity grants the CEO would forgo by leaving the firm. Thus, we expect that higher share ownership by the CEO reduces the likelihood of both voluntary and forced CEO departure. We define PSHO as the log (to

reduce deviations from normality) of the percentage shares owned by the CEO in 2000, i.e., just prior to designing 2001 compensation (whenever available we use Execucomp item SHROWNPC or, if missing, calculate it from SHROWN and SHRSOUT).

CEO as the chairman/founder (CHAIR). Some CEOs have a prominent position within their firms as founders and/or long-time chairmen of the board of directors. These CEOs are more likely than others to stay in their jobs either due to entrenchment or because their talent and expertise are deemed indispensable to the firm. CHAIR equals one if the CEO (i) has been a chairman for 10 or more years in 2001 (using 5 or 15 years as cutoffs does not materially affect the results), or (ii) has been chairman since the IPO (first year of data available on Compustat) taking place 5 to 10 years prior to 2001.

When testing our hypothesis, it is important to control for determinants of performance measurement practices unrelated to employment horizon issues. Ittner et al. (1997) predict and find that several proxies for informativeness of financial performance measures are negatively related to the emphasis on nonfinancial performance measures. We follow Ittner et al. when constructing the following seven informativeness proxies from Compustat data: (i) *financial distress* (FSTRESS), a dummy variable equal to one if the bankruptcy proxy of Ohlson (1980) exceeds its critical value in at least one of the years 1997-2001,³ (ii) *market-to-book* (MTB), the average of market-to-book ratios during 1997-2001; (iii) *R&D-to-sales* (R&DS) ratios averaged over the five years 1997-2001; (iv) *employees-to-sales* (EMPS) ratios averaged over the five years 1997-2001; (v) *value relevance of earnings* (CORR), firm-level correlation between current stock market returns and accounting returns in the previous quarter (changes in EPS scaled by beginning-of-period stock price) estimated using quarterly data from 1997-2001; (vi) *volatility in industry*

³ We set FSTRESS to zero by default for highly-profitable firms and for firms with five consecutive loss years because the Ohlson model does not fully incorporate all past profits/losses. The latter group (LOSS5) largely consists of firms with no or negligible profits since IPO and substantial R&D expenses (the average R&D-to-sales ratio is 0.37 as compared to 0.03 in PROF_H or 0.09 in LOSS4 firms). Thus, we assume LOSS5 are start-ups rather than distressed firms even though the Ohlson model predicts 83% of them to face bankruptcy.

profitability (STDM), a factor score reflecting standard deviation in median industry (defined by 3-digit SIC codes) accounting returns (return on assets, equity, and sales) during 1997-2001; and (vii) *regulation* (REGUL), a dummy variable coded one if firms operate in SIC codes 481, 491, 492, 493, or 494 (telecom or utilities).

Further, we control for the amount of disclosure in the executive compensation section of firms' proxy statements. Poor performance can give rise to lengthy discussions of executive compensation issues which may increase the likelihood of disclosing the use of nonfinancial performance measures. To control for this effect, we calculate DISCLOSE as the log of the number of words in the proxy statement section typically entitled "Report of the Compensation Committee of the Board of Directors on Executive Compensation." Specifically, we rely on the MS Office Word 2003 word count function to count the number of words below the title and above the signature (excluding compensation tables).

Finally, we control for *size* (MSIZE) by taking the log of market value at the end of 2001. We also collect data on *CEO turnover* (TURN) which we use to validate our proxies for short employment horizon. TURN equals one if a firm had a new CEO for most of the year 2001 or 2002 (we use Execucomp data when available and hand-collect turnover data from proxy statements when it is not).

3.3 Descriptive Statistics

Appendix A of the e-companion to this paper reports relevant descriptive data specific to each of the different groups of firms in our sample. We find that 37% (32%) of the firms with high (low) profitability use some type of nonfinancial performance measures in annual CEO bonus plans. For loss-making firms, this percentage increases monotonically with the number of consecutive loss-years: 30%, 31%, 42%, 44%, and 61% in LOSS1-5 firms. Consistent with the evidence presented earlier, the likelihood of CEO turnover in 2001 or 2002 is also much higher on average ($p < 0.01$) in loss-making (26%, 28%, 30%, 24%, 31% in LOSS1-5 firms) than in profitable (15% in PROF_H and 20% in PROF_L) firms.

Not surprisingly, loss-making firms are more likely to experience financial distress and operate in industries with higher volatility of earnings than profitable firms. Also, our profitable firms are larger than the loss-making firms. The median market value (MSIZE) in firms with high (low) profitability is \$950

(\$382) million, while the median market value of our groups of loss-making firms ranges from \$29 to \$133 million. The difference in size arises because we match profitable firms to our sample of loss-making firms by industry classification only. Many industries (at the SIC-3 code level) do not have a sufficient number of firms to allow matching on both industry and size. Therefore, we control for differences in size by including MSIZE (log of market value of equity) in our regressions. Table A8 in Appendix A of the e-companion provides more details on industries (SIC-3 codes) represented with at least 10 observations in our sample (it also includes averages of NONFIN and TURN by industry).

3.4 Predicting CEO Turnover

Our main hypothesis predicts that firms are more likely to use nonfinancial performance measures when their CEO's employment horizon is shorter. As discussed earlier, we use several proxies for short employment horizon: the number of consecutive loss years (LOSS1-5), a dummy variable equal to one for firms where the CEO is 60 or older (AGE), the percentage shares owned by the CEO (PSHO), and a dummy variable equal to one if the CEO has been chairman for 10 or more years (CHAIR). Ultimately, however, the validity of these proxies hinges on their ability to predict CEO turnover.

We expect that all groups of loss-making firms (LOSS1-5) and possibly firms with low profitability (PROFIT_L) have an increased probability of CEO turnover relative to the benchmark in highly-profitable firms (PROF_H). We also expect that CEOs that are over 60 years old in 2001 (AGE) are more likely to retire in 2001 or 2002 than other executives (consistent with this rationale, we code AGE based on the age of the departing CEO when turnover took place in 2001). Following prior literature suggesting that the correlation between CEO age and turnover is weaker in samples of smaller firms or firms experiencing forced turnover (Brickley 2003, Engel et al. 2003), we also include an interaction term AGE · PROF_H to allow the effect of CEO age to vary across highly-profitable and other groups of firms. Finally, we expect that when CEO stock ownership is high (PSHO) or when the CEO is the chairman and/or founder (CHAIR) the probability of turnover is lower. To validate our proxies for short employment horizon, we estimate the following logit model of the probability of CEO turnover in 2001 or 2002:

$$TURN = \gamma_{00} + \gamma_{01}PROF_L + \sum_{j=1}^5 \gamma_j LOSS_j + \gamma_6 AGE + \gamma_7 AGE \cdot PROF_H + \gamma_8 PSHO + \gamma_9 CHAIR + \omega. \quad (1)$$

Error! Reference source not found. presents the results of estimating equation (1) after excluding firms with CEO turnover in 2000 since a model of the likelihood of CEO departure within a year of being appointed is likely to be different from the general model.

Table 1 Logit Estimation of the Likelihood of CEO Turnover

	TURN	
	Coefficient	p-value
Intercept	-2.819 ***	.000
PROF_L	1.402 ***	.002
LOSS1	1.625 ***	.001
LOSS2	1.822 ***	.000
LOSS3	2.273 ***	.000
LOSS4	1.831 ***	.000
LOSS5	2.475 ***	.000
AGE	0.605 **	.022
AGE · PROF_H	1.689 ***	.001
PSHO	-0.223 ***	.000
CHAIR	-1.143 ***	.001
Pseudo R ²		.12
Correctly classified		78%
N		691

***, **, * indicates significance at the 0.01, 0.05, and 0.10 level (two-tailed).

TURN—CEO turnover in 2001 or 2002; PROF_L—firms profitable during 1997–2001 with average return on equity lower than 10%; LOSS1-5—loss-making firms with one to five consecutive loss years; AGE—dummy variable for firms where CEO’s age is 60 years or greater; PSHO—log of the percentage of shares owned by the CEO at the beginning of 2001; CHAIR—dummy variable for firms where the CEO has also been a chairman for 10 or more years.

We find strong evidence that our empirical proxies for employment horizon are associated with CEO turnover. Specifically, firms with low profitability and all groups of loss-making firms are significantly more likely to experience turnover than highly-profitable firms ($p < 0.01$). Our results show that the estimated coefficients increase monotonically with the number of consecutive loss years (except for LOSS4 firms). Other proxies for short employment horizon also have a significant effect in the predicted direction. AGE is positively associated with CEO turnover and this association is stronger in highly-profitable firms as suggested by prior literature ($p < 0.01$ for highly-profitable firms and $p = 0.02$ for all other firms). A greater percentage shares owned by a CEO decreases the probability of turnover ($p < 0.01$) and so does the fact that a CEO has been the long-time chairman ($p < 0.01$).

We use these estimation results to calculate the predicted probability of CEO turnover (PR_TURN), which we then use as an aggregate proxy for short employment horizon. High PR_TURN implies a greater concern about the CEO leaving the firm in the near future, which gives rise to employment horizon issues. Hypothesis 1 predicts that PR_TURN is positively associated with the use of nonfinancial performance measures.

