Timely & True from an Owner’s View: Shareholder Value Accounting for Employee Stock Options

This brief summarizes parts of “Debt vs. Equity: Accounting for Claims Contingent on Firms’ Common Stock Performance, with Particular Attention to Employee Compensation Options”, Columbia Business School, CEASA White Paper No. 1, James Ohlson and Stephen Penman.

The full text is available on the CEASA web site at http://www.gsb.columbia.edu/ceasa/

A companion brief, Policy Brief Number 2, covers other types of contingent equity claims such as warrants, put options, convertible bonds, and convertible preferred stock.
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Summary

As accounting scandals continue to make headlines, companies and regulators are re-thinking whether to record employee stock options and, if so, how. Two new rulings stand out: in 2004, both the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) issued revised standards on "Share-Based Payment." These rulings, like most proposals on the issue, make progress but do not provide a complete answer. In this Brief and, more thoroughly, in the companion White Paper, we go back to basics to address the issue in a comprehensive way, through a return to fundamental principles of accounting for shareholder value.

We base our recommendations on three principles: proprietorship, where the firm accounts for gains and losses arising from employee options from the view of the firm’s owners – the shareholders -- not the firm; completeness, that follows through to show the effects these gains and losses have on all aspects of the firm’s accounts – nothing is left out; and timeliness, where the firm re-calculates the value of any stock-related instrument in every accounting period, as the stock price changes, so information is continually updated.

The result is shareholder value accounting (SVA) where shareholders, along with company executives and the public at large, get timely and accurate information about what the company and its stock are really worth. SVA recognizes four key features of an employee stock option: 1) the grant of the option is a form of compensation to an employee; 2) the grant of the option is a liability to issue stock; 3) a change in the liability occurs in accounting periods following the grant, as the option value changes; and 4) the shareholders receive windfall gains and losses as the option value changes and when the employee finally exercises the option. The result is a faithful picture of the effect the option has on the company and the value of its shares.

The first feature – recognizing the stock option as compensation – is part of the new rules promulgated by the FASB and the IASB. We endorse the prescribed accounting on this score. But we urge regulators to add the other three features as well. The full set of SVA procedures might seem to create a greater accounting burden than recognizing just the grant-date feature, but the actual result is a lesser burden for everyone concerned – shareholders, the company, and the economy overall – through timely and transparent information on the value of company shares.

SVA also provides a single, comprehensive method for accounting for the full variety of instruments that involve a company’s promise to make or receive payments that depend on how its stock performs, including warrants, convertible bonds, put options, and stock appreciation rights. Policy Brief Number 2 elaborates. Over the years, a thicket of partial and contradictory regulatory rules has grown up around the accounting for these mechanisms. SVA offers a way for regulators to cut through the confusion with a complete solution that’s sound in principle and in practice, and one that mirrors economic reality. The proposed accounting is the same for all instruments that are in substance the same, despite differing nominal characteristics, so that instruments cannot be engineered to receive a desired accounting outcome.
The next section of this brief shows how SVA is applied to employee stock options. We then discuss how these procedures embody the three basic principles of proprietorship, timeliness, and completeness. The brief concludes with some further comments on SVA’s advantages for shareholders, companies, regulators, and the public at large.

**Shareholder Value Accounting**

At its most basic level, SVA is about faithfully reporting the economic effects of employee stock options. When a firm issues shares at less or more than fair market value, there is an economic loss or gain to the pre-existing shareholders; their interest in the company has been sold for more or less than its fair market price. The principle of proprietorship means that these economic losses or gains show up in the company’s accounts. Then comes completeness: the financial statements do a thorough job of showing the full economic effects wherever they affect the accounts, in both the income statement and the balance sheet. Last comes timeliness: the market price of a publicly traded stock on which an option is granted changes through time, so the economic loss or gain should be updated every accounting period.

Table 1 puts these three principles into practice for employee stock options. We take a typical scenario and follow what happens from the time the company grants the option (Year 0), to when the employee exercises the option (Year 5). In our scenario, the at-the-money grant is 20 share options with an exercise price of $30 per share. The employee exercises the options, five years later, by paying $30 per share when the stock price is $47. The table shows the yearly and cumulative effect of tracking the fair value of the options on the liabilities and equity in balance sheet and corresponding effects on the income statement.

