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## Performance-Based Long Term Incentive Compensation and Firm Performance

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# Performance-Based Long Term Incentive Compensation and Firm Performance

## Abstract

Awarding executives long-term incentive pay based on firm performance is often described as a natural way to improve firm performance. This brief uses an analytical approach to examine that proposed relationship. We first document the prevalence of performance-based long-term incentive (PB LTI) measures and the trends in the relative size of these measures compared to aggregate measures of compensation. We then compare the characteristics and performance of firms that have implemented a PB LTI measure in the past to those that have not. In order to understand the impact of PB LTI awards on firm performance, we separately assess the roles of the existence of the PB LTI measures, the relative size of the measures, and the type of PB LTI measure on firm performance.

## Keywords

HR, long-term incentive, firm performance, data, performance based, return on equity, ROE, earning per share, EPS

## Disciplines

Human Resources Management | Performance Management

## Comments

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# Performance-Based Long Term Incentive Compensation and Firm Performance\*

A Brief Prepared by the Institute for Compensation Studies

ILR School, Cornell University

Hassan Enayati, Kevin Hallock, and Linda Barrington

August 18, 2016

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\*Funding for this study was provided by executive compensation consulting firm, Pearl Meyer, jointly agreeing with the Institute for Compensation Studies (ICS) authors on the research question of interest. This study builds upon our earlier work examining [TSR, Executive Compensation, and Firm Performance](#). Pearl Meyer obtained the underlying data from Equilar, Inc., a leading independent provider of executive and board compensation data and analysis. Pearl Meyer provided these data to ICS for analysis, including additional data on companies from Capital IQ, and “compensation plan existence and weight” variables that they constructed. Pearl Meyer provided valuable insight on how executive compensation is structured in the corporate landscape, which helped ICS ensure its models were valid in terms of real-world practice and terminology. Independently, ICS conducted the statistical analyses herein. The views, opinions, findings and conclusions or recommendations expressed in this paper are strictly those of the author(s). They do not necessarily reflect the views of the ILR School at Cornell University.

For the complete set of analyses, please email Hassan Enayati at [he76@cornell.edu](mailto:he76@cornell.edu). The authors wish to thank Stephanie Thomas and the consultants at Pearl Meyer for their helpful comments.

# 1 Executive Summary

Awarding executives long-term incentive pay based on firm performance is often described as a natural way to improve firm performance. This brief uses an analytical approach to examine that proposed relationship. We first document the prevalence of performance-based long-term incentive (PB LTI) measures and the trends in the relative size of these measures compared to aggregate measures of compensation. We then compare the characteristics and performance of firms that have implemented a PB LTI measure in the past to those that have not. In order to understand the impact of PB LTI awards on firm performance, we separately assess the roles of the existence of the PB LTI measures, the relative size of the measures, and the type of PB LTI measure on firm performance.

## **Key Findings:**

- \* In 2013, 88 percent of the 2014 S&P 500 firms offered PB LTI plans to one of their top five named executive officers (NEO) - nearly a 40 percent increase from the level of 64 percent in 2006.
- \* There has been an increase in the weight of PB LTI awards relative to both all long-term incentive pay and total direct compensation over the past eight years among NEOs. Conditional upon having a PB LTI award, the average award has risen from 51 percent of all LTI in 2006 to 56 percent in 2013.
- \* The increasing share of LTI that is performance-based is meaningful as LTI's share of TDC has jumped from 56 percent to 62 percent between 2006 and 2013.
- \* The inclusion of PB LTI plans is observed across all sectors, with particularly large uptake in the Information Technology and Consumer Discretionary sectors.
- \* There are differences in the firms that include PB LTI awards in the compensation plans of their executives compared to those that do not include PB LTI awards. Firms with PB

LTI awards tend to experience lower returns (as measured by 10 year compound annual growth rates (CAGR) of Net Income, EBIT, EPS, ROA, and Free Cash Flow).

\* Our models indicate a pattern of within-year increases of PB LTI on firm performance followed by losses in subsequent years.

→ Contemporaneous estimates of the impact of a PB LTI plan on performance are positive for one and three year TSR; however, we find a pattern of negative estimates for the one and two year lags.

