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# HOW RESPONSIVE EXECUTIVE COMPENSATION IS TO CORPORATE PERFORMANCE? AN INDIAN PERSPECTIVE

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**ABSTRACT**

*Based on the principal-agent framework, the present research puts to empirical scrutiny the responsiveness of executive pay to corporate performance in a sample of 209 companies listed on the S&P BSE 500 Index. Both sensitivity and elasticity models have been formulated to measure the strength and magnitude of the pay-performance relationship over the period 2008-09 to 2012-13. Using robust statistical tools, the results of the present study reveal a positive, yet weak strength of such relationship. The stronger responsiveness of pay to accounting-based performance vis-à-vis to market-based performance suggests remedial compensation policies further aligning executive pay to increase in shareholders' wealth in the sample Indian firms. Future research can explore additional theoretical underpinnings of the pay paradigm.*

***Keywords****: Executive compensation, Agency theory, Pay-performance relationship*.

**Introduction:**

The modern corporation, as defined by (Berle & Means, 1932), manifests the strained relationship between the owner and the manager. In such companies, managers are agents of the principals who are delegated with decision-making authority in the absence of these dispersed owners (Jensen & Meckling, 1976). Inherently opportunistic, managers are self-serving economic agents who values own interests rather than the owners' objectives. Consequently, being managers of others' money, they are not expected to take care of it with the same anxious vigilance as if their own (Smith, 1776). This gives rise to conflict of interests, thereby, resulting in agency problems (Fama & Jensen, 1983). Information asymmetry further accelerates this problem by making it difficult for the principal to verify their agents' actions (Dey, 2008). As a result, managers are likely to take actions that maximize their utility, even when those actions do not maximize shareholders' wealth (Watts & Zimmerman, 1986)

The principal can, nevertheless, limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities of the agent (Jensen & Meckling, 1976, p. 308). Executive rewards are, therefore, tied to shareholders' returns in order to subsume the managers' interests in the corporate objectives. This, in turn, squarely relates top managers' pay with corporate performance. Thus, the theoretical explanation underlying this relationship, is the agency theory which has, over decades, fostered an expansive stream of research linking executive pay with corporate performance (Barkema & Gomez-Mejia, 1998); (Lin, 2005);(Colpan & Yoshikawa, 2012), thereby establishing the pay-performance paradigm. Though these studies have mainly been conducted in the western part of the globe (Gill, 2014), this area is fast catching research interest in the developing economies as well due to its economic significance.

A continuous dilemma that often surrounds the media, practitioners, regulators, and the public at large is that, *'are the enormous top executive pay packages justified according to their company's performance?'* Abnormally high pay, according to some, signifies unresolved agency problems (Carter, Marcus, & Tehranian, 2016). Although there are ongoing debates about the strength and implications of this relationship, the overall consensus seems to point out that pay-performance relationships are not very strong (Jensen & Murphy, 1990); (Izan, Sidhu, & Taylor, 1998); (Otten, 2007); (Gigliotti, 2013).In a pursuit to explore the same in the Indian setting, the

present study conducts an analysis of the strength and magnitude of incentives provided by firm performance with respect to executive compensation. Throughout the paper, the terms *'compensation'* and *'compensation'* have been used interchangeably to denote the remuneration of the top executives. The present study contributes to the executive compensation literature in three ways. First, the paper adds to the scant empirical evidence investigating the justification for enormous executive pay packages in the Indian economy which is already characterized by income inequality. Second, by using robust statistical tools the study measures the responsiveness of pay to performance in both absolute as well as in relative terms.Third, to the best of the researcher's knowledge, no study conducted in India, other than the study conducted by Gill (2014), has included long-term compensation in the form of stock option grants in the computation of total compensation. Hopefully, the findings of the study will provide researchers and practitioners valuable insights on the responsiveness of *pay* to *performance* in the Indian business landscape.

**Literature Review:**

The extravagant top managerial remuneration has been, over the years, touching new levels. These levels have often been probed in the context of whether they are in line with the principals' objectives. In addition to the levels, this link can be captured by way of changes which portray the growth in directors' pay and nets out factors which remain constant over time (Gregg, Machin, & Szymanski, 1993). The seminal work of (Jensen & Murphy, 1990) brought the Pay-Performance Sensitivity (PPS) model in the forefront of the compensation discussions. In this study, conducted during 1974 to 1986, the sample US companies exhibited a low responsiveness of $3.25 change in pay for every $1,000 change in performance which raised many questions on the theory underlying executive pay.(Gregg, Machin, & Szymanski, 1993) were also sceptical of the pay for performance sensitivity in a sample of 288 large UK listed companies during the period 1983-91. In consonance, (Garen, 1994) found a low explanatory power of the empirical model testing PPS.

In another study conducted using UK sample companies, (Conyon, 1997) found a positive relation between cash compensation of the highest paid director and current year shareholder returns. However, the authors failed to find any relation between top directors' pay and pre-dated shareholder returns. Taking Return on Assets (ROA) as the performance measure, similar results were reported by (Ghosh, 2006) in the Indian context, who found the Chief Executive Officer (CEO) pay to be contingent only upon the present-year accounting performance. (Benito & Conyon, 1999), in stark contrast, found directors' cash compensation to be positively related to pre-dated shareholder returns. Disaggregating CEOs' cash compensation into salary and bonus, (Banker, Darrough, Huang, & Plehn-Dujowich, 2013) added that the present-year salary was positively associated with both past as well as future performance, as measured by Return on Equity (ROE), whereas bonus was not.