3.5 The Use of Nonfinancial Performance Measures

We specify a logit model of the probability that a firm uses nonfinancial performance measures in 2001 (NONFIN) as a function of (i) the probability that the CEO leaves the firm in the near future (PR_TURN), (ii) several proxies for informativeness of financial performance measures described earlier, (iii) a control variable for the amount of disclosure regarding executive compensation (DISCLOSE), and (iv) size as measured by the log of the market value at the end of 2001 (MSIZE):

$$NONFIN = \beta_0 + \beta_1 PR_TURN + \beta_2 FSTRESS + \beta_3 MTB + \beta_4 R \& DS + \beta_5 EMPS + \beta_6 CORR + \beta_7 STDM + \beta_8 REGUL + \beta_9 DISCLOSE + \beta_{10} MSIZE + \varepsilon. \quad (2)$$

Table 2 presents the results of estimating equation (2) after excluding firms with CEO turnover in 2000 or 2001 because performance measures and incentive arrangements for CEOs in the first or last year on the job are unlikely to be representative.

Table 2 Logit Estimation of the Likelihood of Using Nonfinancial Performance Measures in Annual Bonus Plans

	NONFIN	
	Coefficient	p-value
Intercept	-3.491 **	.012
PR_TURN	1.490 **	.037
FSTRESS	-0.515 **	.048
MTB	0.002	.956
R&DS	3.751 ***	.000
EMPS	-12.276	.359
CORR	-1.231 **	.034
STDM	0.244 **	.017
REGUL	1.114 *	.099
DISCLOSE	0.386 *	.068
MSIZE	0.028	.580
Pseudo R ²		.11
Correctly classified		68%
N		555

***, **, * indicates significance at the 0.01, 0.05, and 0.10 level (two-tailed). Industry dummies (3-digit SIC codes) used in a stepwise estimation procedure; SIC-382 and SIC-386 retained as the only significant effects but not reported above.

NONFIN—dummy variable for the use of nonfinancial performance measures in CEO 2001 bonus plan; PR_TURN—predicted values (probabilities) of CEO turnover based on coefficients in Table 1; FSTRESS—dummy variable for financial-distress firms; MTB—market-to-book ratio (averaged over 1997-2001); R&DS—research and development expenses divided by sales (averaged); EMPS—number of employees divided by sales (averaged); CORR—correlation between stock returns and prior quarter accounting returns; STDM—volatility in median industry profitability (factor score); REGUL—regulated industries (SIC-3: 481, 491, 492, 493, 494); DISCLOSE—log of the number of words in the proxy statement discussion of executive compensation; MSIZE—log of the market value of the firm (\$ millions).

Consistent with our hypothesis, we find that the probability of CEO departure in the near future (PR_TURN) is significantly positively associated with the use of nonfinancial performance measures in annual bonus plans ($p = 0.04$). In other words, firms with a higher predicted probability of CEO turnover due to several consecutive years of losses and/or the CEO approaching retirement or having less power over the board are more likely to disclose in their proxy statements that their CEO's short-term incentive plan includes nonfinancial measures of performance. This result holds even after controlling for informativeness of financial performance measures and the amount of disclosure regarding executive compensation.

Specifically, five of our seven proxies for informativeness of financial performance measures have significant predictive power. Consistent with Ittner et al. (1997), we find that nonfinancial performance measures are more prevalent in firms where the R&D-to-sales ratio is high ($p < 0.01$), where the correlation between stock returns and EPS (CORR) is low ($p = 0.03$), or where volatility in median industry profitability (STDM) is high ($p = 0.02$). In addition, we find that firms in financial distress are less likely to use nonfinancial performance measures ($p = 0.05$).⁴ This latter result is consistent with a prediction of Ittner et al. which, however, lacks empirical support in their study. We do not find a significant effect of the market-to-book ratio, a proxy for growth strategy, possibly due to the difficulty of calculating MTB in loss-making firms (some of which have negative book values). The insignificant result regarding the employees-to-sales ratio may be due to the fact that EMPS may proxy both for firm strategy and for inefficiencies (the latter effect possibly being more important in our sample). We do find that firms in regulated industries are more likely to use nonfinancial performance measures ($p = 0.10$). Finally, we find some evidence that the length of the proxy statement discussion on executive compensation is positively asso-

⁴ This result is sensitive to the type of proxy we use for financial distress. The result in Table 2 relies on the Ohlson (1980) measure of bankruptcy as used in Ittner et al. (1997). We do not find a significant result when using proxies based on Altman (1968), revised Altman scores as in Begley et al. (1996), or market-based measures as in Hillegeist et al. (2004). Nevertheless, the evidence in Begley et al. supports the use of the Ohlson's model as the preferred measure of bankruptcy.

ciated ($p = 0.07$) with our proxy for the use of nonfinancial performance measures (we examine the determinants of DISCLOSE in more detail in the next section).

An alternative way to specify a model of the probability of using nonfinancial performance measures is to directly include all of our proxies for short employment horizon (instead of aggregating them in PR_TURN). While this approach exploits all the variation in the proxies regardless of whether they are empirically related to future CEO turnover, it allows us to estimate a less restrictive version of the model in (2). In this spirit, we include not only group-specific intercepts for different groups of profitable and loss-making firms but also allow the slope coefficients of our employment horizon proxies to be different in highly-profitable firms (allowing these coefficients to further vary across different groups of loss-making firms does not significantly improve fit of the model). Thus, we also estimate the following model:

$$\begin{aligned}
 NONFIN = & \lambda_0 + \lambda_{01}PROF_L + \sum_{j=1}^5 \lambda_j LOSS_j + \lambda_6 AGE + \lambda_7 AGE \cdot PROF_H + \\
 & + \lambda_8 PSHO + \lambda_9 PSHO \cdot PROF_H + \lambda_{10} CHAIR + \lambda_{11} CHAIR \cdot PROF_H + \\
 & + \lambda_{12} FSTRESS + \lambda_{13} MTB + \lambda_{14} R \& DS + \lambda_{15} EMPS + \lambda_{16} CORR + \lambda_{17} STDM + \\
 & + \lambda_{18} REGUL + \lambda_{19} DISCLOSE + \lambda_{20} MSIZE + \psi.
 \end{aligned} \tag{3}$$

Table 3 Logit Estimation of the Likelihood of Using Nonfinancial Performance Measures in Annual Bonus Plans

	NONFIN		NONFIN	
	Coefficient	p-value	Coefficient	p-value
Intercept	-2.997 **	.042	-2.568 *	.099
PROF_L	0.013	.972	-0.020	.959
LOSS1	0.315	.462	0.373	.403
LOSS2	0.333	.453	0.427	.350
LOSS3	1.400 ***	.002	1.544 ***	.001
LOSS4	1.568 ***	.001	1.801 ***	.000
LOSS5	0.899 **	.047		
AGE	0.104	.740	0.256	.443
AGE · PROF_H	-0.284	.523	-0.436	.342
PSHO	-0.167 *	.055	-0.203 **	.031
PSHO · PROF_H	0.104	.381	0.157	.208
CHAIR	0.095	.774	0.109	.770
CHAIR · PROF_H	0.329	.576	0.333	.588
FSTRESS	-0.921 ***	.007	-0.892 **	.012
MTB	0.002	.944	-0.034	.345
R&DS	1.956 ***	.008	0.617	.634
EMPS	-4.120	.529	-19.480	.185
CORR	-1.059 *	.072	-1.782 ***	.008
STDM	0.186 *	.075	0.221 *	.053
REGUL	0.843	.227	-0.009	.992
DISCLOSE	0.252	.244	0.188	.414
MSIZE	0.108 *	.082	0.164 **	.016
Pseudo R ²		.12		.12
Correctly classified		67%		68%
N		558		500

***, **, * indicates significance at the 0.01, 0.05, and 0.10 level (two-tailed). Industry dummies (3-digit SIC codes) used in a stepwise estimation procedure; SIC-382 and SIC-386 retained as the only significant effects but not reported above.

PROF_H—highly profitable firms. Other variables defined as in prior tables.

Table 3 shows the results of estimating equation (3) in the whole sample and also in a sample excluding firms with five consecutive loss years. We present the latter set of estimates as a robustness check because they are not affected by our assumption that LOSS5 firms are start-ups rather than distressed firms (as discussed in footnote 3, these firms have very high R&D-to-sales ratios and we set our financial distress indicator variable to zero for them).

Overall, the results are consistent with our theory. Incidental losses do not necessarily increase the likelihood of incorporating nonfinancial performance measures in annual bonuses. LOSS1 and LOSS2 firms who incur a loss for the first or second time after a series of profitable years are not more likely to use nonfinancial performance measures than profitable firms. However, firms where losses are structural rather than incidental tend to adjust their incentive plans and include nonfinancial performance measures. In particular, firms with at least two prior losses before another loss in 2001 are much more likely to use nonfinancial performance measures than (highly) profitable firms (LOSS3, $p < 0.01$; LOSS4, $p < 0.01$; LOSS5, $p = 0.05$). This is consistent with prior literature suggesting that the number of consecutive loss years is associated with a high likelihood of future losses (Joos and Plesko 2005) and our research design

choice to use such ex ante high likelihood of losses as a proxy for short employment horizon.

