WHY STOCK OPTIONS ARE THE BEST FORM OF EXECUTIVE COMPENSATION (AND HOW TO MAKE THEM EVEN BETTER)

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Stock options are the primary form of compensation for CEOs because they are the best way to align the interests of CEOs with those of diversified stockholders. Nevertheless, critics argue that the use of stock options leads to excessive pay because there is no effective bargaining between the CEO and the board of directors about the number of options to award. They argue that the cost is underestimated by boards and hidden from stockholders and that options induce CEOs to undertake risky business strategies. None of these objections withstands scrutiny. First, there is little reason to believe that options have resulted in excessive CEO compensation. Although CEO pay has increased dramatically in absolute terms, data show that total executive pay as a percentage of corporate income—including gain from the exercise of options—has remained quite stable since 1982. This is true even though equity compensation grew from a negligible amount to as much as 75% of CEO pay by the year 2000. It would thus appear that equity compensation has been substituted for cash compensation and that a larger share of aggregate pay goes to those who succeed in increasing stock price. Second, options are subject to powerful market forces that effectively control their use. Using options as compensation effectively requires a corporation to repurchase shares to control for dilution. Because cash is scarce, there is a natural limit on the number of options that a corporation can grant. In addition, stock options confer significant benefits that are difficult to achieve with other forms of compensation. Aside from the fact that options induce corporations to distribute cash in the form of repurchases to control for dilution, options also convey significant information to the market about a company's prospects, because the need to repurchase stock requires the company to estimate future cash flows in deciding how many options to grant. Finally, options provide an unbiased incentive for acquisitions when appropriate and for divestitures when appropriate. Thus, options make sense for both growing companies and mature companies. Although other forms of incentive compensation may provide some of

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the same benefits as stock options, they are ultimately inferior to options. For example, restricted stock rewards the CEO who increases stock price, but it may also induce the CEO to engage in conservative business strategies designed primarily to avoid losses rather than generate gains, contrary to the interests of diversified investors. And the traditional bonus based on earnings may induce CEOs to grow the business by retaining cash and investing it in new but suboptimal ventures. To be sure, stock options can be abused through such practices as timing and backdating. But these problems can be addressed by announcing option grants in advance of fixing the strike price. Moreover, it is quite easy to design an option that addresses the problem of overvalued equity and eliminates the incentive to maintain a stock price that is inappropriately high. By indexing exercise price downward, options can provide an incentive for CEOs to minimize losses in falling markets. In light of the numerous advantages of options as compared to other forms of incentive compensation, it appears that complaints about executive pay are based largely on ex post results. From an ex ante perspective, investors are not likely to object to options because with options the CEO gains only if and to the extent that stockholders gain. Indeed, as a result of the use of options as compensation, it is arguable that the model of the corporation as one owned by the stockholders has evolved into something more like a partnership between stockholders and officers in which the officers work for an ownership share of the business. Under this model, the board of directors may be seen primarily as an arbiter between these two groups for purposes of dividing up the gain rather than as an active manager of the business. But even under the prevailing stockholder ownership model, it is the supposed duty of the directors and officers to maximize stockholder value. In practice, there are few situations in which that duty is enforced as a matter of law. Options fill the gap.

INTRODUCTION

Stock options are the primary form of compensation for CEOs because they are the best way to align the interests of CEOs with those of diversified stockholders and thus to induce CEOs to maximize return and stock price.[1] A 2009 Equilar

1. I focus on CEO compensation here even though the issues relate to compensation of all high level officers and even to lower level employees in some companies. Aside from convenience, CEO pay is the central issue because (1) CEO compensation is usually much higher than the compensation of other high level officers, and (2) the CEO can monitor the compensation

study of CEO pay found that among the 200 largest U.S. corporations, option grants averaged $3.715M while cash pay of all forms averaged $3.669M and grants of restricted stock averaged $3.408M.[2] These figures reflect the value of options as of the date of grant. On average, that value is a bit less than 50% of the gain on exercise. Thus, in the end, on average, these 200 CEOs are likely to gain about $8M from their options or a bit more than half of their total pay.[3]

What is most remarkable about this study is that options remain the most significant component of CEO pay even though the use of options has been criticized for an array of supposed faults. Although these criticisms take many forms, they ultimately boil down to the worry that CEOs take advantage of their positions to extract excessive pay from the corpo-

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of others while there is arguably no equivalent monitor for the CEO, since boards of directors appear to be unable to perform this function effectively. Michael C. Jensen & Kevin J. Murphy, *Remuneration: Where We've Been, How We Got to Here, What Are the Problems, and How to Fix Them* 24-31 (ECGI, Finance Working Paper No. 44/2004, 2004), *available at* http://ssrn.com/abstract=561305 (regarding the predominance of options as compensation). In the year 2000, about half of CEO pay came in the form of options—as valued at grant date—while about 15% came in the form of cash. The remainder came in various other forms of deferred compensation including restricted stock. *See* Pearl Meyer & Partners, *Executive Pay Trends: Looking Forward and Back* 1 J. OF DEFERRED COMPENSATION 24 (2004) (finding that among the 200 largest U.S. companies about 60% of pay came in the form of options and 9% came in the form of cash, with the remainder coming in the form of bonuses, long term incentives, and restricted stock); *see also* Equilar, 2009 CEO Benefits and Perquisites Report, An Analysis of Key Benefits and Prerequisites at Fortune 100® Companies (2009), *available at* http://www.equilar.com/Executive_Compensation_Reports.php, upon request (suggesting that options remain the primary form of compensation for the CEOs of the largest companies although news reports would seem to indicate that the criticism of options has led many companies to shift to other forms of incentive compensation). The Jensen & Murphy piece collects in one place the major objections to the use of stock options as compensation. Accordingly, I make liberal reference to their piece here, but I do not mean to imply that they are the only commentators who have made these arguments. I should note also that Jensen and Murphy generally favor well-designed options as incentive compensation, but they are quite critical of many common features of stock options plans in practice. *See* Jensen & Murphy, *supra*, at 47-49.

2. *See* Equilar Report, *supra* note 1.

3. These figures underestimate the importance of options in companies that use them for compensation, since 50 of the 200 companies in the study awarded zero options. *Id.*

rations to which they owe a fiduciary duty. And even if CEOs do not take advantage of their power, the worry is that there is no effective check on executive compensation—that the system suffers from a structural conflict of interest.[4]

Some critics seem to object to executive pay because they see it as simply excessive or as a drain on stockholder return. They assert that it is pay without performance.[5] But it is impossible to say how much is too much in the absence of an objective standard.[6] Sensing this difficulty, other critics have

4. Jensen & Murphy, *supra* note 1, at 53.

5. LUCIAN A. BEBCHUK & JESSE M. FRIED, PAY WITHOUT PERFORMANCE: THE UNFULFILLED PROMISE OF EXECUTIVE COMPENSATION (Harvard University Press 2004); Lucian A. Bebchuk, Jesse M. Fried & David I. Walker, *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 751 (2002). *See* William W. Bratton, *The Academic Tournament over Executive Compensation*, 93 CAL. L. REV. 1557 (2005) (reviewing Bebchuk & Fried); John E. Core, Wayne R. Guay & Randall S. Thomas, *Is U.S. CEO Compensation Inefficient Pay Without Performance?* 103 MICH. L. REV. 1142 (2005) (reviewing Bebchuk & Fried).

6. For a classic case of know-it-when-you-see-it reasoning in connection with executive pay, see *Rogers v. Hill*, 289 U.S. 582 (1933) (indicating that pay plan based on percentage of revenues became too lucrative and might be considered invalid despite shareholder approval). *See also* Jones v. Harris Assocs. L.P., 527 F.3d 627 (7th Cir. 2008) (opinion by Easterbrook), *rehearing denied*, 537 F.3d 728 (7th Cir. 2008) (dissent by Posner), *cert. granted*, 129 S. Ct. 1579 (March 9, 2009). *Jones* addresses the standard to determine whether the management fee charged by a mutual fund adviser is excessive. The leading case on the subject is *Gartenberg v. Merrill Lynch Asset Mgmt., Inc.*, 694 F.2d 923, 928 (2d Cir. 1982), in which the court held that the standard is whether the fee is so disproportionately large that it bears no reasonable relationship to the services rendered and could not have been the product of arm's-length bargaining. In apparently rejecting this standard, Judge Easterbrook held that the test is primarily one of disclosure, but that the fee could be so unusual that a court may infer that deceit must have occurred, or that the persons responsible for the decision have abdicated. *Jones*, 527 F.3d at 632. In dissenting from the court's denial of rehearing en banc, Judge Posner argued in essence that the so-unusual standard incorporates a comparative standard that tests compensation by the practices of other funds and that may constitute no standard at all because it does nothing to control what amounts to a race to excess. *Id.* at 732. Judge Posner also sees mutual fund adviser compensation as a subset of the larger problems with executive compensation generally. *Id.* at 730 (citing LUCIAN BEBCHUK & JESSE FRIED, *supra* note 5, at 23-44 (Harvard University Press 2004)); Charles A. O'Reilly III & Brian G.M. Main, *It's More Than Simple Economics*, 36 ORGANIZATIONAL DYNAMICS 1 (2007); Ivan E. Brick, Oded Palmon & John K. Wald, *CEO Compensation, Director Compensation, and Firm Performance: Evidence of Cronyism?*, 12 J. CORP. FIN. 403 (2006); Arthur Levitt, Jr., *Corporate Culture and the Problem of*

objected to generous executive pay because they suspect that there is no genuine negotiation that goes on between the board of directors and the CEO and that the CEO is freely given as many options as she wants.[7] Others argue that the true cost of options is not apparent to stockholders,[8] and as a result, CEOs exact more pay and stockholders suffer more dilution than they should. To be sure, accounting rules now require that the grant-date value of options be recognized as an

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Executive Compensation, 30 J. CORP. L. 749, 750 (2005); Gary Wilson, *How to Rein in the Imperial CEO*, WALL ST. J., July 9, 2008, at A15; Joann S. Lublin, *Boards Flex Their Pay Muscles: Directors Are Increasingly Exercising More Clout in Setting CEO Compensation; and in Some Cases, the Boss Is Actually Feeling a Little Pain*, WALL ST. J., Apr. 14, 2008, at R1; Ben Stein, *In the Boardroom, Every Back Gets Scratched*, N.Y. TIMES, Apr. 6, 2008, at B9. Judge Posner further notes that directors are often CEOs of other companies and naturally think that CEOs should be well paid, that often they are picked by the CEO, and that compensation consulting firms, which provide cover for generous compensation packages approved by boards of directors, have a conflict of interest because they are paid not only for their compensation advice but for other services to the firm—services for which they are hired by the officers whose compensation they advised. *Jones*, 537 F.3d 730 (citing Bebchuk & Fried, *supra*, at 37-39); Gretchen Morgenson, *How Big a Payday for the Pay Consultants?*, N.Y. TIMES, June 22, 2008, at B1; Neil Weinberg, Michael Maiello & David K. Randall, *Paying for Failure*, FORBES, May 19, 2008, at 114; Joann S. Lublin, *Conflict Concerns Benefit Independent Pay Advisors*, WALL ST. J., Dec. 10, 2007, at B3; Warren E. Buffet, *Letter to the Shareholders of Berkshire Hathaway Inc.*, Feb. 27, 2004, at 8. But there is a significant difference between executive compensation and mutual fund advisory fees. Section 5 of the Investment Advisers Act, 15 U.S.C. § 80b-5, prohibits advisory contracts that provide for compensation on the basis of capital appreciation except as averaged over time and in relation to an appropriate index as the SEC may provide by rule. The SEC has adopted no such rule, effectively prohibiting mutual fund advisors from compensation that operates similarly to stock options for CEOs. In the end, the decision of the Seventh Circuit in *Harris* was reversed by the Supreme Court. *See* Jones v. Harris Assocs. L.P., 130 S. Ct. 1418 (March 30, 2010). The Court rejected the notion that disclosure is enough and affirmed the traditional *Gartenberg* approach that leaves room for the courts to find that compensation is so excessive that it could not have been the result of arms length bargaining. In other words, the Court seems to endorse what amounts to a reasonableness standard that ultimately vests significant subjective discretion in the courts. Again, technically, the decision applies only to investment advisers who are regulated under federal law, but it is likely to be quite influential generally in connection with controversies relating to executive compensation.

7. *See* Jensen & Murphy, *supra* note 1, at 50-56.

8. *See id.* at 37-38.

expense,[9] but some still see options as stealth compensation that unduly dilutes the interests of the stockholders who own the corporation. Specifically, some critics argue that options are viewed by the board as essentially costless and are treated as an add-on element of compensation for which recipients do not give up equivalent compensation in return.[10] In other words, options are nothing but icing on an already ample cake.[11] In addition, critics argue that options are too costly. Options are risky securities and therefore carry high rates of return.[12] Because of this risk, CEOs also demand large grants that ultimately divert a large portion of returns away from stockholders.[13] Finally, because options pay off only if the stock price rises, they may induce CEOs to adopt risky business strategies or questionable tactics designed to maintain the stock price, particularly when equity is overvalued.[14]

It is the thesis here that none of these objections can withstand scrutiny, and that stock options are indeed the best form of incentive compensation yet devised. First, there is little reason to believe that options have resulted in excessive CEO compensation. Although CEO pay has increased dramatically in absolute terms, data show that total executive pay as a percentage of corporate income has remained quite stable since 1982.[15] This is true even though during the same period equity compensation (including options and restricted stock)

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9. *See infra* Part III.

10. *See* Jensen & Murphy, *supra* note 1, at 39-43.

11. *See id.* at 58-59.

12. *See* Calvin H. Johnson, *Stock Compensation: The Most Expensive Way to Pay Future Cash*, 85 TAX NOTES 351 (1999).

13. *See* Jensen & Murphy, *supra* note 1, at 39, 57-66.

14. Regarding the argument that options induce risky business strategies, *see* Saul Levmore, *Puzzling Stock Options and Compensation Norms*, 149 U. PA. L. REV. 1901, 1908 (2001); Shane A. Johnson & Yisong S. Tian, *The Value and Incentive Effects of Nontraditional Executive Stock Option Plans*, 57 J. FIN. ECON. 3, 15-34 (2000). While it seems unlikely that options would often cause a shift in business strategy (since undiversified CEOs tend to be quite risk averse), it is not surprising that CEOs would be eager to keep their stock price high even if they think it is overvalued. *See* Jensen & Murphy, *supra* note 1, at 44-49.

15. *See* Richard A. Booth, *Executive Compensation, Corporate Governance, and the Partner-Manager*, 2005 U. ILL. L. REV. 269, 279 (2005) (finding that among large corporations officer compensation including gains from stock options and restricted stock equals about 6 percent of taxable income). The appendix hereto sets forth the data. *See infra* Appendix Table I.

grew from a negligible amount to as much as 75% of CEO pay by the year 2000.[16] It would thus appear that equity compensation has been substituted for cash compensation. With options, more pay goes to those who succeed in increasing stock price. Second, options are subject to powerful market forces that effectively control their use. Using options as compensation effectively requires a corporation to repurchase shares to control for dilution. Because cash is scarce, there is a natural limit on the number of options that a corporation can grant.

In addition, stock options confer significant benefits that are difficult to achieve with other forms of compensation. Options induce corporations to distribute cash in the form of repurchases to control for dilution. Options also convey significant information to the market about a company's prospects, because the need to repurchase stock requires the company to estimate future cash flows in deciding how many options to grant. Finally, options provide an unbiased incentive for acquisitions when appropriate and divestitures when appropriate. Thus, options make sense for both growing companies and mature companies.

Although other forms of compensation may provide some of the same benefits as stock options, they are ultimately inferior to options. For example, restricted stock rewards the CEO who increases stock price, but it may also induce the CEO to engage in conservative business strategies designed primarily to avoid losses rather than generate gains, contrary to the interests of diversified investors.

Although stock options can be abused through such practices as timing and backdating, these problems can be addressed by the simple fix of announcing option grants in advance of fixing the strike price. Moreover, it is quite easy to design an option that addresses the problem of overvalued equity and eliminates the incentive to maintain a stock price that is inappropriately high: by indexing exercise price downward, options can provide an incentive for CEOs to minimize losses in falling markets.

In short, the liberal use of properly structured stock options as executive compensation is a significant improvement over traditional compensation systems. Thus, it appears that

16. *See* Pearl Meyer & Partners, *supra* note 1, at 7.

complaints about executive pay are based largely on *ex post* results. From an *ex ante* perspective, investors would not likely object to executive pay in the form of options because with options the CEO gains only if and to the extent that stockholders gain. Indeed, it is arguable that the model of the corporation as one owned by the stockholders with directors and officers as their agents has evolved into something more like a partnership between stockholders and officers in which the officers work for an ownership share of the business. Under this model, the board of directors may be seen primarily as an arbiter between these two groups for purposes of dividing up the gain (rather than as an active manager of the business). But even under the prevailing stockholder ownership model, it is the supposed duty of the directors and officers to maximize stockholder value. In practice, there are few situations in which that duty is enforced as a matter of law. Options fill the gap.[17]

I.
IMPLICATIONS OF STOCKHOLDER DIVERSIFICATION

Options are the optimal form of executive compensation, because most investors are diversified and the use of options as CEO compensation is most consistent with the interests of diversified investors.[18] The preferences of diversified investors

17. *See* Richard A. Booth, *Stockholders, Stakeholders, and Bagholders (Or How Investor Diversification Affects Fiduciary Duty)*, 53 BUS. LAW. 429, 453-54 (1998) [hereinafter Booth, *Stockholders, Stakeholders, and Bagholders*].

18. A conservative estimate is that more than three-quarters of all stock in the United States is held by well diversified investors. *See* Richard A. Booth, *The Buzzard Was Their Friend—Hedge Funds and the Problem of Overvalued Equity*, 10 U. PENN. J. BUS. EMP. L. 879, 889-90 (2008). Indeed, it is fair to say that it is irrational for most investors not to diversify. By investing in a well diversified portfolio of stocks, an investor can eliminate company-specific risk without any sacrifice of return. For every company that underperforms another will overperform, meaning that only the average matters. If it is possible to eliminate risk without any sacrifice of return, a rational investor will do so. Accordingly, a rational investor diversifies. Although it may go without saying, the focus here is on passive investors. The logic of diversification does not necessarily apply to an investor who seeks to exert control over a company or to pursue other idiosyncratic strategies. For examples, see Bruce H. Kobayashi & Larry E. Ribstein, *Outsider Trading as an Incentive Device*, 40 U.C. DAVIS L. REV. 21, 67 (2006). On the other hand, there is nothing to keep such an investor from seeking to diversify if possible. Indeed, some private equity firms have grown large enough to diversify,

are quite different from those of undiversified investors. While an undiversified investor wants a corporation to maximize return, an undiversified investor also wants the corporation to minimize risk. In contrast, a well diversified investor wants all portfolio companies to maximize return even if it entails more risk, effectively seeking the highest risk-adjusted return. They want their portfolio companies to maximize expected return.[19] Although options are not perfect, they are the best incentive for the CEO to maximize return and thus stockholder value.

The standard rationale for using options as executive compensation is that options align the interest of the CEO with the interests of the stockholders.[20] But this rationale both overstates and understates the case for stock options as compensation.

The alignment rationale understates the case for options because one would think that it is also possible to align the interests of officers and stockholders by using restricted stock

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and by shedding some of the risk that they would otherwise be forced to bear, they may grow even larger in the future. Some passive investors remain undiversified, but it seems clear that as a matter of policy, the law should consider the interests of the vast majority of investors and may safely ignore the interests of irrational investors. Studies indicate that an investor can achieve adequate diversification with as few as 20 different stocks. *See* Franco Modigliani & Gerald A. Pogue, *An Introduction to Risk and Return*, 30 FIN. ANALYSTS J., Mar.-Apr. 1974, at 68, 74-76. *See also* Meir Statman, *The Diversification Puzzle*, 60 FIN. ANALYSTS J., July-Aug. 2004, at 44, 49 (finding that portfolio of 300 stocks is optimal); James M. Park & Jeremy C. Staum, *Diversification: How Much is Enough?* (unpublished Working Paper 1998) *available at* http://ssrn.com/abstract=85428. For a particularly readable explanation of the virtues of diversification, see BURTON G. MALKIEL, A RANDOM WALK DOWN WALL STREET 227-250 (Norton 1996). Moreover, it is costless to diversify. Most individual investors diversify by investing in mutual funds and similar pooled investment vehicles. Funds charge a variety of fees in addition to the direct expenses of holding and trading portfolio securities, but there are comparable fees and expenses involved in maintaining an individual account. Thus, even a very small investor may invest in a fully diversified portfolio of several hundred different stocks. Many investors also diversify across asset classes. The discussion here, however, is focused solely on stock investors, because executive compensation is ultimately an issue of fiduciary duty and fiduciary duty normally runs only to stockholders. Moreover, diversification carries somewhat different implications for other asset classes.

19. *See* Joy v. North, 692 F.2d 880, 886 (2d Cir. 1982). *See generally* Booth, *Stockholders, Stakeholders, and Bagholders*, *supra* note 17 .

20. *See* Jensen & Murphy, *supra* note 1, at 57.

as incentive compensation. Indeed, some have suggested that restricted stock is superior in this regard.[21] The argument is that with restricted stock the CEO worries both about maximizing gain and minimizing loss. In other words, a CEO that owns stock will seek to maximize stock price but not if it creates an undue risk of losses that might cause stock price to fall. The assumption is that stockholders want gains but not if it means increasing the risk of losses, but this is not so. Diversified investors are indifferent to losses as long as the CEO seeks to maximize return. With options officers get their incentive pay only if stock price increases. Options therefore encourage the CEO to maximize return. In contrast, restricted stock sends a mixed message. The CEO will want the stock to appreciate in value, but she will also worry about a decrease in value, which may push the CEO to pursue conservative business strategies. The bottom line is that options work better because a diversified investor has a distinct preference for a CEO who maximizes return even if it means that more individual companies will suffer losses.

The alignment rationale overstates the case for options because CEOs are invariably less well diversified than stockholders. Although diversified stockholders would prefer that the CEO bet the farm when it makes sense to do so, the CEO is naturally reluctant to take such a big risk. For the diversified stockholder, losses wash out. For the CEO, a bad business bet may wipe out several years worth of pay, or possibly even result in termination.[22] Ironically, one of the criticisms leveled at

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21. *See* Sanjai Bhagat & Roberta Romano, *Reforming Executive Compensation: Simplicity, Transparency and Committing to the Long-Term*, (Yale L. & Econ. Research Paper No. 393, 2009), *available at* http://ssrn.com/abstract=1506742; Brian J. Hall, *Six Challenges in Designing Equity-Based Pay*, J. OF APPLIED CORP. FIN., Vol. 15, Spring 2003, *available at* http://ssrn.com/abstract=424170. Stock used for compensation is often called *restricted stock* because it may not be sold for some specified period of time after grant. To be precise, the recipient does not actually receive the stock until the end of the vesting period, at which time the recipient recognizes income for tax purposes according to the market value at the time of vesting. Typically, the recipient is paid any dividends paid during the vesting period. Otherwise, such stock is no different from the stock held by outside investors.

