

# REVERSE MONITORING: ON THE HIDDEN ROLE OF EMPLOYEE STOCK-BASED COMPENSATION

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*This Article develops a new understanding of equity-based compensation schemes, such as employee stock option plans. Current literature views such schemes as a measure aimed at motivating the recipient employees to work harder for the firm. Under that view, this method of remuneration either complements or substitutes for other measures used to monitor the performance of the recipient employees. In contrast, this Article proposes that recipient employees be viewed as potential monitors of other employees and that stock options (or similar types of compensation) motivate them to fulfill this task. This view has many applications and can shed light on persistent puzzles, including why there is sweeping use of stock ownership plans by many “new economy” firms. No junior employee at Microsoft or Intel can improve the value of her heavyweight employer to such a degree that it will make it worthwhile for her to work harder once stock options are offered. Nevertheless, given the sensitivity of the “knowledge industry” to leakage of its intellectual property, all employees can add much to the company’s value by standing on guard against such loss. If technology is both a vulnerable and critical asset for the organization, option recipients will be alert in protecting against infringement. Since not much effort needs to be exerted to monitor their peers and supervisors to prevent this significant harm, incentive compensations can easily motivate employees to perform their monitoring task. Many other applications of this new view that cannot be explained by the current literature are discussed in the Article.*

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## INTRODUCTION

The literature explains that broad-based employee stock option plans, as well as other types of stock-based compensation, are designed primarily to motivate employees to exert greater effort. This Article questions this traditional and widely accepted view and supplements it with another justification for such a type of compensation. Stock options “privatize” the firm’s monitoring task into the hands of its employees. Each employee equipped with stock-based compensation is motivated to monitor other employees—including that employee’s supervisor—to make sure her peers do not harm the firm and that they do their best to maximize its value. This view of options turns the traditional understanding on its head. Instead of emphasizing the role of options in alleviating the burden of monitoring recipient employees, the proposed view, which I term “reverse monitoring,” underlines the role of those employees as monitors of other employees.<sup>1</sup>

This view may shed light on several puzzles that the traditional literature does not answer in a satisfactory manner.<sup>2</sup> For one, it may explain why many

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1. In agency theory terms, and as shall be further discussed, this means that the costs associated with option grants to employees are monitoring costs and not bonding costs. See Michael C. Jensen & William H. Meckling, *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structures*, 3 J. FIN. ECON. 305 (1976).

2. Elsewhere I have discussed another untraditional role of incentive pay in a different context. See Sharon Hannes, *A Demand-Side Theory of Antitakeover Defenses*, 35 J. LEGAL STUD. 475, 494–95 (2006) (discussing the role of executive pay in the context of takeovers).

“new economy” firms grant across-the-board stock-based compensation.<sup>3</sup> The traditional account explains that efforts of employees in this industry sector are especially valuable but hardly measurable. It is doubtful, however, whether the contribution of the ordinary engineer at Microsoft has enough of an effect on the value of Microsoft stock for this argument to hold. In contrast, the reverse monitoring argument explains that Microsoft stock may, indeed, suffer salient damages if its employees tamper with or transfer its highly valuable source code or other proprietary intellectual property. Stock-based compensation provides a powerful incentive for the recipients to monitor their fellow employees against such behavior. And these employees have the ability to fulfill this monitoring task much more efficiently than any other, outside agent. In some cases, this view justifies granting options to many employees, not only to highly creative ones or those at the top of the pyramid. From this perspective, Intel’s longstanding policy of granting options to *all* employees is understandable and far from naïve.<sup>4</sup> Simply put, in many high-tech firms, option grants are one of many measures for preventing intellectual property leakage or sabotage.

One recent study clearly presents the challenge that broad-based employee option plans pose for the traditional literature:

However, many firms also offer firm-wide stock options and profit sharing plans that provide even less incentive than executive plans—after all, most workers can expect to reap a very minimal amount of personal gain from their contribution to firm value or profits. Given the free-rider problems associated with group compensation plans, *their prevalence is puzzling*.<sup>5</sup>

This description accurately reiterates and questions the commonly held rationale for option grants. Although every employee with stock options is expected to exert more effort at work due to the options, why would anyone cause herself discomfort based on the remote possibility that her modified behavior will substantially alter the value of the option grant? The picture changes dramatically if we instead view the recipient employee as a monitor herself and not as a target of monitoring by means of the option. No substantial effort is required of employees to monitor their peers, as their

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3. A “new economy” firm is usually defined as a firm from one of the following market sectors: computers, semiconductors, telephone equipment, or Internet-related industries. See, e.g., Christopher D. Ittner et al., *The structure and performance of equity grants to employees of new economy firms*, 34 J. ACCT. & ECON. 89 (2003).

4. Intel’s describes its program as follows:

At Intel, our employees own a stake in the company. Through Intel’s Stock Option Plan, full and part-time employees may be eligible to receive options based on their past performance and anticipated future contributions. Additionally, all employees are encouraged to enroll in the Stock Participation Plan, a program that offers employees an opportunity to purchase Intel stock at a price lower than the fair market value through convenient payroll deductions.

See Jobs at Intel—The Workplace, Employee Benefits and Development, <http://www.intel.com/jobs/workplace/benefits.htm> (last visited Nov. 29, 2006).

5. Paul Oyer, *Why Do Firms Use Incentives That Have No Incentive Effects?* 1 (July 2000) (unpublished manuscript), available at [http://papers.ssrn.com/abstract\\_id=237917](http://papers.ssrn.com/abstract_id=237917) (emphasis added).

working interactions allow them easily to observe their fellow employees. In contrast to the literature's paradigm of options overcoming recipients' natural resistance to exerting greater effort, peer monitoring is almost costless and requires only awareness. It is therefore hardly surprising that most new economy firms arrange the working environment in an open floor plan, as open spaces and option grants are complementary measures. Even if employees handle especially valuable and sensitive information, the employer has no need for sophisticated surveillance techniques, since the employees, armed with options, are always watching their peers on the firm's behalf. It is hard to imagine anyone in a better position to fulfill this mission, and because their explicit duties do not include this task, it is wise to give them an incentive to do so in the form of options. Ironically, options cause employees in these firms to work harder, not because (as is commonly thought) they consider themselves owners, but because their peers are watching and they care.

Moreover, in many new economy firms, almost any employee can cause considerable damage to the firm by way of breach of trust or otherwise tampering with the firm's intellectual property. This harmful potential is usually much more significant than any beneficial potential that one employee bears, as one rotten employee can spoil the achievements of many others. This reality underscores the use of options as a monitoring device. If a malicious or untrustworthy employee wishes to harm the firm, it is unlikely her option grant will cause her to reconsider. The value of the option grants of her peer employees, however, could drop substantially if she were to carry out such a scheme. This causes her peers to be alert to the possibility of such an occurrence. When an employee becomes cause for concern, other employees (including those usually supervised by her) will quickly report her to eliminate the danger she poses. Altogether, the proposed view of option grants tilts both sides of the classic equation. On the one hand, employees need exert almost no effort in monitoring their peers, especially if the working environment is arranged transparently. On the other hand, peer monitoring can prevent much damage to and leakage of valuable information to competitors. Thus, a medium-sized option package that cannot motivate an employee to work harder can easily motivate her to monitor. As we shall see below, recent empirical studies that refute the classic view of option grants as an incentive device correspond perfectly with the argument presented in this Article.

The reverse monitoring theory has additional important applications that deserve further attention and will not be developed at length in this Article. First, the proposed approach explains why stock-based compensation is justified for key officers in concentrated-ownership enterprises. Resembling the argument above, it is doubtful that these grants are the optimal manner to motivate these officers to exert greater effort. After all, in a concentrated-ownership firm, in contrast to a diffused-ownership firm, the entity has a controller who can reward or sanction the executive officers directly, without need for the crude measure of options. The reverse monitoring theory suggests an alternative explanation. Equipped with options, key officers

guard against expropriation by the controlling shareholder of the entity, although they must do so in a covert manner so as to prevent the controller's revenge. Concentrated-ownership firms with this type of compensation structure should be able to win the trust of institutional investors more easily. Given such a compensation scheme to her officers, the controller is more likely to pursue the interests of all shareholders, rather than her own agenda. This explanation sheds light on why equity-based compensation is on the rise outside U.S. borders, where firm ownership is commonly concentrated (and self-dealing by the controller is a major issue), as well as in U.S. firms with controlling shareholders

A second important application relates to gatekeepers. Equity-based compensation for gatekeepers is an attractive measure from the reverse monitoring perspective. However, such measures can be tricky. While on the one hand, it will motivate gatekeepers to monitor some of management's actions (such as with regard to self-dealing transactions), it may on the other hand, also exacerbate other problems (such as accounting fraud). Some checks and balances are therefore necessary if equity-based compensation is to effectively reward gatekeepers.<sup>6</sup> To these two important applications of the reverse monitoring approach and a few others I will return in Part IV before concluding the discussion.

The Article progresses as follows. Part I starts out by discussing the proliferation of executive and broad-based stock option plans (and other equity-based compensation) in the United States. Thereafter, the Part briefly describes the main criticism against the current trends in executive compensation and shows that it does not hold for broad-based stock option plans. Part II discusses the non-incentive based justifications given in the literature for this trend and the reasons why these explanations are questionable. Part III presents the idea of reverse monitoring and how this approach can shed light on recent empirical findings that challenge the classic incentive-based view of equity-based compensation. Part IV suggests expanding the discussion to equity-based compensation for executives in public firms with a controlling shareholder, to gatekeepers, to employees in partially privatized firms, and to employees of pre-IPO ventures. The Conclusion wraps up the discussion and relates it to the literature about U.S. executive compensation.

#### I. THE PROLIFERATION OF EXECUTIVE AND BROAD-BASED ESOPs IN THE UNITED STATES

Most of the literature on employee stock ownership plans ("ESOPs") focuses on executive compensation.<sup>7</sup> Given the extraordinary features of these

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6. For a recent discussion of rewards to gatekeepers, see Assaf Hamdani & Reinier Kraakman, *Rewarding Outside Directors*, 105 MICH. L. REV. (forthcoming 2007).