Among other proxies for employment horizon, only percentage shares owned by the CEO is significantly related to the use of nonfinancial performance measures. As predicted, PSHO, which reduces the likelihood of CEO turnover and thus increases employment horizon, is negatively associated with the use of nonfinancial performance measures ($p = 0.06$, and $p = 0.03$ in the whole and reduced estimation samples, respectively). Interestingly, the effect of PSHO is not significant in highly-profitable firms where entrenchment benefits of share ownership may be less important. We do not find a significant effect of CEO age and CEO being longtime chairman in neither highly-profitable nor other types of firms.

Other major determinants of NONFIN in equation (3) are largely consistent with our results in Table 2. As before, firm size and several of our proxies for informativeness of financial performance measures are significantly associated with the use of nonfinancial performance measures. It is noteworthy that the strong association between NONFIN and R&D-to-sales ratios is driven by start-up (LOSS5) firms and is not significant after excluding them from the sample. Also, unlike the results in Table 2, we no longer find that length of proxy statement disclosures (DISCLOSE) is significantly associated with our proxy for the use of nonfinancial performance measures.

To assess economic significance and to facilitate interpretation of the coefficients from equation (3), we use the coefficient estimates in

Table 3 to calculate predicted probabilities of using nonfinancial performance measures across different types of loss-making and profitable firms (controlling for all the other effects). These predicted probabilities (untabulated) suggest that 32% of highly-profitable firms and 33% of firms with low profitability use some nonfinancial performance measures. This proportion is 40%, 40%, 66%, 70%, and 54% in LOSS1-5 firms, respectively (the predicted probability in LOSS5 firms is biased downward since we hold R&DS constant across all groups of firms). Financial distress lowers these predicted probabilities by 16-22%.

3.6 Additional Evidence and Robustness Tests

Our analysis has focused so far on the choice of performance measures in short-term incentive plans. The results suggest that firms where the CEO is likely to depart in the near future are also more likely to rely on nonfinancial performance measures when determining the CEO's annual bonus. However, these firms can address employment horizon issues and motivate long-term effort not only by increasing the emphasis on nonfinancial performance measures but possibly also by increasing the emphasis on stock-based compensation. Prior literature questions the efficiency of stock-based compensation in alleviating managerial myopia (McAnally et al. 2008, Erickson et al. 2006, Cheng and Warfield 2005), nevertheless, we assess whether our results are robust to controlling for the importance of stock-based compensation. In particular, we reestimate our results in the previous section controlling for the relative proportion of equity in CEOs' total compensation and find our results qualitatively unchanged.⁵

⁵ We define the proportion of equity in total compensation as the sum of restricted stock granted and the aggregate value of all options granted during 2001 as reported in the proxy statement (item SOPTVAL in Execucomp whenever available) divided by the sum of total compensation including (in addition to equity compensation in the numerator) salary, bonus, long-term incentives, other annual compensation, and the amount under "all other compensation" in firms' proxy statements.

Further, we recognize that NONFIN is an imperfect measure likely reflecting not only the emphasis on nonfinancial performance measures but also firms' choice of the detail of disclosure regarding executive compensation. To control for this effect, we collect data on the length (number of words) of proxy statement discussions of executive compensation (DISCLOSE) and include it in our regression models in the previous section. We find evidence of a weak association between NONFIN and DISCLOSE. To further assess potential biases due to varying levels of disclosures, we also investigate in this section whether our groups of loss-making firms are likely to disclose systematically more about executive compensation than profitable firms.

We are aware of no prior study specifically examining the determinants of the length of proxy statement discussions of executive compensation. Without the guidance of prior literature, we specify a model of DISCLOSE similar to those estimated earlier and include proxies for (i) employment horizon, (ii) informativeness of financial performance measures, (iii) firm size, and (iv) the use of equity in CEO compensation packages in 2001.

Table 4 presents the estimation results after removing some informativeness variables with no significant effect (given the lack of theoretical motivation this improves parsimony and transparency of our final model). For ease of interpretation, the dependent variable in

Table 4 is the raw (unlogged) number of words in the proxy statement discussion of executive compensation (the results are similar when DISCLOSE is log-transformed as before).

Table 4 OLS Model of the Length of the Proxy Statement Discussion of Executive Compensation

	DISCLOSE	
	Coefficient	p-value
Intercept	576.3 ***	.000
PROF_L	2.3	.969
LOSS1	100.3	.144
LOSS2	-24.6	.740
LOSS3	108.2	.162
LOSS4	-30.5	.705
LOSS5	209.3 ***	.001
AGE	77.5 *	.059
PSHO	-61.8 ***	.000
CHAIR	31.4	.527
FSTRESS	142.5 **	.011
REGUL	234.6 *	.086
EQUITY	44.0	.263
MSIZE	65.6 ***	.000
Adj. R ²		.23
N		572

***, **, * indicates significance at the 0.01, 0.05, and 0.10 level (two-tailed).

DISCLOSE—number of words in the proxy statement discussion of executive compensation; EQUITY—dummy variable equal to one if CEO receives equity compensation. Other variables defined as in prior tables.

We find that compensation disclosures in start-up firms (LOSS5) are more detailed than in (highly) profitable firms. The difference is 209 words and is highly significant ($p < 0.01$). LOSS1 and LOSS3 also disclose somewhat more than highly profitable firms—the difference is 100 words, $p < 0.14$, and 108 words, $p < 0.16$, respectively. In light of these results, it is unlikely that our finding in

Table 4 that LOSS3 and LOSS4 use nonfinancial performance measures more than profitable firms is primarily driven by the length of disclosures. For LOSS5 firms, the results in Table 4 hold after controlling for DISCLOSE, which suggests that the result is robust to measurement biases arising because the use of nonfinancial performance measures is easier to detect in more detailed disclosures.

We further find that disclosures are more detailed when firms face financial distress (by about 143 words, $p = 0.01$), when CEOs approach retirement (by 78 words, $p = 0.06$), and when firms operate in regulated industries (by 235 words, $p = 0.09$). The remaining two (highly significant) predictors are firm size, which is positively associated with disclosure, and percentage shares owned by the CEO, which is negatively associated with disclosure. Although outside the scope of this paper, the latter effect may reflect that entrenched CEOs are shielded from pressures to disclose more about their compensation.

Finally, we assess robustness of our results to alternative coding of NONFIN. We consider two narrower definitions of the use of nonfinancial performance measures and re-estimate the results from the previous section. First, we reclassify all firms using individual performance measures as observations with NONFIN equal zero rather than one (as an alternative, we also exclude these observations). Second, we

consider a narrow definition of NONFIN equaling one only if firms report the use of “nonfinancial” or “qualitative” measures or give an example of a performance measure that can unambiguously be classified as nonfinancial (we also consider excluding observations that do not meet this narrow definition). Our main finding that short employment horizon is associated with a greater use of nonfinancial performance measures continues to hold when using these alternative measures.

Overall, the evidence above alleviates concerns that our results are driven by measurement issues inherent in examining the use of nonfinancial performance measures based on publicly-available data. However, we acknowledge that NONFIN remains an imperfect measure. In particular, firms that use nonfinancial performance measures for determining CEO bonuses may put a large or small weight on these measures, which is typically not disclosed, and thus is not captured by NONFIN. To address this limitation, the next section presents the results of tests using more detailed measures of the emphasis on nonfinancial performance measures albeit in a smaller sample.

4. Field and Survey Data

Our analysis in the previous section relies on publicly-available data. Its main advantage is the large random sample of firms with different patterns of losses (profits). Inevitably, this comes at a cost of a less comprehensive measurement of the extent to which different firms rely on nonfinancial measures for performance evaluation. We examine to what extent this potential shortcoming affects our conclusions by collecting additional field and survey data. Even though this additional data sample is small and non-random, it allows us to triangulate the main findings by employing different data collection methods.

4.1 Data Collection

4.1.1 Field Data

We started by conducting field interviews in 12 loss-making entities purposely chosen to be highly diverse.⁶ The aim of these exploratory interviews was to improve our understanding of performance measurement issues in loss-making entities and to facilitate the design of a questionnaire for the survey stage of our research. We relied on the following insights from the field when constructing our measures for the main variables of interest:

First, we found that loss-making entities can emphasize nonfinancial performance measures in three different ways: (i) by placing more weight on nonfinancial measures in overall evaluations; (ii) by placing more weight on nonfinancial measures in bonus plan formulas; and (iii) by evaluating performance subjectively. This distinction reflects that annual bonuses are not the only performance-dependent rewards given, and the weights on performance measures included in annual bonus plan formulas are sometimes quite different from those used in the overall evaluation of managers' performances and in the assignments of other forms of rewards. The distinction also reflects that managers can leave the weights in performance evaluation formulas unchanged but increase the emphasis on subjective evaluation (e.g., *Site 3* in Appendix B) which typically implies consideration of a wide range of factors (Gibbs et al. 2004).

