

AN EMPIRICAL REVIEW OF THE BENEFITS AND CONTROVERSIES OF EMPLOYEE STOCK OPTIONS

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ABSTRACT

As the most widely used incentive-compensation tool, employee stock options have been widely researched from a variety of perspectives. Broadly speaking, they can reduce agency conflicts and play an important role as a corporate governance mechanism, provide incentives for managers to assume a responsible level of risk-taking, substitute cash compensation and attract and retain key personnel. However, academic literature shows that stock options are an expensive way to express compensation to risk-averse employees, cause opportunistic behaviour by management with respect to the timing of the stock options awards and may increase agency problems in the firm. Moreover, there are other controversies over employee stock option accounting. This paper provides an overview of the empirical research of employee stock options' benefits and inconveniences as well as other accounting-driven controversies associated with the question of how employee stock options should be reported on financial statements.

Key words: Stock options; Option valuation; Disclosure; Expense recognition

1. INTRODUCTION

Employee Stock Options (ESOs) have become a common element in many corporations' pay structures, but despite their growing importance, they have also become increasingly controversial. As the most widely used incentive-compensation tool, ESO has been widely researched from a variety of perspectives. Two main questions have been raised: Are these options the best means to competitively attract, retain, and motivate all employees? Do they align interests between management and shareholders?

Broadly speaking, the existing literature on the topic agrees that the use of ESOs can reduce agency conflicts and play an important role as a corporate governance mechanism, provide incentives for managers to assume a responsible level of risk-taking, cause no-cash outflow for the firm and attract and retain key personnel. However, academic literature shows that stock options are an expensive way to express compensation to risk-averse employees, cause opportunistic behaviour by management with respect to the timing of the stock options awards and may increase agency problems in the firm.

Moreover, there are issues and controversies over the questions of whether ESOs should be expensed and how they should be valued. Determining the economic value of options is a complex and extremely important issue since research has demonstrated that the method chosen to measure compensation expense for these options can have a major impact on a firm's net income.

In this paper we summarize the empirical literature regarding the benefits and inconveniences of ESOs and provide an overview of other accounting-driven controversies. We also identify and examine the primary issues associated with the question of whether and how ESOs should be expensed and valued. The structure of the paper is organized as follows. Section 2 discusses the arguments for adopting stock option plans. Section 3 discusses several widespread costs of ESOs. In section 4, we provide an overview of the controversy issues over the question of how option values should be determined and when, and if they should be recognized or disclosed. In section 5 we provide a summary and conclusion.

2. BENEFITS OF STOCK OPTIONS PLANS

This section discusses the arguments for adopting stock option plans. Broadly speaking, the existing literature on stock options discuss that ESOs can be used in several ways (i) as an alignment of interests of management as decision makers and shareholders as risk bearers, (ii) as an incentive for managers to assume a responsible level of risk-taking, (iii) when a firm has cash constraints (iv) to offset the horizon problem, and (vi) to attract and retain key personnel.

2.1. ALIGNMENT OF INTERESTS

The stated objectives of all company stock option plans are to help the company attract, retain, and motivate top-executives, lower-level managers and other employees (Ittner, Lambert, and Larcker, 2003)¹. Options motivate employees by tying pay to the company stock-price performance, thereby giving them a greater incentive to take actions that increase share prices and to avoid actions that decrease share prices, protecting shareholders' interests and increase shareholders' wealth since their own wealth increases at the same time. The increased prevalence of option-based compensation is due, in part, to the perceived need to align managers' interests with those of the shareholders: managers tend to think like owners only by becoming owners.

However, this notion neglects one important phenomenon: agency problems. Agency theory is based on the assumption that managers (as decision-takers) and shareholders (as risk-bearers) have ill-aligned objectives (Muurling and Lehnert, 2004). The managers, although expertise and talented, cannot be expected to make the same decisions as the owners would have made themselves. Agency conflicts arise when shareholders have to bear the cost of manager's investments or actions that do not render sufficient returns (Jansen, Murphy and Wruck, 2004, Dunford, Boudreau and Boswell 2005; Jensen and Meckling, 1976)².

Agency theory suggests that if performance cannot be monitored, employees' pay should be sensitive to the firm performance in order to induce managers to exert effort and thereby align interests of shareholders and managers (Jensen and Meckling, 1976). From this point of view stock options can reduce agency conflicts and play an important role as a corporate governance mechanism (Roosenboon and Goot, 2006). Upper-level and lower-level employees who own stock options continue to bear a substantial part of the wealth consequences of their actions and, therefore, will be more likely to act in the interest of outside shareholders.

However, Holland and Elder (2006) find some evidence that because non-executive employees often do not have the ability to influence the stock price to any significant degree, explaining the issuance of options to non-executives is problematic. They explore a model based on a financing explanation in order to provide employees some diversification and demonstrate that firms do indeed issue stock options as part of compensation for other reasons other than incentives and control, specifically as a way to reduce cash expenses and thus cash financing needs.

