Timely & True from an Owner’s View: Shareholder Value Accounting for Performance-Contingent Equity Claims

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 1, covers employee stock options.

Policy Brief Number Two
Center for Excellence in Accounting & Security Analysis

Columbia Business School established the Center for Excellence in Accounting and Security Analysis last year under the direction of Professor Stephen Penman, George O. May Professor of Accounting, Columbia Business School, and Trevor Harris, Managing Director at Morgan Stanley. The Center ("CEASA") aims to be a leading voice for independent, practical solutions for financial reporting and security analysis, promoting financial reporting that reflects economic reality and investment advice that communicates sound valuations.

CEASA’s mission is to develop workable solutions to issues in financial reporting and accounting policy; produce a core set of principles for equity analysis; collect and synthesize best thinking and best practices; disseminate ideas to regulators, analysts, investors, accountants and management; and to promote and encourage sound research on relevant issues. Drawing on the wisdom of leading experts in academia, industry and government, the Center produces sound research and identifies best practices on relevant issues. CEASA's guiding criteria are to serve the public interest by supporting the integrity of financial reporting and the efficiency of capital markets.

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Summary

CEASA’s Policy Brief number one introduced Shareholder Value Accounting (SVA) as a timely and accurate way to handle employee stock options from the point of view of those who really bear the costs of these options: the owners of the firm, the common shareholders. This Policy Brief applies SVA to all forms of options that a company might write on their own stock, including warrants, call options, put options, convertible bonds, contingent convertible bonds, and convertible preferred stock. We refer to these contingent equity claims – whose payoffs depend on the firm’s stock price – as performance-contingent equity claims, or PCCs.

PCCs take many forms, and every year new ones are developed, sometimes with the intention of taking advantage of loopholes in current accounting standards to present a desired outcome on financial statements. The Financial Accounting Standards Board (FASB) recently tried to close some of these loopholes with Statement No. 150, Accounting for Certain Financial Instruments with Characteristics of Both Debt and Equity. Unfortunately, this new measure further confuses the situation. Some of its prescriptions run counter to Generally Accepted Accounting Principles (GAAP) for similar instruments. For example, under current GAAP, three similar PCCs: warrants, put options, and the implicit warrant feature in a convertible bond, receive different accounting treatments.

The CEASA White Paper presents a unified method of accounting for all types of PCCs, a solid economic argument for doing so, and a means of faithful reporting to shareholders. Our proposed treatment applies Shareholder Value Accounting (SVA) to report the true effects of all transactions as they pertain to the firm’s owners. The economics are simple: raising cash from a PCC is borrowing, and settling the PCC repays the borrowing. Settlement in stock, or a mixture of stock and cash, means that the shareholders repay the loan and bear the borrowing costs. The firm must recognize the borrowing and record the cost of borrowing: this insures accurate reporting of its dealings, and faithfully considers the welfare of its owners.

SVA reports this basic economic reality through four steps: 1) it records the initiation of the PCC as a liability; 2) it recognizes changes in the liability each period as the expected settlement amount changes with the related stock price; 3) it charges interest for the effective borrowing; and 4) it recognizes gains and losses to shareholders upon settlement. Current accounting standards fall short on one or more of these steps, depending on the PCC. In contrast, SVA offers a solid and unified method for handling all PCCs the same way.

By giving an accurate picture of the economics, SVA benefits shareholders, the economy at large, and even the companies themselves, although they might not think so at first. Current accounting rules encourage firms to structure instruments in a way that avoids reporting the true income effects of PCCs. For example, a firm can structure convertible securities to avoid recognizing a real cost of borrowing – the eventual loss to shareholders upon conversion. If a firm raises cash by issuing convertible (preferred) stock, warrants, or options rather than straight debt, it records no liability under current standards.

But the dance can’t go on forever. Someone must pay the price in the long-term. The common
shareholders bear the cost of borrowing, and the accounting must reflect that. SVA eliminates the incentive for deals based on an accounting anomaly rather than on economic value. That’s a good thing for all parties, as it restores confidence in the financial reporting of public companies.

The next section presents an overview of SVA as it applies to PCCs. We then provide the details of SVA accounting; and conclude this Brief with some final comments on how SVA applies more generally, benefiting shareholders, companies, regulators, and the public at large.

Performance Contingent Claims as Liabilities

PCCs have one key common feature: they are loans to the company. For all cases – a convertible bond or preferred stock, a warrant, a call option, or a put option – the company takes in cash when it writes the instrument, and repays the loan by issuing shares (or by paying out a combination of cash and shares). “Traditional” loans show up on the balance sheet: PCCs should too.