→ Results of the role of the relative weight of PB LTI plans on firm performance follow a similar pattern of positive within year estimates followed by negative estimates in lagged years when examining 1 year TSR and EPS growth. There is evidence of a mostly positive impact on ROE and ROIC when increasing the weight of the plans.

\* Comparing findings by level of analysis, i.e., top five NEOs, CEOs, and top five NEOs excluding CEOs, across all subanalyses showed similar estimates and patterns.

## 2 Data

The firms studied in this brief were identified using the 2014 S&P 500 index. A rich longitudinal dataset was constructed using compensation data and firm financial data covering fiscal years 2006 through 2013.<sup>1</sup> The information regarding compensation was derived from Equilar’s executive compensation data. These data contain detailed records of the compensation types and amounts for named executive officers from firms in our sample. For example, we observe base salary, bonus payouts, stock awards, option awards, and several types of incentive plan awards. Measures of firm performance include 1, 3 and 5-year TSR as well as annual measures of return on equity (ROE), earning per share (EPS) growth, total revenue growth, and return on invested capital (ROIC). Firm performance measures came from Capital IQ.<sup>2</sup>

## 3 Methodology

To examine how the inclusion of PB LTI plans impacts firm performance, we used both descriptive analysis and also regression analysis. The descriptive analysis compared the raw patterns among groups of firms with and without PB LTI plans over time. The resulting tables and figures are valuable in understanding the unconditional relationship between PB LTI plans and firm performance. All analyses were conducted on three subsamples of executives: top five proxy-listed NEOs, CEOs only, and top five proxy-listed NEOs excluding CEOs.

Regression analysis is used to as a way to control for other factors that might obscure the role of PB LTI measures on firm performance. Our baseline model uses the following

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<sup>1</sup>The analytical sample excluded firms due to extreme values: loses of 195 observations. Additionally, 1,396 firm-year observations were removed from the sample when key data elements were missing. The final baseline sample consisted of 2,249 firm-year observations, which were associated with 367 firms.

<sup>2</sup>We would like to thank Pearl Meyer for providing us with the data used in this brief and also for constructing the key measures of performance-based compensation, long-term incentive pay, total compensation, and others.

Ordinary Least Squares regression framework:

$$Y_{it} = \beta_1 + Z_{it}\beta_2 + S_{it}\beta_3 + C_t\beta_4 + \beta_5X_{it} + \beta_6X_{i,t-1} + \beta_7X_{i,t-2} + \epsilon_{it} \quad (1)$$

$Y_{it}$  represents a given performance measure for firm  $i$  in fiscal year  $t$ . The set of firm performance measures studied in this brief are 1-year TSR, 3-year TSR, 5-year TSR, ROE, EPS growth, total revenue growth, and ROIC.  $Z_{it}$  is a set of control variables including functions of market capitalization and an indicator for change in CEO. Our model also accounts for sector performance and year fixed effects with  $S_{it}$  and  $C_t$ , respectively. The key variables in this project are the PB LTI measures represented by  $X_{it}$ , which is an indicator variable equal to one when a firm has any executive in the respective sample, i.e., top five NEOs, CEOs, or top five NEOs excluding CEOs, with a PB LTI plan during the current fiscal year. To analyze the role of weight on performance,  $X_{it}$  is set to the firm-level average, given the respective sample, of the ratio of PB LTI award to either LTI or TDC. Our baseline model includes two lags of  $X_{it}$  to account for a delay between PB LTI plan implementation and impact on firm performance. Finally, the remaining error in the model is captured by  $\epsilon_{it}$ , which is clustered at the firm level.

Multiple extensions of the baseline model were investigated to assess the sensitivity of our findings. One extension replaced the sector fixed effects with firm effects, which allows the model to control for unobserved firm-specific and fixed attributes. We also considered the impact of partitioning the sample across firm size and PB LTI plan history. Additional sensitivity checks include removing the Financial sector from the analysis and running models with a richer set of lag measures.

