

Executive Compensation- Where have you been, and where are you going?

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Abstract

Executive compensation is an extensively researched and highly complex topic. This paper attempts to shed some light on the vast literature encompassing this topic. First, I provide background on the major works in executive compensation and agency theory over the last 80 years. Subsequently, I describe the more recent debate between proponents of the managerial power hypothesis and holders of the optimal contracting viewpoint. This discussion includes theoretical and empirical research supporting each side of the debate. I then transition into a more specific discussion of the inherent complexities of executive compensation and of the most recent research on modeling an optimal CEO contract. I highlight several unanswered questions and briefly discuss areas for future research.

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I. Introduction

Executive compensation is a highly publicized and contentious subject, capable of spurring debate across board rooms, academic conferences, and dinner tables alike. Generally, the debate, no matter the arena in which it takes place (though, each arena certainly has its own characteristically skewed distribution of views), breaks down into two fundamental views of the way in which pay is set for executives. The first has been labeled “the managerial power hypothesis,” and it argues that (high) pay schemes for CEOs are the result of rent extraction by powerful executives who essentially set their own pay.¹ The competing hypothesis is manifested in what has been referred to as “the optimal contracting view,” which argues that pay setting outcomes are the result of efficient bargaining between shareholders and managers, aimed at best mitigating the principal-agent problem. Obviously, these views are conflicting (though, in my opinion, should not be held as mutually exclusive), and therefore offer a natural competitive springboard for researchers on either side of the dichotomy.

Determining the fundamental driver of executive pay setting processes (whether it be managerial power or optimal contracting) is clearly relevant in developing a theoretical framework upon which to evaluate and model (hopefully) effective compensation contracts. In particular, the debate over what forces are ultimately responsible for the well-documented and dramatic escalation in CEO pay over the last 40 years is undeniably thought-provoking, and can be used as a catalyst for formulating executable propositions on how to pay managers. As such, this paper will succinctly outline the evolution of evidence on the aforementioned

¹ Bebchuk & Fried (2004)

executive compensation debate² and on how executive compensation methods have evolved in general. More specifically however, it will provide a review of research on other issues related to the current executive compensation landscape, including a brief discussion on some of the major challenges facing compensation research and on what the optimal contract might actually look like.

As a note, the research on executive compensation is as vast as it is bellicose, and therefore, this paper is by no means a comprehensive treatment of the literature in this area- authors with meaningful contributions have most certainly been left out- but it should provide an overview of where the research in this area has been and where it might be heading. For more background reading on areas not directly addressed in this review see the works of Murphy (1999), Abowd & Kaplan (1999), Edmans & Gabaix (2009), and Frydman & Jenter (2010), among others.

II. Background

Issues in executive compensation and agency theory make up a significant portion of the academic literature in corporate finance. Jensen and Meckling (1976) (and to a great extent, Alchian & Demsetz (1972) and Berle & Means (1932)) provide a starting point for much of the current research on these subjects. They describe a theory of the firm in which individual utility maximization on the part of both “the principal and the agent” leads to a troubling scenario where the agent may not always act in the best interests of his principal. As such, they argue that in order to limit these “divergences from his interest,” the principal must incur some

² See Frydman and Jenter (2010) for a more thorough treatment of the theoretical and empirical evidence on both sides of this debate.

“agency costs” in the form of monitoring and bonding. Such a conclusion has given way not only to research evaluating the disconcerting characteristics of cooperative risk-sharing relationships (such as Fama and Jensen (1983 a,b)), but also to more specific methods of managing the principal-agent relationship.

Contemporary approaches to executive compensation are heavily focused on rewarding managers for their efforts to increase shareholder wealth, thereby aligning principal and agent incentives and reducing the aforementioned “agency problems.” This “pay-for-performance” concept has been spearheaded most notably by Jensen and Murphy (1990). They analyze CEO pay-for-performance during the 1970’s and conclude that, on average, CEO wealth changes just \$3.25 for every \$1,000 in shareholder wealth. Such an apparent lack of incentive alignment leads them to surmise that CEO pay during the 1970’s is largely independent of firm performance. Jensen and Murphy (1990) culminate their initial findings with what can be seen as a call to action: “Baseball managers often get fired after one losing season. CEOs stay on the job despite years of underperformance.”

