DIRECTORS' REMUNERATION, CORPORATE GOVERNANCE AND FIRM PERFORMANCE LINKAGES: EVIDENCE FROM THE EMERGING COUNTRY

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Abstract

The study examines the trends and patterns in remuneration of directors working for the largest 30 listed companies in India over the past 18 years, i.e., from 2002 to 2019. It tries to establish short-term and long-run relationships between the director's remuneration and firm performance after controlling for the firm's size, governance, leverage, and risk for the sample companies. The study found a significant increase in remuneration for the period of study, especially after the new guidelines on executive remuneration in the Indian Companies Act, 2013. It also confirms a change in the composition of the remuneration in the last five years wherein the proportion of fixed component (salary) has increased, and the component of variable components (bonus/commission, perquisites) have declined. Results also confirm a short-term bi-directional association between directors' remuneration and firm performance variables. Further, the outcomes of the panel least square regression confirm the subsistence of a strong pay-performance association for the variable components of directors' remuneration. Furthermore, the paper also found a positive relationship with board size indicating larger boards fail to exercise control on paying excessive remuneration to its directors. The positive relationship reported among directors' remuneration and firm performance measures is partially in line with past studies (Chakrabarti, Subramanian, Yadav, & Yadav, 2012; Ghosh, 2006; Ozkan, 2011). However, our results contradict the existing relationship with board size and directors' remuneration highlighting the need to strengthen governance mechanism in the Indian scenario.

Keywords: Directors' Remuneration, Corporate Governance, Firm's Performance, India

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1. INTRODUCTION

The issue of excessive directors' remuneration has gained media and public attention across the globe in the last two decades. As per the Financial Stability Forum, the payment of excessive remuneration was one of the contributing factors inducing the global financial crisis in developed countries. Large payments to managers act as drainage to shareholders' wealth especially when remuneration is not linked with organization performance.

Despite the issue gaining attention in academic and policy circles, the directors' remuneration has seen a substantial upside during the last two decades. In the Indian context, academicians, representatives from the government, and people from the media have raised this issue of rising directors' remuneration in Indian companies. Critics of remuneration policies attribute weak regulatory and governance mechanisms as significant factors leading to managerial rent extraction behavior in Indian firms (Jaiswall & Bhattacharyya, 2016; Bose, 2014; Chakrabarti et al., 2012; Ghosh, 2010; Jaiswall & Firth, 2009).

In the Indian context, the erstwhile Indian Companies Act, 1956 contained rules for managerial remuneration. According to section 198 of the Companies Act, the total remuneration paid to top-level management of a public limited company or a subsidiary private limited company, in a fiscal year, could not go beyond eleven percent of the company's net profit. Additionally, it barred disbursement of any remuneration to directors excluding the fees to be paid under section 309(2) of the Companies Act in the case of inadequate profits or firm incurring severe losses. In addition, section 309 restricted the total remuneration of all full-time directors up to ten percent of the company's net profits in a fiscal year apart from the prior government approval. Further, section 200 prohibited any corporate house from disbursing remuneration liberated of taxes to all its top executive employees.

Even though the act had provisions to safeguard the interest of shareholders however the framework was imposed only on public limited companies and its subsidiaries and excluded private companies. In order to plug the loopholes of the Indian Companies Act, 1956, modifications were made to the Companies Act, 2013. The revised act consolidated all the provisions underneath a single provision of 197. Further, it was made obligatory for all listed companies (private and public ltd companies) to adhere to the new guidelines of the act enclosed in section 197 of the Companies Act, 2013. Furthermore, as per the new guidelines, every listed company had to constitute a nomination and remuneration committee which would ensure that the remuneration of directors was realistic and adequate to attract, retain and inspire directors for running the company successfully.

As per section 197 of the act, firms having sufficient profits can disburse remuneration to all kinds of directors including managing directors and full-time directors and managers not beyond 11 percent of the total profits earned. In case of a single managing director; a full-time director or manager, the remuneration to be paid shall not surpass 5 percent of the total profits and where there are in excess of one of such director's remuneration payable shall not go beyond 11 percent of the net profit.

Further, Schedule V (Part II) of the Companies Act, 2013[1] also permitted a company with insufficient earnings to pay its managing director or the full-time director increased remuneration (up to 200 percent) through an exceptional resolution

agreed by the shareholders along with a detailed explanation of pay increases and mandated publishing the ratio of median pay of top management and pay of all employees in their annual reports.

More recently, the Companies (Amendment) Act, 2017 – amendment effective from 12th of September 2018, allowed payment of managerial remuneration to key directors beyond the prescribed threshold, the same can be paid through authorization in a general meeting through approval of shareholders. Further, it was also notified that for companies that have defaulted on payment of banks, financial institutions, or any other secured creditor, the act mandates to get creditor's approval before placing the matter of increasing remuneration for shareholders' approval.