Besides, (Hall & Liebman, 1998) recognized the responsiveness of pay to performance in relative terms using percentages known as the Pay-Performance Elasticity (PPE) model. Taking a larger sample of US publicly traded companies, the authors, in juxtaposition, found a strong pay-performance relationship over 1980 to 1994, mainly on account of increased stock option grants. In this context, (Kim, 2010) revealed that the sensitivity of stock-based pay to performance is more pronounced in volatile firms. Interestingly, (Kato & Long, 2006) found significant sensitivity and elasticity of cash compensation with shareholder value in a large sample of Chinese listed firms. Overall, these studies signal towards the strong responsiveness of both long-term as well as short-term incentives to corporate performance. Further, supporting agency theory, (Conyon & Peck, 1998) observed that shareholder returns predict top director's pay. (Ke, Petroni, & Safieddine, 1999) also found support for the optimal contracting theory by establishing a significantly positive relationship between CEO pay and accounting performance among publicly-held firms that have diffused ownership. Likewise, a number of studies e.g. (Kim, 2004); (Cheng & Firth, 2006) report a positive relation between accounting performance measures, like ROA and ROE, with executive pay. Moreover many authors (e.g., (Hall & Liebman, 1998); (Aggarwal & Samwick, 1999) have found pay to be positively related with market performance measures such as Total Shareholder Return (TSR).

Although with varying magnitudes, executive compensation typically has a positive relationship with corporate performance (e.g., (Agrawal, Makhija, & Mandelker, 1991); (Mehran, 1995); (Baber, Janakiraman, & Kang, 1996); (Bhattacherjee, Jairam, & Shanker, 1998); (Hall & Liebman, 1998); (Ke et al., 1999); (Wallsten, 2000); (Carpenter & Sanders, 2002); (Kim, 2004); (Ghosh, 2006); (Leone, Wu, & Zimmerman, 2006); (Kato & Long, 2006); (Shim, Lee, & Joo, 2009); (Kim, 2010).A number of studies, however, report the presence of a weak or negative relationship. For instance, (Izan, Sidhu, & Taylor, 1998) failed to establish a statistically significant pay-performance relationship by formulating both level and change models using a sample of 99 Australian listed companies during 1987 to 1992. (Brick, Palmon, & Wald, 2006) found a negative relationship between firm performance and excess compensation, and attributed the same to

the ineffective monitoring atmosphere which they termed as *'cronyism'*. (Parthasarathy, Menon, & Bhattacherjee, 2006), could not establish a significant impact of net profit margin and ROA on CEO payin their study among a large sample of listed firms in India.

Further, in the Japanese setting, (Kubo, 2005) found an overall weak PPS in a panel data set of 210 large listed companies studied during 1993-95. (Firth, Fung, & Rui, 2006) echoed similar results for Chinese listed firms. Negligibly small PPS was reported by (Haid & Yurtoglu, 2006) in a sample of German listed companies. Refuting the optimal contracting theory, (Duffhues & Kabir, 2008) found significantly negative pay-performance relationship in the Netherlands during 1998 to 2001. Later, (Bootsma, 2010) observed a positive, but low pay-performance relationship in a sample of 160 Dutch listed companies during 2002-07. In a large sample studied during the period 1992 to 2004, (Brick, Palmon, & Wald, 2012) observed that a statistically significant negative relation exists between higher CEO PPS and future stock returns. (Gigliotti, 2013) also denied the connection between top managers' pay and company performance across 145 Italian companies listed on the Milan Stock Exchange studied between 2004 and 2009. (Gill, 2014), using both PPS and PPE models, moreover, observed that top executives in the sample Indian companies were drawing enormous compensation even when their companies were performing poorly. Lately, (Alves, Couto, & Francisco, 2016), in a sample of Portuguese listed companies studied over 2002-11, also found the variability in CEO pay as explained by shareholder returns to be small. Likewise, (Fabbri & Marin, 2015) found the relationship between executive pay and firm performance (as measured by net profits) to be weak in a sample of large German firms over the period 1977 to 2009.As evident, researchers have put the strength of the pay-performance relationship to question (e.g., (Jensen & Murphy, 1990); (Haid & Yurtoglu, 2006); (Firth, Fung, & Rui, 2006), thereby providing the rationale for the following hypothesis:

***H:*** *There exists a positive but weak relationship between executive pay and corporate performance.*

**Research Methodology:**

**Sample Selection:**

A total of 209 companies were selected from the companies listed on the S&P BSE 500 Index as on 31 March 2013, formed the final sample for the purpose of this study. The data for the present study was collected from FY 2008-09 up to FY 2012-13 from the corporate database *Prowess*, and the annual reports of the sample companies. For selecting the final sample, companies which were not a part of the said index, during the complete study period, were not considered. Moreover, due to varying managerial pay practices, banking and financial service sector companies along with government owned companies were deleted. Companies which have undergone major corporate restructuring during the course of the study were also removed. Further, companies with financial year other than 31st March were kept out of the final sample. Finally, companies without any executive board of directors for any year during the study were excluded from the sample.

**Variable Selection and Description:**

The variables of utmost importance for studying the pay-performance relationship are executive compensation and corporate performance. In order to bring forth the pay-performance strength, compensation has been taken in both absolute and relative terms. The absolute change in pay (*ΔPAY*) is defined as change in executive compensation for the period'*t*' compared to the period'*t* – 1'. The change in pay in relative terms (*ΔlnPAY*), on the other hand, has been calculated as the natural logarithm of executive compensation for the year*'t'* minus the natural logarithm of compensation for the year '*t* –1'.

For the purpose of the present analysis, the dependent variable, executive pay, comprises of both cash pay (*CPAY*) and total pay (*TPAY*). Cash pay is the sum of salary and annual bonus/commission. Total pay, on the other hand, includes both cash and non- cash pay components, i.e., salary, perks, allowances, retiral benefits, bonus/commission and stock option grants. Stock option awards have been computed following the pioneering study of (Black & Scholes, 1973), as adjusted for dividends by (Merton, 1973).

