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Understanding the Stock Option Debate

This report reviews the basic principles of tax policy and accounting that should guide policymakers in current debates about employee stock options. It finds that:

- Current tax policy towards employee stock options is generally sound. Legislative attempts to harmonize the financial accounting and tax treatment of stock options are undesirable because they would unnecessarily link financial accounting standards to future changes in tax policy. The Levin-McCain proposal (S. 1940), moreover, would increase taxes on many corporations that grant stock options even if they adopt the intended form of accounting. An IRS proposal to levy payroll taxes on statutory stock options (recently postponed, but not rescinded) would also increase taxes on both employees and employers. Both proposals would make granting employee stock options more costly, thereby discouraging employers from providing them.

- Basic principles of financial accounting imply that stock option awards should be treated as a cost in corporate financial statements; this cost should be recognized at the time of grant, not exercise. Although debate continues about the best method for valuing stock options, existing techniques appear sufficiently accurate for accounting purposes.

- Accounting policy should promote efficient capital allocation. Proponents of stock option expensing believe it would do so by improving the quality of reported earnings, improving investor decisions, and increasing confidence in financial markets. Opponents believe such accounting would discourage firms from granting options, reduce investor willingness to invest in option granting companies, and confuse investors. Accounting policies do not directly affect real corporate performance; they merely determine how that performance is portrayed to investors. Accounting policymakers should therefore adopt the accounting method that best informs investors, regardless of whether it appears to favor or disfavor specific compensation methods or types of firms.

- Market forces are responding to investor demand for improved information about stock options. Financial journalists, analysts, and researchers are increasingly educating investors about options; financial data providers are beginning to disseminate independent measures of corporate earnings; and some firms are changing accounting and reporting practices in response to investor demands. These private market initiatives will improve investor understanding and promote efficient capital allocation, independent of policy decisions by Congress, regulators, or accounting standards boards. The public policy focus on stock option accounting may therefore shift from concerns about specific earnings calculations to concerns about disclosure.

Understanding the Stock Option Debate

Employee stock options have once again become a focus of heated debate. Recent accounting scandals have rekindled concerns about financial accounting for options. At the same time, two proposals have emerged to change long-standing policies regarding the tax treatment of employee stock options.

This report reviews the basic principles of tax policy and accounting that should guide policymakers in evaluating these issues. The report addresses four related questions: First, what is appropriate tax policy towards stock options? Second, how should stock options be treated under existing principles of financial accounting? Third, what would be the practical impact of requiring companies to treat stock options as a cost in their financial statements? Finally, how are market forces responding to investor demand for information about employee stock options?

How Employee Stock Options Work

A stock option gives its owner the right to purchase a share of stock for a specified price at some point in the future.[1] For example, an option on IBM stock might allow its owner to purchase one share of IBM for $75 any time until July 31, 2003. The price at which the owner can purchase the stock, in this case $75, is called the *strike price* or the *exercise price*. The final date on which the owner can use the option, in this case July 31, 2003, is called the *expiration date*. If the owner decides to use the option, she is said to *exercise* it; she pays the exercise price and receives a share of stock. An owner will typically exercise the option only if the stock price exceeds the exercise price. If the owner decides to exercise before the expiration date, she is said to *exercise early.* If the owner decides not to exercise, the option *expires.*

Companies frequently give employees stock options as a form of compensation. Options have value because they allow the employee to profit from increases in the stock price. The better the stock performs, the more the options will be worth. By structuring compensation this way, companies hope to align the incentives of employees with the goals of shareholders.[2]

The day that the company awards a stock option to an employee is called the *grant date*. To gain final ownership of the option, employees typically have to satisfy some *vesting* requirement such as remaining with the company for a *vesting period.* Vesting periods can be quite long; for example, a firm might grant three hundred options

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[1] Technically, this describes a call option; a put option is similar but allows the owner to sell a share of stock at a particular price by a particular date. Employee stock options are inevitably call options, so this report simply refers to them as options.

[2] Grants of stock, rather than options, could also help align incentives. For one explanation of why options may be preferred to stock, see Brian J. Hall, "What you need to know about stock options," *Harvard Business Review*, March-April 2000.

to an employee but require that they vest over three years, one hundred per year. If the employee leaves before the options vest, the *unvested options* are *forfeited*.

Employee stock options are usually granted with an exercise price equal to the stock price on the grant date. Such options are said to be issued *at the money*. If the stock price later exceeds the exercise price, the option is *in the money*; if the stock price falls below the exercise price, the option is *out of the money.* Options that are out of the money can have significant value if there is a possibility that the stock price will increase above the exercise price before expiration.

The Tax Treatment of Employee Stock Options

Policymakers have recently proposed two major changes to the taxation of employee stock options. Senators Levin and McCain have proposed that companies be allowed to take tax deductions for employee stock options only to the extent that they report such options as an expense in their financial statements. The Internal Revenue Service (IRS) has expressed its intent to expand collection of payroll taxes on employee stock options; the IRS recently postponed this initiative, but has not rescinded it.

Both of these proposals would significantly increase the tax burden on employee stock options, thereby discouraging their use. Employers would grant fewer options, and employees would realize less benefit from them. The Levin-McCain proposal also raises significant concerns about linking federal tax policy and financial accounting.