Thus, it may be concluded that compared to the erstwhile Companies Act, 1956, the new regulations have made way for a more clear and less complicated policy on executive remuneration which requires Indian listed companies to be more transparent in reporting their executive remuneration policies. At the same time, new provisions aim at empowering shareholders especially in case of decisions related to increasing the remuneration of top directors.

In the same line, the study captures the past trends of directors' remuneration and tries to empirically establish its linkage with the firm's performance. This paper adds value to the existing literature in four ways. At the outset, we study the association between remuneration and performance beginning from 2002 to 2019. The eighteen-year period covers two major regime shifts, i.e., 2002 – when directors' remuneration disclosures were made mandatory by SEBI and 2013 – when new guidelines for directors' remuneration were framed in Companies Act, 2013. Second, we focus on the directors' remuneration's three distinct components. We study the firm performance's impact on aggregate along with distinct components of directors' remuneration (salary, bonus, and perquisites) uncovering new insights on how different components of directors' pay respond to changes in firm performance. Thirdly, we examine the relationship after controlling for board governance (main control mechanism) and other important control variables (size, risk, and debt). Finally, we investigate the short-run causality among the firm performance and directors' remuneration variables using the panel causality tests which supports the existence of heterogeneity across the cross-sections (Dumitrescu & Hurlin, 2012). The paper thus examines both the short-run and the long-run pay-performance relationship in the Indian context. The next section discusses the literature followed by the empirical methods followed by findings and conclusion.

2. LITERATURE REVIEW

Previous studies on the directors' remuneration stem from agency theory, which deals with how top directors' payment policies ought to be intended to reduce agency cost. There are numerous studies (Ntim, Lindop, Osei, & Thomas, 2015; Doucouliagos,

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[1] http://www.mca.gov.in/Ministry/pdf/CompaniesAct2013.pdf

Graham, & Haman, 2012; Ozkan, 2011; Main, Bruce, & Buck, 1996; Boschen & Smith, 1995; Hubbard & Palia, 1995; Jensen & Murphy, 1990) which report positive pay-performance relationship. However, there are other studies that could not establish significant pay-performance linkages (van Essen, Heugens, Otten, & van Oosterhout, 2012; Dong & Ozkan, 2008; Tosi, Werner, Katz, & Gomez-Mejia, 2000; Core, Holthausen, & Larcker, 1999). Brief assessments of the relevant studies have been briefly examined in this paper.

In the US context, Jensen and Murphy (1990) have studied the association between a firm's performance and top management pay for over a large sample of 2,000 firms. The study found a positive relationship between the senior executive's remuneration and firm performance. Hubbard and Palia (1995) also examine CEO remuneration in the context of US banks and found greater remuneration in markets where interstate banking was allowed. Another study by Boschen and Smith (1995) found linkages between managerial remuneration and firms' past performance. Main et al. (1996) report a strong linkage of top management's remuneration and organizational performance especially when executive options were included in executive payment.

On the contrary, Core et al. (1999) report an inverse relationship between board characteristics, ownership structure, and a firm's future operating performance. They also report a positive relationship between board size and total remuneration. In the same line, Brick, Palmon, and Wald (2006) could not establish a linkage between organizational performance and executive remuneration. Dong and Ozkan (2008) have studied the impact of institutional ownership influencing top management remuneration for firms in the context of the UK. They found institutional investors had no significant bearing on the director pay levels and pay-performance relationship. Alshimmiri (2004) found a negative association between cash managerial remuneration and firm performance. Frydman and Jenter (2010) also report a significant rise in top management remuneration from the 1970s to the early 2000s. Guest (2010) study the correlation between governance structures and executive remuneration and concluded that a higher percentage of the board's independent directors in the company negatively influences the director's pay rise. Ozkan (2011), study the relationship between cash (pay and additional benefits) and stock options of executive payment and reported a considerable positive correlation between the remuneration of the CEO and performance of the company. Further, Alonso and Aperte (2011), have studied the relationship between the composition of the board and equity-linked remuneration in the European context. The study found a higher proportion of independent directors on the negatively impacting direct payments and positively impacting bonus or equity link remuneration. Doucouliagos, Graham, and Haman (2012) have also explored the determinants of CEO's pay in the Australian context and have reported a rise in executive payment over the years. They also report dynamic adjustments, size of the company, number of people on board,

CEO's tenure, and firm performance as major drivers of CEO payment. Ntim et al. (2015) have tested executive payment and firm performance linkage using a three-stage least squares (3SLS) simultaneous equation structure and found stronger executive remuneration and firm performance relationship for their sample.

