Chapter 2: Literature Review

CEO pay has been widely studied. Yet, it continues to attract the attention of scholars, policy makers, and media and play a vital role in corporate governance debate. It is important to understand prior research and institutional framework on CEO compensation contracting. Therefore, in this chapter, I review the literature on CEO pay, firm performance, and corporate governance.

First, I discuss the literature related to the level and composition of CEO pay. Second, I review the theoretical framework of compensation contracting. Third, I examine the empirical research on the determinants of CEO compensation. Fourth, I review the literature on RPE in CEO pay. Finally, I examine the studies that investigate the effect of CEO pay on executive action and firm performance.

2.1 Level and Composition of CEO Compensation

CEO compensation packages differ considerably in their level, composition, and form, not only across firms but also across countries. A CEO’s compensation package can have one or more of the following: salary, allowances and perquisites, annual bonus, long-term incentives, restricted stocks and stock options, retirement benefits, severance fees, etc.

Fixed component of total compensation includes salary, allowances, and perquisites. CEOs receive salary and allowances in cash; while salary is often received on a monthly basis, allowances are received either on a monthly basis or as a reimbursement. In contrast, a CEO receives perquisites in kind. Variable component of total compensation includes annual bonus and long-term incentive payouts, and are paid in cash and/ or equity.
2.1.1 Salary

To retain a talented CEO, salary must be competitive and either equal or exceed the CEO’s reservation wage. While setting a CEO’s salary, compensation committee must consider industry practices, the CEO’s experience and talent, as well as complexities and challenges of his tasks (Goergen & Renneboog 2011). Researchers have documented higher CEO salary in larger firms (Murphy 1999). While CEO salaries have increased in nominal terms over time, the share of salary in total CEO compensation has decreased from 42% in 1992 to 17% in 2008 in the U.S., due to a rapid increase in other components of CEO compensation (Frydman & Jenter 2010).

2.1.2 Annual Bonus

Annual bonus is the reward for achieving annual performance targets. It is used to create an incentive to achieve short-term performance. An effective bonus plan clearly identifies and communicates (a) performance measures, (b) performance standard, and (c) pay-for-performance sensitivity. Performance measures may be accounting or non-accounting. Usually firms employ two or more performance measures, balancing accounting measures with operational and strategic ones. Examples of accounting measures include revenue, operating profit, net profit, growth in profits, earnings per share, return on equity (ROE), etc. While sales revenue is more popular in the U.S., earning per share is more common in the U.K. (Geiler & Renneboog 2011). Examples of non-accounting measures are operational or strategic and their examples are quality improvements, capacity utilization, increase in market share of key products, research & development, etc. Performance standards are the annual performance targets for a CEO. Pay-for-performance sensitivity determines
how much bonus a CEO will earn for achieving different performance thresholds. While annual bonuses are rewards for performance in a fiscal year, long-term performance incentives are rewards for meeting performance targets over several fiscal years. Firms create a pool of funds based on performance over multiple years to make long-term incentive payment. Such payments are spread over several years, and they can be subject to malus and/or claw-back provisions. Bonus and long-term incentives as a percentage of total CEO compensation has fluctuated between 21% and 28% during 1992-2008 (Frydman & Jenter 2010).

2.1.3 Stealth Compensation

Researchers often categorize perquisites, retirement benefits, and severance fees as stealth compensation (Jensen & Meckling 1976; Jensen 1986; Bebchuk & Fried 2004). Companies in the U.S. and the U.K. would seldom make a detailed disclosure of stealth compensation to avoid the cost of shareholder outrage at high levels of CEO compensation (Bebchuk & Fried 2004). Perquisites are expenditures that a firm incurs for services consumed by its executive. Examples of perquisite enjoyed by a CEO include company-leased housing, chauffeur-driven car, club membership, personal use of corporate jets, etc. The debate is inconclusive whether perquisites represent managerial excesses by helping CEOs extract rent (Yermack 2006a) or they enhance CEO productivity (Rajan & Wulf 2006; Fama 1980). Prior to 2007, U.S. companies were not required to disclose actuarial values of CEO pensions. Total compensation was significantly understated until 2007, as pension costs were not included in total compensation, despite accounting for high proportion of total CEO pay in top 500 U.S. firms (Sundaram & Yermack 2007; Bebchuk & Jackson 2005). A CEO’s employment contract includes separation pay to encourage the CEO
to take risk and maximize shareholder value, but ensure the CEO from financial
burden that arises from losing his job. Severance pay can be in the form of golden
handshake and parachute. A golden parachute provision entitles a CEO to receive
severance fees upon dismissal if his firm is acquired, whereas a golden handshake
entitles a CEO to receive separation pay when he retires or loses his job for any other
reason. Golden handshakes are commonly used in the U.S. and are relatively
moderate in value (Yermack 2006b), representing two years’ cash compensation on
average (Rusticus 2006).

2.1.4 Equity-Based Pay

Stock options and performance shares or restricted stocks are granted not only
to tie a CEO to the firm for a longer duration and his wealth to shareholder value, but
also to encourage him to maximize shareholder value. These two have gained
importance in CEO compensation between 1992 and 2008. Their share in total
compensation has significantly increased from about 20% in 1992 to 57% in 2008 (Frydman & Jenter 2010). Stock options and restricted shares have vesting conditions
that govern when these will vest. Usually they vest few years after the date of grant.
They may vest entirely on a particular date or in a phased manner over several years
(staggered vesting). Once a CEO has met the vesting conditions, he receives equity
shares or cash, in lieu of performance shares / restricted stock. In case of stock option
grants, once the vesting conditions are fulfilled, the CEO receives the options. The
options give him the right to buy shares from the company at a pre-specified exercise
price during a pre-specified exercise period. Only when the market price of the
company’s stock exceeds the exercise price, it is profitable for the CEO to exercise
the option. An option whose exercise price is below the market price of equity shares
are known as in-the-money option. Upon exercise of an in-the-money stock option, either the CEO pays the exercise price and receives equity shares, or he receives the excess of the market price of equity shares over the exercise price. When an option is out-of-the-money, the CEO will not exercise the option. Therefore, there is no downside risk for the CEO in case of stock option. On the other hand, restricted stocks or performance shares expose the CEO to downside risk as well. As a result, stock options and performance shares have two different behavioral consequences for the CEO.

2.2 Major Theoretic Frameworks Explaining CEO Compensation

A firm’s shareholders want its board to design a contract that attracts and incentivizes a CEO to maximize its value. Such a contract can cover a lot of areas, such as title, responsibility, compensation, termination, resignation, governing law, dispute resolution, period of the agreement, renewability, etc. (Schwab & Thomas 2006). An optimal CEO compensation contract would draw talented CEO candidates to the firm and competitively match the best candidate to the role. Thereafter, it would keep the CEO motivated to work hard, pursue growth through positive net present value projects, optimize risk, and eliminate non-value added costs. However, CEO compensation contracting is rarely observable due to not only the lack of detailed disclosure of pay-setting process, but also the limited use of comprehensive written CEO compensation agreement. For example, Gillan et al. (2009) find that in 2000, only 45% of the 494 U.S. firms in the S&P 500 had a comprehensive explicit employment contracts for their CEO.

Compensation literature dates back to several decades in developed western countries such as the U.S. and U.K. However, CEO compensation research is still nascent in emerging market countries and has picked up only in the previous decade.
Researchers have used a variety of theoretic frameworks to understand executive compensation contracting in publicly traded companies. These theories explore the level, structure, determination, and consequences of executive compensation, providing explanations rooted in economic, sociology, and psychological traditions. The important theories germane to CEO pay and their key implications are presented below:

i. Agency Theory  
ii. Neoclassical Theory  
iii. Information Processing Theory  
iv. Tournament Theory  
v. Size of Stakes Theory  
vi. Human Capital Theory  
vii. Managerial Power Theory  
viii. Stewardship Theory  
ix. Institutional Theory

Institutional theory suggests that firms within an institutional environment tend to adopt similar compensation policies to reduce uncertainty and enhance acceptance, even though some of these practices may be suboptimal. Neoclassical theory suggests that pay should be equal to a CEO’s marginal contribution. Size of stakes theory predicts that CEO pay will increase at a rate directly proportional to the increase in firm size in top firms. According to the human capital theory, the greater the innate talent, firm-specific skills, and experience, the greater is the CEO’s pay. Tournament theory posits that a high CEO pay and a large gap between CEO pay and the pay of the next highest paid officer are the result of a prize of a tournament. Information processing theory suggests that CEOs of firms in a more complex environment need a higher pay and a greater proportion of long-term pay not only to induce them to gather and process information from diverse sources, but also to
reduce the cost of monitoring them. Managerial power theory indicates that powerful CEOs influence their board’s compensation committee to obtain a higher pay and a lower proportion of performance pay. Agency theory predicts that a greater share of performance-sensitive pay to reduce agency cost, because CEOs are rational self-interested managers who prefer to maximize their own utility rather than their shareholders’ value. In contrast, stewardship theory suggests a lower total pay and a lesser proportion of long-term pay, because CEOs are largely trustworthy and good stewards.

In the Indian context, researchers have provided evidence of CEO compensation contracting consistent with agency and managerial power theories only. The compensation literature is yet to investigate the validity of other theories in CEO pay in Indian firms.

2.2.1 Agency Theory

Agency theory is the most widely used theoretic framework explaining CEO pay. It is an information economics based theory. It posits tying CEO pay to firm performance in order to induce a CEO to act in the interest of the shareholders.

Agency is a contract under which principals (shareholders) hire and delegate decision-making authority to an agent (CEO) to perform services on their behalf. As rational human beings, individuals prefer to maximize their own utility and choose an alternative that increases their own utility over another that not only lowers their own utility but also increases someone else’s utility (Ross 1973). Individuals prefer more wealth to less, on one hand, and less effort to more, on the other. For example, principals favor an increase in their firm’s value, which increases their own wealth but requires greater effort by a CEO. In contrast, CEOs prefer less effort and desire more
wealth. Their preferences may differ from those of the shareholders. Their actions may be suboptimal from the shareholders’ point of view and verifiable only at a high cost. For example, shareholders may be scattered or disinterested to scrutinize what a CEO does. The difficulty in verifying actions and the divergence of preferences between the principals and the agent create agency conflicts. Since the eighteenth century, economic scholars have recognized that the separation of ownership and control creates a conflict of interest between managers and shareholders. Adam Smith (1776) eloquently sums this conflict as follows:

The directors of such [joint-stock] companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. Like the stewards of a rich man, they are apt to consider attention to small matters as not for their master's honor, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.

Two hundred years later, Jensen and Meckling (1976) formally recognized the conflict in their agency theory

In a corporation, the ownership of a firm rests with its shareholders, whereas the control vests with its CEO. The separation of ownership from control and the divergence in preferences result in shareholders incurring agency cost. Agency costs comprise of the cost of moral hazard, shirking, rent extraction, suboptimal decisions, monitoring, bonding, etc. They diminish a firm’s value and shareholders’ wealth. Jenson and Meckling (1972) argue that it is generally impossible at zero agency cost to ensure that managers will make optimal decisions from shareholders’ point of view. To mitigate agency cost, a firm can adopt expensive mechanisms such as monitoring to limit moral hazard and providing incentives to align interests of CEOs and shareholders.
Agency theory is a positive theory that parsimoniously explains the behavior of rational, self-interested managers and optimal contracting for aligning their goals with those of the shareholders. It builds on the concept of economic utilitarianism propounded by Ross (1973). It assumes that CEOs are rational, risk-averse individuals who maximize their personal utilities, but do not always act in a manner that is value maximizing for the shareholders. It also assumes the existence of information asymmetry, difference in risk preferences, and partial goal conflict between CEOs and shareholders. It attempts to facilitate design of contracts that optimally achieve efficient risk sharing and mitigate agency problems of moral hazard and adverse selection. It is extensively used in finance (Fama 1980) and accounting (Joel & Feltham 1978), in addition to other areas of management, economics, and political sciences.

Holmstrom and Milgrom (1987) analytically show that the optimal compensation contract provides a CEO an incentive based on the firm’s performance. The positive pay-for-performance sensitivity rewards value-enhancing performance and discourages value-destroying actions. Therefore, linking pay to performance induces greater alignment of the interests of a CEO and shareholders. This is consistent with Masson’s (1971) evidence that firms with a stronger link between executive pay and performance outperform those with a weaker link. Further, Eisenhardt (1989) suggests a reduction in opportunistic behavior when a firm uses outcome-based incentive contracts. According to Jensen and Murphy (1990), the use of long-term pay rewards a CEO for enhancing shareholders’ wealth and effectively aligns the interests of the CEO with those of the shareholders.

Studies investigating compensation in various Asian countries have documented evidence largely in favor of agency theory (Sun et al. 2010). For

2.2.2 Neoclassical Theory

The neoclassical theory is a well-known economic theory. It posits setting wages equal to a worker’s marginal revenue product. When this theory is applied to CEO compensation, CEOs should be paid an amount equal to their marginal contribution to firm performance.

Using cross section data of 100 highest paid CEOs in the U.S. during the year 1983 and sales, assets, equity, and profits as proxies of marginal revenue product, Platt (1987) finds evidence supporting this theory. However, one can question whether a firm’s total sales, assets, equity, and profits truly measure its CEO’s marginal revenue product. Jensen and Murphy (1990) note the complexity in isolating a CEO’s marginal contribution. Gomez-Mejia and Balkin (1992) suggest defining marginal revenue product of CEOs as the total profit under their leadership plus the notional cost of hiring the best alternative CEO minus the notional profit under the leadership of the best alternative CEO. Thus, it appears that a CEO’s marginal revenue product is easier to define, but difficult to measure. Consequently, researchers
have found it hard to empirically test and document evidence in support of the neoclassical theory. Not surprisingly, no investigation of this theory in CEO compensation contracting has been undertaken in the Indian setting.

2.2.3 Tournament Theory

It is widely observed that CEOs are the highest paid executive in their firms and that the difference between the pay of a CEO and that of the second highest paid executive is often huge. Tournament theory provides an economics based explanation for high CEO compensation and huge pay-differentials (Lazear & Rosen 1981; Rosen 1986). It predicts that pay depends on a manager’s relative position within a firm and the difference in pay across levels should be high enough to induce managers to stay motivated and work harder for promotion to a higher level.

Tournaments are competitive events that reward participants based on the rank-order, not the value of outcomes. Lazear and Rosen (1981) observed, “On the day that a given individual is promoted from vice president to president, his salary may triple. It is difficult to argue that his skills have tripled in that one-day period, presenting difficulties for standard theory … It is not a puzzle, however, when interpreted in the context of a prize.” They provide a theory to explain the optimality of incentive schemes based on rank-order of outcomes, where principals can incentivize agents through tournaments when an agent’s precise contribution to overall performance can be learned at a high cost. They posit that members of top management team vying for the CEO position can be viewed as competing in a tournament, and the huge differential in pay can be viewed as a prize of a tournament or lottery. Further, Rosen (1986) analytically shows that a prize of very high value is necessary to motivate tournament survivors, so that they will continue to strive harder
to win the final contest. This ensures that they do not dwell in the past or rest on their prior performance.

