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Equity incentives

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Introduction

Equity incentives are the measure of economic motivation created by the shares, stock options and restricted stock held by an executive. Equity incentives are an increasingly important feature of the contracting environment between shareholders (as represented by the board of directors) and executives. For example, Hall and Murphy (2002) report that, in 1998, the median values of stock and options held by Standard & Poor's Industrial CEOs and Standard & Poor's Financial CEOs were \$30 million and \$55 million, respectively. Similarly, Core et al. (2003) report that over the time period from 1993 to 1998, the average ratio of equity portfolio value to annual total pay was 30.3 for CEOs. Our goal in this chapter is to highlight some of the controversies surrounding equity incentives and to provide a synthesis of the academic research on these topics.

Equity incentives and organizational performance

Despite extensive research, there is little theoretical or empirical consensus on how stock options and/or equity ownership affect firm performance. Early studies such as Moreck et al. (1988) argue that, on

average, observed CEO equity ownership and incentives are 'too low'. If this is true, one expects to observe that firm performance is an increasing function of CEO equity incentives. Morck et al. (1988) find some evidence consistent with this hypothesis, except among CEOs with very large equity ownership. McConnell and Servaes (1990) find consistent evidence of a positive relation between increases in ownership and firm performance so long as managerial ownership is less than 50%. More recently, researchers have begun exploring the performance implications of stock options. Sesil et al. (2000) find mixed evidence of a positive relation between firm performance and option use intensity. Ittner et al. (2003) find that the relation between option grants and firm performance varies across organizational levels within a sample of new economy firms, and Hanlon et al. (2003) argue that their results indicate stock option grants to executives increase future operating performance.

In contrast to studies that view equity incentives as being 'too low' and that expect a positive relation between firm performance and stock option grants, Demsetz and Lehn (1985), Core and Guay (1999), and Himmelberg et al. (1999) develop an alternative prediction about the relation between equity incentives and performance. These authors conjecture that firms and managers contract optimally, and that managerial ownership levels are set at the value-maximizing level based on firm and manager characteristics. For example, higher (lower) ownership is predicted in firms where more (less) monitoring of executives is required. From this perspective, no simple ex-ante relation between ownership and firm performance is expected. That is, low ownership firms are not necessarily expected to perform poorly, since it might be the case that these firms do not require high-powered equity incentives to ensure that managers take appropriate actions. Similarly, high ownership firms use high-powered equity incentives to resolve serious monitoring problems, not because they expect that high incentive levels will allow them to achieve positive abnormal performance.

Perhaps a more realistic scenario is that firms choose optimal managerial equity incentives when they contract with executives, but that transaction costs prohibit continuous recontracting. Since contracting is not continuous, firms' ownership levels can gradually deviate from the optimal level. This means that a subset of firms always has misaligned incentives and that recontracting for these firms (subject to transaction

costs) should produce performance improvements. Core and Larcker (2002) explore this approach in the context of target ownership plans and find that these plans cause executive ownership to increase and that this increase in equity incentives is associated with improvements in subsequent stock market and operating performance.

Despite considerable prior research and rhetoric in the business community, the performance consequences of equity ownership remain an open question. In large part, this lack of conclusive evidence stems from the difficulty in conducting powerful tests of this relation. Larcker (2003) discusses many of the methodological issues that make it difficult to provide empirical tests for the relation between equity and stock option grants and firm performance. Clearly, the need for 'high-powered' incentives varies across firms, and thus greater equity ownership by a particular executive does not necessarily imply that managers have appropriate incentives or that organizational performance will be stronger. Overall, there is no simple theoretical or empirical relation between equity incentives and organization performance.

Efficiency of equity compensation

Lambert et al. (1991) point out that, to understand the equity incentives, one must consider the manager's entire portfolio of wealth, which consists of both firm-specific wealth such as stock and options, and outside wealth that is likely invested in diversified assets. Their model illustrates that when a firm uses equity compensation to impose additional risk on a risk-averse and undiversified manager, the manager will value the compensation at less than the risk-neutral firm's value of the compensation. For example, the manager's valuation of a stock option can be less than 50% of the Black-Scholes value when the manager is constrained to hold 50% of his total wealth in firm stock. The central insight of Lambert et al. (1991) is that shareholders (or the board of directors) must consider the entire structure of the manager's wealth when determining the optimal contracting arrangement.