In the Indian context, there is growing literature examining the nexus between executive remuneration and firm performance in the Indian context. Nonetheless, the results are mixed. One of the earliest studies by Ramaswamy, Veliyath, and Gomes (2000) examined the remuneration of CEOs of top 150 listed companies on the Bombay Stock Exchange (BSE) and reported an inverse relationship among executive remuneration and ownership levels in family-controlled companies during 1992-1993. Ghosh (2006), using a panel data approach on a sample of Indian manufacturing firms found the return on assets as a proxy of firm performance positively and marginally affecting CEO remuneration. On the contrary, Parthasarathy, Bhattacherjee, and Menon (2006) found executive remuneration not linked to the company's performance. Chakrabarti et al., 2012 studied firms listed on the Bombay Stock Exchange for seven years (2004-2010) and reported a positive association between CEO remuneration and firm size (calculated by market capitalization, assets, and sales) and the proportion of promoter holding.

Recently, Aggarwal and Ghosh (2015) explored the relationship between directors' remuneration and a firm's value using both accounting and market-based measures and provide evidence of significant positive relation between accounting performance and directors' remuneration. Raithatha and Komera (2016) find weak evidence of a pay-performance association among the sample firms. On the other hand, Kaur and Singh (2018) find a more significant and positive relationship between CEO payment and firm performance. Finally, Patnaik and Suar (2020) study corporate governance characteristics, environmental, social, and governance disclosure practices linkages with CEO remuneration and report a negative relationship between board independence, the board size, women director on board, CEO duality, and CEO remuneration.

After reviewing the available literature, it is quite clear that the majority of the work has been carried out in developed countries. In the context of India, executive remuneration of public limited companies was heavily regulated by the government till 2002, which makes it interesting to see if there has been a significant alteration in executive payment after the two phases of deregulation i.e. 2002 and 2013. Further, the research on firm performance and executive remuneration linkages has given mixed outcomes. Several researchers over the years have confirmed a positive relationship at the same time numerous studies could not establish the strength of this relationship which they attribute to other factors of the organization which could influence directors' remuneration or firm performance. In the same line, the paper attempts to fill the vacuum by studying the past trends of directors' remuneration in India and also tries to establish its linkages with

firm performance after controlling the governance variables, size, risk, and leverage.

3. RESEARCH METHODOLOGY

The study can be broadly divided into two parts: the first part of the study empirically examines the trends in top directors' remuneration for the last 18 years for the top 30 listed companies included in BSE SENSEX[2]. It studies the past trends and patterns using yearly data of directors' remuneration paid from 2002 till 2019. The second part studies the association between directors' remuneration, corporate governance, and firm performance variables. The data of directors' remuneration and firm performance measures were extracted from the Prowess database[3]. Finally, a panel data approach was followed to empirically examine the relationship among directors' remuneration, corporate governance, and various firm performance variables.

The alternative directors' remuneration, firm performance, and corporate governance measures are described in Table 1. To test the dynamic relationship between remuneration and performance, we consider total directors' remuneration and its components (salary, commissions, and perquisites) as a dependent variable and alternate performance variables to quantify firm performance. We use return on asset (*ROA*), profit before dividend, interest, and taxes (*PBDIT*), annual stock return (*RET*), and enterprise value (*EV*) as a proxy for firm performance. Further, we also control for governance, firm size, risk, and leverage as they have the potential to affect the pay-performance association. The explanation of the firm-specific independent, dependent, and control variables is provided in Table 1.

We explore the short-run dynamic bivariate panel causality using heterogeneous panel non-causality tests proposed by Dumitrescu and Hurlin (2012) which support the existence of heterogeneity among the cross-sections (Paramati, Ummalla, & Apergis, 2016). As a precondition of employing Dumitrescu and Hurlin (2012) heterogeneous panel non-causality tests, the study tests the order of integration of variables using Levin, Lin, and Chu (2002) and Lim et al. (2003) unit root test. It tests the null hypothesis of no causality in any cross-section against the substitute of causality at least for few cross-sections. It calculates the Wald statistics for each cross-section individually and then the panel test value is calculated by taking the average of cross-sectional average of individual Wald statistics (Paramati et al., 2016).

We then estimate long run relationship among the select variables to calculate pay-performance sensitivities and elasticities as denoted by equation (1) using panel fixed effects model. The model controls the unobservable fixed effects for the sample companies. The model tests different components of directors' remuneration as dependent variable and board size, number of independent directors in the board, firm performance measures and control variables as independent variables.

$$
\begin{aligned}
EXEC\ Compensation = \alpha_1 &+ \beta_1 IM_t + \beta_2 BS + \\
&+ \beta_3 FP1_t + \beta_4 SALES_t + \\
&+ \beta_5 Debt/Equity_t + \beta_6 Beta_t + e_t
\end{aligned}
\tag{1}
$$

4. RESEARCH RESULTS

In this section, the results of the data analysis shall be presented in detail. Figure 1 presents the trends of total directors' remuneration paid to directors for these sample firms over the years. We can clearly see an increasing trend of salaries paid to higher management especially after 2012. For period ranging from 2002 till 2012, we could observe a steady growth in directors' remuneration followed by a steep growth especially after 2013 till 2016. The figure also depicts a dip in remuneration in the last three years.