Tournament theory plugs an important hole in the executive literature. It explains huge pay differential that could not be explained by other theories. In corporate settings, researchers do not observe a tournament’s boundaries, such as date a tournament starts, date it ends, the contestants for the CEO position, etc. Such a rich dataset is not commonly available in archival form. Consequently, few researchers have empirically tested and documented evidence in support of the tournament theory. For example, O’Reilly, Main, and Crystal (1988) provide evidence contrary to the predictions of the tournament theory in a cross section of 105 firms drawn from Business Week’s annual survey of executive compensation for 1984. In contrast, Eriksson (1999) documents evidence in favor of tournament theory using a rich dataset containing information about 2,600 executives in 210 firms in Denmark. He finds an upward sloping convex relation between pay and job level. He also documents a positive relation between pay differential and the number of executives having key responsibilities in the firm, which suggests that the larger the number of contestants, the higher is the prize of the tournament. Using proprietary data, Lambert et al. (1993) also document evidence in support of the tournament theory in the U.S. In the Indian context, no investigation of the validity of the tournament theory has been done for CEO pay.

2.2.4 Information Processing Theory

Information processing theory has its origin in economics. It suggests that a firm needs to pay a higher compensation and a greater proportion of long-term pay
not only to mitigate the cost of information processing, but also to induce CEOs to work in the interest of its shareholders.

A firm’s internal and environmental complexities affect its top management’s information processing costs. Organizational structure, geographically dispersed operation, business diversification, and technology can result in internal complexities for a firm (Henderson & Fredrickson 1996). An increase in globalization and product market competition creates environmental complexities. The greater the complexity, the higher is the cost of gathering and processing information. In a firm with higher environmental complexity, the board needs to gather data from diverse sources, process them into useful information about its CEO’s effort, and use the information to monitor the CEO (Sanders & Carpenter 1998). The directors can reduce the monitoring cost by aligning the incentives of the CEO with those of its shareholders. According to Sanders and Carpenter (1998), the use of a greater proportion of long-term component in CEO pay is optimal in firm with higher environmental complexity consistent with the agency theory. Further, they argue that higher complexity also creates a demand for a more talented CEO capable of processing information more effectively. As the supply of talented CEOs is relatively scarce, a board needs to offer a greater pay to hire and retain them. Evidence consistent with information processing theory has been documented by Finkelstein and Hambrick (1988, 1989), Henderson and Fredrickson (1996), and Sanders and Carpenter (1998). Researchers are yet to investigate evidence of information processing theory in CEO pay in the Indian firms.

2.2.5 Size of Stakes Theory

A recent addition to the theories explaining the level of CEO pay, size of stakes theory predicts that the change in the pay of a large firm’s CEO is directly
proportional to the change in the size of the firm and the aggregate size of all firms. It attributes the phenomenal change in CEO pay, especially in top firms, largely to the competitive forces in the CEO labor market.

Size of stakes theory is a competitive model of CEO pay built upon assignment theory, extreme value theory, constant return to scale, and Zipf’s Law by Gabaix and Landier (2008). It does not deal with incentive problem and risk, but assumes that pay increases with talent and talent has the biggest effect in larger firm. As there is a high level of interconnectedness between the asset and CEO talent markets, talent and asset prices move together. When market assigns higher value to assets, it pays higher prices for CEO talent as well. Therefore, as a firm grows, its CEO pay also rises. The demand for more talented CEOs increases as the economy grows. Higher demand raises equilibrium wages as well as the return to employing talented CEOs. Consequently, CEO pay increases further when the aggregate size of all firms in an economy rises. Gabaix and Landier (2008) analytically show that the most talented CEO manages the biggest firm in equilibrium and his pay is directly proportional both to his firm’s size and to the aggregate size of all firms. Pay-differentials can be huge for a small difference in talent at the top end of the CEO talent market, due to Zipf’s law. They empirically test and calibrate their theory using data for the years 1980 to 2003, during which both CEO pay in large firms and firm size grew six-fold. The size of stakes theory explains time-series, cross-sectional, and cross-country behavior of CEO pay. For example, the theory predicts that when the rate of growth in firm size in a country is higher than that in another country, the growth rate in CEO pay in the former would be higher too.

Subsequently, Gabaix, Landier, and Sauvagnat (2014) validate the robustness of the theory in an out-of-sample test during 2004-2011, which include periods of
growth and decline in firm size. They find that during the financial crisis of 2007-2009, the average market value of top 500 U.S. firms and average CEO pay in these firms fell by 17% and 28%, respectively. In contrast, during 2009-2011, the average market value and average CEO pay in these firms rose by 19% and 22%, respectively. Therefore, CEO pay and firm size in top firms exhibit a positive association, and CEO pay closely follows firm size. This theory has not been investigated in the Indian setting.

2.2.6 Human Capital Theory

Human capital theory posits that CEOs will receive pay according to their ability and experience. CEOs that have more talent and firm-specific skills will receive higher pay. According to this theory, pay-premium not only reflects the CEO’s superior ability (Castanias & Helfat 1991), but also signifies the board’s confidence in the CEO to generate superior value for shareholders (Harris & Helfat 1997).

Consistent with human capital theory, studies provide evidence that pay has a positive association with experience and education of CEOs (Agarwal 1981) and profit center managers (Fisher & Govindarajan 1992). Superior managerial talent is a highly valued, but scarce resource. A person needs innate ability, education, and experience to develop superior decision-making, problem solving, communication, and leadership skills. The supply of high quality managers is inelastic in the short run. Therefore, boards need to pay a premium to hire and retain talented CEOs. Harris and Helfat (1997) document that pay-premium for new outsider CEOs reflects premium for scarce skill, increased risk of failure due to lack of firm-specific skills in their new firm, and return to their firm-specific skills in their previous firm. They also find that
a new CEO coming from a different firm (whether from the same industry or from another) earned a positive premium relative to the one promoted from inside the firm. They report that a new CEO from another industry received a higher premium than the one who came from another firm in the same industry. In the Indian setting, A. Ghosh (2006) has documented a weak association (significant only at 10% level) between a CEO’s pay and education.

2.2.7 Managerial Power Theory

Managerial power theory is another widely used theoretic framework, originating from sociological traditions. It goes by various names such as managerialism, skimming, etc. It predicts that powerful CEOs influence contracting process and extract rents through higher pay and lower proportion of performance-sensitive-pay than those under optimal contracting.

One of the first to note the basic idea of managerialism, Berle and Means (1932) observed, “The separation of ownership from control produces a condition where the interests of owner and of ultimate manager may, and often do, diverge, and where many of the checks which formerly operated to limit the use of power disappear [emphasis added].”

According to Finkelstein (1992), CEOs can derive power from their expertise, prestige, connection, ownership, founder-status, etc. For example, Westphal & Zajac (1995) suggest that the position of board chair gives a CEO greater power to influence the board. According to Bebchuk and Fried (2003), CEOs also tend to be more powerful in the presence of ineffective boards and anti-takeover protection measures; in addition, CEOs are more powerful in the absence of strong external monitoring by a large outside shareholder and institutional shareholders. Powerful CEOs influence
decisions made by compensation committee in a number of ways (Bebchuk & Fried 2003; Finkelstein & Hambrick 1989; Westphal & Zajac 1995). As a result, managerial power can exacerbate agency problem in a firm. According to Bebchuk and Fried (2003), managerial power theory views CEO pay as a part of the agency problem itself. Powerful CEOs influence boards (Shivdasani & Yermack 1999) and appoint favorable compensation consultants (Murphy & Sandino 2010) to obtain compensation plans that are more favorable than those under optimal contracting are. They get pay delinked from their firm’s performance and linked to a more stable factor such as its scale of operation (Herman 1981) or its size (Dyl 1988). Morse et al. (2011) find that during 1992-2003, powerful CEOs in the U.S. rigged incentive pay by getting their pay linked to a better performing measure and away from a measure that reflects poor performance. The authors document that these acts drive one-tenth of the total pay-for-performance sensitivity of a powerful CEO and result in a subsequent deterioration in operating return on asset (ROA) and a loss in firm value.

An egregious pay arrangement can generate outside indignation and damage the reputation of a CEO and the directors in the compensation committee. For example, Core et al. (2007) investigate the monitoring role of news media. They report negative press coverage for CEOs drawing excessive pay. The more furious the relevant outsiders are likely to get, the more reluctant the remuneration committee members will be to approve a favorable pay arrangement demanded by a powerful CEO. Therefore, the perceived outrage can constrain the degree of rent seeking by powerful CEOs. Subsequent outrage can also affect CEO compensation. Johnson et al. (1997) document an increase in CEO pay-for-performance sensitivity and smaller increase in CEO pay during subsequent years after firms received negative media reporting of their compensation contracting during 1992-1994. Thomas and Martin
(1999) document a large reduction in CEO over two years after shareholders resolutions disapproved executive pay in the 1990s. However, Core et al. (2007) find that after negative press coverage about excess CEO pay, boards do not reduce the pay or fire the CEO during 1994-2002.

Adams et al. (2005) find that a CEO’s pay has a direct link with his power. Several researchers have documented features of compensation contracting that are suboptimal and exhibit rent seeking behavior by powerful CEOs. Core et al. (1999) document a higher CEO pay in firms where the CEO is relatively more powerful than the board. The authors argue that CEOs are relatively more powerful in firms that have a larger board, greater proportion of independent directors appointed by a CEO, larger proportion of busy independent directors, and CEO as the board chair. As the number of directors increases, it is harder for directors to unite against the CEO; as a result, larger boards reduce its power and effectiveness in reigning in a CEO. Outside directors appointed by a CEO may feel obligated and are less likely to act against the CEO; therefore, as their number increases, a CEO’s power increases. Busy directors are more likely to be pre-occupied and spend less time focusing on a company. Core et al. (1999) define busy directors as those who sit on the boards of three or more public companies. The authors find a positive association between CEO pay and the proportion of busy directors, indicating rent extraction in the presence of ineffective monitoring. Bertrand and Mullainathan (2001) find a negative association between luck-based pay of a firm’s CEO and the presence of a large-block holder in the firm. The authors define a large-block holder as an institutional investor holding five percent or more of the firm’s equity, and luck-based pay as the pay associated with increase in profits driven by factors outside a CEOs control. Further, Hartzell and Starks (2003) document that institutional ownership concentration exhibits a negative
association with executive compensation and a positive association with the proportion of pay tied to performance. Contrary to the predictions of agency theory, but consistent with managerial power theory, Borokhovich et al. (1997) document that compensation of CEOs significantly increased after their firms accepted anti-takeover provisions during 1979-1987. More recently, Chahine and Goergen (2011) document evidence consistent with managerial power theory in young firms. They find that powerful CEOs of unlisted firms benefit significantly from IPO (initial public offer date) options (stock options received around IPO date) at the cost of pre-IPO shareholders.

In the Indian context, studies suggest higher pay and rent extraction by promoter CEOs and CEOs of business group firms (Chakrabarti et al. 2012; A. Ghosh 2006; Jaiswall & Firth 2009; Parthasarathy et al. 2006).

It is important to note that human capital and managerial power theories offer competing explanation for CEO pay. Under human capital theory, pay premiums are justified and viewed favorably by shareholders (Harris & Helfat 1997). In contrast, under managerial power theory, pay premiums are unjustified and viewed unfavorably by shareholders (Shleifer & Vishny 1986). Combs and Skill (2003) provide evidence that pay premiums are consistent with human capital theory in some firms, but with managerialism in others.

2.2.8 Stewardship Theory

Stewardship theory is a sociology-based theory. It predicts lower total CEO pay and lesser proportion of long-term pay due to lower moral hazard and monitoring need.
Unlike agency theory that views managers as self-interested rational beings, stewardship theory views them as trustworthy individuals. It assumes that executives often choose to act in the interest of their firm when their own interest conflicts with those of their firm (Zajac & Westphal 2004). Therefore, stewardship theory predicts that these trustworthy executives can take on the role of good stewards of their firm’s resources, require little monitoring, and will not collude to draw higher pay (Donaldson & Davis 1991). Consistent with the latter, Daily et al. (1998) find evidence that CEO compensation is not associated with the proportion of affiliated directors. This implies that CEO pay does not increase when a CEO can collude with affiliated directors and it does not decrease in the presence of larger proportion of non-affiliated directors. Thus, CEOs are trustworthy, neither colluding to draw higher compensation, nor requiring extensive monitoring to curtail moral hazard.

Agency theory and stewardship theory take an opposite view of human behavior. Therefore, they are likely to hold in different circumstances. Whether stewardship theory will effectively explain compensation contracting depends on whether the executives are self-interested or committed, which in turn is contingent on various psychological and contextual factors (Davis et al. 1997). The literature has identified three such factors: management philosophy, organizational culture, and power distance.

First, there are two management philosophies: commitment and control-oriented (Lawler 1992). Davis et al. (1997) suggest that agency theory prevails when the management philosophy is control-oriented, which requires a separation of planning, control, and execution. On the other hand, stewardship theory prevails in firms where management philosophy is commitment-oriented, which rules out a separation of planning, control, and execution.
Second, there are two distinct organizational cultures: individualist and collectivist (Hofstede 1983). According to Davis et al. (1997), agency theory dominates in an individualistic culture. Individualistic culture is seen in organizations that have a short-term focus on profits and an emphasis on achieving business goals over establishing personal relationships. Such a culture prevails in wealthy economies, such as U.S., U.K., Canada, Australia, New Zealand, Scandinavia, France, Germany, Italy, etc. (Hofstede 1983). On the other end of the spectrum is collectivistic culture, prevalent in firms that favor relationship over confrontation, long-term over short-term orientation. Such a culture is found in Korea, Singapore, Taiwan, and Hong Kong, and in poorer countries in Latin America, East Europe, and Southeast Asia (Hofstede 1983). According to Davis et al. (1997), stewardship theory prevails in collectivist organizations. Lin (2005) provides support against stewardship theory in Taiwan.\(^2\)

Finally, power distance between principals and agents can be either high or low. Power distance manifests in the organizational structure: centralized versus decentralized, long versus short chain of command, number of hierarchical levels, and differences in pay and privileges across these levels. Power distance is high in firms that have centralized decision-making, long chain of command, several levels of managerial hierarchy, and significant variation in pay across levels. On the other end of the spectrum is low power distance. Davis et al. (1997) suggest that stewardship theory is favored when power distance is low, whereas agency theory prevails when power distance is high.

\(^2\) India, Argentina, Austria, Brazil, Israel, Iran, Japan, Spain, Turkey, etc. are neither individualistic, nor collectivist, but in the middle of the collectivist-individualistic scale (Hofstede 1983).
Researchers are yet to investigate whether CEO compensation contracting in India is consistent with stewardship theory.

2.2.9 Institutional Theory

Institutional theory explains compensation policies that conform to industrial and societal practices and trends, but differ from that predicted by agency theory. It predicts that executive compensation and monitoring conform to norms, values, and beliefs that are acceptable in the firm’s institutional environment.

According to institutional theory, firms strive to be societally acceptable by conforming to established norms, values, and beliefs within its institutional environment. Tosi and Greckhamer (2004) show that compensation policies conform to the prevailing societal values, but differ across societies and cultures. Firms embrace structures and processes that offer the best fit and acceptance in the societal order (Pfeffer 1982). Conformance with established order (formal and informal) reduces uncertainty, satisfies regulators, and avoids the indignation of negligence (Meyer & Rowan 1977). According to Peng et al. (2009), informal constraints mostly drive conformance behavior with respect to governance and compensation contracting, when formal ones are ambiguous or ineffective. Based on eighteen field interviews with senior executives, St-Onge et al. (2001) find that firms adopt stock options to mitigate agency costs, but do not scrap it even though they are ineffective in order to avoid deviating from established practice in their institutional environment. The sampled firms continue to use them, out of symbolism and conformance with the practices of other firms. Staw and Epstein (2000) find that to gain social admiration firms adopt popular management practices together with higher compensation that may not be enhancing value. Thus, institutional theory creates a powerful incentive to
imitate and reduce variance with socially acceptable practices, whether formal or informal, irrespective of their value-addition. Adithipyangkul et al. (2010), Buck et al. (2008), Ding et al. (2006), and Firth et al. (2006) find evidence in favor of the role of institutional factors in executive compensation contracting in China. No such investigation has been done in the Indian context.