Hall and Murphy (2002) replicate and extend Lambert et al. (1991) to make some prescriptions about the structure of current equity compensation. In particular, they argue that stock and options are an inefficient means of providing executive compensation. The intuition is that paying

compensation to a risk-averse executive in stock or options can be more costly to the firm than delivering the same value to the executive in cash. This is unquestionably true if the effect of the compensation is solely to increase the amount of risk imposed on the executive and incentive effects of the stock options are ignored (Core and Guay, 2003; Lambert and Larcker, 2003).

As an example, consider an executive with total wealth of \$20 million and with only two investment choices: firm stock and the market portfolio. Assume that the executive would prefer to hold only the market portfolio, but is required via a contract to hold \$10 million of firm stock. Further, assume that the executive is constrained from selling any existing holdings and cannot rebalance portfolio holdings when the executive receives a compensation payment in the form of an option grant with Black-Scholes value of \$1 million (in other words, the firm gives the executive compensation and simultaneously increases the risk imposed on the executive by not allowing portfolio rebalancing).

Now consider how the executive values the \$1 million option grant in this setting. After the grant, the executive has \$11 million in equity, which is further away from the executive's preferred level of stockholdings. Because the executive cannot implement any portfolio rebalancing and is not provided with a compensating risk premium, the executive values this option grant at less than its Black-Scholes value of \$1 million. Since the value perceived by the executive can be substantially below the cost to the firm, Hall and Murphy (2002) conclude that equity grants are an expensive (and inefficient) form of compensation.

Although this conclusion may seem straightforward, Core and Guay (2003) demonstrate that the logic of Hall and Murphy (2002) is open to debate. Core and Guay note that empirical evidence documents that firms grant stock and options to executives for many reasons unrelated to risk-level adjustments, such as to conserve cash and reduce financing costs, to reduce constraints on reported earnings by taking advantage of the non-deductibility of stock option expense, and to manage taxes. Empirical evidence also suggests that the level of executives' equity incentives are determined as part of an employment contract, and that executives engage in portfolio rebalancing in response to stock and option grants (e.g. Janakiraman, 1998; Core and Guay, 1999, 2001; Heath et al., 1999; Ofek and Yermack, 2000).

To see the importance of these distinctions, assume that the executive's holdings of firm equity are not exogenous, but are instead part of an optimal employment contract that motivates the executive to exert the optimal effort and take the optimal actions by imposing risk on the executive. Specifically, assume the contract imposes the optimal incentives by requiring the executive to hold exactly \$10 million dollars of firm stock. Further, assume that the executive is allowed/required to rebalance portfolio holdings over time to maintain the agreed level of incentives. This is an efficient policy from the firm's perspective because it is costly to impose more than the optimal level of risk on the executive.

Under this alternative scenario, consider how this executive values a \$1 million grant of options. Because the executive is allowed to implement portfolio rebalancing and sell \$1 million of existing stock holdings at their market value and still maintain the contracted level of firm equity, the executive will value the option grant at its market value (less transactions costs). Using similar logic and assumptions, Core and Guay (2003) show that the executive also values an increase in the value of his stock and option portfolio at its market value. This conclusion again follows from the assumption that the risk-averse executive can rebalance his portfolio following an increase in its value back to the contractual, optimal level of incentives given the contracting environment. Thus, under these assumptions, the value and incentives inherent in the Black-Scholes model may be a reasonable approximation for the executive's valuation of stock and option grants and his portfolio incentives to increase the stock price.