22. This may partly explain the practice of negotiating up front for a severance package. To be sure, the severance package may be so lucrative that the CEO has little to lose from failure, but if incentive compensation has displaced other forms of compensation and has accordingly increased

stock options is that they induce CEOs to take more risk in order to increase stock price. But that is exactly what diversified investors want. Indeed, a diversified investor would likely prefer more risk than the CEO is willing to assume. Risk matters much more to the CEO than to diversified investors. The problem is that the CEO cannot diversify since he has most of his eggs in one basket. If he is going to be paid with options rather than cash, he will insist on more options. Successful CEOs will receive more compensation than they would with all cash compensation, and unsuccessful CEOs will receive less than they would with all cash compensation. That is as it should be. But it means that in some cases, CEO pay will appear to be quite generous. A diversified stockholder should understand. But undiversified stockholders tend to be the ones who show up at stockholder meetings and otherwise speak out.[23]

In short, options are not perfect, but it is not clear that there is any better form of incentive compensation to align the interests of the CEO and diversified shareholders. Nevertheless, some critics argue that other forms of incentive compensation would be preferable, and others question the need for any form of incentive pay.

Some critics argue that the traditional salary and bonus model of compensation is superior to equity compensation. One problem with the traditional model is that it can create

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the risk borne by CEOs, then it is not surprising that severance packages have also increased in size. The ultimate question is how the two should be balanced. The focus here is primarily on incentive pay, while many of the arguments about pay without performance focus primarily on severance pay. *See* Jensen & Murphy, *supra* note 1, at 29 (suggesting that boards should refuse to agree to severance packages). But it is not necessarily easy to separate the two. If the point of incentive pay is to give the CEO an ownership interest in the company, it may be that severance pay should be seen more as a buyout than as some sort of going away bonus.

23. The optimal mode of compensation may differ depending on whether a corporation is publicly traded or closely held. In a closely held corporation, stockholders are likely to be poorly diversified precisely because they cannot easily sell their shares and buy an array of other stocks. Thus, stockholders in a closely held corporation may want the CEO to focus on maintaining current levels of return and avoiding losses. For a classic discussion of these two differing approaches to maximizing welfare, *see* JOHN RAWLS, A THEORY OF JUSTICE 130-39 (Harvard University Press rev. ed. 1999) (1971) (discussing maximin rule).

perverse incentives. A bonus is often based on gross earnings, revenues, or assets under management. It tends to reward growth irrespective of stockholder value.[24] To be sure, a bonus could be based on increase in share price, but why not then use options? Another problem with the bonus system is that it is usually based in part on *ex post* subjective factors. While subjective factors may affect the number of options granted in the first place, they do so *ex ante*. In other words, with options, the reward is clearly defined up front. With a bonus, there is significant risk of getting it wrong. Admittedly, a subjective bonus system can be adapted to a declining market or a troubled company. In such circumstances, it may be important to reward the CEO who avoids a bigger loss. But options too can be adapted to such circumstances. As addressed further below, the problem of a declining market can be addressed by downward indexing. For a troubled company, options can be repriced when appropriate based on a consideration of subjective factors. In short, using options as incentive compensation permits the consideration of subjective factors when it is necessary, but it minimizes the need to rely on such factors routinely. Although some critics seem to think that there is inherent merit in reliance on subjective factors, it is difficult to believe that it is ever preferable not to know what the reward will be.[25]

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24. *See, e.g.*, Kamin v. American Express Co., 383 N.Y.S.2d 807, 811 (Sup. Ct. 1976) (plaintiffs alleging that decision to grant as a special dividend an unprofitable investment rather than to sell it may have been motivated by desire to avoid reduction in reported earnings even though the grant led to loss of tax benefit).

25. *See* Jensen & Murphy, *supra* note 1, at 79. Jensen and Murphy (and others) also argue that options are overused to compensate lower level employees who cannot do much to affect stock price. This argument assumes that the CEO can affect stock price, which may not be true in all cases. It also assumes that the ability to affect stock price is the point. That is not clearly true either. It may be that the best way to maximize stockholder value is for many employees to work together as a team to achieve a common goal through a clearly defined strategy. It also may be that good ideas percolating up from below contribute to appreciation of price as much as decisions from the top. Stock options are a way to give all a stake in the outcome. On the other hand, in a diversified company, employees in one division may perceive that their compensation is tied to the poor performance of other divisions. In other words, in a diversified company some divisions may perform better than others. Those who work in profitable divisions may resent that their pay is based on a stock price dragged down by unprofitable

In addition, those who advocate other forms of incentive compensation argue that options cause short-term thinking because the market focuses on short term results.[26] But there is really no reason to think that the market focuses on short term results. If this were the case, the market would effectively undervalue stocks with long term prospects and arbitrageurs would buy them up until the price was accurate. The market is able to wait for returns, as are diversified investors. If the return is sufficiently attractive to make good business sense, the market will wait. The fact that the market may react negatively to disappointing quarterly earnings does not mean that the market is focused on short-term results, but rather that the market has changed its mind about long-term prospects. CEOs may think that the market cares about short term results, but that does not make it so.

Similarly, the critics sometimes argue that options and the market reward CEOs even in the absence of improved earnings. They see pay without performance. This too is a strange argument because there is no reason to think that the market will bid up the price of a company for no reason at all. Again, the explanation is that the market is bullish about long term prospects. On the other hand, one might argue that the CEO should wait for his reward rather than be paid based on the equivalent of exit polling. But one could also argue that because options harness the power of the market to evaluate the future in the present, they provide immediate feedback and

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divisions. One way to fix this problem is for the company to issue tracking stock. But the better solution may be to break up the company. If the employees see themselves as working for different businesses, it may be a sign that the business makes little sense as a unified whole. To be sure, there may also be businesses in which diversification makes sense for the same reasons. If individual divisions are engaged in highly cyclical businesses, employees may gain from stability of the whole.

26. *See* Jianxin Daniel Chi & Shane A. Johnson, *The Value of Vesting Restrictions on Managerial Stock and Option Holdings* (Mar. 9, 2009), *available at* http://ssrn.com/abstract=1136298; Brian J. Hall, *supra* note 21. Moreover, CEOs may focus on short term results even if the market is indifferent. Thus, if anything, options should induce CEOs to think long term when it is appropriate. To be sure, short term results may matter for some companies. And it may be that companies that choose to go public (or to stay public) are companies for which short term results are a better indicator of performance.

reward.[27] Rewards usually work best when they are quickly and clearly tied to good work, so it is curious to argue that options are flawed in this regard.

Finally, there are some who question the need for any form of incentive compensation.[28] The argument seems to be that returns are likely to be just as high irrespective of how we pay the CEO. That is conceivable, but it would be difficult to prove and seems unlikely to be true of all companies. The assumption is that talented businesspeople would choose to work for publicly traded companies even without the prospect

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27. Besides, it is exceedingly difficult to measure return. Is it better to focus on GAAP earnings or cash flow? Such nice questions (and the expense inherent in finding answers) can be avoided by relying on market price as a measure of performance. *See generally* JAMES SUROWIECKI, THE WISDOM OF CROWDS (Doubleday 2004) (discussing numerous examples of situations in which groups and markets divine better estimates than individuals or even experts). In addition, it is odd to argue that pay schemes should ignore the early returns if we want CEOs to pay attention to them. In the real world, the market reacts quickly to announcements relating to business plans and strategies. If the market reacts negatively to company news, it signals the CEO to change course.

28. *See* Roger Martin, *Taking Stock: If You Want Managers to Act in Their Shareholders' Best Interests, Take Away Their Company Stock*, HARV. BUS. REV. Jan. 2003 at 19; Roger Martin, *The Wrong Incentive: Executives Taking Stock Will Behave Like Athletes Placing Bets*, BARRON's Dec. 22, 2003 at B30; Bruno S. Frey & Margit Osterloh, *Yes, Managers Should Be Paid Like Bureaucrats*, J. Mgmt. Inquiry, Mar. 2005, at 96. The reference to bureaucrats derives from two 1990 articles by Jensen and Murphy arguing that CEOs who are paid like bureaucrats will act like bureaucrats. *See* 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; Michael C. Jensen & Kevin J. Murphy, *Performance Pay and Top Management Incentives*, 98 J. POL. ECON. 225, 226 (1990). The ultimate question here is whether to view a CEO as a competitor who grabbed the brass ring and may rest on his laurels or rather as an entrepreneur who has a plan (or at least a vision) for the company. In other words, is being CEO more a reward or an opportunity? If the former, being CEO is its own reward and does not call for more. If the latter, incentive compensation is quite appropriate. With stock options, the message is: what have you done for me lately? Although one might question whether the former model ever applies, there was a time when it was the prevailing model. *See* William W. Bratton & Michael L. Wachter, *Shareholder Primacy's Corporatist Origins: Adolf Berle and 'The Modern Corporation,'* 34 J. CORP. L. 99, 100-02 (2008). On the other hand, in light of the recent credit crisis, one might argue that the biggest banks should be seen as so-called utility banks that are too big to fail and whose employees should be paid consistent with that role rather than like investment bankers. *See* Richard A. Booth, *Things Happen*, 55 VILL. L. REV. 57 (2010).

of an ownership interest. That seems unlikely where there are many nonpublic alternatives that offer the rewards of ownership.[29] To be sure, there may be mature businesses in which the goal should be simply to stay the course. It may be important in such a situation to hire a CEO who thinks of himself more as a trustee than as an entrepreneur.[30] But there may be many such companies that are ripe for break-up. Without some form of incentive compensation, it is not clear why a CEO would ever choose to break up his own company. More importantly, it is not clear how to distinguish one mature business from another in this regard.[31] Unless the harm from incentive compensation is demonstrable, it seems unwise to eschew it.

II.
How Much is Too Much?

Although options are the best form of incentive compensation, none of the foregoing arguments speaks to the possibility that CEOs may still be overpaid with too many options. Again, it is difficult to know how much is too much, but scholars have suggested several possible ways to approach the question.

Michael Jensen and Kevin Murphy argue that companies grant too many options because options are seen as costless and are granted in addition to cash compensation that is already adequate if not generous. As a result, stockholder returns are unduly diluted. To prove that options are viewed as free money, Jensen and Murphy point to the fact that option grants as a percentage of shares outstanding have remained

29. *See* Michael Jensen, *The Eclipse of the Public Corporation*, Harv. Bus. Rev., Sept.-Oct. 1989, at 61.

30. One also gets the sense that these critics think that the help should not mix with investors. They seem to see the separation of ownership from control as a virtue, although when first documented by Berle and Means, it was meant as an indictment of corporate governance. Adolf A. Berle, Jr. & Gardiner C. Means, The Modern Corporation and Private Property (Transaction Publishers, 2009) (1933).

31. Ironically, one promising possibility is to give CEOs more control over their own pay. If the CEO thinks the better strategy is to grow or break up the company, she will likely choose lots of options. If the better strategy is to stay the course, she will likely choose cash. *See* Jensen & Murphy, *supra* note 1, at 58-59.

relatively constant since 1992 despite the fact that the stock market has risen dramatically during the same period. As a result, executive compensation has risen dramatically. Jensen and Murphy argue that this shows that boards of directors have abdicated their responsibility to bargain with CEOs and have instead fallen back on established formulas for lack of any better standard.[32] But there is another possible interpretation of this data.

Total executive compensation as a percentage of corporate income has also remained quite constant since 1982 (well before the boom in option compensation). Among the largest corporations, total officer compensation from all sources (including option gains) as a percentage of corporate income has averaged about 6.0% with a high of 7.5% in 1992 and a low of 5.1% in 1995.[33] Compensation from options increased from 1.4% of shares outstanding in 1992 to 2.6% of shares outstanding in 2001.[34] By the end of the same period, about 75% of CEO compensation was paid in the form of equity (mostly options).[35] So it must be that options and equity have been substituted for cash compensation. Thus, the real change has been in the form of compensation rather than the amount.[36]

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32. *See* Jensen & Murphy, *supra* note 1, at 37-43.

33. *See* Booth, *supra* note 15, at 299.

34. *See* Jensen & Murphy, *supra* note 1, at 35-38.

35. *See* Pearl Meyer & Partners, *supra* note 1, at 7.

36. It is also possible that the percentage of total pay that is attributable to successful companies has increased or that the percentage of total pay that goes to the CEO has increased. The former is consistent with the increasing use of stock options. It may also be attributable to or at least connected with more narrowly focused businesses and increasing idiosyncratic risk. *See* Roger G. Ibbotson & Peng Chen, *Sources of Hedge Fund Returns: Alphas, Betas, and Costs* 10-16 (Yale ICF, Working Paper No. 05-17, 2005) (finding that most hedge fund returns come from alpha risk and that such risk has increased significantly in recent years). In other words, as investors become more diversified, individual businesses become less diversified. The latter—the trend toward a jackpot compensation model—calls for further explanation. Given that total pay as a percentage of income has been more or less constant, it must be that the CEO commands a larger share of the pot. Indeed, it is well known that CEO pay has increased in comparison to the pay of other officers and employees. This raises additional questions. What accounts for the system of jackpot compensation that has evolved? And why do other high ranking officers go along with it? Again, one possible answer is the demand for more focused firms that follows from investor diversification.

This suggests that the corporation may have evolved as a form of organization. The traditional hierarchical model of the corporation is one in which the stockholders are viewed as the owners of the business. The stockholders elect the board as their collective agent, and the board appoints the CEO and other high level officers to run the business day to day.

It may be time for a new model. It may be more accurate to think of the corporation as akin to a partnership between the stockholders and the officers with the board of directors acting as an arbiter between these two constituencies.[37] In

37. *See* Booth, *supra* note 15, at 296; Richard A. Booth, *Five Decades of Corporation Law—From Conglomeration to Equity Compensation*, 53 VILL. L. REV. 459, 473-74 (2008). Under the traditional hierarchical model of the corporation (often called the stockholder primacy model), it is common to think of directors and officers as a group whose members all owe essentially the same duties to the stockholders (who are seen as the owners of the corporation). The suggestion here is that directors and officers play very different roles. In essence, officers are undiversified inside investors whose interests are usually, but not always in line with those of diversified outside stockholders. That is, both groups want to maximize their collective wealth, but they may have different views about what that means or how to achieve it. They both want to maximize their share of the pot. In this view of the corporation, the role of the board of directors is to monitor the officers and to arbitrate decisions about how to split the pot. I will call this the two-owner model of the corporation. The two-owner model of the corporation is similar in many respects to the team production model (TPM) of the corporation. *See* Margaret M. Blair & Lynn A. Stout, *Team Production in Business Organizations: An Introduction*, 24 J. CORP. L. 743, 746-48 (1999). Blair and Stout argue that the needs of team production explain why the board of directors retains ultimate managerial authority: the corporation has evolved to serve the needs of businesses that require dedicated inputs that cannot be withdrawn by various investors. Thus, investors (constructively) agree to have a (disinterested) board of directors act as a mediating hierarch that is entrusted with the assets and charged with assuring that all contributors are treated fairly. Blair and Stout conclude that this implies that the board of directors should be seen as owing a fiduciary duty to all corporate constituencies. But it is not at all clear that the duty-to-all conclusion follows from TPM. The model is also consistent with the idea that the board of directors mediates (or more precisely arbitrates) between outside stockholders and inside stockholders (officers). *See* Richard A. Booth, *Who Owns a Corporation and Who Cares?* 77 CHI.-KENT L. REV. 147 (2001). *See also* Booth, *Stockholders, Stakeholders, and Bagholders*, *supra* note 17.

Even under the traditional model, there is vigorous debate as to whether the board of directors should be seen as the ultimate managerial authority or rather as a monitor for the officers. It is well known that in practice the CEO calls the shots. Thus, many scholars of both law and finance have argued that the proper role of the board is to monitor rather

other words, the CEO and other high level officers should be seen as working for a piece of the action.[38] This is a common

than to manage. But the distinction seems academic and the debate quite sterile in the context of the stockholder ownership model because practically speaking the board is seldom able to manage the business anyway. If the two-owner model is the better view of the corporation, the idea of the monitoring board takes on real meaning. Indeed, Jensen and Murphy argue that the board should see itself primarily as a monitor rather than as an advisor to the CEO. *See* Jensen & Murhpy, *supra* note 1, at 54. On close inspection, corporation statutes are somewhat ambiguous about the differences between the roles of directors and officers. *See* MODEL BUS. CORP. ACT §§ 8.30 – 8.31, 8.40 (2005) (setting forth the duties of directors and officers, respectively, in different sections but in essentially identical terms); *but see* MODEL BUS. CORP. ACT § 8.56 (2005) (setting forth special rule regarding indemnification of officers that is somewhat broader than the rule applying to directors). Delaware law as it relates to conflicts of interests and indemnification speaks to the duties of directors and officers in unified sections. *See* DEL. CODE ANN. tit. 8 §§ 144 – 145 (2010). But it talks only of directors in permitting an articles of incorporation provision absolving them from liability for negligence. *See* DEL. CODE ANN. tit. 8 § 102(b)(7) (2010). The ALI, Principles of Corporate Governance Section 3.01 states that "[t]he management of the business of a publicly held corporation should be conducted by or under the supervision of such principal senior executives as are designated by the board of directors. . . ." And Section 3.02 lists as the very first function of the board of directors of a publicly held corporation that it should "[s]elect, regularly evaluate, fix the compensation of, and, where appropriate, replace the principal senior executives." PRINCIPLES OF CORP. GOVERNANCE §§ 3.01-02 (2005). MODEL BUS. CORP. ACT § 8.01 is similar. *See also* Lyman P.Q. Johnson, *Corporate Officers and the Business Judgment Rule,* 60 BUS. LAW. 439 (2005); Lyman P.Q. Johnson & David Millon, *Recalling Why Corporate Officers Are Fiduciaries,* 46 WM. & MARY L. REV. 1597 (2005).

38. Accordingly, setting executive compensation becomes one of the central functions of the board rather than an interesting subset of problems falling somewhere between the duty of care and the duty of loyalty. *See* PRINCIPLES OF CORPORATE GOVERNANCE §§ 3.01, 5.03 (1992); MODEL BUS. CORP. ACT § 8.01 (2005). The monitoring board also makes sense in a world of diversified investors who have a distinct preference for focused business strategies and CEOs with well-defined vision as opposed to management by committee. Thus, the two-owner model is also consistent with a system of jackpot compensation. (As discussed further below, the two-owner model of the corporation also suggests that it is quite important to enforce rules against insider trading, whereas under the traditional view of the corporation the rationale for the prohibition of insider trading is not so clear.) On the other hand, the two-owner model of the corporation raises questions about why anyone would want to be a director. While it is easy to see why one might want to be a member of an inner circle of advisors, it is not clear that a director is often paid enough to serve as real monitor. One possible solution to this problem is a board composed primarily of major stockhold-

model in the business world. It is the model used by venture capital funds, private equity funds, hedge funds, and REITs, where it is standard practice for advisers to be paid a *carried interest* or *carry* of as much as twenty percent of gains.[39] In short, executive compensation practices are consistent with the notion that the officers of a public corporation should be seen as inside owners. If this is the more accurate view, it makes perfect sense that the percentage of corporate income that goes to the officers would remain about constant. From this perspective, it is somewhat surprising that the percentage of compensation has not increased to a level that is more consistent with that of fund managers.[40]

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ers. *See* Charles M. Elson, *Executive Overcompensation—A Board-Based Solution*, 34 B.C. L. REV. 937, 944 (1993). But it is not clear that a large stockholder would make a particularly good neutral arbiter in setting compensation, which essentially amounts to a contest between stockholders and officers. This is not to say that the board should see itself as adverse to the CEO. Rather, its role is more akin to that of a referee. Indeed, that may be a useful analogy in that it is probably easier to keep sight of one's role in a contest between two competing sides. In short, it makes more sense for the board to be independent of both groups. Some commentators seem to agree, though presumably because they see the board as a regulator that may easily be captured by the regulated. *See* Charles M. Elson, *Director Compensation and the Management-Captured Board—The History of a Symptom and a Cure*, 50 SMU L. REV. 127, 127-28 (1996). Recent changes in the law (Sarbanes Oxley) and stock exchange rules are consistent with that view. *See* SOX Rules Not Eliminating Backdating of Stock Options, Glass Lewis Report Says, 38 Sec. Reg. & L. Rep. (BNA) 1879 (Nov. 6, 2006). It is not completely clear that it is a bad thing for the board to be a captive regulator. The board should seldom veto any reasonable business strategy that the CEO might want to pursue, but it does seem clear that members of the board should not be compensated in the same way that CEOs are compensated. In other words, it is inappropriate to compensate directors with options. But it may be quite sensible to pay directors with restricted stock.

39. The difference is that such funds tend to have many investments, only a few of which turn out to be winners. Nevertheless, 20% is a good bit more than the roughly 6% on average that goes to the officers as a group in the business corporation context. On the other hand, the carry enjoyed by fund managers is generally taxed at capital gains rates under current law. This disparate tax treatment has been a source of considerable controversy.

40. It is arguable that the compensation practices of these various funds suggests that executive compensation in operating companies is too low. To be sure, there has been much recent controversy about the taxation of carried interest, but very little about its absolute amount, suggesting that investors are happy to share their gains with those who create them. In contrast, under the Investment Advisers Act, which governs public mutual funds, in-

The evolution of the corporation may also answer the argument that options have been overused to compensate lower level employees. Jensen and Murphy have argued that because options are seen as free money, they have been used too freely to compensate large numbers of employees who cannot do much to maximize stock price.[41] As I discuss below, options give rise to numerous other benefits. The fact that options are the best incentive to maximize stock price does not mean that is the only rationale for using options as compensation. There is no obvious reason why employees other than the CEO and a few other high ranking officers should not be seen as partners and share in the returns.[42]

III.
THE COST OF OPTIONS

Assuming that some amount of gain-sharing in the form of options is desirable, how do we know what amount is optimal? To say that the corporation has evolved into a form of organization in which the CEO and other officers work for a piece of the pie does not necessarily answer the argument that options have been viewed as free money. On the other hand, the question of how much is too much is different if it is about sharing returns. CEO compensation must be seen as the result of two-way bargaining in which the CEO may justifiably seek as much as she can get. But even if the CEO is seen as an equity partner in a corporation, it may still be that she can command too much of the return.[43] The question is whether there is any way to determine how much is too much. Most commentators who have addressed this question have focused on the cost of options. There are two inter-related cost argu-

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centive compensation is generally prohibited. Investment Advisors Act of 1940 § 205, 15 U.S.C. § 80b-5 (2006). This is consistent with the fact that most mutual funds are diversified.

41. Jensen & Murphy, *supra* note 1 at 35-36, 42-43.

42. *See* discussion *infra* Part V.

43. Given that the issue here is framed as one about how to share the equity returns of the business, I avoid reference to CEO pay or executive compensation, because those phrases suggest that the CEO is beholden to the corporation or the stockholders. Similarly, Jensen and Murphy use the term *remuneration* possibly because the term *compensation* may imply entitlement. Jensen & Murphy, *supra* note 1, *passim*.

ments against options. One relates to opportunity cost. The other relates to the cost of capital.

A. *Opportunity Cost*

Simply stated, the opportunity cost argument is that options are risky securities that are worth more to diversified investors than they are to undiversified officers.[44] In other words, an option could be sold to outside investors for more than it is worth to officers as compensation (although companies seldom sell options to raise capital).[45] The upshot is that the corporation must grant large numbers of options and outside stockholders will arguably suffer more dilution.[46]

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44. Jensen & Murphy, *supra* note 1, at 38-39; Calvin H. Johnson, *Stock Compensation: The Most Expensive Way To Pay Future Cash*, 52 SMU L. REV. 423, 441-42 (1999).