7. See, e.g., THE ECONOMICS OF EXECUTIVE COMPENSATION (Kevin F. Hallock & Kevin J. Murphy eds., 1999) (reporting a surge in the number of papers that discuss executive compensation in the 1990s).

plans (and perhaps also the high profiles of the executives involved), this is hardly surprising. Much has changed since Jensen and Murphy first made their famous claim in 1990 that American CEOs are “paid like bureaucrats,”<sup>8</sup> and in the last fifteen years the total compensation of top executives has more than tripled.<sup>9</sup>

This dramatic rise in executive compensation was due at least in part to the striking increase in option grants. While in 1985 the value of options granted was only 8% of the average CEO’s total compensation,<sup>10</sup> from 1992 to 1998 the options’ value rose from 25% to 40%,<sup>11</sup> peaking in 2000 at 51% of average total compensation.<sup>12</sup> Moreover, while in 1980 only 57% of top executives owned options in their firm, this number had risen to 87% by 1994;<sup>13</sup> in 1999 alone 94% of the largest companies granted options to their top executives.<sup>14</sup>

However, and notwithstanding the high-profile discussion on managerial pay, equity-based compensation is certainly not a phenomenon unique to top executives. The lion’s share of equity-based compensation goes to mid-level employees. In a random sample of 1000 firms that filed proxy statements with the SEC in 1999, 48.9% had adopted broad-based stock option plans in 1998.<sup>15</sup> Among those firms making broad use of stock-based compensation

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8. Michael C. Jensen & Kevin J. Murphy, *CEO Incentives—It’s Not How Much You Pay, But How*, HARV. BUS. REV. May–June 1990, at 138, 138 (reviewing U.S. executive compensation in the period of 1969 to 1983); cf. Brian J. Hall & Jeffrey B. Liebman, *Are CEOs Really Paid Like Bureaucrats?*, 113 Q.J. ECON. 653, 655 (1998) (reviewing compensation practices of the 400 largest public firms and concluding that executives are no longer paid like bureaucrats and that pay is linked to performance).

9. See Brian J. Hall & Kevin J. Murphy, *The Trouble with Stock Options*, 17 J. ECON. PERSP. 49 (2003) (reporting and discussing executive option grants).

10. Linda J. Barris, *The Overcompensation Problem: A Collective Approach to Controlling Executive Pay*, 68 IND. L.J. 59, 64 (1992) (presenting results of an empirical study among 800 public firms).

11. Brian J. Hall & Kevin J. Murphy, *Optimal Exercise Prices for Executive Stock Options*, 90 AM. ECON. REV. 209, 209 (2000); see Tod Pery & Marc Zenner, *CEO Compensation in the 1990s: Shareholder Alignment or Shareholder Expropriation?*, 35 WAKE FOREST L. REV. 123, 131 (2000); see also Kevin J. Murphy, *Politics, Economics, and Executive Compensation*, 63 U. CIN. L. REV. 713, 719 (1995) (reviewing executive compensation practices among 1000 large public firms and observing that options accounted for 23% of executive total compensation, averaging \$1.3 million for each of the five most highly paid executives).

12. Kevin J. Murphy, *Explaining Executive Compensation: Managerial Power versus the Perceived Cost of Stock Options*, 69 U. CHI. L. REV. 847, 848 (2002) (discussing growth in executive compensation).

13. Hall & Liebman, *supra* note 8, at 663.

14. Brian J. Hall & Kevin J. Murphy, *Stock options for undiversified executives*, 33 J. ACCT. & ECON. 3, 4 (2002) (reviewing executive compensation in the largest 500 U.S. firms); see also Marcel Kahan, *The Limited Significance of Norms for Corporate Governance*, 149 U. PA. L. REV. 1869, 1888 (2001) (reporting that 94% of a sample of 250 large public firms used stock option compensation, in 1996, in a sample of 250 large public firms, 90% of the companies used stock option compensation).

15. Paul Oyer & Scott Schaefer, *Why Do Some Firms Give Stock Options to All Employees? An Empirical Examination of Alternative Theories* 6–9 (Nat’l Bureau of Econ. Research, Working Paper No. 10222, 2004), available at <http://www.nber.org/papers/w10222>. An ESOP was defined for the purposes of the study as broad-based if it granted all employees, excluding the 10% most highly

beyond the executive tier, the new economy firms from industries based on knowledge are highly overrepresented. Whereas these firms represent only 16.2% of the entire sample in number, they account for 26.2% of the sample firms with broad-based plans and only 6.6% of firms that grant options mainly to their executives. These significant findings—that many firms issue options to many employees and that new economy firms do so more than other firms—present a challenge to the existing literature, but are easily reconcilable with the reverse monitoring argument. Before we progress to this explanation and the fact that additional empirical findings seem to corroborate it, a few words are in order about the current criticism of stock options for top executives. The point here is twofold. First, as we shall see, most criticism about executive compensation arrangements stems from the power and tendency of executives to tilt the design of their compensation in their own favor. This criticism is irrelevant to compensation schemes of lower level employees, since they certainly lack such power. Second, even the harshest critics of current executive compensation structures do not argue against the principle of using ESOPs, which are the compensation schemes advocated in this Article.

In a recent book, which has received much attention in the media and in academia, Lucian Bebchuk and Jesse Fried argue that executive compensation in the United States is structured for the benefit of managers and is inimical to shareholders.<sup>16</sup> If this criticism is justified and it extends to broad-based ESOPs as well, then this Article's quest to uncover the benefits of ESOPs to employers may well be moot. Upon brief scrutiny, however, this line of criticism is revealed to be irrelevant to our discussion. Bebchuk and Fried argue, in short, that top executives, especially CEOs, have considerable power to intervene in setting compensation, which leads to less-than-optimal contracting results. The result is too much pay without enough sensitivity to firm performance, accompanied by many inefficient arrangements that provide unnoticed "stealth" compensation to managers. The use of options and similar compensation arrangements, goes the argument, does not really serve the purpose of motivating managers, but is an excuse to pay them more.

On its face, this line of criticism does not apply to broad-based ESOPs. Mid-level employees have no special power in setting their own compensation, and firms have no incentive to compensate inefficiently. If the pay structure for these employees is inefficient, both the firm and employees can do better by improving that pay structure. And since option grants that fluctuate in value impose considerable risk on the recipient employees, there

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paid employees, at least 1% of the firm's outstanding share capital in one year. Because detailed information in securities disclosures is available only for the five highest-paid workers, the above calculation entails certain assumptions. *Id.* at 7.

16. LUCIAN BEBCHUK & JESSE FRIED, *PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISE OF EXECUTIVE COMPENSATION* (2004) (criticizing manager pay practices and offering reform proposal). *But see* John E. Core et al., *Is U.S. CEO Compensation Inefficient Pay Without Performance?* 103 MICH. L. REV. 1442 (2005) (reviewing BEBCHUK & FRIED, *supra*) (arguing against Bebchuk and Fried's major points and proposals).

must be compelling justification to use them; otherwise firms could use conventional pay, which would allow them both to pay less and to impose less risk on the workers, leaving both parties better off. Moreover, accepting Bebchuk and Fried's criticism of the current structure of executive pay does not require the conclusion that equity-based compensation is an undesirable measure. In fact, this measure, when structured correctly, is highly recommended by the authors:

*The managerial power approach does not question the desirability of using options to compensate executives.* Options provide managers with greater incentive to create shareholder value, and thus the use of options in executive compensation might well be beneficial to shareholders. Rather, the managerial power approach focuses on whether the magnitude and design of a particular option-based pay package [are] close to that which would arise under optimal contracting.<sup>17</sup>

The conclusion of this discussion therefore allows us to continue to analyze the concept of broad-based ESOPs without being affected by the recent criticism of executive ESOPs.<sup>18</sup>

## II. NON-INCENTIVE-BASED JUSTIFICATIONS FOR THE ADOPTION OF ESOPs ON A BROAD BASIS

We saw above that the criticism directed at executive option plans is not applicable to option plans for ordinary employees. Moreover, the empirical literature reveals that the outcomes of such broad-based ESOP adoption are highly favorable to shareholders of the adopting firms. Firms that broadly disperse stock options to employees enjoy better economic performance, in various measures, than their non-granting peer firms.<sup>19</sup> Further analysis shows that option grants bear a statistically significant positive influence on the market value of option-adopting firms.<sup>20</sup> What benefits, then, do broad-based ESOPs produce to counter the costs of the expensive measure? While the most common answer is that ESOPs overcome employees' free-riding and give them an incentive to exert additional efforts at work, this Article argues that this incentive is not likely to emerge in practice and that the answer to the question therefore lies in another type of incentive that stock options generate. But before discussing the flaws of the common incentive-based argument and my proposed alternative, this Part of the paper will

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17. Lucian Arye Bebchuk et al., *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751, 792 (2002) (emphasis added).

18. The discussion should, however, affect the academic discourse regarding executive pay, a point to which I return in the Conclusion.

19. See, e.g., Ittner et al., *supra* note 3 (measuring success of ESOPs against firms' stated objectives); James C. Sesil et al., *Broad-based Employee Stock Options in U.S. 'New Economy' Firms*, 40 BRIT. J. INDUS. REL. 273 (2002) (measuring differences in financial outcomes for firms with and without broad-based ESOPs).

20. Timothy B. Bell et al., *The Valuation Implications of Employee Stock Option Accounting for Profitable Computer Software Firms*, 77 ACCT. REV. 971 (2002).

consider other non-incentive-based justifications for stock option plans. I briefly present each justification and discuss certain reservations that can be raised with regard to these justifications, although this Article's argument can in fact complement each of the justifications.

#### A. Retention

A commonly-echoed argument in the literature is that options are "golden handcuffs," helping firms preserve their workforce and prevent attrition. Options undoubtedly do have this quality, as they usually vest gradually, normally along a four-year period, which makes it worthwhile for workers to maintain their positions at the firm. However, this argument does not explain the superiority of options over other forms of long-term compensation. Option grants involve risks, including factors beyond the firm's boundaries and control; thus, if retention is the firm's only concern, a fixed long-term bonus plan (or one that is tied to individual employee performance) seems more suitable. The prevalent retention argument, therefore, does not explain why option grants, as a specific type of deferred compensation, are the best-suited tool for employee retention.

