Does One Hand Wash the Other? Testing the Managerial Power and Optimal Contracting Theories of Executive Compensation

By Michael B. Dorff*

ABSTRACT

Executive compensation forms a litmus test for corporate governance law’s effectiveness. The interests of management and shareholders diverge most sharply in this arena, where every dollar taken from shareholders transfers directly to management. Legal theorists have broadly divided into two opposing camps on their views of the executive compensation process: those who believe the chief executive labor market is efficient and should be left alone (“Optimal Contracting”) and those who believe that managerial power over nominally independent directors creates a market failure that requires regulatory intervention (“Managerial Power”). This article tests the two hypotheses with an experimental model of the executive compensation process. The results indicate that the Managerial Power camp is correct that chief executives’ power over directors results in excessive compensation. The article argues that corporate governance reform should therefore focus on minimizing managerial power over directors through mechanisms such as truly competitive elections for directors.

I. INTRODUCTION ..................................................................................................... 256

II. EXISTING EVIDENCE ............................................................................................. 261
   A. Optimal Contracting Hypothesis .................................................................... 261
   B. Managerial Power Hypothesis ....................................................................... 263
   C. Advantages of Experimental Modeling ......................................................... 269

III. EXPERIMENTAL DESIGN.................................................................................... 272

IV. PREDICTIONS ......................................................................................................... 275
   A. Optimal Contracting Hypothesis .................................................................... 275
      1. CEO Compensation Levels ........................................................................ 275
      2. Correlation to Performance ...................................................................... 275
      3. Boards’ Decisions to Terminate CEOs ..................................................... 275
      4. Director Termination and Compensation ................................................ 275
   B. Managerial Power Hypothesis ....................................................................... 276
      1. CEO Compensation Levels ........................................................................ 276
      2. Correlation to Performance ...................................................................... 276
      3. Boards’ Decisions to Terminate CEOs ..................................................... 276
      4. Director Termination and Compensation ................................................ 277

V. DATA AND ANALYSIS .......................................................................................... 277
   A. CEO Compensation Levels ............................................................................ 277
I. INTRODUCTION

Jack Welch looms as one of the greatest chief executive officers of the late twentieth century. During his twenty-year plus tenure as CEO of General Electric (G.E.), the corporation’s earnings rocketed from $1.5 billion in 1980 to $12.7 billion in 2000, revenue quintupled to $129.9 billion, and G.E.’s stock performed more than 3.5 times better than the Standard and Poor’s (S&P) 500 Index, increasing 5,096% (while the S&P 500 rose 1,433%).\(^1\) Welch for a time became almost a brand name, as his protégées secured CEO positions at over a dozen corporations.\(^2\) In exchange for his benchmark performance, Welch received generational wealth from G.E.’s grateful board of directors, $120 million in his last year as CEO alone.\(^3\)

Was Welch worth the money? This question is surprisingly difficult to answer, even for someone with the colossal reputation of Jack Welch. The answer depends on a counterfactual: how would G.E. have performed with someone else at the helm? Considering the multifarious variables that produce success in an enormous multinational—from the quality and motivation of employees to the inspiration of inventors to interest rates, consumer sentiment and countless other factors—it appears...
impossible to determine how much a single individual impacts the whole.

Perhaps a better question would ask why we should care. Even if Welch was overpaid, his compensation came out of General Electric’s pocket, not ours. Most of us did not own G.E. stock during Welch’s tenure and, even for G.E. shareholders, Welch’s compensation amounted to a negligible sum on a per share basis. Few shareholders could have felt very sharply the impact of any excessive pay. Other than envy, what motivates the fascination of so many legal and finance scholars with chief executive officer compensation?

The answer involves the core issue of corporate governance law: how can we structure legal constraints that will minimize the agency costs inherent in the separation of ownership and control in publicly held corporations? As Berle and Means first pointed out over seventy years ago, those who own the public corporation do not control it and those who govern the public corporation do not own it.\(^4\) The corporation’s shareholders are often dispersed and seldom own a sufficiently large stake in the company to justify close monitoring of particular corporate decisions.\(^5\) Therefore, the executives who exercise day-to-day control over the corporation are potentially capable of diverting corporate assets to themselves without any fear that shareholders will catch them in the act. For example, a chief executive officer might hire his or her brother-in-law to provide legal advice to the corporation in exchange for an inflated fee, or overstate corporate profits (thereby earning larger performance bonuses) by funneling losses to partnerships operated off the company’s books. Such wrongdoing is unlikely to be detected by shareholders lacking the incentive to monitor corporate activities closely.

To induce investors to buy stock \textit{ex ante}, corporate governance law must be designed to give confidence that managers will seldom cheat and that when they do cheat they will generally be detected and punished. Governance structures must minimize agency costs.

The primary corporate governance mechanism is the familiar board of directors, a group elected by shareholders—though rarely chosen by them in any democratic sense—to hire and monitor the full-time management team (the CEO, COO, CFO, etc.). Equally familiar, in this era of corporate governance scandals, is the critique that boards are notoriously poor monitors.

Executive compensation perhaps constitutes the best test of this claim. Few areas are more closely tied to chief executives’ self-interest than their pay, so CEOs’ incentives to bypass board monitoring should be strongest in this area. Anticipating this danger, boards’ monitoring should be particularly alert when setting their chief executives’ compensation. If CEOs manage to extract excessive pay despite the directors’ vigilance, the inference seems unavoidable that they are also eluding boards’ restraining supervision in other areas.

Not surprisingly, scholars diverge sharply in their views on boards’ efficiency in the compensation arena. Lucian Bebchuk, Jesse Fried and David Walker have divided the responses into two theoretical camps, the Optimal Contracting Hypothesis and the

\(^4\) See \textit{Adolf A. Berle & Gardiner C. Means, The Modern Corporation and Private Property} 112-16 (Transaction Publishers 1991) (1932) (detailing the number of shareholders for various companies).
\(^5\) \textit{Id.}
Managerial Power Hypothesis.\(^6\)

The Optimal Contracting Hypothesis—which draws on the Law and Economics movement\(^7\)—argues that boards of directors, functioning as public shareholders’ loyal agents, bargain at arms-length for the services of chief executive officers and other senior members of the management team.\(^8\) Boards seek efficient employment contracts, with terms that will optimally align management’s incentives with those of the shareholders, minimizing agency costs.\(^9\) The Optimal Contracting Hypothesis argues for skepticism when reviewing claims that executive compensation is excessive or poorly correlated with management performance.\(^10\)

The Managerial Power Hypothesis resonates with the Behavioral Law and Economics movement, though scholars infrequently state the connection expressly.\(^11\) Adherents of the Managerial Power Hypothesis contend that boards of directors do not bargain at arms-length with managers. Cultural and economic factors instead align directors’ and managers’ incentives in important ways and result in a process that better resembles a cooperative attempt to extract economic rents (pay in excess of the optimal) from the corporation than a competitive bargaining effort.\(^12\) The Managerial Power Hypothesis argues that executive compensation is excessive when compared to

---

6. See Lucian Arye Bebchuk et al., *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751, 761-93 (2002) (discussing the pros and cons of the Optimal Contracting Hypothesis and the Managerial Power Hypothesis). While some scholars have proposed additional theories, they tend to fit broadly into one of these two camps. Kevin Murphy, for example, argues that observed compensation package structures can best be understood as a result of corporations acting on the “perceived cost” of compensation rather than the economic cost. Solutions, in Murphy’s view, should therefore focus on educating directors and perhaps changing accounting rules to require a charge for options. See Kevin Murphy, *Explaining Executive Compensation: Managerial Power Versus the Perceived Cost of Stock Options*, 69 U. CHI. L. REV. 847, 857-68 (2002). Murphy appears to assume that once directors are educated as to the real cost of options, and/or once accounting rules are changed to reflect such costs, directors will act in the corporation’s interests. Fundamentally, Murphy’s theory thus appears to comport with the philosophy underlying the Optimal Contracting Hypothesis.

7. Bebchuk et al., *supra* note 6, at 753 n.4 (describing the Optimal Contracting Hypothesis as the product of financial economists and leading law and economics scholars such as Frank Easterbrook and Daniel Fischel).

8. Id. at 753-54.

9. Id.

10. See, e.g., Mark J. Loewenstein, *The Conundrum of Executive Compensation*, 35 WAKE FOREST L. REV. 1, 4 (2000) (arguing that research does not support the proposition that CEOs are overpaid); Kevin J. Murphy, *Top Executives are Worth Every Nickel They Get*, 64 HARV. BUS. REV. 125, Mar.-Apr. 1986 (stating that executive compensation is not excessive); Nicholas Wolfson, *A Critique of Corporate Law*, 34 U. MIAMI L. REV. 959, 975-78 (1980) (contending that excessive compensation is controlled by market forces).

11. Although advocates of the Managerial Power approach seldom identify themselves as members of the Behavioralist school, they employ a distinctly Behavioralist emphasis on emotional and cultural explanations for observed behavior. See Bebchuk et al., *supra* note 6, at 756 (discussing constraints imposed by “outrage”). As Lucian Bebchuk has pointed out to me in private correspondence, however, many of their points would hold true for *homo economicus* as well.

12. See Bebchuk et al., *supra* note 6, at 784; see also DEREK BOK, *THE COST OF TALENT* 98 (1993) ("[T]he task of fixing the compensation of top executives is hardly an arms-length transaction comparable to setting the salaries of middle managers and other kinds of employees."); Carl T. Bogus, *Excessive Executive Compensation and the Failure of Corporate Democracy*, 41 BUFF. L. REV. 1, 39 (1993) (applying the law of small group dynamics to the relationship between the board of directors and the chief executive officer); Charles M. Yablon, *Overcompensating: The Corporate Lawyer and Executive Pay*, 92 COLUM. L. REV. 1867, 1874 (1992) (arguing that CEO compensation is not the result of arms-length bargaining).
Does One Hand Wash the Other?

theoretical, efficient employment contracts. In addition, actual compensation contracts do not effectively correlate managers’ pay with their performance.

Legal scholars have investigated the validity of these two hypotheses by analyzing real-world corporate practices. While researchers on both sides have claimed that such empirical evidence supports their thesis, the data is largely inconclusive. The diverse variables involved in any real-world study have consistently left any results open to other explanations, supportive of the alternate hypothesis.

Much of the evidence cited by Managerial Power advocates thus far has focused on the structure of executive compensation, rather than its level. They have contended that the typical structure of CEO compensation packages is highly inefficient. Structural inefficiencies are important in their own right, since they may impede efforts to motivate chief executives properly. Inefficient structures also substantiate the larger claim that boards are inadequate monitors of corporate behavior because directors are subservient to managers. Structural arguments have not persuaded defenders of the status quo however, because these contentions remain susceptible to alternative accounts, such as Kevin Murphy’s “perceived cost” thesis.

Proof that executive compensation was excessive would constitute more direct evidence of managerial power over directors, bolstering calls for improving directors’ independence and fostering their ability to oversee the CEO. Some Managerial Power theorists have attempted to demonstrate that compensation levels are excessive, relying primarily on growth rates and comparisons to European and Japanese executive compensation. These arguments, however, have not persuaded the Optimal Contracting camp. At the root of the conflict over whether executives are paid too much is the inability to achieve consensus on a definition for “excessive compensation.”

In other labor contracts, appropriate pay levels are set by a well-functioning market. If, however, Managerial Power advocates are correct in their assertion that chief executives control both sides of the bargaining table in their compensation negotiations,

13. See Bebchuk et al., supra note 6, at 785 (describing the excess pay powerful managers receive as “economic rents”); see also Bok, supra note 12, at 98; Bogus, supra note 12, at 79-80 (arguing that CEO compensation is not the product of sound business judgment on the part of the board, nor is it the result of arms-length bargaining between employer and employee); Yablon, supra note 12, at 1874 (current CEO compensation is high and is not well constrained by market forces).

14. See Bebchuk et al., supra note 6, at 796-817 (chief executives are rewarded for general market rises having nothing to do with their own performance); Bogus, supra note 12, at 12 (finding a 10% rise in corporate profits corresponds to a 24% increase in executive compensation and that a decline in corporate profits still results in pay increases for CEOs); Michael B. Dorff, Softening Pharaoh’s Heart: Harnessing Altruistic Theory and Behavioral Law and Economics to Rein in Executive Salaries, 51 BUFF. L. REV. 811, 825-26 (2003) (evidence does not support link between executive ability and compensation).

15. Compare Linda J. Barris, The Overcompensation Problem: A Collective Approach to Controlling Executive Pay, 68 Ind. L.J. 59, 61 (1992) (arguing that executive compensation is excessive), Bogus, supra note 12, at 28-29 (noting that the compensation paid to many top executives at the largest United States corporations is patently excessive), and Mark J. Loewenstein, Reflections on Executive Compensation and a Modest Proposal for (Further) Reform, 50 SMU L. REV. 201, 202 (1996) (noting that popular perception suggests that CEOs are overcompensated), with Loewenstein, supra note 10, at 4 (arguing that CEO compensation is not excessive), Murphy, supra note 10, (same), and Wolfson, supra note 10, at 975-78 (same).

16. See Bebchuk et al., supra note 6, at 793-99 (arguing that common elements of executive compensation packages are highly inefficient, such as options that are not indexed to the relevant market).

17. See supra note 6 (summarizing Murphy’s argument).
then no efficient market exists for executive pay. Without either a well-functioning market or some method of directly measuring a CEO’s contribution to his or her corporation, it is impossible to agree on a point at which pay becomes excessive. This impasse has inhibited efforts to reform the corporate governance system in the United States, leaving the existence and nature of the problem—and therefore the utility of any potential solution—in contention.\(^{18}\)

This article represents the first attempt to apply experimental methods to resolve the dispute. The article employed a simplified model of the corporate governance process susceptible to direct experimental manipulation. Using this model, the article tested whether forms of managerial power commonly found in real corporations produce excessive executive compensation, even when boards consist entirely of independent (non-employee) directors.

The model made it possible to establish an intuitive (and hopefully non-controversial) definition of excessive compensation: compensation is excessive when it surpasses the executive’s contribution to corporate profits. While some may argue that lower sums also constitute excessive compensation, all should agree that pay exceeding the employee’s contribution is excessive. In contrast to the real world, where one person’s contribution to corporate profits is almost impossible to discern with any accuracy, the model permitted the measurement—and even the manipulation—of precisely how much an executive’s work added to the corporation’s income. More generally, the model enabled the modification of a single assumption at a time to isolate and examine the effect of each variable on the results of the executive compensation process. The results were, therefore, much less susceptible to alternative explanations than data from real-world corporations.

The first phase of the exercise set up a market for chief executives in which CEOs had no power over directors other than that derived directly from the market. In the second phase, executives gained power over directors in two ways: (1) the ability to hire and fire directors and (2) the ability to set directors’ salaries, within a fixed range. CEOs of real corporations often appear to possess both these powers, whether de jure or just de facto.\(^{19}\) In both parts of the study, the board bargained with a pool of available executives over the officers’ hiring and compensation.

Changing only the existence of managerial power from one phase of the experiment to the other allowed the examination of the degree to which common types of managerial

\(^{18}\) See Bok, supra note 12, at 95-96 (1993) (noting that there are differing opinions regarding whether CEO compensation is excessive); Melvin A. Eisenberg, *The Compensation of the Chief Executive Officer and Directors of Publicly Held Corporations*, in *CORPORATE GOVERNANCE: CURRENT AND EMERGING ISSUES* 103, 109-10 (ALI-ABA Course of Study, Oct. 7-8, 1999) (arguing that the answer to whether CEOs are overcompensated depends on the theory of executive compensation), available at WL SE39 ALI-ABA 103; Loewenstein, supra note 10, at 1 (noting that the question of whether CEOs are overpaid is complicated); Loewenstein, *supra* note 15, at 202 (“[N]o clear answer emerges from the empirical work as to whether CEOs are overcompensated.”); Tod Perry & Marc Zenner, *CEO Compensation in the 1990s: Shareholder Alignment or Shareholder Expropriation?*, 35 *Wake Forest L. Rev.* 123, 124 (2000) (stating that the evidence regarding executive compensation supports both points of view).