Figure 2 represents the growth in average salary paid to directors. We can clearly see the peaks in the data indicating revision of salary packages every second year. Further, the graph also indicates a steady rise in salary after 2015 (67%) for these companies.

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[2] The S&P BSE SENSEX is India's most popular index measuring the performance of the 30 largest, most liquid companies across key sectors of the Indian economy that are listed at the Bombay Stock Exchange (BSE Ltd). More information about index constituents, index returns, etc., is available at https://www.asiaindex.co.in/indices/equity/sp-bse-sensex

[3] The Prowess database is similar to Compustat database of US firms. It is increasingly employed for getting firm-specific information of Indian listed and unlisted companies. The database was preferred over other similar available databases due to easily available reliable data in usable form.

Table 1. Description of variables used

No	Variable	Full form	Definition
		Panel A: Directors' remuneration (dependent variables)	
1.	*EXCOMP*	Total directors' remuneration	The logarithm of the total remuneration paid to all directors in an accounting year.
2.	*Salary*	Salary component of total remuneration	The logarithm of salary paid to directors in an accounting year.
3.	*Bonus/Commission*	Component of bonus/commission received	The logarithm of bonus paid to directors in an accounting year.
4.	*Perquisites*	Component of perquisites received	The logarithm of perquisites paid to directors in an accounting year.
		Panel B: Corporate governance measures	
5.	*IM*	Independent members on the board	The number of independent members on the board.
6.	*BS*	Board size	The total number of members on board.
		Panel C: Firm performance variables	
7.	*EV*	Enterprise value	The logarithm of market capitalization plus debt, minority interest, and preferred shares, minus total cash and cash equivalents.
8.	*TR*	Total shareholders returns/annual stock return	The logarithm of gain/loss resulting from a change in the stock's price plus any dividends received by shareholders.
9.	*ROA*	The ratio of EBIT to total assets	The logarithm of net profit divided by total assets.
10.	*PBDITA*	Profit before dividend, interest, and tax	The logarithm of profit before dividend, interest, and tax.
		Panel D: Control variables	
11.	*SALES*	Net sales	The logarithm of sales (a proxy for firm size).
12.	*T_EXPENSES*	Total expenditure	Natural log of all expenditure incurred by a firm in an accounting year (a proxy for firm size).
13.	*DE*	Measure of leverage	The ratio of debt to equity.
14.	*BETA*	The measure of market risk	The company's beta estimated using S&P BSE-SENSEX as the market index.

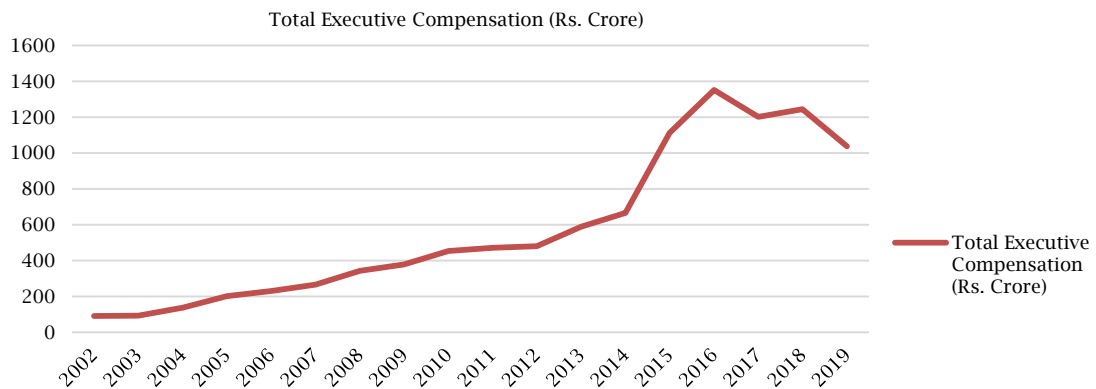**Figure 1.** Total directors' remuneration paid to the sample companies

