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CEO Long Term Incentive Compensation Plans and Firm Performance

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The current economic crisis has once again raised the issue of executive incentive compensation vis-à-vis corporate performance. Corporate top management are criticized for handing themselves hefty monetary awards while leaving their shareholders stand in the cold following the global financial crisis. The current study documents evidence on the performance effect of an important executive incentive compensation policy which has been gaining popularity – the CEO long term incentive compensation plans (LTIP). Using a longitudinal sample of Irish publicly traded companies over a 6-year period from 2002 to 2007, this fixed effect study reports mixed results. The adoption of LTIPs is not related to contemporaneous accounting and market performance, neither is it associated with future accounting performance. However, there is a significant and positive relationship between the adoption of LTIPs and future market performance.

JEL Codes: G30, G34 and M12

1. Introduction

Executive compensation has always been a topical and contentious issue. Despite the economic recession, the Associated Press review of compensation for the heads of companies in the Standard & Poor's 500 index finds the median pay package added up to nearly $8.4 million in 2007, a gain of around $280,000 from 2006. In the wake of the global financial crisis, many ask if executive pay still promotes more robust corporate governance and stronger corporate performance, as prescribed by agency theory, or is simply driving the interests of the executives and other stakeholders further apart?

According to agency theory, there is a fundamental conflict of interest in modern corporations between owners/shareholders and managers/directors. The presumption is that managers, being the agents of shareholders, if left un-observed, would pursue their own interests probably at the expenses of the shareholders. To address the problem, large modern corporations use, inter alia, executive incentive compensation as a means of aligning the interests of managers' with that of the shareholders'. Apart from basic salaries and benefits, the traditional components of an executive incentive compensation package include performance related (annual) bonuses and stock options, which are used extensively in both the UK and the US. The publicly listed companies in Ireland largely follow the UK corporate governance framework.

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In theory, the simple market-based incentive plans such as stock options has the potential to reduce agency problem because they tie a significant portion of the executive wealth to share prices – the yardstick for shareholder's wealth. However, the use of executive stock options also creates new problems. For example, the incentive effect of executive stock options is questionable when risk-averse executives hold undiversified portfolios of financial and human capital (Hall & Murphy 2002). Critics also point out that unconditional stock options may award "lucky" executives when there is a general bull market (Bertrand & Mullainathan 2001).

The use of long term incentive plans (LTIPs) in executive incentive compensation is relatively new. In the UK, LTIPs started gaining popularity during the second half of the 1990s following the recommendations of the Greenbury Committee (1995). The recommendations relate to the design of executive remuneration packages, the levels of award and their transparency. They specifically urge companies to replace executive stock options with LTIPs and/or conditional stock options. LTIPs typically include the granting of shares and/or cash to executives on the basis of some company specific performance conditions. In relation to the share component, LTIPs are effectively conditional stock options with zero exercise prices.

On the positive side, LTIPs can align the interests of managers with that of the shareholders' for a significant part of these plans are often stock-based. They also have the potential to motivate managers in a more realistic way given the company specific nature of these plans. However, for the very same reason, LTIPs also provide executives with new opportunities of manipulation and exploitation, such as the selection of "soft" comparator companies and the creation of complex schemes that make outside scrutiny difficult, etc. Indeed, there is evidence showing that the above concerns are not merely theoretical (Porac, Wade & Pollock 1999).

The fundamental issue is that the use of LTIPs for executive incentive compensation has to be justified by improved corporate performance. However, there is a dearth of empirical evidence in this regard. The current study addresses this issue by examining companies publicly traded on the Dublin Stock Exchange over a 6-year period. It is the first study that sheds light on the performance effect of LTIPs in the Irish context using a relatively large panel dataset. It provides direct empirical evidence on whether the adoption of LTIPs has any association with corporate performance.