\(^{19}\) See Bogus, supra note 12, at 34 (citing a small survey’s finding that CEOs recommended the vast majority of directors); Perry & Zenner, supra note 18, at 135-36 (discussing a study by Anil Shivdasani and David Yermack found that “[o]nly 77.5% of firms had nomination committee[s], and that CEOs served on 32.5% of those nominating committees that did exist”).
power influence even entirely independent boards’ executive compensation decisions. The model revealed that without managerial power, Optimal Contracting theorists are more or less correct that boards will bargain efficiently on behalf of shareholders, though some weaknesses in the theory appeared even during this first phase. Once CEOs gained some power over the directors, however, this willingness to act on shareholders’ behalf evaporated, and boards proved willing to pay CEOs grossly excessive compensation. The results strongly support the Managerial Power Hypothesis, that the existence of managerial power over directors erodes directors’ ability to restrain managers from pursuing their own interests at the corporation’s expense.

The experiment, therefore, contested the notion that most corporate governance problems can be solved by simply requiring that boards consist of a majority of independent directors. Instead, scholars and policymakers should focus on developing legal rules to prevent CEOs from gaining power over nominally independent directors, such as competitive elections for directors where the nominees are selected by large shareholders. The results also refuted Optimal Contracting’s alternative explanation for high compensation, executives’ market-derived bargaining power.

Part II of the Article sketches out the real-world evidence that supports each hypothesis’ analysis of the current state of executive compensation contracts, arguing that thus far, the evidence is indeterminate. Part III describes the model employed to test the Hypotheses empirically. Part IV outlines the outcomes predicted by each Hypothesis. Part V presents and analyzes the resulting data, concluding that managerial power does appear to produce excessive executive compensation. Part VI discusses some potential criticisms of the model. The article concludes by discussing the implications of the results and proposing avenues for future research.

II. EXISTING EVIDENCE

A. Optimal Contracting Hypothesis

The Optimal Contracting Hypothesis assumes that the market for managerial talent behaves similarly to other labor markets. In typical labor markets, employers seek qualified applicants for positions and bargain with them at arms-length over their pay. Employers attempt to structure compensation to minimize agency costs by imbuing employees with incentives to act in the owners’ interests, reducing both monitoring and residual costs. Similarly, in the corporate context, boards of directors—acting on behalf of the shareholders who own the corporation—search for the most qualified managers and then bargain with them at arms-length over their salaries, attempting to adjust the compensation packages to minimize agency costs. In support of their argument,
Optimal Contracting theorists make four major points. First, corporations pay their CEOs generously because few people possess the talent, drive and education to run a major corporation. Just as in other areas of economics, when demand is great and supply is limited, prices rise. Chief executives are well-paid for the same reason that professional athletes, musicians, actors and even some lawyers are—the market determines they are worth the price. Although CEO salaries have enjoyed impressive growth relative to inflation, such increases prove only that premier management talent continues to command higher and higher prices. While large salaries constitute the best evidence of such scarcity, further support comes from the high degree of education and experience possessed by most CEOs of major public corporations.

Second, executive pay closely correlates with important measures of corporate success such as increased profits and growing share prices. Such correlation is precisely what we would expect to observe if employment contracts were optimal. Optimal contracts would induce managers to work toward improving corporate performance by rewarding them in proportion to their success in increasing shareholders’ wealth. This has been accomplished largely through the use of stock options. Not surprisingly, since most corporations’ share prices increased dramatically during the 1990s, so did executive compensation. While executive pay did not on average decrease when corporate performance suffered, it did grow much more slowly, demonstrating sensitivity to managerial failures.

Third, persuasive proof that high executive pay is due to bargaining power and not board co-option stems from an examination of the compensation of chief executives hired from outside the corporation. If director co-option caused executive pay to rise, we would expect to observe that executives brought in from other corporations would command lower prices, since they have not enjoyed the opportunity to build relationships with the

Hubbard, Incentive Pay and the Market for CEOs: An Analysis of Pay-for-Performance Sensitivity 2 (June 2000) (“CEOs (the agents) compete in the labor market to work for firms (the principals), and that the optimal contract in equilibrium is one that just meets the CEO’s reservation utility (or outside opportunity)."), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=236089 (last visited Oct. 7, 2004).

23. See Murphy, supra note 6, at 854-55 (citing an increase in CEO bargaining power as a “plausible” explanation of increases in CEO pay during the 1990’s); Himmelberg & Hubbard, supra note 22, at 2-3 (attributing the increases in CEO pay to scarcity of CEO talent combined with “shocks to CEO labor demand”).

24. See Murphy, supra note 6, at 847 (finding that increase in CEO pay during the 1990s was driven primarily by growth in stock options); Murphy, supra note 10, at 127 (“As measured by the rate of return on common stock, a strong, positive statistical relationship exists between executive pay and company performance.”); Kevin J. Murphy, Corporate Performance and Managerial Remuneration: An Empirical Analysis, 7 J. ACCT. & ECON. 11, 40 (1985) (stating that firm performance is “strongly and positively related to managerial remuneration”).

25. See Murphy, supra note 6, at 850 (discussing the “recent escalation in option-based compensation”); Lynn A. Stout, The Mechanisms of Market Inefficiency: An Introduction to the New Finance, 28 J. CORP. L. 635, 639 (2003) (discussing “the recent enthusiasm for incentivizing corporate officers and directors by compensating them primarily, or even solely, through options and stock-based compensation schemes”).

26. See Murphy, supra note 6, at 847 (increase in CEO pay during the 1990s was driven primarily by growth in stock options).

current board. To the contrary, such executives on average earn more than chief executives promoted from within the company, indicating that it is the well-functioning market, and not managerial power, that accounts for the level of executive compensation.28

Fourth and finally, Optimal Contracting Theorists contend that the number of independent (non-employee) directors of large, public corporations has increased considerably in the past decade.29 Independent directors seem far less likely to be co-opted by management than inside (officer or employee) directors, yet executive compensation has increased at least as dramatically in the past decade as previously.30 This negative correlation between board co-option and manager compensation indicates that there is some other factor that accounts for the rise in executive compensation.

To sum up, then, Optimal Contracting scholars support their claims by pointing to the presumed scarcity of managerial talent, the upside correlation between pay and performance, the higher pay achieved by executives hired from outside the corporation, and the increasing number of independent directors.

B. Managerial Power Hypothesis

The Managerial Power Hypothesis makes two central claims: (1) that corporate managers have some degree of power over their boards of directors and (2) that managers use that power to extract economic rents from the corporation in the form of excessive pay packages that correlate poorly to managerial performance.31

In support of the first claim, scholars have pointed to several factors that imply managerial power over boards. First, the procedures by which directors are selected lend themselves to managerial power.32 Second, the outcome of this selection process yields

29. See Murphy, supra note 6, at 852; see also JAY W. LORSCH & ELIZABETH M. MACIVER, PAWNS OR POTENTATES: THE REALITY OF AMERICA’S CORPORATE BOARDS 17 (Harvard Business School, 1989) (noting that 74% of board directors are outsiders).
30. See Murphy, supra note 6, at 852-54.
31. See Bebchuk et al., supra note 6, at 783-85 (discussing managerial power and the extraction of rents).
32. See Bok, supra note 12, at 98 (arguing that CEOs are often chairman of the board and will have strong influence in the selection of new board members); Bogus, supra note 12, at 34 (finding in a small survey of directors of top 500 corporations in 1989 that “the CEO initially recommended 90-100% of all directorial nominees”); Jayne W. Barnard, Shareholder Access to the Proxy Revisited, 40 CATH. U. L. REV. 37, 38 (1990) (contending that management determines board membership; shareholders may elect directors, but they are not permitted to play a significant role in the selection of candidates, nor are they provided with a real choice between board candidates); Dorff, supra note 14, at 844-45 (arguing that the CEO has tremendous influence over the nomination committee); Charles M. Elson, Director Compensation and the Management-Captured Board—The History of a Symptom and a Cure, 50 SMU L. REV. 127, 157 (1996) (describing the phenomenon of the “captured board,” a board that is essentially appointed by and representative of management); Edward D. Rogers, Striking the Wrong Balance: Constituency Statutes and Corporate Governance, 21 PEPP. L. REV. 777, 784 (1994) (explaining that the expense of contesting a board election limits shareholder power to oppose management’s nomination); Joel Seligman, A Sheep in Wolf’s Clothing: The American Law Institute Principles of Corporate Governance Project, 55 GEO. WASH. L. REV. 325, 331 (1987) (citing state case law indicating that corporate management is permitted to use corporate funds to pay election expenses while shareholders must pay expenses for opposition campaigns and will only be reimbursed if opposition candidates win control of the
directors who by nature of their position, their personality, or board culture, are likely to defer to management on compensation issues. Third, once directors are appointed, they face pressures that induce pliability. Finally, even those directors who desire to monitor management closely face a paucity of resources with which to do so.

Directors are elected by the corporation’s shareholders. This election, however, bears little resemblance to political elections in western democracies. In political elections, candidates generally decide on their own initiative that they would like to hold office, then compete in competitive primary and general elections. Voters thus almost always face a choice of candidates for major offices, and sometimes have many choices.

In contrast, candidates for directorships are selected by the existing board’s nomination committee. In the ensuing election, the proxy form sent to shareholders by board, thus making nomination by anyone other than management “virtually impossible”); Anil Shivdasani & David Yermack, CEO Involvement in the Selection of New Board Members: An Empirical Analysis, NEW YORK UNIVERSITY, CENTER FOR LAW AND BUSINESS, Working Paper No. 98-105, (Feb. 1998) (finding that of the corporations surveyed, 77% had nomination committees and that CEOs served on 32.5% of those committees), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=169528 (last visited Oct. 7, 2004); see also Perry & Zener, supra note 18, at 135-36 (citing the Shivdasani and Yermack article).

33. As Melvin Eisenberg has written: “The inside director, dependent on the CEO for both retention and promotion . . . is highly unlikely to dissent at a board meeting from the inside line determined by the CEO prior to the meeting. Outside directors may have economic ties to the corporation, and tie of friendship, colleagueship, or both, to the CEO.” MELVIN ARON EISENBERG, CORPORATIONS AND OTHER BUSINESS ASSOCIATIONS: CASES AND MATERIALS 147-48 (Concise 8th ed. 2000). See also Dorff, supra note 14, at 845-47 (“[B]oard members chosen tend to be people who seem likely to defer to the CEO,” including CEOs of other large public corporations, insiders, friends of the CEO, institutional investors, and independents.); Elson, supra note 32, at 158 (explaining that the board is usually selected by senior management, and therefore, its effectiveness as a monitor is compromised by professional and personal ties to management); Ronald J. Gilson & Reiner Kraakman, Reinventing the Outsider Director: An Agenda for Institutional Investors, 43 STAN. L. REV. 863, 875 (1991) (contending that outside directors defer to management); Yablons, supra note 12, at 1881 (arguing that outside directors often have personal and professional interests in seeing that the CEO is “adequately” compensated).

34. See Dorff, supra note 14, at 847-50 (stating that prestige, salary, and other substantial benefits of board directorship, induce members to act in a way to retain their positions, especially in relation to the minimal time commitment); Eisenberg, supra note 18, at 130-31 (“[D]irectors who displease a CEO will often find it difficult to retain their board seats. Accordingly . . . a director who has material financial incentives to retain his directorship will not be independent of the CEO.”); Gary Strauss, Companies Pony Up to Keep Directors; Board Seats Have Become Hot Seats, U.S.A. TODAY, Nov. 21, 2002, at B1.

35. See Victor Brudney, The Independent Director- Heavenly City or Potemkin Village?, 95 HARV. L. REV. 597, 609 (1982) (stating that judgments made by an independent director against CEO self-dealing transactions are problematic because comparative data is unavailable to directors, judgment would be too time consuming, there is a lack of adequate staff support, or the director may be preoccupied with other pursuits); Dorff, supra note 14, at 850-54 (explaining that directors face constraints such as limited time, staff, information, agenda, and incentive, which complicate efforts to monitor the CEO); Rogers, supra note 32, at 787 (contending that the board suffers as a result of management’s power over the agenda and control of information).

36. See RMBCA § 8.03(c); Cal. § 301(a); Del. § 211(b); N.Y. § 703(a); ROBERT CHARLES CLARK, CORPORATE LAW 94 (1986).


38. Dorff, supra note 14, at 844; Barnard, supra note 32, at 38.
the corporation will almost always have precisely as many candidates as there are seats to fill. Shareholders’ only real choice then, short of paying for their own (quite expensive) proxy mailing, is in deciding whether to withhold their support from the board’s list of candidates. Managerial Power theorists contend that in the absence of a proxy fight or other takeover attempt, the board’s candidates are nearly universally elected. To the extent managers influence the selection of the board’s nominees, then, they also select the board members.

Perhaps because of the nature of the selection process, Managerial Power scholars have argued that the board members elected tend to be those particularly likely to defer to management, at least on routine issues. The largest group represented on the boards of large, public corporations consists of CEOs of other large, public corporations. CEO-directors seem likely to be sympathetic to their colleague’s desire for a free hand in managing the corporation. They may also face a conflict of interest on compensation issues; they will likely find it easier to argue for increases in their own compensation if chief executives of comparable corporations are paid more. Other groups commonly represented on boards include “inside directors,” such as officers of the corporation, who are conflicted in evaluating and monitoring the performance of a chief executive who has the power to terminate their employment; friends of the CEO, who for reasons of that friendship may be reluctant to question the chief executive’s decisions; and “celebrity” directors, prominent academics and retired politicians who often lack the expertise to...

39. Dorff, supra note 14, at 844; Barnard, supra note 32, at 38.
40. The SEC is currently considering new rules that would permit shareholder groups owning more than 1% of the corporation’s shares to nominate their own list of directors to be included on the corporation’s proxy form. Deborah Solomon, Moving the Market: SEC May Temper Plan to Boost Shareholders’ Powers, WALL ST. J., Apr. 19, 2004, at C3. Such a rule might dilute managers’ power over directors to some degree.
41. Dorff, supra note 14, at 844.
42. Id. at 845. This may be especially true of those directors placed on the board committees responsible for setting managerial pay. As Warren Buffet has famously quipped: “There is a tendency to put cocker spaniels on compensation committees, not Doberman pinschers.” Keith Naughton et al., The Perk Wars: As Jack Welch’s Retirement Deal Sparks an Investor Backlash, Perks Could Become the New Stock Options, NEWSWEEK, Sept. 30, 2002, at 44.
43. CEOs of other companies constitute some 63% of outside directors. Gilson & Kraakman, supra note 33, at 875. See also ROBERT A. G. MONKS, CORPORATE GOVERNANCE 187 (2d ed. 2001) (finding that “86% of billion-dollar company boards include at least one CEO or COO of another company”); Bogus, supra note 12, at 36 (noting cases of CEOs sitting on each other’s compensation committees); Dorff, supra note 14, at 845 (“Because CEOs want their own companies’ boards to remain passive, they have little incentive to oppose management’s desires when they sit on boards of other corporations.”).
44. Dorff, supra note 14, at 845.
45. LORSCH & MACIVER, supra note 29, at 18 (noting that 63% of outside board members are CEOs of other corporations); MONKS, supra note 43, at 187 (finding that “86% of billion-dollar company boards include at least one CEO or COO of another company”); Bogus, supra note 12, at 36 (noting cases of CEOs sitting on each other’s compensation committees); Dorff, supra note 14, at 845 (“Because CEOs want their own companies’ boards to remain passive, they have little incentive to oppose management’s desires when they sit on boards of other corporations.”); Gilson & Kraakman, supra note 33, at 875 (citing LORSCH, supra note 29).
46. See Dorff, supra note 14, at 845-46 (arguing that the CEO “effectively handpicks the board of directors).
47. See Dorff, supra note 14, at 846; Mark J. Roe, The Modern Corporation and Private Pensions, 51 UCLA L. REV. 75, 109 (1993); Yablon, supra note 12, at 1881 (noting that outside directors who form the compensation committee may have a personal interest “in seeing that the CEO is ‘adequately’ compensated”).
examine business decisions critically.\textsuperscript{48} Public institutional shareholders, who may possess both the incentive and expertise to monitor management closely, are rarely represented.\textsuperscript{49}

Advocates of the Managerial Power Hypothesis maintain that once directors are elected, they have little incentive to challenge management’s practices.\textsuperscript{50} To the contrary, defying the chief executive risks the many benefits of board membership. Directors traditionally receive significant compensation for fairly minimal amounts of work. Compensation packages for Fortune 200 corporations average $152,000 per year.\textsuperscript{51} Directors may also receive other substantial benefits such as life, health and disability insurance. Yet directors spend an average of less than 160 hours per year on corporate business, including travel time.\textsuperscript{52} Managerial Power advocates assert that, to the extent chief executives possess the power to remove directors, directors will have powerful financial incentives to mollify them.\textsuperscript{53}

The Managerial Power Hypothesis also claims that directors who wish to question management, despite these contrary incentives, have limited resources with which to do so.\textsuperscript{54} In contrast to chief executives, who spend the bulk of their working hours laboring for the corporation, the directorship is only part-time work for board members.\textsuperscript{55} Most

\textsuperscript{48} See Dorff, supra note 14, at 847.