Current Income Tax Policy for Employee Stock Options

U.S. tax law distinguishes two basic types of employee stock options. *Statutory options* must satisfy a lengthy list of qualifications;[3] they are taxed, in essence, as a form of equity ownership. Options that fail to qualify are considered *non-qualifying options* (NQOs); they are taxed, in essence, as a form of ordinary income.

Statutory options come in two flavors. An *incentive stock option* (ISO) allows an employee to purchase stock in the future, at a price no less than the fair market value at the time of grant. An *employee stock purchase plan* (ESPP) allows employees to purchase stock at up to a fifteen percent discount from fair market value at grant or exercise; the plan must be open to all employees or all employees who are not highly compensated.

[3] To qualify as a statutory option, the recipient must be an employee of the company, and the option must be granted pursuant to a written plan. Additional requirements differ between the two types of statutory options. For details, see Joint Committee on Taxation, *Present Law and Background Relating to Executive Compensation*, April 17, 2002, pp. 40-2.

The specific tax treatment of these three kinds of options is as follows:[4]

- Employees who receive NQOs pay ordinary income taxes on the gain realized at exercise, while employers deduct this gain as a compensation expense. The gain at exercise is thus treated like a discounted stock sale, with the discount being treated as cash compensation to the employee. Any gains or losses the employee realizes after exercise are handled under usual capital gains rules.

- Employees who receive ISOs pay no taxes upon exercise;[5] they pay long-term capital gains taxes on any gains they realize upon selling the stock. Employers get no deduction. If the employee fails to hold the stock for a sufficient period (one year from exercise, two years from grant), the option is disqualified and treated as an NQO.

- Employees who participate in ESPPs pay no taxes upon purchasing stock. Upon disposing of the stock, they pay ordinary income taxes on any discount they received (calculated as the excess of fair market value at grant less the exercise price or, if it is lower, the excess of the fair market value at disposition less the exercise price) and capital gains taxes on any other gains. Employers get no deduction. If the employee fails to hold the stock for a sufficient period (one year from exercise, two years from grant), the stock purchase is treated similar to an NQO.

In none of these instances are options taxed at grant.[6]

Employee stock options are both compensation and a form of equity ownership. The tax code generally treats compensation and equity ownership differently; since options have elements of both, the challenge is striking the right balance between them. The tax code strikes this balance by distinguishing the two types of options. The ordinary income tax treatment of NQOs emphasizes the compensation dimension, while the capital gains tax treatment of statutory options emphasizes the equity ownership dimension.

The Levin-McCain Proposal

Financial accounting and tax accounting differ substantially for non-qualifying options. Companies typically do not report any compensation expense associated with

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[4] For additional details, see Joint Committee on Taxation, *Present Law and Background Relating to Executive Compensation*, April 17, 2002, pp. 40-44.

[5] Gains at exercise are, however, considered a preference item when determining the alternative minimum tax (AMT) for individuals. The AMT has created unfortunate surprises for individuals who exercised ISOs, did not realize that they were subject to the AMT, and subsequently saw the value of their stock decline. Such individuals can face significant tax bills despite holding stock of little or no value. Legislators may revisit the AMT treatment of ISOs as part of a larger AMT reform. See Jane G. Gravelle, "Taxes and Incentive Stock Options", CRS Report RS20874, April 4, 2001.

[6] There are, inevitably, some exceptions. One is that taxes are due at grant if the option has a readily ascertainable fair market value (e.g., is identical to one that is publicly traded).

NQOs on their financial statements, yet they do report a deductible compensation expense on their tax returns. Some policymakers have characterized this differing treatment as a "double standard" and have proposed legislation to eliminate it. The Levin-McCain proposal (S. 1940), for example, would limit tax deductions for non-qualifying stock options to the amount reported as an expense in official financial reports.[7]

Although harmonizing the tax and accounting treatment of options may appear simple, it faces a significant practical challenge: timing. As discussed later in this report, most methods for options accounting focus on expensing them at the time of grant. Tax policy, on the other hand, focuses on the time of exercise.

Timing matters not only because grant and exercise may be years apart but also because the value of an option – the appropriate amount to treat as a financial expense or tax deduction – can differ dramatically between the two dates. A one-year option granted today might, for example, be worth $10. After one year it could be worth almost anything: $20 (if the stock has risen by $20), $5 (if the stock has risen by $5), or nothing (if the stock has declined).

One way to harmonize the tax accounting and financial accounting of options would be to require the same timing for both. However, there are compelling public policy reasons not to do so. As discussed later in this report, both fundamental accounting principles and practical considerations imply that if stock options are expensed in financial statements, they should be expensed at grant, rather than exercise. For tax purposes, however, there are strong reasons to favor expensing at exercise:

- Existing tax regulations generally allow companies to realize a tax deduction for compensation only at the time that the employee reports that compensation as income. Since employees are taxed at option exercise (for NQOs), the tax deduction should occur at this time as well.

- Stock options are much simpler to value at exercise than at grant. By allowing a tax deduction at exercise, the current tax code promotes administrative simplicity and avoids unnecessary tax disputes.

Given the compelling rationale for different timing, it is unlikely that tax and financial accounting for options either can or should be fully harmonized.

The Levin-McCain proposal does not attempt to harmonize timing. Instead, it allows companies to take a tax deduction only if they previously reported an options expense in their financial statements. By linking eligibility for the tax deduction to reporting of the options, this requirement could, in principle, address the perceived

[7] Companies do not realize a tax deduction upon the exercise of incentive stock options; the Levin-McCain proposal would do nothing to encourage them to report ISOs as a cost on their financial statements.