In comparison to previous research in the UK (Buck et al. 2003) which documents reductions in the executive pay-performance sensitivity in the presence of LTIPs, the current study finds that the performance effect of the adoption of LTIPs among Irish publicly traded firms is mixed. There is a significant and positive relation between the adoption of LTIPs and long term future market performance. However, accounting performance is not related to the adoption of LTIPs, neither is short term market performance.

The rest of the paper is structured as follows. Section 2 discusses the relevant literature of executive compensation, particularly executive long term incentive compensation

plans. Section 3 presents the data and the methodology. Section 4 analyses the results. Section 5 concludes with a summary of the findings and the limitation of the study.

2. Executive Compensation and Long Term Incentive Plans

Baker, Jensen & Murphy (1988) describe the situation of executive compensation in a general sense, "Economic models of compensation generally assume that higher performance requires greater effort or that it is in some other way associated with disutility on the part of workers. In order to provide incentives, these models predict the existence of reward systems that structure compensation so that a worker's expected utility increases with observed productivity".

Prior studies on the impact of executive incentive compensation on performance provide mixed results. Some studies show that executive incentive compensation has a positive effect on performance (Hall & Liebman 1998). For instance, Abowd (1990) documents that a 10% increase in bonus for good economic performance is associated with a 30-90 basis points increase in after-tax gross economic income in the following year. Further, a payment increase of 10% for stock performance is associated with a 400-1200 basis points increase in expected total shareholder return.

In contrast, some others studies disagree (Gompers & Lerner 1999; Murphy 2000). Keser and Willinger (2000) create a laboratory experiment to test for the occurrences of hidden actions by executives/agents to maximize their interests at the expenses of the shareholders. The results show that while subjects in the role of agents tend to choose the actions which maximise their expected profits, subjects in the role of principals tend to offer contracts which differ from theoretical predictions. They find that although, more often than not, the contracts between the shareholders and the managers are linked to some form of performance measures, the agents/managers' remuneration is as high for the better outcome as it is for the worse outcome. In other words, the association between performance and executive compensation is weak.

During high flying markets of the 1990s, many companies utilized executive stock options as the primary method for incentive compensation (Satterfield 2002). The proponents of executive stock options claim that managers cannot alter their actions to affect market performance as much as they might do with accounting results (Baker, Jensen & Murphy 1988). Stock options can alleviate the agency problem by aligning managers' interests with those of shareholders' and attract executives with less risk aversion and higher willingness to exert effort (Tzioumis 2008). However, the choice of the exercise price can have a huge impact on the incentive effect of stock options. Executives discount stock options substantially from their market value (Tian 2004). Thus, the use of stock options can be wasteful and counterproductive unless used appropriately.

The relative decline in the use of executive stock options in executive compensation has been met with the increasing popularity of LTIPs. Cates and Costello (2004) point out two significant challenges facing LTIPs: the selection of appropriate measures and suitable goals. The objectives must be linked to achieving the right performance while avoiding

excessive complexity. Porac, Wade & Pollock (1999) provide evidence that shows company boards selectively choose "soft" peers, such that peer definitions are expanded beyond industry boundaries when company performance is poor (and the industry is performing well).

The complexities of LTIPs have also been criticized for giving executives opportunities to tilt the design in their favour. In addition, the heterogeneous nature of LTIPs makes the calculation of executive rewards very difficult and hampers outside examination (research) due to the absence of generally accepted norms for company specific LTIPs. For example, Buck et al. (2003) examine the LTIP that is used by the HSBC banking group. The LTIP rewards executives if firm performance crosses a hurdle of earning per share (EPS) growth rate, adjusted upwards for weighted inflation rates in Hong Kong, UK and USA. If this hurdle is cleared the number of shares distributed to executives depends on total shareholder return in a comparator group. If the company's total shareholder return (TSR) is above the fiftieth percentile of this comparator group, executives receive the shares award in full, with an additional 20% of the full award if performance is in the top quartile. Apparently, the many elements of this LTIP make it very difficult for shareholders to accurately evaluate the toughness of the measure(s). The comparator group involves tracking 329 companies over a set period of time. Thus, the actual management performance is not necessarily linked to the company performance, but to the performance of a peer group.