Over the five years, we re-calculate the fair value of the option every year. In the scenario here, we show the value rising and falling but generally increasing. This is arbitrary on our part; we could just as easily show it declining. The point here is that we must re-calculate option value every year: the probability of the holder exercising the option, and the expected amount of the loss to shareholders upon exercise, change through time as the value of the target – in this case, the stock – goes up or down. There are various methods for making this calculation – the Black-Scholes model and the binomial model are two leading contenders. Whichever measurement method is selected, the accounting entries are the same.

On the balance sheet, we see two entries in Year 0: $200 for deferred compensation and $200 for the option liability. Net liability and cash are both zero. The deferred compensation measures the implicit wages to the employee to whom the options are granted, deferred because the wages expense is recognized in the income statement over the period that the employee is deemed to work for the compensation, the vesting period. The liability measures the value that shareholders expect to give up should the options be exercised.

Note that the deferred compensation, option liability, and net liability are zero in Year 5 as well, for by then the option claim is settled. For the 5-year cumulative effect, deferred compensation and the option liability also come out as zero. Here we see why employee stock options create confusion. All these zeroes might seem to imply there is no effect on the balance sheet other than the Year 5 cash out at the original formula of 20 options at $30 each. But these two
snapshots – beginning and end – give only a partial picture. Tracking fair value year-to-year fills in the rest of the story.

In Years 1 to 5, we see changes in deferred compensation, the option liability, and net liability. The income statement shows even more activity. A yearly compensation expense of $40 reduces deferred compensation by an equal amount for the wages that apply to that period, plus an interest expense of 8% on the fair value of the options at the beginning of the period. This interest expense recognizes that all liabilities imply an implicit borrowing cost, just as implicit (“effective”) interest expense in recognized on zero coupon bonds even though there is no interest payment. We adjust the option liability for the change in its fair value over that period, and this change in fair value, net of the interest expense, gives us a loss or gain in other comprehensive income. The gain or loss simply recognizes how shareholder value changed in the period as the value of the liability changed. The result in each year is two balancing items: the net expense from comprehensive income equals the increase or decrease in shareholder equity. The exception is Year 5, when the cash-out of $600 upon exercise adds paid-in capital to the final equity balance.

Now we have an accurate view, year-to-year and in sum, for the effect of employee stock options on shareholder value. In Year 3, for example, the balance sheet shows a net liability of $200, comprehensive income shows a net expense of $70, and the effect on shareholder capital is a decrease of $70. These items are all relevant to a firm’s financial position in any given year. The employee is contingently owed $200 in fair value and the shareholder is worse off for paying wages, incurring a borrowing cost, and suffering a loss as a result of the increase in the option value.

The cumulative effect on Paid-in Capital after the exercise of the options is not the $600 received from issuing shares, as in the FASB and IASB proposals, but rather $940, which includes the compensation cost and a windfall gain to the employee. The cumulative net expense of $340 shows the overall cost to the shareholders from issuing stock at $340 less than the market price of $940 for the shares issued. Of course, if the employee fails to exercise (because the option is not in the money, for example), shareholders would have a net gain.

This accounting simply recognizes that the exercise of options transfers value from shareholders to employees. Instead of asking employees to pay the market price of $940 for the shares and giving them $340 cash to help with the purchase, the firm nets these two transactions in a $600 share issue. But the economics of the two are the same, and form-over-substance requires that the accounting treat them in the same way. The accounting prior to the exercise date merely tracks the likely effect of the final settlement on shareholder value so all parties are on notice. SVA offers a straightforward, transparent method for showing the full effects of granting an employee stock option, year-to-year and overall, for everyone concerned: the employee, the company, and the shareholders.

**Back to Basics**

Here we present more detail on the three basic accounting principles that underlie SVA: proprietorship, completeness, and timeliness. We explain what each principle means, why it’s
important, and where it shows up in the accounting demonstrated in Table 1.

Proprietorship takes the perspective of the pre-existing common shareholders. They own the company. Our accounting in the first instance serves their interest. Proprietorship stands in contrast to entity accounting, which takes the view of the firm itself and does not address the division of the value in the firm between existing shareholders and contingents claimants. Those who oppose accounting for stock options argue that there is no cash cost of the options to the firm. They are correct – they have an entity view. But there certainly is a cost to the shareholders; granting stock options by definition affects the value of what shareholders own. A proprietorship view requires us to account for shareholder value. That, of course, is not an outrageous notion, given that the shareholders are the owners, management and the board have a fiduciary obligation to represent the interest of the shareholders, and the financial reports and audit reports are prepared for the shareholders. For equity analysts and investors who attempt to price common shares, the proprietorship view is an imperative.