45. This argument assumes that the value of a stock option used as compensation is the same as the value of a listed option. That is clearly not correct. Compensatory stock options come with many strings attached that reduce their value in comparison to traded options. On the other hand, compensatory stock options also last a long time, which makes them more valuable. In any case, compensatory stock options are different from listed options. For what it is worth, Jensen and Murphy estimate that at-the-market options are worth about 55% of the cost to the firm of providing them (or would be so if they could be freely traded). *See* Jensen & Murphy, *supra* note 1, at 65-66. As for the use of options as a means of raising capital, one could argue that options (and warrants) are often used in connection with convertible securities. Moreover, a rights offering is essentially an offering of options.

46. *See* Jensen & Murphy, *supra* note 1, at 39. This is one of the arguments for using safer securities (such as restricted stock) as compensation. This argument is also closely related to the argument that option grants should be recognized as an expense for reporting purposes. For example, Jensen and Murphy argue that if companies must disclose how much options are really worth they will be shamed into not using them to such excess as they have done. *See* Jensen & Murphy at 40-41. One of the problems with the argument is precisely that options may have a different value to the corporation than to the recipient. Whose value should govern? Although there are good models by which tradeable options can be valued, options used as compensation differ in significant ways from listed options. As noted above, an undiversified CEO will attach a lower value on an option than will a diversified investor. So the question is whose value should measure the expense? Some observers have dismissed the question as silly. As they see it, an expense is whatever the company gives up. But that does not change the view of the CEO. This issue was dramatically illustrated by the controversy surrounding efforts by Zions Bancorporation to establish a value for its options (in order to determine the amount to expense) by auctioning off equivalent

Moreover, it seems like an odd bargain for a corporation that places a high value on its options to issue them to officers who place a low value on them. Ordinarily, one expects goods to flow the other way—from those who attach a low value to those who attach a high value. Since the bargain makes little sense, there must be something wrong, and it must be that stockholders are being cheated somehow. Or so the argument goes.

While this argument is correct as a matter of general financial theory, it is also flawed. There are too many real-world counter-examples. For example, it is standard practice for venture capital providers to take back preferred stock that zeroes out the value of the investee firm such that the entrepreneur gains only if the firm increases in value. Although the entrepreneur holds common stock, it has no value initially. It is thus equivalent to an at-the-market option.[47] The same is true in any situation in which one works for an ownership share of the business. Options are about working for a piece of the business, much like an associate in a law firm works in part for a partnership. That too is a risky proposition for the associate. But no one would say that the law firm gives up something that is worth more to it than it is to the new partner. Rather, the focus is on increasing the size of the pie for all.

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securities. The company wanted to minimize the expense and therefore sought to sell the security at as low a price as possible. *See* Floyd Norris, *What Seller Wants A Low Price?* N.Y. TIMES, June 1, 2007, at C1:1. There have been several other attempts to invent securities that mimic compensatory options and that could be sold to establish a market price for such instruments, but to date none have been approved by the SEC for purposes of determining the expense to attach to the grant of options under FASB 123R. One intriguing possibility to address many of the issues surrounding incentive compensation would be for companies to contract with a third party (such as an insurance company perhaps) to pay the CEO. That is, it might be possible to construct a derivative instrument that mimics an option that could be provided to officers in exchange for a fee to be paid to the provider. The fee would then constitute an actual expense of the corporation and the corporation would not need to worry about dilution. But more to the point, it would induce the company to pay as little as possible.

47. *See generally* Ronald J. Gilson & David Schizer, *Understanding Venture Capital Structure: A Tax Explanation for Convertible Preferred Stock*, 116 HARV. L. REV. 874, 881 (2003) (describing the operation of "eat-em-up" preferred stock).

Moreover, the opportunity cost argument proves too much. If the company can pay out less to officers by using safer forms of compensation, then it would seem to follow that the use of debt securities would be even cheaper than stock. So why not give the CEO a corporate bond? Better yet, why not just use surplus cash to pay a bonus? The question answers itself. In an efficient market, there is no difference between an option and a promise of some share of surplus cash at some point in the future. That is what an option is. In short, the argument that options are risky securities depends on the mere coincidence that options happen to capture the same tranche of return that should be the source of compensation, namely, the increase in return. The risk is what it is. Options make sense because they are a way for a company to pay with a share of its growth.

Admittedly, the use of options as compensation has the curious effect of shifting risk from diversified stockholders to undiversified CEOs. It may be that the risk that is shifted is risk that the CEO is better able to bear. A CEO may have reason to be more confident and may even have inside information of a sort. The CEO knows which button to push and will send a big bill for her services. So, it may be that CEOs place a *higher* value on options than would the market. It is difficult to tell as a general matter.

As for the related argument that options were used to excess prior to 2005 because their grant was not treated as an expense under GAAP, the assumption is that accounting rules matter. Clearly, a company that uses options as compensation is worth what it is worth whether or not the grant of options is treated as an expense. There is no reason to think that the market cannot accurately assess the effect that options have on firm value—whether up or down or both. There is no reason to think that the market will settle for a bit less in return by ignoring the dilutive effect of options. To be sure, investors did not always have as good or complete information as they do today.[48] But the lack of good information would likely have

48. The SEC substantially overhauled disclosure rules relating to executive compensation in 1983, 1992, and 2006. *See Final SEC Rules on Disclosure of Executive Compensation*, 15 Sec. Reg. & L. Rep. (BNA) 1852 (Sept. 30, 1983); *Securities and Exchange Commission Final Rules on Shareholder Communications and Disclosure of Executive Compensation*, 24 Sec. Reg. & L. Rep. (BNA) S-

caused investors to further discount stock price—a classic market for lemons effect. Thus, although those who advocated expensing stock options counted on shaming companies out of their use, the more likely result is that the market will now tolerate more options.[49]

1, S-27 (Oct. 16, 1992); *SEC Votes Unanimously to Adopt Rules Updating Executive Compensation Disclosure*, 38 Sec. Reg. & L. Rep. (BNA) 1310 (July 31, 2006). The SEC rules relating to disclosure of executive compensation are contained in Regulation S-K, Item 402. It was not until the 2006 revisions that information relating the grant of options or the number of options outstanding was required. Prior to 2006, the only information that was required to be disclosed related to the exercise of options. *See* SEC, Executive Compensation Disclosure, Release No. 33-8765 (Dec. 22, 2006), at 12. Although option expense was required to be disclosed at least by footnote following the adoption of FAS 123 in 1995, there is not necessarily any way to derive the number of options granted from the expense. Some such information could always be inferred from the number of shares outstanding because fully diluted earnings per share must reflect near-the-money options.

Although one assumes that the companies subject to such rules (and their lawyers) will routinely resist changes therein, there is reason to believe that many companies welcomed the 2006 revisions. In the absence of grant-by-grant information, the disclosure of gain on exercise may create the appearance of a huge payday even though much of the gain may have been there on paper for some time. By mandating disclosure of grants, investors can see the number of options accrued before they have any intrinsic value. There is still some room for improvement in the rules. In most cases, the required disclosure occurs only when the company issues its annual proxy statement. Thus, the information about option grants may be as much as a year old. As I argue at greater length below, the grant of options impounds significant information that the market would presumably prefer to have sooner rather than later. To be sure, a company is free to disclose more information sooner than is required under the rules. But most companies seem to view SEC rules as both a floor and ceiling. It may be that most companies are reluctant to disclose more than what is required for fear of tipping off competitors or even running afoul of some other SEC rule inadvertently. The safer course seems to be to follow the rules to the letter. As a result, SEC rulemaking may sometimes (or even often) be a way for companies to overcome the problem of collective action when it is in their interest to disclose more.

49. *See* Pearl Meyer & Partners, *supra* note 1. This is not to deny that the use of options has declined somewhat from its peak in 2001. But the reason may have more to do with evolving norms governing compensation. Jensen and Murphy argue that accounting rules do affect behavior. They cite the promulgation of FAS 106 in 1990 requiring the recognition of unfunded retirement benefits, which they argue caused companies to stop granting such benefits so liberally. *See* Jensen & Murphy, *supra* note 1, at 40-43. The more likely explanation for the changed behavior of corporations is that the market did not know about the unfunded benefits before the rule change.

B. *Cost of Equity*

A second argument is that at-the-money options fail to account for the cost of equity. That is, if options are supposed to reward the CEO for growing the value of the corporation, the corporation must generate return greater than its cost of equity. For example, if the expected rate of return on a stock is 10%, then arguably the company must generate a 10% return to break even.[50] In other words, if a stock is worth $10.00 per share at the beginning of the year, it must be worth $11.00 per share at the end of the year (assuming no dividends) or else the stockholders have arguably lost money. Suppose further that the company generates a return of 5% and the stock increases in value to $10.50. If the CEO holds options to buy shares at $10.00, she gains 5% even though the stockholders have arguably lost 5%. The implication is that at-the-money options are poorly designed, because they reward *any* increase in price.[51]

In other words, the change was the result of disclosure rather than accounting treatment. In the case of options, the market already knew most of the facts. So there is little reason to think that the accounting rule has had much effect. In addition, Jensen and Murphy argue that corporations largely stopped repricing underwater options after the 1995 promulgation of FAS 123, which required that repriced options be expensed. An equally plausible explanation is that the raging bull market that lasted until late 2001 eliminated much occasion for repricing and that the wholesale failure of many dotcoms thereafter eliminated the companies themselves. What is more interesting is that the 2005 promulgation of FAS 123R, which requires the expensing of all option grants, eliminates the difference between the accounting treatment of new options and repriced options. Thus, there is now no disincentive to reprice existing options, and the practice is likely to reemerge.

50. I use the neutral word *return* here to avoid the implication that GAAP earnings accurately reflect the capacity of the company to distribute cash. Presumably cash flow is a better measure. On the other hand, GAAP may be a better measure of a company's potential return.

51. Jensen & Murphy, *supra* note 1, at 60. There is a chicken and egg problem inherent in this proposal. The market rate of return (and thus the cost of capital) is a function of what the market does. Thus, the cost of capital cannot be known for sure until the returns are in. In this regard, indexing may be more sensible in that it is backward looking, while adjusting exercise price by the cost of capital looking forward may get the adjustment wrong. This is not to say that capital has no cost when the market remains flat (or falls). Moreover, it seems quite clear that the CEO who maintains stock price in a falling market has served the stockholders well. This argument is also closely related to the argument that the corporation could have

Accordingly, Jensen and Murphy have suggested that the exercise price of options should be adjusted upward by the cost of capital going forward.[52] For example, if the cost of eq-

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sold the option for more than it is worth to the CEO. The market value of the option is ultimately a function of the probability that the option will beat its expected return. But an option also has additional value that inheres in the fact that it is an option. In other words, increasing exercise price by the cost of capital is not precisely equivalent to treating the grant of an option as an expense, because the value of an option is slightly more than the cost of capital.

52. Jensen & Murphy, *supra* note 1, at 61. Jensen and Murphy do not discuss whether one should use weighted average cost of capital (WACC) or the cost of equity (COE) in making this adjustment. (One might also argue that since the required rate of return on options is even higher than COE, this higher rate should be used.) What seems clear, though, is that one should use COE if only to compare apples to apples—to measure success against the objective of options to maximize stock price. On the other hand, using COE may incline the officers to minimize debt capital and leverage—so as to maximize the chances of gain from options—even if the optimal capital structure for the business includes some debt. The big problem with adjusting exercise price is that it is notoriously difficult to determine COE (or WACC) with any accuracy. Although it is quite clear that every company has a COE, it is difficult to determine what it is. Thus, any such adjustment to exercise price is likely to lead to dickering and strategic behavior not to mention lucrative work for compensation consultants. Then again, every well run company must try to estimate its COE for capital budgeting purposes. Otherwise, the officers would have no rational basis for deciding what new projects to undertake. One solution might be to use a company's cost of internal equity when adjusting exercise price. Sauce for the goose is sauce for the gander. Nevertheless, there are other lurking issues. COE may reflect anticipated growth in the value of the company. *See* RICHARD A. BOOTH, APPRAISAL AND VALUATION IN CORPORATION LAW (forthcoming Oxford 2009). It is arguable that if the built-in growth rate derives from economy-wide factors, it should be netted out, which would have the effect of increasing COE and thus exercise price.

The idea that exercise price should be increased by the cost of capital is similar to the idea that exercise price should be indexed to the market. Some critics of executive pay argue (for example) that if the broader market has risen by 12%, while a specific stock has risen by only 6%, the stock has in fact lost 6%. Yet the CEO with at-the-money options still gains. One problem with indexing is that it ignores the contribution to total market return made by companies with below average returns. For example, if half of the companies in the market make 18% and half make 6%, overall market return (for a diversified investor) is 12%. But if half make 18% and half make 0%, overall return is 9%. Clearly even below average performers contribute to total return. Moreover, with unadjusted options, CEOs are compensated in proportion to their contribution. Those that gain 18% make three times as much on their options as those that make 6%. Indeed, there is something

uity is 10%, the exercise price of an option should increase by 10% per year.[53] In the alternative, they suggest that CEOs should pay for options upfront according to the corporation's cost of capital.[54] In other words, the CEO should pay about 10% of a stock's price for a one-year option on that stock,which should increase the value of the company by just enough to offset dilution.[55] Jensen and Murphy argue that this would give the CEO skin in the game, and that CEOs who

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vaguely hypocritical about inducing an officer to assume risk for the greater good of diversified investors and then paying them only if they beat the market average. Another problem with indexing is that different companies respond differently to changes in market prices. If the idea of indexing is to net out increases that result from a generally rising market, then one must know how each individual stock reacts to changes in overall market prices—its beta coefficient. But there is much disagreement about how to calculate beta and even more disagreement about whether beta is an accurate measure of risk (and ultimately cost of capital). There is no really good way to index. Focusing on cost of capital sidesteps this problem but does not completely avoid it, and to the extent that cost of capital is just another way of netting out broader market gains, it is not clear that it makes sense.

Finally, it is not clear that it is proper to index, because it is not clear that it is appropriate to net out such elements of return from executive compensation, particularly if compensation is about co-ownership. In other words, if the CEO has agreed to work for a share of the business, her decision may be characterized as a decision to invest her human capital in this business rather than another business and is presumably motivated by her judgment that this business is a better investment that is likely to increase in value more than other businesses. So viewed, it is difficult to argue that she should be denied any element of gain any more than an ordinary investor.

53. *See* Jensen & Murphy, *supra* note 1, at 61-65. This is similar to the practice among hedge funds, REITs, and other private equity funds of conditioning incentive payments on achieving some hurdle rate of return. In venture capital deals, payment-in-kind dividends serve a similar function in that they effectively increase the liquidation rights of preferred stock with the passage of time.

54. Jensen & Murphy, *supra* note 1, at 64-65. It is not clear that these two alternatives are equivalent. It is one thing to part with cash up front. It is quite another thing to receive an option with an exercise price 10% over the current market price.

55. If upfront, the payment should be slightly less than 10% to adjust for the time value of money. In other words, the payment should be some amount that, with interest at the end of the year, the total would equal a 10% return on the market price of a share at the beginning of the year. One tricky question is whether the presumed interest rate should be the same as the cost of equity or rather the rate at which the option holder could borrow funds with his own credit.

have paid something for their options will be more motivated than those who have not.[56]

Another closely related argument against options is that they discourage dividends because dividends reduce stock price. By omitting dividends, stock price increases by the amount that could have been paid out. Thus, options are more likely to end up in the money. Accordingly, it is important to neutralize the effect of dividends (or the lack thereof). One way to do so is to decrease exercise price by the per share amount of any distribution.[57]

C. *Options in the Real World*

Jensen and Murphy are correct in their analysis, but they have missed or misinterpreted key facts. They argue that *either* the CEO should buy options with her own money at a rate equal to the cost of capital *or* that exercise price should be adjusted by the cost of capital less any distributions.[58] Although it is quite clear that these are alternative remedies, it appears that both conditions are routinely satisfied in practice, because these fixes are built into the way options work.

First, CEOs have plenty of skin in the game. Jensen and Murphy argue that options have been layered on top of other compensation—that CEOs do not give up other compensation in exchange for a piece of the action. They cite the fact that the number of options granted has remained relatively constant as a percentage of shares outstanding.[59] But it is not clear what this fact means. As Jensen and Murphy themselves

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56. Jensen & Murphy, *supra* note 1, at 58-59. *See generally* ANDREI SHLEIFER, INEFFICIENT MARKETS: AN INTRODUCTION TO BEHAVIORAL FINANCE (Oxford 2000).

57. Jensen & Murphy, *supra* note 1, at 61. On the other hand, the initial declaration of a dividend usually causes stock price to rise unless the market thinks the company should have better uses for the cash. So it is possible with stock options that adjust for dividends that a company might declare a dividend in order to bump up the price of the stock and simultaneously reduce exercise price. But given that dividends (or increases therein) effectively commit the company to continue to make distributions or suffer a negative market reaction when the dividend is cut, such strategizing seems unlikely. Thus, it seems fair to say that on balance, the adjustment of exercise price for dividends creates an incentive for the company to adopt an optimal distribution policy or at least removes a disincentive to do so.

58. Jensen & Murphy, *supra* note 1, at 58-65.

59. Jensen & Murphy, *supra* note 1, at 35-38.

note, cash compensation has remained quite flat even in absolute terms,[60] so it must be that option compensation has increased *as a percentage* of total compensation, as it in fact has.[61] Again, total executive compensation, including the value of options at exercise, as a percentage of corporate income has remained remarkably constant since 1982. While one might argue that total compensation should not have increased as much as it has, it is quite clear that CEOs have taken most of the difference in options. So they have in fact given up cash compensation dollar for dollar. Indeed, given that total compensation measured in *ex post* dollars has remained constant as a percentage of corporate income, CEOs have given up more cash compensation *ex ante* than they should have given up.[62] Moreover, the foregoing analysis ignores the opportunity cost of a CEO. The choice to work for one company rather than another and the choice to work for options rather than cash are ultimately investment decisions for a CEO. This ignores the fact that a CEO is undiversified. The bottom line is that CEOs have ample skin in the game.[63]

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60. Jensen & Murphy, *supra* note 1, at 36.

61. Jensen & Murphy, *supra* note 1, at 31 (Figure 3). Among S&P500 companies in 1992, 38% of CEO pay came in the form of salary and 24% came in the form of options. In 2001, salary was 19% and options were 54%. These figures reflect grant-date value rather than ultimate gain.

62. That is, the gain from *the exercise* of options appears roughly to offset forgone cash compensation. But compensation critics argue only that CEOs should give up cash compensation to the extent of the grant-date value of options, and that amount is by definition less than the gain from exercise. To be sure, some options expire unexercised. The cash compensation forgone in connection with these options arguably offsets some of the gain, but the data relating to total executive compensation including gains from options is limited to corporations reporting positive income. While it is possible that there are some companies with net operating losses (NOLs) that report no income and whose stock nevertheless increases in value, it seems likely that the vast majority of companies with income enjoy some sort of increase in stock price and (more importantly) that the population of CEOs who exercise their options in any given year is limited to companies with income.

63. Jensen and Murphy hint that it is important that CEOs use their own money—*literally*—because as a matter of human nature, one places a higher value on something for which one pays. Jensen & Murphy, *supra* note 1, at 58-59.

Practically speaking, it is quite unlikely that any corporation would ever adopt a plan that requires the CEO to use his own money to buy options even at a discount price, because it would require the CEO to use after-tax

Second, exercise price *is* effectively adjusted for the cost of capital by virtue of the fact that most companies routinely repurchase shares to control for dilution from the exercise of options. Again, Jensen and Murphy argue that *either* the CEO should buy options with her own money *or* exercise price should be adjusted by the cost of capital less any distributions. But a repurchase is a distribution, and it turns out that if a company repurchases enough shares to control for dilution from the exercise of options, it distributes precisely the amount necessary to reduce exercise price to the market price at the time of grant.[64]

Consider the following example. Assume that Aardvaark Bioclonics Corporation (ABC) has 100 shares outstanding trading at $10 per share for a market capitalization of $1,000. ABC has no long-term debt. ABC's cost of capital (cost of equity) is 10%. Thus, investors expect the corporation to generate a total return of $100 or $1.00 per share over the coming year. If the corporation performs as expected and generates a total return of $100, it should be worth $1,100 at the end of

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dollars. The same might be true if the CEO is given a choice of cash or options. On the other hand, if the corporation pays a lower cash salary and makes up the difference with a grant of options, no tax is due on the grant of options. To be sure, if a CEO uses after tax dollars to buy options, the gain on exercise would be taxed at 15% rather than 35%. But a CEO can always buy a listed at-the-money option with after tax dollars anyway. Moreover, it is also possible to achieve a lower tax rate on gains by borrowing to buy options. But it makes little sense for a poorly diversified CEO to buy options on his own company's stock. Finally, the higher the cost of equity, the more the option would cost. The anomalous result would be that the CEOs of riskier companies would need to pay more for options than the CEOs of safer more established companies. In short, it is difficult to believe that officers routinely give up cash compensation equal to the value of options. The only benefit in doing so would be to save the income tax on compensation equal to the purchase price.

64. One might argue that stockholders prefer dividends to repurchases—that one is not a complete substitute for the other—but that idea runs afoul of well settled financial theory. *See* Merton H. Miller & Franco Modigliani, *Dividend Policy, Growth, and the Valuation of Shares*, 34 J. BUS. 411 (1961). Moreover, all else being equal, stockholders likely prefer repurchases in that they have the effect of cashing out the least optimistic stockholders and thus presumably maximizing the stock price, leaving it up to the stockholder when to cash out. *See* Richard A. Booth, *Junk Bonds, the Relevance of Dividends and the Limits of Managerial Discretion*, 1987 COLUM. BUS. L. REV. 553 (1987); Richard A. Booth, *The Efficient Market, Portfolio Theory and the Downward Sloping Demand Hypothesis*, 68 N.Y.U. L. REV. 1187 (1993).

the year, assuming no distributions to stockholders. Now assume that the CEO holds options to buy 10 shares at $10.00. When the company reports fully diluted earnings per share (EPS), it must calculate EPS as if in-the-money options have been exercised and option shares are outstanding.[65] Accordingly, EPS as reported will be $100 / 110 or about $0.91 per share rather than $1.00 per share. Presumably, the market will react by bidding down the price of the stock. But if the company buys back 10 shares before reporting earnings, it will then report earnings of $1.00 per share as the market expects. The end result is that the company must repurchase enough shares to offset dilution from the exercise of options.[66] In-

65. For the rules regarding the reporting of earnings, *see* EARNINGS PER SHARE, Statement of Fin. Accounting Standards No. 128 (1997). Publicly traded companies that report EPS must report fully diluted EPS, which requires that the company treat as outstanding any option that is in the money. *Id.* at ¶¶ 17-19. Other share-based compensation arrangements such as restricted stock and phantom stock are treated similarly. *Id.* at ¶¶ 20-23. What if the options are not yet vested or matured? When and how often does the company adjust number of shares outstanding? Can the company buy at-the-market calls and treat them as negative shares outstanding? One might also argue that repurchasing shares to fiddle with the denominator in EPS is akin to the management of earnings since the market appears to worry more about EPS than it does about gross earnings. This is a good form of earnings management focused on the denominator of EPS.