There is a more sophisticated version of the employee retention argument, however. Stock prices in an industry and its labor market conditions are often correlated. When stock prices soar in an industry, employers are typically short of workers, and vice versa. Long-term option grants automatically index employees' deferred compensation value to their outside employment opportunities. Costly negotiations and adjustments of contracts are therefore saved by the fact that the inflated value of the option grant prevents attrition when conditions for employees improve in the market. Interestingly, this sophisticated version of the employee-retention justification has some empirical backing. The authors of one study showed that fluctuations in salaries in certain markets are accompanied by correlating fluctuations in the value of mid-sized option grants in the same markets, thus saving the burden and cost of adjusting wages.<sup>21</sup>

While I have no doubt that a compensation package containing options assists in employee retention, I think that to argue that this is the objective of granting options is to miss the point. Although the value of options is influenced by macroeconomics and industry-wide factors, a distinct feature of options is that they primarily reflect the performance of the issuing firm. If the main concern of employers were indexing compensation to outside employment opportunities, salaries could be indexed to industry-level indicators. Therefore, for a full picture of the rationale for the extensive use of options in the market, a theory directly connecting the employee and the issuer-employer is necessary.

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21. Oyer & Schaefer, *supra* note 15, at 28–32.

### B. Financing Constraints

Another common and extensively-examined explanation for the use of ESOPs maintains that cash-constrained firms offer stock as compensation in lieu of raising funds in a more traditional fashion. While this argument is intuitively very compelling, it has limited empirical backing. One study seeking empirical support for this argument looked for a link between ESOP usage and a few different measures of financial constraint. The study revealed that firms that grant options have more accumulated losses, but it could not find any correlation between option grants and other measures, such as dividend payouts.<sup>22</sup> Other studies showed findings that were even less favorable to the financial constraints explanation. One study looked for a link between ESOP usage and cash-flows per employee or available-cash-per-employee as measures of financial constraints in new economy firms and concluded that there is “no evidence that cash constrained new economy firms make greater use of equity-based compensation.”<sup>23</sup> This finding is especially problematic for the financial-constraints argument since the intuition is that many new economy start-ups issue ESOPs in lieu of paying salaries because they are cash constrained. Finally, in relation to non-executive grants, which are especially interesting for the reverse monitoring argument, one study found that they are positively related to high cash levels and unrelated to several factors of cash constraints and financial distress. This study concluded that “[t]hese findings cast doubt on the hypotheses that option grants are motivated by asymmetric information and cash constraints.”<sup>24</sup>

But putting aside empirical findings, it is common knowledge that heavyweight new economy firms such as Intel, Microsoft, IBM, Dell, and many others use stock-based compensation extensively. Therefore, even if there is much appeal and sense to the financial constraints justification, it surely does not tell the entire story of employee stock options.

### C. Sorting

The next explanation for broad-based employee stock ownership plans is the sorting argument, namely, that firms are able to sort out the most suitable employees by means of incentive pay packages. Traditional sorting arguments suggest that firms offer incentive packages to attract the employees who can best contribute to firm value.<sup>25</sup> In its simple form, however, this

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22. Simi Kedia & Abon Mozumdar, Performance Impact of Employee Stock Options (Jan. 2002) (unpublished manuscript), available at [http://papers.ssrn.com/abstract\\_id=304188](http://papers.ssrn.com/abstract_id=304188).

23. Ittner et al., *supra* note 3, at 108.

24. Nittai K. Bergman & Dirk Jenter, *Employee Sentiment and Stock Option Compensation* 7 (MIT Sloan Research, Working Paper No. 4504-04, 2005), available at [http://papers.ssrn.com/abstract\\_id=587426](http://papers.ssrn.com/abstract_id=587426).

25. See Edward P. Lazear, *Output-Based Pay: Incentives, Retention or Sorting?* (Inst. for the Study of Labor, Working Paper No. 761, 2003), available at <http://papers.ssrn.com/abstract=403900> (positing a model in which firms cannot distinguish between the types of work applicants and there-

type of argument assumes that a single employee can improve the firm market value to such a degree that it is even worthwhile to design a compensation scheme that involves so much uncertainty from the point of view of the employee (and therefore so much expense to the employer who has to compensate the employee for the risk).<sup>26</sup> Since the validity of this assumption is questionable, as I will elaborate in my discussion of incentives considerations, researchers have formulated and tested more nuanced sorting arguments.<sup>27</sup>

Under the more sophisticated models of sorting, employees are heterogeneous in their beliefs regarding the firm's prospects. Hence, the corporation will attract the most optimistic employees by offering stock compensation. The firm can benefit from this practice because it enables the firm to reduce its overall compensation expenses. If "optimistic" employees value the firm's stock options above the market price, then firms may pay less by offering them stock, as opposed to traditional pay packages. This argument does not depend on the assumption that each sorted employee believes that she alone can significantly drive up the market value of the firm's shares. Rather, it is necessary only for some employees to believe in the specific prospects of the employer beyond the general belief prevalent in the marketplace. Moreover, if we make the additional assumption that the most optimistic employees are also the most suitable employees, given their belief in the future of the firm, then additional benefits to the firm ensue from hiring able employees. Thus, stock-based compensation, under this sorting argument, enables firms to attract employees who are highly enthusiastic about the firm's future by offering them a pay package that falls below its cash equivalent on the stock market.

The researchers who formulated this argument tested its plausibility against current statistics. The main problem with this argument is the high risk costs associated with stock-based compensation. Risk-averse employees discount the value of their pay package due to the volatility of share prices on the stock exchange, which may outweigh the benefits mentioned above. After assessing the possible effects and running a computerized simulation, the authors tried to match the sorting argument with the existing data and concluded as follows:

Our calculations here indicate that, holding the employee's risk aversion constant, firms with lower stock volatility can more efficiently use stock options. Firms in the NCEO *sample* tend, however, to have very high volatilities. The fact that high-volatility firms use options is consistent with sorting only if these firms hire a selection of very risk tolerant employees,

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fore attract employees who can contribute the most by tying the offered pay to the employee's performance).

26. The risk stems from the volatility of the share prices on the stock exchange, which for a risk-averse employee can easily outweigh any sorting benefit asserted under the traditional argument discussed in the text.

27. See, e.g., Oyer & Schaefer, *supra* note 15, at 11–12, 24–28.

if the firm can locate extremely optimistic employees, or if optimistic employees are significantly more productive.<sup>28</sup>

As expressed in the above passage, the finding that the most volatile firms are those that use stock-based compensation does leave some room for the sorting hypothesis, but it also requires adding highly restrictive assumptions. At the very least, these qualifications raise doubts whether firms can afford to design compensation schemes that are effective only for highly optimistic and risk-tolerant employees. Moreover, the authors did not explain why less volatile firms that could utilize the same compensation scheme efficiently do not use it as often. Most importantly, and on the theoretical level, attracting optimistic employees by granting them overvalued shares seems, to me, to be an adverse practice. Although some compensation costs are minimized at the time of the options grant, the firm will have to cope with its highly disappointed employees when the stock options vest and the employees eventually realize their rash optimism. Because a firm must maintain a good relationship with its workforce over time, I doubt the wisdom of attracting employees by taking advantage of their optimism. Hence, even if firms could underpay by using subjectively overvalued equity, it does not follow that this practice is desirable. It is also unproven that the objective value of stock or an options grant to employees falls short of its cash equivalent. Thus, if stock ownership plans sort optimistic employees and thus economize on some compensation costs, it seems to me that this is a by-product of these remuneration measures and not their main aim or consequence.

#### D. Accounting Considerations

Until recently, employee stock option plans received favorable accounting treatment. Firms could generally elect not to recognize pay in stock options as an expense, although the value of the stock option grant had to be disclosed to the public.<sup>29</sup> Thus, firms were able to boost their profits by using options instead of plain-vanilla salaries. However, if the stock market considers the entire disclosure and not only the financial statements, share prices should not be affected by the artificially inflated profits. Interestingly, there are some empirical findings that “call[] into question whether investors correctly assess the effect of employee stock options on . . . firms’ value,”<sup>30</sup> and at the very least, it is unclear precisely how stock prices incorporate option grant information.<sup>31</sup> Hence, if investors can be tricked to some extent

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28. *Id.* at 27 (emphasis added).

29. Hall & Murphy, *supra* note 9, at 53 (“[T]here is usually no accounting expense recorded for options either at time of grant or exercise.”).

30. Bell et al., *supra* note 20, at 974.

31. For empirical assessments of options’ value disclosure on market prices, see David Aboody, *Market valuation of employee stock options*, 22 J. ACCT. & ECON. 357 (1996); David Aboody et al., *SFAS No. 123 Stock-Based Compensation Expense and Equity Market Values*, 79

by evading recognition of the expense of stock options, the accounting treatment may be a cause of the expansion in stock-option pay. Moreover, this favorable accounting treatment might be a contributing factor in the stock-option trend even if managers naively believe that the market can be fooled or if their own pay is linked to the firm's accounting performance and not to the market value of the shares. Finally, note that, prior to December 2004, accounting standards required firms to write option grants as an expense if the strike price of the option was below the price of the underlying share of the firm on the stock exchange at the date of the option grant. Nevertheless, for a long period many firms were able to illegally circumvent this requirement by retroactively reporting as if they granted options on a date when the price of the share was extremely low—a practice notoriously known as "backdating." This illegal maneuver, constituting securities fraud, seemingly enhanced the favorable accounting treatment of ESOPS.<sup>32</sup>

However, it is doubtful whether favorable accounting treatment can explain the prevalence of stock-based compensation. Given that employees tend to be risk-averse, compensating them with stock-based pay, the value of which depends on the uncertain movement of the market, is a very expensive measure.<sup>33</sup> If the entire maneuver is aimed at artificially inflating profits and camouflaging expenses, then firms with solid corporate governance would avoid paying more in options to compensate for the risk involved from the employees' perspective. However, empirical research reveals that corporate governance is not weaker among option-friendly firms than

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ACCT. REV. 251 (2004); and Mark R. Huson et al., *Earnings Dilution and the Explanatory Power of Earnings for Returns*, 76 J. ACCT. & ECON. 589 (2001).