2.3 Determinants of CEO Compensation

Researchers have widely examined the determination of CEO compensation and documented a number of factors that shape CEO compensation. In the compensation literature, these factors are grouped into (1) economic determinants of pay, (2) ownership type and structure, (3) board composition and processes, (4) managerial attributes, (5) compensation consultants, (6) industry characteristics, and (7) business cycles.

First, the economic determinants of pay include firm performance, size, growth opportunities, age, total risk, and complexity. Researchers have concluded that CEO pay increases with a firm’s performance, size, growth opportunity, total risk, and business complexity. In addition, they find that boards shield CEO pay for strategic expenditure such as R&D and Advertising. Second, the key ownership attributes associated with CEO pay are the ownership and type of the controlling shareholder, the ownership of institutional investors, and the presence of large blockholders. There is a consensus among researchers that CEO pay decreases with the ownership of controlling shareholders, pressure-resistant institutional investors, and large blockholders. In addition, the pay is lower in public sector undertakings, but higher in multinationals, business group affiliated firms, and family-run businesses. Third, researchers find that CEO pay decreases with the strength of board oversight. They find that board oversight is poorer due to larger boards, fewer board meetings, fewer
independent directors, more busy directors, and more gray directors; also, boards chaired by CEOs are less effective in constraining CEO pay. The evidence is consistent more powerful CEOs overpower board to obtain favorable compensation contracts. Fourth, total CEO pay increases with a CEO’s tenure, age, ability, and political and social connection; it also exhibits a concave relationship with a CEO’s age and tenure. Fifth, the literature on the role of compensation consultants in CEO pay is evolving. Recent studies have documented that compensation consultants exacerbate managerial rent extraction, particularly in weakly governed firms. CEO pay is higher in firms that hire compensation consultants and when compensation consultants earn greater proportion of their total fees from non-compensation services. Sixth, studies have documented inter-industry differences in CEO pay. Pay is associated with not only the drivers of product market competition in the industry, but also time-invariant or slowly changing industry factors. Finally, researchers find that CEO pay exhibits yearly fluctuation, heteroskedasticity, time-trend, and pro-cyclical behavior.

2.3.1 CEO Pay and Firm Characteristics

Compensation literature has investigated the role of various firm characteristics in CEO pay. It has documented CEO pay’s association with a firm’s performance, size, growth opportunities, risk and earning volatility, business complexity, advertising and R&D expenditures, non-recurring expenses and losses, age, etc.

Firm Performance: Firm performance is one of the most important factors affecting CEO compensation. Researchers have documented a positive association between CEO pay and firm’s contemporaneous performance (Coughlan & Schmidt
Consistent with agency theory, tying CEO pay to firm's annual performance rewards a CEO for superior performance during the fiscal year and aligns the incentives of the CEO with those of the shareholders. The choice of performance measure in compensation contracting differs across countries. Studies have documented the use of various firm performance measures, such as accounting earnings, sales growth, stock returns, etc.

CEO pay exhibits a positive association with accounting earnings in Japan (Kaplan 1994), Hong Kong (Cheng & Firth 2006), India (A. Ghosh 2006; Jaiswall & Firth 2009), etc. It exhibits a positive association with revenue growth in China (Kato and Long 2006). Equity-return based performance measure is less useful in emerging economies since their stock markets are undeveloped (Gibson 2003). In countries where stock market is well developed or where equity-based pay is prevalent, boards use stock return as a measure of firm performance. Accordingly, executive compensation is associated with stock return in the U.S.A. (Core et al. 1999; Murphy 1985), the U.K. (Ozkan 2011), Japan (Kaplan 1994), South Korea (Kato et al. 2007), etc., but not in India (A. Ghosh 2006; Jaiswall & Firth 2009; Chakrabarti et al. 2012; Parthasarathy et al. 2006). As Indian firms use equity-based compensation only infrequently (Balasubramanian et al. 2010), stock returns do not affect CEO pay in India.

**Firm Size:** Studies have documented a positive relationship between firm size and managerial pay, which implies that CEOs earn higher pay in larger firms. Therefore, CEO pay reflects a premium for firm size. However, pay increases with size at a decreasing rate, which implies a concave relationship between the two.

In a meta-analysis of compensation studies, Tosi et al. (2000) suggest that firm size explains over two-fifth of the variation in total CEO pay. Thus, size is an
important firm-specific factor affecting CEO pay. In addition, size premium is also the most consistently documented empirical regularity, according to Baker, Jensen, and Murphy (1988). The authors point out that the elasticity of CEO pay with respect to sales is largely around 0.30. According to Murphy (1985), the relationship between firm size and CEO pay is not just an association. The relationship is causal, and the causality runs from size to pay. Therefore, an increase in size causes the CEO pay to increase, though at a decreasing rate.

Rosen (1982, 1992) argues that an increase in firm size leads to not only an increase in the level, but also a change in the structure of CEO pay. The literature has explained the relationship between CEO pay and firm size using economic and sociological perspectives. First, larger organizations are complex and require talented managers. Greater CEO pay in these firms reflects higher reservation wages and incentives needed to attract and retain talented CEOs, consistent with the human capital, the size of stakes, and the information processing theories. Second, larger firms also have more layers of management due to hierarchical stratification. Higher pay in these firms arises due to higher pay differential across layers (Mahoney 1979), which appears to be consistent with the tournament theory. Third, marginal contribution of CEO is significantly higher in larger firms (Baker & Hall 2004). Therefore, CEOs of larger firms deserve higher pay, consistent with the neoclassical theory. Fourth, powerful CEOs get pay delinked from their firm’s performance and linked to a more stable factor such as firm’s size (Dyl 1988), which is consistent with the managerialism theory.

The positive sensitivity of CEO pay to firm size has been documented in many countries. These include the U.S. (Baker & Hall 2004; Gabaix & Landier 2008; Gabaix et al. 2014; Smith & Watts 1992; Core et al. 1999), the U.K. (Ozkan 2011),
Hong Kong (Cheng & Firth 2006), India (A. Ghosh 2006; Jaiswall & Firth 2009; Chakrabarti et al. 2012; Parthasarathy et al. 2006), etc.

A firm’s sale is the most widely used proxy for size in the compensation literature. Other proxies of firm size used by researchers are total assets, market value of equity, market value of a firm, etc. Researchers often use log transformation of size in order to reduce the skewness in size proxies. This procedure also accounts for the concave relationship of size with pay and yields an estimate of the elasticity of pay with respect to size. They mostly use a lagged value of firm size as an explanatory variable in regressions.

**Growth Opportunities:** A positive association between CEO pay and higher growth opportunities has been reported by Smith and Watts (1992), Gaver and Gaver (1993), Ho et al. (2004), etc. This suggests that CEO pay is greater in firms with higher growth opportunities.

Growth opportunity is the option to make future investments (Myers 1977). A firm’s growth opportunities do not exist in vacuum; the opportunities are attached to the specific assets that are already in place in the firm. As firm-specific physical asset and human capital differ across firms, we see a variation in growth opportunities across firms (Smith and Watts 1992). A firm’s growth opportunities arise from discretionary expenditures and actions in future by its managers to enhance its capacity, economies of scale, product portfolio, image, capability, and competitiveness through actions related to research and development, mergers and acquisition, globalization, new product launches, advertising, etc. (Myers 1977; Mason and Merton 1985; Smith and Watts 1992; Chung and Charoenwong 1991). According to Gaver and Gaver (1993), the concept of growth options is much broader and encompasses the flexibility to develop the firm and achieve market dominance by
taking advantage of opportunities arising in the future. Growth options are also known as investment opportunity set in finance literature.

More talent is needed to select good investment projects than to manage assets already in place (Smith & Watts 1992). This suggests that firms with higher levels of growth opportunity need CEOs with better talent. As growth firms are also riskier than non-growth ones (Chung & Charoenwong 1991), they must compensate their risk-averse CEOs for bearing a higher risk. Therefore, growth firms pay higher compensation to attract and retain talented CEOs (Smith & Watts 1992). Further, they prefer market-based incentives over accounting-based and tie a greater proportion of pay to stock-based compensation, such as stock option and restricted stock (Smith & Watts 1992; Gaver & Gaver 1993). In contrast, according to Holthausen et al. (1995), boards find accounting-based incentives more useful than market-based incentives, when they use accounting measures in setting long-term performance targets.

Researchers have used several constructs for growth opportunities. Kallapur and Trombley (2001) document following types of proxies used for growth opportunities: price-based (such as Tobin’s Q and its reciprocal book-to-market value of assets), investment-based (such as R&D intensity and capital expenditure to firm value ratio), variance-based (such as variance of stock returns and asset betas), and composite measures obtained using factor analysis. Results are sensitive to the choice of proxy. Kallapur and Trombley (1999) find that realized growth in future is consistently correlated with only few proxies of growth opportunities (for example, market-to-book value of assets, book-to-market value of equity, capital expenditure to assets, etc.), but not with others (for example R&D intensity and earnings-price ratio). Adam and Goyal (2008) report that market-to-book value of assets ratio is the best proxy for a firm’s growth opportunities due to its superior information content relative
to other proxy variables. They find that the market-to-book value of assets ratio also has an edge over a composite measure of growth opportunities extracted using factor analysis from four proxy variables (market-to-book value of assets, market-to-book value of equity, earning-to-price, and capital expenditure to property, plant, and equipment). The above points highlight the appropriateness of market-to-book value of assets ratio over other constructs as the proxy for growth opportunities.

Jaiswall & Firth (2009) use Tobin’s Q as a measure of firm performance and find that CEO pay increases in Tobin’s Q. However, this measure has a number of alternative interpretations (Fich & Shivdasani 2006). According to Yermack (1996), Tobin’s Q vaguely measures firm performance and largely represents the value of future growth opportunities. Therefore, the evidence in Jaiswall & Firth (2009) is consistent with a positive association between CEO pay and growth opportunities in the Indian firms.

**Firm Risk & Earning Volatility:** A firm’s risk reflects the uncertainty in its performance measure. The uncertainty is driven by a firm’s external information environment and its operating risk. The literature has provided mixed results for the role of risk in CEO compensation.

Theory does not predict a clear association between a firm’s risk and its CEO’s pay. Banker and Datar (1989) analytically demonstrate that CEO compensation risk may either increase or decrease with firm risk. Consequently, as firm risk increases CEO pay may be higher (lower) reflecting a premium (penalty) for risk. Risk-averse agents must be adequately compensated for bearing risk (Shavell 1979). Since labor market evaluates CEOs based on their firm’s performance, the volatility in a firm’s performance has an adverse labor market consequence for its CEO (Fama 1980). When pay is tied to performance, the volatility in the performance
measure also increases the volatility in pay. The pay needs to be adjusted upward to reflect premium compensation risk. Therefore, Gray and Cannella (1997) argue that total CEO compensation increases with both a firm’s risk and its CEO’s compensation risk. They find that CEO pay is increasing in compensation risk, but decreasing in a firm’s unsystematic risk and earning volatility; they do not find any association between pay and systematic risk. Core et al. (1999) find that CEO pay decreases with earning volatility, but does not vary with stock return volatility. Miller et al. (2002) document that CEO pay increases in systematic market risk. They also find that CEO pay exhibits a concave relationship with unsystematic risk and a convex relationship with systematic risk in ROA.

In the Indian setting, Jaiswall and Firth (2009) document a negative association between CEO pay and firm’s systematic risk. In contrast, S. Ghosh (2010) reports that total risk and earning volatility do not have a first order effect on CEO pay. Instead, the author documents that volatility in ROA reduces the pay-for-performance sensitivity and thereby, has a second order effect on CEO pay. This indicates that the link between CEO pay and ROA is rather weak in Indian firms whose earning is more volatile.

**Business Complexity:** Studies have documented a positive association between CEO pay and proxies of business complexity, suggesting greater pay for CEOs of more complex firms. Complexity can result from various sources. A firm’s organizational structure, dispersed operation, internationalization, business diversification, and technology can result in internal complexities (Henderson & Fredrickson 1996). An increase in globalization and product market competition enhances environmental complexities.
Researchers have explained the positive association between complexity and CEO pay using information processing and human capital theories. Greater complexity requires more information processing and a more talented CEO, hence greater CEO pay (Finkelstein & Hambrick 1988; Henderson & Fredrickson 1996; Sanders & Carpenter 1998).

Sanders and Carpenter (1998) document a higher CEO pay in multinational corporations. Rose and Shepherd (1997) investigate the relationship between CEO pay and firm diversification. They also examine whether the relationship differs for incumbents and newly hired CEOs. They document that the CEOs of diversified firms in the U.S. earned higher pay during 1985-1990. They also find that the pay of new CEOs in diversified firms is higher than the pay of the incumbents. Agarwal (1981) documents that cash compensation of the CEOs of life insurance firms in the U.S. increases with their span of control, management levels, and their firm’s geographical diversity. A. Ghosh (2006) finds that CEO pay has a positive association with the number of products and plant locations of Indian firms. This evidence suggests that CEO pay is increasing in an Indian firm’s complexity.

**Firm Age:** Compensation studies have documented an association between firm age and CEO pay. Firm age is the number of years a firm is in business (the number of years between the date of incorporation and the end of a fiscal year). If a firm exploits its long experience and develops competitive advantage, it can prosper in its industry. If it fails to adapt to changes in its environment and allows dead-weight costs to build up, its performance will suffer. Therefore, firm age may be associated with either good or bad performance.

Gomez-Mejia et al. (2003) document that CEO pay exhibits a negative association with firm age in publicly traded family firms in the U.S., which suggests
that younger family firms pay their CEO more relative to their older counterparts. A. Ghosh (2006) also reports evidence of a lower CEO pay in older firms in India.

**Other Firm Characteristics:** R&D and advertisement are recurring expenditures. Being strategic in nature, they enhance firm value and long-term competitive advantage. Though their impact lasts for several years, they are expensed following the generally accepted accounting principles. As a result, strategic expenditures decrease earnings. When a reward is based on a performance measure that is adversely impacted by an action, it will induce an executive to curtail or postpone the action, even though this behavior may be suboptimal for a firm. Therefore, Duru et al. (2002) predict that it is optimal to shield CEO pay from the effects of total expenditure on advertising and R&D. They provide supporting evidence in their sample of U.S. firms for the period 1980-1996. Further, Cheng (2004) finds a positive association between a change in total CEO pay and a contemporaneous change in R&D expenditure, when the firm’s ROE declines and the CEO is near retirement (sixty-three years or older). This suggests that a firm’s board penalizes its CEO by decreasing his pay for an opportunistic reduction in R&D. In the Indian context, A. Ghosh (2006) reports that CEO pay exhibits a positive association with R&D intensity, but it does not show a significant association with advertising intensity. However, S. Ghosh (2010) finds that, while the coefficient on R&D intensity is positive, it is not significant at the conventional 5% level. The evidence indicates that CEO compensation is not associated with R&D and advertising intensity. Therefore, boards of Indian firm do not shield a CEO’s pay for strategic expenditures, in contrast to the evidence in the U.S.
Studies have shown that boards also shield CEO compensation from non-recurring transactions, such as restructuring charges (Dechow et al. 1994), extraordinary losses (Gaver & Gaver 1998), etc.