We see two key unresolved issues in the debate over the valuation and efficiency of equity compensation. One issue is developing a better understanding of the extent to which the benefits received by the firm from imposing risk on executives meet or exceed the cost of imposing this risk, i.e. the extent to which observed contracts are optimal. As discussed in a recent paper by Lambert and Larcker (2003), one can make reasonable assumptions about the incentive effects of stock and stock options, and show that simple prescriptions, such as less options are better or more options are better, are clearly false. A second issue is exploring the extent to which contracting costs, transactions costs and other frictions limit executives' ability to rebalance their stock and option portfolios in response to equity grants and changes in equity portfolio value.

Relative performance evaluation

A widespread concern among both practitioners and academics is that executive portfolios lack 'relative performance evaluation' (RPE) or, equivalently, that stock and stock options gain value not only because the firm performs well, but also because the stock market rises. For example, Abowd and Kaplan (1999, p. 162) remark:

Stock options reward stock price appreciation regardless of the performance of the economy or sector. Why should CEOs be rewarded for doing nothing more than riding the wave of a strong bull market? [emphasis added] If the exercise price could be linked to measures like the S&P 500, or an index of close product-market competitors, then executives would be rewarded for gains in stock price in excess of those explainable by market factors outside their control. If market-wide stock movements could be netted out of executive incentive schemes, then equivalent incentives could be provided while reducing the volatility of the executives' portfolios.

A central tenet of agency theory is that compensation contracts filter out systematic noise through relative performance evaluation. Janakiraman et al. (1992), Antle and Smith (1986), Gibbons and Murphy (1992), and others have found relatively little evidence that the annual bonus portion of executive compensation exhibits RPE. However, given that most of a CEO's incentives come from his or her equity portfolio, the lack of explicit RPE in a bonus payment does not imply the lack of implicit RPE in the overall contract. Casual empiricism observes large stock and option portfolios, and assumes there is no RPE. That is, if firms use RPE, one might expect to see explicitly indexed CEO contracts, where the CEO holds securities that only expose him or her to idiosyncratic firm performance and effectively remove systematic risk from the CEO's performance evaluation. However, while there may be no explicit RPE in CEOs' stock and option portfolios, there is considerable implicit RPE in these portfolios (Core and Guay, 2003).

To see how implicit RPE arises, note that CEOs hold equity portfolios that reflect the terms of their employment contracts, not the portfolios they would choose in the absence of constraints. Portfolio theory predicts that a rational, risk-averse CEO would hold *no* stock in their firm (in the

absence of private information), and instead would have *all* of their wealth invested in a diversified portfolio.¹ That is, a CEO will generally hold a substantial quantity of stock in his or her firm only if required to do so as part of the compensation contract (e.g. for incentive reasons).²

Now imagine that a firm hires a new CEO who owns \$100 million in outside wealth that the executive prefers to hold in the market index with return R_m . For simplicity of exposition, we assume the CEO prefers to hold 100% of his outside wealth in the market index, but the same argument goes through if the CEO prefers to hold a combination of the risk-free asset and the market index. Suppose that the employment contract requires this new CEO to purchase \$50 million of the firm's stock, which the executive finances by selling \$50 million of market holdings. Under the simplifying assumption that the firm has systematic risk of beta equal to one, the stock return is $R_m + R_i$, where R_i is the idiosyncratic component of the firm's return. Accordingly, after fulfilling the contract, the executive owns \$50 million in the market portfolio with return R_m and \$50 million in firm stock with return $R_m + R_i$. This new portfolio is equivalent to the \$100 million market portfolio that was originally held, plus a new \$50 million exposure to the idiosyncratic component of the firm's return R_i . The executive's wealth is no more correlated with market movements after the contract than that preferred in the absence of the contract. The only aspect that has changed is that the executive now holds a \$50 million exposure to firm idiosyncratic risk, which is consistent with the RPE prediction that the optimal contract

¹By 'no' stock, we mean no stock other than the small amount of stock the CEO owns by owning the market portfolio. If CEO stock ownership was primarily driven by private information, one would expect to observe that some CEOs hold large quantities of stock (those CEOs with positive information) while other CEOs hold no stock (those CEOs with negative information). Furthermore, one would expect to observe large swings in ownership as private information is generated and disseminated. These features are not commonly observed, and laws against insider trading seem to preclude this behaviour.