## 4 Findings

One of the most striking features of PB LTI plans among Fortune 500 firms is how common they have become. Table 1 shows that the share of firms offering their NEOs PB LTI plans

has increased from 64 percent of firms in 2006 to 88 percent of firms in 2013. Put another way, only one in ten Fortune 500 firms does not offer a PB LTI award to their NEOs. This high level of prevalence is not driven by PB LTI awards only being offered to CEOs as evidenced by the comparable prevalence levels among CEOs and top five NEOs excluding CEOs. Table 2 shows that firms in all sectors have increasingly included PB LTI plans in the compensation of their executives.

With an understanding of the pervasiveness of PB LTI awards, we next assessed the relative size of the PB LTI awards. Table 3 examines how the weight of PB LTI relative to LTI and TDC has changed over time. The average weight of PB LTI plans has been increasing over time among all firms (the unconditional columns); though the fast growth rate is influenced by the rapid increase in the prevalence of these awards. For the firms that actually offer PB LTI plans (conditional columns), the weight of the plans has increased more modestly over the sample time period, e.g., NEO PB LTI weight grew from 51 percent of LTI to 56 percent. Given the growth of LTI during this same time period, the share of total compensation coming from PB LTI increased from 28 percent to 35 percent.<sup>3</sup>

In an effort to understand the prevalence and impact of specific components of PB LTI awards, we worked with the executive compensation consulting firm Pearl Meyer to categorize the thirty-one individual incentive pay metrics reported within the Equilar data into six strategically-aligned groups. The groups and individual metrics are reported in Table 4: Cash Flow, Growth, Market-Based, Profitability, Returns, and Other.

The trends in the prevalence of the IP categories among all firms are described in Table 5. We find that each of the six categories became more common over time. For example, 30 percent of firms offered Market-Based metrics to their NEOs in 2006 while 51 percent offered Market-Based metrics in 2013. Table 6 reports the same prevalency rates but only considers firms that offer at least one of their top five NEOs a PB LTI award. Conditioning on PB LTI award changes the patterns observed in Table 5. Here we find that only Cash

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<sup>3</sup>The share of total direct compensation attributed to LTI increased from 56 percent in 2006 to 62 percent in 2013.



Flow, Growth, and Market-Based metrics are becoming more common with the other three groups becoming slightly less prevalent. Columns 7 and 8 report the number of individual metrics and categories, respectively, in the NEOs plans. The average number of individual measures among NEOs with a PB LTI award has increased by 17 percent from 2.36 to 2.75 metrics. At the same time, the number of unique categories only increased by 11 percent (1.75 to 1.94). The slower growth rate of categories and higher value in individual measures describe a situation where firms are offering NEOs multiple metrics from within the same incentive pay category.

We next compared the performance of firms based on their prior history of offering PB LTI awards to their NEOs. Table 7 shows the results of an analysis that separated firms into one of three groups: those that always offered a PB LTI awards to their NEOs, those that never offered the awards, and those that changed between offering and not. Results indicate the firms that change or always had a PB LTI award have lower returns in terms of Net Income, EBIT, EPS, and ROA. While Table 7 provides evidence of differences in performance being related to a firm's history offering PB LTI awards, these estimates may be influenced by other factors associated to the firm.

A series of regression analyses were implemented in an attempt to isolate the role of PB LTI awards on firm performance. Tables 8 through 11 report the estimates from our baseline model, described in Equation 1, of the relationship between the inclusion of PB LTI awards and performance. The tables reveal a pattern of positive within year increases followed by negative estimates in lagged years. For example, column 2 of Table 8 indicates that including a PB LTI plan in the current year predicts a 10.7 percentage point jump in 1-year TSR. At the same time, we also find that having a PB LTI plan last year (two years ago) predicts a 7.2 (10.3) percentage point decline in 1-year TSR. Looking at our preferred specifications in the four columns reported for each dependent variable, we find evidence of positive contemporaneous estimates on 1-year TSR, 3-year TSR, and ROE but negative lagged estimates for 1-year TSR, 3-year TSR, and 5-year TSR.