"double standard." Of course, it would represent a sizeable tax increase for any companies that decided not to adopt the specified form of accounting.

The Levin-McCain proposal goes further, however, and limits the *amount* of the tax deduction to the amount of the expense reported on the company's financial statements. Since the expense would be taken at grant, while the tax deduction would be taken at exercise, this proposal would represent a substantial tax increase on many companies that grant employee stock options. Even if a company adopted the intended financial accounting, it would frequently pay higher taxes than under current law.

To illustrate, consider a company whose stock currently trades at $50 per share. The company issues an option to purchase one share for $50 any time over the next year. Suppose that in one year the stock price will either be $80 or $20; these two outcomes are equally likely. The option is thus worth about $15; half the time it yields $30 ($80 - $50) and half the time it yields nothing.[8] Under these circumstances, the company would be entitled to tax deductions, after one year, as follows:

	Tax Deduction If the Stock Price Falls to $20	Tax Deduction If the Stock Price Rises to $80
Current Law	$0	$30
Levin-McCain	$0	$15

As this example illustrates, the Levin-McCain proposal would increase corporate taxes – by reducing the value of the deduction – whenever options turn out to be particularly valuable.

The Levin-McCain proposal also raises significant concerns about the relationship between tax policy and financial accounting. As emphasized later in this report, the purpose of financial accounting is to provide consistent, coherent information to investors and, thereby, to promote efficient capital allocation. The purpose of tax accounting is (or, at least, ought to be) to raise government revenues efficiently and, to a lesser extent, to provide incentives for desirable activities. Given these different goals, it is not surprising that tax accounting and financial accounting frequently differ. For example, companies can report much more accelerated depreciation for tax purposes than for financial accounting purposes; accelerated depreciation for tax purposes encourages firms to make capital investments. Since deviations between tax and financial accounting are common, it is unclear why one specific difference – that for stock options – should be addressed through tax policy, while many other differences persist.

Given the highly technical nature of accounting issues, it is also questionable whether a legislative process is appropriate for determining the details of accounting

[8] For simplicity, this example ignores the time value of money.

policy. A particular risk of using tax policy is that it can be easily changed by future legislation. Accounting standards should be long-lived; they should be updated when circumstances warrant, but only after careful deliberation. Tax policy, however, frequently changes in response to changing political circumstances. Accounting standards should not be subjected to short-term political changes.

Payroll Taxes

The IRS currently collects payroll taxes on gains resulting from the exercise of non-qualifying options. This policy is consistent with the income tax, which treats NQO gains as ordinary income, taxable to the employee and deductible to the employer.

The IRS does not, however, collect payroll taxes on gains resulting from statutory options. This policy is consistent with their income tax treatment, which treats such gains as capital gains, taxable to the employee and non-deductible to the employer.

In early 2001, the IRS announced its intention to reverse this policy and to collect payroll taxes on statutory stock options beginning in January 2003.[9] The IRS proposed this change because it belatedly decided that its current policy was reversed by provisions in the *Social Security Amendments of 1983*.[10] The IRS proposal would, apparently, bring tax regulations into conformity with that law. Although the IRS recently announced that it would postpone this initiative in order to more fully evaluate its complexities, it is entirely possible that the IRS will reintroduce this effort in the future.[11]

Payroll taxes can be substantial. Under current law, employees and employers each pay 1.45 percent for Medicare (on all compensation) and 6.2 percent for Social Security (on compensation up to $84,900 in 2002 – this cap increases each year).[12] The proposed payroll taxes could thus be as much as 15.3 percent of any gains that employees realize upon exercising their statutory stock options.

This tax increase would reduce employee’s enthusiasm for incentive stock options and employee stock purchase plans and employer’s enthusiasm for offering them. Employers would also be discouraged by the need to commit significant administrative resources to tracking and collecting the employee component of payroll tax contributions.

Given the regressive structure of payroll taxes (i.e., the fact that tax rates are lower at higher incomes), these impacts would be felt most by rank-and-file employees who receive options and whose income, including cash compensation and option gains, falls below the Social Security cap. These employees would face the highest payroll tax

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[9] *Internal Revenue Service Notice 2001-14,* January 19, 2001.

[10] Public Law 98-21, 97 Stat. 65.

[11] *Internal Revenue Service Notice 2002-47*, June 25, 2002.

[12] Federal unemployment insurance taxes, FUTA, would also apply under the IRS proposal. FUTA levies, paid by the employer, amount to 6.2 percent of the first $7,000 of employee income. Most employees with options will have income exceeding this threshold, so FUTA levies on options are likely to be small.

rate (and place the highest payroll tax burden on their employers), while highly compensated employees would incur only Medicare taxes.

The economic impact of levying new payroll taxes on statutory stock options could be substantial. The National Center for Employee Ownership estimates that, as of early 2000, 8 to 10 million employees held options received through broad-based stock option plans and almost 16 million participated in employee stock purchase plans.[13] Although these figures include employees who would not be affected by the payroll tax increase (because they received non-qualifying options or participated in non-qualifying stock purchase plans), they suggest that millions of employees could be affected. According to the Joint Committee of Taxation, the proposed tax increase would amount to more than $23 billion over its first ten years.[14]

The potential breadth and magnitude of this tax increase sparked significant concern among employers and employees who grant and receive stock options. In response, the IRS decided to postpone its plan to collect these taxes. The House of Representatives recently passed legislation that would maintain current tax policy and shield statutory stock options from payroll taxes permanently.[15] Similar legislation (S. 1383) is pending in the Senate.