Consistent with this perspective, Kato, Lemmon, Luo and Schalleim (2004) question the efficacy of option-based compensation mechanism and hypothesize that firms for which the benefits option based pay outweigh the costs will adopt option-based compensation packages. They find that adopting firms have more growth opportunities and more intangible assets than nonadopting firms, which

¹ Ittner, Lambert, and Larcker (2003) summarize the relative importance of self-reported objectives for a sample of 194 "New Economy" firms. Employee retention is the most-often cited objective for stock option plans, followed by rewards for achieving specific milestones and goals, and attracting new employees.

² Jensen and Meckling (1976) refer to the "agency problem" because managers bear a disproportionate share of cost vs. benefits and for decisions that benefit managers reap a disproportionate share of benefits vs. cost.

is consistent with the notion that option-based compensation is used by firms in cases in which providing market based incentives is important.

2.2. MITIGATE RISK-RELATED INCENTIVE PROBLEMS

Muurling and Lehnert, (2004) mention that the theory behind this benefit of stock options is that managers without equity-based compensation are oftentimes too focused on reporting short-term accounting profits, and in particular on short-term stability to increase their own job security. The rationale for this is that the manager's financial upside is capped, whereas his/her downside includes, amongst others, his or her job. Consequently, these managers sometimes pass up risky, yet profitable, investments in favour of stable, but less profitable investments. Stock options should mitigate this problem, since managers are forced to focus more on profitability to increase their own compensation package.

Although Options help companies attract highly motivated employees who believe they can increase company stock prices and top-level executives who are higher skilled and relatively less risk-averse, it is difficult to justify using stock options to achieve objectives related to attraction. In Hall and Murphy (2003) we find that whether this benefit justifies the compensation "charged" by employees for accepting the risk depends on the value of these sorting and less costly measures of managerial features. For lower-level positions in the company hierarchy, providing compensations in form of options will attract lower-level employees who are relatively less risk-averse. Conversely, the downside of the risk-related incentives of ESOs is that managers may be motivated to take excessive risks to increase the value of their ESOs. After all, finance theory suggests that equity-linked compensation, and in particular highly leveraged compensation such as stock options, spurs managers on to make riskier decisions. The rationale is simple: more risky decisions in the business result in a higher volatility of the underlying share price, which result in a higher value of the stock options.

Future research can investigate the relation between investment decisions and the structure of compensation contracts and how stock options do indeed induce riskier decisions making. This type of investigation can study if ESOs do induce decision making when the options are in-the-money and out-of-the money.

2.3. CASH CONSTRAINTS

ESOs cause no-cash outflow for the firm, and can even cause cash inflow in the case of a good share-price performance. One would therefore expect that firms facing liquidity constraints would divert a larger part of the compensation package to ESOs. For instance, Holland and Elder (2006) state that options have reduced the cash costs of starting a company. A firm with almost no assets can compete for staff head-to-head with an IBM, simply because it can lure clever people by offering options.

However, because employees are risk averse and have short-term investment horizons they will consider the option part of their compensation as having less

value than the cost of those options to the firm. Thus, if a company uses options as a form of compensation, additional compensation above an all-cash will be required to keep the employee at the same level of reservation utility as an-all-cash salary.

In their findings, Lambert, Larcker and Verrecchia (1991), Hall and Murphy (2002), and Muelbroek (2001) confirm that if a risk-averse manager has a significant portion of his other wealth tied to stock price, the value of compensation contract to the manager can be substantially different from the cost of the plan as perceived by shareholders. This difference exists because employees often hold a larger portion of their wealth in securities from their own firm and some employees either are restricted in certain ways from hedging that position or simply choose not to hedge their position due to transaction costs.

Further evidence is presented by Core and Guay (2001) in their study where they examine the use of options for both incentive purposes and as a mean of internal finance. They present empirical evidence that firms use employee option grants as a substitute for cash compensation to a greater extent when firms face cash flow constraints, and when the costs of external capital are greater.

Future research can investigate how stock compensation fits into the “pecking order” of financing alternatives and how firm-specific factors are likely to affect the way stock option plans evolve over time (Morais, 2005).

2.4. HORIZON PROBLEM

According to Yermack (1995), Dechow and Sloan (1991), the “horizon problem” occurs when finding a significant decrease in research and development (R&D) spending and forgo profitable investment opportunities by CEOs nearing retirement, as they will not form during the current CEO’s control. Although the literature suggests that increasing the performance-based component of the compensation package could offset this problem, Yermack’s (1995) research finds no increase in stock options as the CEO approaches retirement age and no significant difference in vested options or stock for CEOs between the ages of 58 and 65. Consistent with Yermack’s (1995) findings, Eaton and Rosen (1983) find that older executives near retirement age receive a high level of delayed compensation in the form of pensions, but are less tolerant towards uncertainty about their compensation. Younger executives were more likely to receive compensation at risk in the form of stock options.

Conversely, Dechow and Sloan (1991) find that the decrease in R&D spending by CEOs nearing retirement is mitigated through the CEO holding stock and stock options.

Finally, the available evidence is insufficient and contradictory; stock options might be a potential tool against the horizon problem according to theory, but little available empirical research does not fully support the theory.