A normal loan stays on the balance sheet until repayment, and the company records interest on the borrowing. Under current GAAP, however, a PCC might show up as a liability –a convertible bond or a put option, for example – or as equity – a warrant or an employee stock option, for example. A warrant or an option is not the same as common equity. It has different property rights. Indeed, it requires the common shareholders to surrender value to the warrant holders if the holder exercises the warrant.

Shareholders own the company, and a company has a responsibility to the shareholders. So when a company settles a claim in shares it must acknowledge that it is using shareholders’ money; it has a material effect on the value of the shares. By settling in shares at a price different from the market value, the company reduces the value of outstanding shares, hurting the holders of those shares, while leaving the company’s assets untouched. This is dilution, loud and clear. It looks like a great deal for the company, but it’s a bad deal for the owners. Earnings appear better, but this is deceptive: this whole process violates the principle of faithfully reporting to shareholders.

We are not saying that companies knowingly intend to hurt their shareholders. Accounting rules permit PCCs to be accounted for in a certain way, so companies do just that. These rules are befuddled. SVA cuts through the confusion, and treats all loans the same way, by applying three basic accounting principles to PCCs:

• *propritorship*, where the firm accounts for gains and losses arising from stock-related options from the view of the firm’s owners – the common shareholders – not the firm

• *completeness*, where the firm follows through to show the effects that these gains and losses have on all aspects of its accounts – nothing is left out

• *timeliness*, where the firm re-calculates the value of a stock-related option in every accounting period, as the stock price changes, and so continually updates information.
The first principle, proprietorship, means that paying off PCCs with shares is fundamentally the same as paying with cash. Both involve a loss to shareholder value. That makes every PCC a liability.

The second principle, completeness, requires the company to report the full effects on shareholder value. It must recognize an implied interest expense on the loan. In addition, the firm must record all losses to shareholders when shares are issued to settle the loan.

The third principle, timeliness, requires a continual updating of the value of the loan to its fair value (market value). That periodic update recognizes gains and losses to the shareholders as the claims move further into (or out of) the money.

**Shareholder Value Accounting for PCCs**

Table 1 demonstrates how SVA works for a PCC. It uses a simple scenario to illustrate the core ideas. Let’s follow a PCC from the time the company issues the claim (Year 0), to when it is settled (Year 5). This basic table can accommodate varying features for particular PCCs. In our example (see Table 1), the company receives a premium of $960 in return for a right to acquire 25 common shares after five years; it duly settles the PCC five years later, by issuing 25 shares when the stock price is $54. We use an implicit interest rate of 8% for the borrowing cost. The table shows the yearly and cumulative effect of the fair value of the PCC 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 PCC each year. In this scenario, we show the value rising and falling (but generally increasing), from $960 to $1,350 at settlement (the company issues 25 shares at $54 each). This is arbitrary on our part – we could have just as easily shown it declining. The point here is that we re-calculate option value each year because the expected settlement amount changes. 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. Regardless of the measure you use, the accounting entries are the same.

On the balance sheet, we see two entries in Year 0: $960 for receiving cash, and $960 for recognizing the option liability, the loan. The liability changes year to year, as we track the fair value of the claim. After settlement, the liability goes to zero. The cumulative five-year effect is $960 cash positive, which is the sum of the cash amount over the five years. In contrast, by recognizing the initial claim as equity – as firms do under current GAAP – companies ignore PCCs between the time they issue the claim to the time they settle it. When you account for the liability year to year, you get a very different story.

Let’s move to the income statement. In Year 1, we show an interest expense of $76.80, which is the borrowed amount ($960) times our interest rate (8%). We then take a loss to comprehensive income ($64.20), which is the one-year change in fair value of the PCC ($141) less the interest expense ($76.80). That gives us a total expense equal to the change in fair value ($141). Using current GAAP classifications, the interest expense would show up as part of Net Income and the
loss as part of Other Comprehensive Income. In Year 2 we do the same thing: an interest expense ($88.08) based on the previous year’s fair value ($1,101) results in a loss ($55.92), and a total expense that matches the change in fair value ($144).