Financial Accounting Principles for Employee Stock Options

Recent accounting scandals and the meltdown in technology stocks have rekindled concerns about financial accounting for options. When this debate last erupted in the early 1990s, the Financial Accounting Standards Board (FASB) struck a compromise between those who believe that employee stock option grants should result in expenses against earnings and those who oppose stock option expensing. Although FASB's original proposal would have required firms to treat stock option awards as a cost in the their financial statements, the final FAS 123 guidelines make such accounting optional; very few corporations have opted to use this form of accounting.[16]

The guidelines also require companies to disclose significant information about options in a footnote to their annual financial reports; this disclosure includes an estimate of the value of option grants. Studious analysts can thus make their own annual earnings calculations, adjusting for options. Observers who focus on reported earnings, however, rely on figures that do not account for the costs of employee stock options.

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[13] National Center for Employee Ownership, *A Statistical Profile of Employee Ownership*, April 2002.

[14] Joint Committee on Taxation, *Estimated Revenue Effects Of H.R. 3762, The "Pension Security Act Of 2002"* (JCX-25-02), April 11, 2002. This estimate assumes the levy would begin in January 2003. Given the recent postponement, the resulting revenues would not begin for at least two years.

[15] Section 301 of H.R. 3762, the *Pension Protection Act of 2002*, passed April 11, 2002.

[16] Financial Accounting Standards Board, *Financial Accounting Statement 123: Accounting for Stock-Based Compensation*, October 1995. Boeing and Winn-Dixie are reportedly the only companies in the S&P 500 that report stock option expenses on their income statements; both companies use "performance" options, a special kind of option that the FAS 123 standards require to be expensed.

Arguments For and Against Expensing Employee Stock Options

Proponents of stock option expensing argue that stock options are a form of compensation and should, therefore, be expensed just like wages, salaries, and other forms of compensation.[17] They believe such accounting is consistent with fundamental accounting principles and, as discussed later in this report, that it would provide significant practical benefits.

Opponents of stock option expensing offer two principled objections to this reasoning (their practical objections are considered later in this report).[18] First, stock options differ from wages and salaries because they do not involve any cash cost to the company. Second, accounting standards already require firms to report earnings per share on a fully diluted basis, which includes stock options in the number of shares outstanding. The calculation of fully diluted earnings per share thus already accounts for stock options.[19]

Proponents of stock option expensing respond to these arguments by noting that many non-cash costs result in expenses (e.g., depreciation). Moreover, adjusting the number of shares outstanding captures only the *number* of shares by which existing shareholders have been diluted; it does not capture the *value* of those options. As argued by Federal Reserve Chairman Alan Greenspan, the calculation of fully diluted earnings per share partially corrects the denominator in earnings per share calculations, but does nothing to correct the numerator.[20]

Why Stock Options Awards Should Be Treated as Costs in Financial Statements

These competing arguments highlight the key issue in stock option accounting: employee stock options do not impose a cash cost on the company, but they do impose costs on shareholders through dilution. The question, then, is whether such dilution should result in expenses on the income statement. Somewhat surprisingly (given the vigor with which this debate continues), existing accounting principles provide an

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[17] Proponents of stock option expensing include Federal Reserve Chairman Alan Greenspan, Warren Buffett, leading institutional investors such as TIAA-CREF and the Council of Institutional Investors, the Association of Investment Management and Research (a security analysis trade group), many academic and professional accountants (including the members of FASB at the time of the original FAS 123 proposal), and economists of such differing politics as Joseph Stiglitz and Lawrence Kudlow. Treasury Secretary Paul O'Neill has also expressed support for expensing options.

[18] Opponents of stock option expensing include John Doerr and other leading venture capitalists, the National Venture Capital Association, Frederick Smith, T. J. Rodgers, and other leading CEOs, technology companies and trade associations, some leading accounting firms, and some economists such as Burton Malkiel and William Baumol. President George W. Bush has also expressed some support for existing accounting policies.

[19] This claim is not exactly correct; fully diluted shares outstanding currently include only in the money options (adjusted to reflect the value of payments to be made at exercise). Out of the money options are excluded, despite having real value and posing a real dilution risk for shareholders.

[20] Alan Greenspan, "Stock options and related matters," presented at the 2002 Financial Markets Conference of the Federal Reserve Bank of Atlanta, May 3, 2002.

unambiguous answer: stock option awards should indeed be treated as a cost in financial statements. The one caveat, to which we return below, is that it must be possible to calculate the value of the options with sufficient accuracy.

The reason that stock option awards should be treated as a cost is that financial accounting needs a way to distinguish between selling options at fair market value and giving them away for free. Selling options at fair market value makes shareholders better off, because the value of the company increases. Selling options at fair market value should therefore result in higher reported earnings than does giving options away. Since basic accounting principles require that selling options at fair market value has no effect on reported earnings, giving them away must result in an expense or a loss.