Future research can investigate the structures of various compensation packages for a number of variables such as the subject of age, level of delayed compensation in the form of pensions and tolerance towards uncertainty about compensation. It can also investigate the validity of the horizon problem and whether it is mitigated through the CEO holding stock and stock options.

2.5. ATTRACT AND RETAIN KEY PERSONNEL

In general, it is important to competitively reward key employees to prevent them from leaving the firm. For example, Welbourne and Andrews (1996) show that the retention of employees who are key for the success of the company is of great importance for firms, in particular, when applying to firms with relatively few employees who possess firm-specific knowledge.

Due to the vesting period, ESOs can serve as a particularly useful tool to provide retention incentives. If an employee decides to leave the firm, unvested options are subject to forfeiture and vested options must be exercised immediately, resulting in an irrational exercise since it is before maturity. Bulow and Shoven (2005), consider the vesting period and the retention incentive that it creates one of the key reasons why firms use these financial instruments. However, there will therefore be greater pressure on the employee to exercise the option earlier than on the holder of a normal option. If the option is 'in the money' the employee will feel under pressure to exercise to reduce the risks resulting from leaving the company (Bulow and Shoven, 2005).

The incentives are highest when the stock price is above the exercise price and when the employee must remain a specified period of time in job before the option becomes exercisable. But if the stock prices fall below the exercise price, workers will rationally accept an outside offer.

Future research can investigate how the ability to attract and retain key personnel is dependent on factors such as market conditions and compensation packages offered companies competing for the same talent.

3. INCONVENIENCES OF STOCK OPTIONS PLANS

Many advocates of stock options focus almost exclusively on the benefits provided by such compensation, devoting less attention to its costs. Academic literature shows that stock options are an expensive way to express compensation to risk-averse employees, cause opportunistic behaviour by management with respect to the timing of the stock options awards and may increase agency problems in the firm.

3.1. DESTROYING VALUE

Due to the restrictions that stock options are usually subject to, the option-receiving employee will have some inability to diversify. Because employees are hesitant to risk, and prohibited from trading the options or taking actions to hedge their risk (such as short-selling company stock), they will naturally value options less than they cost the company to grant. Consequently, this could lead the employee to value his/her equity-based compensation below its market value. Since the company could have sold the equity-based instrument in the market to diversified investors and receive the full market value, the cost to the corporation is the opportunity cost the firm gives up by not selling the option in the market (Bulow and Shoven, 2005; Bodie, Kaplan and Merton, 2003; Duan and Wei, 2005). Because company's cost exceeds the employee's value, options are an

expensive way to express compensation to risk-averse employees and are effectively destroying value (Muurling and Lehnert, 2004).

Jensen, Murphy and Wruck (2004) believe that the reason behind option component explosion of the pay package from 1992-2002 is that option grant decisions are made by board members and executives who incorrectly believed that options were a low-cost way to pay people and didn't know or care that the value (and cost) of an option raised as the firm's share price raised. The authors also believe that the low-perceived-cost view of options also explains why grant-date opportunity cost values rose dramatically and subsequently declined with the stock market.

However, paying in stock options will help companies attract employees who are higher skilled and relatively less-risk averse, because these individuals believe that they can increase company's stock prices and will naturally self-select into firms offering more performance-based upside potential.

3.2. TIMING AND REPRICING OF STOCK OPTIONS

It is widely accepted that management always has at least some influence in the awards of ESOs. Management is therefore in the unique position to manipulate the timing of the awards. Since nearly all ESOs are struck as a function of the share price on the day of the award, it is beneficial for management to opportunistically award stock options just prior to issuance of positive news Yermack (1997). Alternatively, management can time the announcement of bad news to coincide with the scheduled issuance of stock options, thereby effectively lowering the strike price of their options.

Consequently, it is possible to manipulate the timing of the price changes when informing the market of positive news prior to the option grants and delaying the bad news until after the grants. Second, management can influence the stock price by manipulating reported earnings. By managing earnings downward before the award date, and consequently reducing the current stock price by deferring earnings to a future period, the exercise price on grant date would decrease (Morais, 2005).

Besides that, management can influence its own compensation package by adjusting the composition of the remuneration package or adjusting the dividend policy. After the stock grant, management has an incentive to increase the market price of the stock on the exercise date in order to maximize the intrinsic value of the stock options. It is therefore understandable that repricing, which is the act of changing the strike price of the ESO (or cancelling the ESO and reissuing a new option) to a level that, according to proxy statements, better reflects current market conditions, is perhaps the most obvious and direct method to manipulate the value of stock options (Chance, Kumar and Todd, 2000).

3.3. AGENCY PROBLEMS

Whereas ESOs are in fact meant to mitigate agency problems, they can actually create agency problems as well. Jensen, Murphy and Wruck (2004) analyze the agency problems between managers and shareholders and between board

members and shareholders, and discuss how well designed pay packages can mitigate the former while well-designed corporate governance policies and processes can mitigate the latter. They conclude that there are no solutions that will eliminate these agency problems completely and that corporate governance and remuneration policies are highly interrelated: bad governance can easily lead to value destroying pay practices.