\textsuperscript{49} See Bernard S. Black, Agents Watching Agents: The Promise of Institutional Investor Voice, 39 UCLA L. REV. 811, 823-24 (1992) (institutional shareholders face many obstacles to nominating their own directors, including a risk of liability for insider trading or short-swing profits); Dorff, supra note 14, at 846-47.

\textsuperscript{50} See Bogus, supra note 12, at 35 (noting that directors’ only real incentive is to stay in management’s “good graces”); Monks, supra note 43, at 185 (“A director will receive his retainer and fees no matter what. His compensation will not rise in good years, or fall in bad. Such a scheme provides no incentive.”); Lewis D. Solomon, Restructuring the Corporate Board of Directors: Fond Hope—Faint Promise?, 76 MICH. L. REV. 581, 584 (1977) (“Management often installs on the board people who are economically and psychologically sympathetic, if not indebted, to the chief executive officer and who are therefore disinclined to challenge him.”); Strauss, supra note 34, at B1 (chronicling increases in director compensation).

\textsuperscript{51} See Strauss, supra note 34, at B1.

\textsuperscript{52} See Eisenberg, supra note 33, at 147 (“Outside directors spend an average of 157 hours a year on board matters, including preparation time and travel time.”). See also Bogus, supra note 12, at n.184 (citing a 1988 survey showed directors spend about 108 hours per year on board-related activity, including travel time); Bayless Manning, The Business Judgment Rule and the Director’s Duty of Attention: Time for Reality, 39 BUS. LAW 1477, 1481 (1984) (referencing a 1982 survey that showed that directors of publicly held companies spend about 123 hours per year, including travel, on work as a director).

\textsuperscript{53} See Bebchuk et al., supra note 6, at 785 (arguing that CEO ownership and organization of the board affects the amount of power the CEO has; the more power over the board, the more likely the board will defer to the CEO); Bogus, supra note 12, at 33-34 (“In the real world all directors are beholden to management.”); Dorff, supra note 14, at 847-50 (“Since displeasing the CEO means risking one’s position as a board member, we can expect most board members to oppose the CEO’s desires only when the stakes are dramatic.”); Eisenberg, supra note 18, at 130-31 (“In most publicly held corporations a director who has material financial incentives to retain his directorship will not be independent of the CEO.”).

\textsuperscript{54} See Brudney, supra note 35 at 609 (noting that directors are engaged primarily in other activities limiting their time to monitor management); Dorff, supra note 14, at 850-54; Rogers, supra note 32, at 787-88 (arguing that managers’ ability to set the agenda contributes to the “institutional weakness” of directors).

\textsuperscript{55} See Dorff, supra note 14, at 850-51 (arguing boards spend less than 160 hours a year on board matters, which equates to approximately three weeks of work for a New York corporate lawyer); Eisenberg, supra note 33, at 147 (“Boards of publicly held corporations meet an average of 8 times a year, and outside directors spend an average of 157 hours a year on board matters, including preparation time and travel time.”); Lorsch & MacIver, supra note 29, at 23 (noting that directors devote about 14 days a year to board matters); Monks,
Directors, therefore, have many demands on their time from their primary jobs, and can little afford to devote the attention necessary to challenge the chief executive. Directors may also encounter executive-mounted barriers in drawing on corporate resources, such as the expertise of corporate employees.\textsuperscript{56}

In addition, CEOs may employ compensation consultants to help justify requests for increased compensation. Compensation consultants compile compensation surveys of peer corporations. CEOs paid less than average for chief executives of similar corporations may argue compellingly for an increase, claiming their pay should fall in line with that of the CEOs of their competitors.\textsuperscript{57}

Managerial Power's second claim—that managerial power results in rent extraction—really consists of two separate assertions. The first is that executive compensation is excessive. The second is that it is poorly correlated to managers' performance.

In debating whether executive compensation is excessive, scholars have stumbled over one crucial question: what constitutes excessive compensation? In practice, this question turns out to be almost impossible to answer. When an efficient market exists, prices are set by the market. A price is excessive if it exceeds by some margin the market price. In the executive compensation area, however, Managerial Power theorists argue that there is no efficient market. To be efficient, a market must have buyers and sellers with good information bargaining at arms-length.\textsuperscript{58} If board members are co-opted by management, such that directors and corporate officers are on the same side of the compensation negotiation, then the executive compensation market cannot be considered efficient. The market therefore provides no useful information on the correct price for managerial talent.\textsuperscript{59}

\textsuperscript{56} See Eisenberg, supra note 33, at 147 (indicating that executives have more information than directors and thus control the information the board receives); Lorsch & Maciver, supra note 29, at 23-28 (same); Dorff, supra note 14, at 852 (same); Rogers, supra note 32, at 789 (noting that boards lack independent sources of expertise).

\textsuperscript{57} See Bebchuk et al., supra note 6, at 790 ("It is widely understood that the methodology of compensation consultants and boards in devising compensation plans results in a 'ratcheting up' of salaries."); Dorff, supra note 14, at 854-55 (noting that compensation consultants help rationalize high pay for executives); Yablon, supra note 12, at 1878 ("It is not difficult to see how, in a world in which every CEO believes he should be paid at or around the seventy-fifth percentile of the range of compensation levels developed by the compensation consultant, a strong upward pressure on compensation will result.").

\textsuperscript{58} See Clark, supra note 36, at 144 ("[T]here is no real contract or bargain in a case where there are not two or more independent bargaining parties."); Dorff, supra note 14, at 820; Stout, supra note 25, at 639 (contending that markets are efficient when they fully reflect available information). See also Douglas C. Michael, The Corporate Officer's Independent Duty As A Tonic For The Anemic Law Of Executive Compensation, 17 J. CORP. L. 785, 797-99 (1992) (discussing the lack of a competitive market for hiring CEOs, in part because buyers are "incapable of earnest negotiation" with the CEO sellers).

\textsuperscript{59} See Judith Burns, Everything You Wanted To Know About Corporate Governance . . . But Didn't Know To Ask, WALL ST. J., Oct. 27, 2003, R6, R7 (arguing boards chosen by the CEO will grant the chief executive whatever he or she asks); Dorff, supra note 14, at 820 (arguing that the board of directors' affiliation with the CEO prevents vigorous bargaining, a prerequisite for an efficient market); Loewenstein, supra note 15, at 201-05 (stating that "the CEO and the board at least seem to sit on the same side of the table when the CEO's compensation is determined" and there is no "indication of what the CEOs would earn if the market for
no clear indication what level of compensation qualifies as “excessive.”

Managerial Power authors have attempted to surmount this problem with alternative benchmarks. They have examined absolute compensation levels and have compared compensation growth rates to inflation, executive pay growth rates to increases in worker salaries, and U.S. executive compensation level[s] to those in other industrialized nations.60 These statistics demonstrate that chief executive officers of large U.S. corporations are paid a great deal, that CEO compensation has grown much faster than the rate of inflation, that the multiple of worker salaries they are paid is very large and has grown rapidly, and that they are paid about twice as much as their counterparts in Europe and Japan.61

Similarly, adherents of the Managerial Power Hypothesis have contended that executive compensation is poorly correlated with managers’ performance.62 They point to studies which indicate that although chief executive officers’ salaries increase when their services were more efficient”); Michael, supra note 58, at 797-98 (the executive sits on both sides of the bargaining table and the independent compensation committee is unable, even if given relevant information, to engage in “earnest negotiation” with the CEO).

60. See Barris, supra note 15, at 60-61 (stating that during the 1980s, CEO compensation increased by 212% while earnings on the S&P 500 Index grew by only 78% and factory workers’ salaries increased by only 53%); Bogus, supra note 12, at 10 (“During the 1980s, CEO compensation rose 212% . . .”); Eisenberg, supra note 18, at 106-08 (explaining that while U.S. CEOs earn two hundred times what factory workers earn, Japanese CEOs earn only about twenty to thirty times factory workers’ salaries); Melvin A. Eisenberg, A Brief Overview of the Problems Raised by Executive and Director Compensation, SC53 ALI-ABA 299 (1997) (referring to GRAEF S. CRYSTAL, IN SEARCH OF EXCESS: THE OVERCOMPENSATION OF AMERICAN EXECUTIVES 206-09 (Norton 1991); JOHN M ABOWD & MICHAEL L. BOGNANNO, International Difference in Executive and Managerial Compensation, in DIFFERENCES AND CHANGES IN WAGE STRUCTURES 67 (R. Freeman & L. Katz, eds., 1995) (“[T]he evidence suggests that the total compensation of American CEOs, including base salary, bonus, long-term compensation and benefits and perquisites, is approximately twice as high as that of CEOs of comparable corporations in Japan, Germany, eight other west European countries, and Canada.”); Loewenstein, supra note 10, at 4, 6 (explaining that U.S. CEOs appear to be paid more, but executive pay is difficult to measure outside the U.S.); Loewenstein, supra note 15, at 202-03 (stating that CEO compensation rose 20.6% in 1993, 12.8% in 1994, and 10.4% in 1995, and that in 1996, U.S. CEOs earned an average of $1,085,000 while average CEOs in Great Britain earned $551,600, CEOs in Germany earned $237,000, CEOs in France earned $485,004, and those in Italy earned $318,000); Perry & Zenner, supra note 18, at 123-24 (total CEO compensation for all 1900 firms listed in the ExecuComp database more than doubled from 1992 to 1998, and CEOs from S&P 500 firms’ compensation rose more than 250%); Yablon, supra note 12, at 1871 (reviewing CRYSTAL, supra) (stating that in 1990, average U.S. CEOs earned $2.8 million per year (120 times an average manufacturing worker’s salary) while their counterparts in Germany earned $735,000 annually (twenty-one times an average factory worker’s compensation) and CEOs in Japan earned only $310,000 (sixteen times an average factory worker’s salary)).

61. Yablon, supra note 12, at 1871.

62. See Bogus, supra note 12, at 12; Burns, supra note 59, at R6 (citing a joint study by Institute for Policy Studies and United for a Fair Economy showing that “[o]n average, CEO pay rose 279% from 1990 to 2002, far more than the 166% rise in the [S&P 500-stock index] over the same period . . .”); Robert Dean Ellis, Equity Derivatives, Executive Compensation, and Agency Costs, 35 HOUS. L. REV. 399, 413 (1998) (“[T]he links between stock price, firm performance, and managerial performance are at best inconclusive [—]performance and pay do not seem to be strongly correlated.”); Michael, supra note 58, at 799-801 (stating that although “[e]xtensive empirical evidence exists linking executive compensation and the performance of a company’s stock, the link is not sufficient to establish a causal link between pay and performance and that other individual factors, like company size, exist); Henry L. Tosi et al., How Much Does Performance Matter? A Meta-Analysis of CEO Pay Studies, 26 J. OF MGMT. 301-39 (2000) (noting that studies show that “firm performance accounts for less than 5% of the variance” in total CEO pay).
their corporations’ fortunes improve, their salaries also increase when their corporations’ fortunes decline. This result stems in part from boards including stock options as a large component of compensation packages, setting the options’ strike price at market on the date of issuance (rather than at some higher level), and then decreasing the strike price if the general market dips. Conversely, an efficient contract should not only reward managers for their successes but also to hold them accountable for their failures. It is therefore difficult to reconcile repricing options with the Optimal Contracting Hypothesis.

In addition, CEO pay packages seem poorly structured if the goal is to motivate managerial performance. An efficient contract should relate a manager’s pay to his or her performance, or at least to corporate performance relative to the industry as a whole. A CEO should receive a pay increase when his or her efforts produced positive results, not when others within the company or improvements in the market were responsible for those results. Nevertheless, incentive pay (such as stock options) rarely focuses directly on the performance of the chief executive. Instead, options’ values depend on the results of the corporation as a whole, rising when the corporation’s stock price increases. Also, as stock options are usually structured, they reward managers for general economic booms—because the stock market as a whole rises during such times—even when the manager’s corporation underperforms within the industry. These surprising inefficiencies in managerial compensation packages indicate that pay is not well correlated to performance.

In sum, supporters of the Managerial Power Hypothesis claim that the nature of the director selection process, the composition of the board of directors, directors’ incentives to please management, and the relative lack of director resources, support a finding that managers exert power over boards of directors. In support of their claim that managerial power results in excessive pay, these scholars point to several possible measures of excessiveness such as compensation growth rates, the poor correlation between pay and performance when corporations decline, and the inefficient structure of most CEO pay packages.

C. Advantages of Experimental Modeling

The empirical arguments, while illuminating, are ultimately inconclusive. On the first issue of the degree to which managers exert power over board members, neither set of arguments employs direct evidence of either board co-option or independence. Indeed, it is difficult to imagine a source of direct evidence on this point. Even interviews of

---

63. See Barris, supra note 15, at 62; Bogus, supra note 12, at 12; Marino, supra note 27, at 1214 (citing study by Graef Crystal demonstrating that a 20% decline in corporate profits nevertheless resulted in an average increase in pay of 7.6% for the year 1991).
64. See Bebchuk et al., supra note 6, at 821-24 (describing option repricing); Ellis, supra note 62, at 413 (noting that “more than [80%] of the largest United States companies use equity-based compensation . . . ”); Marino, supra note 27, at 1215 (finding that repricing eliminates options’ incentive effects); Murphy, supra note 6 at 847 (explaining that increases in CEO pay during the 1990s were driven primarily by growth in stock options).
65. See Bebchuk et al., supra note 6, at 817-24.
66. See Bebchuk et al., supra note 6, at 796-817.
67. Id.
board members would be unlikely to reveal the degree to which they had been co-opted, since directors can hardly be expected to confess to serving their own interests rather than shareholders’ interests. Instead, scholars of both schools have turned to indirect evidence that may suggest, but cannot prove, co-option or independence.

Scholars favoring the Optimal Contracting Hypothesis rely on institutional structure arguments, claiming that directors who are not officers or employees of the corporation are less likely to be co-opted. While it may be true that outside directors are less likely to be co-opted, in the sense that virtually all inside directors can be expected to defer to the chief executive officer, it does not follow that most outside directors are truly independent. If the structural forces inducing directors to obey CEOs are as powerful as Managerial Power adherents would have us believe, nominal independence may not mean very much at all.

In addition, the fact that CEOs hired from outside the corporation command higher salaries may reflect the need to compensate executives for leaving their power base behind. Outside CEOs have likely established relationships of mutual support with their current corporation’s board, but the new company’s directors may be comparative strangers. Rather than arguing that the market sets CEO pay efficiently, outsiders’ higher pay may instead bolster Managerial Power’s contention that CEOs exercise (and value) power over their boards.

Managerial Power theorists also rely on indirect structural arguments, highlighting aspects of the director selection process and the nature of board membership that seem to provide leverage to management. Not all incentives stem from institutional structures, however, nor do people always behave in response to their best economic interests. Countervailing influences, both economic and non-economic, may stem from directors’ reputations, their equity stakes in the corporation, fear of liability, altruistic norms of behavior, and the directors’ internal morality, to name but a few possibilities. Evidence of these influences abounds. There are many documented cases of board opposition to management desires, most dramatically in decisions to terminate the CEO. It seems doubtful that even the most fervent advocates of the Managerial Power Hypothesis would claim that all board members are always co-opted.

Despite the posture of the theoretical debate, the interesting question is not whether all CEOs of public corporations exercise absolute control over their boards. They do not. Rather, the interesting and useful question is which governance systems minimize the chances of board co-option and which make director co-option more likely.

Even this question, however, is very difficult to answer by studying actual boards because to determine which governance mechanisms best contribute toward director independence, we need a verifiable measure of co-option. While Managerial Power advocates would seem to contend that executive compensation serves as such a measure, that argument just begs the question with which we began: is executive compensation excessive and poorly correlated to performance?