If LTIPs are so complicated and sometimes confusing to shareholders, why do companies use them? Cates and Costello (2004) argue that, inter alia, LTIPs can foster alignment between shareholders and management and reinforce a long term strategic focus. The plans can improve performance and shareholder returns over a sustained period of time and place a focus on long term goals and business objectives. More importantly, they can provide wealth creation potential tied to performance. However, the above conceptual argument is not fully supported by empirical results. The performance effect of LTIPs is mixed. Westphal and Zajac (1998) study the market reaction to the adoption of LTIPs for top management, even if the plans are, in the end, not implemented. They find that there is positive reaction to both an actual implementation and a supposed plan implementation. This positive reaction is consistent with the view that there will be a lower degree of agency problems and lower agency costs subsequent to the adoption of LTIPs (Kumar & Sopariwala 1992). However, using a UK sample, Buck et al. (2003) report that, while increasing average total rewards, the presence of LTIPs is associated with reductions in the sensitivity of pay for performance, raising doubts about the effectiveness of the LTIP instrument. Siding with the skeptics, they argue that LTIPs afford executives new opportunities to manipulate the terms of LTIPs in their own favour at the expense of shareholders. Empirical evidence on the performance effect of LTIPs of Irish plcs is in short supply. So far, there is hardly any evidence on the relationship between firm performance and the LTIP component of executive compensation. The current study makes a contribution in this regard.

3. Data and Methodology

Because the Irish Stock Exchange has a small number of listed companies, all companies of the ISEQ index that are active during the period between 2002 and 2007 are included in the sample which comprises 56 companies. The annual reports of sample firms for the years 2002 to 2007 are used to collect the levels of executive remuneration received by the CEOs. Annual reports in previous years are not used because the quality of disclosure is much poorer in comparison to the post Higgs report (2002) and the Combined Code (2003) period. We do not include executive compensation data following the financial crisis in 2008 to avoid potential distortion introduced by the market crash.

The remuneration package is broken into basic pay, benefits, performance related bonuses, stock options and long term incentive plans. The annual reports are also used to collect information on several corporate governance variables, such as the proportion of non-executive/independent directors on the board. Financial data is collected from Thomson DataStream.

The ideal length of study period in the field has been one of some debate. Some studies favour a shorter timeline (Lee 2009). Others prefer a longer period (Benito & Conyon 1999; Nelson 2005). Theoretically, the performance effect of long term incentive plans should take time to materialize. However, the longer the time period, the more external factors affect the study, which may include management changes, accounting standard changes and change in corporate strategy, etc. The current study chooses a 6-year pre-financial crisis period.

The general estimation model is as follows:
Performance = α + β1(Pay) + β2ln (Total Assets) + β3 (Stock Options) + β4 (LTIP) + β5(Board Independence %) + β6 (Director Ownership %) + β7 (Block Ownership %) + β8 (Non-executive chairmanship)

The hypothesis is that the presence of LTIPs is positively related to corporate performance in terms of both accounting and market returns.

Pay includes three separate component variables: CEO basic annual salary, CEO benefits and CEO performance bonus as disclosed in the annual reports. Companies that do not disclose a comprehensive breakdown of the director pay packet are dropped from the sample. The natural log of total assets is used to control for size. Some research finds a significant relationship between corporate governance and contemporaneous and subsequent operating performance. However, corporate governance is not correlated with future market performance (Bhagat & Bolton 2008). Board Independence, Director Ownership and Block Ownership are used to control for the performance effects of corporate governance. Director share ownership is designed to align the interests of managers with that of the shareholders', so are stock options. Block share ownership can provide external monitoring of managers.

Fernandes (2008) finds that top executive remuneration is higher in companies that have more non-executive directors, casting doubt on the monitoring role of non-executive directors. Given the existence of management affiliated non-executive directors (i.e. grey directors), the proportion of non-executive directors on the board may not be a good measure of board independence (although many studies use the proportion of non-executive directors on the board as a measure of board independence). This study uses the criteria stipulated in the Combined Code (2003) to measure the proportion of non-executive directors that are truly independent on the board. It also uses the presence of a non-executive chairman on the board as an additional measure of board independence.