32. This practice was revealed by an empirical study documenting that stock returns were abnormally negative before executive option grants and abnormally positive after the grants were made. These return patterns almost vanished after August 29, 2002, when the SEC requirement that option grants must be reported within two business days took effect. See Randall A. Heron & Erik Lie, *Does backdating explain the stock price pattern around executive stock option grants?*, J. FIN. ECON. (forthcoming), available at <http://papers.ssrn.com/abstract=877889>; see also Lucian A. Bebchuk, Yaniv Grinstein, and Urs Peyer, *Lucky CEOs* (Harvard Law and Econ. Discussion Paper No. 566) available at <http://ssrn.com/abstract=945392> (providing an empirical examination of backdating of CEOs' options and their relations to corporate governance factors). The empirical findings created an almost unprecedented scandal. See, e.g., David I. Walker, *Some Observations on the Stock Option Backdating Scandal of 2006* (Boston Univ. Sch. of Law, Working Paper No. 06-31, 2006), available at [http://papers.ssrn.com/abstract\\_id=929702](http://papers.ssrn.com/abstract_id=929702) (reporting that the SEC is investigating more than seventy-five companies with respect to the timing and pricing of stock options granted during the boom years of the late 1990s and early 2000s, and that the number of firms caught up in the scandal seems to increase daily); M.P. Narayanan, Cindy A. Schipani, & H. Nejat Seyhan, *The Economic Impact of Backdating of Executive Stock Options*, 105 MICH. L. REV. (forthcoming June 2008) (finding that the revelation of backdating results in an average loss to shareholders of about seven percent).

33. The huge risk-related costs of stock-based compensation were stressed in the literature:

Companies paying options in lieu of cash are effectively borrowing from employees, receiving employment services today in return for highly variable (and often nonexistent) payouts in the future. But risk-averse undiversified employees are unlikely to be efficient sources of capital, especially compared to banks, private equity funds, venture capitalists and other investors who specialize in managing risk and providing capital.

Hall & Murphy, *supra* note 9, at 56. Note, however, that Hall and Murphy did not account for the illegal practice of backdating, which reduces employees' risk to some extent.

among option-averse firms.<sup>34</sup> This finding calls into doubt the favorable accounting treatment argument. Along the same lines, many firms that use broad-based option plans, such as Microsoft and Oracle, are managed by founders with large equity stakes, and they are unlikely to harm firm value in exchange for an artificial increase in profits.<sup>35</sup>

Moreover, by early 2003, more than 155 companies that use stock-based compensation had voluntarily begun to include options as an expense, thus forgoing the favorable accounting treatment.<sup>36</sup> Most importantly, new financial accounting standards mandate recognizing option-based pay as an expense.<sup>37</sup> And even before that, new SEC regulations requiring immediate reporting of executive ESOPs eliminated backdating.<sup>38</sup> The favorable accounting treatment is now history. If this accounting treatment did play a role in the emergence of the stock-option trend, it can no longer justify its existence, and although firms are reconsidering the use of stock-based compensation there is no sign that this phenomenon is close to disappearing.

#### E. *Morale, Teamwork, and Norms*

The next possible explanation for the popularity of broad-based employee stock ownership plans focuses on the effect that this type of compensation has on the norms and morale of the firm workforce. Under this argument, stock or stock-option grants change the status of the employee from an ordinary worker to an owner and transform the firm's workforce into a community. Once workers become owners, they develop social norms that entail cooperation with other members of their community and devotion of as much effort as possible to the community's prosperity. This may also explain why all workers should be rewarded, although not necessarily to the same extent, so that no one feels left out of the community. In fact, this ideal is the same model often manifested by the employers themselves. In the words of Microsoft CEO Steve Balmer, "[o]ur compensation philosophy is simple . . . . We want to attract and retain employees by offering *real ownership* and great long-term financial incentives."<sup>39</sup>

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34. See Paul Gompers et al., *Corporate Governance and Equity Prices*, 118 Q.J. ECON. 107 (empirically comparing corporate governance strength at certain types of firms).

35. See Oyer & Schaefer, *supra* note 15, at 16 (raising the examples of Oracle and Microsoft).

36. David Aboody et al., *Firms' Voluntary Recognition of Stock-Based Compensation Expense*, 42 J. ACCT. RES. 123, 124 (2004) (discussing voluntary firm decisions to recognize option compensation as an expense); Catherine Schrand, *Discussion of Firms' Voluntary Recognition of Stock-Based Compensation Expense*, 42 J. ACCT. RES. 151, 151–53 (2004) (same).

37. This new financial account standard was effective as of December 2004. Share-Based Payment, Statement of Fin. Accounting Standards No. 123 (Fin. Accounting Standards Bd. 2004).

38. The new SEC regulation became effective in August 2002. It took another four years to reveal the extent of backdating that took place before 2002. In any case, all recent scandals relate to the period of the late 1990s and early 2000s. Walker, *supra* note 32, at 2, 8.

39. Microsoft Reshapes Compensation for Continued Success, <http://www.microsoft.com/presspass/press/2003/Jul03/07-08CompPR.msp> (last visited Nov. 29, 2006) (emphasis added).

The phrase “real ownership” conceals the fact that the fraction of ownership granted to the individual employee is minute. But, just as people do not calculate their fraction of ownership in their household or in their narrow community, employees are expected to do their utmost for their corporation once options are introduced even if their financial benefit from this behavior is miniscule. The norms generated by the stock-option compensation measure are thus supposed to overcome the firm’s necessity to monitor the recipient employees.

While I doubt how much water this argument holds, I will nonetheless detail another impact stock-based compensation has on social norms and human behavior that has evaded the literature. Namely, stock-based compensation has an interesting role in inducing employees to monitor their peers from the aspect of social norms and irrational behavior. This stands in contradiction to the traditional view that stresses the role of such compensation in inducing investment of effort and maintaining cooperation. To appreciate my monitoring argument, it is necessary first to understand that in the absence of stock-based compensation, the work environment is tainted by certain cognitive biases identified by behavioral economy<sup>40</sup> and by certain flaws identified by organizational psychology. So as not to stray from the scope of this Article, I will only briefly sketch a few of these biases and flaws and will then explain how stock-based compensation assists the corporation in partially overcoming the challenges that stem from them.

The first phenomenon, documented in a seminal experiment by Asch, is conformism.<sup>41</sup> Simply put, people tend to heed the consensus and put aside their own beliefs, moral opinions, and even good judgment. Conformism can be dangerous if a firm’s workforce adopts detrimental attitudes such as treating customers poorly or stealing from the employer. A second, well-documented phenomenon in organizational psychology is workers’ obedience to what they perceive to be a legitimate authority within the organization. The potential harm in such a tendency lies in the fact that employees rarely try to contradict their supervisors, even if a supervisor’s behavior harms the firm or its shareholders. Third, as experiments in behavioral economics have shown, people are often irrational in that they have a so-called self-protective or self-serving bias.<sup>42</sup>

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40. The field of behavioral economy, which is an interdisciplinary mix of psychology and economics, was pioneered by Amos Tversky and Daniel Kahneman. See generally Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, SCIENCE, Sept. 27, 1974, at 1124; Daniel Kahneman & Amos Tversky, *Choices, Values, and Frames*, 39 AM. PSYCHOLOGIST 341 (1984); Amos Tversky & Daniel Kahneman, *Rational Choice and the Framing of Decisions*, in RATIONAL CHOICE: THE CONTRAST BETWEEN ECONOMICS AND PSYCHOLOGY 67 (Robin M. Hogarth & Melvin W. Reder eds., Chi. Univ. Press 1987).

41. STEPHEN P. ROBBINS, ORGANIZATIONAL BEHAVIOR: CONCEPTS, CONTROVERSIES, AND APPLICATIONS 257–58 (1998) (describing Asch’s famous experiment in which people followed the errors of their group members in regard to easily identified objective matter).

42. See Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 649 (1999) (describing an experiment in which students who were designated as either plaintiff or defendant were asked to make an objective assessment of the monetary judgment in the case: assessments of students designated as plaintiffs

This bias allows them to overlook flaws in their own behavior or the environment and believe that their acts are moral and good for all parties involved. In the workplace, this bias allows workers to bury their heads in the sand and ignore almost any misbehavior carried out by their colleagues and managers, since confrontation always comes at a personal cost.

Finally, three additional pervasive cognitive biases are particularly relevant: the status quo bias, the availability bias, and the anchorage bias. All three are grave impediments to any employee-monitoring endeavor. The status quo bias means that people tend to preserve the current state of affairs;<sup>43</sup> in the workplace, if that state warrants modification, employees will barely notice or else will not seek to effect any change. The availability and anchorage biases refer to the fact that available and accessible information and events make lasting, over-rated impressions<sup>44</sup> and that people hang on to information they receive even when no evidence supports its credibility.<sup>45</sup> Because workers are introduced to existing practices and facts by their supervisors and peers, these two biases make it harder for employees to criticize their colleagues and doubt their statements.

In the absence of incentive pay, these biases and human characteristics work in concert against the possibility of peer monitoring. Employees' natural tendencies are to avoid conflict, accept the current state of affairs and any weak explanation that may support it, and overlook problematic occurrences and behaviors. Stock-based compensation releases certain forces that mitigate these problems. Any harmful acts that hurt the shareholders also hurt the recipient employee. The employee can hardly remain indifferent to such harm, for this is no longer a self-serving strategy. As norms of conformity conflict with norms of self-protection, the employee becomes embittered and, in some cases, will report or otherwise act against the perpetrators of harm to the firm.

#### F. Tax Considerations

Undeniably, tax considerations are critical to understanding the surge in use of stock-based compensation, particularly stock-option plans. One such consideration, in brief, is that tax deferrals are allowed for "nonqualified" options, and both tax deferrals and improved tax rates for the employee are

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were much higher than those designated as defendants, although both groups considered the same case). See generally Norbert L. Kerr, Robert J. MacCoun & Geoffrey P. Kramer, *Bias in Judgment: Comparing Individuals and Groups*, 103 PSYCHOL. REV. 687 (1996) (discussing the operation of the self-serving bias in groups).

43. E.g., William F. Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY 7 (1988) (discussing human preference for the present state).

44. See, e.g., JONATHAN BARON, THINKING AND DECIDING 141-43 (2000) (discussing the availability bias); Shelley E. Taylor, *The availability bias in social perception and interaction*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, 190 (Daniel Kahneman et al. eds., 1982) (same).