Estimates of the relative size of PB LTI to LTI on firm performance, reported in Tables 12 through 15, continue to present evidence of a short-term bump followed by a decline in firm performance. Notably, a different set of firm performance measures are impacted by changes in the weight compared to the introduction or removal of a PB LTI plan. Here we find that the weight of PB LTI to LTI most directly predicts ROE, EPS Growth, and ROIC. In fact, increasing the weight of PB LTI plans predicts only a positive increase in ROE and ROIC with no subsequent decline, i.e., increasing the share of LTI that is performance based by 1 percentage point is associated with between a 0.020 and 0.026 percentage point increase in ROIC.

In addition to the baseline analysis, we performed a series of sensitivity checks, examining the relative impact of market capitalization, financial sector, PB LTI offering pattern, and richer five year lag structure. The positive relationship between contemporaneous PB LTI plans is only present in Fortune 500 firms with lower market capitalization. Excluding firms from the Financial sector weakens the evidence of the positive contemporaneous relationships with PB LTI plans. Neither restricting the analysis to only those firms with changing PB LTI policy nor extending the model to include five lags change the baseline findings other than attenuating the results. Additionally, we explored the relationship between specific incentive pay categories on firm performance but found most estimates to be insignificant. Thus, these findings do not point to a particular category as driving the broader PB LTI impact found earlier.

## **5 Discussion and Future Direction**

Currently, almost ninety percent of the 2014 S&P 500 firms offer PB LTI plans to their named executive officers - a forty percent increase between 2006 and 2013. The relative value of these PB LTI plans has also increased over time, even among those firms that offer the plans, with PB LTI awards now representing just over one third of the total direct compensation

for NEOs. Breaking all PB LTI into six major categories reveals that half of those categories have growth while the other half remain stable or have slightly decreased.

Differences are observable in the firms that include PB LTI awards into the compensation plans of their NEOs compared to those that do not. Firms with PB LTI plans experience poorer performance in key areas. That said, the decision to use PB LTI awards may actually have been a response by the board to improve poor performance among those firms with any PB LTI history. In a similar vein, firms that have been performing well may not feel the need to change their compensation structure. Thus, the usage of PB LTI awards may be endogenous to observed firm performance, so care should be used when drawing causal implications from descriptive statistics.

Our baseline models examined the impact of the inclusion and size of PB LTI awards on firm performance. Evidence suggests that the inclusion of these plans results in short-term increases in performance followed by later declines. Alternatively, increasing the weight of the plans has a more positive impact overall, though there was still some evidence of later losses. While these models provide a clearer understanding of the impact of PB LTI awards on firm performance than the purely descriptive analyses, they still only describe the statistical relationship and are not causal.

This work builds upon our prior work exploring the role of TSR awards on firm performance. In this project, we aimed to understand how the role of the broader category of PB LTI is related to firm performance and which subcomponents may be driving that relationship. Future steps may include examining the role of compensation complexity on the relationship between incentive pay and firm performance.

## 6 Appendix

This appendix provides variable definitions for key measures used in this study.

- TSR outcome measures, where the closing price is adjusted for dividends
  - 1-Year TSR:  $(\text{Fiscal year end stock price}/\text{previous fiscal year end stock price})-1$
  - 3-Year TSR:  $\{(\text{Fiscal year end stock price}/\text{three fiscal year priors end stock price})^{\hat{1}/3}\}-1$
  - 5-Year TSR:  $\{(\text{Fiscal year end stock price}/\text{five fiscal year priors end stock price})^{\hat{1}/5}\}-1$
- TDC measure
  - $\text{TDC} = \text{Long-Term Incentives} + \text{Base Salary} + \text{Short-Term Portion of NEIP Compensation} + \text{Bonus}$
- LTI measure
  - $\text{LTI} = \text{Grant Date Present Value of Securities} + \text{Grant Date Present Value of Option (FAS 123(R))} + \text{Grant Date Present Value of Target Award}$

## 7 Tables

Table 1: Percent of Firms with PB LTI Plans

	Top 5	CEO	Top 5 Excluding CEO
2006	63.60	62.18	62.76
2007	65.75	62.35	64.83
2008	66.87	63.04	65.94
2009	68.01	64.38	67.70
2010	71.64	69.88	71.34
2011	78.10	76.59	77.52
2012	85.24	83.84	84.68
2013	88.08	86.49	87.31

Means of the share of firms with PB LTI plans by three samples: top 5 NEOs, CEOs, and top 5 NEOs excluding CEOs.