Corporate performance of sample firms is examined from both accounting and market perspectives. Return on equity (ROE) is the accounting performance proxy. It is measured in two ways: contemporaneous annual ROE, i.e. short-term performance and annual ROE three years in the future, i.e. long term performance. Market based abnormal returns are also measured in both the short term, i.e. one year, and in the long term, i.e. three years. Abnormal returns are calculated using the index model.

LTIP is a dummy variable, taking the value of 1 if a CEO long term incentive compensation plan is present, otherwise 0. The introduction of LTIPs is expected to have a positive effect on corporate performance, particularly in the case of long term performance. A heuristic approach is used to value stock options as opposed to the Black-Scholes model (McKnight & Tomkins 1999). The Black-Scholes model has difficulty in valuing executive stock options because the options are not traded and the exercise of the options is sometimes dependent on achieving some financial goals. Simulation results suggest that stock option values calculated by option pricing models are typically around one quarter of the exercise price. Our computation uses a value of 1/4 times exercise price as the value for options (Core et al. 1999). Table 1 presents the variables used in the study.

Table 1 Variable Definition

Variable	Definition
ROE1	Contemporaneous annual return on equity ratio.
ROE3	Three year future return on equity ratio.
AR1	Annual abnormal market return.
AR3	Three-year future abnormal market return.
Pay	CEO basic annual salary.
Benefits	CEO benefits.
PR Bonus	CEO performance related bonus other than that is awarded by stock options and/or LTIPs.
Firm Size	The natural log of total assets.
NEDChair	Take the value of 1 if the chairman is non-executive, otherwise 0.
Board Independence	The proportion of independent directors on the board.
Director Ownership	Total board directors share ownership (%).
Block Ownership	Total block investors shareholding (over 3%).
Stock options	CEO stock option values.
LTIP	Take the value of 1 if the company has a CEO LTIP plan, otherwise 0.

4. Results

The sample contains 56 companies over the 6 years period from 2002 to 2007. Table 2 shows the descriptive statistics.

Table 2 Descriptive Statistics

AR1 is one-year abnormal stock return; ROE1 is one-year return on equity; IND is the proportion of independent non-executive directors on the board; DRO is the accumulated percentage of director shareholding; BLK is the accumulated percentage of block ownership of at least 3%; AST is the natural log of total assets; PAY is CEO annual salary; BEN is monetary benefits afforded to the CEO; BON is CEO performance related bonus.

	AR1	ROE1	IND	DRO	BLK	AST	PAY	BEN	BON
Mean	0.21	7.26	0.52	8.08	31.09	6.17	428192	28124	270756
Median	0.06	14.21	0.50	0	29.6	6.13	398500	23000	175000
STD	0.66	42.79	0.169	16.00	20.89	2.58	252913	36366	355061
MAX	5.44	123.26	0.88	81	100	12.192	1155000	400000	2025000
MIN	-0.63	-395.61	0.11	0	0	0	39000	0	0

The average CEO basic salary is €428,192. The mean CEO benefits are €28,124. Average performance related bonuses account for a considerable part of CEO compensation at €270,756. Given the large standard deviations, the results suggest that

the above three components of CEO compensation are unevenly distributed among sample firms.

Average CEO basic salary, benefits and performance related bonuses increase steadily over the 6-year sample period from 2002 to 2007. Average CEO basic salary increases from €348,836 in 2002 to €462,796 in 2007. Annual CEO benefits grow from €21,172 in 2002 to €33,042 in 2007. Performance related bonuses rise from €161,786 in 2002 to €370,312 in 2007. Average accounting returns in terms of return on equity experiences a significant increase from 1.84% in 2002 to 9.83% in 2007. However, it fluctuates over the 6-year period in which the average return on equity drops to a negative 1.05% in 2004. The median return on equity among sample firms over the 6-year period increases from 10.41% in 2002 to 15.44% in 2007, but it peaks at 18.16% in 2005 and decreases in the next two years.