45. Scott Plous, *Thinking the Unthinkable: The Effects of Anchoring on Likelihood Estimates of Nuclear War*, 19 J. APPLIED SOC. PSYCHOL. 67 (1989) (describing a famous experiment assessing the risk of a nuclear war).

available for “qualified” options.<sup>46</sup> A second tax consideration, relevant only for top management, is that, under section 162(m) of the Internal Revenue Code, compensation beyond \$1 million paid to executives named in the company’s proxy statement (usually the five highest-paid managers) cannot be deducted as an expense for tax purposes.<sup>47</sup> But section 162(m) exempts “performance-based” compensation from this burdensome limitation, making options comparatively more attractive.

The inevitable conclusion of this brief discussion is that taxation considerations are a major factor in the development and use of stock-based compensation.<sup>48</sup> But, for two chief reasons, this explanation does not render the rest of the discussion redundant. The first reason is normative and the second, descriptive. First, as manifested in the section 162(m) exemption, Congress intentionally drafted tax breaks to encourage “performance-based” compensation. It is therefore important to question whether stock-based compensation should be encouraged and, particularly, what incentives, if any, this compensation method creates. Second, it is important to recognize the huge waste involved in this type of compensation to understand that the tax benefits offered, no matter how substantial, cannot be the sole reason for the popularity of stock-based compensation.

Employees are typically risk-averse. The value of stock-based compensation—which, as will be discussed shortly, is a major component of employees’ remuneration—is highly contingent on risk factors and uncertainties that are far beyond the control of the recipient employees. Risk-averse employees therefore discount the value of stock-based compensation. Firms could substitute this type of compensation with a much lower payment in cash that does not entail uncertainty. The difference between the two alternatives is the cost, or the waste, involved in stock-based compensation. Several leading economists have tried to quantify this cost, concluding that, operating under reasonable assumptions about risk aversion and diversification, employees

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46. For a short summary, see Hall & Murphy, *supra* note 9, at 53. In reality, most options granted as part of an employee stock-option plan are nonqualified, due to certain restrictions that attach to the qualified plans and the firm’s inability to deduct a compensation expense for those options. *Id.* The deduction of a compensation expense for nonqualified options is a major issue at certain firms that enjoy a huge tax benefit from this non-cash expense. For instance:

Cisco received a tax benefit of nearly \$2.5 billion dollars from the exercise of employees’ stock options. As a result, the company paid little (and possible no) federal income taxes while reporting \$2.67 billion in profits. Cisco obtained the tax benefits from a provision in the tax code that allows firms an income tax deduction equal to the gain recognized by employees on the exercise of their nonqualified options.”

Michelle Hanlon & Terry J. Shevlin, Accounting for Tax Benefits of Employee Stock Options and Implications for Research 1 (Apr. 2001) (unpublished manuscript), available at [http://papers.ssrn.com/abstract\\_id=271310](http://papers.ssrn.com/abstract_id=271310); see also David Walker, *Is Equity Compensation Tax Advantaged?*, 84 B.U. L. REV. 695 (2004) (presenting a broad discussion of tax issues related to stock-based compensation, and revealing that the tax advantage of such compensation is not obvious).

47. I.R.C. § 162(m) (2000).

48. This conclusion does not account for all taxation effects on the employer. When all such complex effects are taken into account, at least one scholar argues that, in practice, there is no aggregate tax advantage to using stock option as compensation. Walker, *supra* note 46, at 701 (“So, is equity compensation tax advantaged? In theory, yes. In practice, generally no.”).

value options (with ordinary features) at “only about half of their cost to the firm.”<sup>49</sup> This astounding gap cannot be overcome solely by any tax benefit, rendering pertinent the inquiry in the next Part, into the motivational benefits arising from stock-based compensation.

### III. REVERSE MONITORING: A NEW VIEW OF ESOPs AS AN INCENTIVE MECHANISM

#### A. *On Two Versions of Agency Theory Explanations*

A recent article entitled *Why Do Firms Use Incentives That Have No Incentive Effects?* exemplifies the puzzle of mid-level employee incentive pay.<sup>50</sup> As will be shown below, mid-level employees receive modest option grants in comparison to executives and their efforts have negligible impact on the firm’s market value relative to efforts made by the CEO and a small group of top executives. This reality has led researchers to argue that the common agency-theory understanding of incentive pay does not hold in this context, driving them to search for explanations beyond the scope of agency theory.<sup>51</sup> The principal point of this Article, however, is that agency theory can in fact supply a good explanation for the prevalence of employee ownership plans, although not the one usually advanced in the literature. To elucidate the difference between the two arguments stemming from agency theory, it is important to review briefly the fundamental features of the theory.<sup>52</sup>

Under agency theory, whenever one person, the agent (in our case, an employee), is required to fulfill a task for another person, the principal (in our case, the employer), a conflict of interest emerges. This conflict means the agent may pursue her own agenda rather than actions optimal in fulfilling her task for the principal. As a result, goes the argument, the principal-agent setting entails three types of costs. The first type is monitoring costs. Since the agent is prone to deviate from the goals set for her, the principal must employ expensive means to verify what her agent is doing and, if necessary, call her to order. Hence, business owners review the accounts to

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49. Hall & Murphy, *supra* note 9, at 56; *see also* Hall & Murphy, *supra* note 11, at 211; Hall & Murphy, *supra* note 14, at 12–13. Another study estimated that for every dollar worth of options, the company actually wastes \$0.64 to cover the risk premium for employees. Oyer & Schaefer, *supra* note 15, at 16. Employees’ risk aversion is also evident because they tend to exercise their options before the expiration date. *See* J. Carr Bettis et al., *The Cost of Employee Stock Options 3* (Mar. 2003) (unpublished manuscript), *available at* [http://papers.ssrn.com/abstract\\_id=376440](http://papers.ssrn.com/abstract_id=376440) (finding that employees exercise options nearly five years prior to expiration and that employees in high-volatility firms exercise their options more than a year and a half earlier compared to employees in firms with low volatility).

50. Oyer, *supra* note 5, at 1.

51. *See, e.g.*, Hall & Murphy, *supra* note 9, at 54 (“Given the increasing prevalence of broad-based plans, a compelling theory of employee stock options must explain not only executive stock options, but also options granted to the rank and file.”).

52. These basic features are outlined in the seminal work of Jensen and Meckling, who are considered the founding fathers of agency theory. Jensen & Meckling, *supra* note 1.

prevent deviances; restaurant owners use covert inspectors to verify the level of service; owners of diamond mines check the clothes of miners at the end of the day to prevent theft. These types of efforts and expenses are termed monitoring costs.

The second inevitable type of cost is bonding costs. Bonding measures do not assist the principal in scrutinizing and governing the actions of the agent, but, rather, are intended to ensure that the agent sticks to the objectives of her employment. Hence, a public servant is often required to cut any ties he may have with the business community to ensure objectivity; financial reporters or advisors are required to refrain from personal investments to prevent skewed recommendations; and workers go to much trouble to bring references and pursue studies, which, at least in part, are efforts aimed at showing how devoted they are going to be to their jobs.

Finally, even after monitoring and bonding costs, there is a residual loss to be borne. This means there is always enough room for a conflict of interest to arise between the principal and agent. For example, a certain amount of theft by workers always occurs; some confidential information will always leak; and employee effort levels rarely meet those of owners. In fact, as long as the residual losses are lower than the cost of additional bonding or monitoring costs required to overcome them, it is efficient to incur these losses.

Into this normative setting enters the traditional account of incentive pay. Since any worker is an agent and therefore presents risks of misbehavior, theft, disgorgement of confidential information, and simple laziness, agency theory calls upon the parties to design the employment agreement accordingly. Specifically, under agency theory, compensation should be structured to overcome these problems. If the employee can hope to receive a part of the gains accrued by the employer from optimal service, then the agency problem can be alleviated. In the traditional argument, linking pay to performance of the employer's stock on the stock exchange by, for example, granting options, may achieve this desired goal.

Option grants, however, are undeniably an expensive method of compensation. The main reason is that employees, like most people, are risk-averse. Since the value of option grants fluctuates due to factors beyond the employee's control, options are an extremely risky asset from her perspective. Moreover, employees are tied, along with their human capital, to the firm; putting much of their personal wealth in options means putting all their eggs in one basket and further increasing their risk. Taken together, the risk-bearing factor would cause employees to accept much lower compensation in cash over an option grant with equivalent market value. Therefore, payment with options, which employees value less, is expensive currency for firms.<sup>53</sup> Furthermore, since no one can go to the grocery store with

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53. The shareholders who suffer from dilution are those who bear the costs of the payment in options. Since shareholders with diversified portfolios are risk-neutral, they will prefer that the firm pay lower amounts in cash rather than issue additional shares whose worth exceeds those amounts. Put differently, transferring a lottery ticket (i.e., options) from a risk-neutral person (i.e., the shareholders) to a risk-averse person (i.e., the employee) entails much loss.

options, they cannot replace the employee's entire salary. Thus options usually supplement—at least in part—regular salary, further increasing the cost of options to the firm and its shareholders.<sup>54</sup>

The incentives that options create must overcome these costs to make option grants worthwhile. Note, though, that under the traditional argument, option grants are not intended to allow the principal to watch and govern the agent's actions, and therefore they cannot be counted as monitoring costs. On the contrary, their role is to induce employees to exert effort even when the employer is not watching. To some extent, this argument even assumes that employee efforts are non-verifiable from the point of view of the employer. In agency theory terms, therefore, the proper specification of the costs that options entail is bonding costs. The employee accepts options, even though she would prefer the equivalent in cash, in order to commit to the objectives of the shareholders. The problem with this argument is that it cannot stand up to any test of reality, at least in the context of the actual compensation plans of most workers.

A recent study shows that a typical firm grants options with a value equal to one year's salary to middle managers and that these managers own "a very small fraction of the firm (less than one one-thousandth of a percent in the case of the large firms)."<sup>55</sup> Careful econometric analysis shows that using options to motivate managers to exert efforts under these circumstances is ludicrous and, in the words of the authors, "[g]iven our calculations here, we find it very difficult to believe that stock options could be the most efficient incentive mechanism available to firms."<sup>56</sup> For example, consider an engineer who receives an option grant of \$100,000 in a firm with a market value of \$10 billion. To increase the value of her fractional holdings by just 1% (equivalent to \$1,000), she needs to increase the firm's market value by \$100 million. It is doubtful that any effort on her part could achieve this goal, especially an effort valued at less than \$1,000 from her perspective. Recall also the waste related to risk-bearing on which we have elaborated earlier in our discussion.<sup>57</sup> Many risk-averse managers would be willing to exchange nontransferable options worth \$100,000 for half the amount in cash.<sup>58</sup> Under these circumstances, it seems unrealistic to surmise that firms cannot devise a better mechanism to ensure optimal effort by their employees.