2.3.2 CEO Pay and Ownership Structures

A large body of research has examined the role of ownership structures in executive compensation. Ownership structure represents ownership percentage and ownership category.

Ownership categories are the different types of shareholders who own equity in the company. These include promoters or controlling shareholders, institutional investors, top management and directors, individual investors, etc. While there may be different categories of shareholders in a firm, the control of the firm rests with either the promoters or the management. Management-controlled firms typically have diffused ownership; its shareholders may be scattered, hold too few shares and have too little incentive to actively monitor the firm. In contrast, a promoter-controlled firm typically has a dominant shareholder who controls its management and affair. A promoter can be a government entity, business group, family, chaebol, keiretsu, dozoku, etc. Promoters have the votes to control the management and the incentives to monitor its affairs actively.

Institutional investors could be mutual funds, public pension funds, hedge funds, or endowments, who do not have any business relationship with their investee firms. These investors can resist any pressure from their investee firm’s management and therefore, are effective monitors (David et al. 1998). Institutional investors could

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3 A chaebol is a family-controlled large business house in South Korea. A keiretsu is a group of Japanese firms linked to a main bank and by a cross-holding of shares among the member firms. The main bank is the top lender and one of the largest shareholders of the member firms in a keiretsu. A dozoku is a Japanese firm controlled by a founding family and often managed by a family CEO.
also be insurance companies, commercial banks, or investment banks, and have a business relationship with their investee firms. These investors offer loans, fund management, investment banking, and insurance services to their investee firms. They are sensitive to the pressures from their investee firm’s management and are likely to be ineffective monitors (David et al. 1998). Institutional investors could also be corporate pension funds, brokerages, or investment advisors, who do not have a business relationship with their investee firm’s management, but they may or may not be interested to monitor the management (David et al. 1998).

Ownership percentage refers to the percentage of firm’s common stocks owned by an investor. The greater the percentage of shares that an investor owns in a firm, the greater is the investor’s wealth tied to the firm. Therefore, when ownership percentage increases, an investor has a greater incentive to monitor the governance and curb management’s excessive opportunistic behavior (Alchian & Demsetz 1972).

Researchers have found that CEO pay is associated with promoter ownership, institutional ownership, blockholders, CEO ownership, ownership by a non-CEO non-promoter insider, ownership of the controlling shareholder, and various types of ownership such as public sector, business group affiliated, family-owned, non-chaebol, keiretsu, etc.

In the Indian context, CEO pay is the highest in business group affiliated firms, the second highest in foreign firms, the third highest in stand-alone firms, and the lowest in public sector undertakings. Studies have also found that CEO pay increases with promoter and non-promoter institutional ownership. Researchers have not yet investigated the role of blockholders in CEO pay in Indian firms.

**Ownership Type:** Compensation literature provides evidence that CEO pay practices vary across ownership categories. The differences in goals and motivations
of the controlling shareholders across ownership categories affect their compensation practices. Ding et al. (2006) find a significant difference in managerial compensation practices in China across distinct ownership categories, such as state-owned-enterprises, publicly listed firms, and foreign firms. Firth et al. (2006a) report that the use of performance-sensitive pay varies across distinct types of controlling shareholders in Chinese firms. Firms managed by a Chinese state agency (such as the state asset management bureau or local finance bureaus) do not tie pay to firm performance, in contrast to the practice in firms with large blockholders and state-owned-enterprises. The authors also find that total CEO pay is higher in foreign firms operating in China, but the pay does not differ across state agency managed firms, central government owned firms, and local government owned firms. Conyon & He (2012) corroborates higher pay in foreign-invested Chinese firms. In South Korea, Kato et al. (2007) report a positive pay-for-performance sensitivity in non-chaebol firms. They also find that pay is not linked to performance in chaebol firms. In Japan, total pay is lower in firms affiliated to a keiretsu, due to more stringent monitoring by the keiretsu’s main bank, than in non-keiretsu firms (Kato 1997). Further, CEO pay is significantly higher in a dozoku, consistent with managerial opportunism (Basu et al. 2007). This is contrary to the evidence documented in family firms in the U.S. Gomez-Mejia et al. (2003) report that in family-controlled U.S. firms, CEOs who have ties to the family receive significantly lower total compensation than professional CEOs (those without ties to the controlling family).

A distinct characteristic of Indian firms is that they have a dominant shareholder (also known as promoter). The percentage of shares owned by a promoter is typically much greater than the ownership of the second-largest shareholder, unless the firm is a joint venture. There are four types of promoters or controlling
shareholders in the Indian context. First, public sector enterprises are the firms controlled and managed by the state or central government and firms affiliated to a government-controlled firm. Second, foreign-invested firms are the private sector firms controlled and managed by foreign investors or a foreign multinational. Third, business group affiliated entities are the private sector firms controlled and managed by an Indian business group or a business-family. Last, stand-alone firms are the private sector firms that are independent entities, unaffiliated to any business group or foreign multinational. Researchers have provided evidence that CEO pay differs across these ownership types.


**Foreign-invested firms:** Studies report that CEO pay is higher in foreign multinational affiliated firms in India. S. Ghosh (2010) reports that foreign firms pay higher total CEO pay than public sector ones. Jaiswall & Firth (2009) also find that CEO pay in foreign firms is greater in comparison to stand-alone firms. Further, Tomar & Korla (2011) document that CEO pay is greater in foreign firms than in the business group affiliated and stand-alone firms.

**Business Group Affiliated and Family Firms:** Studies find that CEO pay is higher in business group affiliated firms. Chakrabarti et al. (2012) document evidence in favor of higher CEO pay in business group affiliated firms. S. Ghosh (2010) reports
that CEOs of business group affiliated firms receive higher total compensation than those in public sector firms. Jaiswall & Firth (2009) find that CEO pay in family firms is greater in comparison to only stand-alone firms. They attribute the higher pay in family firms to the prevailing (during 1999-2003) personal tax regime that had a lower taxes for compensation and higher taxes for dividend income (due to double taxation; corporate tax on firm’s profits and personal income tax on dividends). However, this argument is in sharp contrast to Demsetz (1983), who argues that when family members control the firm, they have incentives to overpay themselves opportunistically.

Stand-alone Firms: S. Ghosh (2010) reports that CEO pay in stand-alone firms are higher than that in public sector firms.

Public Sector Firms: Studies provide mixed evidence of whether CEO pay is lower in public sector firms. Jaiswall & Firth (2009) find that CEO pay in public sector firms and stand-alone firms are similar, statistically indifferent. In contrast, S. Ghosh (2010) reports that CEO pay is the lowest in public sector enterprises. Parthasarathy et al. (2006) and Tomar & Korla (2011) document a significantly lower total CEO pay in public sector firms relative to the business group affiliated and stand-alone firms. According to Parthasarathy et al. (2006), compensation levels and practices in public sector firms are very different from those in firms in other ownership categories. Public sector enterprises do not have the autonomy to set executive pay, but must follow government rules and guidelines on CEO compensation.

The coefficients reported by S. Ghosh (2010) and Jaiswall & Firth (2009) can help understand the rank-order of CEO pay across the ownership types. S. Ghosh (2010) reports the following coefficients on the dummy variables for the three
ownership types: for business group affiliated firms 2.688 (t-statistics 11.6), for foreign firms 2.630 (t-statistic 6.9), and for stand-alone firms 2.072 (t-statistic 7.0). The coefficients on the dummy variables for three ownership types reported in Jaiswall & Firth (2009) are 1.16 (t-statistic 3.16) for family firms, 0.87 (t-statistic 2.37) for foreign firms, and -0.25 (t-statistic -0.71) for public sector firms. The evidence from two studies together suggests the following rank-order of CEO pay: the highest in business group affiliated firms, the second highest in foreign firms, the third highest in stand-alone firms, and the lowest in public sector firms. Therefore, CEOs of business group firms receive highest total pay, whereas the CEOs of public sector firms earn the lowest pay.

**Institutional Ownership and Concentration:** Compensation literature has documented a significant role of institutional investors in CEO compensation. The evidence depends not only upon whether an institutional investor is pressure-resistant or pressure-sensitive, but also upon whether the institutional ownership is concentrated or fragmented. Total CEO pay exhibits a negative association with institutional ownership, when institutional investors are pressure-resistant ownership and their ownership is concentrated. On the other hand, total CEO pay shows a positive association with institutional ownership when institutional investors are pressure-sensitive and their ownership is fragmented.

Institutional investors are financial institutions that manage the money of others, for example mutual funds, pension funds, hedge funds, etc. Over the years, not only the number of institutional investors, but also their investment as a proportion of a firm’s equity has increased. According to Gillian and Starks (2007), these investors owned more than 70% of the market value of U.S. firms listed firms in 2006, up from 30% in 1976 and 10% in 1952. Their large ownership positions make it difficult for
them to exit a company quickly by selling its stock in the market. Therefore, they have the voting power and the incentives to monitor their investee’s CEO and constrain his pay and entrenchment behavior (Alchian & Demsetz 1972). However, not all institutional investors are likely to be effective monitors. Only institutions that do not depend on their investee firms for business can play this role effectively (David et al. 1998). For example mutual funds, pension funds, and endowments and foundations do not solicit business from their investee firm; therefore, these investors are resistant to management pressure. In contrast, commercial banks, investment banks, and insurance companies depend on a firm for lending, investment banking, and insurance services, respectively; therefore, they are likely to be sensitive to management pressure.

Though the investment relationship gives power, the business relationship partially dilutes this power. Therefore, David et al. (1998) predict and empirically find that CEO pay is decreasing (increasing) in the ownership of pressure-resistant (pressure-sensitive) institutions. The standardized coefficients suggest that the magnitude of the effect of the pressure-sensitive ownership on CEO pay is higher than the magnitude of the effect of the pressure-resistant ownership.

Hartzell & Starks (2003) find a negative association between total CEO pay and institutional ownership concentration. They report that total pay decreases by 19% for a one standard deviation increase in the percentage of equity owned by the top-five institutional investors in a firm. In addition, they find a positive association between total CEO pay and total institutional ownership. They find that the magnitude of the coefficient on total institutional ownership variable is less than the magnitude of the coefficient on top-five institution’s ownership. Therefore, the effect of ownership concentration of top-five institutional investors is stronger. Ozkan (2011)
also documents that total cash pay decreases with institutional ownership (whether measured as the ownership of all institutional investors or the ownership of a firm’s four largest institutional investor) in the U.K.

In the Indian context, Chakrabarti et al. (2012) and Parthasarathy et al. (2006) document a positive association between total CEO pay and institutional ownership. While the evidence is contrary to the expected negative sign, these studies do not provide an explanation for the positive sign.

**Large Blockholders:** Compensation research has documented a negative association between CEO pay and large blockholders. This suggests that CEO pay is lower in firms with large blockholders.

Large blockholders are non-controlling institutional investors with substantial shareholding in the firm. Core et al. (1999) use the ownership of 5% of a firm’s shares as the threshold to classify an institutional investor as a large blockholder. These institutional investors have the voting power and the incentives to monitor the firm’s CEO and constrain pay and entrenchment behavior (Alchian & Demsetz 1972). According to Hoskisson et al. (2009), they pressure the board to fire a CEO who shows signs of incompetence or excessive entrenchment. Shleifer & Vishny (1986) argue that monitoring will be theoretically more effective in driving managers to enhance shareholder wealth, as the number of blockholders increases. A large body of research in the U.S. finds that large blockholders are effective outside monitors of their investee’s management. These blockholders check moral hazard and limit managerial rent extraction by strengthening a CEO’s pay-for-performance sensitivity (Gomez-Mejia & Wiseman 1997; Hoskisson et al. 2009). Further, Hoskisson et al. (2009) also posit that severe monitoring over long-term period can significantly
increase career and compensation risk for the CEO and lead to a high level of CEO compensation.

Core et al. (1999) report lower CEO pay in the presence of blockholders in U.S. firms. They find that total CEO pay drops by $86,100 or 9.2% of average total pay when a firm has a blockholder. Bertrand and Mullainathan (2001) find a negative association between luck-based CEO pay (CEO pay associated with increase in profits driven by factors outside a CEO's control) and the presence of a large blockholder in the firm. Cheng & Firth (2006) provide evidence that large blockholders constrain CEO pay and strengthen CEO pay-for-performance sensitivity in family firms in Hong Kong. They find that not only CEO pay decreases with the ownership of blockholders, but also the pay-for-performance sensitivity increases with the ownership of blockholder. Therefore, blockholders play an important role in family firms in Hong Kong. Blockholders also constrain CEO pay in Taiwan (Lin 2005) and in the U.K. (Ozkan 2011). In the Indian context, researchers are yet to investigate the role of blockholders in CEO compensation contracting.

**Promoter Ownership:** Research has documented the role of promoter ownership in CEO compensation. Gomez-Mejia et al. (2003) document that in family-controlled U.S. firms, the family CEO’s pay is decreasing in the family’s ownership. When a family owns greater percent of a firm’s equity shares, its voting rights afford a greater protection to the family CEO. As family ownership increases, the family CEO’s compensation risk as well as turnover risk reduces. Therefore, Gomez-Mejia et al. (2003) argue that lower pay for a family CEO in a family-managed U.S. firm reflects this reduced risk, in addition to the CEO’s greater emotional commitment to the firm. Similar evidence has been documented in Hong Kong, where firms are largely family-controlled and executive directors are from founding family. Cheng
and Firth (2006, 2005) find that executive directors in Hong Kong firms do not use their large voting power to grant themselves a high pay. The authors also document a negative association between CEO pay and executive director’s ownership. They argue that executive directors and CEOs of family firms in Hong Kong rely less on compensation and more on dividend for cash flow.

However, the evidence of the role of promoter holding in CEO compensation in Indian firms is mixed. Jaiswall & Firth (2009) find a positive association between the two only when Tobin’s Q is used as the measure of firm performance. They do not find any association when ROA is used to measure firm performance. However, Chakrabarti et al. (2012) report a positive association between promoter holding and CEO pay, suggesting rent extraction by promoter CEOs at the cost of minority shareholders. They document this association not only in firms that have high promoter holding, but also in firms with low promoter holding. They find that the effect is greater in firms with low promoter holding consistent with greater horizontal agency problem and rent extraction in these firms.

**Other Ownership attributes:** Lambert et al. (1993) and Core et al. (1999) document that CEO pay is lower when a board has a non-CEO insider director who owns 5% or more of the firm’s stock. The presence of such an insider in the board increases monitoring and checks a CEO’s opportunistic behavior in U.S. firms. In contrast, Basu et al. (2007) finds that CEO pay increases with the board’s ownership of firm’s equity in Japan.

Allen (1981), Lambert et al. (1993), and Core et al. (1999) find that CEO pay reduces with a CEO’s ownership of the firm’s stock. The greater the CEO ownership, the greater is the alignment of interests of the CEO and the shareholders. Such CEOs do not exhibit opportunistic behavior in drawing excess compensation. Consistent
with this argument, Randøy & Nielsen (2002) find a significant negative association between CEO ownership and CEO pay in Norway and Sweden.

However, CEOs who own more than 50% of the shares of their company may exploit their power to draw higher pay. Holderness & Sheehan (1988) find that CEOs owning more than half of a publicly traded U.S. firm’s equity earned slightly more pay than CEOs at diffusely held firms. Similar evidence has been documented in India by A. Ghosh (2006) and Parthasarathy et al. (2006) who find that promoter CEOs earn substantially higher pay. The evidence suggests these powerful CEOs opportunistically extract rent, consistent with managerial power theory.