Consistent with this perspective, Jensen (1986) argues that the relation between pay and firm performance is too small to provide significant incentives for managers to increase shareholder value. Roosenboon and Goot (2006) conclude that option grants increase incentives and help to mitigate agency problems, but only when the employee does not own much stock. Undiversified managers who already possess large shareholdings in the firm may be unwilling to accept stock options, as it would increase the risk exposure of their wealth beyond acceptable levels.

Thus, one view is that stock options may improve efficiency by creating incentives to increase firm value. Alternatively, option-based compensation may increase agency problems in the firm.

4. CONTROVERSIES OVER EMPLOYEE STOCK OPTIONS ACCOUNTING

This section examines the controversies of two general issues: (i) how option values should be determined and when, and (ii) if stock options should be expensed or disclosed.

4.1. MEASURING THE VALUE AND COST OF OPTIONS

There are two problems with valuing an option. One is at what date should it be measured and introduced into the accounting system? The other, how should it be measured? One of the major challenges for the firms is how to determine the fair-value costs of the options in an ever-changing market, as stock options do not come with a predetermined value, as there is not a readily available market for the options. Thus, companies are faced with the task of determining the current value of the benefit to be received at some point in the future. The source of the confusion can be found in how firms estimate just what is the benefit being awarded to employees and when.

4.1.1 TIMING

There are three key dates in the life of stock options: The date the option is granted, the vesting date of the option, and the date the option is exercised or lapses. From an accounting point of view entries could be made in the financial statement on any of these dates. The arguments for and against recording the existence of the ESOs in the financial statements at each of the three dates mentioned are as follows:

The main justification for the entry to be made on the grant date is that it is the time when the company makes a commitment, decisions relating to it are out of

the company's hands and the option has a value whether or not the employee eventually exercises the option. For these reasons some proposed that the option should be valued at the grant date and the cost introduced into the financial accounts at that time. The key reason why recording the grant at this date might not be suitable is that the options might never be exercised. The recording of the grant at this date must be based on an estimate of the value of the option, and will result in a charge to the profit and loss account. The charge could be material in a company especially in a time of low profits and high numbers of ESOs.

The reason for vesting date being the most appropriate time for the initial entry is that before this point, the company has no liability to the executive. Before the vesting date the option contract is only a contingent liability, it only becomes a full liability when the qualifying period is complete. The arguments against recording the entry at this date are the same as those against the grant date.

A practical reason in favour of using the exercise date is that it is only at this time that the true value of the option is known. At this date the size of the benefit to the executive is known, as is the opportunity cost to the company. It is only ex post that the cost can be accurately measured and establishing a valuation model that is reliable and generally acceptable is difficult. Samuels and Lymer (1996) claim that the value of the option over its life is so volatile and uncertain, that it could be necessary to continually make adjustments to the value of the employees remuneration and the cost to the company, in order to present a 'true and fair' view. Such frequent adjustments would reduce the credibility of the whole accounting exercise. The authors support that the use of the exercise date reduces the adjustments required and argue, however, that this valuation problem is no more difficult than many others faced in accounting, and it is better to be vaguely 'right' than precisely wrong.

Another justification that might be used to support the use of this date is that granting an ESO should not be expected to lead to immediate benefits to the company. Some of the decisions being made by executives will take time to lead to higher profits and higher share prices. By delaying the recognition of the 'expense' until the benefits affect share prices (if they do) the company is attempting to match costs and revenues.

An argument against using the exercise date is that charging all the actual cost to the profit and loss account in the year the option is exercised leads to an uneven recognition of costs. If the option is first recognized in the accounts at the date of the grant, the expense can be spread over time. Another problem with recognition at exercise date is that the cost to the company becomes dependent upon a choice made by a director or other executive. A director could delay the recognition of the financial rewards. A director would then be acting in his or her own interest, and not as an agent of the shareholders.

4.1.2 VALUE AN OPTION

Fundamental to an understanding of accounting treatment of executive stock options is an appreciation of how ESOs and traded stock options are similar and dissimilar. ESOs differ from traded call options in the following issues:

- Traded call options usually mature in one year or less, employee options usually have a much longer term to what would be expected for ordinary tradeable options.
- Employee options typically don't vest on the grant date. If an employee leaves the firm before his or her options have vested, then the options are worthless and cannot be exercised. An unexercised option will automatically lapse at some point after the worker leaves the company.
- An employee will not be in the advantageous position of a normal investor who can spread his or her risks through portfolio diversification. Samuels and Lymer (1996), express the opinion that an employee is likely to have a greater percentage of his or her wealth tied up in one class of security than an independent investor. Although there is no direct cost if the option is not exercised, the value of the ESOs to the employee is reduced because of the higher risk.

Another point is that, the owner of a vested ESOs and a traded option both have the right but not the obligation to purchase the underlying security at a fixed price for a fixed duration of time. This right has value and for executive stock options represents stock based compensation and should be accounted for as such. Measurement problems in valuing ESOs are related to the fact that ESOs are not transferable and must be exercised to realize their value, whereas traded options are marketable and can be sold or exercised during their life. Carpenter (1998) examines the practical effects of the nontransferability of options on the exercise policies of executives. Her research finds that because executives cannot sell or hedge their options they might exercise options that would have more value if left unexercised, for the purpose of portfolio diversification, consumption, or employment termination. Consequently nontransferability of the options means that their value to executives can be different from their cost to shareholders and in order to estimate the company's opportunity cost, it is needed an understanding of the exercise decisions of executives.