This reasoning is easily illustrated with the less controversial accounting that applies to transactions in common stock. Existing accounting rules (and the principles behind them) require that companies report no gains or losses when they buy or sell their own equity at fair market value.[21] If a corporation sells some of its stock at fair market value, for example, it does not report any gain. This is true even though the sale brings cash into the company. When discount airline JetBlue recently went public, for example, it raised more than $158 million, but it did not report any resulting profit. The economic rationale for this accounting is compelling: from the perspective of shareholders, the cash that comes in is exactly offset by the value of the stock that was sold.

Stock sales at fair market value thus have no effect on reported earnings. They do, however, reduce earnings per share: shares outstanding increase, so earnings per share decrease. A stock sale at fair market value thus results in dilution – an increase in the number of shares outstanding – but no reduction in overall earnings.

The accounting differs if the company gives stock away. In that case, the company must report an expense; reported earnings decrease by the value of the stock given away. Earnings per share are thus reduced in two ways: by the decrease in overall earnings *and* by the increased number of shares outstanding.

The same accounting should apply to employee stock options. Stock option sales at fair market value should result in no reduction in earnings, while stock option grants should result in an expense or charge equal to the value of the options. Both stock option sales and grants should reduce earnings per share to the extent that the options are included in fully diluted shares outstanding. Stock option grants should thus reduce earnings per share in two ways: by increasing the number of shares outstanding and by reducing overall earnings.[22]

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[21] See, for example, Clyde P. Stickney and Roman L. Weil, 2000, *Financial Accounting: An Introduction to Concepts, Methods, and Uses, 9th Edition*, The Dryden Press: Fort Worth, TX, p. 691.

[22] This reasoning demonstrates the flaw in a common argument against stock option expensing. Many commentators have suggested that expensing stock options would be "double counting" because the dilutive effects of the options are already captured in the fully diluted number of shares outstanding. In reality, a second adjustment is required so investors can distinguish between option sales and option grants.

Accounting for stock option sales is consistent with these principles; accounting for employee stock option grants is not. Because of the furious debate in the early 1990s, employee stock option grants are handled under special accounting rules that do not require a reduction in earnings; these rules thus conflict with fundamental accounting principles.

There appears to be no principled rationale for this special treatment. Accounting rules for other uses of corporate equity – granting stock, stock appreciation rights and "performance" options to employees, granting options to non-employees, and granting warrants to vendors and business partners – are all consistent with the basic accounting principle that giving away equity should reduce reported earnings.[23] Since these uses of equity raise the same basic accounting issue as do option grants to employees, accounting consistency implies that employee stock option grants should also be treated as costs.

Why Expensing Should Be at Grant, Not Exercise

Accounting principles thus imply that stock option grants should be treated as a cost in corporate financial statements. There are three basic ways in which this accounting could be done. First, option grants could be recognized as a cost at the time of grant; this cost would be the fair market value of the option.[24] Second, option grants could be recognized as a cost at the time of exercise; this cost would be the difference between the stock price and the exercise price. Third, option grants could be marked to market over their outstanding lifetime. There would be no expense at grant (because the exercise price equals the stock price), but changes in the value of the option (due to changes in the value of stock price) would be treated as gains or losses each reporting period. Such marking to market results in the same overall expense as expensing at exercise; however, it spreads gains and losses over the life of the option, while expensing at exercise results in just one expense at the end of the option life.[25]

Under existing accounting standards, those options that are expensed are either expensed at grant or marked to market. Options typically are not expensed at exercise, although this treatment has received some support from commentators.

Expensing at grant raises significant issues of valuation (discussed below). Expensing at exercise, on the other hand, result in very simple valuation: the value of the

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[23] See FAS 123, *Accounting for Stock-Based Compensation*, October 1995 and American Institute for Certified Public Accountants, "Accounting for Certain Equity Transactions," January 2000. Stock appreciation rights are financial incentives that reward employees based on future appreciation in the stock price. Performance options are options whose strike price can vary over time; standard employee stock options, in contrast, have fixed exercise prices established at grant. Warrants are similar to options.

[24] This discussion assumes the options vest immediately. If the options vest over time, then the expense should be realized over the vesting period. The option grant is capitalized as a cost at the time of grant, with expenses being realized over the vesting period.

[25] This discussion assumes that marking to market involves the intrinsic value of the option (i.e., the stock price less the exercise price). Options could also be marked to market using their fair market value; this would result in an expense at grant as well as changes over time. This approach has the same drawbacks as the marking to market using intrinsic value.

option is just the difference between the stock price and the exercise price; marking to market is similar, except that the calculation is made each period. As discussed earlier, this simplicity is one reason to favor *tax* accounting at exercise. For financial accounting, however, this simplicity is overshadowed by the fundamental accounting principle that governs expense recognition:

> If a cost associates directly with particular revenues, that cost should be treated as an expense when the company realizes the revenue. If a cost does not directly associate with particular revenues, the cost should be treated as an expense when the company receives the associated operating benefit.[26]

This principle of expense recognition requires that stock options be expensed at grant (or, for options that vest, over the vesting period) rather than at exercise. The time of exercise has no clear relationship to revenues or benefits provided to the company; the time of exercise is thus arbitrary from an accounting perspective. The time of grant (with suitable adjustment for vesting), however, bears the same relationship as the timing of the cash wages or salaries that employees receive.