Research on executive compensation during the 1980’s, 1990’s, and 2000’s has revealed a drastic increase in the sensitivity of pay to performance. Hall and Liebman (1998) analyze compensation data from 1980-1994 on firms within the Forbes 500 and “find a strong link between the fortunes of CEOs and the fortunes of the companies they manage.”³ Moreover,

³ They also point out that Jensen & Murphy use a “dollar change in wealth per dollar change in firm value” approach for measuring the strength of incentive alignment, which may be misleading because it disregards scale. As such, they recommend using what has been dubbed the “equity-at-stake” measure which calculates the *dollar change in CEO wealth per one percent change in firm value*. Frydman & Jenter (2010) run analysis using this figure and find that, while overall pattern of run-up in CEO compensation is preserved, incentives are in fact shown to increase nearly monotonically since 1960. Another measure receiving renewed attention is the elasticity of CEO wealth to performance- i.e. percent-to-percent change (Murphy 1985 and Edmans et al. 2009).

Morgan and Poulsen (2001) analyze compensation proposals in proxy statements of S&P 500 firms during the period from 1992-1995 and find evidence suggesting that new proposals are typically introduced in firms with good performance, and that these proposals are generally associated with “significant increases in shareholder wealth.” In fact, they summarize their findings by stating that they “can point to little evidence that suggests that pay-for-performance schemes are overly generous or fail to align managerial incentives in most cases.” Though some, such as Bebchuk and Fried (2003), offer up legitimate caveats on certain issues in the actual governance of incentive-based executive compensation (i.e. issues arising under the “managerial power view”), the widespread implementation of performance-based pay in the private sector and the proliferation of incentive-based research throughout the academic community seem to at least partially validate its merit in resolving many agency problems.

III. Managerial Power vs. Optimal Contracting

Not surprisingly, in the wake of the corporate scandals of 2001-2002 and the devastating 2007-2009 financial collapse, many of the traditional theories that seemed to certify the optimizing properties of incentive-based compensation are being readdressed. While much of the scrutiny is driven by media and politicians, many in the academic community have raised concerns as well. The crux of the debate has been over whether or not the drastic increase in CEO compensation in the U.S. since the mid-1970’s (and the perceived managerial excess that has accompanied it) can actually be consistent with optimal contracting theory, or if it must be indicative of an environment where rent extraction is the predominant feature driving compensation agreements. Thus, we have: managerial power vs. optimal contracting.

The surge in executive pay from the mid-1970's onward has been documented in various studies. Murphy (1999), for example, observes that median cash compensation paid to S&P 500 executives since 1970 has more than doubled by the dawn of the 2000's, and realized compensation has nearly quadrupled.⁴ Similarly, Frydman and Saks (2010) analyze executive compensation data from 1936 to 2005 for the 50 largest U.S. companies as classified by their sizes in 1940, 1960, and 1990 respectively.⁵ They find a correspondingly extreme escalation of CEO pay, reporting that executive pay growth averaged about 0.8% from the 1950's to the mid-1970's, but reached a peak of greater than 10% by the turn of the new millennia.⁶ Structurally, this run-up in executive pay can be attributed to the dramatic increase in the use of tools such as executive stock options over the past 35 years.⁷ On a more visceral level though, this run-up has fostered questions about the underlying driver of compensation agreements.

It should come as no surprise that most executive compensation models seem to fit the aforementioned boom trend quite well. Theories based on optimal contracting in particular seem to do a decent job of explaining the run-up in pay since the 1970's. Gabaix and Landier (2008), for instance, show that what they calculate as a six-fold increase in CEO pay since 1980 can be directly reconciled with a corresponding increase in firm size over that time period. They argue that as firm size increases, CEO talent becomes more impactful and thus, naturally, worth more. Gayle and Miller (2009) expand on the "size explanation" for compensation run-up and argue theoretically and empirically that job complexity for CEOs, and thus the pay that

⁴ Based on 1996-adjusted dollar figures.

⁵ Size in 1940 is calculated off of market values using the CRSP database. Sizes in 1960 and 1990 are calculated using total sales figures from the Compustat database.

