Risk management: 
DOES STOCK OPTION COMPENSATION ENCOURAGE MANAGERIAL RISK TAKING?
Recent decades have witnessed soaring managerial compensation in leading companies, which is largely due to the growing popularity of stock options. In the US, stock options accounted for 41 percent of CEO compensation in 2005, the biggest single element in CEO pay. On the other side of the Atlantic, stock option compensation has recently shown an increasing prevalence. For instance, in the UK, stock option compensation weighed above 20 percent of aggregate equity held by an average executive director in 1999 while since then this figure increased dramatically and in 2004 stock option pay accounted for nearly 40 percent of managerial total equity compensation. In the Netherlands, of firms listed at the Amsterdam Stock Exchange 28% granted stock option compensation to their chief executive officers, with an average value of 16.69% of their total compensation. This grating ratio increased to 34% in 2006, and this stock option compensation on average accounted for 22.50% of total compensation. While these numbers are not as high as for instance observed for US firms, the apparent growth in managerial stock option holdings by Dutch CEOs coheres with the prediction that in Dutch firms stock option compensation will increase in importance as constituent of CEO pay.

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Like its counterpart, stock compensation, stock option pay is argued to reduce managerial opportunism, prolong their horizon within the organization, and better tighten up shareholder value with executives’ pay checks (Jensen and Murphy, 1990). Nevertheless, important distinctions have been identified between stock compensation and stock option compensation on managerial behavior. More specifically, literature shows that these two forms of equity-based compensation provide dissimilar risk to managers and that stock option compensation engenders higher levels of risk taking behavior (e.g. increased R&D investments, capital investments, acquisitions and more extreme performances) regardless of whether managers who have nothing to lose, but a lot to gain, may exhibit an unhealthy preference for riskier projects. Evidence from several studies shows that stock option rewards help overcome managers’ natural risk aversion, by providing a floor to avoid losses while allowing them to benefit from upside gains. Rewarding managers for real performance is strongly recommended in Corporate Governance Codes (including Tabaksblat in the Netherlands). This article shows that compared to traditional stock options, performance-vested stock options may further increase managerial preference for risky projects and encourage risk-seeking behavior; which clearly is not always desirable.

Note
1 We thank Piet Tromp for his help in collecting the data used in this study, and Eelke Wiersma for his suggestions on this paper.

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2 When we consider all firms in the sample, also those not grating stock options, the value of stock option compensation was 5.77% of CEO’s total compensation in 2005, and 7.60% in 2006. We further find that both the granting and value of option compensation are significantly positively correlated (both p<0.01) with firm size (measured by total turnover), indicating that in particular large firms use more of this form of incentive compensation. All CEO compensation data used in this article are extracted from www.bestuursvoorzitter.nl. Because of missing data, the number of observations for 2005 is 107 firms, and for 2006 it is 74 firms.
ther risk taking is in line with the firm’s strategy (Sanders, 2001; Sanders and Hambrick, 2007). The reason for this increased risk taking is that stock options provide CEOs with only a limited downside risk, but with a substantial upside potential. This is not the case for stock payment, which has equal upside and downside risks, and therefore induces less risk taking behavior than stock options do.

In this paper, we provide a review of recent research into the performance consequences of stock option rewarding using a risk taking perspective. We also discuss some potential implications of Corporate Governance Codes (including Tabaksblat) on stock option compensation and managerial risk-seeking behavior. In the end, we provide some suggestions for curbing ‘excessive’ managerial taking.

1 General motivations of stock option rewarding

Stock option compensation provides recipients the right (but not the obligation) to buy a certain number of shares of their own companies at a predetermined price (determined at the grant date). Different from standard stock options traded at the market, stock options granted to managers (or other employees) are not transferable and usually become forfeited shortly after recipients leave the company.

Scholars have widely investigated the potential benefits from stock option grants. A first stream of studies illustrates positive incentive effects of stock option rewarding on firm value and long-run market performance (Hanlon, Rajgopal and Shevlin, 2003). Prior research also suggests that cash constraints and tax benefits result in greater use of stock option compensation. For example, rewarding managers with stock options does not require a current outlay of cash and firms in financial stress are therefore expected to rely on stock option rewards to conserve cash. In corporate America, the taxation code changed in 1993, which limited the deductibility of executive pay to $1 million, unless that pay was ‘performance based’. Apparently, stock option pay satisfies this requirement because managers will benefit from option exercises only if spot prices exceed exercise prices. So at-the-money

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options are not taxed at the time of the grant. A last stream of studies highlights screening effects associated with stock option compensation, and indicates that more competent managers are willing to accept compensation packages with a generous offer of stock options so that less capable managers are screened out. This is also provided as a reason why industries in a greater need of talents (e.g., new economy industries such as telecommunications, consulting services and bio-technology) provide managers with a larger proportion of stock option-based compensation.