The independent variable, corporate performance, has been defined in absolute terms in four ways, i.e., delta Shareholder Wealth (*ΔSW*), delta Sales (*ΔSALES*), delta Net Income (*ΔNI*), and delta Operating Income (*ΔOI*). *ΔSW* is computed as TSR at period '*t*' times, the market capitalization at period '*t* –1' as used by (Jensen & Murphy, 1990), (Murphy, 1999), (Zhou, 2000), (Firth, Fung, & Rui, 2006), (Bootsma, 2010), (Gill, 2014), etc. Following (Jensen & Murphy, 1990), the accounting measures of *ΔSALES*, *ΔNI*, and *ΔOI* have been taken as the value at period't' minus the value at period '*t* –1'.

The following relative performance measures have also been included: delta of natural logarithm Shareholder Wealth (*ΔlnSW*), sales Growth (*GROWTH*),delta ROA (*ΔROA*), and delta ROE (*ΔROE*). *ΔlnSW* is calculated as the natural logarithm of (1 + TSR) at time '*t*' as defined by (Murphy, 1999), (Conyon & Murphy, 2000), (Bootsma, 2010), (Gill, 2014), etc. Growth has been measured as the natural logarithm of sales at time '*t*' minus the natural logarithm of sales at time '*t* –1' following (Bootsma, 2010). The accounting measures of *ΔROA* and *ΔROE* have been computed as the value at time*'t'* minus the

value at time'*t –1'* e.g.(Kato & Kubo, 2006); (Bootsma, 2010); (Gill, 2014) etc.

**Framework for Analysis:**

The strength of the pay-performance relationship has been analysed using the PPS and the PPE models. Before testing these models empirically, the normality of the data has been tested. An initial inspection of the normal curve fitted on the histogram, reflected the skewed nature of the data. Thereafter, the data was subjected to more rigorous tests of normality viz., Kolmogorov-Smirnov test (Kolmogorov, 1933); (Smirnov, 1933) and Shapiro-Wilk test (Shapiro & Wilk, 1965). However, both these statistical tests failed to establish the data normality and the presence of outliers was detected by constructing box plots for all variables under investigation. In order to find a solution to this problem and derive meaningful results, robust regression technique was applied on the following models:

**Pay-Performance Sensitivity Model:**

In their seminal work, (Jensen & Murphy, 1990) documented the PPS model to estimate the strength of the pay-performance relationship in absolute terms. The model ascertains the amount change in executive compensation with respect to ₹1.00 change in performance. This relation is valid only under the assumption, that the prospect of losing a given rupee has the same impact on executives, irrespective of their wealth (Gill, 2014). The primary advantage of this model is that sensitivities have a more natural economic interpretation as it represents the executive's share of value creation (Murphy, 1999). The magnitude of the strength will be estimated through beta coefficient using the following regression equation:

$$\Delta PAY_{it} = \alpha + \beta \Delta PERF_{it} + \varepsilon_{it} \quad (1)$$

where,

$\Delta PAY_{it}$ = Change in executive compensation of company *i* in period *t* compared to period *t* –1**.**

$\Delta PERF_{it}$ = Change in performance of company *i* in period *t* compared to period *t* –1.

**Pay-Performance Elasticity Model:**

(Hall & Liebman, 1998) Introduced a relative measure to ascertain the percentage change in pay with respect to change in performance by 1 percent. This definition is based on the assumption that what matters to executives is the percentage change in wealth (Gill, 2014, p. 98). Among the sensitivity and elasticity approach, neither of the two is dominant over the other (Murphy, 1999). Yet, the elasticity approach produces a better fit as rates of return, rather than changes in performance, explain more about the cross-sectional variation in pay. In addition, unlike the sensitivity coefficient, which varies monotonically with firm size, the elasticity measure is relatively invariant to firm size (Gibbons & Murphy, 1992).However, the change in compensation is amplified, when the variables are measured as percentage changes (Kim, 2004).Elasticity estimates will be computed using the following model:

$$\Delta lnPAY_{it} = \alpha + \beta \Delta lnPERF_{it} + \varepsilon_{it} \quad (2)$$

where,

$\Delta lnPAY_{it}$ = Natural logarithm of executive compensation of company *i* for time *t* minus natural logarithm of executive compensation of company *i* for time *t* –1,

$\Delta lnPERF_{it}$ = Natural logarithm of performance of company *i* for time *t* minus natural logarithm of performance of company *i* for time *t* –1.

**Results and Discussion:**

**Descriptive Statistics:**

Along with the statistics for the complete period, Table 1 presents period-wise descriptive statistics for all the variables used to study the strength of the pay-performance relation. Panel A of Table 1 reports the descriptive information pertaining to pay and performance variables by their amount changed from the previous period. Pressing upon the gravity of the issue, the average *ΔCPAY* and *ΔTPAY* show aberrant behaviour during some years on account of extreme observations. Overall, the average *ΔSW* is showing large variability. Corresponding to the average, a much lower median value has been observed. An overall positive pattern of *ΔSALES* has been observed during the course of the study. The sample companies, in contrast, do not display consistent pattern of *ΔNI* over the years. On the other hand, the statistics pertaining to *ΔOI* project a positive trend.

Further, Panel B of Table 1 presents the respective changes in the selected pay and performance measures in terms of percentage. Over the years, the average *ΔlnCPAY* is positive. Similar trend has been observed in the case of *ΔlnTPAY*. The period-wise average *ΔlnSW* shows that, over the years, shareholders' wealth has been increasing. However, towards the end of the study, this average value begins to recede. With respect to the sample companies, a positive trend has also been reflected by *GROWTH* during each year studied. In contrast, statistics pertaining to *ΔROA* portray a declining trend. Concurrently, *ΔROE* also showcases a gradual declining trend. The overall negative *ΔROE vis-à-vis* an overall positive change in both pay measures, further, provide an elementary indication of the problem of excessive pay to the executives. These observations made from the

descriptive statistics will be instrumental for subsequent detailed analysis.