Another reason to expense at grant is that expensing at exercise (or marking to market) would unnecessarily link reported earnings to the performance of the stock price. Increases in the stock price would reduce reported earnings (since the value of options would increase), while decreases would boost earnings. Such linkages are perverse and unnecessary.

This conclusion is surprising to many observers because of the following question: Suppose that the value of the stock declines over time and the options turn out to be worthless; shouldn't the company's books somehow be revised to reflect the fact that the options did not, in fact, end up costing shareholders anything? The answer to this question is no. There are three ways to see this:

- First, this reasoning ignores the fact that the shareholders did indeed give up something of value at the grant date: the option value, i.e., the risk that the stock would appreciate. That option had real value at the time of grant, so it was a real cost to the company.

- Second, options do not result in such income statement effects when they are sold, rather than granted. To return to a previous analogy, should JetBlue report a gain on its income statement if its stock price falls below its IPO price? On a purely after the fact basis, it would appear that JetBlue made a profit on the IPO, by selling shares for more than they ultimately were worth. Accounting principles rightly reject this reasoning; future share price changes do not result in gains or losses. The same should be true of option grants.

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[26] This paraphrases an explanation of expense recognition in Stickney and Weil, *op. cit.*, p. 109.

- Finally, it should be remembered that expenses represent the value of the labor purchased with the options, not the changing value of the options themselves. Suppose, for example, that a company purchased three years of an employee's labor for $50,000 per year in cash and $10,000 per year in options (valued at grant date). If the employee works for the company for three years, then the company should report cumulative expenses of $180,000 regardless of the ultimate value of the options.[27]

Practical Aspects of Expensing Employee Stock Options

In practice, accountants must balance theoretical accounting principles against real-world complexities and challenges. Accounting rules thus frequently diverge from accounting principles.[28] The practical considerations for stock option accounting fall into three categories: the challenge of valuing options at the time of grant, concerns that expensing stock options would hamper firms that rely on options to compensate and motivate employees, and concerns that expensing options would complicate, rather than clarify, financial reporting.

Valuation

In 1973, Fischer Black and Myron Scholes published a seminal method for valuing basic stock options.[29] The Black-Scholes formula determines the value of an option based on several factors: the current price of the stock, the exercise price, the lifetime of the option, the risk-free interest rate, expected dividends, and the volatility of the stock price. All else equal, an option is worth more when the stock price is higher, the exercise price is lower, the lifetime longer, the risk-free rate higher, the dividends lower, and the volatility higher.

The Black-Scholes model revolutionized options pricing and helped initiate the dramatic financial innovation of the last three decades. Researchers and practitioners rapidly realized, however, that the model did not provide a complete explanation of the prices observed in options markets. Researchers have thus continued to develop new models for pricing options.[30]

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[27] To make this example even clearer, suppose that the company agreed to pay the employee $50,000 per year and, in addition, would give the employee $10,000 per year in lottery tickets. Over the course of three years, the company should report compensation expenses of $180,000 regardless of whether the lottery tickets turn out to be worthless or worth $40 million.

[28] Corporate debt provides a simple illustration. Once a company issues debt securities, the value of those securities varies in response to interest rates, credit concerns, and other factors. In principle, the value of the debt should be marked to market to reflect the changing value of this liability. In practice, however, the debt is carried on the books at original cost until it is retired or repurchased.

[29] Fischer Black and Myron Scholes, "The pricing of options and corporate liabilities," *Journal of Political Economy, 81:3*, 1973, pp. 637-654.

[30] See, for example, John C. Hull, *Options, Futures, and Other Derivatives, 4th Edition*, Prentice Hall, 2000.

Black-Scholes and its various descendants were originally developed to estimate the value of publicly traded options. These options differ from employee stock options in several ways. First, publicly traded options are freely transferable; employee stock options are not. Second, employee stock options have long lifetimes – up to 10 years – while most public options expire in a few months or years. Third, public stock options are typically held for most or all of their potential lifetime; because of tax considerations and limited transferability, employee stock options are frequently exercised early. Finally, employee stock options are often subject to vesting requirements and the risk of forfeiture. In recent years, researchers have analyzed how traditional option-pricing models can be adjusted to reflect these attributes of employee stock options.[31]

Given the challenges of valuing employee stock options, it is legitimate to ask whether options pricing models are sufficiently accurate for use in financial accounting. Opponents of stock option expensing frequently argue that existing models are too inaccurate to be used in preparing financial statements. Proponents, in contrast, point out that compensation committees frequently use these models to estimate option values, that these models are used to value some other options and warrants that already appear as expenses in financial statements, and that accounting frequently involves estimation.

In evaluating these competing arguments, it is important to note several factors that limit how much estimated option values can differ from true market values. First, the value of an option always falls somewhere between zero and the price of a share of stock. Second, options for non-dividend paying stocks must be worth at least the current stock price less the net present value of any dividends expected during the term of the options less the net present value of the exercise price. Financial accounting rules use this lower bound – the so-called minimum value – to value the options of closely held corporations. Finally, public markets exist for the options of many companies. Option prices from these markets can be used to calibrate valuation estimates for employee stock options.

Given these limits, and the increasing sophistication of option valuation models, financial economists and accountants generally believe that options can be valued with sufficient accuracy for use in financial statements.[32] While estimation errors are inevitable, those errors are comparable to the errors inherent in many other accounting calculations.[33]

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[31] See, for example, [add cites].