2.3.3 CEO Pay and Boards Attributes

Boards play a vital role in corporate governance. Their monitoring activities enhance the quality of management decisions and the value of firm (Monks & Minnow 1995). Board oversight also diminishes a CEO’s power to influence the pay-setting process (Tosi & Gomez-Mejia 1989). The evidence suggests that stronger boards constrain CEO pay and strengthen the link between pay and performance. Regulatory changes that strengthen the requirements for board structures and board procedures reduce excess pay and improve structure of CEO compensation (Chhaochharia & Grinstein 2009). The literature on board effectiveness indicates that stronger boards meet more frequently, are smaller in size, are not chaired by the firm’s CEO, have more independent directors but fewer busy directors, and have directors who own a greater percentage of firm’s equity.

The role of boards in executive compensation contracting has been widely investigated. Researchers document that CEO pay is higher when boards are larger, chaired by the CEO, and have fewer independent directors, but more busy directors.
and reciprocally interlocked directors. Growth in CEO pay is higher when board meets more frequently. Pay-for-performance sensitivity is stronger when boards are smaller.

In the Indian context, prior studies have documented that CEO pay is associated with the proportion of non-executive directors in the board, CEO chair duality, and the presence of a remuneration committee in the board. Researchers are yet to investigate the role of busy directors and board meetings in CEO compensation contracting in Indian firms. Besides, the role of board characteristics in the pay-for-performance sensitivity in Indian firms is yet to be studied.

**Board Size:** Compensation literature finds an important role for board size in CEO compensation. In particular, studies document that CEO pay is lower and pay-for-performance sensitivity is stronger, when boards have fewer directors.

Core et al. (1999) document a positive association between board size and CEO pay. This suggests that CEO pay is lower in firms with smaller boards. Jensen (1993), Monks & Minnow (1995), and Yermack (1996) assert that smaller boards are more effective in monitoring the management and guiding them to better decisions. Drawing upon the intuition from organizational behavior, Jensen (1993) suggests that an increase in board size leads to the problem of plenty. He argues that as board size increases, not only the coordination becomes difficult and director free-riding problem aggravates, but also gain from having more directors on the board reduces. CEOs become more powerful vis-à-vis the board when board size increases. Performance evaluation related discussions are more cautious and shielded in larger boards (Eisenberg et al. 1998). As a result, agency problem increases, thereby hurting firm performance and value. Consistent with this, Yermack (1996) finds that U.S. firms with smaller boards are more efficient in utilizing assets, generating profits, and
enhancing value. His results suggest that small boards are better monitors and more effective at firing CEOs for poor performance and strengthening the pay-for-performance sensitivity. He also shows that neither the percentage of outside directors on the board, nor the level of board ownership affects the pay-for-performance sensitivity in U.S. firms. Ozkan (2011) documents that total cash pay is increasing in board size in the U.K. Eisenberg et al. (1998) also document that in Finland, firm profitability is decreasing in board size among small and midsize firms. This suggests that small board size is a relatively more effective corporate governance mechanism, both in large firms, where there is separation of ownership and control, as well as in small and midsize firms, where there is less separation of ownership and control.

Researchers have examined the role of board size in compensation contracting in Indian firms. Tomar & Korla (2011) and A. Ghosh (2006) do not find any role of board size in CEO compensation. Chakrabarti et al. (2012) find a positive association between CEO pay and board size only when the proxy for firm size is sales, but not when the proxy for firm size is either total asset or market value of equity. Thus, there is a weak evidence of the role of board size in CEO compensation contracting in Indian firms.

**Number of Board Meetings:** Board meeting is an important board characteristic (Vafeas 1999). It is through board meetings that boards govern a firm, shape its long-term strategy, and manage crises. Directors are often pressed for time to carry out their duties (Lipton & Lorsch 1992). The effectiveness of board increases with the effectiveness of the time spent at board meetings (Conger et al. 1998). Vafeas (1999) documents that an increase the number of board meetings is associated with an improvement in firm performance in the U.S. He reports an increase in the frequency of board meetings after a period of poor performance. The improvement in board
activity is beneficial for firm performance, as it drives up not only operating profitability, but also improves asset utilization efficiency.

Albuquerque (2009) reports that CEOs received lower pay raises when boards had fewer meetings. In Indian setting, researchers are yet to examine the role of board meetings in CEO compensation.

**Independent Directors:** A number of studies have examined the role of independent directors in compensation contracting in U.S. firms. Independent or outside directors play an important role in corporate governance. Weisbach (1988) posits that independent directors are often well-respected academicians and business leaders with an incentive to protect their reputation. Further Fama & Jensen (1983) suggest that independent directors “use their directorship to signal … that (1) they are decision experts, (2) they understand the importance of diffuse and separate control, and (3) they can work with such decision systems.” This suggests that independent directors have strong incentive to protect and enhance their reputation in the independent director labor market. Therefore, independent directors are likely to be effective monitors. An outsider-dominated board is more likely than an insider-dominated one to curtail a CEO’s opportunistic behavior (Fama 1980) or fire the CEO in case of poor performance (Weisbach 1988). Therefore, the higher the percentage of independent or outsider director in the board, the stronger is the board’s control over the CEO and top management.

Finkelstein & Hambrick (1989) provide evidence suggesting that independent directors have no role in CEO pay. Ozkan (2011) documents that total cash pay increases with the percentage of independent directors in the U.K. However, Lambert et al. (1993), Boyd (1994), and Core et al. (1999) document a significant association between CEO pay and the percentage of independent directors on the board. Core et
al. (1999) report that total and cash pay of CEOs are lower when boards have a greater proportion of independent directors. Their results indicate that CEO pay declines by about 8% when the proportion of independent directors increases by one standard deviation (or 13%) or the number of independent directors increases by one. Yermack (1996) finds that the pay-for-performance sensitivity in U.S. firms is not associated with the percentage of outside directors in the board. In contrast, Cheng & Firth (2006) and Lin (2005) report that pay-for-performance relationship strengthens as the proportion of independent directors increases in Hong Kong and Taiwan. However, they do not find CEO pay decrease in the proportion of independent directors.

Studies find a mixed evidence of the role of independent directors in CEO compensation in Indian firms. Parthasarathy et al. (2006) and Tomar & Korla (2011) report that the level of CEO pay is not associated with the proportion of independent directors. In contrast, A. Ghosh (2006) finds a positive association between the proportion of non-executive directors and total CEO pay. The positive association is opposite of the expected negative association. His evidence suggests that CEO pay is higher when boards have a greater proportion of non-executive directors. This evidence indicates a failure of the monitoring role of the board and reflects opportunistic behavior by powerful CEOs. Researchers are yet to investigate whether pay-for-performance sensitivity strengthens from the presence of a greater proportion of independent directors in the boards of Indian firms.

**Busy Boards and Busy Independent Directors:** Independent directors gain valuable experience as well as reputational benefits from serving on the boards of many firms. They have an incentive to accept more independent directorship and serve on multiple boards (Fama & Jensen 1983). However, serving on multiple boards
can make them too busy to attend to their duties. Researchers disagree whether multiple directorships impair monitoring effectiveness of an independent director and whether board busyness is a sign of weakness in corporate governance. Following NACD (1996), researchers define a busy independent director as one who serves on three or more boards (six or more boards if he is retired). They classify a board as busy if the majority of its independent directors are busy. Ferris et al. (2003) argue that busy boards do not differ from non-busy boards at monitoring top management. However, Field et al. (2013) argue that independent director’s monitoring role is more important in Forbes 500 firms and concede that busy directors could be less effective monitors in these firms. However, due to their experience and contacts, busy directors enhance firm value by providing excellent advice to smaller firms undertaking their initial public offering. Further, Fich & Shivdasani (2006) report that board busyness exhibits a negative association with ROA, profit margin ratio, and asset turnover ratio; hence, firms with busy boards have poor operating performance. They find that a busy board is unlikely to fire a CEO for poor performance, even though the board has a majority of independent directors. They document that a departure of a busy director from a firm’s board is associated with a positive two-day abnormal return on the firm’s stock. They also document that when an independent director crosses the busyness threshold, the firms where he is an incumbent director experiences a negative return, which is larger in magnitude if the acceptance of independent director position in another firm leads to classifying the incumbent firm’s board as busy. Their evidence suggests that busy independent directors are ineffective monitors and busy boards are a sign of weak corporate governance.

Core et al. (1999) report that CEO pay increases with the percentage of busy directors among the independent directors on the board. This suggests that busy
directors award excessively high pay to CEOs and are unable to mitigate agency problems. In the Indian setting, researchers are yet to examine how CEO pay is associated with busy directors and busy boards.

**CEO Duality:** CEO duality is the practice of a single individual holding two positions: CEO and board chair. There is a large body of evidence that CEO pay is higher in firms where the CEO is also the chair of the board of directors.

Agency problems are higher in firms with CEO duality (Yermack 1996). In such firms, boards spend less time monitoring the CEO (Tuggle et al. 2010). Such CEOs have greater influence on the board (Westphal & Zajac 1995). They exploit their power to act opportunistically and draw substantially higher pay. Core et al. (1999) documents that a person who is both the CEO and the board chair in a U.S. firm earns 16% higher pay. The above evidence suggests that higher pay reflects managerialism and agency problem.

In Indian firms, the evidence is mixed. Parthasarathy et al. (2006) do not find any association between CEO duality and total CEO pay. In contrast, A. Ghosh (2006) and Tomar & Korla (2011) document that CEOs who are also board chairs earn significantly higher pay.

**Other Board Attributes:** Outside directors appointed by the CEO are likely to lack independence. Therefore, they enhance a CEO’s power relative to the board and his ability to act opportunistically. Consistent with this argument, compensation studies have documented that CEOs who appoint a greater percentage of outside directors receive higher pay (Core et al. 1999; Lambert et al. 1993).

Core et al. (1999) find that CEO pay is increasing in the percentage of gray outside directors in the board. The authors classify a director on a company’s board as
gray if the company had paid him or his employer any amount in excess of his board fees. The evidence suggests that CEOs are able to influence the board and obtain favorable pay when the board has a greater proportion of gray directors.

Interlocking relationship is relatively common in large U.S. firms; one in twelve U.S. firms has their CEO interlocked with another CEO (Hallock 1997). In an interlocking arrangement between two firms, the CEO of one firm acts as a director on the board of the other firm, and vice versa. Therefore, interlocked directors may not be truly independent. Hallock (1997) and Core et al. (1999) examine the role of interlocking relationship in CEO pay. Hallock (1997) finds that CEO pay is higher in firms whose CEOs are reciprocally interlocked. However, the association is no longer significant when other determinants of pay are controlled. Core et al. (1999) also find a lack of role of interlocking relationship on CEO pay. Their evidence suggests that CEO compensation contracting is not influenced by whether or not executives of two firms are reciprocally interlocked.

Major stock exchanges in the U.S., such as the New York Stock Exchange and the NASDAQ, imposed new requirements to increase the effectiveness of board monitoring following corporate frauds in 2000-2002. The Security Exchange Commission, the U.S. regulatory body, approved these rules in November 2003 and they became effective from 2004. The rules redefined independent directors and ties for automatic disqualification of a director from being independent. As a result, all New York Stock Exchange and NASDAQ listed firms were required to adhere to the following key requirements: boards to have a majority of independent directors; independent directors to meet without the management at regularly scheduled sessions; only independent directors to be members of compensation, nomination, and audit committees; a written charter and self-evaluation procedures for compensation
and nomination committee; financial literacy for all members of audit committee and at least one audit committee member to have expertise in corporate accounting and financial management, etc. According to Chhaochharia & Grinstein (2009), these changes enhanced board structures and procedures and strengthened board oversight. The authors document a 17% reduction in excess CEO pay due to these regulatory changes.

2.3.4 CEO Pay and CEO Characteristics

Studies have examined the role of CEO attributes such as tenure, ability, age, etc. in CEO pay. The evidence suggests that CEO pay increases with CEO tenure, ability, and age, and it is higher for founder or promoter CEOs. In Indian firms, a CEO’s tenure and promoter status plays a role in CEO pay; however, studies find a mixed evidence for the role of CEO’s education and age in CEO pay.

CEO Tenure: Compensation literature has widely investigated the role of a CEO’s tenure in his pay. Researchers have documented that the higher the CEO tenure, the greater is the CEO pay and the lower is the pay-for-performance sensitivity. In addition, they have documented that a CEO’s pay-for-size and pay-for-risk sensitivities are increasing in tenure.

CEOs nominate new directors to serve on the firm’s board and thereby, shape the board’s composition (Finkelstein & Hambrick 1988). A newly appointed CEO may not have too much power over the board (Fredrickson et al. 1988). However, over time, the CEO nominates new directors to serve on the board and replaces unfavorable directors with favorable ones. As a result, he gains their loyalty and increases his influence over the board (Hill & Phan 1991).
A CEO may not provide the compensation committee any information that reflects poor performance (Coughlan & Schmidt 1985). Over time as he gains control over the firm’s information system, he opportunistically sets agenda for board meetings (Hill & Phan 1991). Therefore, Hill & Phan (1991) argue that CEOs gain greater power over the board as their tenure increases, and they use this power to influence the board to grant a more favorable compensation contract that awards them higher pay, shields them from poor performance, rewards them for empire building, and transfers greater portion of compensation risk to the firm.

Further, Cremers & Palia (2010) argue that pay can also increase with tenure as the board updates its belief about the CEO’s abilities, retaining good CEOs and firing incompetent ones. As tenure increases, the CEO learns from experience and develops firm-specific skills, which enhances his human capital, value to the firm, and his compensation (Agarwal 1981; Gerhart & Milkovich 1990; Gomez-Mejia & Wiseman 1997).

Hill & Phan (1991) predict and document higher total cash compensation, lower pay-for-performance sensitivity, and higher pay-to-size and pay-to-risk linkage, as CEO tenure increases in a balanced panel of 104 U.S. firms from seven industries (banking, oil, pharmaceuticals, aerospace, automobile, beverages, and steel) drawn from Forbes compensation surveys during 1977-1988. Cremers & Palia (2010) also report that CEO pay increases pay-for-performance sensitivity strengthens, as CEO tenure increases. They also investigate whether the link between pay and tenure differs with insider / outsider status of a CEO and with strong / weak corporate governance. They document that governance quality affects the link between pay and tenure. A firm with stronger governance has a stronger link, compare to a firm with weaker governance. They also find that the insider CEOs have a lower pay-for-
performance sensitivity over tenure than an outsider CEO. Ozkan (2011) also
document tenure’s positive association with total cash pay and pay-for-performance
document that CEO pay increases with tenure in Japanese firms. In contrast, no
association between CEO pay and CEO tenure has been documented in Norway and
Sweden (Randøy & Nielsen 2002) and in family-controlled U.S. firms (Gomez-Mejia
et al. 2003).

In the Indian setting, only A. Ghosh (2006) investigates the role of in-firm
experience on pay (other studies ignore the role of tenure or in-firm experience as an
explanatory variable). He documents that CEO pay increases with tenure, but at a
decreasing rate. His evidence suggests a concave relationship between CEO pay and
tenure in Indian firms.

**CEO Ability:** Compensation literature has examined the role of ability in
compensation contracting and documented a positive association between CEO pay
and CEO ability.