The same problem holds true for Managerial Power’s thesis that officers’ power

68. See Murphy, supra note 6, at 850-54 (noting that the increase in executive pay during the 1990s coincided with the increase in number of independent directors); Susan J. Stabile, Viewing Corporate Executive Compensation Through A Partnership Lens: A Tool To Focus Reform, 35 WAKE FOREST L. REV. 153, 171 (2000) (stating that twenty-five years ago independent directors were a small minority; now they are a large majority on boards).
causes excessive executive compensation packages that are poorly correlated to managerial performance. While both sides have grown quite adept at analyzing the compensation numbers in terms that make them seem either excessive or reasonable, the debate can never be resolved successfully without a consensus definition of "excessive." Neither side has successfully proposed such a definition. For the Managerial Power proponents, the compensation growth rate itself, both in absolute terms and as a multiple of workers’ salaries, strongly suggests excessiveness.69 For Optimal Contracting supporters, no compensation can be safely declared excessive since some market explanation can nearly always be developed to explain any particular package’s appropriateness.70

Similarly for the correlation claim, the central problem is the absence of an acceptable measure for management’s performance. Proxies such as corporate profitability, revenues, or stock price are the result of numerous factors in addition to CEO performance. Other contributors include exogenous changes in demand for the product, supply of raw materials, interest rates, currency exchange rates, employment rates, consumer optimism, and general market and economic conditions, among others. Good results may stem from the CEO’s efforts, or from factors having nothing to do with the CEO. Poor results may similarly be the CEO’s fault, or may result from other causes. In the absence of an effective measure of executive performance, it is difficult to conclude anything about the correlation between executive compensation and achievement.

Experimental modeling offers us a way around this impasse. By developing a model of the executive compensation process, we can directly manipulate the degree of power that those in the executive role possess over those in the director position. We can then measure the degree to which chief executives’ power over the board corresponds to increases in compensation. We can also measure how the correlation between pay and executive performance varies with changes in management’s power over the board. Moreover, we can establish for purposes of the model the precise contribution that the chief executive makes to corporate performance, permitting us to state definitively what constitutes excessive compensation and whether increases in compensation correlate to improvements engendered by the CEO.

69. See Barris, supra note 15, at 60-61 (reporting that in the 1980s CEO compensation grew by 212%, while factory workers' wages grew only 53%); Margaret Blair, CEO Pay: Why Such a Contentious Issue?, 12 BROOKINGS REV. 22 (1994) (noting that in the early 1980s CEOs earned approximately 50 times what factory workers earned, and in 1992 CEOs earned more than 94 times what factory workers earned); Bogus, supra note 12, at 10 (“In 1956, veteran CEOs were making 34 times as much as the average factory worker; by 1990, they were making 130 times as much.”); Eisenberg, supra note 18, at 109 (stating that CEO compensation is high both absolutely and relatively); Allen Kaufman et al., A Team Production Model of Corporate Governance Revisited (George Washington University SMPP Working Paper No. 03-03, Sept. 2003) (noting that a quarter century ago the second highest paid executive made about three-quarters of that of the CEO, but by 2000 CEOs in manufacturing firms were making on average twice as much as the second highest paid executive), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=410080 (last visited Oct. 7, 2004).

70. See Bebchuk et al., supra note 6, at 762-64; see also Eisenberg, supra note 18, at 111 (arguing that it is possible that CEO compensation is set by market forces); Murphy, supra note 6, at 855 (explaining that CEO compensation has increased as a result of increased bargaining power on the part of executives); Himmelberg & Hubbard, supra note 22, at 4 (finding that “aggregate productivity shocks” increase demand for CEO labor, thus driving up CEO compensation); Wolfson, supra note 10, at 978 (stating that excessive compensation is controlled by market forces).
Excessive compensation consists at least of pay that surpasses the CEO’s contribution to corporate profits. Some might consider smaller sums excessive as well, but pay that meets this weak definition of excessiveness should certainly qualify. No reasonable employer would willingly pay an employee more than the employee would yield in profits, under circumstances where it is known with certainty in advance of contracting precisely what the employee’s contribution will be. Since participants in the experiment possessed such knowledge, any salary that topped a CEO’s contribution to profits may safely be deemed excessive.

If this process had taught us that Managerial Power’s second thesis was incorrect—that executive power over the board does not translate into excessive compensation that is poorly correlated to executive performance—then Optimal Contracting theorists would have had a powerful argument that the debate should end. The extent of managerial power over the board should matter little if board members overcome the CEO’s influence (and their own self-interest) and obey their fiduciary duties to put shareholders first. But since the model confirmed the link between managerial power and economic rent extraction, Managerial Power advocates have gained potent evidence supporting their claims. In addition, the link between executive power and excessive compensation has produced a useful tool to measure the efficacy of proposed changes in corporate governance structures in reducing executives’ sway over the board in future studies.

III. EXPERIMENTAL DESIGN

The experiment modeled the process by which corporations set their chief executives’ compensation. The experiment consisted of two phases. In the first phase, chief executives had no power over directors other than market-derived bargaining power. In the second phase, chief executives were granted the ability to fire directors and hire new ones, and could also set directors’ pay, within certain limits. The rules of each phase were otherwise identical, so any difference in outcome was attributable to the power given to managers in the second phase.

In each phase, the study randomly assigned subjects to one of three roles: chief executive officer, director, or runner. Directors were randomly assigned to one of fifteen corporations in Phase I (fourteen in Phase II because of slightly smaller attendance), with three directors to each corporation. Several days in advance of each phase, all subjects were supplied with an instruction sheet containing a short explanation of the rules of that phase. Subjects were not told how many rounds would be played, or that there would be a second phase with different rules.

The pool of subjects consisted of second-year law students enrolled in an introductory course in corporate law. In addition, every student at the law school—whether or not enrolled in the course—participated as an equal shareholder of every corporation. The participation of shareholders was entirely passive, limited to the receipt of dividends. The study was performed during two class periods one week apart near the end of the course.

All money in the model—corporate income, chief executive and director
Does One Hand Wash the Other?

compensation, and shareholder dividends—took the form of digital lottery tickets. At the conclusion of the exercise, a lottery number corresponding to one of the digital tickets was randomly generated and the owner of that ticket received the prize, ten thousand Westlaw Points donated by Westlaw, part of the Thomson Corporation. Westlaw Points are typically awarded to law students as an inducement to use Westlaw’s on-line legal research system instead of its competitor’s. Students receive a small number of Westlaw points each day they log on to Westlaw’s service. These points accumulate and can be traded for a wide variety of prizes. Few students succeed in acquiring ten thousand Westlaw Points over the course of their three-year law school careers. While it is difficult to value Westlaw Points precisely, ten thousand points should enable a student to “purchase” a prize worth roughly two or three hundred dollars.

For each round, each corporation’s income was determined as a function of the inherent quality of the corporation (95%), and the chief executive’s managerial talents (5%). As explained in Part VI.C below, this distribution was set for purposes of experimental convenience and was not intended to reflect the relative contribution of CEOs and inherent quality in actual corporations. Reasonable people could differ on the impact CEOs have on real-life corporate results, and the chief executive’s influence on corporate performance likely varies widely from corporation to corporation.

The inherent quality of the corporation was randomly assigned before each phase as an integer between one and ninety-five. Chief executives’ talents were similarly assigned randomly as an integer between one and five. To calculate a corporation’s income in each round, the corporate quality index was added to the corporation’s CEO’s talent index, and the sum was then multiplied by 10,000. Corporations’ gross incomes could therefore range from 20,000 to 1,000,000 lottery tickets per round, depending on their quality index and the skill level of the CEO the corporation hired that round. Corporate quality indexes were fixed for the duration of the phase. The only influence directors had over their corporation’s income was in selecting a chief executive. Chief executives’ skill levels were likewise fixed.

During each round, executives and boards communicated with one another exclusively in writing on either “Preliminary Offer Forms” or “Firm Offer Forms.” Parties could send out as many Preliminary Offer Forms at one time as they desired, but could only have one Firm Offer Form outstanding. Runners carried the offer forms between the executives, grouped at the front of the room, and the corporations, spread throughout the classroom. The chief executives had placards in front of their seats denoting each officer’s skill level. When a corporation and a chief executive had both signed off on a Firm Offer Form, the board of directors filled out a Corporate Results Form denoting the results for that round. Throughout the game, a chart recording the game’s history—including how much each corporation had paid for its chief executive in each round, what skill level that executive possessed, the amount the directors had received, and the size of the dividend paid to shareholders—was projected on two large screens at the front of the classroom for all subjects to study. As each corporation

73. For a sample list of prizes, see APPENDIX B.
74. See APPENDIX C.
75. See APPENDIX D.
76. See APPENDIX E.
completed its Corporate Results Sheet, the results were displayed on the two large screens at the front of the classroom.

Rounds ended only when every corporation had hired a CEO. Students were told, however, that after the first twelve minutes, the round would enter the “penalty phase.” During the penalty phase, any corporation that had not yet hired a CEO that round was penalized 50,000 tickets per minute until the directors turned in a Corporate Results Form. Similarly, any CEO that had not secured a position with a corporation was fined 2500 tickets per minute.

Chief executives’ compensation was not restricted in amount. Boards and executives were free to agree to any salary they desired. The form of the compensation, however, was limited to a straight salary. Boards could not agree to award executives extra stock, bonuses, or income based on future results of any kind. Employment contracts were limited in duration to one round. At the end of each round, directors and chief executives began the bargaining process without any contractual commitments from prior rounds.

Runners were paid a flat fee of 3000 tickets per round. This amount represented only a little over half what directors could earn. Directors should therefore have been motivated to struggle to keep their positions (during Phase II, when their jobs became vulnerable) to avoid being demoted to runners. Directors’ pay was set differently in the two phases of the game, as explained in the next paragraph, but in both phases all directors in the same corporation had to receive the same pay, and in both phases director salaries were set at 3000 tickets in the first round.

Phases I and II differed in the amount of non-market power that chief executives possessed over directors. In the first phase of the study, chief executives had no power over directors, except that stemming from the scarcity of managerial talent. In Phase I, directors voted by majority rule on their own compensation (limited to a maximum of 5000 tickets per round per director) and retained their positions as directors permanently throughout the phase. In Phase II, however, at the conclusion of each round, once every corporation had hired a chief executive, the CEOs chose whether to retain or fire the directors of their corporations. Terminated directors became runners. Executives had the option of retaining all the directors, or replacing as many or as few as desired. Replacement directors came from the pool of runners and directors terminated earlier in the round. Executives also had the power to set directors’ salaries, subject to the same cap of 5000 tickets per director per round. Managerial power in Phase II then, stemmed from two sources: the power to replace directors and the ability to set directors’ salaries.

Any lottery tickets left over after paying the CEO and director salaries were distributed to the shareholders as a dividend. The shareholders consisted of all the (roughly one thousand) students in the law school, including those participating in the exercise but not limited to them. Each shareholder owned a little over 0.1% of each corporation and would therefore receive that percentage of the dividends.

---

77. The 5000 ticket limit was imposed to preserve the separation between ownership and control. Without such a limit, directors might have kept all tickets not paid to the CEO, essentially abrogating to themselves the role of residual owner intended to be filled by the shareholders. The model’s directors’ incentives would then have diverged widely from those of actual directors, because any ticket not paid to the CEO would be distributed to the board. With real corporations, net profits—after appropriate reserves for future investment and other purposes—belong to the shareholders. The 5000 ticket limit on directors’ salaries retained a critical aspect of the actual CEO compensation process—directors paid the CEO with other people’s money.
IV. PREDICTIONS

A. Optimal Contracting Hypothesis

1. CEO Compensation Levels

The Optimal Contracting Hypothesis predicted that executives would be compensated at a rate set by the market in both Phases. The level of compensation would be a function of the scarcity of managerial talent and of the marginal benefit the corporation derived from hiring a particular manager. While the precise compensation level would vary with bargaining power and negotiating skill, corporations should not have paid executives more than the executives generate in income to the corporation.78 The level of CEO compensation should have changed only based on the CEO’s skill level, and should not have varied with the degree of power the CEO possessed over the board.

2. Correlation to Performance

Managerial pay should have correlated strongly with the contribution of each manager to corporate profitability. Better managers should have been paid more; less skilled managers should have been paid less. The correlation of the executives’ pay to their performance should not have varied in Phase II as managers gained power over boards.

3. Boards’ Decisions to Terminate CEOs

Optimal Contracting predicted many shifts in employment in a robust market as chief executives and boards each searched for optimal contractual arrangements. This result should not have differed with the shift in managerial power.

4. Director Termination and Compensation

Few, if any, directors should have lost their seats in Phase II. (In Phase I, directors’ seats were permanent.) In the model, directors’ abilities only slightly and indirectly affected corporate performance through negotiations with potential chief executives.

78. It is theoretically possible that an efficient board in the model would pay more for a manager than that manager produced if (a) managerial talent were very scarce (as if there were insufficient managers for the number of corporations) and (b) corporations were absolutely required to have managers. Although corporations were not provided with the option of doing without managers altogether in the model, there were precisely as many managerial candidates as there were chief executive officer positions to fill. Hence, no excessive salaries should occur in Round I. The model probably somewhat overstates the scarcity of managerial talent. In the real world, it seems likely that there are more than enough qualified candidates to fill the available CEO positions, perhaps even by some multiple. Although talented CEOs may be scarce in the sense that only a very small percentage of the population is capable of running a major corporation, the large number of other high corporate officers (Chief Operating Officers, Chief Financial Officers, General Counsels, etc.) demonstrates that there are many qualified people accessible to fill the posts. The greater scarcity of managerial talent in the model may somewhat bias the results toward supporting the Optimal Contracting Hypothesis, which relies on scarcity of managerial talent to explain high executive salaries.
There was, therefore, no reason for CEOs to terminate directors, unless the directors were rewarding themselves with excessive compensation. In both Phases, director compensation should have been very low. Since again, directors in the model contributed relatively little to corporate performance, directors should not have been entitled to—and therefore should not have received—high levels of compensation. Directors themselves should have recognized this fact in Phase I and, in obedience to their fiduciary duties, should have awarded themselves little pay.\(^79\) Chief executives should similarly have recognized this fact in Phase II and likewise should have limited directors’ pay.

### B. Managerial Power Hypothesis

1. CEO Compensation Levels

The Managerial Power Hypothesis predicted that in Phase I, in the absence of formal managerial power over the board, compensation should not have exceeded the CEOs’ contribution to corporate income. In Phase II, however, managers should have received excessive compensation (defined, again, as compensation that surpassed the CEO’s contribution to the corporation’s profits).

2. Correlation to Performance

During Phase I, Optimal Contracting’s predictions should have held true. But in Phase II, Managerial Power predicted a poor correlation between executive pay and performance. CEOs’ compensation should have become a function of the degree of managerial power, rather than the executive’s contribution to corporate profits. While some correlation between performance and pay may have persisted, the far more important determinant of executive pay should have been managerial power.

3. Boards’ Decisions to Terminate CEOs

In Phase I, Optimal Contracting and Managerial Power concurred in their predictions of frequent shifts in leadership as CEOs and directors sought better deals for themselves. In Phase II, CEO terminations should have become much more rare under the Managerial Power Hypothesis. Board members should have feared that firing an executive would mark them as unreliable to other potential managers, thus increasing the risk that the new chief executive would replace the “rebellious” board with more docile directors. In addition, Managerial Power predicted the evolution of stable reciprocal relationships, in which boards granted their CEOs excessive compensation as an inducement to retain the existing directors and pay them the maximum possible compensation.

\(^79\) It is an interesting irony that the Optimal Contracting Hypothesis, which stems from the Law & Economics movement with its focus on the effect of individual incentives, generally assumes without much explanation that directors will act in accordance with their fiduciary duties rather than in line with their individual interests. On the other hand, the Managerial Power Hypothesis, which appears strongly influenced by the Behavioralist school with its focus on the impact of emotional and cultural factors, generally assumes without much explanation that directors will act in accordance with their individual interests, rather than obeying cultural and legal fiduciary duty norms.
4. Director Termination and Compensation

In Phase I, directors should have paid themselves the maximum salary every round. Although a few directors may have been moved by their duty to shareholders to take less compensation, self-interest should generally have governed. In this regard, the prediction was different from that of Optimal Contracting, which assumed that directors would pay greater attention to their fiduciary duties.\(^{80}\) In Phase II, Board salaries were again predicted to be much higher than under Optimal Contracting. Executives were likely to pay directors the maximum, as inducement to retain and continue to reward the CEOs.