⁶ Other studies have produced similar results. See for instance, Jensen & Murphy (1990a), Hall and Liebman (1998), Jensen, Murphy, and Wruck (2004), or even Bebchuk & Fried (2004) and Bebchuk & Grinstein (2005).

⁷ See Murphy (1999), Core, Guay, & Larcker (2002), Hall & Murphy (2003), and Faulkender & Stulz (2011).

they require, increases along with firm size. Other market-based explanations for the run-up include those by Frydman (2005), as well as those by Murphy & Zbojnik (2007), Giannetti (2008), and Marin & Verdier (2004), which point to the general increase in competition in the market for CEO talent. They argue that CEO pay has increased as a reaction to broader and more exogenous societal and economic changes- things like globalization, increased transferability of skills between jobs, etc.

Researchers in the managerial power camp seem to have so far been less successful than their optimal contracting counterparts in explaining the actual run-up in CEO pay. As described in research such as that by Holmstrom & Kaplan (2001), Hermalin (2005), and Kaplan (2008), corporate governance has only become more intense since the 1970's, which should actually seem to call for a drop in CEO compensation over that time period (if in fact rent extraction is driving compensation agreements). Managerial power hypothesis proponents explain this counterintuitive result in a quite logical manner. They posit that while governance may have become more intense since the 1970's, powerful CEOs themselves have increased their ability to cloak rent extractions at an even more rapid pace (through the use of increasingly available stock options and other "stealth-like" compensation tools).⁸ Furthermore, a possibility that has received somewhat less attention by those of the managerial power viewpoint is that the intensification of certain aspects of corporate governance may have actually been counterproductive in some cases. Gillan (2007), for example, points out that many of the governance reforms after the Enron scandal, such as

⁸ See Bebchuk & Fried (2004) as well as Hall & Murphy (2003) for discussion on issues relating to opacity of the current executive compensation toolkit. See also Gillan (2001) for a discussion on executive stock options.

those that required certain board structures might, “likely move firms away from their optimal governance structure.” While such unintended side effects, when taken by themselves, would not fully explain the magnitude of the run-up in CEO pay, they certainly could prove to be a significant additive factor when taken as a part of the broader environment.

Aside from theoretically explaining the run up in CEO pay since the 1970’s, research motivated by both camps of the executive compensation debate has also yielded interesting empirical results that have contributed to the understanding of the broader executive compensation landscape. These results include observed correlations between CEO skill and overall compensation (Graham et al. 2009), evidence of CEOs negating incentives by hedging firm-specific risk produced by compensation agreements (Bettis et al. 2001, 2010b), and observed instances where firms seem to reward CEOs for luck rather than skill (Bertrand & Mullainathan 2001).⁹ Ultimately however, it still remains relatively unclear as to what is truly driving executive compensation agreements. With large quantities of data now available, and because of the unique circumstances in the current economic, legislative, and political environment, researchers in this arena should hopefully find themselves increasingly closer to more definitive answers. In order to find these answers however, theoretical and empirical research should always remain cognizant of the possibility (or even strong likelihood) that the two major views on executive compensation are in fact not mutually exclusive. As Weisbach

⁹ See Murphy (1999) or Florin, Hallock, & Webber (2010) for an efficient account of major empirical work on executive compensation.

(2006) points out, it is a model's ability to stand up to departures from its assumptions that will determine how it is judged.¹⁰

IV. The Arduous Journey to the Optimal Contract

Theoretically modeling and empirically testing the causes and effects of executive compensation is challenging. This is in large part because many of the factors that influence the configuration and efficacy of pay are relatively unobservable (personal CEO characteristics, the private wealth of the CEO, etc.). From an empirical standpoint, this significantly confounds any efforts to (definitively) prove causality, due to widespread endogeneity concerns. Frydman and Jenter (2010), for instance, sum this up nicely: "CEO pay and firm performance may be correlated because compensation affects performance, because firm performance affects pay, or because an unobserved firm or CEO characteristic affects both variables."¹¹ Such a potentially tumultuous environment means that the recent explosion of available data on CEO compensation, whilst both invigorating and encouraging, should be handled with care. As Gillan et al. (2013) uncover, even the datasets themselves should be prudently evaluated for any potential sources of bias, or else they too may become latent contributors to empirical error.¹²

¹⁰ In the case of executive compensation, these departures are both unavoidable and significant. As a simple example, traditional contracting theory relies on a principal's ability to interact with managers to create the optimal contract, but in reality shareholders interact with management *indirectly* through a board of directors.