Table 2: Share of Firms with PB LTI Plan by Sector (Top 5)

	2006	2007	2008	2009	2010	2011	2012	2013
Energy	0.58 (31)	0.53 (34)	0.59 (32)	0.58 (33)	0.64 (33)	0.71 (35)	0.82 (38)	0.85 (39)
Materials	0.75 (24)	0.71 (28)	0.85 (27)	0.81 (27)	0.88 (26)	0.86 (29)	0.90 (29)	0.93 (28)
Industrials	0.63 (41)	0.70 (53)	0.61 (51)	0.69 (52)	0.71 (52)	0.72 (50)	0.81 (53)	0.92 (59)
Consumer Discretionary	0.52 (23)	0.56 (50)	0.71 (49)	0.74 (50)	0.74 (57)	0.83 (59)	0.84 (58)	0.89 (64)
Consumer Staples	0.67 (15)	0.70 (33)	0.69 (29)	0.77 (30)	0.75 (32)	0.88 (32)	0.90 (30)	0.91 (32)
Health Care	0.71 (14)	0.84 (19)	0.68 (22)	0.74 (23)	0.83 (23)	0.85 (26)	0.93 (29)	0.94 (31)
Financials	0.57 (49)	0.58 (52)	0.49 (53)	0.39 (46)	0.46 (52)	0.64 (50)	0.83 (52)	0.82 (56)
Information Technology	0.30 (10)	0.54 (26)	0.59 (29)	0.57 (28)	0.67 (27)	0.71 (34)	0.72 (36)	0.74 (42)
Telecommunication Services	0.50 (4)	0.50 (4)	0.67 (3)	0.50 (4)	0.80 (5)	0.67 (3)	1.00 (5)	1.00 (5)
Utilities	0.89 (28)	0.96 (28)	1.00 (28)	1.00 (29)	1.00 (28)	0.97 (29)	1.00 (29)	1.00 (30)

Means with number of observations in parentheses for the sample of the top 5 NEOs.

Table 3: Weight of PB LTI Plan Relative to LTI and TDC

Year	Top 5				CEO				Top 5 Excluding CEO			
	Unconditional		Conditional		Unconditional		Conditional		Unconditional		Conditional	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	LTI	TDC	LTI	TDC	LTI	TDC	LTI	TDC	LTI	TDC	LTI	TDC
2006	32.80	19.13	50.50	30.07	35.74	21.16	54.09	34.03	32.79	17.59	50.94	28.03
2007	33.20	19.13	49.57	29.10	35.59	20.58	53.57	32.90	32.99	17.88	49.80	27.58
2008	34.13	21.02	50.24	31.43	36.90	23.25	55.27	36.76	33.35	19.19	49.78	29.10
2009	36.07	21.75	52.38	31.98	37.85	23.23	55.49	36.09	35.98	20.44	52.49	30.19
2010	38.31	22.05	52.35	30.78	40.42	24.13	55.58	34.53	37.42	20.29	51.35	28.43
2011	41.43	24.74	52.29	31.68	43.38	26.86	54.51	35.07	40.67	22.82	51.71	29.43
2012	47.13	28.85	54.83	33.85	49.66	31.51	57.57	37.58	45.92	26.45	53.78	31.23
2013	49.73	30.88	56.02	35.05	52.55	34.64	59.81	39.94	47.78	27.75	54.30	31.78

Means of the weight of PB LTI plans by three samples: top 5 NEOs, CEOs, and top 5 NEOs excluding CEOs. Unconditional estimates include firms with zero individuals (with respect to the sample) reported to have a PB LTI plan. Conditional estimates exclude firms with zero individuals (with respect to the sample) reported to have a PB LTI plan.