In Phase II, Managerial Power predicted few director terminations. (No director terminations were possible in Phase I.) Although some executives may have asserted their power over any resistant boards, most directors should have anticipated the need to please management and avoid the risk of termination. In this regard, both hypotheses predicted similar outcomes.

V. DATA AND ANALYSIS

The raw results of the two phases are contained in Appendices F (Phase I) and G (Phase II).

A. CEO Compensation Levels

Executive compensation was markedly higher in Phase II, where managers possessed power over directors, than in Phase I, where a pure market prevailed. The average executive salary in Phase I was 90% of the income generated by the executive, while the average salary in Phase II was 164% of the income generated.\(^{81}\)

The CEO compensation levels therefore strongly support the Managerial Power Hypothesis. Recall that the Optimal Contracting Hypothesis predicted that compensation would never exceed the CEO’s contribution to corporate income. In contrast, the Managerial Power Hypothesis predicted that while contributions should exceed compensation during the pure market phase, during the managerial power phase, compensation should reach excessive levels.

Not only did managerial power contribute to higher salaries, it encouraged excessive compensation as predicted by the Managerial Power Hypothesis. In Phase I, with only the market to work with, managers seldom succeeded in extracting more in salary from corporations than they generated in income. In fact, out of forty-six negotiated salaries, only thirteen (28%) were excessive in Phase I. In contrast, during Phase II, fifty-one negotiations resulted in excessive compensation, out of seventy contracts (73%). The excessive compensation results were statistically significant with a very high degree of confidence. The odds were less than 1% of achieving such a large difference in the

\(^{80}\) See supra text note 79.

\(^{81}\) The analysis of the data excludes the Phase I negotiations by Corporation JJ in Rounds 1 and 2. Those contracts were the result of an attempt by a sister-brother team to co-opt all of JJ’s income for themselves. The brother, who was a CEO, agreed with the sister that if JJ paid him all its net income in salary (after paying the directors), and if as a result he won the lottery, he would split the prize with the directors. Since this arrangement involved using extra-game payoffs to induce intra-game behavior, I banned the sister and brother from negotiating with one another after Round 2, and discarded the contaminated data points.
number of incidents of excessive compensation through random chance, as measured by the Chi-square test of statistical significance. Table One tabulates the results.

**TABLE 1: CHI-SQUARE TEST FOR EXCESSIVE CEO COMPENSATION**

<table>
<thead>
<tr>
<th></th>
<th>Phase I</th>
<th>Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Observed</td>
<td>Expected</td>
</tr>
<tr>
<td>Salary above worth</td>
<td>13</td>
<td>28.99</td>
</tr>
<tr>
<td>Salary equal to worth</td>
<td>15</td>
<td>10.87</td>
</tr>
<tr>
<td>Salary below worth</td>
<td>30</td>
<td>18.12</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>57.98</td>
</tr>
<tr>
<td>Percentages</td>
<td>45.31%</td>
<td>54.69%</td>
</tr>
</tbody>
</table>

The critical value\(^{82}\) for the two degrees of freedom represented by this data is 5.991 for \(\alpha = .05\) (the usual test of statistical significance).\(^{83}\) Since the \(\chi^2\) value of the data is actually 33.24, the data is highly significant. In fact, the results would be significant even under a much more stringent test. For \(\alpha = .005\), the critical value for two degrees of freedom is 10.60.\(^{84}\) Again, the \(\chi^2\) value of 33.24 easily meets even this very rigorous test, demonstrating that the odds of achieving these results by chance are less than five in a thousand. The data therefore strongly support the Managerial Power Hypothesis’ prediction that giving CEOs power over directors would result in more excessive executive compensation.

An interesting result that neither hypothesis predicted is that even during the pure market phase, some corporations agreed to pay excessive salaries. While the majority of these salaries exceeded CEO contributions by only a small margin,\(^{85}\) it remains difficult to understand why any corporation would agree, under pure market conditions, to pay an executive more than that executive produced.

---

82. The formula for the Chi-Square test is the sum of \((\# \text{ incidents observed} - \# \text{ incidents expected})^2 / \# \text{ of incidents expected}. In this table, Phase I represents CEOs with no power and Phase II represents CEOs with power. The “observed” column consists of the number of occasions the described behavior actually occurred during the experiment. The “expected” column records the number of incidents we would expect based on the proportion of incidents in the two columns. In this case, there were fifty-eight incidents in Phase I and seventy in Phase II. Phase I therefore accounted for 45.31% of the total number of incidents, and Phase II accounted for the remaining 54.69%. We would therefore expect that, if there were no difference between Phase I conditions and Phase II conditions, the two phases would account for a similar percentage of the incidents in each category (row). The Null Hypothesis, the statement the data is testing, is thus that Phase I should be no different from Phase II. Taking the first row for example, we would expect to see 45.31% of the number of incidences of above-worth salaries (64 total) occur during Phase I, and 54.69% of such incidents to occur in Phase II if the Null Hypothesis were correct. Chi-Square is a measure of how far the observed data departs from this expectation. The greater the departure, the more certainty we can have that the Null Hypothesis is incorrect. Tables of critical values for Chi-Square provide the value the Chi-Square number must meet or exceed to meet a particular test of statistical significance (\(\alpha\)).

83. See *MARTIN STERNSTEIN, STATISTICS* 194 (1994).

84. *Id.*

85. Approximately 54% of the thirteen excessive compensation packages during Phase I exceeded CEO contributions by 10% or less.
One possible explanation for this anomaly is that some of the students did not understand the game. While it is impossible to disprove this thesis conclusively, the explanation does not seem to explain many of the results. If directors paid too much for CEOs because they misunderstood the game’s rules or strategies, we would expect to see the same corporations consistently overpaying their CEOs. We would also expect to see more incidents of excessive compensation in the early rounds than in the later rounds. As students observed what other corporations did, they should have learned of their mistakes.

For the most part, however, neither trend manifested. The thirteen Phase I incidents of excessive compensation were spread among nine corporations, with most of the corporations overpaying only a single time. Two corporations awarded excessive compensation twice, and one three times. For these last three corporations, perhaps some misunderstanding of the rules explains the excessive contracts. But it seems difficult to attribute the other overpayments—when the directors overpaid only once—to the same cause. Nor did these incidents occur solely or even primarily in the first round, when misunderstandings would seem most likely to take place. Instead, of the remaining six incidents (excluding those attributable to multiple “offenders”), only one took place in the first round, with two in round two, one in round three, and two in round four.

An alternative and more likely explanation stems from the time limits imposed on the exercise. In order to fit more rounds within the class period, each round was essentially restricted to twelve minutes. Players who had not achieved a contract by the end of the time period suffered penalties, which mounted the longer it took the participants to reach an agreement. Corporations were penalized 50,000 tickets per minute, and CEOs were fined 2500 tickets per minute.

Directors should have enjoyed an advantage as a result of the penalty structure. Each director would lose only fifty tickets per minute personally, his or her share of the corporation’s loss when divided among the roughly one thousand shareholders, while CEOs personally lost many times that amount.

Directors may have perceived themselves to be at a disadvantage, however, in representing the corporation’s interest. The corporation lost much more income—twenty times as much—than the CEO did by playing a waiting game. Although the corporations and CEOs were fined similar portions of their income (in both cases, five percent of the maximum possible income), some directors may have felt impressed by the number of tickets their corporation would be fined, and therefore made poor bargains under time pressure. When faced with a choice (or even potential choice as the penalty period approached) between costing the corporation 50,000 tickets per minute in penalties, and giving up 5000 or 10,000 of the corporation’s tickets by overcompensating the CEO, directors may have chosen to accept a poor deal to minimize the corporation’s loss.

If the directors adopted the corporation’s perspective, they did, perhaps, face a strategic disadvantage. CEOs risked only 2500 tickets per minute, and stood to gain several times that amount through hard bargaining. The corporation, in contrast, risked 50,000 tickets per minute to avoid overpayments on the order of 10,000. The fact that the highest Phase I overpayment did not exceed 25,000 tickets, or the equivalent of one-half of one minute’s corporate penalty, supports this explanation. In contrast, during Phase II, overpayments reached a high of $85,000 tickets. Note, however, that without some form of directorial altruism, this explanation fails. Again, the directors themselves lost little by
delay, especially compared to the loss suffered by the CEOs.

To the extent directors adopted the corporation’s interests as their own, the results support an aspect of the Optimal Contracting Hypothesis. Optimal Contracting relies on directors to put shareholders’ interests ahead of their own. Directors are expected to negotiate at arms-length with CEOs over the executives’ compensation, despite the consequent risk to their jobs as board members. The existence of managerial power means that a director’s hard bargaining risks alienating the CEO and could result in the loss of the director’s very valuable position. The willingness of a few directors to subvert their own interests to shareholders’ demonstrates that the sort of altruistic behavior expected by Optimal Contracting is at least possible under some circumstances. Nevertheless, the overall results are far more consistent with the Managerial Power Hypothesis.

**B. Correlation to Performance**

While both hypotheses predicted a strong correlation between management skill and compensation in Phase I, the predictions diverged for Phase II. Optimal Contracting predicted that the correlation between pay and performance would hold constant in Phase II, but Managerial Power forecast that pay would disassociate from performance as executives’ power became a more important determinant of their pay than their ability to enhance the corporation’s income.

The results followed neither prognostication precisely. During Phase I, the correlation coefficient for the relationship between CEO pay and skill level was .68. In Phase II, the correlation coefficient dropped to .61. This change represented a drop of some 10%, arguably supporting Managerial Power’s prediction of an uncoupling of the relationship between executives’ contributions to corporate income and the pay they received.

On the other hand, the correlation between pay and performance remained fairly strong, supporting Optimal Contracting’s forecast. In addition, the correlation did not appear to decline as the rounds wore on, as might be expected under Managerial Power’s analysis. If directors rewarded power rather than skill, their recognition of the CEOs’ power should have grown over time. Yet, the correlation between pay and performance during the last round of Phase II was approximately .63, somewhat better than Phase II’s overall correlation of .61. The correlation data appear indeterminate.

**C. Boards’ Decisions to Terminate CEOs**

The degree to which boards repeatedly sought out the same CEO also provides evidence for Managerial Power’s validity. Optimal Contracting predicted that boards would shift CEOs from round to round in an effort to find and negotiate the best possible deal. Managerial Power, in contrast, forecast the development of relatively stable
relationships between boards and executives, in which they tacitly agreed to exchange the rewards within their respective authorities. CEOs were predicted to grant security and maximum salaries to directors in exchange for excessive compensation.

The predicted stability appeared to manifest. During Phase I, the pure market phase, CEOs switched from one corporation to another 77% of the time. In contrast, during Phase II, CEOs traded employers only 29% of the time. The results are compiled in Table 2.

**Table 2: CEO Changes in Employment**

<table>
<thead>
<tr>
<th>Shift</th>
<th>Phase I</th>
<th>Phase II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift</td>
<td>33</td>
<td>16</td>
</tr>
<tr>
<td>No Shift</td>
<td>10</td>
<td>40</td>
</tr>
</tbody>
</table>

Since the degree of freedom in Table Two is one, the critical value for $\alpha = .05$ is 3.841, and for $\alpha = .005$ is 7.879. The $\chi^2$ value of the data is 22.58, revealing an extremely high degree of statistical significance. There is virtually no chance that this data distribution would be produced by pure random chance. This result unambiguously supports the Managerial Power Hypothesis.

D. Director Termination and Compensation

Both hypotheses predicted CEOs would seldom terminate directors. Managerial Power, however, predicted there might be a few terminations—especially in the early rounds—as CEOs punished recalcitrant boards for failing to comply with their demands for excessive compensation. Table 3 compiles the number of directors fired by each corporation’s CEO in each round, along with the total number of rounds each corporation experienced at least one termination and the total number of corporations that experienced a termination in each round.

**Table 3: Director Terminations (Phase II)**

<table>
<thead>
<tr>
<th>Round</th>
<th>AA</th>
<th>BB</th>
<th>CC</th>
<th>DD</th>
<th>EE</th>
<th>FF</th>
<th>GG</th>
<th>HH</th>
<th>JJ</th>
<th>KK</th>
<th>LL</th>
<th>MM</th>
<th>NN</th>
<th>Total Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total Incidents:</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

---

89. See supra note 82 for a brief explanation of the Chi-Square measure of statistical significance.

90. See STERNSTEIN, supra note 83, at 194.
As both theories predicted, there were relatively few terminations. Chief executives had seventy opportunities to fire one or more directors, yet chose to exercise that power only eight times, and six of those terminations involved only a single director. Nine of the fourteen corporations’ CEOs never exercised their power to fire directors.

The firing incidents were not, however, particularly concentrated in the early rounds. Instead, with the exception of the fifth and (unknown to the participants) final round, termination incidents were fairly evenly spread, with two CEOs exercising their power in the first round, three in the second, one in the third, and two in the fourth. The absence of any terminations in the fifth round may indicate that Managerial Power correctly predicted that directors would learn the penalty of resisting executives’ desires for excessive pay, rendering further terminations largely unnecessary. Alternatively, the absence of fifth-round terminations may have been merely coincidence; the incidents of firings are too few in number to permit rigorous statistical analysis.

On directors’ compensation, Optimal Contracting predicted low director salaries in accord with the relatively small contribution to corporate profits made by directors, while Managerial Power predicted that directors would be paid the maximum salary in both phases. The results are compiled in Table 4.

### Table 4: Director Salaries

<table>
<thead>
<tr>
<th></th>
<th>Mean Salary Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHASE I:</strong></td>
<td></td>
</tr>
<tr>
<td>Round 1</td>
<td>3000</td>
</tr>
<tr>
<td>Round 2</td>
<td>4357.14</td>
</tr>
<tr>
<td>Round 3</td>
<td>4888.87</td>
</tr>
<tr>
<td>Round 4</td>
<td>4433.33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Mean Salary Paid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHASE II:</strong></td>
<td></td>
</tr>
<tr>
<td>Round 1</td>
<td>3000</td>
</tr>
<tr>
<td>Round 2</td>
<td>4362.5</td>
</tr>
<tr>
<td>Round 3</td>
<td>4821.21</td>
</tr>
<tr>
<td>Round 4</td>
<td>4428.57</td>
</tr>
<tr>
<td>Round 5</td>
<td>4857.14</td>
</tr>
</tbody>
</table>

Once director salaries were permitted to vary after Round One of each phase, they immediately approached the maximum of 5000 tickets per round, as predicted by Managerial Power. It is noteworthy, however, that during both phases, the directors sometimes received less than the maximum salary. During Phase II, CEOs set directors’ salaries and might for a variety of reasons decide to award less than the maximum compensation. For example, CEOs might desire to pay directors in proportion to their contribution, as predicted by Optimal Contracting, or to punish recalcitrant directors for refusing to increase CEO pay, as forecast by Managerial Power. During Phase I, however, directors determined their own pay. Why would any board vote itself less than the maximum permitted compensation?
The most likely response appears to be that some directors took their roles as corporate fiduciaries very seriously. Board members attempting to fulfill their responsibilities to their shareholders may have felt reluctant to grant themselves the maximum reward, knowing they were adding little value. The fact that three corporations always awarded themselves sub-maximum salaries, while the others—with the exception of two in round two, perhaps due to some early misunderstanding of the game—always awarded themselves the maximum, supports this thesis, as does anecdotal evidence from speaking with some of the participants.

If this explanation is correct, this rather altruistic behavior to some extent supports the Optimal Contracting Hypothesis. While none of the boards awarded themselves the negligible pay predicted by Optimal Contracting, the fact that any of them refrained from paying themselves the maximum permitted amount does accord with the general principle underlying the theory. As discussed above, the Optimal Contracting Hypothesis relies on directors to put shareholders’ interests ahead of their own. The willingness of a few directors to subvert their own interests to shareholders’ in this context demonstrates that the sort of altruistic behavior expected by Optimal Contracting is at least possible under some circumstances. The fact that all the boards apparently abandoned shareholders for their own interests in Phase II, however, may indicate that such altruism is not robust. These results seem to warrant further investigation into altruistic behavior by corporate directors.