¹¹ Endogeneity concerns are fairly widespread throughout corporate finance research. See for example Roberts & Whited (2012) for a thorough discussion on the sources of endogeneity and strategies used to address them.

¹² Gillan et al. (2013) document a "backfill bias" in the now widely popular ExecuComp database that can lead to significantly erroneous empirical results. In fact, they produce results suggesting that many of the empirical studies which rebut the Jensen & Murphy (1990) study mentioned earlier in this paper may exhibit some overestimation. Such a revelation underlines the importance of incorporating appropriate levels of meticulousness into any enthusiastic pursuit.

Fortunately, empiricists have managed to make considerable headway in providing meaningful evidence on what an optimal contract might indeed look like. This evidence, in turn, has allowed researchers to begin to map out the intricate relationships between the different facets of the executive compensation environment. This includes, but is not limited to, research explaining the implicit and explicit “costs” of CEO stock option grants (Gillan 2001 and Falenbrach & Stulz 2011), the influence of so-called “clawback provisions” in executive compensation agreements (Bebenko et al. 2012), and the closely-related interplay between the market for corporate control and CEO compensation (Bertrand & Mullainathan 1998). More specifically, this increased knowledge base seems to have triggered a revitalization in the dynamic agency literature.¹³ Recently for instance, Edmans et al. (2012) have produced a particularly intriguing model in which the CEO chooses effort, can engage in private saving, and may be prone to myopic behavior. They engineer an optimal contract based on what they coin a “dynamic incentive account,” or “DIA,” which is set up upon employment and which contains the NPV of the CEO’s future pay with a fraction of the value in stock and a fraction in cash. Essentially, the DIA is centered around two key features. First, it is rebalanced over time so as to maintain an optimal mix of cash and equity that maximizes CEO effort in the current period, while also mitigating any equity-induced conflicts for the risk-averse manager. Second, it offers gradual vesting from the account, which maximizes effort in future periods, stabilizes cash flows for the CEO, and minimizes the potential for myopia.¹⁴ Tractable models such as this one, that can potentially be implemented in practice and that avoid the use of more rudimentary tools

¹³ Examples of this revitalization can be seen in the works of Demarzo & Sannikov (2006), Demarzo & Fishman (2007), He (2009), Sannikov (2008), Garrett & Pavan (2010,2011), Zhu (2011), and He (2012).

¹⁴ Interestingly, O’Byrne (2012) derives very similar results to Edmans et al. (2012), via a different mechanism.

such as clawback provisions, provide considerable promise for more effectively managing agency issues in the future.

V. Conclusion

Research on executive compensation has evolved in both method and magnitude over the last 80 years. This evolution in research has corresponded with an equally sizeable escalation in CEO pay that has sparked a debate between proponents of the managerial power hypothesis and holders of the optimal contracting viewpoint. This debate, in turn, seems to have contributed to a revitalization of dynamic agency research, by which exciting new models of the optimal compensation contract have been produced. Ultimately, the relative importance of managerial power and optimal contracting in explaining executive compensation agreements remains an open question. Likewise, many of the most recent and promising models of executive compensation have not yet been rigorously tested. Unanswered and unaddressed questions such as these help emphasize the underlying complexity of executive compensation research and should provide substantial motivation for future research.