Management literature has debated whether CEOs are indispensable. Collingwood (2009) articulates the views of business leaders and academicians from
different disciplines. He suggest that CEOs do not matter and good firm performance
arises from non-CEO factors. He says, “Good leaders can make a small positive
difference; bad leaders can make a huge negative difference.” Warner et al. (1988)
fail to find any significant stock market reaction to CEO departures, which indicates
that stock market investors were neither excited nor concerned about the future of the
firm. Chang et al. (2010) examine whether CEO ability affects firm performance, firm
value, and CEO pay. To answer these questions, they look at stock price reaction to
CEO turnover in U.S. firms during 1992-2002. They provide evidence that CEO
ability affects firm performance, firm value, and CEO pay. They find that stock market reaction to a CEO departure event was worse, the better the firm’s past performance and the higher the CEO’s abnormal pay. Their evidence rejects the view that CEOs do not matter.

CEOs matter because they are talented. A number of attributes contribute to making a CEO more talented. These attributes can be either time-invariant (such as innate ability, charisma, personality, education, leadership skills, etc.) or time-varying (experience, industry knowledge, firm-specific skills, etc.). Several of these attributes are not only difficult to measure, but also publicly unavailable in archival form. Therefore, it is difficult to tease out the precise impact of these sources of CEO ability on CEO pay. The role of time-varying ability in CEO compensation is absorbed by variables that either reflect a time-trend or are perfectly correlated with time, for example CEO tenure, in-firm experience, total experience, etc. The role of time-invariant ability in CEO compensation is determined using CEO fixed effects.

Graham et al. (2012) document the important role of time-invariant managerial attributes in CEO compensation. They find that the time-invariant unobserved managerial characteristics are significantly correlated with both executive pay as well as other observable attributes. Therefore, they highlight the importance of controlling for time-invariant attributes. They assert that without managerial fixed effects, compensation studies using longitudinal data suffer from omitted variable bias and yield inconsistent estimates of the coefficients on explanatory variables. They also show that including these fixed effects significantly alters the magnitude of the coefficients on observable characteristics. For example, their Table 3 shows that the coefficient on CEO chair indicator variable falls from 0.08 (t-statistic 4.46) to 0.02 (t-statistic 1.89), while that on tenure rises from 0.03 (t-statistic 4.41) to 0.04 (t-statistic
The evidence in Graham et al. (2012) highlights the need to include managerial fixed effects in executive compensation studies in order to not only obtain unbiased estimate of the coefficients, but also understand their precise economic significance.

Studies have also documented the association of executive compensation with specific time-invariant attributes such as education, charisma, narcissism, global experience, etc. (Carpenter et al. 2001; Kato 1997; Sen & Sarkar 1996; Tosi et al. 2004; A. Ghosh 2006; Agarwal 1981).

In the Indian setting, A. Ghosh (2006) has documented a weak association (significant only at 10% level) between CEO pay and CEO’s education. However, pay does not depend on the level of a CEO’s education in U.S. firms (Agarwal 1981) and in Japanese *keiretsus* (Kato 1997).

Tosi et al. (2004) examine whether CEO charisma has a role in firm performance, stockholder wealth, and CEO pay. For this purpose, they conduct a randomly sampled survey, obtain their data for 59 CEOs of Fortune 500 firms in 26 industries, and compute their score for CEO charisma. Over a ten-year period, they find that total pay was higher for a CEO perceived as charismatic by the firm’s Vice President of Human Resources Department and Chief Financial Officer. They also find that in firms with charismatic CEO, shareholder returns were higher when perceived market uncertainty was high. However, they do not find any association between firm profitability (ROA) and charisma rating. This suggests that charismatic CEOs draw higher pay and influence shareholder wealth in a limited way, but are unable to contribute to better profitability.

O’Reilly III et al. (2014) examine whether CEO narcissism is associated with CEO pay. Highly narcissistic persons are dominating and grandiose and have high self-esteem and a sense of entitlement, but low empathy for others. To test the role of
narcissism, the authors obtain employee ratings of the personality of thirty-two CEOs of leading high-technology firms. They document a weak evidence (significant at 10% level) of CEO pay increasing in a CEO’s narcissistic ratings. However, they find strong evidence that narcissistic CEOs earn higher pay as their tenure increases. Therefore, narcissism appears to strengthen the association between CEO pay and CEO tenure.

Agarwal (1981) documents that cash compensation of a CEO of a life insurance firm in the U.S. increases with his experience, his span of control, and his firm’s management levels and geographical diversity. The greater the span of control, number of management levels, and firm geographical diversity, the greater the business and environmental complexity, and therefore, the greater the need for a CEO with more talent. Therefore, the evidence documented by Agarwal (1981) suggests that a more talented CEO earns higher pay.

Carpenter et al. (2001) investigates the role of a CEO’s prior international work experience in CEO pay and firm performance of U.S. multinationals. They find that a CEO’s years of prior international work experience enhanced firm profitability, the greater the international exposure of the multinational firm and the higher the prior international experience of the top management team (comprising of executives designated vice president or above, but excluding the CEO). They also document a higher pay for a CEO with higher international work experience. Their evidence suggests that prior experiences are valuable to a firm when bundled with appropriate organizational capabilities and resources, and result in greater CEO compensation.

**CEO Age:** Compensation studies have documented a concave relation between a CEO’s pay and age. Conyon & Murphy (2000) report that CEO pay increases with age but at a decreasing rate in large firms in the U.S. and the U.K. Saha
& Sarkar (1999) find that pay increases with age in some large Indian firms. However, A. Ghosh (2006) does not find any association between CEO pay and CEO age in a large sample of Indian firms.

**Founder / Promoter CEO:** There is no consensus in the literature about whether the pay is significantly different for a founder / promoter CEO. Deckop (1988) finds no significant difference in pay between a founder and a non-founder CEO in large U.S. firms. Similarly, Gomez-Mejia et al. (2003) report that pay of a founder CEO is not significantly different in a sample of family firms in the U.S. O’Reilly III et al. (2014) document similar evidence in a small sample of high-technology firms in the U.S. In contrast, He (2008) documents lower pay for the founder CEO of firms going public during 1998-2002. In Indian firms, the evidence suggests that CEOs who are promoters or are related to promoters earn a higher pay (Parthasarathy et al. 2006; A. Ghosh 2006).

**CEO’s Political and Social Connections:** In the U.S. setting, researchers have examined the role of a CEO’s political and social connections in his pay. Their evidence indicates a higher total compensation and a lower pay-for-performance sensitivity for CEOs who are more connected, whether socially or politically.

Brown et al. (2012) document that a CEO’s social networks exhibits a positive association with his pay and a negative association with his pay-for-performance sensitivity. Their evidence is based on firms in the S&P 1500 index in 2005. They count all direct ties that a CEO has formed through his career, education, and social activities, including golf clubs, charities, etc. Aslan & Grinstein (2012) examine the role of a CEO’s political connection in his total compensation. They document that more politically connected CEOs earn higher pay and have lower pay-for-performance sensitivity, and their firms have better operating performance. They use
a CEO’s campaign contribution as a proxy for a CEO’s political capital and connections. They report that for a CEO whose political contributions is one standard deviation higher than mean, total CEO pay is 9% higher and pay-for-performance sensitivity is 17% lower than average. In India, researchers are yet to investigate how political and social connections shape CEO pay.

2.3.5 CEO Pay and Compensation Consultants

The role of compensation consultants in CEO compensation contracting has been examined in the U.S., the U.K., and Canada (Armstrong et al. 2012; Cadman et al. 2010; Conyon et al. 2009; Goh & Gupta 2010; Kabir & Minhat 2014; Murphy & Sandino 2010; Voulgaris et al. 2010; Core et al. 1999). In these English law origin countries (Porta et al. 2000), firms are required to provide a detailed disclosure of their top management’s pay-setting process (Conyon 2009). The literature is still evolving and has documented mixed evidence that consultants contribute to excessive CEO pay. In the Indian setting, researchers have not investigated the role of compensation consultant due to the lack of detailed disclosures about the top management pay-setting process.

Executive compensation consultants provide advice to their client firms about top management pay and guide them in the process of determining senior management compensation, structure, and policy. Based on a consultant’s advice, a firm’s compensation committee recommends to its shareholders the appropriate level of total compensation, short-term, and long-term incentives for the CEO and other senior management (Murphy & Sandino 2010). Their services are widely used by large corporations in the U.S., the U.K., Canada, and Australia (Conyon 2011). In the U.S. and the U.K., compensation committees typically choose one or more reputed
compensation consultants (Bender 2011a; Bender 2011b; Conyon et al. 2009; Kabir & Minhat 2014). The U.S. market is dominated by top-five consultants – Frederick W. Cook, Hewitt, Mercer, Pearl Meyer, and Towers Watson – that serve more than 75% of the S&P 500 index firms, 70% of the S&P 1500 firms, and 60% of the Russell 3000 firms (Conyon 2011). These consultants have access to compensation data and practices of a large number of their clients. Using this data, they benchmark their client firm’s compensation policy with the market and assist its compensation committee to design top management compensation plan (Conyon 2011). As a result, compensation consultants contribute to legitimizing a firm’s compensation practices (Wade et al. 1997) and establishing market norms for executive pay (Bender 2011b).

Compensation consultants occupy an important place in the process of setting CEO compensation in large firms (Baker et al. 1988; Core et al. 1999). Yet, they are criticized for contributing to excessive CEO pay in the U.S. (Crystal 1991). Wade et al. (1997) find that firms with large blockholders legitimize high CEO pay by citing compensation consultants, downplaying the importance of accounting or market performance, and emphasizing management and shareholder goal-alignment. 4

Several empirical studies in the U.S., U.K., and Canadian settings have documented that CEO pay is higher in firms that use the services of compensation consultants in determining CEO pay (Armstrong et al. 2012; Conyon et al. 2009; Kabir & Minhat 2014; Murphy & Sandino 2010; Voulgaris et al. 2010). However, Armstrong et al. (2012) find that the higher CEO pay is due to weak corporate governance in these firms, rather than due to their use of the services of a compensation consultant. The evidence suggests that weakly governed U.S. firms are

more likely to hire a compensation consultant and in these firms, CEOs use the services of compensation consultants to justify excessive pay. This indicates managerialism. In contrast, Conyon et al. (2009) and Voulgaris et al. (2010) find that firms hiring compensation consultants grant a higher proportion of equity-based pay to their CEO, which suggests efficient contracting and better goal-alignment between shareholders and the CEO.

The advice rendered by compensation consultants can suffer from prejudice due to business pressure and conflicts of interests (Conyon 2009). Many consultants provide advisory services not related to compensation (Armstrong et al. 2012; Cadman et al. 2010; Conyon 2009; Conyon et al. 2009; Murphy & Sandino 2010). For example, they advise compensation committees on complicated, emerging issues (such as legal, regulatory, actuarial, tax, and accounting) that affect compensation (Murphy & Sandino 2010). Their revenue from non-compensation services can be large (Murphy & Sandino 2010) and they may be unwilling to lose the revenue by recommending a low CEO pay. They compete aggressively in an oligopoly market structure and under pressure to get repeat business from their clients. Their behavior is also affected by the chance that their services may not be renewed or may be terminated for recommending low pay (Conyon et al. 2009; Bebchuk & Fried 2004). Therefore, compensation consultants are criticized for not being truly independent (Conyon 2009). However, Cadman et al. (2010) and Conyon et al. (2009) do not find CEO pay is higher firms when consultants have a conflict of interest. Murphy & Sandino (2010) find that CEO pay in a U.S. firm increases with the number of non-compensation services the firm obtains from a compensation consultant; the results

5 Among the big-five compensation-consulting firms, Frederick C. Cook and Pearl Meyer only provide compensation services (Cadman et al. 2010). In contrast, Hewitt, Mercer, and Towers Watson provide compensation consulting as well as non-compensation related advisory services.
have weak statistical significance. The authors also report a higher CEO pay in Canadian firms that use the service of compensation consultants, but they do not find a robust evidence of pay increasing with their proxy for a consultant’s conflict of interest. Kabir & Minhat (2014) report that CEO pay is not associated with the number of compensation consultants a U.K. firm hires, but is associated with the market share of these consultants. Their evidence suggests that consultants recommend higher pay in order to maintain their market share and retain their business with their client firms.

Due to a multiplicity of measures used, comparing the results across studies is difficult. Studies have used a binary variable (yes/no) if the firm uses a compensation consultant (Conyon et al. 2009; Kabir & Minhat 2014; Voulgaris et al. 2010) and separate binary variables for a specific consultant (Armstrong et al. 2012; Kabir & Minhat 2014). They have also used a consultant’s market share (Kabir & Minhat 2014), fees from non-compensation services divided by fees from compensation related services (Murphy & Sandino 2010), and other proxies for their conflict of interest arising from providing non-compensation services (Cadman et al. 2010; Conyon et al. 2009; Murphy & Sandino 2010).

2.3.6 CEO Pay and Industry Attributes

Studies have documented an inter-industry variation in CEO compensation. The factors driving the inter-industry variation in CEO pay may be either time-varying or time-invariant. Researchers include industry fixed effects to absorb the effect of time-invariant industry attributes on CEO pay. Several Indian compensation studies have included industry fixed effects (A. Ghosh 2006; S. Ghosh 2010; Jaiswall & Firth 2009; Tomar & Korla 2011).
Ely (1991) finds significant differences in CEO pay and pay-for-performance sensitivity across four industries (banking, electric utility, oil and gas, and retail-grocery) in her sample of 176 U.S. firms during 1978-1982. The inter-industry variation in compensation level and practices are attributed to the inter-industry differences in production environment, business uncertainty, demand and supply of CEO talent, internal governance mechanism, product market competition, etc. Ely (1991) argues that a difference in production environment across industry causes a variation in CEO pay. Gillan et al. (2003) find that a firm’s corporate governance is shaped less by firm factors and more by industry characteristics such as product uniqueness, leverage, and competitive and information environment. Gillan et al. (2009) document a significant variation in profitability and risk across industries. The choice of performance measures also vary across industries. Stock returns are more used in industries with high growth options such as high-tech, internet, etc. (Engel et al. 2002; Smith & Watts 1992); whereas, accounting-based performance measures are preferred in traditional, low-growth industries such as utilities, manufacturing, etc. (Engel et al. 2002; Murphy 1999). Alexander & Zhou (1995) develop an analytical model to predict the role of industry’s product market competition in executive compensation. Empirically, they find that only incentive pay, not total pay, is associated with the industry’s product market competition measured using concentration indices such as the Herfindahl-Hirschman Index and four-firm concentration ratio. However, concentration indices erroneously measure product market competition in an industry. According to Raith (2009), concentration indices based measures of substitutability, such as Herfindahl-Hirschman Index, are poor proxies for an industry’s product market competition. When market structure is endogenous, Herfindahl-Hirschman Index indicates not only a greater competition in
a more substitutable market, but also a lower competition in markets having greater size and entry barriers. Therefore, product market competition in an industry increases in substitutability, but decreases in market size and entry barriers. Karuna (2009) overcomes this issue by using separate proxies for industry size, product substitutability, and entry barriers. He documents an association between these proxies and CEO pay.

2.3.7 CEO Pay and Fiscal Year

Studies have documented that CEO pay fluctuates each year, varies with business cycle, and shows a time-trend. Therefore, they recommend the use of year fixed effect in compensation studies that pool firm-year observations. In the Indian setting, many compensation studies using longitudinal data have included year fixed effects (A. Ghosh 2006; Jaiswall & Firth 2009; Tomar & Korla 2011).