66. Historically, this practice may have related to permissible consideration for shares. Treasury shares were largely free of such restrictions, so many companies repurchased outstanding shares to fund option plans. Few such restrictions remain today. The amount of cash that a company must distribute is proportional to its increase in price. If there is a minimal increase in price, the company will need only to shell out a minimal amount of cash. Incidentally, the need to use cash to control for dilution subverts the argument that options are a good way for a cash starved company to pay its employees. The fact is that options are a drain on cash because of the need to control for dilution. The example assumes that options are granted at the beginning of the year and may be exercised at the end of the year. In the real world, options often cover longer periods during which returns compound while exercise price remains fixed. The implication is that it can become very expensive for a growing company to control for dilution. As discussed further below, this has the paradoxical effect of limiting the number of options that a growing company can grant. On the other hand, it may be that the stockholders of growth companies presume that their stake will be diluted by options and factor that into their investment decision. If so, full disclosure would seem to be quite important.

deed, it is standard operating procedure to do so.[67] To be sure, the effects of dilution are mitigated by the inflow of cash from the exercise of options, but unless the corporation repurchases shares, EPS will still be diluted by the larger number of shares outstanding.

There is a bit of accounting legerdemain in these results. The company can report earnings of $1.00 only because it uses cash to buy back 10 shares. Such a use of cash does not constitute an expense under GAAP, so it does not reduce reported earnings. In contrast, if the company repurchases shares at the end of the year, it should cost about $11.00 per share to do so.[68] In other words, it costs the company $110 to buy back 10 shares. That is $10 more than its return for the year. The

67. For example, in 1997 Microsoft reportedly used cash equal to two-thirds of its income to buy back shares to control for dilution. Roger Lowenstein, *Microsoft and its Two Constituencies*, WALL ST. J., Dec. 4, 1997, at C1. For other examples, *see* Q2 2008 PPG Industries PreRecorded Earnings Conference Call – Final (July 17, 2008) ("We use share repurchases for any excess cash and through the second quarter our focus remained to offset dilution from option exercises."); Quest Diagnostics at Jefferies & Co. Annual Healthcare Conference – Final (June 24, 2008) ("[W]e will be repurchasing shares at a minimum to offset the dilution associated with stock options and other benefit plans."); Q1 2008 Alcon Inc. Earnings Conference Call – Final (Apr. 24, 2008) ("[S]hare repurchase programs designed to offset dilution resulting from the exercise of employee stock options."). It seems likely that CFOs spend much of their time thinking about these matters.

68. If the company repurchases shares at the beginning of the year, it would cost about $10.00 per share to do so, but the company will be deprived of the use of the $100 for the year. So the true cost of buying shares at the beginning of the year is $100 plus the cost of that capital at 10% per year. Either way the cost is $110 to repurchase 10 shares. The same is true if the company buys back shares at various times during the year. The lower price paid earlier in the year is offset by the cost of capital for the remaining portion of the year and vice versa. In the real world, the company would likely be able to time its repurchases to coincide with dips in market prices, so the price paid is likely to be less than $11.00. There are dangers lurking in repurchasing shares (or locking in the price) too soon. Stock price may not increase as the company expects, and the company may find itself short of cash. Something like this happened at Electronic Data Systems Corporation (EDS). *See* Alan Goldstein & Bill Deener, *SEC Inquiry Pushes EDS Shares Down 12%; Plano Company Says It Acted Properly on Matters in Question*, DALLAS MORNING NEWS, Oct. 3, 2002, at 1D (company entered into derivatives to deal with potential dilution and was compelled to buy stock even though it declined in price). The safer strategy would seem to be to wait to repurchase shares when it becomes apparent that options will be exercised, though not necessarily at the very end of the option period.

company can make such a distribution, though, because when the CEO exercises 10 options, the company receives $100. Although neither of these transactions affects reported earnings, they do affect the value of the company. When the company receives $100 from the exercise of options, its value increases by $100 to $1,200. When the company repurchases shares, its value decreases by $110.

The bottom line is that the value of the company will increase from $1,000 to $1,100 as a result of operations, and from $1,100 to $1,200 as a result of the exercise of options, but it will then decrease by $110 to about $1,090 as a result of repurchasing stock. Even though the company reports total earnings of $100 at the end of the year, its stock price should settle at about $10.90 per share rather than $11.00.[69] While it is not clear that the market knows about these changes in value in any direct way, there is no reason to think that the market does not understand the basic dynamic. Thus, there is every reason to think that the market can intuit its way to a good estimate of the value of a stock adjusted for the effects of options.[70]

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69. To be precise, the amount of cash that must be used to repurchase stock is a bit less than $110. Assume for the moment that the company issues 10 options. It is tempting to assume that the ending share price will be (1000 + 100 + 100 – 110) / 100 or $10.90 per share. But this is not quite correct. If the ending price is $10.90 per share it will not cost $110 to repurchase the shares. Rather, it will cost only $109 to repurchase 10 shares. But if that is the case, the ending share price will be (1000 + 100 + 100 – 109) / 100 or $10.91 per share. To be precise, the repurchase price is equal to:

{[ending value + (exercise price x options)] / (shares + options)}

Plugging in the numbers for the example, the formula gives the following result for the repurchase price per share:

{[1100 + (10 × 10)] / (100 + 10)} = (1200 / 110) = 10.91

In other words, $10.91 is the price at which the repurchase price and the resulting market price will equilibrate.

70. Needless to say, these numbers assume that the market is efficient and gets the adjustment right. To be sure, the market may get it wrong sometimes or even often, but that does not subvert the argument here. Moreover, repurchase may have the effect of eliminating the most pessimistic investors from the company's stockholder population and thus enhancing stock price somewhat, although most optionees are likely to sell option stock immediately upon exercise in the absence of a prohibition to the contrary. *See* Richard A. Booth, *The Efficient Market, Portfolio Theory and the Downward Sloping Demand Hypothesis*, 68 N.Y.U. L. REV. 1187, 1188 (1993). Inci-

It would thus appear that there is no way to avoid some dilution of outside stockholder value from the use of options as compensation. If it were not for the use of options as compensation, the stock would have ended the year at $11.00 rather than $10.90, assuming that the company would have performed just as well without incentive compensation.[71]

D. *Repurchases and Antidilution*

The foregoing analysis is incomplete, however. Jensen and Murphy also argue that exercise price should be *decreased* to the extent of any dividends.[72] While they may have in mind

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dentally, this may argue—from an outside stockholder point of view—for the use of restricted stock rather than options as incentive compensation.

71. One possible way to deal with this residual dilution is to require the company to beat its expected return by enough to compensate for the excess repurchase amount. That is, one could require that the company in the example generate enough return so that its ultimate price (after repurchasing shares at that price) would be $11.00 rather than $10.90. To be precise, the company would need to generate a return of about $110 rather than $100. That is just another way of saying that if the initial exercise price is $10.00 per share, it should be increased by 10% to $11.00 per share at the end of one year, which is just a roundabout way of saying that the exercise price of options should be increased by the cost of capital. *See* Jensen & Murphy, *supra* note 1, at 58-65. In other words, the idea that the exercise price should be increased by the cost of capital is equivalent to limiting option compensation to cases in which performance exceeds expectations, which is the same thing as indexing. From the point of view of a stockholder, this is smoke and mirrors. A stockholder might still argue that his returns would have been even higher but for the effects of options. Why should this windfall be diluted simply because the company expected a return of 10% rather than 11%? If we are worried about dilution of expected returns, why are we not worried about dilution of returns that exceed or fall short of expectations? This suggests that there may be more than one form of dilution. *See* In re Time Warner, Inc. Sec. Litig., 9 F.3d 259, 272 (2d Cir. 1993) (Winter, J., dissenting) (discussing various forms of dilution). One type of dilution arises when stockholders end up with less than they would have in the absence of options. Another type of dilution arises when officers gain more than stockholders. As I discuss further below, this distinction is related to two different ways that one might measure return. On the one hand, one might say that a stockholder breaks even when actual return equals expected return. On the other hand, if expected return is 10% and the company generates a return of 9%, it seems peculiar to say that the stockholder has suffered a loss.

72. *See* Jensen & Murphy, *supra* note 1, at 60-61. It is not clear that Jensen and Murphy consider the effect of dividends and other distributions on their cost of capital argument. Their point seems to be limited to neutralizing any disincentive to pay dividends. But it is nonetheless necessary to con-

distributions in the form of dividends, a repurchase is a distribution. Although a repurchase is usually not pro rata, it is well-understood as a matter of both law and finance that a repurchase can be functionally equivalent to a dividend.[73] Accordingly, dividends and repurchases are generally regulated by the same statutory provisions.[74]

In the example, because the company repurchases 10 shares and thus distributes $110, exercise price should be decreased by that amount spread over 100 shares. A distribution of $110 in the form of a dividend is equivalent to $1.10 per share. So if exercise price is increased to $11.00 per share to adjust for the cost of equity, it should then be reduced from $11.00 not just to $10.00 but to $9.90 per share to adjust for the distribution of $110. Arguably, the officers who have options to buy shares at $10.00, pay $0.10 too much. The implication is that at-the-market options work even better than they should, so it turns out that the unavoidable dilution that goes with at-the-market options is avoidable. At the end of the day, stockholders have on average exactly what they should have. Roughly speaking, the stock trades for $10.90 for an aggregate value of $1,090, and the company has distributed $110 to selling stockholders through repurchases.[75]

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sider the effect of dividends and other distributions on stockholder return in order to determine the dilutive effect (if any) that results from the exercise of stock options.

73. *See* Miller & Modigliani, *supra* note 66.

74. *See, e.g.*, I.R.C. § 302; MODEL BUS. CORP. ACT § 6.40 (2002).

75. If the CEO has options on five shares rather than ten, share price settles at about $10.95. It does not really address the dilution issue to increase exercise price by the cost of equity. In the foregoing example, suppose that the exercise price is set at $11 to reflect the cost of capital. The company exceeds expectations, generates a return of $200, aggregate value rises to $1,200, and the market price of the stock increases to $12. The company further increases in value to $1,310 from the exercise of 10 options. With 110 shares outstanding, each share is worth $11.91. But the stockholders might nonetheless complain that their shares would have been worth $12 but for the dilutive effect of options. There is no apparent reason why we should be less concerned about this issue simply because the company has exceeded expectations. Indeed, a diversified investor has a distinct interest in stocks that exceed expectations: it is part of the logic of diversification that such stocks make up for those that under-perform. Moreover, Jensen and Murphy argue that the CEO should get more options if exercise price is adjusted either for cost of capital or for dividends. Jensen & Murphy, *supra* note 1. Assume that the CEO is granted 20 such options. The company will

Still, it is worth considering how the effect of a pro rata dividend might differ. Suppose the company distributes a regular dividend of one dollar per share and adjusts the exercise price of options for dividends. If the company earns $100, its aggregate market value should increase to $1,100 just before the ex-dividend date and then fall to $1,000 when the stock goes ex-dividend. In other words, market price will rise to $11 per share and then fall to $10 per share. If exercise price is increased to $11 to reflect the cost of capital and then reduced to $10 to reflect the dividend, no one will exercise. In the end, the stockholders will have shares worth $10 and a dividend of one dollar per share for a total value of $11 per share. There is no dilution. The paradox is that with the repurchase the company makes a bigger distribution to stockholders—$110 rather than $100. All else being equal, stockholders might prefer this alternative. To be sure, stockholders end up with shares worth $10.90 rather than $11.00 because $110 has been distributed to now-former stockholders, but the company is more or less compelled to repurchase shares to control for dilution whereas the dividend is ultimately discretionary.[76] Moreover, repurchase has the effect of assuring liquidity and supporting market price, which may offset residual dilution in the real world. Perhaps most importantly, investors can choose the type of company they prefer in constructing their portfolios.[77]

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receive $200 from the exercise, its aggregate value will increase from $1,100 after the payment of the dividend to $1,300 and because there are now 120 shares outstanding, stock price should settle at $10.83 per share.

76. The same argument may be made for why the market was receptive to junk bonds in the 1980s. *See* Richard A. Booth, *Junk Bonds, the Relevance of Dividends and the Limits of Managerial Discretion,* 1987 COLUM. BUS. L. REV. 553 (1987).

77. There is no reason to think that the market will react negatively to the announcement of an option grant—unless there is timing or backdating involved—because there is no danger of dilution if stock price fails to increase. So there is no reason for the market to bid down stock price. An investor who dislikes the use of options as compensation, either in general or in the specific circumstances of the grant, can sell his stock and invest the funds elsewhere to secure undiluted returns. The new rules regarding stockholder approval of option plans together with the disclosure of significant grants largely assure that investors will have the information they need to vote with their feet.

Moreover, there are other forces at work that assure the same result. The foregoing examples do not take into consideration the rule that requires the grant of an option to be treated as an expense at the time of grant to the extent of the value of the option. If we expense options at the time of grant, then EPS is reduced up front by just the amount necessary to offset repurchase, or at least the amount necessary to purchase offsetting options. If the company then reports EPS that meets market expectations, it will in fact have exceeded expectations by just enough to overcome dilution.[78] In other words, expensing options is similar to a penalty in football. We move the line of scrimmage back, say five yards, so that the team must make fifteen yards rather than ten for a first down. In theory, this is a good solution, but in practice it gives rise to the same problems that arise with adjusting exercise price by the cost of capital: it is difficult to value options that are used as compensation. CEOs will argue for low values while stockholders will argue for high values. In addition, this solution assumes that the market cares how EPS is calculated. The company is worth what it is worth regardless of how return is measured under GAAP.[79] Labeling an option grant as an expense does not make it so.[80] Thus, it is difficult to believe that

78. Indeed, it will have exceeded expectations by a bit more in that an option is worth a bit more than the cost of capital on the same principal amount.

79. In addition, FASB Statement No. 123(R) gives rise to other problems. *See* SHARE-BASED PAYMENT, Statement of Fin. Accounting Standards No. 123 (revised 2004). It makes it difficult to compare returns from one company to the next, because the value of an option varies inversely with the risk associated with the issuer. Thus, all else being equal, a riskier company must recognize a greater expense than a more conservative company. It also requires after-the-fact adjustments (restatements) in cases in which options are not exercised. It may thus lead to anomalies in which stock price declines because of a reported loss, options expire out of the money, and the adjustment to expenses results in a restated profit. Simple disclosure of option grants and levels is more useful, but the FASB cannot require that and the SEC was slow to adopt such rules.

80. Happily, the rule does not interfere with the real work of controlling for dilution through repurchases. On the other hand, there may be situations in which a company finds it difficult to repurchase shares because option expenses have depleted the balance sheet capital needed to back up a repurchase. This may be a problem in states such as California that mandate the use of GAAP as a matter of corporation law, but under Delaware law, which governs most public companies, a corporation may use any reasonable

the market did not adjust for the value of options before the rule requiring expensing, either by bidding down stock prices up front to adjust for potential dilution or by insisting on higher EPS.[81] There is no reason to think that the market will accept a lower rate of return simply because dilution is inevitable.[82]

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method to determine whether it has sufficient capital (balance sheet surplus) to repurchase shares. Moreover, the ability to use derivative instruments to synthesize repurchases may permit even California corporations to sidestep GAAP in this connection.

81. To be sure, the market needs information about options in order to adjust, but most of that information is now available. SEC rules adopted in 2006 require, among other things, annual disclosure of the number of options granted to the five highest paid officers together with the number of options held by each and the terms thereof. Before 2006, there was no explicit disclosure of such information prior to exercise, although it could be gleaned in some cases from balance sheet information relating to changes in equity. In addition, FASB Statement No. 123(R) adopted in 2004 requires that option grants be expensed and thus provides some information about option grants on a quarterly basis. Finally, NYSE and NASDAQ rules adopted in 2003 require stockholder approval of equity compensation plans and changes thereto, including the number of shares allocated to the plan. *See* NYSE Rule 303A.08. Thus, the market knows roughly how many options are outstanding and how many shares may be issued in connection with the exercise of options, but except for the five highest paid officers, little is known about the terms of the options. Moreover, Exchange Act §16(a) and SEC rules adopted thereunder already required reporting of grants and exercises (in addition to sales) by statutory insiders (directors, officers, and ten-percent stockholders). 15 U.S.C. §78p. In the absence of such information, analysts are likely to assume the worst and bid down stock prices even further. In other words, before 2006, when the only information available under SEC rules was based on exercise and there was no good information about grants, a classic market for lemons existed. *See* George Akerlof, *The Market for Lemons: Qualitative Uncertainty and the Market Mechanism*, 84 Q. J. ECON. 488 (1970). Now that better information is available, stock prices should be somewhat higher.

82. While it is difficult to believe that the market does not monitor and react to such information, there is surprisingly little research on the effect of option grants on market prices, and it is rather limited in scope and equivocal in results. *See* M.P. Narayanan & H. Nejat Seyhun, *Do Managers Influence their Pay? Evidence from Stock Price Reversals Around Executive Option Grants* (Ross Sch. of Bus., WorkingPaper No. 927, 2005) *available at* http://ssrn.com/abstract=649804; Gerald T. Garvey & Todd T. Milbourn, *Do Stock Prices Incorporate the Potential Dilution of Employee Stock Options?* (Nov. 6, 2002) *available at* http://ssrn.com/abstract=266973. One possible reason for the lack of research may be that information about option grants, options outstanding, and option exercises was difficult to find before recent changes in SEC and stock exchange rules.

Finally, as noted above, it is arguable that CEOs have made up for dilution by forgoing cash compensation. If cash pay is reduced, the company is worth that much more. The problem is that it is difficult if not impossible to know how much cash compensation has been given up for options. We know that total compensation has remained quite constant as a percentage of aggregate corporate income, and we know that the proportion of compensation taken in the form of equity has increased. So we know that CEOs and other officers have given up cash compensation for equity compensation in an amount that likely exceeds the grant date value of options, but it is difficult to say how much more. Still, this suggests that options are in fact a well designed form of incentive compensation in that CEOs have been willing to give up cash compensation even though it should not have been necessary to do so. It must be that CEOs believe they can make more from options than the cost of options, and that they are willing to bet their own money. This suggests that incentive compensation matters. Otherwise, why would a CEO assume the risk of failure to meet expectations without some reward for doing so, when the alternative is a fixed sum of cash payable no matter what the result?[83] In other words, why would a CEO forgo cash compensation for a chance at the brass ring? It must be that the CEO believes she can affect returns, but why risk it without the prospect of some reward? One can always stay the course. So the implication is that without incentive compensation, returns will be lower.[84]

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83. One might argue that the CEO who refuses to maximize return without a piece of the action is holding out on the corporation and violating his fiduciary duty at least in spirit, but few would likely advocate the enforcement of any such notion of fiduciary duty. Besides, CEOs are likely to gravitate to companies where they will be rewarded most handsomely. So the idea that one should maximize return out of a sense of duty is not likely to work even if it can somehow be enforced. *See* Booth, *Stockholders, Stakeholders, and Bagholders*, *supra* note 17; *see also* Chi & Johnson, *supra* note 26 (discussing the various ways that CEOs can reduce risk even in the presence of options and advocating the use of long vesting periods to counteract such strategies

84. Of course, it is possible that CEOs as a type are inclined to take risks regardless of the reward. One is reminded of the comment by Ross Johnson, the ousted CEO of RJR Nabisco, at the end of the movie *Barbarians at the Gate* that he would have done the job for no pay at all. Nevertheless, the fact that CEOs seem to give up too much cash in exchange for options itself calls

In the end, the existing regime is an elegant system that has distinct advantages over the adjustment of exercise price by the cost of capital or the payment of pro rata dividends. By repurchasing shares, the company automatically distributes an amount that reflects its cost of capital *as continuously adjusted by the market.* The big problem with adjusting exercise price for the cost of capital lies in estimating the cost of capital. There is a lot of room to disagree and thus a lot of wiggle room in any such adjustment. In practice, the CEO is likely to argue for a low cost of capital, while the stockholders would argue for a high cost of capital. At the very least, this solution is likely to give rise to a subtle form of earnings management: promise less and deliver more.

E. *Available Data*

What do we know about the efforts of corporations to control for dilution from the exercise of options? A rough sketch can be drawn at a macro level from readily available data.[85] The height of the options boom was from 1998 to 2001 when option grants totaled about 2.5% of shares outstanding. During those years, 1999 was the last year in which market prices increased overall thus affording a clear view of a year in which most options are likely to have been in the money and large numbers of options are likely to have been exercised. According to IRS data for 1999, aggregate income for the

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for an explanation. It would appear that in some cases CEOs attach more value to an option than would a diversified investor. Why might this be? One possible answer is that CEOs in these cases are unusually optimistic or even have inside information about company prospects. Indeed, this may explain the puzzle of why options appear to flow to CEOs who should place a lower value on them. Maybe CEOs do in fact place a higher value on options than do other investors. This in turn suggests a way to reassure the market about the number of options granted. Jensen and Murphy have suggested that CEOs should have a choice of cash or options. *See* Jensen & Murphy, *supra* note 1, at 58-59. In other words, the board could allocate some specified amount for CEO compensation and have the CEO decide the form it will take. The answer would reveal valuable information to the board and the stockholders that is otherwise impossible to obtain. But to the extent that the CEO can in fact control his own pay (as many critics charge), much of that information is implicitly available already—certainly to the board but even to the stockholders to the extent they know in advance about the number of options granted to the CEO.

85. *See* Appendix, Table 1 – Stock Market Returns/Option Grants/Dividends & Repurchases.

10,380 corporations with assets of $250M or more was $758B and total officer compensation (including gain from exercise) was $58B.[86] According to CRSP data, the aggregate market value of publicly held U.S. corporations increased from $13,288B in 1998 to $17,009B in 1999 for an aggregate gain of $3,721B. Stock options accounted for 2.4% of stock outstanding.[87] So for 1999 the one-year gain on options was $3,721 ×

86. Data for the 1999 year is taken from Table 2 of the IRS's Corporation Complete Report Publication, which is available for the years 1994-2006 *at* http://www.irs.gov/taxstats/article/0,,id=170544,00.html. This is roughly congruent with the population of all publicly traded companies. To be sure, tax accounting differs from GAAP. So numbers derived from IRS data may differ from numbers derived from SEC data. But over a large number of corporations the differences are likely to wash out. Nevertheless, tax figures may be a better source of accurate data in that they are uncorrupted by the kind of earnings management that goes with reports to stockholders. On the other hand, tax numbers suffer from their own brand of manipulation designed to minimize tax. But that is also likely to wash out because of the idiosyncratic situations of individual companies and their motivations to either minimize or maximize taxable income in any given year. It is worth noting that in 1999, there were 4,935,904 corporations in all that filed tax returns. Their assets totaled $41,464B, their equity totaled $15,363B and their net income totaled $929B. The 10,380 largest companies reported assets of $36,710B, equity of $13,697B, and income of $758B. Thus, the largest corporations accounted for 89% of all assets, 89% of the book equity, and 82% of the income. Total officer compensation for all corporations equaled $374B (or 40% of income) while among the largest corporations compensation totaled $58B (or 7.65% of income). In other words, big corporations pay out a much smaller percentage of their return as compensation. Note that these figures include corporations that reported losses (which skews the percentages). Compensation as a percentage of income among the largest corporations *with income* averages about 6%. *See* Booth, *supra* note 15, at 280 (covering the years 1980 and 2000).