Furthermore, ESOs are generally granted with a vesting requirement, whereas traded options are owned at the time of purchase. All else equal, this lack of marketability reduces the fair market value of an ESO relative to its publicly traded counterpart. Alternatively, ESOs generally have a longer time to expiration than do publicly traded options. This attribute produces a higher value. According to Barenbaum, Monahan and Shubert (1995), these differences do make the valuation of ESOs more difficult, but they do not negate the fact that ESOs have economic value, which must be recognized.

As mentioned before, determining the economic value of options is a complex issue that is affected by multiple factors involving many estimates. However, valuing these options is extremely important since research has demonstrated that the method chosen to measure compensation expense for these options can have a major impact on a firm's net income (Foster, Kogler and Vickrey, 1991). There are four methods that can be used to value an option. The market price, the intrinsic value, the forecast growth and the Black and Scholes valuation. These will be briefly considered.

The first of the four valuation methods described above, that is when available, the actual traded option price, does not require assumptions but for the reasons

given is not suitable as a basis for accounting entries. Each of the other three methods require various assumptions to be made. The selection of assumptions generally has a greater impact on value estimates than the choice of option-pricing models (Coopers and Lybrand, 1993). Samuels and Lymer (1996) go even far and show that the estimated values and costs based on these models can vary considerably from year to year. They argue that the valuation of an option, either at the date of the grant or at the vesting date, is unreliable and to base accounting entries on such valuations could in fact lead to confusion.

A second method for valuation would be the intrinsic value. As mentioned before, this is simply the difference at any point in time between the market price of a share at that time and the option exercise price. This is a very simple approach to valuation and because of this it has many supporters. There is a possible variation on this basic approach, namely the difference between the market price on a particular day and the present value of the sum of the exercise price at the earliest date for exercising the option and any expected dividends during the option period. This is sometimes known as the 'minimum value'.

A third valuation model would be Forecast growth. This is a model in which the value of the option is the difference between the forecast future price of an option at any particular date and its exercise price. The forecast being based on assumed annual growth rates in option price. Its obvious problem is forecasting future option prices.

The last valuation method, The Black and Scholes model (1973) adapted for continuous dividends, is a mathematical option pricing model, as it tends to be a straightforward calculation, which requires limited inputs based on estimation. It incorporates probability estimates relating to the expected life of the share or the volatility factor. In this context, a fifth method could be introduced. Consistent with the Black-Scholes method, a Binomial model would provide a simplified explanation and extend its usefulness where, if its inputs and assumptions used were the same as in the Black-Scholes model, the results would be similar.

Samuels and Lymer (1996) express the opinion that, although these models are useful to analysts and fund managers and obviously used to guide portfolio investment decisions, this does not mean that they are reliable enough to measure opportunity cost and to introduce the resulting valuation figure into the accounting records. Hall and Murphy (2002) explain the simple case of an option not exercisable until expiration, where the cost of the option to the company is the Black-Scholes value and the value to the employee is the cash amount he would be satisfied to accept and invest at the risk-free rate in lieu of the option. This notion characterizes the option value in terms of a certainty equivalent and would reflect the illiquidity and the attractive or unattractive features the option brings to the employee's personal portfolio (Chance, 2004).

4.2. DISCLOSURE OR RECOGNITION OF STOCK OPTIONS

As should be recognized by now, one of the main catalysts for stock options is the anomalous accounting treatment of stock options. Our purpose here is to provide an overview of the controversy issues over the question how they should be reported on financial statements.

4.2.1 DISCLOSURE OF STOCK OPTIONS

The natural starting point for assumptions about disclosures (especially voluntary disclosures) is that shareholders endogenously optimize disclosure policy, corporate governance, and management incentives in order to maximize firm value. However, this notion neglects one important phenomenon, perfectly credible (or, equivalently, completely unbiased) disclosure is not optimal because it may be too costly (Watts and Zimmerman (1986)). Core (2001) concludes that the statement that is too costly to eliminate all manipulation means that managers can add some bias to disclosure at a low personal cost however even though disclosure contains some bias, in equilibrium it is still credible. In this matter, Aboody and Kasznik (2000) find that firms delay disclosure of good news and accelerate the release of bad news prior to stock option award periods, consistent with managers making disclosure decisions to increase stock-based compensation. Miller and Piotroski (2000) find that managers of firms in turnaround situations are more likely to provide earnings forecasts if they have higher stock option compensation at risk. Another reading by Noe's (1999) points out evidence, at a superficial level and consistent with managers acting in shareholders' interests, that supports the unsurprising result that managers follow the law and either disclose or abstain from trading.