The total cost of the PCC shows a five-year cumulative effect of $390, in this case mostly as interest expense ($448), with a small gain in other comprehensive income ($58.48). This gain shows that the holders of the claim lost, after covering the cost of using their money; but the shareholders received a windfall gain after recognizing the borrowing cost. You can see how more dramatic changes in stock price year-to-year can result in a much larger total cost: the spreadsheet allows you to track those changes. The year-to-year total expense has another effect as well. Just like any income statement or other comprehensive income item, it increases or decreases shareholder’s equity. In this case, there are three years of shareholder losses (Years 1, 2, 4) and two years of shareholder gains (Years 3, 5).

Now we have an accurate view, year-to-year and in sum, for the effect of PCCs on shareholder value. In Year 4, for example, the balance sheet shows a liability of $1,300, the income statement shows an interest expense of $80, other comprehensive income shows a loss of $220, and the effect on shareholders equity is a decrease of $300. These items are all relevant to a firm’s financial position in any given year. The company owes contingently $1,300 in fair value and the shareholder is worse off for incurring borrowing costs and suffering a loss from the increase in the option value.

This same spreadsheet allows you to make modifications to the accounting for different kinds of PCCs. For example, a warrant or call option can yield cash at settlement because shares are issued at a strike price for cash; that reduces the loss in other comprehensive income but does not affect paid-in capital. Or, a convertible bond yields cash from periodic interest: that reduces the fair value of the claim but does not alter that period’s effective interest expense in the income statement. Put options and warrants reduce rather than increase paid-in capital at settlement, but most certainly there is a loss from repurchasing shares at more than their fair market value. A net share settlement of a put option has exactly the same effect on shareholders’ equity as a cash settlement. And so on: Table 1 can accommodate any variation and combination of PCCs. Imagine, for example, contingent convertible bonds with put features. The basic elements of their accounting are all there on the spreadsheet.

**Back to Basics**

Here we discuss the three 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 by Table 1.

The first principle, *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: it does not address the distinctions between firm-value, existing shareholders and contingent claimants. Opponents of 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 or warrants – to employees or outside investors – by
definition affects the value of what existing shareholders own. The holder of the option is trying
to get a slice of the equity. A Proprietorship View accounts for all the costs that shareholders
incure by surrendering their equity. That is hardly an outrageous notion, given that the
shareholders are the owners. Management and the board have a fiduciary responsibility to
represent the interest of the shareholders, and to prepare financial and audit reports for their
benefit. By the same token, equity analysts and investors who are valuing companies, must favor
a Proprietorship over an Entity View.

We can see the contrast between the Proprietorship and Entity Views by returning to Table 1.
Entity accounting considers only the initial transaction at Year 0. There is an increase in equity,
but no liability is ever recorded, then or later. Proprietorship accounting recognizes the liability
and also recognizes a gain or loss to shareholders every year and cumulatively over the five
years, as the value of the contingent claim changes. In Entity accounting, a PCC is equity. In
Proprietorship accounting, it’s a liability, and only becomes equity upon exercise. Current FASB
and IASB proposals mix the interest of PCC claimants and shareholders. Above all, they fail to
report faithfully the shareholders’ true interest in the firm.

The second basic principle, completeness, thoroughly applies the notion behind comprehensive
income embraced by FASB. Comprehensive income reporting requires recording all gains and
losses to shareholders. Our accounting applies this notion to the gains and losses from PCCs that
are obscured by 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 writing the PCC.

FASB and IASB regulations provide only a partial solution: they leave out most of the entries on
Table 1. They recognize a liability at initiation for some instruments, but not for others. They fail
to track the unfolding of the transaction through to exercise. In terms of completeness, the
reporting to shareholders does not get done. It’s easier than a complete accounting, but it’s not as
accurate. Indeed, structural engineers can finesse the accounting to give quite the wrong picture.

Our third principle, timeliness, dictates that we represent the economics of PCCs in every
accounting period. We update their value 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
appear only at initiation and settlement (contract date and exercise date), and appear
incompletely at that. 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 clearly show the benefit of continuous, timely accounting. They
track the balance sheet and income statement over time, rather than just at grant date and/or
exercise date. Timeliness gives both a status report for each period and a more comprehensive
picture at the end. An equity analyst who tracks these effects will have an edge in valuing
shares.

These three principles of SVA – proprietorship, completeness, and timeliness – take us back to
the fundamentals of good accounting and security analysis. As business grows more complex and added risk needs to be managed, it’s good for new instruments to emerge. Financial innovation is a boon to our economic system. But in recent years, accounting principles have not kept up with the innovation. These principles are the bedrock of our financial reporting system. Indeed, financial innovations combined with out-of-date accounting principles produce misleading financial reports. Choosing between financial innovation and solid accounting is not a position that firms should encounter. SVA brings accounting into the mainstream of financial progress.