87. *See* Jensen & Murphy, *supra* note 1, at 38 (Figure 7). Given that on average options vest over about 2.4 years, it would appear that about 40% of options can be exercised in any given year and thus that the number of options that can be exercised in any given year is about 1% of stock outstanding. *See* Chi & Johnson, *supra* note 26, at 13 & Table 3. Even if some option holders choose not to exercise, the company must assume that they will do so. There is little to lose if the company repurchases shares before it is necessary. In effect, the treasury stock will increase in value until such time as the option holder exercises. No further repurchase will be necessary. Moreover, it may be important for the company to keep up its repurchase activity even with respect to options that have not yet vested in order to avoid the need for a massive buyback when options do vest as discussed above with regard to compounding. On the other hand, stock price may decline in which case the repurchase will have used up cash unnecessarily.

.024 or about $89B. Thus, in 1999 corporations in the aggregate should have distributed at least $89B to their stockholders in the form of dividends or repurchases, net of exercise price, in order to control for dilution. According to Center for Resarch on Securities Prices (CRSP) data for 1999, corporations in the aggregate paid out about $275B in dividends. IRS data indicate that corporations repurchased $99B in the same year.[88] In other words, distributions totaled $374B in 1999. That is more than three times the amount necessary to control for dilution from all outstanding options.[89] To be sure, much of the amount distributed to stockholders was likely motivated

88. This figure is based on the reported increase in treasury stock from 1998 to 1999 for the 10380 largest companies. Needless to say, this is a net figure. Presumably, some substantial quantity of treasury stock was also resold during the year. So to be precise, the largest corporations bought back *at least* $99B in the aggregate during the year 1999. Undoubtedly, gross repurchases were higher in aggregate amount. Again, it is somewhat inaccurate to use CRSP data (covering 8,363 companies in 1999) in combination with IRS data (covering 10,380 companies in 1999), but given that the S&P 500 accounts for about 85% of the aggregate value of the market, the smallest 2,000 companies that are included in the IRS data are not likely to account for more than a small fraction of the increase in treasury stock.

89. Fama and French find that share repurchases increased dramatically during the period 1983 to 1998. *See* Eugene F. Fama & Kenneth R. French, *Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?* (CRSP, Working Paper No. 509 2000). During the period 1973 to 1977, share repurchases equaled 3.37 percent of aggregate earnings. During the period 1978 to 1982, the figure was 5.12%. But during the period 1983 to 1998, corporations repurchased shares to the tune of 31.42% of earnings. During the same period, cash dividends equaled 45.24% of earnings. *See* Fama & French, *supra*, at 23-24. Moreover, if one assumes that corporations almost always use treasury stock to fill for options (or do so whenever possible) and that all of the activity in connection with treasury stock arises in this connection, then changes in treasury stock should be roughly equal to the difference between the price paid to repurchase outstanding stock (presumably the market price) and the exercise price. In other words, changes in treasury stock should reflect the total gain from options. These are major assumptions. As Fama and French note, treasury stock may be used for other purposes such as merger consideration. This does not seem likely to be a major factor since there is no apparent reason not to issue new stock in such a deal unless there is significant doubt about the valuation of the target company. Treasury stock is likely also to be used for awards of restricted stock. That is not especially problematic in the context of this paper in that the use of restricted stock also gives rise to the need to control for dilution. In any event, the data collected by Fama and French are similar to the data set forth in the appendix hereto. *See infra* Appendix Table I.

other than by efforts to control for dilution, but it does not really matter why a corporation makes a distribution to its stockholders. It matters only that it does so.[90]

In sum, outside stockholders are protected from dilution by three different forces any one of which may be enough to do the job. First, companies repurchase shares to control for dilution. Second, companies must recognize the grant of options as an expense—and the market presumably does so anyway—such that exercise price is effectively adjusted for the cost of capital. Third, CEOs apparently forgo more than enough cash compensation to offset the cost of options. As a result, stockholders may be made more than whole, although in the end it seems likely that companies and the market mix and match these ways of controlling for dilution in many different combinations.

IV.
THE OUTER LIMITS OF OPTIONS

The foregoing analysis largely dispels the worry that stockholders have been systematically cheated by excessive CEO compensation in the form of options. Although one might think that CEO gain ultimately comes out of return that would otherwise belong to outside stockholders, when a corporation repurchases shares to control for dilution, there is no significant dilution of outside stockholder return. Still, some may worry that CEOs may nonetheless be *able* to command too much pay in the form of too many options. Experience suggests that boards of directors are unable to resist ever increasing CEO demands. So what is to keep CEOs from appropriating more and more of outside stockholder return by taking more and more options?

The answer is that options are self-regulating. Although the use of cash by the corporation to repurchase shares does

90. Nevertheless, the data suggest that repurchases tend to rise and fall with market prices rather than inversely. *See infra* Appendix Table 2. This might seem curious. One would think that companies repurchase their stock when they think the price is too low. But with repurchases to control for dilution from stock options, the tendency will be to distribute more cash in the form of repurchases when stock price is high. Given that the data appear to reflect such a pattern, it seems likely that repurchases are motivated more by antidilution than by price support.

not affect earnings, clearly there is a limit on the amount of cash available to repurchase shares. The need to report fully diluted EPS alone effectively dictates repurchases that eliminate dilution.[91] Additionally, the amount of cash that is available for such use is related to return from operations. Thus, for a company to decide how many options to grant, it must have some sense of what its return is likely to be over the period of time leading up to the date when options may be exercised.[92] In short, the need to repurchase enough shares to make up for options effectively limits the number of options that a corporation can grant or that a CEO would even want.

There are three sources of gain for stockholders. First, stock price rises when the corporation realizes returns. Second, stock price rises when projected returns increase. Third, stock price rises when the cost of capital goes down.[93]

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91. This is not to say that GAAP income is necessarily the best measure of performance. Many would argue that cash flow is a better measure. *See* BOOTH, *supra* note 53. Accordingly, I use the neutral word *return* in the discussion that follows to avoid the (incorrect) implication that GAAP earnings accurately reflect the capacity of the company to distribute cash. Moreover, the rule requiring the expensing of options at grant-date corrupts EPS for present purposes.

92. In other words, the corporation must think about using options in much the same way that a university thinks about using an endowment.

93. The source of gains goes to the heart of the debate about whether options do what they should do. It seems clear that it is appropriate to reward the CEO for generating more than expected return. Even though sometimes the increase in return may be the result of dumb luck, it is still worth something that the CEO may have maneuvered the company into the right place at the right time. Moreover, there is a very real sense in which the CEO has chosen to invest in her own company. No one would suggest that a stockholder should be entitled only to the returns he predicted when he bought the stock (even though an outside investor is free to diversify). Although it is tempting to argue that the CEO should not be entitled to gains that result from a reduction in the cost of capital (as a result of a generally rising stock market), it is also possible that the efforts of the CEO led to a reduction in the cost of capital for the company (presumably as a result of reducing risk). It seems quite appropriate to reward the CEO in such circumstances, but it is also quite difficult to distinguish such circumstances from a general increase in market prices and a concomitant reduction in the cost of capital generally. Finally, as noted above, it is not completely clear why we should not reward the CEO simply for generating expected return or even part of it. Although Jensen and Murphy argue that the exercise price of options should be adjusted upward for the cost of capital, they also describe an ideal bonus system of rewards *meeting* expectations. *See* Jensen & Murphy, *supra* note 1, at 60-65, 68-81. Again, the ultimate ques-

There are two sources of funds that a corporation may use to repurchase shares. First, it may use cash from operations. Second, it may use cash from the exercise of options.[94]

Cash from the exercise of options offsets exercise price. The CEO will only exercise, though, if stock price has increased relative to exercise price. Thus, the company always needs *additional* funds to buy back stock, and those additional funds must come from other sources. Most companies for whom options are an important form of compensation also need funds to finance growth. The bottom line is that the funds available for the repurchase of outstanding stock are limited. Moreover, the funds needed for repurchase increase as stock price increases, further limiting the number of shares

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tion here is about what constitutes return. It is always tempting to ask "What have you done for me lately?" But it is also common to say "Keep up the good work." *See* Joy v. North, 692 F.2d 880 (2d Cir. 1982) (addressing the distinction between profit and expected return). *See also* Booth, *Stockholders, Stakeholders, and Bagholders, supra* note 17.

94. There are three other possible sources of cash (or the equivalent) that can be used to repurchase shares in order to control for dilution. First, a company can borrow to the extent of gain if necessary to make up for a shortfall in cash returns in order to repurchase stock. Needless to say, borrowing is a wash transaction in the sense that it gives rise to a liability that must ultimately be paid with cash returns (since the borrowed cash is distributed in the form of a buyback). Second, a company may use existing cash to buy back shares. Existing cash is already built into the value of shares and is thus equivalent to borrowing from oneself. Third, another possible source of (synthetic) cash is some sort of derivative arrangement (such as a call) that amounts to a firm commitment on the part of a third party to sell shares. Such an instrument is likely to be more costly than borrowing (because of the option value inherent therein) and is thus probably irrelevant for present purposes. This is not to say that a company should not borrow to repurchases shares when it is necessary (and possible) to do so. To be sure, such tactics may give rise to complaints about pay without performance, because options reward increases in market price even when current return is disappointing. But as noted above, such complaints are the result of short term thinking. Finally, just to be clear, the funds necessary to maintain the current level of operations—even if they come from profits—do not really count as available for the repurchase of outstanding stock. It is worth noting here that prior to the Sarbanes-Oxley Act of 2002 (SOX), it was common for companies to make short term loans (usually on very attractive terms) to option holders for purposes of exercising options. In some cases, the loans were conveniently forgotten. SOX effectively outlawed that practice together with all other loans to employees. Thus, options are a somewhat better deal for outside stockholders post-SOX.

that can be repurchased. Thus, ironically, growth companies are less able to afford options than are mature companies.[95]

Leaving aside the idiosyncratic needs of individual companies for cash to finance growth, it is a simple matter to determine the maximum number of shares that a company can repurchase depending on its cost of equity (COE) and its performance relative to expectations. This calculation is relatively simple for any given COE because the answer depends solely on cash return and increase in stock price—cash from exercise drops out of the equation. The bottom line is that a company can afford to repurchase its own stock only to the extent that it generates returns sufficient to cover the increase in stock price. Thus, the amount of return divided by the increase in stock price determines the maximum number of options that the company can support without diluting outside stockholder return.

The appendix sets forth a series of charts showing the cash available for repurchase of stock and the maximum number of at-the-money options that can be supported depending on COE and realized return.[96] Each of the charts depicts a company with 100 shares outstanding and expected return of $100 per period. The aggregate value (market capitalization) depends on COE. The first chart depicts a company with COE equal to 10%. If the company performs as expected and generates a return of $100, stock price will rise to $11.00 per share and the company can in theory repurchase 100 shares—all of its outstanding stock—because it needs just $1.00 per share in addition to the cash it receives from exercise. But if the company exceeds expectations, the number of shares that it can repurchase decreases dramatically as performance improves. For example, if the company grows in value such that sustainable return increases to 150% of the previously expected return, the company can afford to have granted only 23 options. If sustainable return increases to 200% of the previously ex-

95. One of the problems with FAS 123R is that it requires growing companies to recognize more expense in connection with the grant of options because the riskier the stock the more valuable the option on it. Yet, coincidentally, the more a company expects to grow the fewer options it can afford to grant.

96. *See infra* Appendix Tables 3A, 3B, 3C, and 3D.

pected return, it can afford to have granted only 16 options.[97] The second chart shows a company with a market multiplier of 20—a cost of capital of 5%. If the company grows by 50%, it can afford to have granted only 13 options. If the company grows by 100%, it can afford to have granted only 9 options. The third chart shows a company with a market multiplier of 30. If the company has a market multiplier of 30, the number of affordable options drops to 9 and 6, respectively. Again, these limits assume that the company has no other need for available cash. In most cases, a growing company needs cash to finance growth, further limiting the number of options that can be supported.

Paradoxically, the more a company expects to grow, the fewer options it can afford to grant: the more a company grows in value, the more it costs to repurchase shares to control for dilution. To be sure, the market may tolerate some dilution from such companies, but growth companies also tend to have higher multiples and are thus more limited in the number of options they can issue without diluting stockholder value. As a result, the CEO is conflicted in a positive way. The more optimistic she is, the more reluctant she will be to grant options liberally. So CEOs have every reason to be conservative in the number of options they seek. They are more likely to err on the low side than on the high side.[98]

97. The simplifying assumption here is that the company's return jumps immediately to the new higher level as of the next reporting period. This may be unusual but it is not necessarily unrealistic. In most cases, return increases more gradually. On the other hand, it is quite realistic to assume that the market will jump quickly to an estimate of new return, though it may take quite some time for realized return to catch up. Thus, the scenario depicted is simply an example and should not be confused with a situation in which the company simply has a good year and realizes one-time returns in excess of expectations. In such a case, the value of the company should increase by the amount of the return but the perpetuity value of the company should remain the same other things equal. Again, there is no reason why the time period must be one year. It is simply a convenient period for purposes of illustration and calculation.

98. For a diversified investor, it does not matter if some companies get it wrong and issue too many options, because others will get it wrong and issue too few. It all comes out in the wash as long as all try in good faith to get it right, which they are likely to do given the forces at work. The bottom line is that the CEO gains only if and to the extent that the stockholders gain.

Although a company with a lower multiplier, usually an established company, or a company that simply satisfies expectations, can afford to issue lots of options, options are less attractive in such circumstances. For the option holder there is little prospect of striking it rich. In such a company, options are more in the nature of deferred compensation than incentive compensation. Indeed, if the recipient gives up cash compensation for options, options operate more like a stick than a carrot. They mostly punish failure to satisfy expectations.[99]

99. While a company that just meets expectations can afford to buy back all of its stock (no matter what the cost of equity), it may be difficult as a practical matter to buy back enough stock to offset dilution without adversely affecting market price. The market is likely to bid up the price of shares simply because of (temporarily) reduced supply, thus increasing the price that the company must pay and the cash required. Finally, the company may run up against a variety of regulatory limits (such as capital requirements). Moreover, some stockholders might object that a massive buyback is roughly equivalent to going private and should be subject at the very least to a stockholder vote. But it is difficult to see why a stockholder should much care about the identity of fellow stockholders. Why should a stockholder care if the company has bought back most of its stock in order to satisfy options? On the other hand, a stockholder might legitimately complain if there are too few shares left trading after a buyback to support a liquid market. But this would also undercut the value of options as compensation. In other words, a company that uses options as compensation has a strong interest in maintaining a liquid market for its shares. Moreover, the usual practice is for an option holder to sell shares immediately upon exercise. So there is little reason to think that the market will dry up.

Strange things happen when a company fails to meet expectations. For example, in the first chart—where the market multiplier is 10—options end up in-the-money only if the company generates a return that is (about) 91% or more of expected return. At this level, positive cash return offsets (masks) a decrease in perpetuity value. Again, perpetuity value may not decrease if the disappointing results are a one-off event. Theoretically, the company can afford to buy back all of its outstanding shares many times over, because the smaller the increase in price compared to exercise price, the less cash the company must kick in. But practically speaking the absolute limit is the number of shares outstanding. For example, suppose that the company reports returns that are 95% of expected returns and stock price rises from $10.00 per share to $10.45 per share. Assume that the company issued options on 20 shares because the CEO thought it might be possible to beat expectations by as much as 60%. At 160% of return, the company cannot afford to buy back any more than (about) 21 shares, assuming it uses cash equal to all of its return for the purpose. In this example, option holders receive a total of $9.00—about 9.47% of return. If the company had in fact generated 160% of expected return, option holders would have received about 20% of total return.

In the real world, the determination of how many options to grant also depends on the vesting period and the total return over that period rather than simply annualized COE. Thus, if a company expects to generate a return of 15% per year over a two-year period and wants to grant at-the-money options that mature at the end of that period, it must consider the fact that the exercise of options will bring in cash equal only to market price as of the date of grant and will require additional cash to repurchase shares equal to the compounded rate of return over the period or 32% of exercise price rather than 30%. If options mature in three years, the company will need cash equal to 52% of exercise price rather than 45%. In other words, longer options are more expensive, not merely because they are worth more as a matter of option pricing theory, but also because of compounding—they constitute a bigger drain on cash when they mature—and because they entail more uncertainty in planning.[100]

It is one thing to determine the maximum number of options that a company can afford to grant, but it is quite another to conclude that that number of options is optimal or that a company would want to grant the maximum number of options that it can afford. If that is not the case, the question is what determines the optimal number of options. There are several responses.

First, if the worry is how much is too much, it is not clear that the answers to this question matters much. When options work as they should, the CEO gains only if and to the extent that stockholders gain. There is no dilution of stockholder gain.

Second, it is unlikely that a CEO would want more options than the company can afford to grant. A big grant of options is a pessimistic signal. It indicates that the CEO thinks it will be easy to generate enough cash to buy back shares. In contrast, a small grant of options signals cautious optimism. Moreover, it should be easy for the market to forgive the occa-

100. The need to plan for exercise also suggests that there is a limit on the duration of an option. It seems unlikely that a company can plan in good faith for options that last any longer than about five years. For example, it is more or less standard in the context of an appraisal proceeding to use five-year cash flow projections because longer projections are unreliable and presumably few companies prepare them for their own internal use (and without a view to litigation). *See* BOOTH, *supra* note 53.

sional grant of too many options. It is only a problem if the company performs better than expected.[101]

To be sure, total gain to option holders increases as the number of options increases. So it may be that companies get it wrong accidentally on purpose sometimes—but this is not a big worry. While option holders may theoretically gain if a company grants more options than it can support by repurchase, excess options have the effect of reducing the price increase that outside stockholders expect. This sets up a negative feedback effect that constrains the use of options. If the company fails to increase in value as much as the market expects, it is likely that its value will be bid down even further in the market, as happens when a company announces disappointing earnings. Indeed, because fully-diluted EPS is the primary measure of results, too many options may in fact *cause* an earnings disappointment because the market tends to overreact to such news.[102] If a company grants more options than it can afford, its stock price will suffer. Indeed, this may explain why boards of directors seem not to negotiate about CEO compensation with much vigor. It is not necessarily that they view options as free money. Rather, it may be that they understand that CEOs have every incentive to get it right when it comes to their own compensation.

Although there is little reason to worry about excessive stock option compensation, it would be easy to eliminate the risk of excessive grants by devising a stock option plan that

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101. On the other hand, a CEO may favor a smaller grant to send a falsely optimistic signal. But the cost of such strategizing is that the CEO reduces her own gain. This suggests that the real complaint about options is that insiders hold back disclosable good information in order to profit from future price increases. Moreover, it is possible that the CEO might choose to use cash for repurchases in order to maximize pay when other more profitable uses of cash might be available. This is not a big worry. If there are better uses for cash, the CEO will gain more from longer options. On the other hand, an undiversified CEO may be tempted to cash out rather than assume additional risk for a bigger payday. But it is also risky to cash out. If the market expects growth, it may punish the stock if the company follows a contrary strategy. There are notable examples of companies announcing dividends that disappoint the market.

102. *See* Werner F. M. De Bondt & Richard Thaler, *Does the Stock Market Overreact?*, 40 J. FIN. 793 (1985); Werner F. M. De Bondt & Richard Thaler, *Further Evidence on Investor Overreaction and Stock Market Seasonality*, 42 J. FIN. 557 (1987).

determines the number of options to be granted according to a formula tied to the factors discussed above. Specifically, the number of options granted would be determined by the number of shares that the company is able to repurchase on a specified date in the future, and the company would be required to repurchase that number of shares. This would assure that stockholders would suffer zero dilution. This would also induce CEOs to think hard about the appropriate vesting period. To be sure, it might be a bit of a challenge to determine exactly how to measure the company's capacity to repurchase shares, but the number of options could be based on the number of shares in fact repurchased as of the specified date.[103]

In summary, the prospect of dilution and limits on cash protect investors from excessive use of options as compensation. The number of options a corporation can grant depends on the anticipated growth in the value of the company—from the date of grant to the date when the options may be exercised—together with anticipated cash flow and its cost of equity. In the end, it is really up to the CEO to manage his own pay in light of his best guess about the company's prospects. There is every incentive to get it right. No CEO wants to invade existing capital to control for dilution because the market is likely to punish the stock and reduce the value of options. In short, there is a natural market-imposed limit on the number of options that a company can grant.

V.
THE SUBTLER BENEFITS OF OPTIONS

Although the primary rationale for using options as compensation is that they are the best way to induce the CEO to maximize stock price, they also give rise to other benefits that may be as important as the incentives they create.

First, unlike traditional compensation plans that focus on aggregate earnings or assets under management (AUM), options reward the CEO for any strategy that increases stockholder wealth. If stock price increases because of an acquisi-

103. As for allocating options among the various officers in the absence of knowing how many options will ultimately be available, the easy fix is to allocate some specified percentage of the pool to each officer. This would have the additional—probably positive—effect of emphasizing precisely how gains are to be shared.

tion that increases value, options generate a reward. If stock price increases because of a divestiture, options generate a reward. Perhaps more importantly, options discourage any strategy that has the effect of decreasing stock price. In contrast, traditional compensation plans tend to reward growth regardless of percentage return. Most CEOs are inclined to grow the company anyway. Who would want to shrink his company? But divestitures often create stockholder value. In other words, stock price often increases when a company announces a spin-off. Options encourage such moves, so it is no coincidence that divestitures increased as the use of options as compensation increased. Indeed, divestitures were almost nonexistent before the early 1980s. By 1990, they accounted for more than half of all deals.[104]

Second, options effectively force the company to distribute cash by way of repurchases. One of the major stockholder gripes that triggered the takeover wars of the 1980s was that target companies hoarded cash and invested it in uneconomic expansion (including acquisitions designed to increase AUM and aggregate earnings) rather than to pay dividends.[105] Indeed, the rise in option compensation was a direct result of efforts to align the interests of CEOs with those of stockholders. So if stockholders want distributions, CEOs who are paid with equity will see to it that the company pays dividends. This is not to say that anyone necessarily reckoned that options

104. *See infra* Appendix Table 4.