Second, until recently, FASB allowed firms to provide information on the values of options in footnote or tabular form. An argument in defence of this approach is that companies already disclose information about the cost of option grants in the footnotes to the financial statements and therefore, have the necessary data readily available. Li (2002) examines the market's response to the disclosures of stock option information around firms and provides evidence that SFAS 123 footnote disclosures communicate useful information about ESOs to investors and the results suggest that under the SFAS 123 methodology the information is viewed as sufficiently reliable to be used in firm valuation. Consistent with Li (2002), Balsam, Sami, and Shahid (2003) examine whether SFAS 123 disclosures have an impact on firm valuation. Based on an analysis of 242 companies, these authors find a significant association between unexpected compensation expense and the market reaction at the time of the release of the annual report, thereby supporting the value relevance of SFAS 123 disclosures. Li (2002) further concludes that allowing disclosure, as opposed to requiring recognition, delays the incorporation of information into stock price because financial statements are typically released after earnings announcements are made. Li also contends that quarterly disclosures of stock option expense will aid in resolving this problem. Li believes requiring expense recognition is justifiable yet concludes that expensing would have more impact on the timing of market reactions to expense recognition, not the magnitude.

Third, there is some concern about putting the expense of stock option grants on the income statement and balance sheet without addressing other similar contingent assets and liabilities as well. Some experts argue that stock options are more like contingent liability than equity transactions since their ultimate cost to the company cannot be determined until employees either exercise or forfeit their options. Bodie et al (2003) state that this argument ignores the considerable economic value the company has sacrificed at the time of grant. What's more, a contingent liability is usually recognized as an expense when it is

possible to estimate its value and the liability is likely to be incurred. At the time of grant, both these conditions are met. The value transfer is not just probable; it is certain. The company has granted employees an equity security that could have been issued to investors and suppliers who would have given cash, goods, and services in return. The amount sacrificed can also be estimated, using option pricing models or independent estimates from investment banks. They conclude that there has to be an offsetting entry on the asset side of the balance sheet and in contrary to some expert's arguments, stock option grants have real cash flow implications that need to be reported and that footnote disclosure is not an acceptable substitute for reporting the transaction in the income statement and balance sheet. Relegating an item of such major economic significance as employee option grants to the footnotes would systematically distort those reports.

Another reading by Deshmukh, Huwe and Luft (2002) states that if option grants are only disclosed in the footnotes to financial statements, they don't affect reported earnings when they are issued or when they vest. As a result, this leads to higher reported earnings, with negative impact on earnings arriving years later when the options are exercised.

As mentioned before, probably the strongest arguments against option recognition are that the information is already reported and that option pricing models are not sufficiently accurate to justify moving from option disclosure to recognition. The criticism that option values cannot be estimated with sufficient accuracy raises another question: "If it is so difficult to accurately measure what these options are worth, how can companies justify awarding them?..." (Chance (2004)). More evidence can be found with depreciation being a particularly powerful counter-argument to the notion that estimation error is too great in option valuation to justify expensive. Like stock options, most fixed assets have long lives and estimating the usable life of a fixed asset is difficult. Therefore, estimating the salvage value, which is the market value of the asset at a future date, is also difficult, arguably much more difficult than assessing the value of an option.

The above positions are clearly contradictory. If current disclosure is sufficient, then moving the cost from the footnote to the balance sheet and income statement will have no market effect. But to argue that proper costing of stock options would have a significant adverse impact on companies that make extensive use of them is to admit that the economics of stock options, as disclosed in footnotes, are not fully reflected in companies' market prices. (Bodie et al (2003)).

4.2.2 RECOGNITION OF STOCK OPTIONS

A) STOCK OPTIONS AS AN EXPENSE

Besides all the economic arguments in favour of reporting stock option grants on the principal financial statements, which seem overwhelming, expensing stock options poses challenges. In practice, expensing stock options becomes complicated and uncertain and that is perhaps why only few countries have standards on accounting for share-based payments. For a start, the benefits

accruing to the company from issuing stock options occur in the future periods, in the form of increased cash flows generated by its option motivated by retained employees. The fundamental matching principle of accounting requires that the costs of generating those higher revenues be recognized at the same time the revenues are recorded. In the case of options, managers would have to estimate an equivalent pattern of benefits arising from their own decisions and activities that would likely introduce significant measurement error and provide opportunities to bias their estimates (Bodie, Kaplan and Merton (2003)).

Second, by issuing options, companies are able to avoid the cash expense associated with other methods of employee compensation. From the employee's point of view, the trade might be worth the difference in cash compensation because he believes that the company has good prospects for substantial share growth. This assumption seems obvious, but Hassett and Wallison (2001) point out that companies offer other intangible and unrecorded inducements to employees that may also have the effect of lowering the employers' salary obligations. More specifically, companies that are leaders in their industries — large, profitable, and stable — may not have to pay as much for their executive talent as start-ups or companies in need of turn-around. The career risks associated with joining large and stable companies are lower than the risks of joining start-ups, and it is likely that the executives recruited to start-ups can command higher salaries because of that risk. The cash savings realized by the large and stable companies is every bit as real as the cash savings realized through the issuance of stock options, but no one is suggesting (yet) that it be valued and treated as an expense. The same is true for companies located in or near communities with good schools, transportation, housing, and cultural facilities. All of those are inducements to employees that might lower the companies' salary obligations, but they are not treated as expenses that companies would otherwise have had to pay if they were not so favourably located.