While exerting efforts to perform better seems an ill-fitted rationale for the use of stock options, the empirical research still finds a (remotely) plausible incentive effect for options:

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54. See Hall & Murphy, *supra* note 9, at 56 ("[I]ndeed, most broad-based option plans are added on top of existing competitive pay packages.").

55. Oyer & Schaefer, *supra* note 15, at 20–22.

56. *Id.* at 23.

57. See *supra* note 49 and accompanying text.

58. Hall & Murphy, *supra* note 9, at 55.

[O]ptions are sensible for incentive purposes under a very limited set of circumstances—namely, if employees take actions that have large value implications for the firm, the costs to the employee of taking these actions are very small, and it is extremely difficult for firms to observe whether employees are taking these actions.<sup>59</sup>

This allegedly hypothetical and remote case for an incentive-based justification for options is precisely the case of reverse monitoring. One should not think of options, especially those granted to mid-level employees, as a method of encouraging recipient employees to work harder, but rather as an incentive to watch other workers and constituencies of the entity. Put differently, the costs of options borne by the firm are monitoring costs, not bonding costs. Armed with options, employees will ensure that others do not harm the firm. Note that all three requirements of the empirical study are fulfilled here. First, no special effort is needed beyond paying attention, as employees are natural monitors of their peers. While outside agents need to penetrate the organization and use surveillance techniques or indirect monitoring methods, the employees are already there, performing their day-to-day tasks. The employer can arrange the work force and the work tasks to enhance the ease of monitoring. For instance, working in groups and dividing up one task among several groups to require interaction—the reality in many high-tech firms—is one means of doing this. The physical structure of the work environment is another method, as open space and any other spatial arrangement that increases transparency allow for easy monitoring. In many new economy firms, an employee cannot make a phone call or perform a task on her computer screen without other employees inadvertently noticing. In these places, options are commonly believed to motivate employees to work harder because of the options they receive. It actually makes more sense to believe they work harder because their peers have received options and are watching them closely.

Second, while the efforts exerted by a single mid-level employee cannot contribute much to improving the market value of a large firm, the employee can still significantly harm the firm, especially in the knowledge industry. In an interview with a mid-level manager at Intel, the manager explained that each engineer in his group could easily harm Intel significantly by releasing certain information to a competitor.<sup>60</sup> Intel, with its multi-billion-dollar market value, is particularly vulnerable to such leaks due to the nature of its assets. While one lone engineer cannot reasonably improve the market value significantly, the potential damage that the individual worker can wreak to this value is enormous. Investing in monitoring is, therefore, crucial, and the more vulnerable a firm is, the more options it is likely to issue to its employees. It is hard to find an effective alternative to so many good and intelligent monitors already positioned within the facility. Monitoring by employees is thus both non-substitutable and likely to prevent much harm,

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59. Oyer & Schaefer, *supra* note 15, at 24.

60. Interview with one of Intel's mid-level managers, in Haifa, Isr. (Jan. 2, 2006).

thereby fulfilling two additional requirements for effective use of options laid out in the empirical literature.

### B. Additional Empirical Verification

The findings of additional recent empirical studies of broad-based employee ownership plans seem to comply with the predictions of this Article's theory and fail to conform to the classic incentive-based explanation. One paper compares executive option grants to non-executive option plans, following a sample of 1,170 firms through 1996–2001.<sup>61</sup> Similar to the results of previous studies, the authors of this study found that top-five executives receive a disproportionate share of the total grants (20%) and that ESOPs tend to increase both the firm's valuation and net income.<sup>62</sup> The study's unprecedented finding was that, in the regressions, the non-executive portion of the grant had a pronounced and positive effect on both net income and firm valuation.<sup>63</sup> Given this finding, the authors took for granted the traditional account of options as an incentive mechanism and made the following statement: "On the surface it may seem surprising that the effect of options appears to be smaller for executives than for lower-level employees since, from a risk/incentive perspective, it seems likely that executives have more control over firm performance and may be less risk averse."<sup>64</sup>

Thus, the authors implicitly view options as a way to compensate only those who should be encouraged to exert additional costly effort, and they therefore logically assume that broad-based plans entail waste. Because lower-level employee efforts barely affect a firm's market value, the authors were surprised to find that broad-based plans increase firm performance and market value more than executive-only plans.<sup>65</sup> Under the reverse monitoring argument, however, even the slightest incentives can suffice to induce one employee to monitor her peers, since no extraordinary efforts are necessary on her part to do so. This is especially true in firms and industries in which a lack of careful monitoring at all levels of the organization can lead to much damage. These firms reveal themselves as such by adopting broad-based ESOPs, and it therefore comes as no surprise that these measures increase their performance and valuation.<sup>66</sup> Most significantly,

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61. Wayne R. Landsman et al., *Governance and the Split of Options between Executive and Non-executive Employees* 1, 15 (Mar. 2005) (unpublished manuscript), available at <http://papers.ssrn.com/abstract=688083>.

62. *Id.* at 6–7, 16.

63. *Id.* at 16–20.

64. *Id.* at 6.

65. This surprising conclusion led the authors to search for a different answer, and they eventually argued that weak corporate governance harms the positive outcomes of executive stock option plans. *Id.* at 7 ("[I]n the absence of strong governance, executive options have little or negative consequences for valuation and future profitability.").

66. IP intensive firms may not be aware of this argument but still enjoy its benefit. It is possible they observe its benefits but wrongly assume that they stem from the classic incentive

the ancillary findings of this empirical paper support the notion and entire reasoning of the reverse monitoring argument. These findings, which the authors did not think particularly important, are summarized in the paper as follows: “[a] larger proportion of options tend to go to lower-level employees for firms that are larger, have more employees, spend more on research and development and have higher market-to-book ratios.”<sup>67</sup>

All four features in this finding conform to the predictions of the reverse monitoring argument. First, larger firms and firms with more employees not only issue more options to low-level employees, but do so in higher proportions than other firms relative to their size and employee base. Under the traditional incentive-based explanation of options, this finding would be puzzling. Larger firm size makes it harder for the individual employee to improve firm value through her efforts; a sizable workforce at a firm creates free-riding in the sense that one employee’s in exertion of effort can be easily overcome by the efforts of others, while exertion of effort by one employee is diluted by the acts of her many peers. It is precisely these two characteristics, however, that make monitoring employees in such firms by management difficult. Hence, management must expend more resources on monitoring by peer employees, which is the result of a high proportion of stock grants to non-executives. It is harder for options to cause employees to exert additional effort in larger firms and firms with a larger workforce; thus, it is much more important to motivate these workers to watch one another. And since options can barely serve to motivate directly a mid-level employee to increase her effort level, the latter monitoring effect is crucial.

Second, options to lower-level employees are more common in firms with higher market-to-book ratios. Firms with high market-to-book ratios are often those firms with high levels of intellectual property, since intellectual property developed within the firm’s boundaries does not appear in the financial statement (and, hence, has no effect on the firm’s “book” value). And since intellectual property is especially vulnerable to leakage and tampering, its existence poses a risk of an adverse material effect on the firm’s market value. Consequently, using options to induce peer monitoring is especially suited to protect the market value of the firm that holds much of this property.

Finally, and related to the previous point, firms that spend more on research and development issue a larger proportion of their option plans to lower-level employees. According to conventional wisdom, this finding makes sense because workers in such firms are believed to be highly creative and significant to firm value. However, at the individual level, this argument is questionable, as one worker’s efforts, creative as they may be, can hardly make much of a difference, at least in most cases, most of the time. Nevertheless, firms with high R&D levels are usually new economy

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explanations. I also assume most firms simply mimic other firms that experimented with ESOPs and found them worthwhile.

67. Landsman et al., *supra* note 61, at 17.

firms—firms in the knowledge industries. Such knowledge can be well protected by peer employees encouraged to monitor through option grants.

A second recent empirical study provides additional reinforcement of the reverse monitoring view and explicitly contradicts the traditional incentive-based argument. The authors set forth the mission of their paper as follows:

There is, however, a small but growing body of empirical literature that provides evidence that firms that broadly disperse stock options have greater performance . . . . Do certain contextual factors (e.g. firm size, industry, technology) influence the relationship between broad-based stock options and performance? In this paper, we focus on one such contextual factor, firm size. *We chose firm size because according to existing theory, group incentives such as stock options are expected to be effective at monitoring employees only in small firms . . . .*<sup>68</sup>

This entire mission is, of course, rooted in the traditional understanding of options as providing incentives to work harder and the view of the recipient employee as the entity that is bonded thereby. The authors explain the expected negative relationship between size and firm efficacy on two levels: First, as explained above, the larger the firm, the less influential each employee is on the firm's total output, and therefore it is less feasible to motivate her with options that rely on total output.<sup>69</sup> Second, and more interesting, greater firm size makes it harder to motivate employees even under a much richer perception of the firm.<sup>70</sup> Since interaction between employees is recurrent, they may cooperate with one another and refrain from free-riding. This achieves an optimal outcome for everyone, even if each employee's compensation is keyed to the total output.<sup>71</sup> This argument is often used in the context of group incentives and profit-sharing because the harder everyone works, the greater the profits are to be shared for the benefit of everyone. However, even with this deeper perception of the firm and incentive structure, large firm size is likely to be a hindrance to option efficacy. The larger the firm, the harder it is for cooperation to emerge, thereby endangering the joint commitment to work harder in order to maximize total output and, in turn, each worker's compensation.

Given these two effects of size, the authors expected to find that the benefits of options to the issuing firm would decline with firm size (less than 500 workers, between 500–5000 workers, and over 5000 workers).<sup>72</sup> They therefore gathered data on 312 firms that had adopted broad-based option plans, divided them into three groups based on size, and matched up

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68. James C. Sesil & Maya K. Kroumova, *The Impact of Broad-Based Stock Options on Firm Performance: Does Firm Size Matter?* 3 (May 6, 2005) (unpublished manuscript), available at <http://papers.ssrn.com/abstract=717081> (emphasis added).