To sum up the results, the model lends considerable support to the Managerial Power Hypothesis, particularly in the excessiveness of executive compensation, our core concern. As predicted by Managerial Power, executive compensation rose dramatically in the presence of managerial power, and exceeded excessive levels far more often than under pure market rules in Phase I. Also as Managerial Power forecast, CEOs remained with the same corporation to a far greater degree in Phase II, and CEOs generally chose to reward compliant directors with the maximum pay permitted. Board member terminations pointed weakly toward Managerial Power, subsiding only in the fifth and final round. The correlation between pay and performance supported neither hypothesis unambiguously, declining during Phase II as predicted by Managerial Power, but remaining fairly strong as predicted by Optimal Contracting.

VI. POTENTIAL CRITICISMS

While the results strongly support the Managerial Power Hypothesis—and undermine the Optimal Contracting Hypothesis—the model contains flaws that may weaken the conclusions. This section discusses these flaws and the validity of the results.

A. Nature of Subjects

One obvious criticism of an attempt to model real-world situations in a laboratory

91. See supra Part V.A (discussing this point).
92. See generally Dorff, supra note 14 (exploring the potential usefulness of psychological studies on altruism for the corporate governance context); Lynn A. Stout, On the Proper Motives of Corporate Directors (Or, Why You Don’t Want to Invite Homo Economicus to Join Your Board), 28 DEL. J. CORP. L. 1 (2003) (discussing altruism’s role in corporate board decisions).
setting is that the subjects consist of a different demographic group than those being modeled. Directors of large public corporations are typically chief executives or high-level officers of other large public corporations. Board members tend to be sophisticated, experienced business leaders in their late fifties.\textsuperscript{93} Moreover, they are overwhelmingly male.\textsuperscript{94} In contrast, the subjects of this study were second-year law students, with an average age of 27.\textsuperscript{95} Fewer than half the subjects were male,\textsuperscript{96} and few if any had substantial business experience.\textsuperscript{97}

These differences are significant and could affect the game’s results. Fifty-nine year old corporate leaders might well react differently from twenty-seven year old law students, though the particular differences in behavior would be difficult to predict. Certainly studies like this would possess more facial validity if corporate leaders were willing to volunteer their time to participate, or if sufficient funding were available to attract them as subjects. Neither scenario currently appears likely to materialize.

Despite these constraints, however, there are good reasons to believe that the subjects’ reactions are predictive of how real-world directors would behave. The subjects were second-year law students (spring semester) enrolled in a course in business associations. They had already received three (nearly four) semesters of graduate education aimed in part at training them to think analytically and dispassionately, much as experienced business people are urged to do. Moreover, they had studied in some detail the laws controlling the U.S. corporate governance system. On this issue, then, their knowledge may have approached or exceeded that of typical board members. Finally, the subjects’ incentives were designed to model closely those of real-world directors. Faced with similar incentives, people should behave similarly.\textsuperscript{98}

The nature of the subjects is the most important weakness of the modeling process. Although economic incentives can be duplicated to a large extent, and experiential differentials can be minimized through education, it appears impossible to know with certainty that the subjects reacted the way actual directors would react under the same conditions. Still, the subjects in this experiment were sufficiently similar in knowledge, training, and situation to their real-world counterparts to raise a strong inference that the study’s results are credible.

\subsection*{B. Subjects’ Incentives}

The results’ validity also depends on the degree to which the subjects’ incentives reflected those of real-world directors and chief executives. A possible weakness here is that, unlike real-world directors and chief executives, who are paid with money, the subjects were compensated with digital lottery tickets representing a chance to win 10,000 Westlaw Points. The lottery tickets had some real worth. Nevertheless, because

\begin{footnotesize}
\begin{itemize}
\item[93.] See Burns, supra note 59, at R7 (table).
\item[94.] Id. (reporting that 87\% of directors of S&P 500 companies are male).
\item[95.] This information was compiled from questionnaires submitted by the students on the first day of class, with approximately 83\% responding to the age question. Responses are on file with the author.
\item[96.] Approximately 47\% of the participants were male, based on class enrollment figures (on file with the author).
\item[97.] This information was compiled from the questionnaires described supra note 95.
\item[98.] See generally RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 4 (5th ed. 1998) (discussing how economics assumes people respond to incentives).
\end{itemize}
\end{footnotesize}
there were many tickets ultimately issued, and because the prize was worth only a few hundred dollars, the value of each ticket was quite small, on the order of a few tenths of a penny. In contrast, in the executive and director compensation context, the amounts at stake are many orders of magnitude larger, sometimes amounting to hundreds of millions of dollars. Since even the most successful participants in the study could expect to earn at most a few dollars (one million tickets were worth about $3), the students may not have felt the same drive to maximize their individual income as real-world executives and directors, whose decisions affect the distribution of tens of millions of dollars.

A reduced incentive might have two different effects on behavior. One possibility is that participants competed less fiercely. Because they cared less about the ultimate outcome, factors other than self-interest may have played an outsized role in decision-making. Under this theory, subjects would have been more willing to behave altruistically—or to attempt to secure reputation benefits by appearing to behave altruistically—toward shareholders than they would if more substantial benefits had been at stake. Directors may have forgone their own compensation to provide larger dividends to shareholders.

This theory seems inconsistent with the students’ behavior. During Phase I, most directors awarded themselves the maximum permitted salary, indicating that they valued lottery tickets more than any perceived reputation benefits from altruistic behavior toward the shareholders. There were a few exceptions, which may have been caused by the paucity of the incentives, but the vast majority of directors demonstrably valued the tickets. During Phase II, the directors again demonstrated that they valued the lottery tickets through their unanimous willingness to overcompensate executives in exchange for job security and higher pay. Every corporation overpaid its CEO at least twice, and the vast majority of contracts (73%) represented excessive compensation. Executives’ corresponding eagerness to accept such “bribes” from directors demonstrates that they also valued the tickets.

The second possibility is that subjects concluded that because the lottery tickets’ worth was so low, the shareholders stood to gain little regardless of the decisions made by the board. Even if the board behaved abstemiously in regard to its own compensation and parsimoniously in regard to chief executives’ pay, the net benefit to members of the larger student body—the shareholders—was likely to be negligible. Participants might therefore have thought it made sense to allocate most or all of the corporation’s income to executive and director salaries, since the resulting cost to shareholders would be essentially nil. The model might therefore have underemphasized the impact of directors’ willingness to fulfill their roles as good agents of the shareholders. In other words, the model may have failed to account properly for directors’ obedience to their fiduciary duties.

This thesis is troubling for two reasons. First, Optimal Contracting—which the model’s results appear to undermine—relies on directors’ respect for their fiduciary duties to overcome their self-interest. If the model inaccurately enfeebles directors’ fidelity to their duties, that flaw would render suspect any conclusions drawn from the data. Second, this thesis seems difficult either to prove or disprove. While some directors
apparently behaved altruistically toward their shareholders in Phase I (by paying themselves less than the maximum), the model does not contain any clear method of quantifying directors’ adherence to their fiduciary duties. Also, even if the model could measure the degree to which directors obeyed their fiduciary duties, no such measure exists in the real world. It would therefore be impossible to calibrate directors’ altruism precisely.

Both legal and cultural constraints might inspire directors to comply with their fiduciary duties. In the outside world, there are few real legal constraints on directors’ compensation decisions in public corporations, either in setting their own compensation or that of the CEO. The lack of such constraints in the model may therefore mirror actual conditions.

Challengers to compensation decisions must first overcome the difficult procedural hurdles involved in launching a derivative suit. Plaintiffs must either make demand on the board of directors to cause the corporation to launch the suit—a demand that will most likely be rejected since the directors would be deciding to sue themselves—or satisfy the requirements of demand futility. These requirements are difficult to meet. In Delaware, for example, to fall under the demand futility exception, a plaintiff must allege particularized facts that create a reasonable doubt that the directors are disinterested and independent or that the challenged transaction was otherwise the product of a valid exercise of business judgment.

Plaintiffs who succeed in demonstrating demand futility will still likely fail to obtain relief. Compensation decisions are evaluated under the business judgment rule, despite the apparent conflict of interest involved in directors setting their own pay and in directors subject to managerial power setting managers’ pay. As long as the board informed itself before acting, behaved in good faith, and was not interested in the decision (beyond the obvious conflict just mentioned), the decision will pass so long as it

---

99. I refer to the directors’ behavior as “altruistic” because in the model, there was no penalty for violation of fiduciary duties in the payment of directors’ salaries. This aspect of the model largely mirrors real life. While theoretically, a breach of fiduciary duty claim is available against directors who grossly overcompensate themselves, such claims rarely succeed in overcoming the many required hurdles. Plaintiffs face not only the difficult procedural requirements involved in derivative suits, but also, given the usual practice of obtaining shareholder consent to director and executive pay packages, the enormous obstacle of the business judgment rule. As former Chancellor Allen has stated, such claims, like the Loch Ness Monster, are so rare as to possibly be non-existent. Steiner v. Meyerson, No. 13139, 1995 WL 441999, at *5 (Del. Ch. 1995) (discussing waste claims but allowing breach of loyalty claims to proceed). But see Sanders v. Wang, No. 16640, 1999 WL 1044880 (Del. Ch. 1999) (denying a motion to dismiss a waste claim in an executive compensation case).

100. I limit my discussion of possible causes of altruistic behavior here to external causes, since these are likely to be easier for policymakers to affect. Some potential internal causes of altruistic behavior include, inter alia, morality, religion, and a variety of personality factors. See generally Dorff, supra note 14, at 857-77 (discussing factors that correlate with altruistic behavior).

101. See Dorff, supra note 14, at 838 (“Simply put, directors and executives of public corporations face little or no real threat of liability [for executive compensation decisions].”); ARTHUR R. PINTO & DOUGLAS M. BRANSON, UNDERSTANDING CORPORATE LAW 217 (1999) (“Executive compensation cases in publicly traded corporations are rarely successful.”).


103. See Brehm, 746 A.2d at 262 n.56.
is rational and not a waste of corporate assets. To meet the waste standard, the plaintiff shareholder must prove that the directors approved "an exchange that is so one sided that no business person of ordinary, sound judgment could conclude that the corporation has received adequate consideration." This standard sets a prohibitively high bar for any shareholder-plaintiff.

The model’s lack of legal penalties for directors who violated their fiduciary duties therefore was not a meaningful departure from the real world.

Cultural sources of restraint are far more difficult to evaluate, both within actual boards of directors and within the model. There exists no quantifiable evidence that American boards possess and perpetuate a culture that either promotes or denigrates obedience to fiduciary duties. Citing to the countless examples of appropriate board behavior proves no more than the rather overexposed counterexamples of Enron, WorldCom, Adelphia, etc. A discussion of cultural influences on board behavior would inevitably revert to the prior analysis of the similarities and differences between real-world directors and the second-year law students playing their roles in the model. The different cultural environments, like the differences between the two sets of individuals, are important to the validity of the results. But just as with those individual differences, the cultural distinctions seem inevitable in any modeling process, short of actual directors volunteering their time to participate in academics’ investigations, and the direction of their impact is at best uncertain.

C. CEO’s Impact

In the model, the skill of the CEO accounts for only five percent of corporate performance. This article makes no claim about the extent to which this percentage models reality; the true value could be much higher or much lower, and in all likelihood varies greatly from corporation to corporation and CEO to CEO. If CEOs’ abilities generated a significantly larger percentage of corporate results, the argument for high salaries would become much stronger, but efficient salaries should still correlate to performance and certainly not exceed the CEO’s contribution to corporate income. In addition, the use of corporate performance measures as a proxy for the management team’s success would be more justified if management played a larger role in creating that performance.

Neither argument, however, affects the validity of the experiment. Unlike the real world, in the model, CEOs’ impact on corporate performance—positive or negative—was objectively measured and transparent to all participants. Boards had the option of correlating executives’ pay to their individual impact on performance without the need for proxy measures such as profit growth or share price. Given that option, most boards seem to have paid CEOs in some proportion to their contribution in both phases of the

104. Id.
Boards might have reacted differently if CEO impact had been set as a larger determinant of corporate results. Perhaps boards would have baulked at rewarding CEOs beyond their contribution in the managerial power phase had CEOs’ contributions represented a much larger percentage of corporate profits. If so, such results might have rendered the impact of managerial power less apparent, in that pay might not have reached overtly excessive levels by exceeding CEOs’ contributions. It seems unlikely, though, that increasing the CEOs’ impact on corporate profits would have eliminated or even noticeably reduced the importance of managerial power on the compensation bargaining process. There is no apparent link between the magnitude of CEOs’ contributions and the importance of managerial power to the negotiation process. Still, it would be useful to repeat the experiment, changing CEOs’ impact on corporate performance to much higher percentages of corporate income.

D. Exogeneity of CEO’s Impact to Compensation Structure

A further possible weakness of the model is that corporate profits are entirely unrelated to management’s compensation structure. Under the Optimal Contracting Hypothesis, the primary purpose of executive compensation packages is to induce management to act in the shareholders’ interest: to work hard, manage the corporation well, take the appropriate level of risk, etc. A well-structured compensation package, by imbuing management with appropriate incentives, should result in better corporate performance. By severing this connection between compensation and performance, the model may have reduced the boards’ incentive to structure compensation packages efficiently and improperly skewed the results toward supporting the Managerial Power Hypothesis.

Although compensation packages in the model were not able to induce executives to work harder or initiate new programs, they retained a related function: the attraction and retention of skilled managers. The model created an active market in managerial talent, permitting corporations to replace their CEO with one from a pool of applicants with varying skill levels. Boards’ incentive to lure away talented managers was the promise (guaranteed in the model) of enhanced corporate performance. This process gave high-skill managers leverage to negotiate advantageous compensation agreements. Since the model did not attempt to measure the structure of compensation packages, but only their level and relation to performance, the absence of an incentive to negotiate efficient structures should not have impacted the results.

E. Transparency of Executive Skill Levels

A related critique is that chief executives’ skill levels were not only fixed but transparent. Real-world executives do not have their skill levels written on placards, as the model’s participants did. Instead, managerial talent must be deduced from observation of the manager’s behavior, the performance of business units under the manager’s control, and the manager’s educational background and experience. As a result, it is not generally possible for boards “in the wild” to correlate compensation

107. See supra Part V.B.
Does One Hand Wash the Other?

precisely with performance.

While boards may have some difficulty in judging managerial talent, this critique does not directly affect the model’s results. The model did not attempt to measure boards’ abilities to assess managerial talent. Rather, the goal was to examine whether managerial power impacted boards’ executive compensation decisions in an environment in which talent could be unambiguously assessed. Transparent skill levels should have facilitated an efficient labor market and provided the most favorable possible environment for validating the Optimal Contracting Hypothesis. The dramatic impact that managerial power had on compensation, even when executives’ skill was disclosed to all market participants, is very difficult to reconcile with the Optimal Contracting Hypothesis.

F. Loyalty to Fellow Student Stockholders

Directors and executives may have acted more altruistically toward shareholders because they were all students. Subjects playing directors and executives were, of course, also students, just as the shareholders were. Although directors and executives possessed the opportunity to earn many more lottery tickets than students who did not occupy those roles, the role allocation was largely a function of random chance (the assignment to a particular section of Business Associations), not individual merit. Decision-makers may therefore have empathized with the shareholders to an unusual degree. In addition, the students likely either knew many shareholders or at least believed that the shareholders had much in common with them.

This dynamic is unlike usual director-shareholder relationships, where most shareholders are dispersed, disaggregated, and, with the possible exception of institutional shareholders, effectively anonymous. Studies have demonstrated that individuals are more likely to behave altruistically toward people with whom they have much in common, especially when the potential altruists have some relationship with those in need of assistance.108

Although a risk of excessive altruism existed, it did not appear to manifest. In both phases, most directors and executives acted to maximize their own income, necessarily at shareholders’ expense. If altruistic impulses towards fellow student shareholders blunted participants’ self-interest, the effect is not apparent from the data.

G. Termination Sequence Regularity

During Phase II of the model, boards always made their executive hiring decision in each round before CEOs decided whether to retain the directors.109 This fixed order may have created strategic possibilities not present in the outside world. The model’s process

---


109. During Phase I, CEOs had no power to terminate directors.
does to some degree reflect actual directors’ vulnerability to CEOs, however, since real world directors are vulnerable only when up for re-election, at regular, predetermined intervals. If CEOs really do have the power to terminate board members, as the Managerial Power Hypothesis posits, it seems unlikely that the model created any particular strategic advantages for CEOs not present in reality.