We can see the contrast between the proprietorship and entity views by returning to Table 1. Entity accounting considers only the closing balance sheet at Year 5, and recognizes that the only activity is the cash entry for the employee buying stock at the end. There is an increase in equity, but no liability is ever recorded. If compensation expense is recognized at grant date (Year 0) – as in the current FASB and IASB prescriptions – the grant is treated as equity rather than a liability. Proprietorship accounting recognizes that, although there is no cash transactions prior to settlement, there is a gain or loss to shareholders every year and overall, as the value of the option changes. In entity accounting, an option is equity. In proprietorship accounting, it’s a liability and only becomes equity when it is exercised. The current FASB and IASB proposals mix the interest of employees and shareholders. Critically, they fail to report faithfully the shareholders’ interest in the firm.

The second basic principle, completeness, applies the notion behind comprehensive income, embraced by the FASB, in a thorough way. Comprehensive income reporting requires that all gain and losses to shareholder be reported. Our accounting applies this notion to the gains and losses from employee stock options that are hidden under current accounting requirements. Completeness also carries the notion of being comprehensive to the balance sheet. It forces the accountant to track every line we show on Table 1. These lines capture the full effects of granting an option. FASB and IASB regulations provide a partial solution: they leave out most of these items. They value the option at grant date and amortize the compensation expense to the income statement, but fail to track the unfolding of the transaction through to exercise. In terms of completeness, that’s about half right. It’s easier than a complete accounting. But it’s only half as accurate.

Completeness is especially relevant in the current debate about expensing stock options, offering a neutral but technically coherent answer to what understandably becomes a heated political issue. Completeness plays no favorites. It takes no sides on what to leave out. It puts everything in, and thereby renders the conflicts moot.

Our third principle, timeliness, means that we strive for a representation of the economics of options in every accounting period; their value is updated as time goes by, right up to the final
resolution of the option contract at exercise date. This stands in contrast to a transactional view, where entries are made only at initiation and settlement (grant date and exercise date) and may depend on the kind of transaction to be recognized (grant but not exercise, for example). From a shareholder view, the value of the stock changes from period to period, and the value of the option liability with it, so timeliness compels us to account for that value on a continuous basis.

The yearly entries in Table 1 show clearly the benefit of continuous, timely accounting. They track the balance sheet and the income statements over time rather than at grant date and/or exercise date. Timeliness gives both a status report for each period and a more comprehensive picture at the end.

Ownership Matters

We conclude with a further word about the debate over expensing stock options. We understand the questions that different sides ask: Are stock options a means for CEOs to enrich themselves at their companies’ expense, or are they the best way for all employees to own and thereby work hard for innovative, entrepreneurial companies? Are they a shell game ripe for abuse, or a pillar of the American financial system that holds so much hope for a prosperous world?

These questions raise value issues but are not are not pertinent to the accounting issue. Whatever the motivations behind the grant of options, faithful reporting to shareholders requires that shareholders be informed of the effect of options on their equity. Indeed, shareholders may well benefit from options – by incentivizing employees – but faithful reporting reports not only the benefit (in higher earnings) but also the costs.

The U.S. Congress passed the Sarbanes-Oxley Act faster than any previous securities legislation in its history, at a time when the financial reporting was seen to have failed investors. Whatever its merits or flaws, the Congress intended the Act to be a means to revive the faith of investors in American public companies. The market has recovered somewhat since then. But the cloud remains. Everyone knows that another wave of scandals could make the market plummet again, and the enrichment of employees through options at the expense of shareholders – such as we observed in the late 1990s -- could well be repeated without improved financial reporting. Compared to Sarbanes-Oxley, SVA is simple indeed. While measurement of fair values is required, most of the accounting involved is easily accomplished by routine record keeping. Indeed the spreadsheet in Table 1 can be modified for any array of parameters.

SVA offers a relatively painless answer to a contentious issue, one that would build confidence for the ordinary investor. Many Americans now own common stock. They are the ones who stand to benefit (or suffer) most from the accounting standards regulators decide to adopt. Their ownership matters. As proprietors of public companies, they deserve timely and accurate information on what their holdings are worth. And better information, as economists tell us, makes everyone better off. The company knows its true worth. The whole market works more efficiently.