Second, our field interviews helped us identify entities where managers' employment horizon is likely to be short. In particular, we found that loss-making entities *expecting losses* (i.e., entities where losses are likely to persist) tend to rely on nonfinancial performance measures more than loss-making entities *expecting profits* (i.e., entities that have been loss-making but expect to turn profitable in the foreseeable future). This is consistent with our theory since returning to profitability should reduce the likelihood of managerial turnover and alleviate the employment horizon problem. In the words of a Director of Com-

⁶ Seven of these entities were loss-making firms and five were loss-making divisions. They varied significantly in size, age, ownership (public versus private), and industry. Appendix B in the e-companion to this paper contains additional information and detailed descriptions of eight of the most interesting loss situations.

compensation we interviewed (*Site 6*): “When a loss is more ‘structural,’ as opposed to ‘transitory,’ I would reverse the order of incentive system priority; that is, I would place retention before motivation, and I would be sure to find ways to keep the long-term focus.” Similar retention concerns were mentioned in six of the eight sites in Appendix B, and assigning incentives subjectively or linking them to (forward-looking) nonfinancial performance measures “to keep the long-term focus” was identified as a remedy. This suggests that the importance of retention concerns could serve as another proxy for the severity of employment horizon issues.

Third, we identified several empirical proxies for informativeness of earnings and verified that they relate to the emphasis on nonfinancial performance measures as expected. In particular, we found that the emphasis on nonfinancial measures is higher when earnings are more noisy; that is, when they are adversely affected by uncontrollable events (*Site 3*), when performance targets are inaccurate (*Site 6*), or when poor information systems produce unreliable measures (*Site 8*). On the other hand, earnings are emphasized in entities where profit urgency is high (e.g., due to a struggle to survive or the need to finance long-term growth) and, thus, where earnings are viewed as informative of the needed profit-enhancing actions by management (*Sites 2 and 7*).

4.1.2 Survey Data

In March 2005, we invited business school graduates of the Universities of Michigan and Southern California with a minimum of five years experience to participate in an online survey. Our initial email message stated that we sought participants informed about performance measurement and incentives of CEOs/managers of entities reporting losses in the prior three years. To have a control group, we also invited those informed about performance measurement and incentives of CEOs/managers in profitable entities to participate. We excluded respondents from (i) small entities defined as entities with sales lower than \$10 million and fewer than 50 employees, and (ii) owner-managed or professional firms (e.g., accounting or consulting firms). After further excluding responses with missing values, we obtained our final sample of 141 entities, which is 33% of the number of respondents who were sent a link to our online survey. Our final sample consists of 74 loss-making and 67 profitable entities. About 60% of our

sample consists of firm-level entities; the other 40% are divisions within firms. About 23% of the respondents are CEOs or general managers, 16% are CFOs or division controllers, 28% are corporate controllers, vice presidents, or directors and the remaining 33% include other respondents such as finance and human resource managers.

4.2 Variable Measurement

4.2.1 Emphasis on Nonfinancial Performance Measures

Our field study suggests that loss-making entities can emphasize nonfinancial performance measures in at least three different ways: (i) by placing more weight on nonfinancial measures in overall evaluations, (ii) by placing more weight on nonfinancial measures in bonus plan formulas, and (iii) by evaluating performance subjectively. Below, we describe how we measure each of these different manifestations of the emphasis on nonfinancial performance measures:

Weight on nonfinancial measures in overall evaluations (NONFIN_OV). We asked the respondents to ascribe relative weights (0-100%) to the following performance measures in overall performance evaluations (Question 1 in Appendix C of the e-companion): bottom-line financial; other financial; nonfinancial; individual (e.g., leadership skills, ability to attract and retain key personnel); and other performance measures. NONFIN_OV is the weight on nonfinancial and individual performance measures.

Weight on nonfinancial measures in bonus plan formulas (NONFIN_B). Question 2 lists the same performance measures as in NONFIN_OV; however, it specifically asks about 2004 bonuses as a percentage of salary earned for performance as measured by each of the items. NONFIN_B is the weight on nonfinancial and individual performance measures in bonus plans.⁷

⁷ NONFIN_B includes higher-level performance measures as an additional item because bonus plan formulas of division managers sometimes include measures of business group or firm performance. These are not included in NONFIN_OV which relates to executive rather than firm performance. To allow for comparability of firm-level and division entities, we recalculate the relative weights in divisions so that they sum up to 100% when higher-level measures are excluded. NONFIN_B is the (recalculated) weight on nonfinancial and individual performance measures in bonus plans.

Extent to which performance is evaluated subjectively (SUBJECT). Question 3 measures SUBJECT from the respondents' indication of the extent to which the evaluators relied on subjective evaluations as opposed to a formulaic performance evaluation approach (0-100%).

4.2.2 Employment Horizon

Our field study observation also helped us to identify entities where managers' employment horizon is likely to be short: (i) loss-making entities expecting losses to persist; and (ii) entities concerned about retention of their managers. Thus, we use the following empirical measures as proxies for short employment horizon:

Types of loss-making entities. Questions 4 asked respondents to classify their entity as either a loss-making start-up entity, other loss-making entity, or a profitable entity.⁸ In addition, respondents indicated using dummy variables whether their entity reported profits/losses in each of the years 2001-2004 and whether they expected a profit or loss in 2005. They also reported actual and budgeted earnings for 2004 and budgeted earnings for 2005.

If respondents describe their entity as a loss-making start-up business, we code a dummy variable LOSS_ST equal to one. If they describe their entity as a non-start-up loss-making business, we code LOSS_EL or LOSS_EP dummy variables equal to one depending on expectations about future earnings at the beginning of 2004 (that is, at the time when entities designed their incentive schemes as measured in Questions 1-3). Loss-making entities expecting profits (LOSS_EP) had at least two losses during 2001-2003 but turned profitable after that (actual and budgeted earnings in 2004 and budgeted earnings in 2005 were all positive). In contrast, loss-making entities expecting losses (LOSS_EL) reported actual or budgeted losses in 2004 and 2005. Finally, our control group (PROF equals one) includes entities described as profitable with actual and budgeted profits both in 2004 and 2005. Thus, we categorize our sample ent-

⁸ Question 4 includes six categories, two for each of the three main groups. Due to limited sample size, however, we classify our sample entities into four groups only (start-up entities, loss-making entities expecting losses, loss-making entities expecting profits, and profitable entities).

ities into mutually-exclusive categories represented by the dummy variables LOSS_ST, LOSS_EL, LOSS_EP, and PROF.

Retention concerns (RETAIN). Respondents estimated the relative importance (0-100%) of motivation and retention in the design of CEO's or general manager's incentive compensation for 2004 (Question 5). RETAIN is the weight on retention.

4.2.3 Control Variables

When testing Hypothesis 1, we need to control for congruence and noise in earnings and for other potentially confounding factors. Based on prior literature and our field observations, we control for congruence of earnings using a proxy for profit urgency which reflects the perceived pressure within an entity to deliver short-term profits (Ittner et al. 1997, Gilson and Vetsuypens 1993). Further, we use multiple measures to proxy for noise in earnings—the presence of adverse uncontrollable factors, ex ante environmental uncertainty, and quality of the information systems (inversely related to noise), all of which we identified as important factors in the field phase of our study.

Profit urgency (URGENT). Respondents indicated on two 1-5 Likert scales the extent to which they agreed that “the entity has adequate (access to) capital for the near term” and “the entity faces strong pressures to earn short-term profits” (Question 6). Because each of these two items likely identifies settings where short-term financial performance measures are crucial for survival and because both items are not significantly correlated, we code URGENT as a dummy variable equal to one if respondents “strongly disagree” with the former statement or “strongly agree” with the latter, thereby capturing that strong (dis)agreement with at least one of these items is indicative of profit urgency.⁹

Adverse uncontrollable factors (UNCONTR). We measure the presence of adverse uncontrollable factors in an entity's environment based on self-reported (0-100%) measures of executive performance and entity performance (Question 7). We assume that whenever executive performance is much better than

⁹ We note, however, that including “(dis)agree” rather than just “strongly (dis)agree” significantly weakens the explanatory power of URGENT in our regression models.

entity performance, it must be because entity performance was adversely affected by some uncontrollable factors. Thus, we code UNCONTR as a dummy variable equal to one if executive performance is greater than entity performance by 40% or more (other cutoffs yield similar results).

Environmental uncertainty. We measure ex ante environmental uncertainty with six 1-5 Likert scales (Question 8). Exploratory factor analysis of the six items revealed three underlying factors with the highest loadings on: (i) ETARGET, two items about accuracy of demand forecasts and ability to set meaningful annual performance targets; (ii) ECOMP, two items about competition for main products and predictability of competitors' actions; and (iii) ETECH, two items about the frequency of new product introductions and the degree of technological change.

Quality of information systems (ISYS). Respondents indicated on a 1-5 Likert scale the extent to which they agreed that "the entity's information systems are effective" (Question 9). High ISYS scores indicate agreement.

Finally, we also use two other variables to control for other potentially confounding factors: the natural logarithm of the number of employees (SIZE) and a dummy variable (PUBLIC) indicating whether an entity (or the firm the entity belongs to) is publicly listed.

4.3 Descriptive Statistics

The final sample of entities participating in our survey consists of 74 loss-making and 67 profitable entities. Among the loss-making entities, there are 48 loss-making entities expecting losses, 13 loss-making entities expecting profits, and 13 loss-making start-up entities. The performance measurement and evaluation practices in our sample entities are highly varied. Combining all loss-making entities, the average weight on nonfinancial performance measures is 38% in overall evaluations and 28% in bonus plan formulas; the average extent to which performance evaluation is subjective is 58% (Appendix A provides more details). The averages in profitable entities are lower: 29% on nonfinancial performance measures in

overall evaluations, 21% in bonus plan formulas, and 37% of performance evaluation is subjective.¹⁰

The median number of employees ranges from 80 in start-up entities to 400, 450, and 600 in profitable, LOSS_EL, and LOSS_EL entities, respectively. Some of the most salient differences pertain to profit urgency, the presence of adverse uncontrollable factors, and the importance of retention concerns, all of which are considerably lower in profitable entities.