²Another exception to this point is the case of a founding CEO. In this case, it may be difficult for the CEO to sell all of his or her stock immediately without incurring substantial 'signalling costs'. However, programmes such as those employed by Bill Gates, in which the CEO announces regular sales at certain times in the future, allow founding CEOs to gradually reduce their equity holdings without incurring information costs.

requires the CEO to hold more than his preferred exposure to the firm's idiosyncratic (non-market) return. The implicit indexing of his holdings of firm stock is not observed because the structure of his outside wealth and executive preferences are not observed (Jin, 2002; Core et al., 2003; Core and Guay, 2003). This analysis suggests that executive contracts are likely to be more consistent with RPE than might be observed by casual empiricism or by previous empirical RPE research that has not considered the structure of executives' other wealth.

The explicit use of RPE in executive compensation contracts (e.g. indexed stock options) is quite uncommon. Johnson and Tian (2000) note that firms face several potentially costly implementation issues with respect to indexed options. For example, an observable, non-manipulable benchmark index must be specified that well captures common uncertainty beyond the executive's control (e.g. Dye, 1992). Indexed options can also create greater incentives to increase risk than standard options. Further, as discussed below, indexed options require the firm to use variable financial accounting that results in compensation expense for options. If the recognition of accounting expense is important to the firm, this will be a disadvantage of indexed stock option contracts.

Repricing stock options

Stock option repricing, the practice of resetting the exercise price of previously granted options that are significantly out of the money, has attracted considerable attention in recent years, and is an area of particular concern for institutional investors and the business press:

Heavy criticism has come from the financial press and from large institutional investors such as the State of Wisconsin Investment Board, who argue that resetting is tantamount to rewarding management for poor performance and that, more importantly, it destroys incentives present in the initial contract.

(Acharya et al., 2000, p. 66)

The typical argument against repricing is that firms provide options to employees as a form of equity incentives, and that these incentives are intended to encourage employees to take value-maximizing actions.

When the stock price rises, employees are rewarded through the increase in the value of their options. However, if options are repriced after the stock price falls, the repricing effectively removes the risk originally imposed on the executive for incentive purposes, and may be seen to be a 'reward' for poor performance.

Thus, critics argue that repricing is an inappropriate aspect of the compensation contract. Critics also question whether repricing is actually necessary in many cases. In support of this criticism, Chance et al. (2000) examine a sample of repricing firms and find that if the firms had not repriced, over half of their sample would have stock options that were at the money within two years after the repricing event. Of course, two years is a long time if you lose valuable employees to competitor firms in the interim.

As a counter-argument, Saly (1994) and Acharya et al. (2000) point out that it is generally optimal to allow a long-term contract to be renegotiated, and an ex-ante strategy of repricing options following bad outcomes dominates a commitment not to recontract. Intuitively, if the outcome is bad and is known to be the CEO's fault, he or she can be terminated. If the firm wishes to keep the CEO following a bad outcome, it will want to assist him or her with optimal incentives, and doing so involves recontracting.

Arguments against repricing also fail to consider the retention incentives that options are likely to provide. Employee stock options generally have vesting requirements that encourage employees to remain with the firm until the options are exercisable. Furthermore, employee stock options are not tradable or portable. This means that employees must exercise any vested options when they leave the firm, thereby forfeiting the time-value of the options (i.e. the employees are forced into sub-optimal early exercise of the options). As an employee builds up an option portfolio over time, these retention incentives increase, thereby making it more costly for a competitor firm to hire away the employee. That is, not only would a competitor firm have to pay the employee his or her market wage, the firm would also have to compensate him or her for the value foregone from forfeiting unvested options or suboptimally exercising options prior to maturity. When the stock price falls precipitously, these retention incentives are largely eliminated and the probability of employee turnover increases as it becomes less costly for competitors to lure employees away. Repricing options can serve to reinstate the retention

incentives. Obviously, repricing is costly from the perspective of the firm, but this cost may be substantially smaller than the cost of employee turnover (Acharya et al., 2000; Carter and Lynch, 2001), and thus repricing can be seen as a value-increasing action by the board of directors.³