Figure 2. The growth in directors' remuneration paid to the sample companies
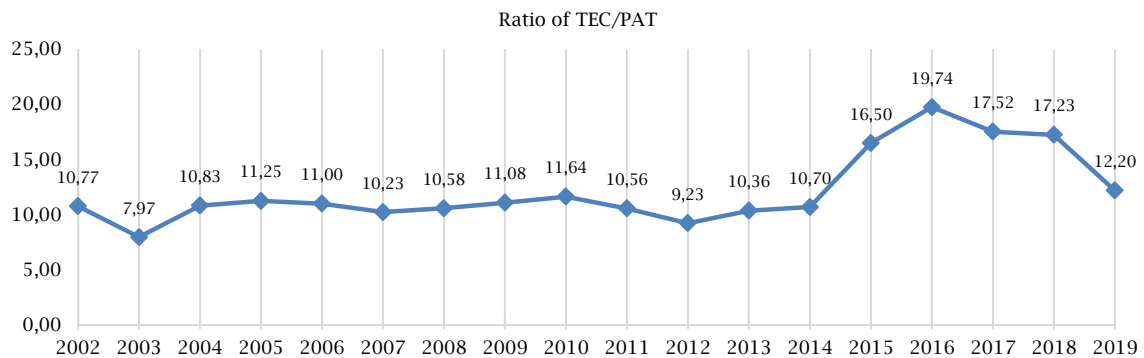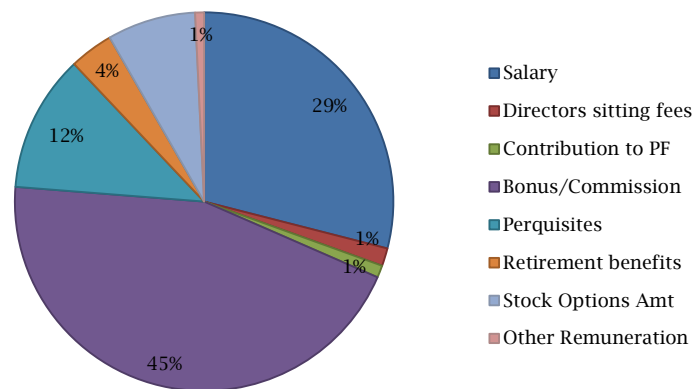
Figure 3. The ratio of total directors' remuneration and PAT

Figure 4. Components of directors' remuneration (aggregate) for the last 18 years

Figure 3 presents the proportion of total directors' remuneration to profit after tax. It also indicates that the directors' remuneration rose steeply after 2014 and the ratio which was stable at 10 percent for almost 12 years almost doubled within a time frame of 2 years after 2014. In line with our observations from the previous figures, it also indicates a drop in the ratio calculated after 2016. Figure 4 represents the different components of the directors' remuneration. The percentages have been calculated by adding the amount received in each category for the last 18 years. Three main components, i.e., bonus, salary, and perquisites emerge as the most important constituents of directors' remuneration.

Table 2 presents the details of the highest directors' remuneration being paid along with the exact amount being disclosed in the annual statements. The highest package for our sample companies has been received by Mr. Vineet Nayyar in 2016 while acting as Vice Chairperson of Tech Mahindra Ltd. More interestingly, the top 10 remuneration packages have been dominated by two companies (Tech Mahindra Ltd. and Larsen & Toubro Ltd.) from the sample of 30 companies.

Table 2. A snapshot of highest directors' remuneration paid from 2002 till 2019

Rank	Company name	Year	Director name	Designation	Total remuneration (Rs. Crores)
1	Tech Mahindra Ltd.	2016	Vineet Nayyar	Vice Chairperson	181.786
2	Tech Mahindra Ltd.	2015	C. P. Gurnani	Managing Director & Chief Executive Officer	165.570
3	Tech Mahindra Ltd.	2017	C. P. Gurnani	Managing Director & Chief Executive Officer	150.707
4	Tech Mahindra Ltd.	2018	C. P. Gurnani	Managing Director & Chief Executive Officer	146.192
5	Larsen & Toubro Ltd.	2018	A. M. Naik	Chairperson	139.783
6	Tech Mahindra Ltd.	2015	Vineet Nayyar	Executive Vice Chairperson	119.911
7	Hero Motocorp Ltd.	2019	Pawan Munjal	Chairperson, Managing Director & Chief Executive Officer	80.410
8	Larsen & Toubro Ltd.	2017	A. M. Naik	Executive Chairperson	78.910
9	Hero Motocorp Ltd.	2018	Pawan Munjal	Chairperson, Managing Director & Chief Executive Officer	75.440
10	Larsen & Toubro Ltd.	2016	A. M. Naik	Executive Chairperson	66.140

Proceeding further in the direction of understanding the changes in patterns of different components of directors' remuneration, we study the year wise composition of the remuneration paid to directors of our sample firm for the last five years. As a benchmark for comparison of the past eighteen years average figures of the sample companies were also calculated in Table 3. It is quite evident that there has been a significant shift in how directors have been paid remuneration in the last five years. The salary component has witnessed a significant increase and at the same time, the proportion of bonus/commissions and perquisites has declined substantially. Also, remuneration in the form of stock options has also gained importance in recent years.