105. The use of cash to buy back stock to control for dilution may account for continuing low dividend rates. *But see* Fama & French, *supra* note 91 (finding that most companies that pay dividends also repurchase shares). But the difference is that the cash goes to the market and helps support the price of stock. In short, options induce companies to behave something like a mutual fund not only in the sense that the company continuously redeems its stock, but also in the sense that it continuously issues stock as options are exercised. Thus, options also provide liquidity to the market. One other advantage of options is that they give rise to a continuous offering. Thus, a company that wants to raise additional capital should find it easier to do so, because it always has a registration statement in effect. By the same token, other types of equity compensation may be more attractive if there are doubts about the company's ability to file a registration statement or the liquidity of its stock.

would also induce distributions by way of repurchase in order to control for dilution. Nevertheless, they do.[106]

Third, the grant of options may convey important information about a company's prospects. The number of options a company grants should be related to the cash expected to be available to repurchase shares. In effect, the company says to the market that it will be able to repurchase a number of shares equal to the number of shares it must issue to satisfy options, so a grant of options may convey soft information to the market that is otherwise difficult to disclose. In addition, a grant of options may suggest that the market price is at a low and is likely to rise. There are presumably many cases in which management believes that market price is too low for reasons that cannot be well articulated for the market. In such cases, news of an option grant may be a good way to convey the information to the market.[107]

Fourth, options perform important communication and bonding functions within a company. They are a way to keep

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106. I am not the first to notice that there is a connection between options and repurchases. *See* William W. Bratton, *The New Dividend Puzzle*, 93 GEO. L.J. 845, 872-76 (2005), *citing* Mary E. Barth & Ron Kasznik, *Share Repurchases and Intangible Assets*, 28 J. ACCT. & ECON. 211 (1999); Alon Brav et al., *Payout Policy in the 21st Century* 36 (NBER, Working Paper No. 9657, 2003); Konan Chan, et al., *Do Managers Time the Market? Evidence from Open-Market Share Repurchases*, 31 J. OF BANKING AND FIN. 2673 (2007) George W. Fenn & Nellie Liang, *Corporate Payout Policy and Managerial Stock Incentives*, 60 J. FIN. ECON. 45, 48 (2001); Christine Jolls, *Stock Repurchases and Incentive Compensation* 13 (NBER, Working Paper No. 6467, 1998); Kathleen M. Kahle, *When a Buyback Isn't a Buyback: Open Market Repurchases and Employee Options*, 63 J. FIN. ECON. 235, 236 (2002); J. Nellie Liang & Steven A. Sharpe, *Share Repurchases and Employee Stock Options and Their Implications for S&P 500 Share Retirements and Expected Returns*, FRB Working Paper No. 1999-59; Scott J. Weisbenner, *Corporate Share Repurchases in the 1990s: What Role Do Stock Options Play?* 1-3 (Fed. Reserve Bd., Working Paper No. 1999-95, 1999). But generally speaking these scholars seem to view antidilutive repurchases as a subterfuge designed to obfuscate the impact of options rather than as a stockholder-friendly practice. *See* Bratton, *supra*, at 872-76. *See also* Jesse M. Fried, *Insider Signaling and Insider Trading with Repurchase Tender Offers*, 67 U. CHI. L. REV. 421 (2000) (characterizing repurchase tender offers as opportunity for insider trading by sale of stock received through equity compensation).

107. Moreover, because the pot of options is limited, the grant of options involves a bet of sorts on the part of management as to the best time to issue options. *See, e.g.*, Lewis v. Anderson, 509 F. Supp. 232 (C.D. Cal. 1981), *aff'd*, 692 F.2d 1267 (9th Cir. 1982) (involving controversy over number of shares available under option plan).

score in real time with the stock market as the scoreboard for all to see.[108] Options provide an immediate reward for good management (at least on paper) and thus communicate immediate feedback about performance to the CEO and other officers. Of course, the CEO could and should keep one eye on the market anyway, but a CEO is more motivated to do so if it is a matter of personal wealth. Otherwise, she may be inclined to dismiss a negative reaction as being misunderstood.[109] Moreover, lesser officers and employees may be inclined to agree with such an assessment, but they will be less inclined to do so if they have options. Thus, the generous use of options as compensation for lesser officers gives rise to internal pressure to perform that may be just as important as the demands of the market. On the plus side, options encourage a kind of team spirit. While there may be disagreement in the ranks about business strategies from time to time, options provide an objective assessment of the wisdom of the course taken by the CEO.[110]

In addition, equity compensation may be an effective substitute for a non-competition agreement, which is particularly important in California where non-competition agreements are illegal.[111] Indeed, options may be superior to non-competition agreements in the same way that a carrot is superior to a stick. It has also been argued that options induce employees to monitor fellow employees, which may be particularly impor-

108. *See* Richard A. Booth, *Going Public, Selling Stock, and Buying Liquidity*, 2 ENTREPRENEURIAL BUS. L. J. 649, 663 (2008). *See also* Henry G. Manne, *Insider Trading: Hayek, Virtual Markets, and the Dog That Did Not Bark*, 31 J. CORP. L. 167, 170-72 (2005) (arguing that insider trading performs a similar function and does so more efficiently than equity compensation).

109. *See, e.g.*, Smith v. Van Gorkom, 488 A.2d 858, 876 (Del. 1985) (CEO complained that market did not appreciate the true value of company).

110. To be sure, the argument that options should be limited to high ranking officers may make more sense in a mature company with little prospect for growth. In such a setting, options may induce the CEO to sell the company or to split it up if either such move would increase value for the stockholders. Options (and equity) reward good management irrespective of whether the better strategy is to grow or shrink the company.

111. *See* Richard A. Booth, *Give Me Equity or Give Me Death – The Role of Competition and Compensation in Building Silicon Valley*, 1 ENTREPRENEURIAL BUS. L. J. 265, 271 (2006).

tant in a company that depends heavily on intellectual property.[112]

Finally, it may be that many talented businesspeople prefer to work at least in part for a piece of the action and will gravitate toward positions that offer such compensation. Thus, options may be important for recruiting. This argument relies to some extent on the use of options by other companies. In other words, it stems in part from the need to use options because other companies do so. It is thus reminiscent of the argument that CEOs and their consultants cite the practices at other companies to justify ever more lucrative pay packages.[113] Again, this is not a real worry given the powerful forces that constrain the use of options. The point for present purposes is that talent at all levels may gravitate to situations that offer a piece of the action. Even if one is suspicious of the everybody-does-it argument, the reality for public companies is that talent may gravitate to nonpublic companies that can offer more equity compensation.

A. *Options as Legalized Insider Trading*

One might argue that a grant of options at a time when the CEO believes stock price to be too low is objectionable for the same reasons that insider trading is objectionable.[114] The

112. *See* Sharon Hannes, *Reverse Monitoring: On the Hidden Role of Employee Stock-Based Compensation*, 105 MICH. L. REV. 1421, 1441 (2007).

113. *See* Jensen & Murphy, *supra* note 1, at 50-56.

114. *See* William W. Bratton, *The New Dividend Puzzle*, 93 GEO. L. J. 845 (2005); Jesse M. Fried, *Informed Trading and False Signaling with Open Market Repurchases*, 93 CAL. L. REV. 1323, 1347-48 (2005). The objection is that repurchases result in the unequal treatment of stockholders. Presumably, holders benefit at the expense of sellers. There are several responses. First, it appears that investors prefer repurchases to dividends, even if one ignores differing tax rates if any, because repurchases ultimately permit stockholders to choose *when* they will receive a distribution. Second, repurchases are arguably superior to dividends because they result in the distribution of cash to the least optimistic stockholders—those who choose to sell. Thus, repurchases take advantage of downward sloping demand for stocks, because they concentrate the cash where it goes furthest. *See* Booth, *supra* note 72, at 1206-07. This may also compensate to some extent for the residual dilution from options. Third, it is not at all clear that repurchases result in unequal treatment when undertaken to control for dilution from the exercise of options. In such cases, the company must repurchase shares that have increased in price. Otherwise the options would not be exercised. Indeed, the data show that repurchases tend to rise and fall with market prices. *See* Ap-

easy response is that we permit insider trading in such circumstances anyway as long as the information does not rise to the level of a material fact. That is, insiders are free to trade on their superior analysis and insight but not on hard facts that should be disclosed. Moreover, to the extent that we should see the corporation as a partnership between stockholders and officers rather than as a hierarchy in which the stockholders are the sole owners, it is not clear that we should preclude the officers from acting on their disagreements with the stockholders. In any event, these turn out to be moot points if companies announce option grants in advance of setting the exercise price. If advance announcement is the rule, outside stockholders gain information from the timing of grants without losing the benefits of any subsequent price increase.

Indeed, stock options are similar in many respects to legalized insider trading. They give the option holder the right to buy a specified quantity of stock at a fixed price for a fixed period of time after the option matures (no need for furtive calls to broker or brother-in-law.) Because the exercise price is fixed, there is no incentive to withhold information from the market, and because options afford only the right to buy, they do not enable an option holder to profit on bad news.[115]

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pendix Table 2. That is, corporations appear to buy back more stock when prices are high than they do when prices are low, suggesting that options may account for most repurchase activity.

115. One arguable disadvantage of options (as compared to insider trading) is that an option holder cannot buy an unlimited number of shares. Thus, some may be undercompensated (or think so). *See* Manne, *supra* note 111, at 172-73 (arguing that to permit insider trading would largely solve the problem of overvalued equity and would eliminate the need for repricing options as well as addressing several other issues). There are several responses. But for present purposes it suffices to note that insider trading dilutes outsider return because there is no offsetting repurchase. Indeed, if insiders are permitted to trade on inside information without limit, outsiders have no assurance that they will be able to participate in the gain and hence have no reason to invest. There would be no market. And options would not work. Another arguable disadvantage of options is that they do not permit the optionee to dictate the date of grant and hence the exercise price. Thus, an optionee cannot act to capture as much gain as he might if free to trade on inside information, because he must wait for the company to grant options. This problem could be addressed in large part by permitting optionees to specify the date on which they accept a grant. Indeed, the CEO (and possibly other potential optionees) are free to bargain with the board about the timing of option grants. This assumption may be somewhat con-

B. *Other Forms of Equity Compensation*

So how do other forms of equity compensation compare to options in these regards? Restricted stock and stock appreciation rights (SARs or phantom stock) also reward increases in stock price.[116] And the accounting and reporting requirements for each type of compensation are essentially the same. Indeed, one of the stated reasons for FAS 123R was to eliminate inconsistencies in the accounting requirements among various types of equity-based compensation,[117] but these devices are inferior to stock options as compensation.

Again, restricted stock sends a mixed message. With restricted stock, the recipient worries both about maximizing gain and minimizing loss. In other words, a CEO who *owns* stock will seek to maximize stock price but not if it creates an undue risk of losses that might cause stock price to fall. That may incline the CEO to pursue more conservative business strategies than diversified stockholders would prefer. Options work better because a diversified investor has a distinct preference for a CEO who maximizes return even if it means that more individual companies will suffer losses. In addition, restricted stock does not typically involve any payment of cash to

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trary to the idealized notion that the board of directors or the compensation committee thereof should operate from behind a Rawlsian veil of ignorance, but it is probably much closer to how the real world operates. For example, reportedly Steve Jobs prevailed on the Apple board of directors to make a big grant prior to release of the iPhone. Moreover, the idealized model can lead to problems as it did in *Texas Gulf Sulphur* if optionees have better information about the company than does the board. *See* SEC v. Texas Gulf Sulphur Co., 401 F.2d 833 (2d Cir. 1968). Arguably, optionees have an obligation to speak up under such circumstances. Accordingly, we should assume that optionees have some ability to influence if not control the timing of grants. Regulation should comport with that reality. Finally, Manne also argues that options are inferior because they work only on the upside and do not permit insiders to communicate pessimism as they could if permitted to sell on the basis of inside information. Although most would likely see this as one of the virtues of options, it is arguable that CEOs need to hear from the pessimists more than they do from the optimists. *See* Jensen & Murphy, *supra* note 1, at 44-49. It is possible that this problem could be addressed by issuing puts in addition to calls. Puts may also be useful in addressing the repricing problem as discussed further below.

116. *See* Jensen & Murphy, *supra* note 1, at 57-59.

117. *See* SHARE-BASED PAYMENT, Statement of Fin. Accounting Standards No. 123 (revised 2004) summary cmt. B at ii (Fin. Accounting Standards Bd. 2004).

the issuing company. Thus, the company must use internally generated funds to finance 100% of the repurchase price of shares to control for dilution. That means that fewer shares can be issued, incentives will be more modest, and less cash will be distributed to outside stockholders. Moreover, with restricted stock, the company must repurchase shares to control for dilution no matter how it performs. To be sure, there is some information imbedded in the grant of restricted stock. Presumably, the company figures that it will generate sufficient return going forward to satisfy any need for capital and thus to reimburse itself for the cash it must use up front. But the need to use cash in hand upon the grant of restricted stock is more a reflection of past performance than future prospects. In contrast, with options the company distributes cash by way of repurchases only if it has generated return while the option was outstanding: there is no need to distribute cash unless options are likely to be exercised, and presumably that is more consistent with stockholder expectations than distributions irrespective of return.[118] Finally, the recipient of restricted stock usually must pay tax on the award—using personal funds—to the extent of the value of the stock as it vests.[119] And there is no assurance that the stock can be sold at that price when the restriction lapses. Indeed, it is entirely possible

118. With restricted stock, the recipient typically receives any dividends paid during the vesting period even though the stock remains restricted. Thus, there is no need for any dividend adjustment in connection with restricted stock (which is not to say that there is any such need with options as long as the company repurchases enough shares to control for dilution). But with restricted stock, the fact that the company must repurchase shares up front with cash in hand is no incentive to adopt an optimal distribution policy. Admittedly, it is hardly clear that options induce optimal distributions because it is hardly clear what constitute optimal distributions. What is clear is that the ability to distribute cash limits the number of options that can be granted, and generous option compensation entails generous distributions. Again, the data indicate that in the aggregate, corporations distributed cash equal to $374B / $758B or 49.3% of taxable income booked during 1999 about one-third of which ($99B) was in the form of repurchases. If one looks solely at the data for the S&P 500 which ended the year at 1469.25, earnings were 45.17 and dividends were 16.17. Assuming that S&P 500 companies repurchased shares at about the same pace as the entire market—using cash equal to about 36% of earnings—total distributions as a percentage of GAAP earnings would have been about (16.17 x 1.36) / 45.17 or 48.7%. *See supra* notes 85-90 and accompanying text and *infra* Table 1.

119. *See* I.R.C. § 83 (2006).

that one might pay more in tax than the stock is worth at the time the restriction lapses, thus increasing the risk to the recipient. With options, tax is payable when the option is exercised to the extent of the gain. And one can choose to exercise when the stock can be sold.[120] In sum, with restricted stock one pays more tax per share, the tax must be paid whether or not the stock can be sold (and out of other funds if it cannot be sold), and there is a real risk that the stock may decrease in value if it cannot be sold. Given these problems, one gets the impression that the proponents of restricted stock were more motivated by their distaste for options than any real advantages with alternative forms of equity compensation.

Stock appreciation rights (SARs) are quite similar to options from the point of view of the recipient. SARs are equivalent to exercising an option and immediately selling the stock. That may be a bit more convenient especially if the market for the stock is thin. Still, with options one can time the exercise for purposes of tax planning or other considerations, but SARs are less attractive than options from the point of view of the company and its outside stockholders because they do not necessitate repurchase of shares to control for dilution. So they do not have the effect of inducing distributions. For the same reason, there is no natural limit on the number of phantom shares. In other words, SARs are not self-regulating. It is true that the company may set the number of phantom shares equal to the optimal number of options. But with options, repurchases effectively assure that the company accounts for the cost of capital. With SARs, there is no inherent justification for an at-the-money grant.[121]

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120. In both cases, the tax is at ordinary income (OI) rates. With restricted stock the tax is payable on the value of the stock. (The tax on any dividends is at the lower 15% dividend rate.) With options, the tax is payable on the gain. I.R.C. § 83 (2006). Presumably, most companies have some rough idea of the dollar amount of equity compensation they mean to pay to each recipient and usually would issue more options than restricted stock, all other things being equal. In other words, one would think that the usual goal is to pay about the same amount whether it comes in the form of whole shares plus anticipated gain or solely the anticipated gain on some (necessarily greater) number of shares. So ignoring any issue of timing, the tax payable is likely to be the same and accordingly not a significant motivation one way or the other.

121. For SARs to be equivalent to options, the constructive exercise price should be increased (indexed) by the company's cost of capital. Again, that

VI.
THE DARK SIDE OF OPTIONS

Although options are the best form of executive compensation, they are not perfect. Recent controversies over timing and backdating show that options can be abused. In addition, options can create problems if equity becomes overvalued as it did in the period leading up to the dotcom bust and the demise of Enron and other major corporations. Indeed, it is arguable that options may have been a significant cause or aggravating factor in these scandals.[122] But these problems with options are easy to fix.

A. *Timing and Backdating*

The practice of timing refers to granting options when the stock price appears to be at a low or the CEO has reason to know that the price is likely to rise in the future. If the CEO knows material nonpublic facts that are ripe for disclosure, a grant of options at such a time—*spring loading*—may be equivalent to insider trading or misappropriation of existing stockholder wealth.[123] Otherwise, timing is not much of a worry. The fact that management is familiar with the company and confident about its future is not a problem.[124] Indeed, as

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is no problem in theory. But in practice it is difficult to determine a company's cost of capital. Options avoid the problem because the cost of capital is built in to market price and thus the price the company must pay to repurchase its own stock.

122. *See* Jensen & Murphy, *supra* note 1, at 44-49.

123. *See* Tyson Foods, Inc. Consol. S'holder Litig., 919 A.2d 563, 592-93 (Del. Ch. 2007), *modified*, 2007 Del. Ch. LEXIS 120 (Del. Ch. Aug. 15, 2007) (allegations that directors used inside knowledge to enrich employees and avoid restrictions in stockholder-approved plan or concealed terms of grants suffice to raise doubt as to application of the business judgment rule). *See generally Private Civil Litigation: The Other Side of Stock Option Backdating*, 39 Sec. Reg. & L. Rep. (BNA) 1344-45 (Sept. 3, 2007).

124. The SEC has been quite forgiving about timing though not necessarily for the right reasons. The argument seems to be that because the corporation itself is a party to the trade and is deemed to know any material nonpublic information, there is no insider trading and therefore no abuse. As SEC commissioner Paul S. Atkins has opined:

> Boards, in the exercise of their business judgment, should use all the information that they have at hand to make option grant decisions. An insider trading theory falls flat in this context where there is no counterparty who could be harmed by an options grant. The counterparty is the corporation — and thus the shareholders! They are intended to benefit from the

noted above, option grants can convey this information to the market quite efficiently and for the benefit of all of the stockholders.

The practice of backdating refers to granting options as if the grant occurred on an earlier date when stock price was lower. For example, a company might grant an option today when the stock is trading at 30 and record the option as granted a month earlier when the market price was 25. In effect, backdating constitutes grant of an option at a below market price. Although stockholders have no reason to object to at-the-money grants, they have every reason to object to the sale of company stock at a bargain price. When properly used, at-the-money options combined with repurchase of stock have no effect on stockholder wealth. In contrast, a backdated below-market option dilutes stockholder wealth. That is, it constitutes a diversion of existing stockholder wealth from outside stockholders to inside stockholders.[125] Again, the courts have had little trouble with such cases.[126]

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decision. . . . In the best exercise of their business judgment, directors might very well conclude that options should be granted in advance of good news. What better way to maximize the value that the option recipient attaches to the option?

Atkins Says Insider Trading Likely Not an Issue in OPTIONS Grants, 38 Sec. Reg. & L. Rep. (BNA) 1214 (July 10, 2006). But what if the CEO controls the flow of information and sits idly by while the board of directors grants him options at a time when he knows the corporation is about to strike it rich? *See* SEC v. Tex. Gulf Sulphur Co., 401 F.2d 833, 856-57 (2d Cir. 1968) (noting top management would have violated Rule 10(b) by accepting stock options without disclosure). It is not at all clear that public stockholders would be as tolerant as the SEC seems to be. Indeed, it seems likely that such a grant would be an actionable breach of fiduciary duty under state law. It is not enough that a company merely comply with federal securities law. *See* Richard A. Booth, *The Missing Link Between Insider Trading and Securities Fraud*, 2 J. BUS. & TECH. L. 185, 205 (2007).

125. There is nothing necessarily illegal about a below-market grant. The problem arises when it is falsely represented to the market as an at-the-money grant. Although backdating is more worrisome than timing, there may be an innocent explanation even for this practice in some cases. For example, it may be appropriate to agree to grant options as of a particular date in connection with a new hire even though the grant may not occur until a later date. Or it may be that the grant needs to be ratified by the board of directors at a future meeting.

126. *See* Ryan v. Gifford, 918 A.2d 341 (Del. Ch. 2007); Brandin v. Deason, 941 A.2d 1020 (Del. Ch. 2007); Conrad v. Blank, 940 A.2d 28 (Del. Ch. 2007). In addition, backdating has triggered numerous SEC enforcement

Arguably, the new SEC rules governing disclosure of executive compensation have largely eliminated the problem of timing and backdating by requiring disclosure of grants. Again, under the old rules, disclosure was limited to gain from exercise. Indeed, it was because of the new rules that many cases of timing and backdating came to light.[127] Still, the new rules do not go as far as they might. They only require after-the-fact disclosure of grants, and thus do not address any lingering worry about opportunism on the part of insiders.[128]

The problems of timing and backdating can be avoided altogether by announcing option grants in advance of setting the exercise price. For example, a company might announce that it will make a grant of some specified number of options at the closing market price five days hence.[129] In the

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actions. *See Former Apple GC to Pay $2.2M to Settle Options Backdating Charges*, 40 Sec. Reg. & L. Rep. (BNA) 1316 (Aug. 18, 2008); *Company, Co-Founder Settle SEC Charges of Backdating, Improperly Reporting Options*, 40 Sec. Reg. & L. Rep. (BNA) 779 (May 12, 2008); *Broadcom to Pay $12M to Settle Options Backdating Charges*, 40 Sec. Reg. & L. Rep. (BNA) 682 (Apr. 28, 2008); *McGuire, Former UnitedHealth CEO to Pay $467M Over Options Backdating*, 39 Sec. Reg. & L. Rep. (BNA) 1909 (Dec. 10, 2007). *See generally More Stock-Options Backdating Cases Expected in Near Future, SEC Official Says*, 39 Sec. Reg. & L. Rep. (BNA) 80 (Jan. 22, 2007); *Cox: Agency Aiming to Halt Practice of Backdating Stock Options*, 38 Sec. Reg. & L. Rep. (BNA) 1142 (June 26, 2006). Backdating has also given rise to criminal prosecution. *See Ex-CFO of Engineered Support Systems Enters Guilty Plea To Backdating Options*, 40 Sec. Reg. & L. Rep. (BNA) 1243 (Aug. 4, 2008); *BroadCom Co-Founder Samueli Admits Role in Stock Option Backdating Scheme*, 40 Sec. Reg. & L. Rep. (BNA) 1029 (June 30, 2008); *Brocade CEO Reyes Gets 21 Months Following Verdict on Options Backdating*, 40 Sec. Reg. & L. Rep. (BNA) 100 (Jan. 21, 2008); *Former SafeNet CFO Pleads Guilty to Illegal Stock-Option Backdating*, 39 Sec. Reg. & L. Rep. (BNA) 1594 (Oct. 15, 2007); *N. Calif. Prosecutors Create Task Force on Backdating Stock Options*, 38 Sec. Reg. & L. Rep. (BNA) 1253 (July 17, 2006). Finally, backdating also leads to tax problems in that the immediate gain is immediately taxable. *See IRS Criminal Unit Joining Task Force to Investigate Backdating of Options*, 38 Sec. Reg. & L. Rep. (BNA) 1576 (Sept. 18, 2006).

127. *See PCAOB Staff Issues Audit Alert on Backdating of Stock Options*, 38 Sec. Reg. & L. Rep. (BNA) 1383 (Aug. 7, 2006); *Audit Community Grappling with Role in Backdating of Options, PCAOB Staff Says*, 38 Sec. Reg. & L. Rep. (BNA) 1420 (Aug. 14, 2006).

128. Another worry about timing and backdating is that they give options a bad name. The fact that such abuses are possible may cause investors to assume that the practice is more common than it really is or indeed that it is the norm—another market for lemons effect.