Empirical research on stock option repricing provides insight into several issues. First, for most firms and most industries, the frequency of repricing is low. Brenner et al. (2000) find an incidence of repricing of less than 1.5% per firm-year (over 1992–1995) and Chance et al. (2000) find an even lower incidence of repricing when they examine 4000 large firms from 1985 to 1994. On the other hand, Carter and Lynch (2001) find that over 260 firms repriced during 1998, but most of these firms are small, high-technology firms. In high-technology, 'new economy' firms, Ittner et al. (2003) find that 63.8% of the firms allow repricing, with shareholder approval required in 35.4% of the cases. Moreover, 59.6% of the firms in their sample have repriced stock options at least once, and 31% have repriced stock options more than once following their initial public offering.

Prior research finds that repricing follows poor firm-specific performance, and some researchers interpret this as evidence that repricings are not being undertaken to protect managers from industry performance. On the other hand, Carter and Lynch (2001) point out that repricings are conditional on bad firm-specific performance *and* on the firm's (unobserved) decision not to terminate its employees. If bad managers are fired and get no repricing, then for the remaining sample of good managers, even if there were no true relation between repricing and performance, a negative relation could be observed because the managers who are punished for poor performance are excluded from the sample.

Brenner et al. (2000) and Chance et al. (2000) provide evidence that repricings reflect governance problems (i.e. that entrenched managers are more likely to do repricings). Brenner et al. (2000) present evidence that option grants and compensation are higher for managers whose

options are repriced. However, Carter and Lynch (2001), in a study that matches each repricing firm against a control firm with out-of-the-money options, find no evidence of a correlation between repricings and governance problems.

Manipulation of exercise price and timing of stock option grants

Yermack (1997) finds positive abnormal stock returns after option grants, and presents evidence to support the hypothesis that these returns occur because managers time the option grant so that it is made prior to the release of good news (i.e. the exercise price is set prior to the release of good news). By making grants before good news, the manager effectively awards himself an in-the-money option, which is more valuable than the at-the-money option that he or she appears to receive. Yermack (1997) also presents evidence that the severity of this problem is greater for firms with weaker governance (e.g. when the CEO is a member of the compensation committee). Complementing Yermack's argument that managers time equity grants around fixed information disclosure dates, Aboody and Kasznik (2000) suggest that managers also time the disclosure of information around fixed equity grant dates. Specifically, they provide evidence that firms delay disclosure of good news and accelerate the release of bad news prior to stock option award periods.

While the manipulation effect appears to be statistically significant in prior research, one can question its economic significance and whether rational CEOs would engage in risky behaviour for such a small expected gain. Based on abnormal returns for 30 days after the grant date, Aboody and Kasznik (2000) find that the disclosure strategy increases the CEO's option award value by a mean of \$46 700 (median \$18 500). The amount estimated by Aboody and Kasznik represents 2.5% (5.1%) of reported total CEO compensation of \$1 885 600 (CEO option compensation of \$923 400). Given that the average CEO within this sample is likely to have a stock and option portfolio worth over 10 times his or her annual compensation, the typical CEO's wealth gain from this behaviour is much less than 1%. No evidence is reported by Aboody and Kasznik as to whether total CEO compensation for the sample firms engaging in this practice is statistically different than for firms not

³ This argument ignores the fact that restricted stock or other forms of deferred compensation could be equally or more effective as a retention device. For example, tenure-based restricted stock could have the same expected retention value as an equivalent dollar value of options, but with less risk. Interestingly, although stock options are commonly thought to provide retention incentives, there is little direct empirical evidence that documents these effects.

engaging in the practice. There is also the issue of expected litigation costs in the event of shareholder litigation (discussed below) and the potential decrease in the value of their human capital as it becomes known that they are 'manipulating' corporate disclosure.