The results seems to be consistent with Keser and Willnger's experiment (2000) result that the agents/managers' remuneration is as high for the better outcome as it is for the worse outcome.

The Higgs report (2002) and the Combined Code (2003) recommend/require improved board independence in terms of the proportion of independent non-executive directors on corporate boards. The Irish publicly traded companies generally subscribe to the UK corporate governance framework. Table 2 shows that, on average, sample firms have over half of the board represented by independent non-executive directors. This ratio remains stable over the 6-year period. The ownership structure of these companies is tilted towards block ownership instead of director/managerial shareholding. Table 3 presents the results of the correlation analysis.

Table 3 Pearson Correlation Analysis

AR1 is contemporaneous annual abnormal stock return; AR3 is 3-year future abnormal stock return; ROE1 is contemporaneous annual return on equity; ROE3 is 3-year future annual return on equity; NCH is a dummy variable taking the value of 1 if the company has a non-executive chairman on the board, otherwise 0; IND is the proportion of independent non-executive directors on the board; BLK is the accumulated percentage of block ownership of at least 3%; DRO is the accumulated percentage of director shareholding; AST is the natural log of total assets; PAY is CEO annual salary; BEN is monetary benefits afforded to the CEO; BEN is CEO performance related bonus; OPT is the value of CEO stock options. LTIP is a dummy variable taking the value of 1 if there is a CEO long term incentive plan, otherwise 0.
P values are in parentheses. ** Significant at the 0.01 level; * Significant at the 0.05 level.

	AR1	AR3	ROE1	ROE3	NCH	IND	BLK	DRO	AST	PAY	BEN	BON	OPT	LTIP
AR1	1.00													
AR3	-0.01	1.00												
ROE1	-0.12	-0.04	1.00											
ROE3	0.43**	-0.13	0.04	1.00										
NCH	-0.09	-0.22**	-0.01	-0.02	1.00									
IND	0.01	-0.01	-0.06	-0.01	0.02	1.00								
BLK	-0.05	0.05	-0.00	-0.01	-0.20**	0.12	1.00							
DRO	0.13*	0.24**	-0.01	-0.02	-0.03	-0.09	-0.20**	1.00						
AST	-0.17**	-0.23**	0.37**	0.02	0.16**	0.04	-0.07	-0.30**	1.00					
PAY	-0.16*	-0.26**	0.28**	0.03	0.20**	-0.00	-0.12	-0.34**	0.76**	1.00				
BEN	-0.01	-0.17*	0.07	-0.01	-0.07	-0.07	0.15*	-0.12	0.22**	0.22**	1.00			
BON	-0.07	-0.16*	0.18**	0.02	0.24**	-0.10	-0.20**	-0.20**	0.66**	0.66**	0.19**	1.00		
OPT	0.03	0.01	-0.05	-0.01	0.08	-0.01	-0.17**	0.17**	0.00	0.12	-0.02	0.11	1.00	
LTIP	-0.07	-0.02	0.20**	0.03	0.09	0.05	-0.10	-0.12	0.33**	0.26**	0.04	0.23**	-0.07	1.00

Uni-variate Analysis

Larger firms are more sophisticated to manage. They also have more capacity to pay their executives. The results in Table 3 show that firm size is positively correlated with CEO basic salary, benefits and performance related bonuses. Larger firms are also more likely to have long term incentive plans in place. LTIP is positively correlated with contemporaneous annual accounting performance in terms of return on equity, but it is not correlated with three-year future accounting performance. LTIP is not significantly correlated with stock market performance, neither are CEO stock options.