69. *See id.* at 5.

70. *Id.* at 14.

71. *See, e.g.,* ROBERT AXELROD, *THE EVOLUTION OF COOPERATION* (1984) (discussing the emergence of cooperation in reiterated prisoner dilemmas).

72. Sesil & Kroumova, *supra* note 68, at 3.

each size-group with a corresponding sample of non-adopting firms.<sup>73</sup> The study followed the firms throughout the years 1995–1997, measuring multiple aspects of firm performance (profit margins, shareholder return, labor productivity, and return on assets).<sup>74</sup> This study covered over 1.1 million employees who received options,<sup>75</sup> out of about 8 to 10 million ESOP recipients in the entire U.S. economy.<sup>76</sup>

The authors were surprised to find that option-adopting firms outperformed their non-adopting peers in each size category, not only in the small size category.<sup>77</sup> Moreover, when they compared among adopting firms, the larger firms were found to outperform the smaller ones.<sup>78</sup> These unanticipated findings led the authors to conclude, “we find strong evidence that stock option firms perform better than non-stock option firms, however, we do not find strong evidence that small stock option firms perform better than stock option large firms.”<sup>79</sup> They consequently called for more research on the topic.<sup>80</sup>

Once again, from the perspective of the reverse monitoring explanation, these findings come as no surprise. A large workforce sometimes prevents efficient monitoring by means of the traditional employment hierarchy. Granting options to many employees will cause them to monitor one another, a task they can easily perform. If employees work any harder in these circumstances, it is not because their options have motivated them to do so, but, rather, because their peers are watching closely. Moreover, firm size by number of employees often reflects firm maturity. A seasoned firm, with seasoned technology, may need to use options to protect this technology. If technology is both a vulnerable and a critical asset for the organization, option recipients will be alert in protecting against third-party infringement.

#### IV. INITIAL INQUIRY INTO ADDITIONAL APPLICATIONS OF THE REVERSE MONITORING THEORY

Until this point, this Article has discussed the concept of reverse monitoring in the context of broad-based stock ownership plans and shed light on the puzzles that surround it. The reverse monitoring view of stock-based

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73. *Id.* at 6–7.

74. *Id.*

75. *Id.* at 7.

76. *Id.* at 3 (citing Press Release, National Center for Employee Ownership, A growing number of U.S. employees receive stock options (Feb. 2002) (on file with author)).

77. *Id.* at 9 (“The descriptive statistics reported in Table 2 show that, within each size category, broad-based stock option companies have higher average productivity, return on assets (ROA), profit margin, and capital intensity compared to non-stock option companies.”).

78. *Id.* (“Comparing small to large stock option companies using the simple means reported in Table 2 shows they had similar [labor] productivity levels, but small firms appear to lag behind large ones with respect to ROA and profit margins.”).

79. *Id.* at 12.

80. *Id.* at 15.

compensation concentrates on the role of the recipient of incentive pay as a monitor of other firm employees, including the recipient's supervisors, in contrast to the traditional view of the recipient as the entity that is bonded by the stock grant. This concept has many more applications than can be explored here at length, and they deserve further discussion and analysis. For one, reverse monitoring can explain the rise in stock-based compensation for executives in firms located outside of the U.S., which typically have concentrated ownership.<sup>81</sup> The common story of stock-based compensation for executives of U.S. firms explains that U.S. firms often have dispersed ownership.<sup>82</sup> The dispersed shareholders cannot effectively monitor their managers, and thus the monitoring gap is filled by stock options and the like, which align manager and shareholder incentives.<sup>83</sup>

This story, however, does not fit most economies outside the United States, where public firms have concentrated ownership and, accordingly, usually a controlling shareholder.<sup>84</sup> A controlling shareholder, unlike dispersed shareholders, has both the incentives and the means to monitor and discipline managers. Why then, is stock-based compensation, a costly mechanism, also so common today in such firms? The reverse monitoring concept suggests that executive stock compensation in these firms is meant to induce managers to monitor their supervisors. Equipped with options, these officers stand on guard against any misbehavior on the part of their own monitor, the controlling shareholder of the entity. A controlling shareholder sometimes has a perverse incentive to pursue her own goals at the

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81. See, e.g., Michael H. Bradley & Anant K. Sundaram, *The Emergence of Shareholder Value in the German Corporation* 16 (EFA 2004 Maastricht Meetings, Paper No. 1467, 2003), available at <http://papers.ssrn.com/abstract=463840> (reporting that no large German firm included in the DAX 30 index had an ESOP in 1990, twenty-seven percent of the large German firms had adopted ESOPs by 1995, and no less than seventy-three percent of these firms had ESOPs by 1999).

82. See Rafael La Porta et al., *Corporate Ownership Around the World*, 54 J. FIN. 471, 511–12 (1999) (reporting that U.S. firms, in contrast to firms in most world economies, have a dispersed ownership structure); Andrei Shleifer & Robert W. Vishny, *A Survey of Corporate Governance*, 52 J. FIN. 737, 769 (1997) (noting that large investors are less common in U.S. firms than in most of the world).

83. Note, however, that this explanation suffers from certain flaws even for dispersed ownership firms. Any senior executive, aside from the CEO, has at least one boss. This boss can monitor the performance of her supervisee and reward her accordingly. The bosses' monitoring and effective promise of reward may be imperfect, but the crude nature and waste involved in stock-based compensation cast much doubt on the value of using the latter method solely to replace or back the monitoring role performed by the boss. This discussion, relating to the voluminous literature of U.S. executive pay, falls beyond the scope of this Article. It deserves special attention as some of the reform suggestions raised by commentators, such as the proposal to index options, do not necessarily fit the reverse monitoring role highlighted by this Article. See, e.g., BEBCHUK & FRIED, *supra* note 16, at 190 (concentrating on strengthening the link between executive bonus plans and improved firm performance).

84. The literature views stock-based compensation as a method designed to alleviate the agency problem between managers and shareholders and does not consider its role in concentrated ownership firms. See Mark J. Roe, *The Institutions of Corporate Governance* in HANDBOOK OF NEW INSTITUTIONAL ECONOMICS 371 (Claude Menard & Mary M. Shirley eds., 2004) (analyzing different types of agency costs and then describing stock-based compensation as a measure intended to alleviate the so-called "horizontal" agency problem existing between executives and dispersed shareholders).

expense of the minority, most significantly in the context of self-dealing transactions, which are not always beneficial to the firm.<sup>85</sup> This can result in a drop in the firm's share prices and harm to executives with substantial stock holdings. Those executives possess the knowledge as to whether a specific self-dealing transaction is good or bad for the firm and their direct contact with independent directors and institutional shareholders may allow them to covertly block exploitative transactions.<sup>86</sup> In turn, when institutional investors examine self-dealing transactions in firms with stock-based compensation, investors should be easily persuaded by the controlling shareholder that she is not pursuing her own agenda, rather than the common interests of all shareholders. This means that controlling shareholders can commit to act for the firm by granting stock-based compensation to their executives. To conclude, in this setting, reverse monitoring explains that executive stock compensation can work to alleviate the agency problem between the controlling shareholder and the minority, and not only between management and a dispersed shareholders body.

Another important application of the reverse monitoring approach comes into play in the area of gatekeepers, such as outside directors, investment bankers, or outside legal counsels.<sup>87</sup> A recent paper, concentrating on the role of outside directors as gatekeepers, suggests rewarding gatekeepers with cash grants when they expose corporate misbehavior and in particular accounting fraud.<sup>88</sup> The authors of the paper reject the idea of equity compensation to gatekeepers since, in cases of accounting fraud, stock-based compensation can actually cause them to turn a blind eye to the fraud that drives share prices up. Moreover, in endgame scenarios, as in the Enron case, stock-based compensation does not provide any incentive, since in bankruptcy stock compensation is generally worth nothing.<sup>89</sup> While these concerns carry great weight, they do not justify ruling out stock-based compensation for gatekeepers. First, there are instances of corporate misconduct, such as self-dealing by management, that, unlike accounting fraud, do not inflate the value of the firm's stock and therefore do not create any perverse incentives for the gatekeeper compensated with stock. Second, if stock-based compensation is designed properly—namely, with a sufficiently long horizon and a disgorgement of past profits that are based on fraud from the

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85. Simon Johnson et al., *Tunneling*, 90 AMER. ECON. REV. 22, 22 (2000) (describing self-dealing as the gravest corporate governance problem outside the United States).

86. See, e.g., Guhan Subramanian, *Fixing Freezeouts*, 115 YALE L.J. 2 (2005) (discussing the role of both outside directors and informed minority shareholders in blocking unfair going-private transactions, which are a certain type of self-dealing transactions that can be extremely detrimental to the firm); Simeon Djankov et al., *The Law and Economics of Self-Dealing* (Nat'l Bureau of Econ. Research, Working Paper No. 11883, 2005), available at <http://nber.org/papers/W11883> (comparing the different mechanisms used around the world to block harmful self-dealing transactions).

87. See Reinier Kraakman, *Gatekeepers: The Anatomy of a Third Party Enforcement Strategy*, 2 J.L. ECON. & ORG. 53, 53 (1983) (defining "gatekeepers" as private parties who are able to disrupt misconduct by withholding their cooperation from wrongdoers).

88. Hamdani & Kraakman, *supra* note 6 (considering the use of rewards to motivate outside directors' diligence).

89. *Id.* at 17–23.

gatekeepers' stock-based compensation<sup>90</sup>—gatekeepers will have incentive to fight accounting fraud as well (even in endgame scenarios), because it never enhances the value of the firm in the long run. These two adjustments to gatekeepers' stock-based compensation may overcome the concerns raised in the literature and preserve the advantage of stock-based compensation over cash grants. This advantage lies in the fact that stock compensation is automatic and fine-tuned. Armed with stock compensation, the gatekeeper does not have to come forward and prove her case, as she would have to in the case of a cash prize, and every cent that she saves for public shareholders is immediately reflected in the value of her compensation.