**Regression Results:**

**Sensitivity of Pay to Performance:**

Table 2 presents the year-wise pattern of responsiveness of *CPAY* to both market- and accounting-based corporate performance measures in the sample companies. An analysis of the results of Model 1 shows that *ΔSW* has gained significance in positively influencing *ΔCPAY* only in the latter years of study. Though this relationship has turned positive, it has been observed that with each ₹1,000 increase in *SW*, *CPAY* changed by minuscule amount ($\beta$ = 0.000, $p$< 0.01) in 2011-12 and by a meagre 01 paisa ($\beta$ = 0.00001, $p$< 0.01) in 2012-13. This implies that the incentive provided by increase in shareholders' wealth is inadequate for aligning managers' interests with the company's objectives. Common to the Indian backdrop, such weak pay sensitivities have also been observed by Gill (2014).

With respect to Model 2, a non-uniform pattern has been displayed by the sensitivity coefficients over the years. The results of this model have reported significant positive coefficients only in 2010-11 and 2012-13. In these years, it has been observed that, with each ₹1,000 increase in *SALES*, a significantly positive, but small change of 09 paisa ($\beta$ = 0.00009, $p$< 0.01) and 07 paisa ($\beta$ = 0.00007, $p$< 0.01), respectively, occurs in *CPAY*. Gill (2014) also reported a similar magnitude of incentive provided by increase in sales during 2009-11. Like the previous specification, Model 3 also reports statistically significant impact of *ΔNI* in the years 2010-11 and 2012-13 whereas the results of Model 4 show that *ΔOI* is a significant determinant of pay during a major part of the study, i.e., from 2010-11 to 2012-13. Interestingly, during the years 2010-11 and 2012-13, a ₹1,000 increase in both *NI* and *OI* cause a magnitude of ₹1.00 ($\beta$ = 0.001, $p$< 0.01) change in *CPAY*. From this, it may be said that, as compared to *ΔSW* and *ΔSALES*, *CPAY* is more sensitive to *ΔNI* and *ΔOI*. A higher responsiveness of *CPAY* to accounting-based profits *vis-à-vis* to market-based performance may, thus, be concluded from Model 1 to 4.

Taking *TPAY* as the dependent variable, Table 3 presents the regression results of Model 5 to 8. By regressing *ΔTPAY* on *ΔSW* in order to estimate Model 5, significant results ($\beta$ = 0.000, $p$< 0.10) were obtained only for 2011-12. Moreover, the low strength implies a nearly absent relationship between *TPAY* and *SW*. Contrary to the theoretical assumption, the sample companies display that as compared to *ΔTPAY, ΔCPAY* exhibit more responsiveness to *ΔSW*. Further, in the year 2009-10, *TPAY* shows only a slight change of 04 paisa ($\beta$ = 0.00004, $p$< 0.10) in the direction of *ΔSALES*, as reported in Model 6. In the subsequent year, this relationship has turned significantly negative ($\beta$ = -0.00012, $p$< 0.05) which is consistent with (Duffhues & Kabir, 2008). This negative relationship is followed by an insignificant relationship during 2011-12. In the last period studied, a ₹1,000 increase in *SALES* led to an increase of 06 paisa ($\beta$ = 0.00006, $p$< 0.10) in *TPAY*. Therefore, a clear trend in the time-series data cannot be deciphered from the results of this model. In conjunction with Model 3, Model 7 further highlights the significance of *NI* in determining pay by affecting a change of ₹1.00 ($\beta$ = 0.001, $p$< 0.01) in *TPAY* throughout the course of the study. However, the year 2010-11 is an exception where this relationship is insignificantly negative. Followed by a pattern of weak ($\beta$ = 0.00028, $p$< 0.05) and insignificant association during 2009-10 to 2011-12, the link between *ΔTPAY* and *ΔOI*, as shown in Model 8, gradually strengthened ($\beta$ = 0.001, $p$< 0.01) in 2012-13.

To summarize, the sensitivity coefficients show executive pay to be more responsive to the accounting-based firm performance measures, especially net income. This is in line with the legal requirement linking managerial remuneration with the company's net profits (See Section 197 of the Companies Act, 2013). Yet, the magnitude of the relation of pay with net income is too low which clearly indicates the inadequate compliance of the legal stipulations.

**Elasticity of Pay to Performance:**

Taking *ΔlnCPAY* as the dependent variable, Model 9 to 12 estimates the pay-performance elasticities as reported in Table 4. In Model 9, the predictor variable, *ΔlnSW*, is found to follow a pattern of negative association with *ΔlnCPAY* up till 2011-12. Though the results show a negative trend, this impact is insignificant to penalize the executives for shareholders' wealth maximization. However, in 2012-13, the relative responsiveness of pay to this market-based performance measure has significantly improved as shown by an increase of 0.69 percent ($\beta$ = 0.069, $p$< 0.01) in *CPAY* corresponding to every 10 percent increase in *SW*. Even though highly significant, this impact is inadequate to motivate executive efforts towards improved company performance. For the period 1983-91, (Gregg, Machin, & Szymanski, 1993) observed a similar trend in a sample of UK companies. Later, (Bootsma, 2010) also reported a comparable cash pay elasticity coefficient with shareholder wealth in the Netherlands. Replicating the pattern followed by the previous specification, Model 10 reports insignificant and even negative elasticity coefficients for *GROWTH* till the year 2011-2012 and significantly positive, thereafter, during 2012-13. Notwithstanding this similarity, *GROWTH*, in comparison with *ΔlnSW*, reports a higher elasticity of 4.07 percent ($\beta$ = 0.407, $p$< 0.01).