In addition, CEO basic salary is positively correlated with contemporaneous accounting performance, but this correlation disappears in relation to future accounting performance, i.e. 3-year future ROE. In fact, CEO basic salary is negatively correlated with both contemporaneous and future market performance. It is expected that CEO performance related bonus is positively and significantly correlated with contemporaneous accounting performance. However, the bonus is not correlated with contemporaneous market performance. The correlation coefficient even turns negative in relation to 3-year future market return. This preliminary finding seems to suggest that components of CEO compensation are more related to contemporaneous accounting performance than to future performance. As a robustness check, we also conduct the Spearman's Rank correlation coefficient analysis. The results are not materially different and are not reported here.

Multi-variate Analysis

Corporate governance related studies are prone to the problem of endogeneity which may introduce bias to OLS (Ordinary Least Squares) estimators. To address this issue, the current study employs fixed effect estimators to account for both observed and unobserved time-constant variables in the panel dataset. Table 4 reports the regression results.

Table 4 Fixed Effect Regressions on CEO Long Term Inventive Compensation Plans

ROE1 is contemporaneous annual return on equity; ROE3 is 3-year future annual return on equity; AR1 is contemporaneous annual abnormal stock return; AR3 is 3-year future abnormal stock return; NCH is a dummy variable taking the value of 1 if the company has a non-executive chairman on the board, otherwise 0; IND is the proportion of independent non-executive directors on the board; BLK is the accumulated percentage of block ownership of at least 3%; DRO is the accumulated percentage of director shareholding; AST is the natural log of total assets; PAY is CEO annual salary; BEN is monetary benefits afforded to the CEO; BEN is CEO performance related bonus; OPT is the value of CEO stock options. LTIP is a dummy variable taking the value of 1 if there is a CEO long term incentive plan, otherwise 0.

	(1) ROE1	(2) ROE3	(3) AR1	(4) AR3
NCH	-7.798	-23.040	0.034	0.027
	(1.65)	(0.21)	(0.10)	(0.03)
IND	-29.274	-11.170	0.228	-1.890
	(1.51)	(0.47)	(0.41)	(1.12)
BLK	-0.453	-0.160	0.008	0.003
	(1.29)	(0.10)	(1.16)	(0.20)
DRO	-0.580	-0.472	0.014	0.086
	(1.52)	(0.66)	(1.09)	(1.93)*
AST	24.176	-6.412	-0.060	-2.036
	(2.71)***	(0.10)	(0.38)	(3.81)**
PAY	-0.000	0.000	0.000	-0.000
	(1.12)	(0.93)	(0.36)	(0.26)
BEN	0.000	-0.000	-0.000	0.000
	(0.77)	(0.47)	(0.16)	(0.04)
BON	-0.000	-0.000	-0.000	0.000
	(0.10)	(0.51)	(0.50)	(1.71)
OPT	-0.000	-0.000	-0.000	-0.000
	(1.36)	(0.07)	(0.94)	(0.43)
LTIP	-2.706	10.977	-0.046	0.994
	(0.61)	(0.54)	(0.32)	(2.96)***
Constant	-96.290	71.914	0.147	13.489
	(1.97)	(0.13)	(0.11)	(3.65)***
Observations	235	215	215	173
R-squared	0.11	0.00	0.07	0.26

Robust t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

The four regressions in Table 4 test the potential relationship between LTIP and accounting based and market based firm performance. The adoption of CEO long term incentive compensation plans among sample firms is positively related with long term market based firm performance measured by three-year future abnormal stock returns. This relationship, however, does not exist between LTIPs and contemporaneous annual abnormal stock returns. On the other hand, accounting based firm performance is not related to the adoption of LTIPs. An introduction of a three-year lag does not change the results and the model loses explanatory

power. All other components of CEO compensation including CEO stock options are not related to firm performance.

As a robustness check, we test two sub-samples of non-financial firms and non-loss-making firms. Non-financial firms have unique governance and capital structure. Loss making firms' CEO compensation may not be comparable to profit making companies. Table 5 and Table 6 present the results.