Yermack (1997) argues that this type of granting practice would likely be construed as illegal insider trading. If CEOs engage in this behaviour opportunistically to the detriment of shareholders, without the permission of the board, they violate their fiduciary responsibility to the shareholders. If shareholders sue the firm over this behaviour, the CEO is not covered by the firm's directors' and officers' insurance, and thus could lose his or her entire wealth in litigation. Unless the CEO expects the risk of being caught in this behaviour to be extremely low, it seems highly irrational to engage in such risk-seeking behavior to extract relatively small rents from the firm.

Both Yermack (1997, pp. 471–472) and Aboody and Kasznik (2000, p. 98) also entertain the possibility that their evidence is consistent with managers acting in shareholders' interests. For example, because the incentives to increase stock price volatility created by an in-the-money option are lower than those created by an at-the-money option (e.g. Lambert et al., 1991), firms may wish to issue in-the-money options but prefer to avoid the accounting cost of such options. To accomplish this objective, they allow managers to time disclosures. Provided that CEOs' and other employees' levels of compensation are adjusted downward to reflect this extra value, one could argue that this type of behaviour is entirely consistent with firms acting in shareholders' interests by writing efficient contracts that minimize a complex array of contracting costs.

Little is presently known about the extent to which CEOs 'self-deal' with stock options. On one hand, it has been argued that the timing of stock option grants is consistent with a form of opportunistic insider trading. However, the economic importance of this behaviour for the executive and the firm is very unclear. On the other hand, arguments can be made that observed granting behaviour simply reflects efficient contracting between boards and CEOs. This latter argument is bolstered by the seemingly transparent nature of self-dealing with options that should make monitoring this activity relatively easy. In addition, one might question why CEOs use stock options (instead of cash or perquisites) to extract rents given that the pay-off from options is risky and depends on stock price increases. One possibility is that option compensation is favoured

over cash compensation because the former is taxed on a deferred basis – that is, income tax is paid only at the exercise date and not at the grant date. A second conjecture is that excess option compensation attracts less unwanted public attention than excess cash pay because option expense is not included in reported earnings (e.g. Bebchuk et al., 2002).

Accounting for stock options

In a competitive labour market, options are granted to employees as a form of compensation in return for services rendered. Like any other factor in production, corporations use these employee services to earn profits. However, unlike other factors in production, most firms record no accounting expense for compensation that is paid in options (assuming the grant date stock price is less than or equal to the exercise price). It is important for the reader to note that the recognition of option compensation as an expense in firms' financial statements is a separate issue from whether option compensation is an economic cost. Institutional accounting rules are influenced by objectives to produce reliable financial statements as well as by the political process. With respect to option compensation, these forces have resulted in financial accounting rules that allow most firms to avoid recognition of option expense in accounting earnings, and to instead disclose an estimate of the expense in a footnote to the financial statements.

As a side note, the fact that options may provide employees with incentives does not provide a justification for excluding an estimate of the economic cost of granting options from the computation of labour expense. To the extent that options create incentives, they are like any other incentive in that they work by imposing risk on the employee and the firm has to pay the employee extra compensation to accept this risk. The benefits to the firm from such incentives will show up in firm profitability when the employees make better decisions as a result of these incentives, and appropriate financial accounting will attempt to match the benefits from these incentives with the costs associated with these incentives. Evidence in Bell et al. (2001) is consistent with investors' perception that services rendered by employees in return for newly granted options extend beyond the year in which the options are granted. As such, it may be reasonable to view the services received from option

compensation as a temporary economic asset to be amortized (expensed) over a few years following the grant date.