Further, as shown in Model 11, the magnitude of strength of the accounting-based measure of ROA is

fairly high throughout the study period, except during 2011-12. With a change of 10 percent in *ΔROA*, a significantly positive impact of 8.10 percent ($\beta$ = 0.810, $p$< 0.10), 8.83 percent ($\beta$ = 0.883, $p$< 0.05), and 6.19 percent ($\beta$ = 0.619, $p$< 0.10) on *ΔlnCPAY* have been reported during 2009-10, 2010-11, and 2012-13, respectively. The considerable magnitude of impact, as shown by these high coefficients, indeed has important implications for the Indian corporate sector. Likewise, (Ghosh, 2010) observed a significant, however, weak sensitivity of executive pay in relation to ROA among sample Indian manufacturing companies. Gill (2014), on the other hand, reported an insignificant link between pay and ROA. Contrary to these Indian studies, the present results are in conformance with those reported in the US context by (Kim, 2004). The author recognized a significantly high impact of change in ROA on top executive pay as reported in the present study. Moreover, unlike any other measure, *ΔROE* exhibits a significant impact on *ΔlnCPAY* during all the years under study, as shown in Model 12. This consistent pattern of impact presses upon the important role played by ROE in determining executive compensation.

Taking *ΔlnTPAY* as the dependent variable, Table 5 reports the results of Model 13 to 16. Similar trend in terms of strength and magnitude, as reported by Model 9 and 10 using *ΔlnCPAY* as the dependent variable, has been observed in Model 13 and 14. Further with respect to Model 15, a 9.57 percent ($\beta$ = 0.957, $p$< 0.05) increase in *TPAY* during 2009-10 in relation to a 10 percent increase in *ROA* is very forthcoming. Besides, the results reported in Model 16 for *ΔlnTPAY*, replicate the pattern followed by *ΔlnCPAY* in Model 12.

Overall, a stronger pay-accounting performance relationship *vis-à-vis* the relationship between pay and market-based firm performance is a noteworthy observation as reflected from the results of both models. Similar findings have been reported by (Raithatha & Komera, 2016) in a large sample of Indian listed firms studied during 2002-12. The time-series analysis of the PPS and the PPE model shows that the change in company performance influence pay as reflected through significant positive coefficients. Although positive, these coefficients are too small to drive the executives towards better corporate performance. Moreover, majority of the models exhibit an inconsistent pattern and report considerably small estimates. Therefore, together with PPS, PPE model also show a positive yet weak pay-performance relationship, thereby extending complete support for *H*, i.e., *there exists a positive but weak relationship between executive pay and corporate performance*.

**Conclusion:**

The present study seeks justification for executive pay awards in incentives provided by corporate performance through measuring its strength and magnitude. Further, the study is motivated by the concern for identifying the seriousness of the issue of unjustified rewards in India. This objective has been accomplished by formulating two base models often found to be studied by researchers in the realm of executive pay literature. Depicting the change in terms of amount and percentage, these models have been adopted by researchers worldwide. Overall, the results extend an evidence of a weak positive link between pay and performance in terms of changes.

The present study can be replicated using a larger sample of companies and for a longer span of time. It is, however, equally plausible to argue that as much, if not more, media policy attention has been focused on pay levels as on changes (Cosh & Hughes, 1997, p. 482). Moreover, acceptance of the hypothesis of a positive yet weak pay-performance relationship induces the need to explore additional theoretical underpinnings for a better understanding of the *'pay problem'*. Further, future research could critically appraise the impact of law and key pay reforms in determining managerial compensation.

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**Table 1: Descriptive Statistics**