The coefficients on LTIP in relation to 3-year future market performance are consistently and significantly positive. This result suggests that the positive effect on future market returns in relation to the adoption of CEO long term incentive plans is not affected by the profitability and the governance and capital structure of the company. Taking the results of the full sample in Table 4 and the results of the two subsamples in Table 5 and Table 6 together, it seems that, consistent with previous empirical evidence (Westphal & Zajac 1998), the market has interpreted the adoption of CEO long term incentive plans as a positive signal for future firm performance. However, it is puzzling to see that this relationship is not evident between the adoption of LTIPs and accounting firm performance. The coefficients on both the short-term and the long-term return on equity are positive but not significant among profit making firms. Among non-financial firms, the adoption of LTIPs has a significant but negative relationship with contemporaneous return on equity ratios. This relationship turns positive in relation to future accounting performance, though it is insignificant.

One possible explanation is that the result reflects the exact reason why LTIPs are introduced in some companies because firms that have performed poorly in the past, i.e. lower ROEs, attempt to use LTIPs to better align the interests of managers with the shareholders' in order to boost performance. However, if there is such an attempt in the first place, its effect has not been evident in relation to accounting performance. Another possible explanation is that there might be information asymmetry existing between accounting disclosure and market interpretation.

The complicated structure of individual long term incentive plans, as noted earlier, remains an unknown factor. On the one hand the exact time length of these "long-term" incentive plans varies. On the other hand, the exact measures used in these plans, e.g. a combination of accounting performance indicators and market performance indicators, are complicated and difficult to compare.

Table 5 Fixed Effect Regressions on CEO Long Term Inventive Compensation Plans of Non-financial Firms

ROE1 is contemporaneous annual return on equity; ROE3 is 3-year future annual return on equity; AR1 is contemporaneous annual abnormal stock return; AR3 is 3-year future abnormal stock return; NCH is a dummy variable taking the value of 1 if the company has a non-executive chairman on the board, otherwise 0; IND is the proportion of independent non-executive directors on the board; BLK is the accumulated percentage of block ownership of at least 3%; DRO is the accumulated percentage of director shareholding; AST is the natural log of total assets; PAY is CEO annual salary; BEN is monetary benefits afforded to the CEO; BEN is CEO performance related bonus; OPT is the value of CEO stock options. LTIP is a dummy variable taking the value of 1 if there is a CEO long term incentive plan, otherwise 0.

	(1) ROE1	(2) ROE3	(3) AR1	(4) AR3
NCH	-10.13	-23.98	0.0272	0.299
	(-1.652)	(-0.218)	(0.0779)	(0.311)
IND	-48.96	-2.180	0.166	-2.825
	(-1.728)*	(-0.0291)	(0.233)	(-1.297)
BLK	-0.643	-0.235	0.00676	-0.00518
	(-1.589)	(-0.181)	(0.908)	(-0.249)
DRO	0.311	-0.196	0.0134	0.0865
	(0.755)	(-0.0612)	(0.696)	(1.340)
AST	33.44	-3.525	-0.0909	-2.096
	(2.963)***	(-0.0340)	(-0.422)	(-2.847)***
PAY	-1.90e-05	4.73e-05	4.69e-07	-1.87e-06
	(-1.118)	(0.822)	(0.730)	(-0.868)
BEN	3.89e-05	-4.72e-05	-2.79e-07	-2.16e-07
	(0.755)	(-0.390)	(-0.170)	(-0.0289)
BON	-7.14e-07	-3.93e-05	-1.33e-07	2.94e-07
	(-0.0423)	(-0.551)	(-0.254)	(0.420)
OPT	-1.10e-06	-2.40e-07	-5.98e-08	-2.04e-08
	(-1.685)*	(-0.0477)	(-0.914)	(-0.234)
LTIP	-10.58	8.112	-0.0626	1.292
	(-2.138)**	(0.265)	(-0.381)	(2.744)***
Constant	-121.2	52.15	0.255	13.99
	(-2.309)**	(0.0761)	(0.161)	(2.949)***
Observations	194	174	175	140
R-squared	0.146	0.002	0.064	0.277