4.4 Results

As discussed before, firms dealing with employment horizon issues can motivate long-term effort and emphasize nonfinancial aspects of performance in different ways. Our questionnaire survey takes that into consideration and collects detailed information on performance measurement practices in profitable and loss-making entities. Specifically, we examine how much weight our sample entities put on (i) nonfinancial performance measures in overall evaluations (NONFIN_OV), (ii) nonfinancial performance measures in annual bonus plans (NONFIN_B), and (iii) subjective (not formula-based) evaluations (SUBJECT). We regress these three dependent variables on our proxies for short employment horizon, proxies for informativeness of financial performance measures, and controls for size and public listing:

$$\begin{aligned} \text{NONFIN}_i = & \theta_0 + \theta_1 \text{LOSS_EP} + \theta_2 \text{LOSS_EL} + \theta_3 \text{LOSS_ST} + \theta_4 \text{RETAIN} \\ & + \theta_5 \text{URGENT} + \theta_6 \text{UNCONTROL} + \theta_7 \text{ETARGET} + \theta_8 \text{ECOMP} + \theta_9 \text{ETECH} + \theta_{10} \text{ISYS} \quad (5) \\ & + \theta_{11} \text{PUBLIC} + \theta_{12} \text{SIZE} + \zeta. \end{aligned}$$

where NONFIN_i stands for NONFIN_OV, NONFIN_B, or SUBJECT. θ_0 (θ_1) represents the intercept for entities expecting to be profitable in the future that are currently profitable (loss-making). θ_2 and θ_3 are intercepts specific to loss-making entities expecting losses to persist and to start-up entities, where we expect greater CEO turnover and shorter employment horizons (based on our findings in **Error! Refer-**

¹⁰ Untabulated correlations calculated for the total sample of 141 entities show that the weight on nonfinancial performance measures in overall evaluations is positively correlated with the weight on these measures in bonus plan formulas ($r = 0.69$; $p < 0.01$) and with the extent to which performance evaluation is subjective ($r = 0.36$; $p < 0.01$). The latter two variables are also significantly correlated ($r = 0.26$; $p = 0.01$).

ence source not found.; our survey dataset does not contain turnover data to directly validate this). RETAIN reflects the relative importance of retention in the design of incentive compensation and serves as another proxy for short employment horizon. Thus, our main hypothesis predicts that θ_2 , θ_3 , and θ_4 are significantly greater than zero.

Table 5 Tobit Models of the Weight on Nonfinancial Performance Measures as Reflected in Different Performance Evaluation Practices

	NONFIN_OV		NONFIN_B		SUBJECT	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Intercept	9.997	.386	-34.754	.186	67.829 ***	.000
LOSS_EP	6.147	.247	-1.003	.930	-3.786	.671
LOSS_EL	10.295 **	.023	22.358 **	.046	15.144 *	.053
LOSS_ST	16.355 **	.028	29.383 *	.100	10.103	.381
RETAIN	0.212 ***	.008	0.317 *	.070	0.222 *	.092
URGENT	-11.295 ***	.005	-33.993 ***	.002	7.993	.259
UNCONTROL	11.734 **	.038	27.861 *	.084	7.909	.457
ETARGET	0.851	.652	2.474	.558	-7.433 **	.022
ECOMP	-1.629	.287	-1.623	.618	-5.441 *	.068
ETECH	0.328	.857	-2.787	.507	1.594	.639
ISYS	3.257 *	.080	8.054 **	.028	-3.419	.293
PUBLIC	2.017	.599	15.568 *	.082	-23.275 ***	.000
SIZE	-0.063	.947	0.238	.921	-1.833	.213
σ	19.648	.000	32.780	.000	30.805	.000
Pseudo R ²		.03		.05		.04
N		122		89		122

***, **, * denote significance at the 0.01, 0.05, and 0.10 level (two-tailed), respectively.

NONFIN_OV—weight on nonfinancial performance measures in overall evaluations; NONFIN_B—weight on nonfinancial performance measures in bonus plan formulas; SUBJECT—the extent to which performance is evaluated subjectively; LOSS_EP—dummy variable for loss-making entities expecting profits both in 2004 and 2005; LOSS_EL—dummy variable for entities expecting losses in 2004 or 2005; LOSS_ST—dummy variable for loss-making start-up entities. Other variables defined in Section 4.2.

Table 5 presents the results of estimating equation (5). Overall, we find support for our main hypothesis. In most cases, our proxies for short employment are positively associated with the reliance on nonfinancial measures and subjectivity in performance evaluations. Specifically, the weight on nonfinancial performance measures in overall evaluations in loss-making entities expecting losses and in start-up entities is greater than in profitable entities ($p = 0.02$ and $p = 0.03$, respectively). The weight is also increasing in the importance of retention concerns ($p = 0.01$). We obtain similar results for the weight on nonfinancial performance measures in annual bonus plans and for subjectivity in performance evaluations (except that start-up entities are not significantly different from profitable entities regarding subjectivity). Finally, we note that loss-making entities that expect to turn profitable are not significantly different from profitable entities in any of the three regressions. This is consistent with our field study observation that the emphasis on nonfinancial performance measures is driven more by expected rather than actual earnings.

We also find partial support for the standard hypothesis that informativeness of financial performance measures is inversely proportional to the weight on other measures. Profit urgency, the absence of adverse uncontrollable factors, and target accuracy (all of which proxy for informativeness of financial performance measures) are negatively associated with the weight on nonfinancial performance measures in at least one of the regressions. Other results worth noting include the positive association between the weight on nonfinancial performance measures and the quality of information systems and the negative association between reliance on subjective evaluations and competitive business environment.

5. Summary and Conclusions

Our study collects field, survey, and archival data to examine how employment horizon issues affect the choice of performance measures in incentive contracts. We focus in particular on entities with persistent losses where managers are likely to voluntarily or forcibly depart in the near future. Relying on prior theoretical literature, we predict that entities where managerial employment horizon is short are more likely to emphasize forward-looking, nonfinancial performance measures. This is because an increased

emphasis on nonfinancial performance measures encourages long-term effort and reduces the incentive of managers to myopically maximize short-term financial results before leaving the firm.

Our data from different sources consistently support the main hypothesis. First, we find that our aggregate proxy for short employment horizon (based on an empirical model of the likelihood of CEO departure) is positively associated with the use of nonfinancial performance measures in annual bonus plans of 555 firms (Table 2). Further results in

Table 3 show that nonfinancial performance measures are particularly common in loss-making firms with more than two consecutive losses where the CEO owns little stock (making turnover more likely). Second, we find that short employment horizon is significantly positively associated with three different proxies for high emphasis on nonfinancial performance measures in our survey sample of 141 loss-making and profitable entities. In particular, loss-making entities expecting losses to persist and entities concerned about retention of their executives put greater weight on nonfinancial performance measures in overall evaluations, in bonus plan formulas, and also tend to evaluate performance in a more subjective manner. Overall, these findings provide robust support for the theory that the contracting value of forward-looking measures increases as managers' employment horizon becomes shorter.

Our analysis also adds to the discussion of how informativeness of earnings affects the choice of performance measures. Although it has been well-established theoretically that the emphasis on forward-looking performance measures should be low when maximizing short-term financial goals is congruent with firm value, there is little empirical evidence to support this prediction. We find that profit urgency (e.g., due to financial distress) is associated with a substantially lower emphasis on nonfinancial performance measures both in our archival and survey data (

Table 3, Table 5). In addition, we present several related results supporting the theory that informativeness of earnings is a major determinant of the use of nonfinancial performance measures.

Our findings are subject to some caveats. The archival dataset relies on proxy statement disclosures as the only source of information on the choice of performance measures in annual bonus plans. Although we control for the length of disclosure in our regressions, we cannot rule out the possibility that some firms use nonfinancial performance measures but do not disclose sufficient information in their proxy statements for us to categorize them correctly. The implication for our results is that the difference between profitable and loss-making firms is likely to be underestimated. Also, studying loss-making firms, many of which are in a pre-profit stage or in financial distress, inevitably raises the issue of a survivorship

bias. We acknowledge that our results, in particular those concerning our LOSS4 and LOSS5 groups, may only generalize to the population of loss-making firms that survive.

As for our additional data collection, we employed an anonymous online survey designed to be convenient for respondents in order to gain access to potentially sensitive information on performance measurement and evaluation practices in loss-making entities. This implies that our survey results are based on a relatively small non-random sample of entities. Also, space constraints on the online questionnaire did not allow us to fully establish reliability and validity of some of our empirical measures.

Notwithstanding these caveats, we find support for our predictions in different samples relying on different data collection methods. This provides reassurance that our results are not driven by any of the above data limitations discussed above.