Bebchuk & Grinstein (2005) find a statistically significant coefficient on each year dummy during 1993 and 2004. In addition, they report that, except for the years 1998 and 2001, the value of the coefficient on a year dummy was higher than that of the previous year. This suggests that CEO pay exhibits heteroskedasticity and a time-trend. Further, using the data of Bebchuk & Grinstein (2005), Eisfeldt & Rampini (2008) document that CEO pay is also highly pro-cyclical. They report a correlation of 0.91 (0.70) between CEO pay in the S&P 1500 firms (smaller firms) and the U.S. GDP. They also find a similar correlation for the combined pay of top-five executives in a firm. They attribute this behavior to the need to induce the executives to reallocate capital over a business cycle. It is a common practice in extant empirical studies on executive compensation to include year dummies (indicator variables or
fixed effects) to control for the annual variation in CEO pay due to macro-economic factors.

2.4 Relative Performance Evaluation in CEO Pay

Boards use compensation incentives to attract, hire, and retain talented CEOs. An important question they have to address, on an ongoing basis, is how to align the goals of their firm’s CEO with that of the shareholders. In standard principal-agent models compensation contract provides incentive based on own firm performance (Holmstrom & Milgrom 1987). This helps align the interests of executives, and reward performance that create firm value while discouraging actions that destroy firm value. This argument is consistent with the evidence that firms with a stronger link between executive pay and firm performance outperform those with a weaker link (Masson 1971). A firm may do well for several reasons. Its managers may be more talented, make superior business decisions, and put higher effort. The economy may be expanding rapidly. The industry may have experienced a demand surge. However, when the industry or economy faces recession, a firm may perform poorly despite its manager’s efforts and decisions that enhance long-term firm value. Absolute-performance-based incentives reward managers for good firm performance during boom, but punish them for poor performance during recession. Common economic or industry shocks are not under an individual’s control. Therefore, absolute-firm-performance-based-incentives punish managers for luck and expose their compensation to systematic risk. RPE overcomes this issue by rewarding a CEO for his idiosyncratic performance, attributable to his effort. To use RPE in CEO compensation, boards employ performance relative to a group of other firms (referred to as “rivals” or “peers” in the literature).
Economic theory suggests that by using RPE in compensation contracts, firms can improve contracting efficiency (Holmström 1982) and create incentives to achieve both superior performance (Lazear & Rosen 1981) and strategic advantage (Vickers 1985). The board of a firm uses RPE in compensation contracts by placing a positive weight on a measure of the firm’s performance and a negative weight on a measure of its peer’s performance. This ensures that a CEO is compensated based on how the firm performs relative to its peers.

Holmström (1982) predicts that a firm will use relative performance when the output of its peers reveals information about the manager’s efforts, when managerial effort is not observable or knowable from the manager’s performance alone. The use of RPE benefits reduces moral hazard by filtering out the effect of economic shock from firm performance and evaluating managers solely based on their actions. It also reduces extraneous noise from compensation contracts and thereby helps a firm capture gains in contracting efficiency.

2.4.1 Theory of Relative Performance Evaluation

Holmstrom (1982), Janakiraman et al. (1992), and Aggarwal & Samwick (1999a) are the three important studies that have contributed to the development of the theory of relative performance evaluation.

Holmström (1982) shows that when agents face common uncertainties, principals can improve compensation contracting efficiency by including a measure of peer performance. He provides a one-period principal-agent model of relative performance evaluation in an industry with no strategic interaction among its players.
He shows that when firms face common uncertainties, RPE will improve the efficiency in compensation contracting by decreasing an agent’s exposure to these common uncertainties or systematic risk. This happens when one agent’s output provides information about the uncertainty in the environment faced by another agent. Aggregate measures such as peer averages may provide sufficient information about common uncertainties. Therefore, schemes that compare agents with such aggregate measures will be efficient. This has application in executive incentive packages, which base rewards on explicit comparisons with similar firms in the same industry.

Let there be \( n \) risk-neutral principals (for example, firms) each employing a risk-averse agent (for example, CEO). Let each agent-principal combination be indexed by \( i = 1...n \). Each agent selects an action \( a_i \), which is not observable and therefore not contractible. The output \( \pi_i \) of agent \( i \) depends on his action \( a_i \) and the state of nature \( \theta_i \) (for example, economic or industry shocks, whether good or bad) faced by firm \( i \). Let there be no strategic interaction among firms; hence, \( a_i \) does not affect \( \pi_j \) (\( j \neq i \)). Let \( \theta_i \) have two components, a common uncertainty \( \eta \) (for example, common shock, such as recent 2007-2009 economic recession in which automobile sales crashed) and a firm-specific component or idiosyncratic risk \( \varepsilon_i \) (for example, in the 2007-2009 recession in the U.S., General Motors lost market share and went into bankruptcy, whereas Hyundai gained share in the US automobile market). Let \( \varepsilon_i \) be independent and normally distributed, and \( b_i \) be the impact of the common shock on the firm performance.

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\(^6\) The absence of a strategic interaction implies that the action and performance of an agent does not affect the action and performance of other agents. Therefore, in such an environment, agents act independently of each other.
The output can be represented as a function of effort and state of nature using either an additive model or a multiplicative model as follows:

\[ \pi_i(a_i, \theta_i) = a_i + b_i \eta + \varepsilon_i \text{ for } i = 1 \ldots n \ldots \ldots \ldots (1a) \]

\[ \pi_i(a_i, \theta_i) = a_i (b_i \eta + \varepsilon_i) \text{ for } i = 1 \ldots n \ldots \ldots \ldots (1b) \]

Theorem 7 and 8 in Holmström (1982) shows that if the output of the agents are inter-independent, the optimal incentive contract for each agent will depend not only on his output, but also on the weighted average of the output of other agents, where weights are based on the precision of the measure of the peers’ output. Therefore, in the optimal set of sharing rules for the agent \( \{w_o(\pi)\} \), \( w_o \) will depend not only on an agent’s own output \( \pi_o \) but also on the weighted average of other agents’ outputs, \( \bar{x} = \sum \omega_p \pi_p \), with weights on each output, \( \omega_p = (\tau_p \div \sum \tau_p) \div b_p \). The subscripts \( o \) and \( p \) refer to own and peer firms, respectively. Here, \( \tau_p \) is the precision (reciprocal of the variance) of \( \varepsilon_p \) for the peers. Therefore, the higher the precision, the better is the information about the common shock, \( \eta \), in the peers’ output, \( \pi_p \), and the greater is the weight the peers’ output, \( \pi_p \), receives when evaluating the agent’s performance \( \pi_o (o \neq p) \). This is consistent with weak form of RPE usage in compensation contracts, which requires only a partial filtering out of common shocks.

Further, Theorem 9 of Holmström (1982) shows that all common uncertainties can be filtered out as the number of firms used in RPE grows large, even though there may not be any common uncertainty, or that the uncertainty may not be observed \textit{ex post}. These common uncertainties can be inferred from the peers’ output, and separated out of own performance, simply by deducting the arithmetic average of peer performance from a firm’s own performance, i.e. \( \pi_o - [\sum \pi_p \div (n-1)] \). Therefore \( w_o \)
will depend only on \((a_o + \epsilon_o)\) or \((\pi_o - b_o, \eta)\). This is consistent with the strong form of RPE usage in compensation contracts, where all common uncertainties are removed.

Holmström (1982) and Banker and Datar (1989) show that the optimal sharing rule is based on a linear combination of the performance measures of the agent and his peers. When two performance measures are distributed as bivariate normal random variables, Banker and Datar (1989) show that the weights on own and peer performance in an optimal contract will satisfy the following condition when the two performance measures have joint normal distribution:

\[
U' o \left[ w_o (\pi_o, \pi_p) \right]^{-1} = \kappa + \beta_o [\pi_o - E(\pi_o|a_o)] + \beta_p [\pi_p - E(\pi_p|a_o)] \quad \ldots (2)
\]

where the subscripts \(o\) and \(p\) refer to own and peer, respectively; \(U'\) is the marginal utility of the agent; \(w\) is the sharing rule or compensation plan; \(a\) is the agent’s action; \(\beta\) is the weight on performance in the compensation plan; \(E\) is the expectation operator; \(\pi_o\) is the own performance of the agent; \(\pi_p\) is the peer performance of the agent; \(E(\pi_o|a_o)\) is the expected performance of the agent given his actions; \(E(\pi_p|a_o)\) is the expected performance of the peer given the agent’s actions; \([\pi_o - E(\pi_o|a_o)]\) is the unsystematic component of the agent’s own firm performance; and \([\pi_p - E(\pi_p|a_o)]\) is the unsystematic component of the peer firm performance. When a firm’s action does not affect another, \([\pi_p - E(\pi_p|a_o)]\) simplifies to \([\pi_p - E(\pi_p)]\).

Janakiraman et al. (1992) posit that when the actions of one agent affects another, the optimal weights on own and peer performance, \(\beta_o\) and \(\beta_p\), respectively, satisfy:

\[
\frac{\beta_p}{\beta_o} = \left( \frac{\partial E(\pi_p|a_o)}{\partial a_o} - \psi, \frac{\partial E(\pi_p|a_o)}{\partial a_o} \right) \div \left( \frac{\partial E(\pi_o|a_o)}{\partial a_o} - \psi, \frac{\partial E(\pi_p|a_o)}{\partial a_o} \right) \quad \ldots (3)
\]
where $\psi$ is the sensitivity of own performance to changes in peer performance; other variables are as defined earlier.\(^7\)

In the absence of a strategic interaction, the optimal contract will have $[\pi_p - E(\pi_p)]$ instead of $[\pi_p - E(\pi_p | a_o)]$ and will satisfy:

$$U'(w_p(\pi_o, \pi_p)^{-1} = \lambda + \beta_o[\pi_o - E(\pi_o | a_o)] + \beta_p[\pi_p - E(\pi_p)] \quad \ldots \quad (4)$$

Here the two slope coefficients satisfy:

$$\beta_p + \psi \beta_o = 0 \Leftrightarrow \beta_p / \beta_o = -\psi \quad \ldots \quad (5)$$

Note that $\beta_o > 0$ since higher effort results in better relative performance. The marginal utility of the agent depends upon own as well as peer unsystematic performances, $[\pi_o - E(\pi_o | a_o)]$ and $[\pi_p - E(\pi_p)]$ respectively. When condition (5) is satisfied, the peer group component of firm performance is completely removed and the executive is evaluated solely on $[\pi_o - E(\pi_o | a_o)]$. This is consistent with the strong form of RPE, which considers not only the sign but also the magnitude of $\beta_p$ along with that of $\beta_o$ in assigning weight to the performance measures in optimal compensation contract.

Condition (4) $\Leftrightarrow$ Condition (5) $\Leftrightarrow$ $0 > \beta_p / \beta_o = -\psi \Leftrightarrow$ strong form of RPE.

The strong form of RPE does not allow for the competitive environment to play a role in contract design. When condition (5) fails, $0 > \beta_p / \beta_o \neq -\psi$, but since $\rho > 0$ and $\beta_o > 0$, it must be that

$$\beta_p < 0 \quad \ldots \quad (6)$$

\(^7\) In the regression of own performance on peer performance, $\psi$ is the slope coefficient. The sensitivity is positive due to a positive correlation between own and peer performance.
When condition (5) fails, but condition (6) is satisfied, the **weak form of RPE** holds, wherein common uncertainties are filtered out only partially in performance evaluation. Janakiraman et al. (1992) argue that the weak form holds under the assumption of strategic interaction, i.e. when an agent’s action not only influences his own firm’s performance but also affects his peer firm’s performance. Therefore, the applicability of the weak form of RPE is not as restrictive as that of the strong form.

**Aggarwal and Samwick (1999a)** show that the optimal compensation contracts for risk-averse agents will have a positive weight ($\beta_o$) on own performance. This weight increases in the correlation ($\rho$) between own and rival firm performances. Further, the optimal compensation contract will have a negative weight ($\beta_p$) on rival firm performance, consistent with RPE. In particular, $\beta_p = -\psi \beta_o$ as pointed in Equation (5).

Let us denote $\beta_p / \beta_o$ by $\mu$, the RPE ratio.

$$\mu = \beta_p / \beta_o = -\psi = -\rho (\sigma_o / \sigma_p) \quad \text{Equation (7)}$$

where $\sigma_p$ and $\sigma_o$ are the standard deviation of peer and own firm performance respectively. The optimal ratio $\mu$ will be negative. Its magnitude decreases in $\rho$ and $\sigma_o$ and increases in $\sigma_p$. Keeping $\rho$ and $\sigma_o$ constant, an increase in the noise in peer performance makes the weight on peer performance less negative and the RPE ratio less negative. This suggests that a firm will use less RPE when its peer performance is noisier. When only the noise in own firm performance increases, the weight on own performance becomes less positive and the weight on peer performance becomes more negative. Consequently, as own performance measure becomes noisier, the RPE ratio becomes even more negative. This suggests that firms will use more RPE when their own performance measure is noisier or less informative. Now keeping the noise
in performance measures constant, as the correlation between own performance and peer performance increases, the weight on own performance becomes more positive and the weight on peer performance becomes more negative; as a result, change in the correlation changes the RPE ratio. When own performance is noisier than peer performance, an increase in the correlation will make the RPE ratio more negative, which suggests a greater use RPE usage. On the contrary, when peer performance is noisier than own performance, an increase in the correlation will make the RPE ratio less negative, which suggests lower RPE usage in such firms.

The relationship $\mu = -\psi$ predicts that $\partial \mu / \partial \psi = -1$, consistent with strong form of RPE, where common shocks are fully filtered out. However, if common shocks are only partially filtered as in weak form of RPE, then $\partial \mu / \partial \psi < 0$ and $\partial \mu / \partial \psi > -1$; this would imply that there may be other factors, not related to effort-insurance trade off, that determine the relative weights $\beta_p$ and $\beta_o$.

### 2.4.2 Empirical Evidence of RPE in Executive Compensation

RPE is a fundamental prediction of agency and contracting theories. However, the debate about the use of RPE was unsettled for a long time, as the empirical evidence for RPE usage in CEO compensation contracts had been mixed until Albuquerque (2009).

Antle & Smith (1986) was one of the first studies to investigate empirically the use of RPE in executive compensation contracting. They provide a mixed support for RPE in the total compensation of top three executives. They document that 16 out of 39 U.S. firms in three industries used the strong form of RPE in compensation. Gibbons & Murphy (1990) show that total CEO pay is determined based on a firm’s performance relative to its industry. They also find that the change in CEO pay is
determined based on firm performance relative to the aggregate market, but not relative to the industry. In the largest US commercial banks, Barro & Barro (1990) find that total CEO compensation has a positive weight on industry performance, contrary to the predictions of the RPE theory. Janakiraman et al. (1992) document RPE usage in total CEO compensation in the weak form, but not in the strong form. Aggarwal and Samwick (1999a) show the existence of RPE in total CEO pay but not in the change in total CEO pay. Since U.S. firms did not explicitly disclose RPE usage before December 15, 2006, these prior studies used implicit tests and a definition of peers that included either all firms in an industry or all firms in a stock market index.