For the second time in just over a decade, FASB proposed a rule requiring companies to treat stock options as an expense on their income statements. A heated debate over the issue has raged among shareholder rights activists, accountants, economists, industry leaders, and venture capitalists. Advocates blame stock options for high profile accounting fraud scandals. They reason that the lure of lucrative gains drove greedy executives to artificially pump up the value of their company's stock. In addition to the debate Templin (2005) points out that by implementing the rule, the FASB seeks to bring American standards in line with those of the IASB which has taken a leadership role in creating a unique opportunity by issuing a high-quality standard that will provide the basis for international convergence. He concludes that the purpose behind the reform of accounting rules should be a matter of improved information, and that we should not reform accounting rules in order to shift power from executives to shareholders if such a reform would negatively affect the quality of the information. Another reading by Jameson (2005) points to the fact that expensing fails to distinguish shareholders interests from the corporation's interests. Once equity-based compensation is granted, interests between original shareholders and new shareholders begin to diverge and by failing to distinguish them, the interests of both groups are confounded when determining per share earnings.

Opponents also counter that no expense should occur because no money leaves the corporate coffers when a grant is made. The only time that cash actually leaves the corporate coffers in relation to an option grant is when a company repurchases the shares that were granted when an option is exercised. This is one way to demonstrate that options are indeed an expense but it leads to the threshold question whether options cost the company money at the date of grant. Templin (2005) argues that option grants to executives often result in paydays that are significantly greater than the executive's base salary. However, he states that is important to note that the cash realized from that payday does not occur at the date of grant.

For various reasons, the accounting profession is married to the idea that the expense must occur at the date of grant. A possible explanation might be that in accrual accounting, all revenue and expenses are allocated to the period in which they were incurred regardless of whether the revenue was received or the expense actually paid out. Accrual accounting attempts to match the expense that relates to the revenue earned in the time period in which the revenue was earned. If a company incurs an expense at the date of grant of an option, then it must recognize that expense unless an exception is present. Within this context and in support of expensing options at the date of grant, Templin (2005) points out that the theoretical expense of an option captures a cost that the corporation saved by issuing an option. Consequently, since the corporation saved money in compensation costs by issuing the option, the cost savings should be registered as an expense on the income statement. To not do so would be to overstate earnings since a cost is not registered. Although no money shifts out of the corporation, the mere fact that it saved an amount by issuing an option to compensate an employee is enough evidence to value the option.

In another line of reasoning, proponents of the FASB also point to an opportunity cost that the company foregoes by giving the option to employee instead of selling it into the market. By granting options to the employees, the company simply loses the immediate opportunity to accrete cash and equity to the balance sheet (Strikburger (2003)). According to Jameson (2005) expensing misapplies the concept of opportunity cost and erroneously treats opportunity cost as a cost that diminishes realized gain. Because opportunity cost does not diminish what a corporation actually gains or accomplishes in a period, to include equity-based compensation as an expense in the income statement is to understate actual corporate income/gains.

To conclude, few countries currently have standards on accounting for share-based payments and reasonable minds can disagree on whether there is an expense under these different theories, however, assuming that the expense is legitimate, the question arises whether such an expense has to be recognized at the time of grant. Although accrual accounting requires the recognition of an expense during the period in which it was incurred, the valuation of an option at the date of grant is uncertain and it will result in unfairness to the company. In addition, Templin (2005) acknowledges the fact that the value of an option often fluctuates dramatically between the date of grant and date of exercise and that not all options will ultimately be exercised. Some will never vest, while others will vest but expire out-of-the-money. This argument has been made to support an alternative recommendation of expensing only at exercise. Exercise date

accounting would avoid the many problems of valuation prior to expiration, but it would postpone recognition that the company has incurred a cost until exercise or expiration. In fact, many options often expire without any value. Valuing at a later date, when the actual cost is certain will result in a more accurate picture of a company's finances and support the goals of reliability, consistency, and comparability.

B) STOCK OPTIONS AS INTANGIBLE ASSETS

As noted previously, the value of the option to the company is not realized until the option is exercised. Since the company realized the benefit of retention of an employee at the point of exercise, a possible way to defer compensation expenses occurs when the compensation is capitalized into an asset. Furthermore, this incentive-aligning motivation extends beyond the vesting period to the time that employees exercise their options. This raises the possibility that an intangible asset exists even beyond the vesting period. Thus, unlike most expenses, investors may view ESO expense as providing information about an unbooked intangible asset as well as an expense. To capitalize the compensation expense, however, would require that companies treat the "retention benefit" as some sort of intangible goodwill asset carried on the balance sheet. As that asset is consumed-i.e. the options are exercised-the expense would then occur. This idea is admittedly a bit of a stretch in terms of accounting theory but serves as a justification for deferring the expense to a time when the value can be determined with certainty rather than speculation.