**H. Size of Boards**

In the model, boards were very small, with only three directors per board. Real boards, however, are much larger. The average board size for S&P 500 companies is 10.9.\(^\text{110}\) Having fewer directors may have impacted the group’s dynamics in various ways. For example, the smaller size may have resulted in greater emphasis on consensus decision-making, collegiality, and conflict suppression. It may also have produced tighter bonds among board members and between the directors and the chief executive, perhaps resulting in an “us versus them” mentality vis-à-vis the shareholders. On the other hand, smaller groups may in some instances have magnified personality conflicts that could have been mediated through the presence of a larger group.

Although the model’s boards were considerably smaller than actual boards of directors, they were similar in size to compensation committees. Compensation committees of S&P 500 companies average approximately 4.5 members.\(^\text{111}\) Since compensation committees set the chief executive’s compensation in the first instance, the compensation committee may be the more appropriate institution to model if the goal is to understand how managerial pay is determined.

**VII. CONCLUSION**

Notwithstanding the caveats in the previous section, the experiment’s results strongly support the Managerial Power Hypothesis. Managerial power over directors dramatically impacted executive compensation. While further confirmatory work would be helpful and should be conducted, the existing evidence argues for serious investigation of Managerial Power’s policy agenda, finding changes in corporate governance law that will minimize chief executives’ power over their board members.

One such method that has received some attention recently is to foster competitive elections for directors. The SEC is in the process of proposing new rules that would permit large shareholders, under restricted circumstances, to force the corporation to include the shareholder’s slate of candidates for the board on the corporation’s proxy form.\(^\text{112}\) The current form of the proposal is rather timid, but the underlying notion is exciting. Competitive elections hold the promise of eliminating a major source of managerial power—the influence over the nomination process—and substituting an incentive to please major shareholders for the existing motivation to satisfy the CEO.

The experimental method should prove helpful in investigating the efficacy of this

---

110. See Burns, supra note 59, at R7 (table).
112. See Phyllis Berman, Open Elections? Not a great idea, say some chief executives, FORBES, Mar. 29, 2004, at 52A (noting that the proposed rule would allow some shareholders to propose their own candidates if more than 35% of shareholders withheld their approval of a director’s election).
and other suggested reforms. Since the results of this study established a correlation between managerial power and excessive compensation, we now have a metric for managerial power. New experiments should compare governance reform proposals, using the degree to which the proposals succeed in curbing excessive compensation as a measure of their success in reducing managerial power over directors.
Instructions for Phase One

1. **The Prize:** This is a game in which you will have the chance to earn a prize of 10,000 Westlaw points. These Westlaw points may be added to your current balance and traded in for valuable merchandise. The currency in this game is lottery tickets. Each lottery ticket represents the chance to win the prize. The more lottery tickets you accumulate, the greater your chances of winning the prize.

2. **Corporate Earnings:** Lottery tickets are derived from the earnings of corporations. In this game, the class is divided into fifteen corporations. Each corporation’s income will vary with each round based upon the corporation’s quality and the CEO’s quality.

   a) **Corporate Quality:** The corporation’s quality accounts for the vast majority of the corporation’s income. Quality of the corporation derives from various factors including good will of the corporation, the strength of the corporation’s employees, the corporation’s competitive position, the corporation’s product line, etc. The corporation will have a quality number of 0 – 95 which dictates the income that the corporation earns on its own, multiplied by 10,000 tickets. For example, if the corporation has an index number of 20, then it will add 200,000 tickets of income each turn. Neither the board of directors nor the CEO affects the corporation’s quality, nor will the quality change with the passage of time.

   b) **CEO Quality:** The CEO’s quality contributes much less to the corporation’s income than does the Corporate Quality. However, the board of directors can control this aspect of the corporate income. Each CEO will have a publicly known quality of 0 – 5. The CEO’s contribution to the corporation’s earnings consists of his or her quality score multiplied by 10,000 tickets. For example, a CEO with an index number of 5 will contribute 50,000 tickets per year to his or her corporation. The board of directors can affect the portion of the corporation’s income that stems from CEO quality by hiring a CEO with a higher quality rating. CEOs’ quality ratings will be displayed in front of their seats.

3. **Distributing Earnings:** How do you accumulate lottery tickets? Earnings from each of the corporations will be distributed as follows: salary to the CEO, salary to the directors, and dividends to the shareholders. Each corporation must have one CEO and a board of directors. The board of directors will consist of 3 members. The rest of the student body (including all students enrolled at [school name omitted], whether or not they are enrolled in this class) will be shareholders in each of the corporations and will receive dividends in the form of lottery tickets. Every member of the student body – including CEOs and directors – are equal shareholders of every corporation in the game, owning one share of each corporation. Shares cannot be traded or otherwise transferred, and additional shares cannot be issued. Note that more than one class will likely play this game.

   a) **CEO Income ➔ The CEO has no minimum or maximum salary cap. The board of directors sets the CEO salary in each round.**

---

113. Students were given only the Phase I instructions sheet before Phase I, and did not receive the Phase II instruction sheet until after Phase I had concluded.
2005] Does One Hand Wash the Other? 293

B) Director Income ➔ Each director earns a salary of 3,000 tickets for the first round. In subsequent rounds, the directors may change their salaries up to a maximum of 5,000 tickets/round by majority vote of the board.

C) Shareholder Income ➔ The shareholders will earn the dividends paid out by each corporation. In each round, the number of lottery tickets distributed as dividends will be the net income of the corporation, minus the CEO salary and the directors’ salaries. No tickets will be retained from round to round. Fractional tickets will be discarded.

4. Hiring & Firing Decisions:

A) General Guidelines: The board of directors hires the CEO of the corporation. In each round, every corporation must have a CEO and each CEO must have a corporation. The CEO will seek employment with a corporation by negotiating with the board of directors for his or her salary.

B) Changing Partners: In each round, the board may negotiate to keep its current CEO or attempt to hire a new one. Similarly, the CEO may seek employment with the same corporation or with a different one.

C) Majority Rule: All decisions of the board must be made by majority vote (two out of the three directors).

5. Negotiating the CEO’s Salary: All participants will engage solely in written negotiations. Each corporation and CEO will receive pre-printed written offer forms. The contestants will fill out the forms, explaining the terms of the offer, and will have them delivered to the offeree. Boards and CEOs have equal power to initiate negotiations with an offer. There are two types of offers:

Exploratory Offers (Yellow Forms): Exploratory offers do not commit the offeror. Offerors may make as many simultaneous exploratory offers to different offerees as they wish. The written exploratory offer must consist of the offered salary that the corporation will pay the potential CEO or the salary that the CEO requests from the corporation.

Firm Offers (Blue Forms): Firm offers commit the offeror until the firm offer is accepted or rejected. Offerors may therefore only engage in one firm offer at a time. Once that firm offer has been accepted, the negotiations for the corporation have ended for the year. On the other hand, if the firm offer is rejected, then the offeror is free to make another firm offer to a different offeree or may submit a new offer to the same offeree. Firm offers must be responded to immediately; you may not “sit” on a firm offer. Once both the CEO and the board have signed a Firm Offer sheet listing the same salary, the form should go back to the directors so they can fill out a Corporate Results Form.

Time for Each Round: Each round of offers will last until every corporation has hired a CEO, up until a maximum of 12 minutes. Time warnings will be called periodically. After the 12 minutes have elapsed, any corporation without a CEO will be fined 50,000 tickets per minute until a CEO is hired. Any CEO without a corporation will be fined 2500 tickets per minute until hired. Partial minutes will be rounded up for the purpose of fines.

Communicating Offers: The directors should not physically hand the written offers to the CEOs. Students assigned as runners will run the written offer forms between the parties. Runners may not communicate oral messages between CEOs and directors; all communications must be in writing. Runners who do communicate oral messages will be fined 1500 tickets per incident. The runners will be compensated at a fixed rate of 3000
tickets per round.

Length of Contracts: Each employment contract lasts only one round. A corporation and its CEO from the previous round may choose to continue to work together, but that decision must emerge from the usual bargaining process each round.

6. Attendance: All students must be present in class on the date of the game. If you do not plan to be present it is imperative that you let Professor Dorff know now.

7. Paperwork: At the end of each round, a board member of each corporation must fill out a Corporate Results Sheet, recording the board’s salary, and the CEO’s identity and salary for that round.

8. Order of Events: In each round (“year”), events will occur in the following order: The board negotiates with the CEO candidates to select the corporation’s CEO for that round and that CEO’s salary. A member of the board fills out a Corporate Results Sheet, recording the board’s salary, and the CEO’s identity and salary for that round. The Corporate Results Sheet must be turned in to Professor Dorff’s research assistants promptly at the end of each round.
Illustrations\textsuperscript{114}

Example 1 (Basic Income Calculation): Corporation A hires CEO Smedley. Smedley has a CEO Quality Index of 5, and Corporation A has a Corporate Quality Index of 63. If Corporation A agreed to pay Smedley 35,000 tickets as salary, and if Corporation A’s directors paid themselves 4000 tickets, how many tickets would be left over with which to pay dividends to shareholders?

Answer: 633,000 tickets. The corporation will earn 630,000 tickets because of its Corporate Quality Index and 50,000 tickets from its CEO’s Quality Index, for a total of 680,000 tickets. We then have to deduct its expenses, the salary paid to the CEO and the directors. 680,000 – 35,000 – 4,000 – 40500 = 633,000 tickets left over with which to pay dividends to the shareholders (633 shares per shareholder).

Example 2 (Effect of CEO): Suppose that after a series of negotiations, Corporation B is faced with a choice between hiring either CEO Excellent, with a CEO Quality Index of 5, or CEO Poor, with a CEO Quality Index of 1. Excellent demands 60,000 tickets in salary, while Poor is willing to settle for 9,000. Which CEO will maximize Corporation B’s income?

Answer: Hire Poor, even though Poor is a much worse CEO. Excellent brings in an additional 50,000 tickets in revenue, while Poor brings in only an additional 10,000 tickets in revenue. This difference would seem to argue in favor of hiring Excellent. But if Corporation B hires Excellent, it will have to pay Excellent 60,000 tickets, for a net decrease in income of 10,000 tickets (50,000 extra tickets – 60,000 tickets in salary = -10,000 tickets). On the other hand, if Corporation B hires Poor, it will only have to pay Poor 9,000 tickets, resulting in a net increase in Corporation B’s income of 1,000 tickets (10,000 extra tickets – 9,000 tickets in salary = 1,000 net tickets added). Clearly Corporation B is better off adding 1000 tickets to its income than subtracting 10,000 tickets. Note that this is just as true regardless of what Corporation B’s Corporate Quality Index is. Whether Corporation B earns 10,000 tickets per year from its Corporate Quality Index or 950,000 tickets per year, it is still better off hiring Poor. The only benefit conferred by a better CEO in this game is the increased income generated by the CEO’s CEO Quality Index.

Example 3 (Double Check on CEO Differential): Let’s try this again to make sure it’s clear. Suppose Corporation C, which has a Corporate Quality Index of 45, and Corporation D, which has a Corporate Quality Index of 85, each are choosing between CEO Very Good (CEO Quality Index of 4) and CEO Mediocre (CEO Quality Index of 3). If Very Good is demanding 35,000 tickets in salary, and Mediocre is demanding 28,000 tickets in salary, which CEO will maximize Corporation C’s income? If Corporation D is faced with the same choice, which CEO will maximize Corporation D’s income?

Answer: Very Good, for both. Very Good brings in an extra 40,000 tickets, and costs 35,000, for a net increase of 5,000 tickets per round. Although Mediocre only costs 28,000, he is not a bargain. Mediocre only brings in 30,000 extra tickets. When we subtract his 28,000 ticket salary, we still end up with an increase (unlike with Excellent of the previous example), but it’s an increase of only 2,000 tickets per round. Clearly both corporations are better off hiring Very Good. Again, the Corporate Quality Index is

\textsuperscript{114} The illustrations were reviewed orally with students in class, and were not distributed.
irrelevant to this decision.
Instructions for Phase Two

Summary of Changes

1. The CEO may fire all or some of the board members and choose their replacements.
2. The CEO sets the directors’ salaries, within certain limits.
3. Since each corporation must maintain 3 directors per round, there will be a pool of approximately a dozen unaffiliated directors from which the CEOs may hire replacements for the directors they have fired. Furthermore, in this round there will only be 15 corporations.

Rules

1. The Prize: This is a game in which you will have the chance to earn a prize of 10,000 Westlaw points. These Westlaw points may be added to your current balance and traded in for valuable merchandise. The currency in this game is lottery tickets. Each lottery ticket represents the chance to win the prize. The more lottery tickets you accumulate, the greater your chances of winning the prize.
2. Corporate Earnings: Lottery tickets are derived from the earnings of corporations. In this game, the class is divided into fifteen corporations. Each corporation’s income will vary with each round based upon the corporation’s quality and the CEO’s quality.
   A) Corporate Quality: The corporation’s quality accounts for the vast majority of the corporation’s income. Quality of the corporation derives from various factors including good will of the corporation, the strength of the corporation’s employees, the corporation’s competitive position, the corporation’s product line, etc. The corporation will have a quality number of 0 – 95 which dictates the income that the corporation earns on its own, multiplied by 10,000 tickets. For example, if the corporation has an index number of 20, then it will add 200,000 tickets of income each turn. Neither the board of directors nor the CEO affects the corporation’s quality, nor will the quality change with the passage of time.
   B) CEO Quality: The CEO’s quality contributes much less to the corporation’s income than does the Corporate Quality. However, the board of directors can control this aspect of the corporate income. Each CEO will have a publicly known quality of 0 – 5. The CEO’s contribution to the corporation’s earnings consists of his or her quality score multiplied by 10,000 tickets. For example, a CEO with an index number of 5 will contribute 50,000 tickets per year to his or her corporation. The board of directors can affect the portion of the corporation’s income that stems from CEO quality by hiring a CEO with a higher quality rating. CEOs’ quality ratings will be displayed in front of their seats.
3. Distributing Earnings: How do you accumulate lottery tickets? Earnings from each of the corporations will be distributed as follows: salary to the CEO, salary to the directors, and dividends to the shareholders. Each corporation must have one CEO and a board of directors. The board of directors will consist of 3 members. The rest of the student body (including all students enrolled at [school name omitted], whether or not they are enrolled in this class) will be shareholders in each of the corporations and will receive dividends in the form of lottery tickets. Every member of the student body – including CEOs and directors – are equal shareholders of every corporation in the game, owning one share of each corporation. Shares cannot be traded or otherwise transferred, and additional shares cannot be issued. Note that more than one class will likely play this
game.

A) CEO Income → The CEO has no minimum or maximum salary cap. The board of directors sets the CEO salary in each round.

B) Director Income → Each director earns a salary of 3,000 tickets for the first round. In subsequent rounds, the CEO of each corporation may change the directors’ salaries up to a maximum of 5,000 tickets/round and down to a minimum of zero tickets per round.

C) Shareholder Income → The shareholders will earn the dividends paid out by each corporation. In each round, the number of lottery tickets distributed as dividends will be the net income of the corporation, minus the CEO salary and the directors’ salaries. No tickets will be retained from round to round. Fractional tickets will be discarded.

4. Hiring & Firing Decisions:

A) General Guidelines: The board of directors hires and fires the CEO of the corporation. In this Phase, the CEO can also hire and fire the directors. In each round, every corporation must have a CEO and three directors. At the end of each round, the CEO will announce which of the directors (if any) will remain directors of the corporation the next turn. The CEO will then fill any empty board seats with candidates of the CEO’s choice from the pool of unaffiliated directors (runners). The CEO may also choose directors that have been fired by other corporations that round. After choosing the new directors, the CEO will announce the salary that directors will receive during the next round. Directors cannot bargain over their salaries; they will receive whatever salary the other directors of their corporation receive, as determined by the CEO of the previous round. Once the new board is in place, the next round will begin with the CEOs all seeking employment during with a corporation by negotiating with the boards for their salaries, just as in Phase One.

B) Changing Partners: In each round, the board may negotiate to keep its current CEO or attempt to hire a new one. Similarly, the CEO may seek employment with the same corporation or with a new one.

C) Majority Rule: All decisions of the board must be made by majority vote (two out of the three directors).