## 7.1 Trends in IP Categories

Table 4: Separating IP Metrics in Strategically-Aligned Categories

IP Award Bin	IP Award Metric
Cash Flow	Cash Flow
	EBITDA
Growth (Top Line)	Market Share
	Revenue
Market-Based	Absolute TSR
	Market Capitalization
	Relative TSR
	Stock Price
	Total TSR (Relative and Absolute)
Profitability	EPS
	EPS / Net Income
	Gross Profit / Margin
	Net Income
	Operating Income / Margin
	ROS
Returns	EVA
	ROC / ROIC
	ROE
	ROA
Other	Asset/Asset Ratio
	Cost/Cost Ratio
	Customer Satisfaction
	Debt Leverage/Debt Ratios
	Division Performance
	Environmental
	Industry Specific
	N/A
	Other Financial
	Other Non-Financial
	Other Ratios
Safety	

The ICS thanks Pearl Meyer for categorizing the individual metrics into the above six groups.



Table 5: Prevalence of IP Categories Over Time - All Firms (Top 5)

Year	IP Category						Average IP Count	
	(1) Cash Flow	(2) Growth	(3) Market-Based	(4) Profitability	(5) Returns	(6) Other	(7) Individual Measures	(8) Categories
2006	6.69	7.95	30.13	29.29	20.92	11.72	1.44	1.07
2007	7.03	11.01	28.44	32.42	21.71	11.31	1.48	1.12
2008	6.81	11.15	30.34	32.51	20.12	12.38	1.51	1.13
2009	9.32	10.56	30.75	35.09	18.63	12.42	1.54	1.17
2010	8.96	12.54	35.82	37.31	20.90	11.04	1.71	1.27
2011	11.24	15.56	37.18	40.06	22.19	13.54	1.90	1.40
2012	11.98	18.11	45.68	39.00	25.07	16.16	2.21	1.56
2013	13.21	17.36	50.78	39.90	28.24	15.54	2.33	1.65

The left panels reports the means of the share of firms with each of the six IP categories for all firms by three samples: top 5 NEOs, CEOs, and top 5 NEOs excluding CEOs. The right panels presents the average number of metrics and categories by firm.

Table 6: Prevalence of IP Categories Over Time - Firms With PB LTI (Top 5)

Year	IP Category						Average IP Count	
	(1) Cash Flow	(2) Growth	(3) Market-Based	(4) Profitability	(5) Returns	(6) Other	(7) Individual Measures	(8) Categories
2006	10.96	13.01	49.32	47.95	34.25	19.18	2.36	1.75
2007	11.39	17.82	46.04	52.48	35.15	18.32	2.39	1.81
2008	10.84	17.73	48.28	51.72	32.02	19.70	2.40	1.80
2009	14.08	15.96	46.48	53.05	28.17	18.78	2.33	1.77
2010	12.71	17.80	50.85	52.97	29.66	15.68	2.42	1.80
2011	15.00	20.77	49.62	53.46	29.62	18.08	2.53	1.87
2012	14.83	22.41	56.55	48.28	31.03	20.00	2.73	1.93
2013	15.55	20.43	59.76	46.95	33.23	18.29	2.75	1.94

The left panels reports the means of the share of firms with each of the six IP categories for firms offering PB LTI awards by three samples: top 5 NEOs, CEOs, and top 5 NEOs excluding CEOs. The right panels presents the average number of metrics and categories by firm.

Table 7: Firm Characteristics by PB LTI Plan Pattern (Top 5)

	Always PB LTI	Change PB LTI	Never PB LTI
Market Cap - Avg	23690.79 (0.72)	25687.94 (0.94)	26379.44
Total Revenue - Avg	20476.85 (0.78)	17960.63 (0.55)	22355.41
10 Yr Net Inc CAGR	7.10 (0.00)	7.12 (0.00)	14.64
10 Yr ROIC CAGR	0.69 (0.07)	0.48 (0.06)	3.76
10 Yr EBIT CAGR	7.26 (0.00)	6.92 (0.00)	15.62
10 Yr EPS CAGR	7.00 (0.00)	6.33 (0.00)	13.38
10 Yr ROA CAGR	0.06 (0.01)	0.06 (0.03)	0.08
10 Yr ROE CAGR	0.16 (0.51)	0.15 (0.02)	0.26
10 Yr FCF CAGR	6.65 (0.03)	7.23 (0.02)	13.25
Observations	210	122	35

Means with p-values in parentheses for the sample of the top five NEOs. Firms are grouped into three groups based on the sample period: those that always had a PB LTI plan, those that never had a PB LTI plan, and those that changed their PB LTI plans by either introducing or removing them.