Another reading by Landsman, Peasnell, Pope and Yeh (2004) points out that a more appropriate accounting treatment would be to record an asset at grant date. Firms that issue ESOs do so because they get something in return, an intangible asset, in the form of the employees' intellectual capital. Consequently, recognizing an expense that relates to an off-balance sheet asset creates the impression that ESOs impose a cost without providing any attendant benefit to the firm.

C) STOCK OPTIONS AS EQUITY OR LIABILITIES

Accounting for ESOs is affected by whether outstanding options are viewed as equity or liabilities. To treat options as equity is in effect recommending a method that combines the interests of common stockholders and optionholders (the entity view). According to Kirschenheiter, Mathur and Thomas (2004) to treat options-as-equity view distorts performance measures. They argue that unexpected share price changes affect optionholders and equity-holders differently, combining their interests provides an average earnings effect that is not representative for either group. They show that distortion can be avoided simply by accounting for options as liabilities at grant and thereafter recognizing changes in option values. Their conclusion is that all securities other than common shares should be treated as liabilities, thereby simplifying the equity versus liability distinction, and that these liabilities should be recorded at fair values, thereby obviating the need to consider earnings dilution. Landsman et al (2004) also point out that an accounting policy that recognizes at grant date the

firm's obligation to its employees as a liability, rather than as a component of equity, and includes the effects of changes in a firm's obligation to employees after grant date, would better capture the economic impact of ESOs on a firm's equity-holders.

5. SUMMARY AND CONCLUSIONS

In this paper we summarize the empirical literature regarding benefits and inconveniences of ESOs. An examination of the literature on the topic agrees that entities use ESOs to reduce agency conflicts, provide incentives for managers to assume a responsible level of risk-taking, cause no-cash outflow for the firm and attract and retain key personnel. Although advocates of stock options focus almost exclusively on the benefits provided by such compensation, many studies show that stock options are an expensive way to express compensation to risk-averse employees, cause opportunistic behaviour by management with respect to the timing of the stock options awards and may increase agency problems in the firm.

Aside from the benefits and inconveniences of ESOs, we have identified and examined the primary issues associated with the question of whether, how and when ESOs should be valued and recognized. For a start, accounting standards were developed to mitigate the opportunity for exploitation of the separation of control from ownership implicit in the corporate form of business in order to attempt instil a measure of uniformity in reporting to enable comparisons between entities. However, standards are closely akin to regulatory instruments and, as any regulatory instrument, often utilized as a policy tool by regulators (Street et al., 1997). The importance of employee stock options (ESOs) is well justified in the literature however the debate clearly illustrates the harsh criticism and considerable controversy regarding the accounting treatment. Motivated by these concerns recent reform and changes in accounting rules have taken place. For example, the IASB adopted IFRS 2, which is designated to ensure that companies recognize compensation expenses.

Reasonable minds disagree on whether there is an expense. They argue that companies already disclose information about the cost of option grants in the footnotes to the financial statements and therefore, have the necessary data readily available. Some authors also refer that option pricing models are not sufficiently accurate to justify moving from option disclosure to recognition. Determining the economic value of options is complex since research has demonstrated that the method chosen to measure compensation for these options can have a major impact on a firm. Moreover if current disclosure is sufficient, then moving the cost from the footnote to the balance sheet and income statement will have no market effect. But to argue that proper costing of stock options would have a significant adverse impact on companies that make extensive use of them is to admit that the economics of stock options, as disclosed in footnotes, are not fully reflected in companies' market prices (Bodie et al, 2003).

On the other hand, expensing stock options poses challenges. In practice, expensing stock options becomes complicated and uncertain and that is perhaps why only few countries have standards on accounting for share-based payments.

First, the benefits accruing to the company from issuing stock options occur in the future periods, in the form of increased cash flows generated by its option motivated by retained employees. Managers would have to estimate an equivalent pattern of benefits arising from their own decisions and activities that would likely introduce significant measurement error and provide opportunities to bias their estimates (Bodie, Kaplan and Merton, 2003). Second, by issuing options, companies are able to avoid the cash expense associated with other methods of employee compensation. From the employee's point of view, the trade might be worth the difference in cash compensation because he believes that the company has good prospects for substantial share growth. This assumption seems obvious, but companies offer other intangible and unrecorded inducements to employees that may also have the effect of lowering the employers' salary obligations, like cash savings realized by the large and stable companies and well located companies (Hassett and Wallison, 2001). In addition, opponents counter that no expense should occur because no money leaves the corporate coffers when a grant is made.

In summary, few countries currently have standards on accounting for share-based payments and reasonable minds can disagree on whether there is an expense under these different theories. Therefore, the question of whether the full recognition of options might lead companies to expend greater effort in trying to achieve accurate option values and additionally benefit firms by improving the quality of earnings estimates, as opposed to just being disclosed, still remains. Our study is relevant to the ongoing debate about costs and benefits of ESOs and contributes to the literature on the recognition and the disclosures and whether the recognition is an appropriate substitute for the disclosure.

Finally, the debate over how options should be reported on financial statements has turned on the question of whether mandatory expensing versus disclosure of employee stock options does make a difference and that the market is able to translate the incentive effect of employee stock options into firm value.

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