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E-Companion

to

**Employment Horizon and the Choice of Performance Measures:
Empirical Evidence from Annual Bonus Plans of Loss-Making Entities**

Appendix A. Descriptive Statistics

Table A1 Highly Profitable Firms (PROF_H)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	295	0.37	0.00	0.48	0.00	1.00
TURN	291	0.15	0.00	0.36	0.00	1.00
AGE	295	0.35	0.00	0.48	0.00	1.00
PSHO ^a	290	6.10	1.20	12.12	0.10	72.89
CHAIR	293	0.11	0.00	0.31	0.00	1.00
FSTRESS	295	0.00	0.00	0.00	0.00	0.00
MTB ^b	295	4.20	3.15	3.39	0.57	20.00
R&DS ^c	295	0.03	0.00	0.06	0.00	0.32
EMPS	294	0.01	0.01	0.01	0.00	0.18
CORR ^d	295	0.13	0.05	0.16	0.00	0.66
STDM	295	0.02	-0.40	1.02	-1.21	2.65
REGUL	295	0.01	0.00	0.10	0.00	1.00
DISCLOSE	295	1,121	1,002	554	211	2,781
EQUITY	295	0.72	1.00	0.45	0.00	1.00
MSIZE	295	6,846	950	29,785	3.24	392,959

NONFIN—dummy variable for the use of nonfinancial performance measures in CEO 2001 bonus plan; TURN—CEO turnover in 2001 or 2002; AGE—dummy variable for firms where (departing) CEO's age is 60 years or greater; PSHO—percentage of shares owned by the CEO at the beginning of 2001 (before the log transformation); CHAIR—dummy variable for firms where the CEO has also been a chairman for 10 or more years; FSTRESS—dummy variable for financial-distress firms; MTB—market-to-book ratio (averaged over 1997–2001); R&DS—research and development expenses divided by sales (averaged); EMPS—number of employees divided by sales (averaged); CORR—correlation between stock returns and prior quarter accounting returns; STDM—volatility in median industry profitability (factor score); REGUL—regulated industries (SIC-3: 481, 491, 492, 493, 494); DISCLOSE—the number of words in the proxy statement discussion of executive compensation (before log transformation); MSIZE—the market value of the firm (\$ millions; before log transformation).

^a If CEO ownership is smaller than 0.1%, we replace its value with 0.1% before the log transformation.

^b If book values in a particular year are close to zero (small positive or negative) we set annual market-to-book ratios to 20 (using other maximum values does not materially affect our results).

^c Missing values of R&DS are set to zero.

^d We set the value of CORR to zero if the correlation between stock market and accounting returns is negative due to estimation errors.

Table A2 Firms with Low Profits (PROF_L)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	105	0.32	0.00	0.47	0.00	1.00
TURN	101	0.20	0.00	0.40	0.00	1.00
AGE	103	0.29	0.00	0.46	0.00	1.00
PSHO ^a	105	9.17	1.90	15.49	0.10	69.00
CHAIR	98	0.14	0.00	0.35	0.00	1.00
FSTRESS	93	0.24	0.00	0.43	0.00	1.00
MTB ^b	103	2.00	1.57	1.32	0.51	9.99
R&DS ^c	105	0.03	0.00	0.06	0.00	0.33
EMPS	104	0.01	0.01	0.01	0.00	0.07
CORR ^d	104	0.14	0.07	0.18	0.00	1.00
STDM	105	-0.44	-0.72	0.77	-1.21	2.27
REGUL	105	0.01	0.00	0.10	0.00	1.00
DISCLOSE	105	1,035	965	443	211	2,351
EQUITY	105	0.65	1.00	0.48	0.00	1.00
MSIZE	103	1,546	382	4,504	3.41	37,426

See Table A1 for variable definitions.

Table A3 Firms with a Loss in 2001 and Profits in 1997–2000 (LOSS1)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	92	0.30	0.00	0.46	0.00	1.00
TURN	90	0.26	0.00	0.44	0.00	1.00
AGE	92	0.42	0.00	0.50	0.00	1.00
PSHO ^a	90	11.24	4.35	17.04	0.10	74.76
CHAIR	89	0.19	0.00	0.40	0.00	1.00
FSTRESS	80	0.45	0.00	0.50	0.00	1.00
MTB ^b	90	2.36	1.66	2.08	0.48	15.75
R&DS ^c	92	0.04	0.00	0.07	0.00	0.37
EMPS	90	0.01	0.00	0.01	0.00	0.05
CORR ^d	90	0.15	0.08	0.19	0.00	0.75
STDM	92	-0.29	-0.46	0.75	-1.21	1.91
REGUL	92	0.03	0.00	0.18	0.00	1.00
DISCLOSE	92	1,074	934	605	211	2,781
EQUITY	92	0.59	1.00	0.50	0.00	1.00
MSIZE	90	2,180	133	8,565	2.42	64,259

See Table A1 for variable definitions.

Table A4 Firms with Losses in 2000–2001 and Profits in 1997–1999 (LOSS2)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	93	0.31	0.00	0.47	0.00	1.00
TURN	93	0.28	0.00	0.45	0.00	1.00
AGE	93	0.26	0.00	0.44	0.00	1.00
PSHO ^a	90	7.69	2.26	12.53	0.10	68.30
CHAIR	92	0.18	0.00	0.39	0.00	1.00
FSTRESS	85	0.55	1.00	0.50	0.00	1.00
MTB ^b	92	3.12	1.88	3.13	0.49	20.00
R&DS ^c	93	0.04	0.00	0.09	0.00	0.57
EMPS	91	0.01	0.01	0.01	0.00	0.06
CORR ^d	92	0.15	0.05	0.18	0.00	0.67
STDM	93	0.09	-0.30	0.96	-1.15	1.91
REGUL	93	0.02	0.00	0.15	0.00	1.00
DISCLOSE	93	986	955	381	295	2,292
EQUITY	93	0.56	1.00	0.50	0.00	1.00
MSIZE	92	834	105	2,771	0.83	23,506

See Table A1 for variable definitions.

Table A5 Firms with Losses in 1999–2001 and Profits in 1997–1998 (LOSS3)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	100	0.42	0.00	0.50	0.00	1.00
TURN	96	0.30	0.00	0.46	0.00	1.00
AGE	100	0.27	0.00	0.45	0.00	1.00
PSHO ^a	99	8.26	3.00	12.67	0.10	68.70
CHAIR	99	0.19	0.00	0.40	0.00	1.00
FSTRESS	93	0.69	1.00	0.47	0.00	1.00
MTB ^b	100	3.23	1.68	3.51	0.35	20.00
R&DS ^c	100	0.06	0.00	0.12	0.00	0.90
EMPS	99	0.01	0.01	0.01	0.00	0.05
CORR ^d	100	0.12	0.01	0.17	0.00	0.59
STDM	100	0.23	-0.19	1.07	-1.15	2.36
REGUL	100	0.00	0.00	0.00	0.00	0.00
DISCLOSE	99	996	896	446	211	2,475
EQUITY	100	0.54	1.00	0.50	0.00	1.00
MSIZE	100	580	39	2,705	0.67	20,085

See Table A1 for variable definitions.

Table A6 Firms with Losses in 1998–2001 and Profit in 1997 (LOSS4)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	85	0.44	0.00	0.50	0.00	1.00
TURN	84	0.24	0.00	0.43	0.00	1.00
AGE	85	0.26	0.00	0.44	0.00	1.00
PSHO ^a	85	8.02	2.90	13.45	0.10	77.20
CHAIR	84	0.19	0.00	0.40	0.00	1.00
FSTRESS	80	0.79	1.00	0.41	0.00	1.00
MTB ^b	85	4.32	2.56	4.71	0.44	20.00
R&DS ^c	85	0.09	0.00	0.16	0.00	1.00
EMPS	85	0.01	0.01	0.01	0.00	0.03
CORR ^d	85	0.12	0.01	0.16	0.00	0.58
STDM	85	0.24	-0.14	1.02	-1.14	2.37
REGUL	85	0.02	0.00	0.15	0.00	1.00
DISCLOSE	85	928	830	487	211	2,646
EQUITY	85	0.56	1.00	0.50	0.00	1.00
MSIZE	85	545	29	2,648	0.19	23,975

See Table A1 for variable definitions.

Table A7 Firms with Five Consecutive Loss Years in 2001 (LOSS5)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN	99	0.61	1.00	0.49	0.00	1.00
TURN	97	0.31	0.00	0.46	0.00	1.00
AGE	99	0.08	0.00	0.27	0.00	1.00
PSHO ^a	98	7.11	2.50	12.87	0.10	68.30
CHAIR	96	0.14	0.00	0.34	0.00	1.00
FSTRESS	99	0.00	0.00	0.00	0.00	0.00
MTB ^b	99	6.73	5.57	4.96	0.37	20.00
R&DS ^c	99	0.37	0.23	0.40	0.00	1.00
EMPS	98	0.02	0.01	0.03	0.00	0.27
CORR ^d	99	0.15	0.04	0.20	0.00	0.75
STDM	99	0.15	-0.32	1.11	-1.14	2.65
REGUL	99	0.05	0.00	0.22	0.00	1.00
DISCLOSE	99	1,030	984	466	211	2,781
EQUITY	99	0.68	1.00	0.47	0.00	1.00
MSIZE	99	612	112	1,946	0.76	16,478

See Table A1 for variable definitions.