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6 Fixed Effect Regressions on CEO Long Term Inventive Compensation Plans of Profit Making Firms

ROE1 is contemporaneous annual return on equity; ROE3 is 3-year future annual return on equity; AR1 is contemporaneous annual abnormal stock return; AR3 is 3-year future abnormal stock return; NCH is a dummy variable taking the value of 1 if the company has a non-executive chairman on the board, otherwise 0; IND is the proportion of independent non-executive directors on the board; BLK is the accumulated percentage of block ownership of at least 3%; DRO is the accumulated percentage of director shareholding; AST is the natural log of total assets; PAY is CEO annual salary; BEN is monetary benefits afforded to the CEO; BEN is CEO performance related bonus; OPT is the value of CEO stock options. LTIP is a dummy variable taking the value of 1 if there is a CEO long term incentive plan, otherwise 0.

	(1) ROE1	(2) ROE3	(3) AR1	(4) AR3
NCH	-2.735	4.563	0.067	-0.282
	(0.70)	(2.58)**	(0.22)	(0.20)
IND	3.189	4.850	-0.197	-1.265
	(0.38)	(0.58)	(0.47)	(0.74)
BLK	-0.082	0.041	0.006	0.009
	(0.88)	(0.37)	(1.06)	(0.52)
DRO	-0.703	-0.344	0.002	0.123
	(6.74)***	(2.39)**	(0.16)	(2.87)***
AST	2.398	-0.256	-0.074	-2.103
	(1.34)	(0.15)	(0.51)	(2.55)**
PAY	0.000	0.000	-0.000	0.000
	(0.22)	(0.30)	(1.88)*	(0.19)
BEN	0.000	0.000	0.000	-0.000
	(2.62)***	(2.39)**	(1.23)	(0.38)
BON	0.000	0.000	0.000	0.000
	(1.18)	(1.53)	(1.54)	(1.22)
OPT	-0.000	0.000	0.000	0.000
	(1.99)**	(1.03)	(1.27)	(0.58)
LTIP	2.565	1.575	-0.013	1.174
	(1.07)	(0.53)	(0.10)	(2.54)**
Constant	7.322	24.179	0.746	14.192
	(0.58)	(1.81)*	(0.70)	(2.58)**
Observations	184	165	172	141
R-squared	0.18	0.13	0.07	0.28

Robust t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

5. Summary and Conclusion

The current study explores an empirical area that has been relatively overlooked by prior research particularly in Ireland, i.e. the potential relationship between the adoption of CEO long term incentive compensation plans and firm performance. The research focuses on two types of firm performance: accounting returns in term of return on equity ratios and market performance in terms of abnormal stock returns. Other CEO compensation components of basic pay, benefits, performance related bonuses and stock options are also included in the examination. The main finding is that there are mixed results in relation to the performance effect of the adoption of LTIPs among Irish publicly traded firms. The pertinent result is a significant and positive relation between the adoption of LTIPs and long term future market performance. However, the same relationship does not exist between accounting performance and the adoption of LTIPs, neither does it exist between the adoption of LTIPs and short term market performance.

In addition, the study shows that the incentive effect of CEO stock options on firm performance is questionable. The value of the stock options awarded to CEOs is found not to be significantly related to firm performance. Some negative relationship is even detected among non-financial and profit making firms. The "performance" related CEO bonus is not related to contemporaneous and future firm performance either. Corporate governance variables have little relationship with firm performance. These results seem to support the notion that hefty executive incentive compensation is not necessarily linked to improved performance.

A caveat of the study is the complex nature of the long term incentive compensation plans designed by individual companies. Unlike the device of executive stock options, LTIPs are often linked to different comparator group performance over different periods of time from company to company. The quality of the disclosure is also poorer. As a result, the intrinsic value of the plans is difficult to determine, let alone compare. There is limited room for external empirical examination. In another sense, future research of a case study nature could provide unique insight into the detailed designs of LTIPs and their impact on performance.

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