5. Negotiating the CEO’s Salary: All participants will engage solely in written negotiations. Each corporation and CEO will receive pre-printed written offer forms. The contestants will fill out the forms, explaining the terms of the offer, and will have them delivered to the offeree. Boards and CEOs have equal power to initiate negotiations with an offer. There are two types of offers:

- Exploratory Offers: Exploratory offers do not commit the offeror. Offerors may make as many simultaneous exploratory offers to different offerees as they wish. The written exploratory offer must consist of the offered salary that the corporation will pay the potential CEO or the salary that the CEO requests from the corporation.

- Firm Offers: Firm offers commit the offeror until the firm offer is accepted or rejected. Offerors may therefore only engage in one firm offer at a time. Once that firm offer has been accepted, the negotiations for the corporation have ended for the year. On the other hand, if the firm offer is rejected, then the offeror is free to make another firm offer to a different offeree or may submit a new offer to the same offeree. Firm offers must be responded to immediately; you may not “sit” on a firm offer. Once both the CEO and the board have signed a Firm Offer sheet listing the same salary, the
form should go back to the directors so they can fill out a Corporate Results Form.

**Time for Each Round:** Each round of offers will last until every corporation has hired a CEO, up until a maximum of 12 minutes. Time warnings will be called at 6 minutes, 2 minutes, and 1 minute. After the 12 minutes have elapsed, any corporation without a CEO will be fined 50,000 tickets per minute until a CEO is hired. Any CEO without a corporation will be fined 2500 tickets per minute until hired. Partial minutes will be rounded up for the purpose of fines.

**Communicating Offers:** The directors should not physically hand the written offers to the CEOs. Students assigned as runners will run the written offer forms between the parties. Runners may not communicate oral messages between CEOs and directors; all communications must be in writing. Runners who do communicate oral messages will be fined 1500 tickets per incident. The runners will be compensated at a fixed rate of 3000 tickets per round.

**Length of Contracts:** Each employment contract lasts only one round. A corporation and its CEO from the previous round may choose to continue to work together, but that decision must emerge from the usual bargaining process each round.

**6. Attendance:** All students must be present in class on the date of the game. If you do not plan to be present it is imperative that you let Professor Dorff know now.

**7. Paperwork:** At the end of each round, a board member of each corporation must fill out a Corporate Results Sheet, recording the board’s membership and salary, and the CEO’s identity and salary for that round.

**8. Order of Events:** In each round (“year”), events will occur in the following order:

A member of the new board fills out a Corporate Results Sheet, recording the board’s membership and salary, and the CEO’s identity and salary for that round.

The CEO decides which directors to retain, and replaces those the CEO has decided to terminate from the pool of unaffiliated directors.

The CEO announces the directors’ salaries for the following round.
APPENDIX B: SAMPLE LIST OF PRIZES

Premium Bag 5-Piece Luggage Set: 4,846 points
Leather Flapover Backpack: 6,000 points
Aiwa® Portable CD/MP3 Player: 6,450 points
Vivitar® Digital 1.3 MegaPixel Camera: 6,500 points
ALLCLAD® 7-Piece Emerilware™ Cookware Set: 6,922 points
Panasonic® Ultra Slim Progressive-Scan DVD Player: 7,000 points
Sony® Desktop Micro System: 7,000 points
Sharp 1.2 Cubic-Foot Stainless Steel Microwave Oven: 7,154 points
Tivoli® Portable Audio Laboratory (P.A.L.): 7,300 points
Panasonic® 2.4GHz Digital Cordless Phone: 7,800 points
Samsung® DVD Player: 8,200 points
Sony® SPIAR Wireless Speaker System: 8,658 points
Aurora® Brushed Stainless Cross-Cut Shredder: 8,846 points
JBL® 2-Way, 6-Inch Bookshelf Speaker: 9,200 points
Weber® Q™ Silver Table Top Gas Grill: 9,692 points
Panasonic® 2.4 GHz GigaRange Expandable Cordless Phone & Answering Machine: 9,750 points
Casio® 2.7” Handheld Outdoor LCD TV: 10,000 points
Coach® Man’s Classic or Ladies’ Hudson™ Watch: 10,000 points
JVC® DVD Player: 10,000 points
Palm® Pilot Zire™—B/W LCD: 10,000 points
Toshiba® 20” Color TV: 10,000 points
Yamaha® Acoustic Guitar: 11,000 points
SONY 13” COLOR TV: 12,712 points
Coach Soho Leather Large Hobo—Black: 12,831 points
Initial® Portable DVD Player with 4” Screen: 13,462 points
Fuji® 3.2 Megapixel FinePix 3 X Zoom Digital Camera: 13,825 points
Sony CLIÉ® Handheld: 14,000 points
Bose® VCS-30™ Series II Center/Surround Speaker Package: 15,000 points
Bushnell® Yardage™ Pro Tour Range Finder—Golf: 15,000 points
Coach Mini Signature Multi-Function Tote: 15,138 points
Bose® QuietComfort™ Acoustic Noise Canceling Headset: 15,500 points
Sony® DVD/VCR Combination: 15,500 points
Philips® 20” Flat Screen Stereo TV: 16,000 points
APPENDIX C: PRELIMINARY OFFER FORM

PRELIMINARY NEGOTIATION FORM

<table>
<thead>
<tr>
<th>ROUND</th>
<th>FROM:</th>
<th>TO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1ST PROPOSAL:</td>
<td>$</td>
<td>ACCEPT/REJECT:</td>
</tr>
<tr>
<td>COUNTER-PROPOSAL:</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>ACCEPT/REJECT:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2ND PROPOSAL:</td>
<td>$</td>
<td>ACCEPT/REJECT:</td>
</tr>
<tr>
<td>2ND COUNTER-PROPOSAL:</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>ACCEPT/REJECT:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3RD PROPOSAL:</td>
<td>$</td>
<td>ACCEPT/REJECT:</td>
</tr>
<tr>
<td>3RD COUNTER-PROPOSAL:</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>ACCEPT/REJECT:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4TH PROPOSAL:</td>
<td>$</td>
<td>ACCEPT/REJECT:</td>
</tr>
<tr>
<td>4TH COUNTER-PROPOSAL:</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>ACCEPT/REJECT:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th Proposal:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accept/Reject:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
APPENDIX D: FIRM OFFER FORM

FIRM OFFER FORM
WARNING: YOU MAY ONLY HAVE ONE FIRM OFFER FORM OUTSTANDING AT ANY GIVEN TIME!!!!
ROUND __________

<table>
<thead>
<tr>
<th>FROM:</th>
<th>TO:</th>
</tr>
</thead>
</table>

| 1ST FIRM OFFER AMOUNT: | ACCEPT/REJECT |
| $ | |

| 1ST COUNTER-OFFER | |
| $ | |

<table>
<thead>
<tr>
<th>ACCEPT/REJECT?</th>
</tr>
</thead>
</table>

| 2ND FIRM OFFER | ACCEPT/REJECT? |
| $ | |

| 2ND COUNTER-OFFER | |
| $ | |

<table>
<thead>
<tr>
<th>ACCEPT/REJECT?</th>
</tr>
</thead>
</table>

| 3RD FIRM OFFER | ACCEPT/REJECT? |
| $ | |

| 3RD COUNTER-OFFER | |
| $ | |

<table>
<thead>
<tr>
<th>ACCEPT/REJECT?</th>
</tr>
</thead>
</table>

| 4TH FIRM OFFER | ACCEPT/REJECT? |
| | |

<p>| | |
| | |
| | |</p>
<table>
<thead>
<tr>
<th></th>
<th>4th Counter-Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Accept/Reject?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>5th Firm Offer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Accept/Reject?</td>
</tr>
</tbody>
</table>

Final Agreement: $_________________________

APPENDIX E: CORPORATE RESULTS FORM

Corporate Results Sheet
Round:
Corporation:
Board Membership:
1.
2.
3.
Each director’s salary:
CEO’s identity:
CEO’s Quality Index:
CEO’s Salary:
## APPENDIX F: PHASE I (PURE MARKET) RAW RESULTS

<table>
<thead>
<tr>
<th>CORPORATION</th>
<th>AA</th>
<th>BB</th>
<th>CC</th>
<th>DD</th>
<th>EE</th>
<th>FF</th>
<th>GG</th>
<th>HH</th>
<th>II</th>
<th>JJ</th>
<th>KK</th>
<th>LL</th>
<th>MM</th>
<th>NN</th>
<th>OO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corp. Rating x 10,000</td>
<td>270,000</td>
<td>80,000</td>
<td>280,000</td>
<td>670,000</td>
<td>670,000</td>
<td>650,000</td>
<td>90,000</td>
<td>880,000</td>
<td>80,000</td>
<td>80,000</td>
<td>0</td>
<td>280,000</td>
<td>250,000</td>
<td>670,000</td>
<td>640,000</td>
</tr>
</tbody>
</table>

### ROUND 1

| CEO Quality | 2 | 1 | 2 | 5 | 2 | 3 | 5 | 3 | 3 | 1 | 1 | 4 | 2 | 2 | 5 |
| CEO Salary | 20,000 | 95,000 | 25,000 | 10,000 | 25,000 | 28,000 | 75,000 | 31,500 | 29,000 | 83,000 | 100 | 36,000 | 18,000 | 50,000 | 35,000 |
| BOD Salary | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 | 3,000 |
| Distrib. Per Share | 261 | 71.5 | 266 | 701 | 656 | 916 | 869.5 | 172 | 1 | 0 | 275 | 243 | 466 | 546 |

### ROUND 2

| CEO Quality | 3 | 4 | 3 | 5 | 2 | 5 | 2 | 1 | 2 | 1 | 5 | 2 | 3 | 1 | 2 |
| CEO Salary | 29,000 | 39,000 | 30,000 | 15,000 | 18,000 | 45,000 | 20,000 | 80,000 | 20,000 | 80,000 | 50,000 | 20,000 | 30,000 | 11,000 | 21,000 |
| BOD Salary | 5,000 | 4,000 | 5,000 | 3,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 0 | 5,000 | 5,000 | 5,000 | 4,000 |
| Distrib. Per Share | 256 | 69 | 265 | 696 | 657 | 640 | 935 | 867 | 165 | 0 | 265 | 235 | 454 | 527 |

### ROUND 3

| CEO Quality | 5 | 2 | 3 | 5 | 3 | 2 | 2 | 4 | 1 | 1 | 5 | 1 | 2 | 3 | 2 |
| CEO Salary | 30,000 | 19,500 | 30,000 | 17,500 | 32,000 | 28,000 | 21,000 | 39,000 | 30,000 | 40,000 | 9,000 | 20,000 | 30,000 | 20,000 |
| BOD Salary | 5,000 | 5,000 | 5,000 | 3,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 3,333 | 5,000 | 5,000 | 5,000 |
| Distrib. Per Share | 275 | 65.5 | 265 | 693.5 | 65,3 | 637 | 934 | 866 | 167 | 815 | 0.001 | 266 | 235 | 455 | 528 |

### ROUND 4

| CEO Quality | 4 | 3 | 5 | 5 | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | 5 |
| CEO Salary | 30,000 | 35,000 | 30,000 | 20,000 | 40,000 | 18,500 | 20,500 | 50,000 | 39,000 | 20,000 | 17,000 | 10,000 | 11,000 | 9,000 | 31,000 |
| BOD Salary | 5,000 | 5,000 | 5,000 | 3,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 |
| Distrib. Per Share | 256 | 60 | 265 | 691 | 656 | 636.5 | 934.5 | 845 | 166 | 815 | 1.5 | 265 | 234 | 456 | 550 |
APPENDIX G: PHASE II (MANAGERIAL POWER) RAW RESULTS

<table>
<thead>
<tr>
<th>CORPORATION</th>
<th>AA</th>
<th>BB</th>
<th>CC</th>
<th>DD</th>
<th>EE</th>
<th>FF</th>
<th>GG</th>
<th>HH</th>
<th>II</th>
<th>JJ</th>
<th>KK</th>
<th>LL</th>
<th>MM</th>
<th>NN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corp. Rating x 10,000</td>
<td>20,000</td>
<td>30,000</td>
<td>950,000</td>
<td>280,000</td>
<td>60,000</td>
<td>760,000</td>
<td>500,000</td>
<td>530,000</td>
<td>170,000</td>
<td>710,000</td>
<td>130,000</td>
<td>720,000</td>
<td>590,000</td>
<td>230,000</td>
</tr>
<tr>
<td>Round 1</td>
<td>CEO Quality</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>CEO Salary</td>
<td>9500</td>
<td>8000</td>
<td>40000</td>
<td>8000</td>
<td>40000</td>
<td>40000</td>
<td>39000</td>
<td>28000</td>
<td>41000</td>
<td>10000</td>
<td>30000</td>
<td>55000</td>
<td>51000</td>
</tr>
<tr>
<td></td>
<td>BOD Salary</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>Distrib. Per Share</td>
<td>11.5</td>
<td>23</td>
<td>921</td>
<td>273</td>
<td>671</td>
<td>692</td>
<td>523</td>
<td>160</td>
<td>701</td>
<td>321</td>
<td>706</td>
<td>340</td>
<td>222</td>
</tr>
<tr>
<td>Round 2</td>
<td>CEO Quality</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CEO Salary</td>
<td>20000</td>
<td>10000</td>
<td>70000</td>
<td>9000</td>
<td>47000</td>
<td>18000</td>
<td>40000</td>
<td>56000</td>
<td>22000</td>
<td>55000</td>
<td>40000</td>
<td>45000</td>
<td>30000</td>
</tr>
<tr>
<td></td>
<td>BOD Salary</td>
<td>5000</td>
<td>5000</td>
<td>4500</td>
<td>4000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>Distrib. Per Share</td>
<td>5</td>
<td>15</td>
<td>916.5</td>
<td>269</td>
<td>858</td>
<td>731</td>
<td>692</td>
<td>523</td>
<td>160</td>
<td>701</td>
<td>321</td>
<td>706</td>
<td>340</td>
</tr>
<tr>
<td>Round 3</td>
<td>CEO Quality</td>
<td>3</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>CEO Salary</td>
<td>35000</td>
<td>12000</td>
<td>70000</td>
<td>25000</td>
<td>51000</td>
<td>20000</td>
<td>40000</td>
<td>57000</td>
<td>25000</td>
<td>76500</td>
<td>50000</td>
<td>47500</td>
<td>10000</td>
</tr>
<tr>
<td></td>
<td>BOD Salary</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>Distrib. Per Share</td>
<td>0</td>
<td>13</td>
<td>915</td>
<td>260</td>
<td>854</td>
<td>735</td>
<td>685</td>
<td>508</td>
<td>150</td>
<td>628.5</td>
<td>296.5</td>
<td>697.5</td>
<td>341</td>
</tr>
<tr>
<td>Round 4</td>
<td>CEO Quality</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CEO Salary</td>
<td>21000</td>
<td>13000</td>
<td>80000</td>
<td>30000</td>
<td>60000</td>
<td>45000</td>
<td>35000</td>
<td>60000</td>
<td>46000</td>
<td>88000</td>
<td>45000</td>
<td>52500</td>
<td>15000</td>
</tr>
<tr>
<td></td>
<td>BOD Salary</td>
<td>3000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>4000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>Distrib. Per Share</td>
<td>0</td>
<td>12</td>
<td>905</td>
<td>255</td>
<td>845</td>
<td>740</td>
<td>680</td>
<td>505</td>
<td>152</td>
<td>617</td>
<td>300</td>
<td>692.5</td>
<td>330</td>
</tr>
<tr>
<td>Round 5</td>
<td>CEO Quality</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>CEO Salary</td>
<td>5000</td>
<td>13575</td>
<td>80000</td>
<td>30000</td>
<td>70000</td>
<td>36000</td>
<td>61000</td>
<td>48000</td>
<td>95000</td>
<td>47500</td>
<td>53000</td>
<td>17500</td>
<td>31000</td>
</tr>
<tr>
<td></td>
<td>BOD Salary</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
<td>5000</td>
</tr>
<tr>
<td></td>
<td>Distrib. Per Share</td>
<td>10</td>
<td>11425</td>
<td>905</td>
<td>255</td>
<td>835</td>
<td>735</td>
<td>685</td>
<td>504</td>
<td>147</td>
<td>610</td>
<td>297.5</td>
<td>692</td>
<td>327.5</td>
</tr>
</tbody>
</table>