Table 3. Component wise segregation of directors' remuneration paid from 2015 till 2019

Year	Salary	Bonus/ commission	Perquisites	Retirement benefits	Stock options	Other remuneration
2015	24%	38%	33%	1%	1%	3%
2016	29%	36%	9%	4%	19%	2%
2017	32%	32%	8%	5%	19%	6%
2018	35%	26%	10%	8%	16%	6%
2019	46%	33%	7%	2%	8%	4%
18 years average	29%	45%	12%	4%	7%	3%

Note: Other remuneration includes directors sitting fees and contribution to the provident fund.

In the next step, we test the correlation between the variables of our study. Table 4 reports the results of the correlation analysis. The findings indicate that four different variables of directors' remuneration display positive correlations with all the test variables except total return (*TR*) and *beta.* These findings give preliminary evidence that directors' remuneration has considerable positive correlations with firm performance variables, supporting that higher firm performance may lead to higher directors' remuneration. However, correlations fail to provide evidence of the direction of causation among the variables, and therefore, causality tests have been employed along with pay and performance sensitivities and elasticities using the panel least square method.

Table 4. Unconditional correlations

	TOTAL EXPENSES	ROA	EVALUE	PBDITA	TR	BETA	BS	IM
Total remuneration	0.33***	0.15***	0.33***	0.21***	0.00	-0.10**	0.29***	0.35***
Bonus/commission	0.25***	0.32***	0.34***	0.03	-0.01	-0.02	0.25***	0.18***
Salary	0.39***	0.15***	0.35***	0.26***	0.04	-0.04	0.28***	0.26***
Perquisites	0.27***	0.17***	0.34***	0.17***	-0.08*	0.03	0.16***	0.21***
Other	0.40***	0.10***	0.36***	0.36***	-0.01	-0.14***	0.19***	0.23***

4.1. Panel unit root results

The results of unit root tests at the level and first difference have been reported in Table 5. The alternate hypothesis of no unit root is accepted for both the tests at the level for all the variables except *beta.* For the variable *beta,* both tests reject the null hypothesis at a 1 percent significance level at the first difference. From the results, we conclude that all the series except beta are stationary and integrated of order zero, i.e., I(0). Thus cointegration tests are not relevant for our data and we can proceed with heterogeneous panel non-causality tests.

Table 5. Panel unit root test results

Test variables	LLC test		IPS test		Inference
	At level	At 1st difference	At level	At 1st difference	
Log Total remuneration	-7.51*	-18.41*	-2.13**	-14.72*	I(O)
Log of Bonus/commission	-31.65*	-49.53*	-13.43*	-23.77*	I(O)
Log of Perquisites	-7.62*	-12.75*	-6.58*	-14.73*	I(O)
Log of Total expenses	-8.55*	-7.54*	-1.26***	-7.06*	I(O)
Log of ROA	-10.46*	-17.69*	-7.78*	-16.78*	I(O)
Log of Sales	-9.17*	-29.47*	-6.21*	-10.52*	I(O)
Log of EV	-11.43*	-25.82*	-7.52*	-19.61*	I(O)
Log of TR	-19.30*	-23.50*	-15.70*	-24.13*	I(O)
Log of Total assets	-12.16*	-32.85*	-5.88*	-14.91*	I(O)
Log of PBDITA	-4.50*	-13.81*	-0.05	-12.12*	I(O)
DE	59.67	-1625.86*	-8.04*	-286.75*	I(O)
Beta	-0.61	-13.64*	1.58	-10.93*	I(1)
Log of IM	-4.07*	-21.48*	-4.30*	-18.45*	I(O)
Log of BS	-4.19*	-15.76*	-4.53*	-14.60*	I(O)

*Note: * significant at 1%; ** significant at 5%;*** significant at 10%.*

4.2. Heterogeneous panel non-causality test

The results of heterogeneous panel non-causality tests are documented in Table 6. The findings showcase the presence of significant bi-directional causality between directors' remuneration and all performance indicators except total return (*TR*). The results provide evidence that directors' remuneration and performance mutually affect each other in the short run. Similar results have been documented in previous literature (Firth, Fung, & Rui, 2007; Kato & Long, 2006; Dong & Ozkan, 2008), as remuneration is based on performance. The results thus provide evidence of a short-run causal relationship between directors' remuneration and firm performance. Further, the significant bi-directional causation from pay to performance highlights higher pay can also stimulate the performance of sample firms.