2 Stock option compensation and risk taking

Although the literature in general assumes that stock option grants and stock compensation have congruent incentive effects (Jensen and Murphy, 1990), substantial differences have been identified regarding managerial preferences towards risks. By holding stock compensation, managers are exposed to firm risk in a symmetric manner, both upside and downside. As equity holders, managers receive benefits when the stock price rises and suffer losses when the stock price declines. Stock option compensation, however, shields managerial compensation from downside market price movements. In the scenario that the firm’s stock price falls below the option exercise price, managers will hold options and thus avoid a reduction in their real wealth. As illustrated by Figure 1, managerial payoff from stock option compensation is a convex function of firm market performance: when the market price (MP) is below the option exercise price (EP), managers will choose to hold their options and their benefit is null; when MP exceeds EP, managers can exercise their options to benefit from the price difference (i.e., MP-EP).

Since managers’ economic portfolios and personal reputation are tied to the company, they, in contrast to shareholders, are subject to ‘undiversified’ risk and therefore tend to be risk-averse (Sanders and Hambrick, 2007). Research in behavioral decision theories suggests that compared with those having something to lose, decision makers who have nothing to lose but something to gain exhibit preferences for riskier projects (Sanders, 2001). Applying this view to the situation of equity compensation, managers are likely to be more risk-averse under stock compensation due to the downside risk that this creates. In contrast, by providing no downside risk, stock option pay neutralizes managers’ risk aversion and increases their preference towards risky projects.

Several studies have looked into the effects of stock option compensation on managerial decision making. For instance, stock option rewards have been found to relate negatively to firms’ risk hedging (i.e., the use of derivatives) (Raigopal and Shevlin, 2002), which indicates that stock option compensation encourages managers to take greater risks on behalf of shareholders. Sanders (2001) finds evidence for dissimilar incentive effects between executive stock ownership and stock option rewards. More specifically, he shows that firms’ propensity to undertake risky projects, such as acquisitions and divestitures, increases with the levels of CEOs’ stock option holdings, but not with their stock ownership.

Sanders and Hambrick (2007) follow up on this study and decompose the concept of risk-seeking behavior into three elements: (1) the size of investment, (2) the variance of possible outcomes, and (3) the probability of extreme losses. In their study of a sample of Fortune 500 companies, they measure risk taking by examining firms’ R&D investments, capital investments, and acquisitions, which are usually referred to as ‘red flags’ for risky and uncertain long-term investment behavior both in the literature as well as in practice. Their findings support the prediction that CEO stock option pay generates significantly greater investment spending. Importantly, they also show that stock option compensation is associated with more extreme levels of corporate performance and more often with big losses than with big gains. This suggests that ‘option-loaded’ CEOs possess larger preferences towards risky projects than shareholders would like them to have, which may be harmful to the firm.
3 Corporate governance and stock option compensation

In the wake of eye-catching corporate scandals from the beginning of this decade, increasing concerns have been raised about managerial compensation. One of the major concerns pertains to the incentive effects of traditional stock options (hereafter TSOs). Managers cannot exercise their options right after option grants and have to wait until the options become vested. The vesting of TSOs, in general, depends only upon the passage of time. Opponents of TSOs argue that managerial benefits might merely mirror price increases in a rising market. Managers will in such cases receive windfall gains, even if they underperform relative to the market average or to their peers. Concerns about TSOs providing unearned gains to managers were voiced in several influential corporate governance codes (e.g., Tabaksblat in the Netherlands, Greenbury Code in the UK, German Corporate Governance Code). One of the latest developments in executive compensation is the conditioning of stock option benefits upon the achievement of pre-specified performance targets. Without clearing these hurdles, managers cannot exercise the options, no matter how long they have held them. Performance-vested stock options (PVSOs) are purported to better align managerial interest with shareholder value (Kuang and Qin, 2007) and induce higher economic effort from managers compared to TSOs (Kuang and Suijs, 2006).