129. The announcement should include the number of shares involved and the terms of the grant but not necessarily the recipient. For a similar

meantime, the market can adjust to the news much as it does to news of a dividend. Needless to say, advance announcement of option grants would obviate the problem of backdating. It would also eliminate any lingering worries about timing because the market would have the chance to react to the news of a grant before the price is set. Finally, it would enhance the information content of grants by eliminating any doubts about strategic behavior. Advance announcement would demonstrate good faith precisely by giving the market a chance to react before the price is set.[130]

One possible objection is that advance announcement itself might depress the price of the subject stock and make the options granted that much more lucrative. In other words, one might object that advance announcement could be used to manipulate market price downward in advance of the grant. There are several answers. First, this objection assumes that the market does not like options. To the contrary, the market should favor the use of options over other forms of compensation for the numerous reasons discussed above. Moreover, options cost nothing unless stock price rises, so there is no reason for the market to bid down the price of the stock.[131] Second, a grant of options should usually be viewed as a positive signal that stock price is likely to rise. Finally, the market might see a company that announces grants in advance as more trustwor-

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proposal relating to insider sales of stock, see Jesse M. Fried, *Reducing the Profitability of Corporate Insider Trading Through Pretrading Disclosure*, 71 S. CAL. L. REV. 303 (1998). *Cf.* MODEL BUS. CORP. ACT § 6.21 (1984) (requiring stockholder vote in connection with issuance of shares that increase outstanding shares by 20 percent or more); NYSE, Inc., Listed Company Manual § 312.03(c). This is not to say that management would be free to withhold material information from the market simply because it announces option grants in advance. Indeed, it would effectively prevent situations like TGS. In addition, advance announcement might avoid much of the adverse reaction from stockholders when an optionee enjoys surprisingly large gains. In other words, advance announcement could defuse much of the controversy surrounding the use of options as compensation by effectively emphasizing upfront that options are a way by which management works mostly for an ownership interest in the firm.

130. Another alternative might be to report outstanding shares and options continuously.

131. One might argue that market price may build in expectations about future gains that will be diluted by a grant of options. But if market price decreases for this reason, it must rise again all the more for the optionee to gain.

thy and thus bid up its price relative to others as with other improvements in governance.[132]

The question is why have issuers failed *voluntarily* to announce grants in advance if by doing so they could avoid allegations of timing and backdating and perhaps even enhance stock price? To be sure, timing and backdating have only recently surfaced as problems. One unlikely possibility is that no one ever thought to announce grants in advance. Another possibility is that SEC rules have been interpreted as prohibiting the practice. Again, one likely but unfounded worry is that because of the bad press surrounding executive compensation generally—and options in particular—advance announcement might cause a decrease in stock price and result in allegations of manipulation.[133]

It is also arguable that controlling for dilution is a close substitute for advance announcement. In other words, if a company repurchases enough stock to neutralize the dilutive effect of options, outside stockholders have no need to know. Why should they care about the identity of fellow stockholders? The obvious answer is that stockholders may care a lot about the equity stake of the CEO. If equity compensation is the best incentive—or especially if opinions differ about the

132. For example, studies indicate that companies that reincorporate in Delaware enjoy an immediate and permanent enhancement in price. *See* Robert Daines, *Does Delaware Law Improve Firm Value?*, 62 J. FIN. ECON. 525 (2001); Sanjai Bhagat & Roberta Romano, *Event Studies and the Law: Part II: Empirical Studies of Corporate Law*, 4 AM. L. & ECON. REV. 380, 389 (2002); Paul Gompers et al., *Corporate Governance and Equity Prices*, 118 Q.J. ECON. 107, 125 (2003). *See also* Guhan Subramanian, *The Disappearing Delaware Effect*, 20 J.L. ECON. & ORG. 32 (2004) (discussing media response to Daines's study). *But see* Lynn A. Stout, *Share Price as a Poor Criterion for Good Corporate Law*, 3 BERKELEY BUS. L.J. 43, 48 (2005).

133. One conceivable worry is that it may be seen as manipulation if a company announces a grant of options that causes a bump up in stock price, and the company then fails to grant the options. Needless to say, failure to grant is entirely under the control of the company and thus easily avoided. And if circumstances change for some reason, the company can always make a corrective disclosure. Moreover, Rule 10b-18 makes it quite clear that there is no violation where a company announces a repurchase and fails to follow through. Although the rule is not precisely applicable, the principle is the same. But in the end, it may simply be that companies are reluctant to announce anything that they do not need to announce because it effectively creates a commitment to follow through. As the old saying goes: it is easier to ask forgiveness than permission.

optimal form of compensation—it is important that investors know how the CEO is paid.[134] Finally (and again), option grants can convey important information about a company's prospects that is difficult to convey in any other equally reliable way.[135]

Perhaps the most likely reason why companies fail to announce grants in advance is that option holders stand to gain more by keeping such soft information under wraps. Advance disclosure might eat into potential gain precisely because it would be viewed by the market as a positive signal and cause an increase in stock price with the result that the options themselves will carry a higher strike price.[136] Although this

134. It is curious that the debate over executive compensation has focused on ultimate questions such as whether options are good or bad and whether a grant does or does not constitute an expense. The forces arrayed against options—mostly more established old-economy companies—seem determined to confine the use of options as much as possible, suggesting that they view such forms of compensation as a threat of some sort rather than a choice that might be right for some companies and wrong for others. This suggests that there is some such perceived threat, perhaps that in the competition for talent all companies will be forced to offer more and more equity to their CEOs and high level officers.

135. It may also be that many companies are reluctant to disclose the details of option grants because of internal politics. The worry may be that disclosure will lead to internal discord about who gets how many options. It is not clear that this is a good reason for failure to disclose. As I have argued elsewhere, one of the reasons for going public and being public is that the market provides immediate feedback about the wisdom of business decisions. This may be especially important where there is internal disagreement within a given company about business strategy. And this may include emphasis on one segment of a business rather than another as reflected by the allocation of rewards. To be sure, the announcement of an option grant need not reveal the recipient (though it might), but within a firm individual officers will clearly know when they are not it. This problem can be obviated to some extent by batching grants, but it cannot be avoided altogether since an individual officer will always know at the very least how his grant compares as a percentage of total grants. If we view a corporation as a partnership between stockholders and officers who agree to share gains, it seems sensible to view the officers as (general) partners with each other. Then again, in many large partnerships only a few partners at the top know all the details about the compensation of other partners. In the end, the final decisions about compensation may best be left to the board of directors who under the partnership model are neutral arbiters without skin in the game.

136. This suggests another possible objection to advance disclosure—that a company could try to misrepresent its prospects by granting more options than it can afford. As discussed at length above, a big grant of options is not

may seem at first to be a bad faith motivation, there is no question that to some extent inside stockholders and outside stockholders are adversaries. It is quite common for CEOs to gripe that the market does not appreciate company potential, so it is understandable that a CEO might not want to share too much gain with outside stockholders. On the other hand, if advance announcement is seen as an improvement in corporate governance—and it is difficult to see how it would not be so—stock price is likely to slightly rise simply as a result of adopting such a policy. Admittedly, it is scary to go first, so this may be an area that is appropriate for a new SEC rule.[137]

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a good sign. The more a company grows in value, the more expensive it is to repurchase shares to control for dilution. Thus, a big grant may suggest that growth will be minimal. If anything the temptation for a CEO would be to make a grant that is too small. The obvious downside for the CEO is a smaller payday. Thus, the CEO is subject to conflicting incentives that ultimately encourage honesty. In other words, the signals inherent in option grants are likely to be extraordinarily trustworthy. Still, if signaling remains a concern, it can be controlled to some extent by adopting a fixed calendar of grant dates or avoiding grants at times when they might be interpreted as signals. One danger is that a fixed calendar could lead to problems of earnings management. The announcement of options before the announcement of EPS should minimize such problems. Options seldom can be exercised any sooner than one year after grant. Thus, the only real worry is that negative EPS news might drive down market price in advance of the grant. Positive EPS news following a grant may generate paper gains, but it is likely to dissipate long before the options mature. To be sure, a company may be tempted to maximize EPS shortly before options mature. But that is a problem no matter what. Moreover, it may be that the number of options granted is a more significant signal than is the date. *See* Desimone v. Barrows, 924 A.2d 908 (Del. Ch. 2007) (dismissing spring loading and backdating claims where options were granted in accord with stockholder approved incentive plan providing for regularly-scheduled option grants in absence of any allegation that corporation deviated from normal disclosure practices).

137. Although commentators tend to bemoan the capture of regulators by regulated entities, one benefit of regulatory capture is that regulated entities may be able to address market failure through nominally independent administrative agencies. On the other hand, in the debate leading up to FAS 123R, established companies seem to have favored expensing, while growth companies seem to have opposed it. And established companies were quicker to shift to restricted stock. This may have been because option expense would be higher for growth companies and would thus give an edge to established companies in reporting earnings. It may also have been that options were important to growth companies in recruiting talent and that established companies figured they could compete more effectively with cash compensation. In this context, regulatory capture tends to be anticompeti-

B. *Overvalued Equity*

Following the dotcom bust and the demise of Enron, WorldCom, and other corporations, stock options have been criticized as inducing CEOs to pursue overly risky business strategies.[138] The usual argument is that options induce CEOs to take big chances to increase stock price. But that is not a real worry. CEOs are poorly diversified and risk averse. The real worry is that they will take *too little* risk on behalf of diversified stockholders. Options are a way of nudging CEOs to take more risk, but even when they are compensated mostly with options, CEOs do so only reluctantly. Even with options as the primary form of compensation, CEO will likely prefer some safe growth to taking a big risk for a jackpot.

The real problem is overvalued equity. Options can create perverse incentives if stock price becomes too high. CEOs may be tempted to undertake questionable tactics designed to *maintain* stock price until options can be exercised and option stock can be sold. If stock price is too high, the CEO will naturally seek to keep it from falling in order to maintain paper gains. Looking back on the most recent spate of corporate scandals, it seems clear that many if not most of the problems resulted from an obsession with meeting analyst expectations and making the quarterly numbers.[139] So the question is how do we induce CEOs to decrease stock price when necessary or at the very least not to stand in the way of a market correction?

The overvaluation problem can be fixed in large part by indexing the exercise price of options on the downside. In other words, the exercise price of an option can be made to adjust in proportion to a decline in the S&P 500 or some other index.[140] Aside from fixing the overvaluation problem, down-

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tive. See *Staff Considers Recruitment Advantage in Setting Penalty for Options Backdating*, 39 Sec. Reg. & L. Rep. (BNA) 1297 (Aug. 20, 2007).

138. *See* Jensen & Murphy, *supra* note 1, at 44-49.

139. *See* Jensen & Murphy, *supra* note 1, at 88-89.

140. Because individual stocks tend to follow the market to varying degrees as measured by the firm's beta coefficient, any formula for downward indexing should adjust for such factors. For example, suppose the company has a beta of 1.50 and the market falls by 10% as compared to the exercise price of at-the-money options on the date of grant. Exercise price should be reduced by 15% such that if the stock has fallen by say just 10% the options would now be in the money. Although such an adjustment might be authorized in the option plan without any specification of details, leaving it to the

ward indexing makes sense as an incentive device. In effect, downward indexing rewards the CEO for minimizing losses. If a company loses less in a market downturn than it would have lost if it had simply followed the market downward, the CEO is rewarded.[141] If incentive compensation makes sense in good times, it makes even more sense in bad times.

Although downward indexing deals with the problem of market-wide overvaluation, it does nothing to address the problem of overvaluation of an individual company. It is not clear that this is a big problem. The problem of overvaluation seems much more likely to arise as a result of broad-based irrational exuberance. On the other hand, even if the problem of overvaluation is market-wide, it is possible that some companies will be more overvalued than others. The question is how can we reward the CEO who presides over an appropriate company-specific price correction? The solution is to permit and even encourage repricing in cases in which the CEO recognizes the problem and tries to deal with it in good faith. The trick, of course, is to distinguish situations where repricing is appropriate from those in which it amounts to a gratuitous do-over. There is little doubt that if the company replaces the CEO, the new CEO will get options at the current low market price. So if the company retains the old CEO—presumably because the board attributes problems to causes beyond

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board of directors to determine the new price based on specified factors, the better practice would seem to be to specify the applicable index and beta coefficient up front. This would have the additional benefit of rewarding any effective gain that might result from a reduction of the company's beta coefficient. Although it is not clear we want to reward a reduction in risk in up markets, it seems likely that stockholders would prefer less risk in down markets. One open question is whether exercise price should be readjusted upward if the market rebounds.

141. In other words, downward indexing rewards only those CEOs who effectively exceed expectations and not those who merely perform as expected. This is not to say that it makes sense to index the exercise price of options on the upside as many have advocated. Repurchases and dividends effectively do that anyway. Moreover, as I argue above, companies that perform below the market average nonetheless contribute to the average. While I do not know of any company that has adopted such a compensation scheme, repricing is effectively equivalent. Again, it is difficult to imagine a CEO who would work simply for a salary and not insist on some share of the gain. So if options fall deep out of the money and the board fails to reprice or award more options, the CEO has little incentive to turn around the company other than simply to keep her job.

her control—it is difficult to see why options should not be repriced.[142] Here again, it is key to be clear that the board of directors should serve as a monitor for management and not as a cheerleading squad. To be sure, many observers see repricing as abusive. But the objection seems to be based on the notion that options should be seen as a reward—even at the time of grant—rather than as an incentive. Indeed, this view seems to underlie many objections to options. Quite to the contrary, repricing is really nothing more than the grant of a new option at a lower price.[143] The new option replaces an old option that is deep out of the money and that lacks incentive value.[144] In a company that awards options regularly to continually refresh incentives, it may not be necessary to reprice existing options. New options will create new incentives.[145] So if one accepts the idea that options should be a

142. CEO turnover has increased in recent years (though it is still more common for a troubled company to retain its CEO than to sack her). To be sure, this increase is consistent with shifting more risk to the CEO through variable incentive compensation. But it may also be some of this increase is due to the failure of boards to recognize the importance of incentive compensation in a troubled company. In other words, some CEOs may leave because they are left with nothing but salary as compensation, which may also explain why most CEOs negotiate for severance benefits up front. Indeed, it is possible that some cases involving controversial severance benefits may have been better addressed through repricing. In other words, it may be that boards have sometimes sacked the CEO for fear of the fallout from repricing her options.

143. This assumes that the vesting period for the option is also extended. In contrast, there is no need to extend the vesting period in connection with downward indexing. Indeed, it would be counterproductive to do so.

144. Prior to 2005 (but after 1995), FASB rules required the expensing of repriced options but not of newly granted options. Now that the FASB requires that all grants be expensed, there is no disincentive in the rules to reprice options, although the market may still react negatively. *Compare* Jensen & Murphy, *supra* note 1, at 26-27, *with* 41-42.

145. One possible problem is that the company may run out of shares to back up the grant of new options. Even before stock exchange rules required it, most companies sought stockholder approval of stock option plans that set aside a specified number of shares to be issued in connection with options. *See, e.g.*, Lewis v. Anderson, 692 F.2d 1267 (9th Cir. 1982). Some companies adopted so-called evergreen plans that added new shares to the plan whenever old options were exercised. These were somewhat controversial. And even with evergreen plans, it may sometimes be necessary to reprice options because new shares are added only when old options are exercised. While it is not clear whether most plans precluded the use of treasury shares in addition to the number of shares authorized in the plan,

staple of a well designed compensation plan, it is difficult to see the objection to repricing.[146]

CONCLUSION

There is something ironic—indeed hypocritical—about many of the arguments against the use of stock options as executive compensation when for years the worry has been about the separation of ownership from control. Although they do not do the job perfectly, stock options are the best way to align the interests of officers and stockholders. Many of the arguments against options stem from a traditional and outdated view of the outside stockholders as the sole owners of a corporation. From this view, stockholders tend to see options as diluting their returns. The better view is that a corporation is owned jointly by traditional outside stockholders and inside officer stockholders. Many of the common objections to stock options as compensation disappear if one thinks of the corporation in terms of this two-owner model. Nevertheless, there remain three practical problems that are easily addressed.

First, the worry that there is no natural limit on the ability of the CEO to extract value from the corporation through options appears to be unfounded. In order to control for dilution, a corporation must repurchase enough shares to maintain a more or less constant number of outstanding shares. But the number of shares that a corporation can repurchase is limited by its cash flow. Thus, the number of options that it can grant is naturally limited. Contrary to popular perception,

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the 2003 stock exchange rules cover all shares regardless of source. *See* Order Approving NYSE and NASDAQ Proposed Rule Changes Relating to Equity Compensation Plans, http://www.sec.gov/rules/sro/34-48108.htm.

146. One of the arguments for restricted stock is that it creates an incentive to minimize losses. But restricted stock may exacerbate the problem of overvalued equity. With restricted stock, the holder loses real money when stock price falls. With options, there is no loss other than the loss of paper gains. On the other hand, restricted stock is in a sense self-indexing in that the recipient gets whatever the stock is worth when it vests. Thus, the recipient gets some reward even in a down market. And preventing a bigger loss is its own reward. But with restricted stock there is no enhanced reward for protecting stockholder value. If outside stockholders enjoy an effective gain in the sense that they have lost less than they would have lost but for the efforts of the CEO and other officers, some of the effective gain should be shared. Otherwise there is no real incentive. In short, downwardly indexed options work better in such circumstances than restricted stock.

options have worked quite well in this regard. The data show that distributions to stockholders have well exceeded the amount necessary to control for dilution from stock options. Thus, it appears that complaints about executive pay are based inappropriately on *ex post* results. From an *ex ante* perspective, investors have no reason to object to executive pay in the form of options.

Second, recent revelations of timing and backdating suggest that management can take advantage of nonpublic information in granting options. Timing and backdating can be addressed by announcing option grants in advance of setting the exercise price.

Third, perhaps the most difficult problem with options is that they may induce questionable tactics if equity becomes overvalued. If stock price is too high, the CEO may attempt to keep it high until options can be exercised. This problem can be solved with downward indexing and judicious repricing of options when necessary. Although downward indexing based on market-wide conditions can be built into the option plan, company-specific repricing is a matter that can be addressed only by an independent and vigilant board of directors that sees its role primarily as monitor of the CEO rather than as advisor. Here, the two-owner model of the corporation may have practical significance. It is much easier for a board to see itself as such if the corporation is viewed under the two-owner model rather than the traditional model.

The bottom line is that with a little fine-tuning of terms and adjustment of stockholder perspective, options can serve the interests of both inside stockholders and outside stockholders better than any other form of incentive compensation.

APPENDIX

TABLE 1
STOCK MARKET RETURNS / OPTION GAINS / DIVIDENDS & REPURCHASES

year	SP500 close	SP500 earnings	SP500 dividends	dividends as % of close	SP500 close + dividends	SP500 % return without dividends	total market capitalization (CRSP) ($B)	number of companies (CRSP)	vw % return with dividends (CRSP)	vw % return without dividends (CRSP)	dividends as % of market capitalization	total gain in market capitalization ($B)	options as % of stock outstanding (AM)	indicated antidilution distributions ($B)	dividends (calculated) ($B)	treasury stock at year-end (IRS) ($B)	change in treasury stock	total distributions ($B)	net income (IRS)	officer compensation (IRS)	officer compensation as % of income	number of companies (IRS)	SP500 earnings as % of close	indicated total market earnings	officer compensation as % of earnings
1979	107.94	14.55	5.97	0.06	113.91		1068	4819	0.244	0.183	0.061				65	21			192	8	0.042	2660	0.135	144	0.056
1980	135.76	14.99	6.44	0.05	142.20	0.26	1365	5006	0.332	0.271	0.061	317			85	50	29	114	158	10	0.063	2877	0.110	153	0.065
1981	122.55	15.18	6.83	0.06	129.38	-0.10	1288	5369	-0.040	-0.084	0.044	-97			58	99	49	105	147	11	0.075	3141	0.124	160	0.069
1982	140.64	13.82	6.93	0.05	147.57	0.15	1475	5521	0.204	0.142	0.062	187			91	162	63	154	113	13	0.115	3188	0.098	145	0.090
1983	164.93	13.29	7.12	0.04	172.05	0.17	1829	6186	0.227	0.179	0.048	354			87	243	81	168	131	14	0.107	3420	0.081	147	0.095
1984	167.24	16.84	7.83	0.05	175.07	0.01	1764	6322	0.032	-0.011	0.043	-65			76	280	37	113	164	16	0.098	3663	0.101	178	0.090
1985	211.28	15.68	8.20	0.04	219.48	0.26	2204	6335	0.314	0.265	0.049	440			109	348	68	175	178	18	0.101	4052	0.074	164	0.110
1986	242.17	14.43	8.19	0.03	250.36	0.15	2478	6667	0.156	0.118	0.038	274			94	554	208	302	197	20	0.102	4471	0.060	148	0.135
1987	247.08	16.04	9.17	0.04	256.25	0.02	2482	7161	0.018	-0.014	0.032	4			79	688	134	213	248	22	0.089	4794	0.065	161	0.137
1988	277.72	22.77	10.22	0.04	287.94	0.12	2717	6966	0.176	0.130	0.046	235			124	801	113	237	320	27	0.084	5094	0.082	223	0.121
1989	353.40	24.03	11.73	0.03	365.13	0.27	3306	6813	0.284	0.240	0.044	589			146	927	126	272	308	27	0.088	5450	0.068	225	0.120
1990	330.22	21.73	12.35	0.04	342.57	-0.07	2980	6705	-0.061	-0.094	0.033	-326			99	999	72	171	301	28	0.093	5589	0.066	196	0.143
1991	417.09	19.10	12.97	0.03	430.06	0.26	3997	6804	0.336	0.296	0.040	1018			160	1090	91	251	286	28	0.098	5933	0.046	183	0.153
1992	435.71	18.13	12.64	0.03	448.35	0.04	4396	6963	0.091	0.061	0.029	399	0.014	6	130	1202	112	242	316	35	0.111	6269	0.042	183	0.191
1993	466.45	19.82	12.69	0.03	479.14	0.07	5056	7758	0.116	0.068	0.028	659	0.014	9	141	1396	194	335	391	34	0.087	6798	0.042	215	0.158
1994	459.27	27.05	13.36	0.03	472.63	-0.02	5001	8199	-0.008	-0.033	0.025	-55	0.014	-1	126	1513	117	243	442	32	0.072	7043	0.059	295	0.109
1995	615.93	35.35	14.17	0.02	630.10	0.34	6785	8473	0.357	0.325	0.032	1785	0.016	29	215	1619	106	321	568	36	0.063	7537	0.057	389	0.092
1996	740.74	45.17	14.69	0.02	755.63	0.20	8298	9056	0.212	0.188	0.024	1513	0.019	29	200	1647	28	228	646	40	0.062	8212	0.061	506	0.079
1997	970.43	39.56	15.52	0.02	985.95	0.31	10784	9113	0.303	0.282	0.022	2486	0.020	50	233	1873	226	459	730	47	0.064	9017	0.041	440	0.107
1998	1229.23	38.23	16.20	0.01	1245.43	0.27	13288	8711	0.223	0.205	0.018	2504	0.025	63	234	2026	153	387	659	51	0.077	9669	0.031	413	0.123
1999	1469.25	45.17	16.71	0.01	1485.96	0.20	17009	8363	0.253	0.237	0.016	3722	0.024	69	275	2125	99	374	758	58	0.077	10360	0.031	523	0.111
2000	1320.28	52.00	16.27	0.01	1336.55	-0.10	15575	8134	-0.111	-0.121	0.010	-1434	0.025	-36	152	2401	276	428	815	68	0.083	10883	0.039	613	0.111
2001	1148.09	44.23	15.74	0.01	1163.83	-0.13	13829	7439	-0.113	-0.124	0.012	-1746	0.026	-45	163	2563	162	325	524	56	0.107	10989	0.039	533	0.105
2002	879.82	47.24	16.08	0.02	895.90	-0.23	11034	7020	-0.206	-0.221	0.013	-2796	0.021	-59	140	2623	60	200	477	51	0.107	11093	0.054	592	0.086
2003	1111.91	54.15	17.88	0.02	1129.79	0.26	14585	6690	0.331	0.308	0.024	3552	0.020	71	344	1379	-1244	-900	644	55	0.085	11745	0.049	710	0.077
2004	1211.92	67.01	19.41	0.02	1231.33	0.09	16458	6733	0.130	0.108	0.022	1873	0.020	37	354	836	-541	-187	889	66	0.074	12444	0.055	910	0.073
2005	1248.29	68.32	22.38	0.02	1270.67	0.03	17384	6748	0.073	0.054	0.019	926	0.020	19	335	1022	184	519	1602	72	0.045	13226	0.055	951	0.076