[32] In this regard, it is important to note that FAS 123 does not limit firms to a specific option valuation model. Instead, it requires that firms use a model that accounts for the key factors, described earlier, that determine option value. Financial accounting standards can thus be flexible enough to allow for future refinement in option valuation techniques.

[33] There is one somewhat subtle distinction: errors in estimating options values (e.g., by misestimating the market's forecast of future volatility) are not corrected in future accounting periods. Errors resulting from many other accounting estimates (e.g., expected bad debts) can be corrected in later periods.

Financial Communication and Capital Allocation

A second practical concern is that expensing stock options would harm firms that rely heavily on them to compensate and motivate employees. Under expensing, option grants would reduce reported earnings. Opponents of stock option expensing worry that this could discourage firms from granting options, reduce company stock prices, and make it more difficult for option granting firms to attract investment capital.

One response to this argument is to note that accounting is a matter of financial communication, not business economics. The fundamental business tradeoff with employee stock options is that they compensate and motivate employees while diluting the ownership stake of shareholders. *This tradeoff exists regardless of the method of accounting.* Expensing stock options would not, therefore, increase their cost in any real sense. Professional managers should focus on true business economics, so accounting changes should have no effect on their decisions about options. Similarly, sophisticated investors should "look through" accounting to the true costs and benefits of options; their investing decisions should therefore be unaffected by the choice of accounting method.

Not surprisingly, there is good evidence that managers and investors do, in fact, try to base their decisions on underlying business economics. Compensation consultants and committees frequently use option pricing models when designing and valuing option compensation programs; they certainly do not think of options as being free. Moreover, a growing body of academic research demonstrates that stock prices incorporate information about employee stock option grants. All else equal, stock prices are lower for companies whose shareholders face dilution from employee stock options.[34]

This line of reasoning is a double-edged sword. If managers and investors already consider stock options in their decision making, it is unlikely that expensing those options would significantly harm option-granting companies. On the other hand, it is also unlikely that expensing stock options would deliver significant benefits for investors and capital allocation. This reasoning thus suggests that both sides may have exaggerated the practical importance of the options debate.

The ongoing vigor of this debate indicates, however, that this reasoning is incomplete. Many sophisticated observers, on both sides of the debate, believe that accounting has real effects. Given these beliefs, the policy challenge is determining which method of accounting would provide the most practical benefits.

In answering this question, policymakers should begin with an even more basic question: What is the purpose of financial accounting? From an economic perspective, financial accounting should inform investors about corporate performance and, thereby, promote efficient capital allocation. Policymakers should therefore judge competing

[34] See, for example, David Aboody, 1996, "Market valuation of employee stock options,' *Journal of Accounting and Economics 22:* 357-391 and Mark R. Huson, Thomas W. Scott, and Heather A. Wier, 2001, "Earnings dilution and the explanatory power of earnings for returns," *The Accounting Review 76(4):* pp. 589-612.

methods for stock option accounting on their ability to inform investors and improve capital allocation.

Proponents argue that expensing stock options would do this in several ways. First, it would assist investors who rely on reported earnings in making their investment decisions. The quality of reported earnings would increase, so these investors would make better, more informed investment decisions. Second, expensing stock options would clarify financial reporting by harmonizing the treatment of employee stock options with fundamental accounting principles and with accounting for other forms of equity. Financial reports would therefore be more consistent and intelligible. Third, expensing stock options would help renew investor trust in corporate reporting and, thereby, increase confidence in the financial markets.

In contrast, opponents argue that the current approach to stock option accounting provides better investor information and that expensing stock options would discourage firms from granting options and would reduce investment in option-granting firms. In evaluating these arguments, it must be emphasized that the latter two impacts, reduced use of option grants and reduced investment in option granting firms, would not necessarily be bad.[35] If existing accounting gives investors or managers a misleadingly optimistic view of the performance of option-granting companies, expensing options would be desirable precisely because it corrects this unfounded optimism. Improved capital allocation and higher investment returns would then result.

Conversely, expensing options would be counterproductive if it causes investors and managers to become excessively pessimistic about the performance of option granting companies. Expensing options would also be undesirable if accounting changes would confuse investors, rather than enlighten them, about the meaning of reported earnings.

Policy should therefore favor the accounting method that best informs investors and, thereby, best promotes efficient capital allocation. Unfortunately, existing research provides no clear empirical guidance on this question. Investors do react to reported earnings figures, but they also incorporate many other factors, accounting and non-accounting, in their investment decisions. Experience has demonstrated that investors can make good use of financial statements despite a host of well-known and long-standing problem areas (e.g., inventory valuation in times of inflation, original cost accounting for real estate and other long-lived assets, expensing rather than capitalization of intangible assets, etc.). As discussed in the next section, it would not be surprising to find that investors are similarly adapting to the issues related to stock option accounting.

[35] A related issue is that accounting policies should not be used to promote particular forms of corporate behavior (e.g., granting employee stock options). To argue otherwise is to open a veritable Pandora's box of policy issues and accounting confusion. Should accounting be changed so that firms do not have to expense salaries and wages (on the premise that this would encourage them to hire more workers and to pay them more)? Should accounting be changed so that firms do not have to expense any expenditures on research and development (on the premise that this would encourage greater R&D and innovation)?

On the other hand, this experience suggests that investors will also adjust to any temporary confusion that may result from a change in accounting standards. Since accounting principles provide clear guidance on the treatment of stock option accounting, the weight of evidence would appear to favor a shift to stock option expensing.