Albuquerque (2009) shows that firms in the same SIC two-digit code industry and belonging to the same market-value-based size-quartile ("industry-size peers") constitute a better measure of a firm’s peer group. Her empirical results suggest that CEO pay is not associated with industry-peer performance, which was commonly used in prior empirical studies on RPE. She argues that the ideal peer group should include firms that are similar along several firm and industry characteristics: industry, size, diversification, financing constraints, operating leverage, and growth options. The choice of industry-size peer group not only explains RPE, but also reduces the dimensionality of the problem because different firm characteristics are not completely independent and the information in many characteristics is subsumed by size. For example, a firm’s flexibility in responding to an external shock depends on its technology, organizational complexity, and ability to access external capital, which also depend on firm size. Therefore, industry-size peer definition overcomes the misspecification inherent in industry-peer group definition. Her results demonstrate the existence of RPE in both strong as well as weak forms. She finds that firms employ RPE and the results are consistent with complete filtering of common shocks.
in the total compensation as well as in the change in compensation of a CEO. Therefore, she provides evidence of strong form of RPE usage. Subsequent studies have found evidence of RPE usage in U.S. and U.K. firms based on explicit disclosure in annual report. In the U.K., FTSE 350 firms use RPE in the grant of performance-vested equity (Carter et al. 2009). In the U.S., firms disclosed RPE usage in determining CEO compensation (Gong et al. 2011) and in making performance-vested equity grants (De Angelis & Grinstein 2011).

In the Indian context, private sector firms do not adequately disclose how their boards determine CEO pay. Therefore, we do not know whether they use RPE in determining CEO compensation or awarding performance-vested equity grants or stock options.

2.4.3 Drivers of RPE Usage: Analytical Investigation

Several papers have advanced the theoretical RPE literature by incorporating the effect of competitive environment, strategic interaction, agents’ job market opportunities, contract externalities, and cost heterogeneity. Aggarwal & Samwick (1999b) introduce strategic interaction and product substitutability to show the absence [presence] of RPE in industries where competition is characterized by differentiated Bertrand [Cournot]. Oyer (2004) brings in agents’ outside job opportunities that are correlated with own performance to show that variable participation constraints ensure that agents are rewarded for luck, not consistent with RPE. Albuquerque (2010) analyzes the effect of cost heterogeneity and its interaction with product substitutability, to shows the optimality of RPE in compensation contract. She also shows that when cost heterogeneity is high, more [less] efficient or low [high] cost firms will have greater [lower] weight put on peer performance and

Aggarwal and Samwick (1999b) model how compensation contract design is affected when firms interact strategically in imperfectly competitive product markets. In their differentiated Bertrand model, they find that compensating agents based on the profits of both own and rival firms is superior to compensating agents only on the profits of their own firms. The improved contract places a positive weight on both own and rival firm performance. This induces collusion, lessens competition, and raises equilibrium prices and profits for both firms. They also show that $\mu$, the ratio of the weight placed on rival performance to that on own performance in compensation contracts, decreases (increases) in peer (own) price and increases in product substitutability. When product substitutability is low (high), industries behave like separated monopolies (more competitive) and place less (more) positive weight peer performance, which results in a lower RPE usage. The results in their differentiated Cournot model of strategic interaction are just the opposite of their result (described above) for differentiated Bertrand model of strategic interaction.

Albuquerque (2010) explores how cost heterogeneity among firms interacting strategically affects the optimal weights on own and peer performance. The RPE ratio $\mu$ will be higher in magnitude for low cost (or more efficient) firm than that for high cost (or less efficient) firm and it is never optimal to ignore peer performance in compensation contracts. Therefore, firms always employ RPE in wage contracts. She also shows that $\mu$ behaves differently to changes in product substitutability in the presence of cost heterogeneity such that firms in the same industry may place different weight on RPE. The magnitude of the optimal $\mu$ is decreasing in product substitutability for high cost firm irrespective of cost heterogeneity and for low cost
firm in low cost-heterogeneous environment, consistent with incentive to collude and soften competition. Such firms will put positive weight on both own and rival performance, contrary to that predicted by RPE. She interprets this as a potential cause of bias against the relevance of RPE in empirical literature. However, when cost heterogeneity environment is high, the more efficient firm chooses compensation contract where the magnitude of the optimal RPE ratio $\mu$ is increasing in product substitutability, consistent with incentive to harden competition. This suggest that more efficient firms in high cost-heterogeneous industries put negative weight on rival performance resulting in a more negative $\mu$ and a greater use of RPE.

2.4.4 Drivers of RPE Usage: Empirical Investigation

The association of RPE usage with firm, executive, and industry characteristics has been investigated empirically in various studies such as Joh (1999), Aggarwal and Samwick (1999b), Himmelberg and Hubbard (2000), Bertrand and Mullainathan (2001), Garvey and Milbourn (2003), Rajgopal et al. (2006), and Albuquerque (2014). Most of the studies prior to Albuquerque (2009) explored whether the absence of RPE is restricted to executives of certain types of firms or firms in certain types of industries.

Aggarwal and Samwick (1999b) empirically test the association between the competition in a firm’s industry and its RPE usage. They use executive level annual data during 1993-1995 in U.S. manufacturing firms. However, they document a positive coefficient on firm’s own performance and its peer performance. Thus, their evidence indicates no RPE usage in compensation contracting. Further, they find a positive coefficient on the interaction between a firm’s own performance and its industry’s Herfindahl-Hirschman Index. They also find a negative coefficient on the
interaction between peer performance and the industry’s Herfindahl-Hirschman Index; this negative coefficient is smaller in magnitude than the positive coefficient on the peer performance. This suggests that the positive weight on peer performance increases as industry concentration decreases (i.e. competition increases in the industry). This suggests that firms reward their executives for mitigating product market competition in their industry. Joh (1999) tests not only the presence of RPE in the cash compensation of the board of directors of Japanese public firms, but also the association of RPE with industry growth and concentration. Joh (1999) finds a positive weight on average industry performance in the tests of the strong and the weak form of RPE. Further, he documents a negative association of the weight on industry performance with industry growth and concentration. This suggests that as industry growth and concentration decreases, the positive weight on peer performance increases in Japanese publically traded firms. This is consistent with a decrease in RPE in a growing or a concentrated industry where commitment to collusion is less.

Bertrand and Mullainathan (2001) test whether the absence of RPE is due to a positive association of CEO pay with observable firm performance. They run a 2-SLS regression. In the first stage, they estimate expected performance due to observable luck. In the second stage, they examine how CEO compensation is associated with the predicted performance from the first stage regression. They find that the coefficient of the predicted performance in the second stage regression is positive and significant, instead of zero, suggesting that CEOs are rewarded for observable luck (or expected firm performance) rather than relative performance. They also explore how pay-for-luck differs between poorly governed and well-governed firms, by including a governance measure and its interaction with expected performance in their second stage of the 2-SLS procedure. They use two independent proxies for good
governance: first, the number of blockholders, each owning at least 5% of the firm’s common stock; second, the number of such blocks held by the directors. They find that the expected performance has positive and significant coefficient. The interaction of expected performance with the governance variable has negative and significant coefficient. This suggests that the pay-for-luck is higher in poorly governed firms, consistent with rent extraction and skimming. They conclude that better governed firms pay their CEO less for luck, even in the absence of RPE.

Himmelberg & Hubbard (2000) test whether CEO pay responds to shocks in the aggregate demand for a highly skilled CEO, and whether this explains absence of RPE usage in bigger and more complex firms during 1992-1998. As a proxy for CEO talent, they use log of firm size, consistent with “positive assortative matching” (Rosen, 1982). They find that RPE is used in smaller firms (who are in the bottom quartile of the size distribution), but not in larger and more complex firms. Garvey & Milbourn (2003) test the association of RPE with firm and CEO characteristics and document the use of RPE in the compensation of younger and less wealthy CEOs, thus confirming RPE in only a select group of firms. Rajgopal et al. (2006) empirically test whether the lack of evidence of RPE in compensation is due to CEO talent and outside opportunities. They hypothesize a positive peer performance sensitivity of CEO talent. They find that the RPE usage decreases with CEO’s talent, tenure, and stockholder wealth variance, but increases with CEO age and firm size. They conclude that compensation is positively associated with a CEO’s outside job opportunities in the industry, the weight on firm’s peer performance is not negative, and therefore there is a lack of evidence of RPE in CEO compensation. Albuquerque (2014) hypothesizes and documents that a firm with high growth opportunity uses less RPE. In such a firm, not only is peer performance less informative about external
shocks, but also the agency problem is more severe and the CEO can influence the choice of peers in RPE. Therefore, the costs exceed the benefits from RPE usage.

2.5 Consequences of CEO Pay on Executive Action and Firm Performance

Compensation researchers and agency theory scholars advocate linking CEO pay with firm performance to reduce agency cost and incentivize a CEO to maximize shareholder value. In their compensation philosophy and policy, remuneration committees emphasize compensation as a tool to attract, retain, and motivate talented CEOs to exert greater effort towards enhancing firm performance. Thus, an important belief among researchers and practitioners is that compensation level and mix potentially influences a CEO’s motivation, effort, and decisions; this is akin to the adage – what you get is what you pay for. Better compensation should lead to higher motivation, greater effort, and better decisions, which in turn, should result in more favorable firm outcome such as better firm performance and greater shareholder value. Consequently, an effective CEO compensation policy should shape firm outcomes such as investment, financing, business efficiency, product portfolio, competitiveness, etc., thereby affecting a firm’s future performance.

2.5.1 Role of CEO Compensation Level, Structure, and Policy on Firm Performance

In the U.S.A., the Omnibus Budget Reconciliation Act of 1993 changed the tax deductibility of compensation from January 1994. Firms could deduct only performance-related compensation that was not only paid in cash, but also obtained based on pre-determined criteria approved by a compensation committee comprising of only independent directors. The act put a ceiling of $1 million per executive. As a result, affected firms were forced to renegotiate of executive compensation contracts
and switch to performance-based pay. As a result, the operating performance of these firms improved significantly during the subsequent three-year period (Maisondieu-Laforge et al. 2006).

Compensation scholars have investigated the influence of CEO compensation on firm performance, but Tosi et al. (2000) point out that the literature has failed to document unequivocal evidence for the same. Higher compensation level does not always lead to better firm performance because the latter is also affected by strategic interactions, industry developments, and economic shocks (Holmstrom 1982; McGahan & Porter 1997; Yermack 1997). As a result, firm performance is quite noisy and not entirely under a manager’s control (Brush et al. 1999). This could be a reason for the equivocal evidence about the consequences of compensation on firm performance.

Compensation literature has documented the role of specific components of pay package on future firm performance. Stock option is one element of compensation package that has attracted considerable scholarly attention. Hanlon et al. (2003) have investigated the relation between stock option grants to top management teams and future firm performance in the U.S. firms. They report that over the five years after the stock option grant, undiscounted operating profits increased by 3.71 times the fair value (using the Black-Scholes Option Pricing model) of the stock option grants. They also document a concave relation between option grants and future firm performance; as the fair value of an option grant increases, a firm’s performance increases at a decreasing rate.

Compensation scholars have also invested the effect of adoption of specific compensation plans on firm’s operating performance. Kato et al. (2005) study the effect of Japanese firms including stock option in compensation package after a
change in regulation in May 1997. They find that stock market reacted positively to the announcement of the adoption of stock option; adopting firms experienced a positive 2% abnormal stock return. They also document subsequent improvement in operating performance at the adopting firms, but no change in their stock volatility and dividend policy. Morgan & Poulsen (2001) document an increase in shareholder wealth from the announcement and adoption of management-proposed stock or option based pay-for-performance plans for top executives during 1992-1995 in the U.S. firms. Core & Larcker (2002) find that when boards required their firm’s managers to own a minimum number of its equity shares, firms with low level of managerial stockholding experienced significant improvement in both accounting profitability and stock returns.

Among the subset of firms that were anticipated to adopt compensation plans during 1983-1996 for rewarding their executives based on positive economic profit, Hogan & Lewis (2005) examined whether subsequent performance of the adopters was significantly better than that of the non-adopters. Interestingly, they found a change in investment behavior among the adopters subsequent to the adoption of economic profit based incentives. They document that the adopters reduced their invested capital, improved their asset utilization efficiency, increased their profitability, and enhanced their shareholder value creation, and the benefits were significantly higher for the adopters than for the non-adopters. Balachandran (2006) and Wallace (1997) document that the adoption of residual income-based compensation plan is associated with an increase in residual income, but not shareholder value.
2.5.2 CEO Pay and Executive Action and Behavior

Compensation level and structure help potential candidates self-select to a position and thereby creates a sorting effect. Lazear (1986) predicts that a firm attracts less (more) talented, but more (less) homogenous workers when it pays salary (piece rate). Lazear (2000) documents that when firms adopt performance pay such as piece rate system, they attract more talented workers, gain average productivity, and experience greater variance of output across the workers. Dunford et al. (2005) documents a positive association between an executive’s job search effort and the percentage of deeply out-of-the-money stock options in the executive’s portfolio.

Compensation can influence executive attention and strategic choices. Using firms in the airline industry that underwent deregulation, Cho & Hambrick (2006) report that a greater performance-based pay induces managers to pay more attention to their firm’s strategic issues post industry deregulation, and thereby make necessary changes to its strategy. Mehran et al. (1998) find that a firm makes strategic choices yielding greater shareholder value, when its CEO owns a greater proportion of its stock and his compensation has a higher option delta (i.e. a greater sensitivity to the firm’s stock price). Mehran & Rosenberg (2008) document that banks that granted stock options to their CEOs borrowed less, had higher capital, and undertook riskier investments. Their asset and stock price volatility was higher, particularly at higher levels of option grants. Desai & Dharmapala (2006) report lower incidence of tax sheltering due to greater proportion of incentives (restricted stocks and/or stock options) in total compensation. They find that the relationship is stronger in firms with weaker governance structures. Fenn & Liang (2001) show that management’s stock options holding affects a firm’s payout policy. In particular, the authors document that
the stock options holding exhibits a positive association with stock repurchases and a negative association with cash dividend payment.

Stock options in compensation packages make the compensation a convex function of stock prices. When stock price increases, the value of call options on the stock increases at an increasing rate. Therefore, option holders benefit significantly from the rise in the price of the underlying stock. This creates a strong incentive not only to influence stock price, whether opportunistically or through greater information disclosure, but also to backdate and spring-load option grants. For example, Nagar et al. (2003) report that CEOs who own greater percentage of their firm’s stock and with a greater percentage of equity-based compensation in total CEO compensation provide better information disclosure. Consequently, their firms have lower information asymmetry. In contrast, Yermack (1997) document that stock option grants are opportunistically scheduled just before a significant increase in stock price. Lie (2005) and Heron & Lie (2007) document evidence of opportunistic backdating of option grants. Aboody & Kasznik (2000) find opportunistic voluntary disclosure by CEOs around scheduled option grant dates to maximize the fair value of their option compensation. They document that firms prepone (postpone) announcement of bad (good) news before (after) the date on which the CEO is scheduled to receive stock option grants. Similarly, Callaghan et al. (2004) document opportunistic timing of news around re-pricing of stock options. They find that CEOs disclose good (bad) news in quarterly earnings just after (before) the date of re-pricing of out-of-money stock options. Further, Bergstresser & Philippon (2006) document that when their CEO’s stock option portfolio delta is higher, companies manipulate their reported earnings upward by aggressively using discretionary accruals. During the period when earnings are managed upward, their CEOs not only exercise greater number of
options, but they also sell a greater number of their firm’s equity they own. Burns &
Kedia (2006) document evidence that CEOs whose stock option compensation has
higher option delta are more likely to misreport earnings. They also find that other
forms of compensation are not association with the likelihood of misreporting. Guidry
et al. (1999) investigate a large conglomerate that has an earnings-based bonus plan.
They report the presence of earnings manipulation to maximize the bonus award. The
studies discussed above highlight that incentivizing CEOs too much through
aggressive use of stock options or stock-based plans is detrimental to the firm.