Table A8 The Use of Nonfinancial Performance Measures and CEO Turnover in Different Industries

SIC-3	INDUSTRY	N	NONFIN	TURN
283	Chemicals - Drugs	23	0.13	0.61
355	Special Industry Machinery, Except Metalworking	11	0.09	0.50
357	Computer And Office Equipment	28	0.04	0.36
366	Communications Equipment	13	0.08	0.38
367	Electronic Components And Accessories	20	0.15	0.40
382	Laboratory Apparatus And Analytical, Optical, Measuring, and Controlling Instruments	16	0.06	0.65
384	Surgical, Medical, And Dental Instruments And Supplies	22	0.05	0.45
736	Personnel Supply Services	10	0.00	0.10
737	Computer Programming, Data Processing, And Other Computer Related Services	61	0.13	0.52

Tabulated above are means of NONFIN and TURN in SIC-3 categories with at least 10 observations in our sample.

Table A9 Loss-Making Entities Expecting Profits (LOSS_EP)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN_OV	13	30.38	30.00	14.06	10.00	60
NONFIN_B ^a	13	13.45	10.00	15.77	0.00	47
SUBJECT	13	38.85	30.00	27.78	0.00	100
RETAIN	13	35.00	25.00	17.91	15.00	60
URGENT	13	0.38	0.00	0.51	0.00	1.00
UNCONTROL	13	0.15	0.00	0.38	0.00	1.00
ETARGET	13	0.47	0.68	0.66	-0.62	1.50
ECOMP	13	0.00	-0.04	1.07	-2.12	1.47
ETECH	13	-0.25	-0.16	0.93	-1.88	1.32
ISYS	13	2.92	3.00	1.04	1.00	4.00
PUBLIC	13	0.62	1.00	0.51	0.00	1.00
SIZE-FIRM	7	16,949	500	43,239	120	115,000
SIZE-DIVISION	6	4,622	675	9,992	61	25,000

NONFIN_OV—weight on nonfinancial performance measures in overall evaluations; NONFIN_B—weight on nonfinancial performance measures in bonus plan formulas; SUBJECT—the extent to which performance is evaluated subjectively; RETAIN—importance of retention concerns; URGENT—dummy variable for profit urgency (entity is under pressure to earn short-term profits or has limited access to capital); UNCONTROL—dummy variable for adverse uncontrollable factors in an entity’s environment (executive performance is deemed better than overall entity performance); ETARGET—factor scores, higher values reflect target accuracy; ECOMP—factor scores, higher values reflect greater competition; ETECH—factor scores, higher values reflect faster technological change; ISYS—quality of information systems; PUBLIC—dummy variable for publicly-listed firms; SIZE—number of employees (before log transformation) separately reported for firm-level entities (SIZE-FIRM) and division-level entities (SIZE-DIVISION).

^a Missing values in NONFIN_B are due to entities that report that they do not have annual bonus plans.

Table A10 Loss-Making Entities Expecting Losses (LOSS_EL)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN_OV	38	38.29	40.00	22.26	0.00	75
NONFIN_B ^a	24	30.44	17.50	34.70	0.00	100
SUBJECT	37	61.92	70.00	32.03	0.00	100
RETAIN	41	45.54	50.00	25.14	0.00	100
URGENT	48	0.42	0.00	0.50	0.00	1.00
UNCONTROL	48	0.23	0.00	0.42	0.00	1.00
ETARGET	48	0.24	0.24	0.67	-1.67	1.50
ECOMP	48	-0.30	-0.26	0.95	-2.24	1.86
ETECH	48	-0.30	-0.18	0.96	-2.01	2.52
ISYS	48	3.10	3.50	1.04	1.00	4.00
PUBLIC	48	0.48	0.00	0.50	0.00	1.00
SIZE-FIRM	32	5,807	363	26,401	12	150,000
SIZE-DIVISION	16	7,334	575	17,552	25	70,000

See Table A9 for variable definitions.

Table A11 Start-up Entities (LOSS_ST)

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN_OV	13	44.46	40.00	24.80	10.00	80
NONFIN_B ^a	7	44.29	50.00	38.67	0.00	100
SUBJECT	13	65.38	70.00	28.83	10.00	100
RETAIN	13	50.00	50.00	28.80	0.00	80
URGENT	13	0.31	0.00	0.48	0.00	1.00
UNCONTROL	13	0.00	0.00	0.00	0.00	0.00
ETARGET	13	-0.26	-0.13	0.56	-1.15	0.64
ECOMP	13	0.50	0.59	0.71	-0.74	1.45
ETECH	13	-0.59	-0.51	0.75	-1.98	0.85
ISYS	13	3.15	4.00	1.07	1.00	4.00
PUBLIC	13	0.46	0.00	0.52	0.00	1.00
SIZE-FIRM	11	128	76	124	45	430
SIZE-DIVISION	2	400	400	283	200	600

See Table A9 for variable definitions.

Table A12 Profitable Entities

	N	Mean	Median	Std.Dev.	Min	Max
NONFIN_OV	62	29.24	30.00	19.87	0.00	73
NONFIN_B ^a	52	21.22	16.67	22.54	0.00	80
SUBJECT	61	37.31	25.00	30.26	0.00	100
RETAIN	61	32.62	30.00	22.13	0.00	80
URGENT	67	0.21	0.00	0.41	0.00	1.00
UNCONTROL	67	0.03	0.00	0.17	0.00	1.00
ETARGET	67	-0.18	0.12	1.26	-4.64	1.57
ECOMP	67	0.09	0.15	0.97	-1.79	2.33
ETECH	67	0.44	0.44	0.95	-2.60	2.82
ISYS	67	3.42	4.00	1.05	1.00	5.00
PUBLIC	67	0.61	1.00	0.49	0.00	1.00
SIZE-FIRM	33	8,851	300	17,308	35	55,000
SIZE-DIVISION	34	1,180	600	1,732	14	7,800

See Table A9 for variable definitions.

Appendix B. Field Study Summary

We conducted field interviews in 12 loss-making entities that varied significantly in size, age, and ownership (public versus private). The entities were also in varied industries, including financial services (three entities), medical services (three entities), high technology (two entities), software, specialty retail, utilities, and consumer products. Within these entities, we interviewed executives in a variety of roles, but most were line managers, chief financial officers, or heads of compensation. Given the exploratory nature of this phase of the research, our early interviews were nearly totally open-ended. We asked the managers to discuss their entity's performance measurement and incentive systems and the reasons why they were designed and used as they were. Below, we provide brief descriptions of eight of the most differentially interesting loss situations.

Site 1. One entity we studied was using a new technology to produce emission control products. It had been making losses ever since it was founded in 1996 and profitability was a distant goal at the time we visited the company. The weight on operating income was only 15% of the target bonus in 2003. The primary emphasis was on future order commitments that accounted for 30%, current revenues for 15%, and the remaining 40% was linked to other nonfinancial measures. During the interview in 2002, the CFO predicted that the importance of financial measures would probably increase in the future as the company became closer to going public. As predicted, the two financial measures—revenues and operating income—were weighted slightly greater than 50% in 2004 amid pressure from venture capitalists getting impatient for returns on their investments. At the same time, performance deteriorated in 2003 and both voluntary and forced managerial turnover became an issue (the downturn severely challenged the initial perception that the company was going to be successful which had minimized turnover in the early years). In subsequent years, much of the managerial team including the CFO and CEO left or was replaced.

Site 2. Another hi-tech start-up entity placed a high weighting of importance on earnings. The company was growing well over 50% a year, but had not reported a profit in any quarter of its 17-year history. Management knew that raising more money would be difficult until the company started earning profits.

Target bonuses (40% of base salary) were based 75% based on corporate earnings and 25% based on individual achievements in four to nine performance areas (e.g., accomplishment of a project milestone, establishment of a needed line of credit, meeting a receivables target). In 2000 and 2001, bonuses were paid only up to a maximum of about 20% of base salary (i.e., half of the bonus potential). Also, the company did not come close to achieving their aggressive revenue and earnings plan for 2002. As a result, no bonuses were paid and management mandated an across-the-board salary cut of 10%. The company's CFO summarized by stating that, "The big message in this company at this time is sustainable profit, and hence, we're looking at that quarter after quarter after quarter. We must get there, and it better be sooner rather than later." However, losses persisted and by 2004 it became a major problem to retain the core set of employees. The company gave them additional stock options to discourage turnover. Both the CEO and the board were frustrated with the poor company performance. At the beginning of 2005 the CEO offered his resignation, and the board accepted it.

Site 3. A multi-divisional company selling medical products in many locations around the world varied its emphasis on nonfinancial performance measures across different divisions (representing different countries). For example, in 2003, earnings were not yet important for evaluating and rewarding the managers of their Japanese division, established in 1997. The goal was to build market share over the initial 5-year period. The VP-International explained: "Losses were tolerated if the long-term prospects were favorable." But while the emphasis was on growth, division managers also were "watching pennies and nickels" in day-to-day expenses. Also from day one, every sale had to have a positive gross margin. In its third year, the Japanese division could have budgeted a profit, but corporate management did not make its managers do so because they wanted to ensure that needed further investments in the future would not be jeopardized.