We propose that SVA apply beyond employee stock options to all kinds of performance-contingent claims, to any instrument where a company promises to make or receive payments
that depend on how its stock performs in the future. Such claims include warrants, convertible
bonds, put options, future share purchase agreements, and other compensation options. We
address this wider proposal in more detail in the White Paper and in a separate Policy Brief. But
we note here that it serves the same aim of timely and accurate information for the benefit of
everyone concerned. Applying SVA to the whole set of stock-related instruments – including
employee options – offers regulators a single sword to cut through the many knots that structural
engineers create. The improved accounting will make life easier for everyone involved in
creating, analyzing and trading shareholder value.
### TABLE 1

**Shareholder Value Accounting for Employee Stock Options**

**Scenario:**
* 20 Options granted to employees with exercise price at current market price of $30 per share
* Fair option value at grant date is $10 per option
* Options vest over five years and are exercised at vesting date
* Implicit borrowing cost is 8% per year

<table>
<thead>
<tr>
<th>Stock Price upon Exercise</th>
<th>$47.0</th>
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#### Grant Year

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<th>Tracking Fair Value</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Cumulative 5 Yr. Effect</th>
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</thead>
<tbody>
<tr>
<td>Fair Value of Option</td>
<td>$10</td>
<td>$15.0</td>
<td>$12.5</td>
<td>$14.0</td>
<td>$15.0</td>
<td>$17.0</td>
<td>$200</td>
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<tr>
<td>Total Fair Value, 20 options</td>
<td>$200</td>
<td>$300</td>
<td>$250</td>
<td>$280</td>
<td>$300</td>
<td>$340</td>
<td>$200</td>
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<tr>
<td>Change in Fair Value</td>
<td>$100</td>
<td>($50)</td>
<td>$30</td>
<td>$20</td>
<td>$40</td>
<td>$40</td>
<td>$200</td>
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#### Balance Sheet

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<th></th>
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<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td>Deferred Compensation</td>
<td>$200</td>
<td>$160</td>
<td>$120</td>
<td>$80</td>
<td>$40</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Compensation - Option Liability</td>
<td>$200</td>
<td>$300</td>
<td>$250</td>
<td>$280</td>
<td>$300</td>
<td>$0</td>
<td>$200</td>
</tr>
<tr>
<td>Net Liability</td>
<td>$0</td>
<td>$140</td>
<td>$130</td>
<td>$200</td>
<td>$260</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Cash</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$600</td>
<td>$600</td>
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#### Income Statement

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<th>3</th>
<th>4</th>
<th>5</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Compensation Expense</td>
<td>$40.0</td>
<td>$40.0</td>
<td>$40.0</td>
<td>$40.0</td>
<td>$40.0</td>
<td>$200.0</td>
<td></td>
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<tr>
<td>Interest Expense @ 8%</td>
<td>$16.0</td>
<td>$24.0</td>
<td>$20.0</td>
<td>$22.4</td>
<td>$24.0</td>
<td>$106.4</td>
<td></td>
</tr>
<tr>
<td>Total Compensation &amp; Interest Expenses</td>
<td>$56.0</td>
<td>$64.0</td>
<td>$60.0</td>
<td>$62.4</td>
<td>$64.0</td>
<td>$306.4</td>
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<tr>
<td>Other Comprehensive Income: loss (gain)</td>
<td>$84.0</td>
<td>($74.0)</td>
<td>$10.0</td>
<td>($2.4)</td>
<td>$16.0</td>
<td>$33.6</td>
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<tr>
<td>Comprehensive Income: net expense</td>
<td>$140.0</td>
<td>($10.0)</td>
<td>$70.0</td>
<td>$60.0</td>
<td>$80.0</td>
<td>$340.0</td>
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<tr>
<td>Paid-in Capital</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$940</td>
<td>$940.0</td>
<td></td>
</tr>
<tr>
<td>Effect on Shareholder Equity: increase (decrease)</td>
<td>($140)</td>
<td>$10</td>
<td>($70)</td>
<td>($60)</td>
<td>$860</td>
<td>$600.0</td>
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</table>
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Stephen Penman, George O. May Professor of Accounting, Columbia Business School; Co-Director, CEASA
Rachel Winston, Associate Director of Research, CEASA

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