Table 6. Results of heterogeneous panel causality results

Null hypothesis	W-stat.	Zbar stat.	Results
EVALUE does not homogeneously cause *TOTAL_REMUNERATION*	7.285***	8.653	Bi-directional causality
TOTAL_REMUNERATION does not homogeneously cause *EVALUE*	71.808***	123.984	
PBDITA does not homogeneously cause *TOTAL_REMUNERATION*	10.706***	14.767	Bi-directional causality
TOTAL_REMUNERATION does not homogeneously cause *PBDITA*	14.949***	22.352	
TR does not homogeneously cause *TOTAL_REMUNERATION*	2.402	-0.184	No causality
TOTAL_REMUNERATION does not homogeneously cause *TR*	2.339	-0.283	
ROA does not homogeneously cause *TOTAL_REMUNERATION*	4.609***	3.713	Bi-directional causality
TOTAL_REMUNERATION does not homogeneously cause *ROA*	24.139***	37.520	

Notes: '***' '**' and '*' denote rejection of the null hypothesis at 1%, 5%, and 10%, respectively. The appropriate lag length is chosen based on SIC.

4.3. Panel least square fixed-effect model

Finally, we test our formulated model by employing the panel least square method where three main components of directors' remuneration and its aggregate are taken as the dependent variable and firm performance, corporate governance, and control variables are taken as independent variables. The basic model has been explained in equation (1). Specifications 1-4 in Table 7 consider total remuneration as the dependent variable and specifications 5-8 consider salary as an independent variable. Similarly, Table 8 specifications 9-12 present the results of linkage between the amount of bonus/commission paid to directors with firm performance variables, and finally, specifications 13-16 present the relationship between perquisites and firm performance variables.

The results from the panel regression show that out of the four firm performance measures considered in our first model, only enterprise value is statistically significant (i.e., total directors' remuneration is regressed on different performance measures). Similarly, when the salary component is regressed on other firm performance variables, we also get similar results. The other three firm performance variables are not statistically significant. The proxy for company size (total expenses for specifications 1-4) has a negative sign but it is not statistically significant. In the case of specifications 5-8, where yearly sales were taken as a proxy of firm size, the results indicated a significant negative relationship. This finding contradicts previous studies around the world, which have reported a positive relationship between firm size and directors' remuneration (Kato & Long, 2006; Tosi et al., 2000). However, Murphy (1999) in his study has reported weak pay-performance elasticity among the large US firms. At the same time, out of the two corporate governance variables, only board size is positive and statistically significant. This reflects that size of the board has a significant impact on directors' pay, indicating that a larger board size leads to higher directors' remuneration. For firms' leverage (debt/equity ratio) and market risk (beta), we find a significant positive and negative influence on total directors' remuneration respectively.

From specifications 9-12, as reported in Table 8, it is evident that in case of bonus/commission was taken as the dependent variable, two out of four firm performance variables (*PBDITA* and *ROA*) are positive and statistically significant. Further, out of the set of control variables only the variable for firm size (*Sales*) is negative and significant indicating an inverse relationship with the level of bonus/commission.

From specifications 13-16 in Table 8, it is evident that in the case when the amount received as perquisite was taken as a dependent variable, three out of four firm performance variables (*EVALUE*, *PBDITA,* and *ROA*) are positive and statistically significant. Further, out of the set of control variables only the variable for firm size (*Sales*) is negative and significant indicating an inverse relationship with the component of perquisites.

Further, the size of the estimates is relatively large for our sample. The result could be attributed to the nature of our sample firms which are top 30 firms in terms of market capitalization large and actively followed and monitored by the outsiders for their corporate governance practices and directors' remuneration (Raithatha & Komera, 2016).

Table 7. Results of panel least square (FE) (Part 1)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	Total remuneration				Salary			
EVALUE	0.276***				0.267***			
TR		-0.8				0.036		
PBDITA			-0.14				0.13	
ROA				-0.55				0.19
T_EXPENSES/Sales	-0.11	-0.02	-0.18	-0.17	-0.395	-0.511**	-0.54**	-0.53**
IM	0.62	0.47	0.75	0.76	-0.488	-0.704	-0.38	-0.39
LBS	2.704***	2.75**	2.88**	2.88**	4.068***	4.186***	4.32***	4.31***
BETA	-0.98***	-0.78**	-0.90**	-0.88**	-0.77	-0.74	-0.77	-0.79
DE	0.145**	0.16**	0.19**	0.18**	-0.039	-0.035	-0.02	-0.02
C	3.896**	4.19**	4.92***	4.73***	2.559	4.455***	3.61**	3.91**
R^2	0.512	0.465	0.495	0.496	0.438	0.412	0.43	0.43

Table 7. Results of panel least square (FE) (Part 2)