References

- Abowd, JM and David S. Kaplan, 1999. "Executive compensation: six questions that need answering." *Journal of Economic Perspectives*. 13(4):145—68.
- Alchian, Armen A. and Harold Demsetz, 1972. "Production, Information Costs, and Economic Organization." *American Economic Review* LXII, no. 5, pp. 777-795.
- Babenko, Illona, Bennett, Benjamin, Bizjak, John M., and Jeffrey L. Coles, 2012. "Clawback Provisions." *Working Paper*.
- Bebchuk, LA and Y. Grinstein, 2005. "The growth of executive pay." *Oxford Review of Economic Policy* 21(2):283-303.
- Bebchuk, Lucian A. and Jesse M. Fried, 2004. "Pay Without Performance: The Unfulfilled Promise of Executive Compensation." *Harvard University Press*, UC Berkeley Public Law Research Paper No. 537783.
- Bebchuk, Lucian A. and Michael S. Weisbach, 2010 "The State of Corporate Governance Research." *The Review of Financial Studies* v. 23 n. 3, pp.939-961.
- Berle, Adolf and Gardiner Means, 1932. "The Modern Corporation and Private Property." *New York: Macmillan*.
- Bertrand M and S. Mullainathan 1998. "Executive compensation and incentives: the impact of takeover legislation." *Working Paper*, NBER.
- Bertrand M and S. Mullainathan 2001. "Are CEOs rewarded for luck? The ones without principals are." *Quarterly Journal of Economics*, 116(3):901—32.
- Bettis, JC, Bizjak JM and S. Kalpathy, 2010a. "Why do insiders hedge their ownership and options? An empirical examination." *Working Paper*, Arizona State Univ.
- Bettis, JC, Bizjak JM, and M. Lemmon, 2001b. "Managerial ownership, incentive contracting, and the use of zero-cost collars and equity swaps by corporate insiders." *Journal of Financial and Quantitative Analysis*, 36(3):345—70.
- Bizjak, John, Michael Lemmon and Lalitha Naveen, 2008. "Does the Use of Peer Groups Contribute to Higher Pay and Less Efficient Compensation?" *Journal of Financial Economics* 90, pp. 152-168.
- Core, JE and DF Larcker, 2002. "Performance consequences of mandatory increases in executive stock ownership." *Journal of Financial Economics*, 64(3):317—40.

- DeMarzo, Peter M., and Michael J. Fishman, 2007. "Agency and optimal investment dynamics." *Review of Financial Studies* 20, 151–188.
- DeMarzo, Peter M., and Yuliy Sannikov, 2006. "Optimal security design and dynamic capital structure in a continuous-time agency model." *Journal of Finance* 61, 2681–2724.
- Edmans, A, Gabaix, X, and A. Landier, 2009. "A multiplicative model of optimal CEO incentives in market equilibrium." *Review of Financial Studies*, 22(12):4881–917.
- Edmans A and X. Gabaix, 2009. "Is CEO pay really inefficient? A survey of new optimal contracting theories." *European Financial Management*, 15(3):486–96.
- Edmans, Alex, Gabaix, Xavier, Sadzik, Tomasz, and Yuliy Sannikov, 2011. "Dynamic CEO Compensation." *Journal of Finance*, Forthcoming.
- Fahlenbrach, Rudiger and Rene' M. Stulz, 2011. "Bank CEO Incentives and the Credit Crisis." *Journal of Financial Economics* 99:11-26.
- Fama, Eugene F. and Michael C. Jensen, 1983. "Agency Problems and Residual Claims." *Journal of Law and Economics*, pp. 327-349.
- Fama, Eugene F. and Michael C. Jensen, 1983. "Separation of Ownership and Control." *Journal of Law and Economics*, pp. 301-325.
- Florin, B., Hallock, K.F. and D. Weber, 2010. "Executive pay and performance: Methodological considerations and future directions." *Cornell University*.
- Frydman C and RE Saks, 2010. "Executive compensation: a new view from a long-term perspective, 1936--2005." *Review of Financial Studies*, 23(5):2099—138.
- Frydman, C., 2005. "Rising through the ranks: the evolution of the market for corporate executives, 1936-2003." *Working paper*, Massachusetts Institute of Technology.
- Frydman, Carola and Dirk Jenter, 2010. "CEO Compensation." *Working Paper*, No. 77, Rock Center for Corporate Governance at Stanford University.
- Gabaix X and A. Landier, 2008. "Why has CEO pay increased so much?" *Quarterly Journal of Economics*, 123(1):49—100.
- Garrett, Daniel, and Alessandro Pavan, 2010. "Managerial turnover in a changing world." *Working paper*, Northwestern University.
- Garrett, Daniel, and Alessandro Pavan, 2011. "Dynamic managerial compensation: On the optimality of seniority-based schemes." *Working paper*, Northwestern University.