Last, but not least, reverse monitoring can explain why employee stock option plans are common in pre-IPO ventures and at partially privatized firms. With regard to pre-IPO ventures,<sup>91</sup> stock options to employees promise pre-IPO financial investors (such as venture capitalists and angel investors) that the firm's workforce will place pressure on the founders and entrepreneurs heading the firm to go public as early as possible. Since venture capitalists and other private equity investors hope for a fast exit, large option grants to many employees serve as a credible commitment from the management of the venture not to waste the invested funds and to do all that is possible to go public quickly. Any other behavior would be implausible when the entire firm's workforce is vigilantly watching in the hope of cashing in on the stock component of their pay. Indeed, one entrepreneur described this feeling as "sitting on a volcano."<sup>92</sup> As for partially privatized corporations, the reverse monitoring view serves to explain how stock compensation can overcome a pervasive problem that plagues these firms. The literature explains that government-owned enterprises underperform in the market as management often concentrates on political goals to please the owner.<sup>93</sup> Hefty stock compensation to the executives and employees of such

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90. The concept of disgorgement of past compensation, including profits from realization of stock options, is already present in the Sarbanes-Oxley legislation with regard to executive pay. Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745, § 304(a)(1)–(2) (codified in 15 U.S.C. 7243 (Supp. III 2003)). Recent court decisions developed a similar approach based on the unjust enrichment doctrine. See *Scrushy v. Tucker*, No. 1050564, 2006 Ala. LEXIS 230 (Aug. 25, 2006) (requiring HealthSouth's CEO to repay an amount of \$47,828,106, representing the bonuses paid for the years 1997–2002, that were based on materially misstated earnings); *In re HealthSouth Corp. S'holders Litig.*, 845 A.2d 1096 (Del. Ch. 2003), *aff'd*, 847 A.2d 1121 (Del. 2004) (rescinding a transaction wherein HealthSouth's CEO repaid a \$25 million loan to HealthSouth with shares of his HealthSouth stock artificially inflated by an accounting fraud that raged on his watch as CEO, although the CEO was not personally liable for the fraud).

91. See Jesse M. Fried & Mira Ganor, *Agency Costs of Venture Capitalist Control in Start-ups*, 81 N.Y.U. L. REV. 967 (2006) (describing the prevalence of the practice of issuing stock options at pre-IPO ventures).

92. Interview with an entrepreneur whose firm was financed by a venture capital fund and has a workforce saturated with stock-options that expects to go public soon, in Tel Aviv, Isr. (Jan. 5, 2006).

93. See Nicholas Baberis et al., *How Does Privatization Work? Evidence from the Russian Shops*, 104 J. POL. ECON. 764, 765 (1996) ("Managers of state firms are selected for their ability to get along with politicians, address political concerns, and lobby for assistance. In contrast, managers of private firms are selected for their ability to run them efficiently.") (emphasis added); Andrei

corporations promises to mitigate this problem and cause management to stand on guard against self-interested interference from above.

#### CONCLUSION

Empirical data show that options cause firms to flourish. Intuition tells us that they motivate employees to work harder in order to improve firm value and, in turn, the value of their grants. But if this argument does not hold—because the average correlation between individual employee effort and total firm value is slim—then a substitute intuition is that employees with options work harder because they “feel” like owners and therefore care more about the firm. This Article suggests an alternative view, where options are more of a stick than a carrot. Undoubtedly options cause employees to exert additional effort themselves and to cooperate. I claim this comes from options driving individual employees to care about the acts and whereabouts of their peers. While substantial additional efforts cannot be motivated by slim financial incentives, monitoring others merely requires awareness and attention. As I have shown in this Article, this new understanding can shed light on recent empirical findings and provide explanations to puzzles such as the extensive use of options in new economy firms.<sup>94</sup>

Because the tiny fraction of ownership the average employee receives does not turn gigantic firms into Greek democracies or mutual-aid societies, I also question the psychological explanation of options as fostering a sense of ownership in employees. Options are monetary compensation; they are not flowers or gifts for the holidays that employers distribute to show that they care and to raise morale.<sup>95</sup> It is therefore important to analyze carefully why options bring about effective results as a monetary incentive. People in close-knit communities, such as family units, cooperate with one another due to a sense of belonging and genuine and sincere caring; it is doubtful that financial incentives cultivate such altruistic behavior. I therefore argue

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Shleifer & Robert W. Vishny, *Politicians and Firms*, 109 Q. J. ECON. 995, 1023 (1994) (discussing the harmful effect of politicians' control on firms).

94. Not all puzzles were discussed. For instance, the reverse monitoring argument may also explain the shift from stock-options to restricted stock, following the changes in accounting standards that eliminated the advantage of using stock-options. See *supra* Section II.D. Stock-options seem a better fit from the perspective of the classic increased-efforts view of options. Since options promise rewards only for improved firm performance, an employee unable to contribute to achieving such targets will not receive any benefit. Compensation in shares seems more appropriate to support a monitoring task, in which preventing a downside is at least as important as promising an upside. Once the artificial accounting benefit of stock options was eliminated, it was no wonder firms opted for shares in lieu of options more often.

95. Some scholars take this argument further and claim that stock options and similar incentive compensation schemes actually harm employees' willingness to exert efforts for the firm. Dirk Sliwka, *Trust as a Signal of a Social Norm and the Hidden Costs of Incentive Schemes* (Forschungsinstitut zur Zukunft der Arbeit [Inst. for the Study of Labor] Discussion Paper Series, IZA DP No. 2293, 2006) available at <http://papers.ssrn.com/abstract=932028> (arguing that high-powered incentives may crowd out motivation as they convey the pessimism of the employer in regards to the norms and ethics of her employees, and that by choosing fixed wages the principal signals trust in a favorable social norm).

that options promote cooperation and industriousness because there is no way to get away with exerting less-than-maximum effort when your peers are watching and considering the effects of your behavior on their compensation. Accordingly, any misconduct may result in informal sanctions, singling out, and, in some cases, even reporting to supervisors. Moreover, arranging the workplace in a way that allows for transparency of employee efforts—so prevalent in many of the firms that use options—is not aimed at generating a friendly work atmosphere for employees. Rather, these typical spatial arrangements are aimed at reinforcing peer monitoring and thus supplementing the use of options.

In this short Article, I have reviewed the growing body of empirical literature on broad-based ESOPs and shown that the reverse monitoring theory fits comfortably with the empirical findings. Moreover, the reverse monitoring theory sheds light on several pervasive puzzles raised by the empirical and theoretical literature. Additional verification of the reverse monitoring theory would require an independent study. While I do not intend to propose a methodical research agenda, several doable tests come to mind. One line of research can aim to expose the additional monitoring benefits of peer monitoring in firms that use ESOPs. One possible hypothesis in this connection would be that ESOP firms should have more selective layoffs than similar non-ESOP firms. Another line of research could try to track complementary arrangements for peer monitoring in ESOP firms. For instance, ESOP firms might have policies or structured procedures in which one employee can easily and confidentially convey her opinion of her peers, such as through periodical questionnaires. As a third line of research, one could try to find a link between ESOP usage and IP protection. For instance, the reverse monitoring theory would predict a correlation between R&D expenditure and ESOP grants to personnel not directly involved in the creation of the R&D. Because these personnel do not require powerful incentives to perform research, it is possible they are actually being motivated to prevent IP leakage. Finally, one could survey employees in ESOP versus non-ESOP firms and try to measure or ask the staff about peer pressure.

Before concluding, it is important to explain that this theory does not require employers to be fully aware of the theory's consequences and operation. CEOs do not necessarily devise ESOPs with the intention of causing their employees to spy on one another. CEOs do, however, find out, either by hunch or by observation, that options stimulate labor to work harder and perform better. CEOs then choose to tell themselves and their subordinates a pleasant story, in which options cause workers to exert additional effort since they wish to improve firm value—or, alternatively, that options simply motivate employees since employees are proud to be part of an entity that regards them as owners. The perhaps more convincing story, the one in which employees work harder because options turn their friends into monitors, is less convenient and therefore silenced or never realized.

Finally, this Article discussed the concept of reverse monitoring in the context of broad-based stock ownership plans and shed light on the puzzles

that surround it. Most of the existing literature about employee stock ownership plans concentrates on executive compensation. The dramatic rise in use of these plans for managers raised managerial remuneration to frightening new heights. Between the years 1980 and 1994, the average executive's compensation rose by 209%,<sup>96</sup> and between the years 1992 and 1998, it almost tripled, with average compensation to the top five executives in the largest 500 U.S. companies climbing from \$2,335,000 to \$6,549,000.<sup>97</sup> The increase in average CEO total compensation was even more stunning, from \$3,500,000 in 1992 to \$14,700,000 in 2000.<sup>98</sup>

This surge brought about much academic discussion in which one group of scholars criticizes the current structure of executive incentive pay,<sup>99</sup> while the other tries to justify it.<sup>100</sup> However, a full theory of ESOPs must account for all types of ESOPs, and not only those offered to top executives, and the lack of such account should be considered as a warning sign for the accuracy of the existing theories of executive pay. If one cannot explain ESOP grants to mid- and low-level managers and ordinary employees, how can one be sure one's explanation about top managers is complete? The reverse monitoring theory presented in this Article as an explanation for broad-based ESOPs may actually support the existing theories about executive ESOPs. Any senior executive (aside from the CEO) has at least one full-time boss. This boss can monitor the performance of her supervisee and reward her accordingly. While this mechanism is imperfect, it is doubtful if the cost of stock options can be justified merely by the need to improve this mechanism. The idea of reverse and peer monitoring must be taken into account as well. Armed with stock options, key officers do not only exert more efforts but also watch one another, including their CEO. This added value may explain why executive ESOPs are worthwhile, even if one believes that the existing explanations cannot justify the existing practices in the marketplace.

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96. Hall & Liebman, *supra* note 8, at 655.

97. Murphy, *supra* note 12, at 847-48 (discussing growth in executive compensation); see also Susan J. Stabile, *One for A, Two for B, and Four Hundred For C: The Widening Gap in Pay Between Executives and Rank and File Employees*, 36 U. MICH. J.L. REFORM 115 (2003) (discussing and criticizing growth in executive compensation).

98. Hall & Murphy, *supra* note 9, at 51 (reporting and discussing executive compensation and option grants).

99. E.g., Lucian Arye Bebchuk & Jesse M. Fried, *Executive Compensation as an Agency Problem*, 17 J. ECON. PERSP. 71, 72 (2003) (describing flaws in the design of managers' pay and their consequences).

100. E.g., Core et al., *supra* note 16, at 1142.