Although firms in the USA do have the option of expensing (i.e. reducing reporting earnings) the estimated value of options granted, historically relatively few firms make this choice. Recently, starting in the second half of 2002, some large high-profile firms such as Coca-Cola, American Express and Ford Motors have announced plans to expense employee stock options. However, these firms are in the minority and tend not to be the most intensive users of options. For firms that grant, but do not expense, employee stock options, other things being equal (including firms' economic profits), accounting earnings are expected to be greater than the earnings of firms that use no options. There is a discussion of the UK approach to the expensing of options in Chapter 3. However, regardless of whether firms choose to expense options in income, pro-forma income that includes option expense must be disclosed in the footnotes to the financial statements (and it is quite likely that both the IASB and FASB will require expensing of stock options in the future). Furthermore, there is significant disclosure about outstanding employee options in both the firm's proxy statement and annual report, and evidence in Aboody (1996) and Bell et al. (2001) is consistent with an efficient stock market recognizing and pricing these competing claims to the firm's equity.

Nevertheless, firm managers appear to behave as if they believe their stock prices would suffer if earnings included an expense for stock option compensation. For example, Carter and Lynch (2003) document that firms accelerated repricing activity around the effective date of an accounting rule that required expensing of repriced options. Prior to December 1998 in the USA, repricings did not trigger an accounting expense. After this date, firms are required to use variable accounting for repriced options, thereby incurring an accounting expense. Carter and Lynch (2003) find that firms accelerated repricing activity around the effective date of this accounting rule. Following this change in accounting treatment, Carter and Lynch (2003) observe a sharp reduction in the use of repricings to reinstate incentives. A survey by iQuantic (2001) finds that the majority of high-tech 'new economy' firms with underwater options have switched from repricing underwater options to giving a supplemental grant of options at the lower strike price. If cancelling and reissuing options was optimal from a contracting standpoint,

it seems that firms are incurring real economic costs to avoid the accounting expense associated with repricings.

If managers incorrectly perceive that there are real costs associated with expensing option compensation, options may be overused and substituted for other forms of compensation, such as cash or restricted stock. If there is a large real economic cost of expensing options, firms might prefer to grant options even if, as argued by Hall and Murphy (2002), their compensation cost is greater than that of restricted stock. It would be unfortunate if financial accounting requirements were an important motivation for firms to either increase or decrease their use of stock options. Specifically, shareholders presumably want the board of directors to select stock option plans that maximize shareholder value, not short-term earnings. Thus, if indexed options or other stock option designs that require variable accounting provide optimal incentives for executives, why would a board reject such a compensation plan because of 'unfavourable' accounting? Clearly, the role of financial accounting for employee stock options is of considerable importance to firms, but not well understood by economists.

Conclusion

There is a long history of academic research that examines the managerial incentives associated with stock options and equity ownership. The increased use of stock options and the large payouts from stock option grants in recent years has produced considerable debate among academics, in boardrooms and in the financial press regarding the desirability of using equity compensation in executive compensation programmes. In this chapter, we provide a synthesis for some of the major research findings, as well as the fundamental controversies and unresolved issues around equity incentives.

Recent increased scrutiny of corporate governance practices as well as expected changes in financial accounting requirements for stock options have important ramifications for executive compensation and incentives. The expectation that all firms will be required to expense employee stock options has already prompted many firms to voluntarily adopt this accounting treatment. When this accounting change occurs, it will likely remove some of the perceived costs of implementing restricted

stock plans, performance-based stock option plans and other equity-based plans that would previously have been out of favour due to the required accounting treatment. Microsoft Corporation's recent decision to begin compensating employees with restricted stock instead of options suggests that these changes have already begun.

We note, however, that a key finding from our survey of the compensation and incentives literature is that simple normative prescriptions (e.g. restricted stock is a better tool for compensation and incentives than options; repricings are an indication of poor governance; more equity ownership by executives is always better than less ownership) are inappropriate. It is necessary to understand the objectives of shareholders, the characteristics of managers and other elements of the decision setting before drawing any conclusions about the desirability of observed equity-based incentive plans or the level of equity ownership by managers. We conclude that the continued and heated debate about stock option accounting, the appropriateness of option plans, the structure of executive pay and the adequacy of corporate governance suggests that there remain many important issues to address in future research on equity compensation and incentives.