Table 8: Estimates of PB LTI Plans on 1-Year TSR and 3-Year TSR

	1-Year TSR				3-Year TSR			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB LTI Plan	3.610 (2.961)	10.704*** (3.126)	5.168 (3.984)	3.734 (4.082)	0.635 (1.362)	3.487* (1.409)	3.348* (1.511)	3.113* (1.481)
PB LTI Plan - 1 Lag	-2.168 (2.764)	-7.163* (3.322)	-1.781 (3.250)	-9.661** (3.164)	1.029 (1.195)	-1.578 (1.294)	1.479 (1.455)	-2.555 (1.354)
PB LTI Plan - 2 Lags		-10.275** (3.162)		-10.833*** (2.904)		-3.282* (1.468)		-2.547 (1.539)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	2249	2247	2249	2247	2249	2247	2249	2247
$R^2$	0.18	0.12	0.21	0.16	0.16	0.11	0.19	0.15
Adjusted $R^2$	0.17	0.11	0.20	0.15	0.15	0.11	0.18	0.14

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 9: Estimates of PB LTI Plans on 5-Year TSR and ROE

	5-Year TSR				ROE			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB LTI Plan	-2.249*	-0.515	-0.283	-0.425	1.552	1.801	1.120	1.163
	(1.073)	(1.089)	(1.084)	(1.098)	(1.177)	(1.171)	(0.852)	(0.877)
PB LTI Plan - 1 Lag	2.119**	0.277	2.103*	-0.278	1.088	0.464	0.581	0.188
	(0.791)	(0.830)	(0.855)	(0.794)	(0.862)	(0.729)	(0.714)	(0.661)
PB LTI Plan - 2 Lags		-1.669		-1.499		0.206		0.161
		(0.858)		(0.937)		(0.928)		(0.909)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	2249	2247	2249	2247	2249	2247	2249	2247
$R^2$	0.22	0.18	0.27	0.23	0.13	0.13	0.05	0.05
Adjusted $R^2$	0.21	0.17	0.27	0.23	0.12	0.12	0.05	0.04

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 10: Estimates of PB LTI Plans on EPS Growth and Total Revenue Growth

	EPS Growth				Total Revenue Growth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB LTI Plan	9.807 (13.081)	19.286 (10.589)	32.898 (21.099)	30.231 (24.286)	-1.884 (0.960)	-1.450 (0.997)	0.296 (1.117)	0.280 (1.122)
PB LTI Plan - 1 Lag	-15.031 (13.982)	-13.884 (14.624)	-9.142 (17.111)	-17.247 (16.080)	0.323 (0.882)	0.412 (0.979)	1.575 (1.059)	1.087 (1.031)
PB LTI Plan - 2 Lags		-24.676 (20.676)		-17.605 (26.024)		-1.165 (0.987)		-0.268 (1.152)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	2249	2247	2249	2247	2249	2247	2249	2247
$R^2$	0.02	0.02	0.02	0.02	0.17	0.16	0.19	0.19
Adjusted $R^2$	0.01	0.01	0.01	0.01	0.16	0.16	0.18	0.18

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Table 11: Estimates of PB LTI Plans on ROIC

	ROIC			
	(1)	(2)	(3)	(4)
PB LTI Plan	0.285 (0.833)	0.468 (0.845)	0.621 (0.528)	0.642 (0.530)
PB LTI Plan - 1 Lag	-0.008 (0.595)	-0.201 (0.437)	-0.104 (0.411)	-0.425 (0.394)
PB LTI Plan - 2 Lags		-0.175 (0.625)		0.027 (0.475)
Time FE	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	2249	2247	2249	2247
$R^2$	0.17	0.17	0.08	0.07
Adjusted $R^2$	0.16	0.16	0.07	0.07

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 12: Estimates of PB LTI/LTI on 1-Year TSR and 3-Year TSR