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**PCC Glossary**

**Contingent Equity Claim** is a claim by parties, other than the common shareholders, with payoffs that depend on the price of the common stock. The claim can be settled in stock, or with a mixture of stock or cash. See also **Performance Continent Claim**.

**Convertible Bond** is a bond that typically pays interest but also carries an option to convert the bond into a predetermined number of shares. It is implicitly a bond with an imbedded **Warrant**.

**Contingent Convertible Bond** is a **Convertible Bond** but with conditions on the conversion features and/or other put features attached.

**Convertible Preferred Stock** is preferred stock, typically paying a preferred dividend, that can be exchanged for common stock at an agreed-upon price.

**Call Option** is a claim that gives the holder the right, but not the obligation, to buy stocks at a particular price (the strike price).

**Performance Continent Claim** is a claim by parties, other than the common shareholders, with payoffs that depend on the price of the common stock. The claim can be settled in stock, or with a mixture of stock or cash. Major, well-known examples are: convertible bonds, convertible preferred stock, warrants, call options, put options, options granted to employees, and stock appreciation rights granted to employees. See also **Contingent Equity Claim**.

**Put Option** is a claim that gives the holder the right, but not the obligation, to sell shares at a particular price (the strike price).

**Warrants** are similar to **Call Options**, but usually of longer duration and issued by firms rather than traders. A warrant claim gives the holder the right to buy stocks from the firm at a particular price.
### TABLE 1

Shareholder Value Accounting for Performance Contingent Equity Claims  
*Applies (with Variations) to Warrants, Convertible Debt, Convertible Preferred Stock, Put & Call Options and Similar Instruments*

**Scenario:**  
* Claim issued for consideration of $960 with a right to acquire 25 shares, settled after 5 years  
  * Implicit borrowing cost is 8% per year

<table>
<thead>
<tr>
<th>Inception</th>
<th>Period</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Cumulative 5 Year Effect</th>
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<tr>
<td></td>
<td>Fair Value of Claim</td>
<td>$960</td>
<td>$1,101</td>
<td>$1,245</td>
<td>$1,000</td>
<td>$1,300</td>
</tr>
<tr>
<td></td>
<td>Change in Fair Value</td>
<td>$141</td>
<td>$144</td>
<td>($245)</td>
<td>$300</td>
<td>$0</td>
</tr>
</tbody>
</table>

#### Balance Sheet

<table>
<thead>
<tr>
<th></th>
<th>Inception</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$960</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$960</td>
</tr>
<tr>
<td>Liability - Performance Contingent Equity Claims</td>
<td>$960</td>
<td>$1,101</td>
<td>$1,245</td>
<td>$1,000</td>
<td>$1,300</td>
<td>$0</td>
<td>$0</td>
</tr>
</tbody>
</table>

#### Income Statement & Other Comprehensive Income

<table>
<thead>
<tr>
<th></th>
<th>Inception</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Expense @ 8% - Income Statement</td>
<td>$76.80</td>
<td>$88.08</td>
<td>$99.60</td>
<td>$80.00</td>
<td>$104.00</td>
<td>$448.48</td>
<td></td>
</tr>
<tr>
<td>Loss (Gain) - Other Comprehensive Income</td>
<td>$64.20</td>
<td>$55.92</td>
<td>($344.60)</td>
<td>$220.00</td>
<td>($54.00)</td>
<td>($58.48)</td>
<td></td>
</tr>
<tr>
<td>Total Expense</td>
<td>$141.00</td>
<td>$144.00</td>
<td>($245.00)</td>
<td>$300.00</td>
<td>$50.00</td>
<td>$390.00</td>
<td></td>
</tr>
<tr>
<td>Paid-in Capital</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$1,350</td>
<td>$1,350</td>
<td></td>
</tr>
<tr>
<td>Effect on Shareholders Equity: increase (decrease)</td>
<td>$0</td>
<td>($141)</td>
<td>($144)</td>
<td>$245</td>
<td>($300)</td>
<td>$1,300</td>
<td>$960</td>
</tr>
</tbody>
</table>

**Modifications:**

1. *Any Net Cash received by the firm at settlement reduces the loss in Other Comprehensive Income, but does not affect Paid-in Capital*
2. *Cash received as periodic interest reduces the liability’s fair value but does not affect that period’s effective interest expense in the Income Statement*
3. *For put options and put warrants, Paid-in Capital is reduced at settlement rather than increased*
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