| Variable | Year | N | Mean | Median | SD | Min. | Max. |
|---|---|---|---|---|---|---|---|
| **Panel A: Change in ₹million** | | | | | | | |
| ***CPAY*** | 2009-10 | 209 | 6.539 | 1.554 | 49.588 | -198.191 | 439.411 |
| | 2010-11 | 209 | 15.480 | 2.975 | 94.999 | -182.269 | 1070.800 |
| | 2011-12 | 209 | -6.805 | 1.820 | 89.701 | -1070.800 | 137.085 |
| | 2012-13 | 209 | 3.922 | 1.665 | 43.481 | -172.900 | 429.407 |
| | Overall | 836 | 4.784 | 2.037 | 73.479 | -1070.800 | 1070.800 |
| ***TPAY*** | 2009-10 | 209 | 16.185 | 3.193 | 82.334 | -197.795 | 837.054 |
| | 2010-11 | 209 | 7.961 | 4.400 | 82.748 | -787.992 | 546.400 |
| | 2011-12 | 209 | -1.687 | 2.860 | 62.366 | -515.861 | 186.052 |
| | 2012-13 | 209 | 5.311 | 1.436 | 54.770 | -170.890 | 570.387 |
| | Overall | 836 | 6.942 | 3.083 | 71.773 | -787.992 | 837.054 |
| ***SW*** | 2009-10 | 209 | -21983.837 | 1625.610 | 259640.404 | -2900623.459 | 407783.078 |
| | 2010-11 | 209 | 110083.105 | 8074.745 | 560440.614 | -580380.324 | 5060891.246 |
| | 2011-12 | 209 | 298610.234 | 69904.590 | 957516.041 | -450349.441 | 11078387.370 |
| | 2012-13 | 209 | 105250.820 | 25419.254 | 505200.751 | -3034486.658 | 2257545.698 |
| | Overall | 836 | 122990.081 | 19056.416 | 632533.344 | -3034486.658 | 11078387.367 |
| ***SALES*** | 2009-10 | 209 | 6425.330 | 1242.000 | 39578.760 | -37487.500 | 540717.200 |
| | 2010-11 | 209 | 11017.992 | 2753.000 | 44300.302 | -85205.200 | 582512.100 |
| | 2011-12 | 209 | 13961.778 | 3651.800 | 58838.390 | -12979.400 | 811410.000 |
| | 2012-13 | 209 | 8110.708 | 2154.100 | 36389.220 | -100202.700 | 339920.200 |
| | Overall | 836 | 9878.952 | 2444.500 | 45602.391 | -100202.700 | 811410.000 |
| ***NI*** | 2009-10 | 209 | 1119.668 | 306.300 | 3518.747 | -9890.700 | 19242.000 |
| | 2010-11 | 209 | 1291.691 | 172.900 | 9595.390 | -17093.000 | 124536.900 |
| | 2011-12 | 209 | -700.113 | -12.800 | 9715.838 | -127661.900 | 34059.900 |
| | 2012-13 | 209 | -86.600 | 62.700 | 3988.671 | -24844.200 | 18103.600 |
| | Overall | 836 | 406.161 | 131.350 | 7361.245 | -127661.900 | 124536.900 |
| ***OI*** | 2009-10 | 209 | 1783.793 | 386.600 | 6549.466 | -9422.700 | 72776.100 |
| | 2010-11 | 209 | 2047.720 | 414.100 | 12967.464 | -14956.000 | 160070.900 |
| | 2011-12 | 209 | 509.150 | 379.700 | 12711.460 | -163598.100 | 53255.800 |
| | 2012-13 | 209 | 691.011 | 359.500 | 4862.793 | -23599.300 | 29642.700 |
| | Overall | 836 | 1257.919 | 396.400 | 9957.903 | -163598.100 | 160070.900 |
| **Panel B: Change in percentage** | | | | | | | |
| ***CPAY*** | 2009-10 | 206 | 7.248 | 9.375 | 61.619 | -324.254 | 236.591 |
| | 2010-11 | 207 | 23.907 | 14.533 | 63.223 | -216.933 | 510.190 |
| | 2011-12 | 205 | 0.045 | 6.211 | 59.418 | -248.491 | 225.641 |
| | 2012-13 | 204 | 6.384 | 6.848 | 51.510 | -283.372 | 317.894 |
| | Overall | 822 | 9.432 | 9.956 | 59.688 | -324.254 | 510.190 |
| ***TPAY*** | 2009-10 | 206 | 8.766 | 12.432 | 65.513 | -316.407 | 357.574 |
| | 2010-11 | 207 | 20.778 | 14.785 | 61.137 | -246.549 | 510.190 |
| | 2011-12 | 206 | 0.358 | 7.769 | 57.262 | -352.403 | 130.370 |
| | 2012-13 | 204 | 4.703 | 5.933 | 47.209 | -283.372 | 242.753 |
| | Overall | 823 | 8.676 | 10.185 | 58.595 | -352.403 | 510.190 |
| ***SW*** | 2009-10 | 173 | 27.118 | 37.156 | 94.478 | -321.888 | 252.972 |
| | 2010-11 | 161 | 40.593 | 57.098 | 91.564 | -299.573 | 213.298 |
| | 2011-12 | 199 | 97.710 | 111.514 | 88.652 | -460.517 | 251.770 |
| | 2012-13 | 182 | 74.233 | 89.399 | 98.606 | -265.926 | 317.095 |
| | Overall | 715 | 61.793 | 77.473 | 97.288 | -460.517 | 317.095 |
| ***GROWTH*** | 2009-10 | 209 | 9.728 | 9.009 | 25.275 | -72.722 | 160.314 |
| | 2010-11 | 209 | 20.246 | 17.860 | 61.568 | -136.738 | 806.910 |
| | 2011-12 | 209 | 14.698 | 16.020 | 28.949 | -226.999 | 146.959 |
| | 2012-13 | 209 | 8.194 | 10.393 | 23.328 | -136.574 | 110.286 |
| | Overall | 836 | 13.217 | 13.408 | 38.340 | -226.999 | 806.910 |
| ***ROA*** | 2009-10 | 209 | -0.386 | -0.116 | 5.382 | -30.046 | 18.167 |
| | 2010-11 | 209 | -0.711 | -0.735 | 7.095 | -20.456 | 74.879 |
| | 2011-12 | 209 | -1.189 | -0.185 | 8.818 | -96.085 | 14.960 |
| | 2012-13 | 209 | -0.642 | -0.749 | 6.603 | -29.223 | 60.514 |
| | Overall | 836 | -0.732 | -0.448 | 7.076 | -96.085 | 74.879 |
| ***ROE*** | 2009-10 | 209 | 26.374 | 38.671 | 769.534 | -8342.994 | 2807.525 |
| | 2010-11 | 209 | 171.373 | 10.326 | 2609.949 | -2737.961 | 37346.187 |

| Variable | Year | N | Mean | Median | SD | Min. | Max. |
|---|---|---|---|---|---|---|---|
| | 2011-12 | 209 | -224.267 | -7.142 | 2689.354 | -38027.733 | 4187.636 |
| | 2012-13 | 209 | -19.278 | 4.482 | 451.121 | -1961.377 | 2589.114 |
| | Overall | 836 | -11.449 | 8.063 | 1927.896 | -38027.733 | 37346.187 |