The Dutch Corporate Governance Code, Tabaksblat, which has become effective as of January 1, 2004, describes the general framework of good corporate governance in Dutch corporates. All listed companies are subject to mandatory compliance. As an important facet of corporate governance, best practices in management compensation are also delineated. Provisions II.2.1 and II.2.2 explicitly state that stock option compensation should be performance-based:

Provision II.2.1: ‘Options to acquire shares are a conditional remuneration component, and become unconditional only when management board members have fulfilled predetermined performance criteria after a period of at least three years from the grant date.’

Provision II.2.2: ‘If the company, notwithstanding best practice provision II.2.1, grants unconditional stock options to management board members, it shall apply performance criteria when doing so and the options should, in any event, not be exercised in the first three years after they have been granted.’

Setting appropriate performance targets is expected to bring about significant improvements on firm economic performance. These targets are usually absolute or relative performance-based. In the UK, for instance, commonly observed option vesting targets are based on either absolute accounting performance (e.g., to meet or beat inflation-adjusted EPS growth rate) or relative market performance (e.g., total shareholder return relative to a peer group). In the US, commonly used vesting targets are absolute stock returns and absolute accounting performance. Although we have no data about vesting targets used by Dutch firms, these practices in British and North American companies may still provide an indication of the targets that are typically used.

Although performance hurdles are designed to reward managers for delivered performance, they may also encourage excessive risk taking, possibly even more than TSOs. In particular, given the direct implications of activities such as R&D and capital investments, on firms’ market performance, market-based vesting hurdles can provide managers with explicit incentives for additional risk-seeking. In spite of a great deal of variance in risk-seeking outcomes, managers may gamble on the gains in stock returns to meet the vesting hurdle. That is because they are protected from the downside risk related to risk-taking in the situation that PVSOs are not exercisable because of a failure to meet the vesting targets. Moreover, mergers, acquisitions, and divestitures may bring about (relatively quick) increases in accounting profit. So the risk-seeking incentive will not disappear even when accounting-based targets are used, since the increases in accounting profit enhance the opportunity for managers to clear the accounting-based hurdles. Evidence has documented additional managerial risk seeking associated with PVSO rewards. For example, Johnson and Tian (2000) find that relative to TSOs, PVSO plans provide stronger incentives to increase the volatility of stock returns (which is commonly used to measure firm risk).

Note 6 We focus on how PVSOs provoke managerial risk seeking. However, PVSO incentive may also have implications on other aspects of managerial behavior, such as managerial opportunism in reporting (Kuang, 2007), which is beyond the scope of this study.
‘Stock options reduce managerial opportunism and link shareholder value with the executives’ pay cheque. Or do they?’

Although additional risk seeking may be a deliberate strategy, to the extent that firms use PVSOs to induce higher managerial effort, it needs to be recognized that an important ‘side-effect’ is the potential increase in risk-taking to achieve the desired performance levels.

4 Discussions and conclusions

Stock option rewards help overcoming managers’ risk aversion by providing a floor to avoid losses while allowing them to benefit from upside gains. Evidence from several studies coheres with this prediction and shows that ‘stock option-loaded managers’ have a greater propensity to undertake risky investment projects. Attaching performance targets to option vesting aims to reward managers for real performance delivered and this measurement is strongly recommended in Corporate Governance Codes (including Tabaksblat in the Netherlands).

Our review, however, shows that compared to traditional stock options, performance-vested stock options may further increase managerial preference for risky projects and encourage risk-seeking behavior by providing additional hurdles to clear, which clearly is not always desirable.

Firms, and in particular supervisory and compensation committees, need to be aware of these potential effects of stock option compensation on managerial risk-taking behavior. One obvious solution to deter excessive risk taking is to adjust the weight of stock option pay in executive total compensation in order to match with the firm’s strategy and risk profile. For instance, if diversified shareholders’ interests are well served by risky operating and investment strategies (e.g., in industries characterized by high growth and great uncertainty about future performance), firms could enlarge stock option grants.

At the same time, appropriately exposing managers to downside risk (e.g., by also providing stock rewards) can be desirable to discourage excessive risk-seeking behavior. In addition, shareholders’ opinions on executive compensation could be more strongly voiced in managerial pay, for instance by letting shareholders vote on executive compensation packages. An important role is also expected from firms’ supervisory boards to effectively monitor managerial behavior and in particular decisions such as R&D investments, acquisitions and capital investments. The presence of substantial stock option compensation and ownership should be a reason for additional caution. Equally important is the transparency of the composition of executive payments by adequate disclosure to the public and shareholders, including clear disclosure of performance targets for option vesting.

References


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