	1-Year TSR				3-Year TSR			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB LTI to LTI	0.084 (0.046)	0.162*** (0.049)	0.109 (0.056)	0.078 (0.054)	0.000 (0.026)	0.024 (0.028)	0.034 (0.033)	0.028 (0.033)
PB LTI to LTI - 1 Lag	-0.083 (0.047)	-0.153** (0.055)	-0.043 (0.057)	-0.145* (0.058)	0.020 (0.024)	-0.005 (0.022)	0.027 (0.021)	-0.019 (0.022)
PB LTI to LTI - 2 Lags		-0.097* (0.049)		-0.107* (0.054)		-0.029 (0.032)		-0.019 (0.033)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	2249	2205	2249	2205	2249	2205	2249	2205
$R^2$	0.18	0.11	0.21	0.15	0.16	0.11	0.19	0.15
Adjusted $R^2$	0.17	0.10	0.21	0.15	0.15	0.10	0.18	0.14

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$



Table 13: Estimates of PB LTI/LTI on 5-Year TSR and ROE

	5-Year TSR				ROE			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB LTI to LTI	-0.022 (0.015)	-0.004 (0.015)	0.017 (0.016)	0.016 (0.017)	0.041* (0.017)	0.040* (0.017)	0.036* (0.014)	0.037* (0.015)
PB LTI to LTI - 1 Lag	0.022 (0.014)	0.007 (0.015)	0.042* (0.016)	0.015 (0.015)	-0.005 (0.014)	-0.006 (0.013)	-0.006 (0.013)	-0.013 (0.013)
PB LTI to LTI - 2 Lags		-0.026 (0.015)		-0.016 (0.016)		-0.001 (0.016)		0.013 (0.015)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	2249	2205	2249	2205	2249	2205	2249	2205
$R^2$	0.22	0.18	0.27	0.23	0.13	0.13	0.05	0.05
Adjusted $R^2$	0.21	0.17	0.27	0.23	0.12	0.12	0.05	0.05

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 14: Estimates of PB LTI/LTI on EPS Growth and Total Revenue Growth

	EPS Growth				Total Revenue Growth			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PB LTI to LTI	0.767** (0.253)	0.872** (0.300)	1.050* (0.425)	1.092* (0.435)	-0.001 (0.015)	0.007 (0.016)	0.027 (0.018)	0.032 (0.018)
PB LTI to LTI - 1 Lag	-0.660** (0.225)	-0.711** (0.231)	-0.591** (0.191)	-0.721*** (0.213)	-0.008 (0.017)	-0.005 (0.021)	0.011 (0.020)	0.001 (0.023)
PB LTI to LTI - 2 Lags		-0.194 (0.271)		-0.135 (0.281)		-0.018 (0.018)		-0.000 (0.021)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes	No	No	Yes	Yes
Observations	2249	2205	2249	2205	2249	2205	2249	2205
$R^2$	0.02	0.02	0.02	0.02	0.16	0.16	0.19	0.18
Adjusted $R^2$	0.01	0.01	0.02	0.02	0.16	0.15	0.18	0.18

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table 15: Estimates of PB LTI/LTI on ROIC

	ROIC			
	(1)	(2)	(3)	(4)
PB LTI Plan	0.026*	0.025*	0.021*	0.020*
	(0.012)	(0.012)	(0.009)	(0.010)
PB LTI Plan - 1 Lag	-0.013	-0.010	-0.008	-0.013
	(0.010)	(0.010)	(0.008)	(0.007)
PB LTI Plan - 2 Lags		-0.006		0.005
		(0.011)		(0.008)
Time FE	Yes	Yes	Yes	Yes
Sector FE	Yes	Yes	No	No
Firm FE	No	No	Yes	Yes
Observations	2249	2205	2249	2205
$R^2$	0.17	0.16	0.08	0.07
Adjusted $R^2$	0.16	0.15	0.07	0.07

Regression point estimates with standard errors in parentheses. Time fixed effects (FE) are captured using dummy variables to identify each year within the panel. The sector fixed effects are based on the 10 sectors under the two-digit GICS: Energy, Materials, Industrials, Consumer Discretionary, Consumer Staples, Health Care, Financials, Information Technology, Telecommunication Services, and Utilities. Firm fixed effects are represented by a set of dummy variables that separately identifies each firm. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$