**Table 2: Results of Cash Pay-Performance Sensitivity Model**

| | Dependent variable: $\Delta CPAY_{it}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
| | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. |
| **Panel A: 2009-10** | | | | | | | | |
| Constant | 2.202*** | 3.285 | 2.293*** | 3.273 | 2.018*** | 2.873 | 2.097*** | 2.990 |
| ***ΔSW*** | -0.000 | -0.017 | | | | | | |
| ***ΔSALES*** | | | -0.000 | -0.562 | | | | |
| ***ΔNI*** | | | | | 0.000 | 0.860 | | |
| ***ΔOI*** | | | | | | | 0.000 | 0.482 |
| *F*-stat. | 0.00 | | 0.32 | | 0.74 | | 0.23 | |
| N | 208 | | 208 | | 208 | | 208 | |
| **Panel B: 2010-11** | | | | | | | | |
| Constant | 4.901*** | 4.958 | 4.097*** | 4.180 | 4.595*** | 4.472 | 4.622*** | 4.499 |
| ***ΔSW*** | -0.000 | -0.921 | | | | | | |
| ***ΔSALES*** | | | 0.000*** | 4.165 | | | | |
| ***ΔNI*** | | | | | 0.001 *** | 7.054 | | |
| ***ΔOI*** | | | | | | | 0.001*** | 7.307 |
| *F*-stat. | 0.85 | | 17.34*** | | 49.76*** | | 53.39*** | |
| N | 209 | | 209 | | 209 | | 209 | |
| **Panel C: 2011-12** | | | | | | | | |
| Constant | 3.869*** | 4.612 | 4.526*** | 4.686 | 4.476*** | 5.185 | 4.017*** | 4.700 |
| ***ΔSW*** | 0.000*** | 3.143 | | | | | | |
| ***ΔSALES*** | | | -0.000 | -0.446 | | | | |
| ***ΔNI*** | | | | | 0.000 | 1.189 | | |
| ***ΔOI*** | | | | | | | 0.000*** | 5.742 |
| *F*-stat. | 9.88*** | | 0.20 | | 1.41 | | 32.98*** | |
| N | 209 | | 208 | | 208 | | 209 | |
| **Panel D: 2012-13** | | | | | | | | |
| Constant | 1.281 | 1.571 | 1.647** | 2.034 | 2.127** | 2.505 | 1.652** | 2.195 |
| ***ΔSW*** | 0.000*** | 6.251 | | | | | | |
| ***ΔSALES*** | | | 0.000*** | 3.112 | | | | |
| ***ΔNI*** | | | | | 0.001*** | 2.956 | | |
| ***ΔOI*** | | | | | | | 0.001*** | 3.744 |
| *F*-stat. | 39.07*** | | 9.68*** | | 8.74*** | | 14.02*** | |
| N | 208 | | 209 | | 209 | | 209 | |

**Note:** (1) *, **, ***, respectively, indicates significant at the 10 percent, 5 percent, and 1 percent levels.
(2) Results have been obtained by using *Stata 13.0*.

**Table 3: Results of Total Pay-Performance Sensitivity Model**

| | Dependent variable: $\Delta TPAY_{it}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 5 | | Model 6 | | Model 7 | | Model 8 | |
| | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. |
| **Panel A: 2009-10** | | | | | | | | |
| Constant | 3.515*** | 3.813 | 3.405*** | 3.635 | 2.950*** | 3.025 | 3.128*** | 3.293 |
| ***ΔSW*** | 0.000 | 1.115 | | | | | | |
| ***ΔSALES*** | | | 0.000* | 1.718 | | | | |
| ***ΔNI*** | | | | | 0.001*** | 2.600 | | |

| | Dependent variable: $\Delta TPAY_{it}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 5 | | Model 6 | | Model 7 | | Model 8 | |
| | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. |
| ***ΔOI*** | | | | | | | 0.000** | 2.014 |
| *F*-stat. | 1.24 | | 2.95* | | 6.76*** | | 4.05** | |
| N | 208 | | 209 | | 209 | | 209 | |
| **Panel B: 2010-11** | | | | | | | | |
| Constant | 5.902*** | 5.470 | 6.815*** | 5.737 | 6.090*** | 5.635 | 6.017*** | 5.568 |
| ***ΔSW*** | -0.000 | -0.740 | | | | | | |
| ***ΔSALES*** | | | -0.000** | -2.140 | | | | |
| ***ΔNI*** | | | | | -0.000 | -1.387 | | |
| ***ΔOI*** | | | | | | | -0.000 | -0.993 |
| *F*-stat. | 0.55 | | 4.58** | | 1.92 | | 0.99 | |
| N | 209 | | 208 | | 208 | | 208 | |
| **Panel C: 2011-12** | | | | | | | | |
| Constant | 4.548*** | 3.929 | 4.783*** | 4.003 | 5.365*** | 5.138 | 5.271*** | 4.927 |
| ***ΔSW*** | 0.000* | 1.782 | | | | | | |
| ***ΔSALES*** | | | 0.000 | 0.892 | | | | |
| ***ΔNI*** | | | | | 0.001*** | 5.082 | | |
| ***ΔOI*** | | | | | | | 0.000 | 0.733 |
| *F*-stat. | 3.18* | | 0.80 | | 25.82*** | | 0.54 | |
| N | 208 | | 208 | | 209 | | 208 | |
| **Panel D: 2012-13** | | | | | | | | |
| Constant | 2.347** | 2.028 | 1.925 | 1.586 | 2.457** | 2.064 | 2.053* | 1.694 |
| ***ΔSW*** | 0.000 | 0.029 | | | | | | |
| ***ΔSALES*** | | | 0.000* | 1.932 | | | | |
| ***ΔNI*** | | | | | 0.001*** | 2.621 | | |
| ***ΔOI*** | | | | | | | 0.001*** | 3.579 |
| *F*-stat. | 0.00 | | 3.73* | | 6.87*** | | 12.81*** | |
| N | 208 | | 209 | | 209 | | 209 | |

**Note:** (1) *, **, ***, respectively, indicates significant at the 10 percent, 5 percent, and 1 percent levels.
(2) Results have been obtained by using *Stata 13.0*.