The emphasis on nonfinancial performance measures was also high in the East-European division during a turnaround, which had been operating in a loss position for the past 5 years. The losses were primarily due to a reorganization in the region, which included the purchase of several distributors and contract

renegotiations with a number of other distributors. This turnaround also required some re-building and growth. Toward these ends, the General Manager in Eastern Europe was specifically instructed in early 2001 to invest in upgrading his sales and marketing organization, even if it came at the expense of short-term profitability. “This was meant to be this division’s only mission,” the VP-International explained. Essentially, the medium-term objective was to focus on the top-line, instead of on the bottom-line.

In contrast, earnings were judged to be important even through a transitory-loss period in Italy because the losses were deemed to be the fault of the local managers. The VP-International argued that “this was not a start up, the business was already solidly in place; it was a matter of discipline, they had too many side products.” As a consequence, the managers in Italy were given no bonuses in 2001 and 2002. The general manager was given a profit objective as a “make-or-break” job requirement. The general manager responded by reducing costs without apparently jeopardizing the long-term potential and the business has been profitable since.

In addition to varying the emphasis on financial and nonfinancial measures, top management relied heavily on subjectivity to assess division managers’ performances, which could, and sometimes did, entirely “over-ride” the formulaic evaluations when making final bonus decisions. They argued that such potential “over-ride” discouraged the division managers from generating short-term results while losing sight of long-term objectives, which was viewed as the critical exigency in each of the three divisions described above.

Site 4. A leading international publisher of software game products continued to place high emphasis on earnings during a loss period because it deemed the loss transitory and expected positive earnings in each of the following three years. The company’s Director of Global Compensation and Benefits noted that, “2004 is slow because we are ramping up games for new platforms, and that hurts sales because of customers’ anticipation of the new platform releases. But, the expectation is that 2005 will be good, and 2006 fantastic. The bonus plan is still right; it is still focused on the right aspects of our business given our current strategy.” Whereas the loss was not only considered transitory, it also did not elevate any immediate

retention concerns. The CEO had been with the company since 1991 and was still there in 2007. During this entire period, he was also the Chairman of the Board.

Site 5. A division of a large regional retail bank deemphasized earnings for annual bonus payments because it expected the transitory loss to persist for two or more years. According to the senior Vice President, managers relied more on subjective evaluations, considering various essential indicators of nonfinancial performance such as cross-selling and personnel development, and payouts were based more on effort rather than on results. “It is hard to build all these things into a formula. The less you define, the more you can build what you want into it.” If losses persist, it is also important “to let good people know that they have a secure future and about giving them subjective bonus payouts.” In contrast, “formula bonuses tend to be based on year-over-year improvement, but in a downturn, there is no year-over-year improvement.”

Site 6. One electric utility company we studied was hit hard by the California power crisis in 2000. It was “operating in an era in which it was impossible to set goals” because of the huge magnitude of the crisis. In the words of the company’s Director of Compensation, “You can’t anticipate things like this. How do you prepare for tsunamis? How do you operate in a world without goals?” While performance as reflected in traditional financial performance measures became uncontrollable and unpredictable, measures of operational performance gained in importance. In the director’s words, “We knew we needed to keep the lights on, so our traditional operating goals (reliability, customer satisfaction, and safety) remained important.” The compensation committee of the board of directors approved no executive salary increases for 2001, and they delayed all employee raises by 3–4 months. They approved only “special” bonus payments to two executives “in recognition of their significant contributions in 2000 to preserve the viability of the company during the financial crisis, and for retention purposes.” In addition, in March 2001, the board committee changed the bonus plan into a retention incentive plan. These awards were not tied to performance as goals were seen to be “quite unclear.” The payments were earned if an executive remained actively employed through the performance period. The retention incentives were set equal to

target bonus levels (30–80% of salary). For lower-level executives, these awards were paid quarterly in cash. At the most senior level, all of the awards were in deferred stock units convertible into shares of stock after two years.

Site 7. A young company intending to be the “Rolls Royce of pet stores” emphasized earnings targets and measures right from its start. Yet, the business model turned out to be too expensive to work. Customers did not value enough the costly service and design elements that the retail chain was offering them. The CFO explained: “We couldn’t show we were on track to profitability; we didn’t have enough mass; and eventually we couldn’t get more money.” Even though profitability was “wishful thinking” in the early days, each of their five stores had a budgeted profit target after only the company’s first five months of operation. The CFO thought that this emphasis on earnings was appropriate. He thought the company needed to emphasize short-term financial performance because it was critical for the company’s survival. Retention of key executives was a concern, however. This was a small company, so there was no one who could step quickly into any of the key specialized jobs (e.g., operations, marketing, CFO) and searching for a new candidate could take 6-9 months. To avoid losing valuable time, the company gave options and restricted stock to key employees to discourage turnover. In the end, however, the company did not survive because it had a failed business model—all five stores were sold to a large pet store chain.

Site 8. A small manufacturer of high-end barbeque equipment was undergoing a turnaround during which earnings were of little importance. A turnaround specialist had been brought in as an interim CEO to try and save the company. He found what he says is common in such situations: “You can’t believe the financial statements or any data in the company.” So, he started by building his own information system on an Excel spreadsheet. One of the goals was to reduce the parts cost by 20%. Among the measures to which the turnaround specialist was paying the most attention were sales, cash expenses, collections, and purchases. All of these items had a direct and immediate impact on cash flow, something that was in short supply. The company had no formal incentive systems. Most of the managers had a sizable ownership stake and short-term pay was not an important issue.

Appendix C. Questionnaire Items

1. NONFIN_OV—Weight on Nonfinancial Performance Measures in Overall Evaluations

In reaching their evaluation of CEO performance, which of the following factors did the evaluators take into account? (Allocate 100 points across all the factors considered, with higher numbers indicating a higher weight placed on that particular factor by the evaluators.)

- Bottom-line financial measures of firm performance (i.e., accounting profits or returns);
- Other financial measures of firm performance (e.g., revenue, specific cost items, receivables, inventory, debt levels);
- Nonfinancial measures of firm performance (e.g., customer satisfaction, employee retention, R&D productivity, product/service quality);
- Individual measures of CEO performance (e.g., leadership skills, ability to attract and retain key personnel);
- Other (please describe).

2. NONFIN_B—Weight on Nonfinancial Performance Measures in Bonus Plan Formulas

Annual bonus plan of the CEO. (Please write the bonus as a percentage of CEO salary in 2004.)

- Based on bottom-line financial measures of firm performance (i.e., accounting profits or returns);
- Based on other financial measures of firm performance (e.g., revenue, specific cost items, receivables, inventory, debt levels);
- Based on nonfinancial measures of firm performance (e.g., customer satisfaction, employee retention, R&D productivity, product/service quality);
- Based on individual measures of CEO performance (e.g., leadership skills, ability to attract and retain key personnel);
- Based on higher-level measures of performance (e.g., firm or business group performance);*
- Other (please describe).

(*This item was only included if respondents indicated that they reported for an entity below the firm level.)

3. SUBJECT—Extent to Which Performance Evaluation Is Subjective

In reaching the evaluation of CEO performance, to what extent did the evaluators rely on: (Allocate 100 points.)

- A formulaic approach, i.e., using objective and quantifiable performance indicators, as opposed to,
- A subjective approach, i.e., using judgments of potentially a variety of performance indicators, some of which may not be easily quantifiable.

4. Types of Loss-Making Entities

Which of the following best describes the entity?

- The entity has been operating in a start-up mode. It has not yet earned a profit, but it expects to become profitable.
- The entity has been operating in a start-up mode. It has not yet earned a profit and it may not survive.
- The entity has been reporting temporary losses. It has been profitable before and expects to be profitable again.
- The entity has been experiencing financial adversity and may not survive without a major restructuring.
- The entity has been profitable, but profitability is below its desired long-term goal.
- The entity is operating at or above its desired long-term profitability goal.

5. RETAIN—Retention Concerns

Consider the following two purposes of incentives: motivation and retention. Indicate the relative importance of each in the design of the general manager’s incentive compensation for 2004: (Allocate 100 points.)

- Motivation;
- Retention.

6. URGENT— Profit Urgency

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither agree or disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
The entity has adequate (access to) capital for the near term	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The entity faces strong pressures to earn short-term profits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. UNCONTR—Executive Performance Is Deemed Better Than Overall Firm Performance

On a scale from zero (poor) to 100 (excellent), what was the “overall performance” of the entity for the last year (2004)?

On a scale from zero (poor) to 100 (excellent), what was the “overall performance” of the entity general manager as rated by his/her evaluators for the last year (2004)?

8. ETARGET, ECOMP, ETECH—Target Accuracy and Environmental Predictability

Please rate the entity’s business environment in roughly the last 3–5 years:

	<i>Very Low</i>	<i>Low</i>	<i>Mode- rate</i>	<i>High</i>	<i>Very High</i>	<i>NA</i>
Competition for main products/services	<input type="checkbox"/>					
Predictability of competitors’ market actions	<input type="checkbox"/>					
Frequency of new product/service introductions	<input type="checkbox"/>					
Accuracy of demand forecasts one year out	<input type="checkbox"/>					
Degree of technological change	<input type="checkbox"/>					
Ability to set meaningful annual performance targets	<input type="checkbox"/>					

9. ISYS—Quality of Information Systems

	<i>Strongly Disagree</i>	<i>Disagree</i>	<i>Neither agree or disagree</i>	<i>Agree</i>	<i>Strongly Agree</i>
The entity’s information systems are effective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>