Variable	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
	Bonus/commission				Perquisites			
EVALUE	-0.01				0.261*			
TR		-0.025				-0.07		
PBDITA			0.579*				0.640*	
ROA				1.48*				1.69*
Sales	-1.014***	-0.996***	-1.212***	-1.22***	-0.743**	-0.79**	-1.066***	-1.093***
IM	0.086	0.225	0.095	0.15	0.379	0.31	0.5	0.438
LBS	2.551	2.474	2.581	2.56	0.627	0.88	0.905	0.891
BETA	-0.433	-0.375	-0.366	-0.41	-0.426	-0.47	-0.362	-0.473
DE	0.153	0.145	0.131	0.17	0.074	0.09	0.071	0.112
C	6.097***	5.999***	4.458**	5.57***	5.062**	6.45***	4.677*	5.977*
R^2	0.595	0.595	0.598	0.601	0.448	0.434	0.448	0.448

Notes: ***, **, and * refer to 1%, 5%, and 10% significance level, respectively.
The table presents the results from estimating equation (1) using the panel fixed effects (FE) model.
For a definition of variables refer to Table 1.

5. DISCUSSION

From the analysis of past remuneration data, it is quite evident that there has been a significant shift in how directors have been paid remuneration, especially after 2012. The fixed component (salaries) has seen a substantial hike and the variable components (bonus, commissions, and perquisites) has declined drastically. Interestingly, remuneration in the form of stock options has also gained importance in recent years. Further, we document an increasing trend for salaries paid to higher management, especially after 2012.

In the case of our results from the empirical model, out of the two corporate governance variables i.e., board size (BS) and a number of independent members (IM) only board size had a significant positive influence on directors' remuneration. The positive relationship with board size may indicate larger boards fail to exercise control on paying excessive remuneration to its directors. The results are consistent with the findings of Core et al. (1999) which have reported a positive relationship between larger boards in terms of both cash remuneration and total remuneration. Furthermore, our results also confirm a negative relationship in the case of firms' Beta and Sales. The negative relationship reported between beta and directors' remuneration could be linked to a firm with higher market risk paying lower remuneration to the directors. The results are consistent with Jensen (1986) which has provided evidence that fixed contractual payments do act as a disciplining force for management and reduces agency problems.

The positive relationship reported among directors' remuneration and firm performance measures is partially in line with past studies (Chakrabarti et al., 2012; Ghosh, 2006; Ozkan, 2011). However, our results contradict the existing relationship with board size and directors' remuneration highlighting the need to strengthen governance mechanism in the Indian scenario.

The results of heterogeneous panel non-causality tests showcase the presence of significant bi-directional causality between directors' remuneration and all performance indicators except total return. The results provide evidence that directors' remuneration and performance mutually affect each other in the short run. Similar results have been documented in previous literature (Firth et al., 2007; Kato & Long, 2006; Dong & Ozkan, 2008), as remuneration is based on performance. The results thus provide evidence of a short-run causal relationship between directors' remuneration and firm performance. Further, the significant bi-directional causation from pay to performance highlights higher pay can also stimulate the performance of sample firms.

Overall, we find a stronger pay-performance relationship among the sample firms in the case of variable components which are directly linked to performance (bonus, commissions, and perquisites). These findings contradict the previous studies with those reported by Kaur and Singh (2018), Aggarwal and Ghosh (2015), and Raithatha and Komera (2016).

6. CONCLUSION

The study empirically examined the directors' remuneration and firm performance relationship among top 30 listed Indian firms for a period of 18 years, i.e., from 2002 to 2019. The study found a significant increase in remuneration among the sample firms over the period of study, especially

after the new guidelines on directors' remuneration in Companies Act, 2013. We find a change in the composition of the remuneration structure in the last five years wherein the proportion of salary has increased, and the component of bonus/commission, perquisites have declined. Further, results confirm short term bi-directional relationship between directors' remuneration and firm performance variables. Furthermore, the results of the panel least square regression suggest the existence of a strong pay-performance relationship among the variable components of directors' remuneration.

Although the findings of the study contradict the previous studies done by Aggarwal and Ghosh (2015), Raithatha and Komera (2016), and Kaur and Singh (2018), future research should cover a larger sample of companies. Similarly, research has not yet considered the other factors which influence managerial remuneration like industry type, managerial skills, market forces, etc. For example, few people may demand extraordinary remuneration because of their leadership skills which have to be modeled while examining managerial remuneration and firm performance linkages. The study can be extended to examine how other factors like industry type, level of R&D intensity, the composition of the board, ownership structure, women directors in the board etc. can influence firm performance and the director's remuneration. More specifically, do specific industry types pay significantly more to a company's directors? Does ownership structure or ownership control enhances pay-performance linkages? These and other related questions offer fruitful avenues for research.

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