**Table 4: Results of Cash Pay-Performance Elasticity Model**

| | Dependent variable: $\Delta lnCPAY_{it}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 9 | | Model 10 | | Model 11 | | Model 12 | |
| | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. |
| **Panel A: 2009-10** | | | | | | | | |
| Constant | 0.133*** | 4.829 | 0.095*** | 3.572 | 0.111*** | 4.560 | 0.104*** | 4.306 |
| ***ΔlnSW*** | -0.023 | -0.815 | | | | | | |
| ***GROWTH*** | | | 0.164 | 1.567 | | | | |
| ***ΔROA*** | | | | | 0.810* | 1.803 | | |
| ***ΔROE*** | | | | | | | 0.011*** | 3.395 |
| *F*-stat. | 0.66 | | 2.46 | | 3.25* | | 11.52*** | |
| N | 171 | | 205 | | 206 | | 206 | |
| **Panel B: 2010-11** | | | | | | | | |
| Constant | 0.184*** | 5.898 | 0.157*** | 5.311 | 0.145*** | 5.853 | 0.141*** | 5.704 |
| ***ΔlnSW*** | -0.049 | -1.559 | | | | | | |
| ***GROWTH*** | | | -0.064 | -0.708 | | | | |
| ***ΔROA*** | | | | | 0.883** | 2.553 | | |
| ***ΔROE*** | | | | | | | 0.017** | 2.532 |
| *F*-stat. | 2.43 | | 0.50 | | 6.52** | | 6.41** | |
| N | 159 | | 207 | | 207 | | 206 | |
| **Panel C: 2011-12** | | | | | | | | |
| Constant | 0.136*** | 3.742 | 0.094*** | 3.178 | 0.115*** | 4.795 | 0.116*** | 5.066 |
| ***ΔlnSW*** | -0.033 | -1.194 | | | | | | |
| ***GROWTH*** | | | 0.095 | 0.852 | | | | |
| ***ΔROA*** | | | | | 0.333 | 1.237 | | |
| ***ΔROE*** | | | | | | | 0.009** | 2.295 |
| *F*-stat. | 1.43 | | 0.73 | | 1.53 | | 5.27** | |
| N | 195 | | 204 | | 205 | | 204 | |

| | Dependent variable: $\Delta lnCPAY_{it}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 9 | | Model 10 | | Model 11 | | Model 12 | |
| | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. |
| **Panel D: 2012-13** | | | | | | | | |
| Constant | 0.026 | 0.922 | 0.037* | 1.770 | 0.074*** | 3.412 | 0.071*** | 3.333 |
| ***ΔlnSW*** | 0.069*** | 3.047 | | | | | | |
| ***GROWTH*** | | | 0.407*** | 4.862 | | | | |
| ***ΔROA*** | | | | | 0.619* | 1.901 | | |
| ***ΔROE*** | | | | | | | 0.012*** | 2.605 |
| *F*-stat. | 9.29*** | | 23.63*** | | 3.61* | | 6.79*** | |
| N | 177 | | 204 | | 204 | | 204 | |

**Note:** (1) *, **, ***, respectively, indicates significant at the 10 percent, 5 percent, and 1 percent levels.
(2) Results have been obtained by using *Stata 13.0*.

**Table 5: Results of Total Pay-Performance Elasticity Model**

| | Dependent variable: $\Delta lnTPAY_{it}$ | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Model 13 | | Model 14 | | Model 15 | | Model 16 | |
| | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. | Coeff. | *t*-stat. |
| **Panel A: 2009-10** | | | | | | | | |
| Constant | 0.157*** | 5.897 | 0.124*** | 4.880 | 0.138*** | 5.968 | 0.126*** | 5.469 |
| *ΔlnSW* | -0.021 | -0.777 | | | | | | |
| *GROWTH* | | | 0.152 | 1.516 | | | | |
| *ΔROA* | | | | | 0.957** | 2.232 | | |
| *ΔROE* | | | | | | | 0.009** | 2.113 |
| *F*-stat. | 0.60 | | 2.30 | | 4.98** | | 4.46** | |
| N | 171 | | 205 | | 206 | | 205 | |
| **Panel B: 2010-11** | | | | | | | | |
| Constant | 0.188*** | 5.821 | 0.149*** | 4.987 | 0.158*** | 6.397 | 0.158*** | 6.264 |
| ***ΔlnSW*** | -0.024 | -0.742 | | | | | | |
| ***GROWTH*** | | | 0.064 | 0.710 | | | | |
| ***ΔROA*** | | | | | 0.780** | 2.250 | | |
| ***ΔROE*** | | | | | | | 0.012* | 1.803 |
| *F*-stat. | 0.55 | | 0.50 | | 5.06** | | 3.25* | |
| N | 159 | | 207 | | 207 | | 206 | |
| **Panel C: 2011-12** | | | | | | | | |
| Constant | 0.130*** | 3.617 | 0.102*** | 3.760 | 0.114*** | 4.752 | 0.114*** | 4.842 |
| *ΔlnSW* | -0.029 | -1.049 | | | | | | |
| *GROWTH* | | | 0.057 | 0.655 | | | | |
| *ΔROA* | | | | | 0.322 | 1.187 | | |
| *ΔROE* | | | | | | | 0.009** | 2.318 |
| *F*-stat. | 1.10 | | 0.43 | | 1.41 | | 5.37** | |
| N | 196 | | 206 | | 206 | | 205 | |
| **Panel D: 2012-13** | | | | | | | | |
| Constant | 0.022 | 0.806 | 0.025 | 1.201 | 0.072*** | 3.421 | 0.069*** | 3.315 |
| *ΔlnSW* | 0.071*** | 3.231 | | | | | | |
| *GROWTH* | | | 0.459*** | 5.573 | | | | |
| *ΔROA* | | | | | 0.438 | 1.400 | | |
| *ΔROE* | | | | | | | 0.020*** | 4.368 |
| *F*-stat. | 10.44*** | | 31.05*** | | 1.96 | | 19.08*** | |
| N | 177 | | 204 | | 204 | | 204 | |

**Note:** (1) *, **, ***, respectively, indicates significant at the 10 percent, 5 percent and 1 percent levels.
(2) Results have been obtained by using *Stata 13.0*.

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