Private Responses to Stock Option Accounting

While legislators and regulators have been debating possible accounting changes, markets forces have already begun to respond to investor demand for better options information. Some companies have responded to this demand by expanding their options disclosure or changing their options accounting. Microsoft, for example, discloses information about stock option grants quarterly, not just annually. TD Bank Financial Group, a Canadian company, recently announced that it would expense stock option awards because its institutional investors prefer that method of accounting.[36] Such voluntary accounting decisions may become more frequent as investors organize to influence corporate accounting.[37]

Investor demand for options information has also spurred financial data providers, analysts, researchers, and journalists to make better use of the options information in the footnote disclosure of annual financial statements:

- Financial data providers are using this information to calculate and disseminate preferred calculations of corporate earnings. Standard and Poor's (S&P), for example, recently announced that it would calculate it own measure of earnings; these "core earnings" differ from reported earnings in several ways, most notably by treating option grants as an expense.[38]
- Professional security analysts are using this information to inform their clients about how stock options affect corporate earnings and shareholder value.[39]
- The financial press is using this information to educate investors about the potential costs of employee stock options.[40]
- Researchers are using this information to quantify the divergence between reported earnings and earnings adjusted for stock options. The Federal Reserve Board, for example, has estimated that corporate earnings growth

[36] "TD Bank to Book Options as an Expense", *Financial Times*, May 16, 2002

[37] Such efforts include individual initiatives by large investors, such as pension funds, as well as possible joint efforts by groups of large investors (see "Big Guns Aim for Change," *BusinessWeek*, June 24, 2002).

[38] Standard and Poor's, "Standard & Poor's To Change System For Evaluating Corporate Earnings", March 14, 2002.

[39] [Insert Bear Stearns cite]

[40] See, e.g., "How big is the options bite?", *Fortune*, June 10, 2002, p. 191-2, and "Reckoning the cost of stock options," *BusinessWeek*, April 15, 2002, p. 114-119.

> from 1995 to 2000 was overstated by about 2.5 percent per year because options were not expensed.[41]

As these efforts continue, investors will become increasingly well-informed about stock options and their effect on shareholder value. It would not be surprising to see other providers of financial data follow S&P's lead and provide their own options-adjusted measures of corporate earnings. Investors would then be free to choose between competing earnings measures. At the same time, they would become less reliant on the specific earnings calculations in corporate financial statements. If this happens, public policy debates about financial reporting may increasingly focus on disclosure – which provides the raw material for differing accounting calculations – rather than the calculations themselves.[42]

Conclusion

The use of stock options as compensation has increased dramatically over the last two decades. Employees who once received only salaries, wages, and bonuses are now equity owners who have a greater stake in the performance of their company. By aligning employee incentives more closely with those of shareholders, stock options have contributed to the economic successes of the last twenty years. It is important, therefore, that increased public policy debate about employee stock options not give rise to unnecessary or undesirable policy changes.

Current proposals to change the tax treatment of employee stock options are troubling because they would increase taxes on options, thereby discouraging employers from granting them. The increased tax burden on options might be justifiable if these proposals were correcting problems in existing tax policy. However, this is not the case; existing tax policy towards employee stock options is generally sound. The two proposals to change tax policy, on the other hand, would violate basic tax principles. The Levin-McCain proposal would unnecessarily link tax and financial accounting, while the IRS proposal to levy payroll taxes would violate the long-standing distinction between options that are treated as compensation and options that are treated as capital ownership.

The debate about options accounting is more complicated because it raises issues of both accounting principle and practical impact. Existing accounting principles clearly imply that stock option grants should be treated as a cost in corporate financial statements. Current debates about the *existing* principles of stock option accounting are therefore misguided. There may be room for productive debate about revised systems of

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[41] Alan Greenspan, "Corporate governance," presented at New York University, New York, NY, March 26, 2002.

[42] Three issues that may receive particular attention are the frequency of option disclosures (quarterly versus annual), the format of financial reports, and the timeliness with which they are released. Markets for competing measures of corporate earnings would likely be most effective if options information is provided in a timely manner, on a quarterly basis, and in a standardized electronic format that facilitates alternate accounting calculations.

accounting principles, but each alternative will face the same basic issue: distinguishing grants of equity from sales at fair market value.

Commentators differ greatly on the practical impacts of stock option expensing. Opponents believe that it would discourage firms from granting options, reduce investor willingness to invest in option granting companies, and confuse investors. Proponents, however, believe that it would improve the quality of reported earnings, improve the investment decisions of investors who rely on reported earnings, and increase public confidence in financial reporting. In evaluating these competing claims, policy should focus on one goal: informing investors so they allocate their capital as effectively as possible. Accounting policies should not be designed to favor or disfavor particular forms of compensation or types of companies. Although some arguments can be made for both sides, the weight of evidence appears to favor a switch to stock option expensing.

Policymakers must also be sensitive to larger forces that may blunt the impact of their decisions. U.S. accounting, for example, may be increasingly influenced by the decisions of the International Accounting Standards Board, which is currently reviewing stock option accounting. Decisions about specific accounting calculations, moreover, may eventually be mooted by investors' increasing ability to select their own preferred measures of corporate earnings. Public policy debates may therefore shift focus from accounting calculations to accounting disclosure.

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