- Gayle GL and RA Miller, 2009. "Has moral hazard become a more important factor in managerial compensation?" *American Economic Review*, 99(5):1740—69.
- Giannetti, M., 2008. "Serial CEO incentives and the structure of managerial contracts." *Working paper*, Stockholm School of Economics.
- Gillan, Stuart, Hartzell, Jay C., Koch, Andrew and Laura T. Starks, 2013. "Getting the Incentives Right: Backfilling and Biases in Executive Compensation Data" *Working paper*.
- Gillan, Stuart and John D. Martin, 2007. "Corporate Governance Post-Enron: Effective Reforms, or Closing the Stable Door?"
- Gillan, Stuart, 2001. "Option-based Compensation: Panacea or Pandora's Box?" *Journal of Applied Corporate Finance*, Vol. 14, No. 2, Summer 2001.
- Graham JR, Li S, and J. Qiu, 2009. "Managerial attributes and executive compensation." *Working Paper*, Duke Univ.
- Hall B and KJ Murphy, 2003. "The trouble with stock options." *Journal of Economic Perspectives*, 17(3):49—70.
- Hall, B, J. Liebman, 1998. "Are CEO's really paid like bureaucrats?" *Quarterly Journal of Economics* 113, pp. 653-691.
- He, Zhiguo, 2009. "Optimal executive compensation when firm size follows geometric Brownian motion." *Review of Financial Studies* 22, 859—892.
- He, Zhiguo, 2012. "Dynamic compensation contracts with private savings." *Review of Financial Studies* 25, 1494—1549.
- Hermalin, BE, 2005. "Trends in corporate governance." *Journal of Finance*, 60(5):2351—84.
- Holmström B and SN Kaplan, 2001. "Corporate governance and merger activity in the United States: making sense of the 1980s and 1990s." *Journal of Economic Perspectives*, 15(2):121—44.
- Jensen MC and KJ Murphy, 1990a. "Performance pay and top management Incentives." *Journal of Political Economy*, 98(2):225—64.
- Jensen MC and KJ Murphy, 1990b. "CEO incentives: It's not how much, but how." *Harvard Business Review*, 68(3):138—53.
- Jensen, Michael C., Murphy, Kevin J. and Eric G. Wruck, 2004. "Remuneration: Where We've Been, How We Got to Here, What are the Problems, and How to Fix Them." *Harvard NOM Working Paper No. 04-28; ECGI - Finance Working Paper No. 44/2004*.

- Jensen, Michael C. and William Meckling, 1976. "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3, pp. 305-360.
- Kaplan, Steven N., 2008. "Are U.S. CEOs overpaid?" *Academy of Management Perspectives*, 22(2):5—20.
- Marin, D. and T. Verdier, "Globalization and the empowerment of talent." *CEPR Discussion Paper*, No. 4129, 2004.
- Morgan, Angela G. and Annette B. Poulsen, 2001. "Linking pay to performance- compensation proposals in the S&P 500." *Journal of Financial Economics*, pp.489-523.
- Murphy, KJ, 1985. "Corporate performance and managerial remuneration: an empirical analysis." *Journal of Accounting & Economics*, 7(1--3):11—42.
- Murphy, KJ and J. Zabochnik, 2007. "Managerial capital and the market for CEOs." *Working paper*, University of Southern California.
- Murphy, Kevin J, 1999. "Executive compensation." *Handbook of Labor Economics*, Vol. 3B, ed. o.
- O'Byrne, Stephen, 2012. "Achieving Pay for Performance." *Director Notes*, The Conference Board.
- Roberts, Michael R. and Toni M. Whited, 2012. "Endogeneity in Empirical Corporate Finance." *Simon School Working Paper*, No. FR 11-29.
- Sannikov, Yuliy, 2008. "A continuous-time version of the principal-agent problem." *Review of Economic Studies* 75, 957—984.
- Weisbach, Michael S., 2006. "Optimal Executive Compensation vs. Managerial Power: A Review of Lucian Bebchuk and Jesse Fried's Pay without Performance: The Unfulfilled Promise of Executive Compensation." *Journal of Economic Literature* Vol. XLV, 419-428.
- Zhu, John, 2011. "Optimal contracts with shirking." *Working paper*, University of Pennsylvania.