NOTES ON TABLES 1 AND 2

The S&P 500 is a value-weighted index and accounts for about 85% of total market capitalization. The figures for dividends as a percentage of market capitalization are calculated by finding the difference between the value-weighted (vw) return with and without dividends. Figures for options as a percentage of stock outstanding are taken from Michael C. Jensen & Kevin J. Murphy, *Remuneration: Where We've Been, How We Got to Here, What Are the Problems, and How to Fix Them*, ECGI Working Paper No. 44/2004, at 38 (Figure 7). As the authors note, the figure shows the grant-date number of options as a fraction of total common shares outstanding granted to all employees in an average S&P 500 firm, based on data from S&P's ExecuComp data. Grants below the Top 5 are estimated based on "Percent of Total Grant" disclosures; companies not grant-

ing options to any of their top five executives are excluded. The number in parentheses indicates the fraction of the grant, on average, that is awarded to the indicated employee (or employee group). Fiscal 2002 results are based on the April 2003 "cut" of ExecuComp, which includes only companies with fiscal closings in December 2002 or earlier.) The figures for indicated antidilution distributions are calculated by multiplying the yearly gain in market capitalization by the percentage of options (as a percent of stock outstanding). Although this arguably assumes that all options are exercised each year, it also reflects a pay-as-you-go approach to antidilution repurchases. Dividends are calculated by multiplying the dividend rate, using Center for Research on Securities Prices (CRSP) data, by total market capitalization. Note that the dividend rate for the S&P 500 is quite similar to the rate calculated using CRSP data. Figures for treasury stock are taken from IRS data for corporations with total assets of $250M or more. Although the population of such corporations was smaller than the population of publicly held corporations in 1980 (2,877 versus 5,006), it was considerably larger in 2005 (13,226 versus 6,748). The count was closer in 1999 (10,380 versus 8,363), the year on which much of the analysis here focuses. In any event, the vast majority of the wealth of U.S. corporations is concentrated in the very largest corporations. Again, the S&P 500 accounts for about 85% of the value of all publicly traded corporations. So although IRS numbers do not match up perfectly with either the S&P 500 or CRSP data, the comparison is still meaningful. Indeed, it seems quite likely that stock buybacks are heavily concentrated among the very largest corporations. Nevertheless, total distributions reflects the addition of two disparate numbers: CRSP dividends and IRS changes in treasury stock. Note that the latter figure also understates repurchases since it is a net figure rather than a gross figure. But arguably net repurchases are a better reflection of distributions anyway since the reissue of treasury stock dilutes stockholder value. Incidentally, Federal Reserve Board (FRB) data confirms that companies generally buy back more stock than they issue—at least among nonfinancial companies. For example, in 1999, nonfinancial corporations bought back about $110B more in stock than they issued, whereas IRS data for the largest 10,380 companies indicates that they bought back $99B net. *See* FRB, Flow of Funds Accounts, Table F.213 (1995 to 2004) (June 11,

2009). Net income (IRS) is income for tax purposes and does not reflect any reduction for net operating losses (NOLs). Officer compensation includes cash, stock grants, and gain from the exercise of nonqualified stock options under IRC § 83. Virtually all options granted to high level officers are nonqualified. *See also* IRS Form 1120. Officer compensation as a percent of income reflects income in the aggregate. Arguably, it is more accurate to isolate corporations with income, but the focus here is on the aggregate numbers that matter to diversified investors. S&P 500 earnings as a percent of close are calculated from closing data and earnings data as reported for the S&P 500. The percentage return is then used to estimate total market earnings for all stocks in the CRSP index. Although smaller companies on average generate higher percentage earnings, again the fact that the S&P 500 accounts for 85% of total market value suggests that the discrepancy will be minimal. The last column presents an alternative measure of officer compensation as a percentage of earnings. Since reported earnings are generally somewhat lower than taxable earnings in the years 1986 and forward (presumably as a result of tax reforms enacted in 1986), the percentage of officer compensation is somewhat higher for these years than for earlier years. Finally, Table 2 below compares market price and treasury stock levels. Again, although one might think that companies tend to repurchase their stock when the price is low, quite the opposite appears to be the case. What is also intriguing about Table 2 is that repurchases appear to lag market prices by two to three years. This suggests that repurchases are indeed motivated mostly by worries about dilution since most options mature over a similar period. In other words, one would expect repurchases to occur over time as options mature. And that is exactly what Table 2 illustrates.

TABLE 2

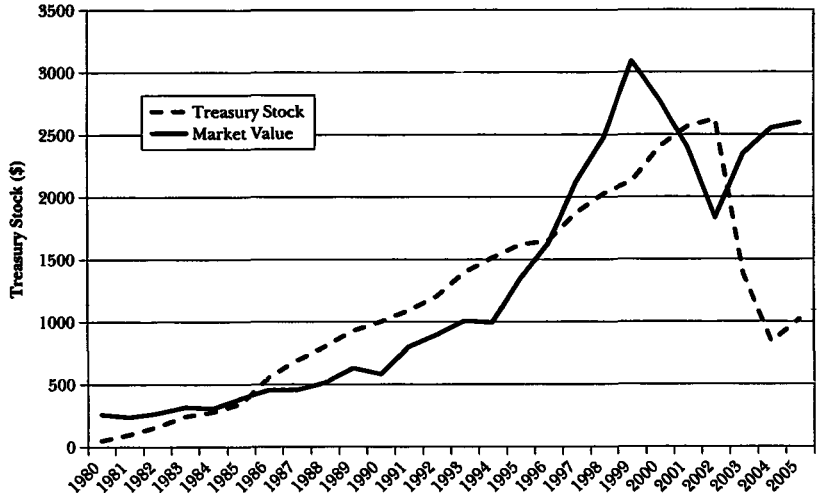

TABLE 3
MAXIMUM OPTIONS & DILUTION AT VARIOUS LEVELS OF RETURN

The following charts show the maximum number of at-the-money options that can be granted at various levels of return together with their dilutive effect on outside stockholders. Each of the following charts is based on a company with 100 shares outstanding. Charts A through D show companies with market multipliers of 10, 20, 30, and 40, respectively.[147] In each case, the company expects to generate a total return of

147. It is tempting to equate the market multiplier with the reciprocal of the cost of equity. But the market multiplier also reflects anticipated growth and thus cannot be translated directly into the cost of equity except in cases in which the market anticipates zero growth. The charts depict various scenarios depending on the market multiplier rather than the cost of equity, because the market multiplier reflects the price that the company must in fact pay to repurchase shares. Nevertheless, if one adjusts exercise price for the cost of equity as advocated by Jensen and Murphy, the adjustment should presumably be based on the true cost of equity (without any reduction for anticipated growth) even though the company could presumably sell shares to the public at a price that reflects the cost of equity as reduced by anticipated growth. Thus, Chart F depicts a company with a market multiplier of 20—which would suggest a cost of equity of 5%—but the cost of equity is assumed to be 10%.

$100 in the coming year. Thus, the value of the company is expected to increase by $100 as of year end.

The charts depict the effects of options at various levels of realized return where the company grants the maximum number that it can afford to grant given the cash available for repurchase of an equal number of shares to control for dilution. The assumption is that realized return will be sustained indefinitely in subsequent periods, thus resulting in a change in price that reflects the new expected return together with the realized return from the year depicted. To be sure, it is entirely possible for a company to beat its numbers one year without raising expectations for following years.

Chart E depicts a situation in which the company issues exactly half as many options as it could theoretically afford because it needs to preserve half of its funds for capital needs.

Chart F depicts the same company with options whose exercise price is set at the market price plus the cost of capital as proposed by Jensen and Murphy. The assumption here is that the cost of capital is ten percent.[148]

148. I considered adding a chart depicting the effect of compounding in connection with options that vest over a period of more than one year. But given that in-the-money options must be reflected in EPS whether or not they have matured, it seems likely that most corporations follow a pay-as-you-go policy and repurchase shares continually rather than only immediately before options mature. Moreover, if a company uses options liberally, it is likely that options mature continually and that there is no significant difference between the two repurchase strategies. The bottom line is that companies likely deal with compounding by repurchasing shares as if in-the-money options could be exercised even though they have not yet matured. Thus, it seems realistic to base these charts on a one-year period.

CHART A
MARKET MULTIPLIER = 10

return	market capitalization (10X)	total value at year end	repurchase price per share	maximum options	amount available for repurchase	adjusted market price / repurchase price	dilution per share	adjusted option gain	adjusted option gain as percent of total return
95	950	1045	10.45	211	2206	10.14	0.31	31	0.68
96	960	1056	10.56	171	1810	10.21	0.35	35	0.63
97	970	1067	10.67	145	1545	10.27	0.40	40	0.59
98	980	1078	10.78	126	1354	10.35	0.43	43	0.56
99	990	1089	10.89	111	1211	10.42	0.47	47	0.53
100	1000	1100	11.00	100	1100	10.50	0.50	50	0.50
110	1100	1210	12.10	52	634	11.38	0.72	72	0.34
120	1200	1320	13.20	38	495	12.33	0.87	87	0.27
130	1300	1430	14.30	30	432	13.30	1.00	100	0.23
140	1400	1540	15.40	26	399	14.29	1.11	111	0.21
150	1500	1650	16.50	23	381	15.28	1.22	122	0.19
160	1600	1760	17.60	21	371	16.28	1.32	132	0.17
170	1700	1870	18.70	20	365	17.28	1.42	142	0.16
180	1800	1980	19.80	18	364	18.28	1.52	152	0.16
190	1900	2090	20.90	17	364	19.28	1.62	162	0.15
200	2000	2200	22.00	17	367	20.29	1.71	171	0.14
300	3000	3300	33.00	13	430	30.35	2.65	265	0.12
400	4000	4400	44.00	12	518	40.42	3.58	358	0.11
500	5000	5500	55.00	11	611	50.50	4.50	450	0.10
600	6000	6600	66.00	11	707	60.58	5.42	542	0.10
700	7000	7700	77.00	10	804	70.66	6.34	634	0.09
800	8000	8800	88.00	10	903	80.74	7.26	726	0.09
900	9000	9900	99.00	10	1001	90.83	8.17	817	0.09
1000	10000	11000	110.00	10	1100	100.91	9.09	909	0.09

CHART B
MARKET MULTIPLIER = 20

return	market capitalization (20X)	total value at year end	repurchase price per share	maximum options	amount available for repurchase	adjusted market price / repurchase price	dilution per share	adjusted option gain	adjusted option gain as percent of total return
96	1920	2016	20.16	600.00	12096	20.02	0.14	14	0.86
97	1940	2037	20.37	262.16	5340	20.10	0.27	27	0.72
98	1960	2058	20.58	168.97	3477	20.22	0.36	36	0.63
99	1980	2079	20.79	125.32	2605	20.35	0.44	44	0.56
100	2000	2100	21.00	100.00	2100	20.50	0.50	50	0.50
110	2200	2310	23.10	35.48	820	22.29	0.81	81	0.26
120	2400	2520	25.20	23.08	582	24.23	0.98	98	0.19
130	2600	2730	27.30	17.81	486	26.20	1.10	110	0.15
140	2800	2940	29.40	14.89	438	28.18	1.22	122	0.13
150	3000	3150	31.50	13.04	411	30.17	1.33	133	0.12
160	3200	3360	33.60	11.76	395	32.17	1.43	143	0.11
170	3400	3570	35.70	10.83	387	34.17	1.53	153	0.10
180	3600	3780	37.80	10.11	382	36.17	1.63	163	0.09
190	3800	3990	39.90	9.55	381	38.17	1.73	173	0.09
200	4000	4200	42.00	9.09	382	40.17	1.83	183	0.08
300	6000	6300	63.00	6.98	440	60.20	2.80	280	0.07
400	8000	8400	84.00	6.25	525	80.24	3.76	376	0.06
500	10000	10500	105.00	5.88	618	100.28	4.72	472	0.06
600	12000	12600	126.00	5.66	713	120.32	5.68	568	0.05
700	14000	14700	147.00	5.51	810	140.37	6.63	663	0.05
800	16000	16800	168.00	5.41	908	160.41	7.59	759	0.05
900	18000	18900	189.00	5.33	1007	180.46	8.54	854	0.05
1000	20000	21000	210.00	5.26	1105	200.50	9.50	950	0.05

CHART C
MARKET MULTIPLIER = 30

return	market capitalization (30X)	total value at year end	repurchase price per share	maximum options	amount available for repurchase	adjusted market price / repurchase price	dilution per share	adjusted option gain	adjusted option gain as percent of total return
97	2910	3007	30.07	1385.71	41668	30.00	0.07	7	0.93
98	2940	3038	30.38	257.89	7835	30.11	0.27	27	0.72
99	2970	3069	30.69	143.48	4403	30.28	0.41	41	0.59
100	3000	3100	31.00	100.00	3100	30.50	0.50	50	0.50
110	3300	3410	34.10	26.83	915	33.23	0.87	87	0.21
120	3600	3720	37.20	16.67	620	36.17	1.03	103	0.14
130	3900	4030	40.30	12.62	509	39.15	1.15	115	0.11
140	4200	4340	43.40	10.45	453	42.13	1.27	127	0.09
150	4500	4650	46.50	9.09	423	45.13	1.38	138	0.08
160	4800	4960	49.60	8.16	405	48.12	1.48	148	0.08
170	5100	5270	52.70	7.49	395	51.12	1.58	158	0.07
180	5400	5580	55.80	6.98	389	54.12	1.68	168	0.07
190	5700	5890	58.90	6.57	387	57.12	1.78	178	0.06
200	6000	6200	62.00	6.25	388	60.12	1.88	188	0.06
300	9000	9300	93.00	4.76	443	90.14	2.86	286	0.05
400	12000	12400	124.00	4.26	528	120.16	3.84	384	0.04
500	15000	15500	155.00	4.00	620	150.19	4.81	481	0.04
600	18000	18600	186.00	3.85	715	180.22	5.78	578	0.04
700	21000	21700	217.00	3.74	812	210.25	6.75	675	0.04
800	24000	24800	248.00	3.67	910	240.28	7.72	772	0.04
900	27000	27900	279.00	3.61	1008	270.31	8.69	869	0.03
1000	30000	31000	310.00	3.57	1107	300.34	9.66	966	0.03

CHART D
MARKET MULTIPLIER = 40

return	market capitalization (40X)	total value at year end (perpetuity + return)	repurchase price per share	maximum options	amount available for repurchase	adjusted market price / repurchase price	dilution per share	adjusted option gain	adjusted option gain as percent of total return
98	3920	4018	40.18	544.44	21876	40.03	0.15	15	0.84
99	3960	4059	40.59	167.80	6811	40.22	0.37	37	0.63
100	4000	4100	41.00	100.00	4100	40.50	0.50	50	0.50
110	4400	4510	45.10	21.57	973	44.20	0.90	90	0.18
120	4800	4920	49.20	13.04	642	48.14	1.06	106	0.12
130	5200	5330	53.30	9.77	521	52.12	1.18	118	0.09
140	5600	5740	57.40	8.05	462	56.10	1.30	130	0.07
150	6000	6150	61.50	6.98	429	60.10	1.40	140	0.07
160	6400	6560	65.60	6.25	410	64.09	1.51	151	0.06
170	6800	6970	69.70	5.72	399	68.09	1.61	161	0.05
180	7200	7380	73.80	5.33	393	72.09	1.71	171	0.05
190	7600	7790	77.90	5.01	391	76.09	1.81	181	0.05
200	8000	8200	82.00	4.76	390	80.09	1.91	191	0.05
300	12000	12300	123.00	3.61	445	120.10	2.90	290	0.03
400	16000	16400	164.00	3.23	529	160.13	3.88	388	0.03
500	20000	20500	205.00	3.03	621	200.15	4.85	485	0.03
600	24000	24600	246.00	2.91	717	240.17	5.83	583	0.03
700	28000	28700	287.00	2.83	813	280.19	6.81	681	0.03
800	32000	32800	328.00	2.78	911	320.22	7.78	778	0.03
900	36000	36900	369.00	2.74	1009	360.24	8.76	876	0.03
1000	40000	41000	410.00	2.70	1108	400.26	9.74	974	0.03

CHART E
MARKET MULTIPLIER = 20
COMPANY RESERVES 50% OF EARNINGS

return	market capitalization (20X)	total value at year end	repurchase price per share	maximum options	amount available for repurchase	adjusted market price / repurchase price	dilution per share	adjusted option gain	adjusted option gain as percent of total return
96	1920	2016	20.16	300.00	6096	20.04	0.12	12	0.75
97	1940	2037	20.37	131.08	2719	20.16	0.21	21	0.57
98	1960	2058	20.58	84.48	1788	20.31	0.27	27	0.46
99	1980	2079	20.79	62.66	1352	20.49	0.30	30	0.39
100	2000	2100	21.00	50.00	1100	20.67	0.33	33	0.33
110	2200	2310	23.10	17.74	465	22.63	0.47	47	0.15
120	2400	2520	25.20	11.54	351	24.66	0.54	54	0.10
130	2600	2730	27.30	8.90	308	26.70	0.60	60	0.08
140	2800	2940	29.40	7.45	289	28.75	0.65	65	0.07
150	3000	3150	31.50	6.52	280	30.80	0.70	70	0.06
160	3200	3360	33.60	5.88	278	32.84	0.76	76	0.06
170	3400	3570	35.70	5.41	278	34.89	0.81	81	0.05
180	3600	3780	37.80	5.06	281	36.94	0.86	86	0.05
190	3800	3990	39.90	4.77	285	38.99	0.91	91	0.05
200	4000	4200	42.00	4.55	291	41.04	0.96	96	0.04
300	6000	6300	63.00	3.49	370	61.55	1.45	145	0.03
400	8000	8400	84.00	3.13	463	82.06	1.94	194	0.03
500	10000	10500	105.00	2.94	559	102.57	2.43	243	0.03
600	12000	12600	126.00	2.83	657	123.08	2.92	292	0.03
700	14000	14700	147.00	2.76	755	143.59	3.41	341	0.03
800	16000	16800	168.00	2.70	854	164.11	3.89	389	0.03
900	18000	18900	189.00	2.66	953	184.62	4.38	438	0.03
1000	20000	21000	210.00	2.63	1053	205.13	4.87	487	0.03

CHART F
MARKET MULTIPLIER = 20
COMPANY RESERVES 50% OF EARNINGS AND INDEXES EXERCISE PRICE

return	market capitalization (20X)	total value at year end	repurchase price per share	maximum options	amount available for repurchase	adjusted market price / repurchase price	dilution per share	adjusted option gain	adjusted option gain as percent of total return
100	2000	2100	21.00						
110	2200	2310	23.10	26.19	634	22.46	0.64	64	0.21
120	2400	2520	25.20	14.29	406	24.55	0.65	65	0.13
130	2600	2730	27.30	10.32	336	26.62	0.68	68	0.09
140	2800	2940	29.40	8.33	307	28.68	0.72	72	0.08
150	3000	3150	31.50	7.14	293	30.73	0.77	77	0.07
160	3200	3360	33.60	6.35	287	32.79	0.81	81	0.06
170	3400	3570	35.70	5.78	286	34.84	0.86	86	0.05
180	3600	3780	37.80	5.36	287	36.89	0.91	91	0.05
190	3800	3990	39.90	5.03	291	38.95	0.95	95	0.05
200	4000	4200	42.00	4.76	295	41.00	1.00	100	0.05
300	6000	6300	63.00	3.57	371	61.52	1.48	148	0.03
400	8000	8400	84.00	3.17	463	82.03	1.97	197	0.03
500	10000	10500	105.00	2.98	560	102.54	2.46	246	0.03
600	12000	12600	126.00	2.86	657	123.06	2.94	294	0.03
700	14000	14700	147.00	2.78	756	143.57	3.43	343	0.03
800	16000	16800	168.00	2.72	854	164.08	3.92	392	0.03
900	18000	18900	189.00	2.68	954	184.59	4.41	441	0.03
1000	20000	21000	210.00	2.65	1053	205.10	4.90	490	0.03

TABLE 4
MERGERS, DIVESTITURES & LEVERAGED BUYOUTS
(1980 TO 2003)

YEAR	ALL MERGERS	DIVESTITURES	LBOs	TOTAL DIVESTITURES & LBOs	DIVESTITURES AS PERCENT OF ALL	LBOs AS PERCENT OF ALL	DIVESITURES & LBOs AS PERCENT OF ALL
1980	32.8	5.1	0.2	5.3	0.155	0.006	0.162
1981	46.8	6.8	1.9	8.7	0.145	0.041	0.186
1982	60.7	8.4	3.5	11.9	0.138	0.058	0.196
1983	52.7	12.9	4.5	17.4	0.245	0.085	0.330
1984	153.2	44.8	15.3	60.1	0.292	0.100	0.392
1985	149.6	51.0	16.3	67.3	0.341	0.109	0.450
1986	223.1	84.7	46.5	131.2	0.380	0.208	0.588
1987	198.8	77.8	40.5	118.3	0.391	0.204	0.595
1988	281.8	115.8	55.2	171.0	0.411	0.196	0.607
1989	316.8	94.9	75.5	170.4	0.300	0.238	0.538
1990	205.6	90.8	17.6	108.4	0.442	0.086	0.527
1991	141.5	61.4	7.3	68.7	0.434	0.052	0.486
1992	125.3	57.2	7.2	64.4	0.457	0.057	0.514
1993	420.4	213.4	16.4	229.8	0.508	0.039	0.547
1994	524.9	236.9	10.6	247.5	0.451	0.020	0.472
1995	895.8	365.3	23.6	388.9	0.408	0.026	0.434
1996	1059.3	319.0	17.4	336.4	0.301	0.016	0.318
1997	1610.0	616.0	24.0	640.0	0.383	0.015	0.398
1998	2480.0	555.0	27.0	582.0	0.224	0.011	0.235
1999	3402.0	678.0	58.0	736.0	0.199	0.017	0.216
2000	3440.0	892.0	86.0	978.0	0.259	0.025	0.284
2001	1688.0	644.0	60.0	704.0	0.382	0.036	0.417
2002	1185.0	473.0	83.0	556.0	0.399	0.070	0.469
2003	1818.0	501.0	86.0	587.0	0.380	0.065	0.445