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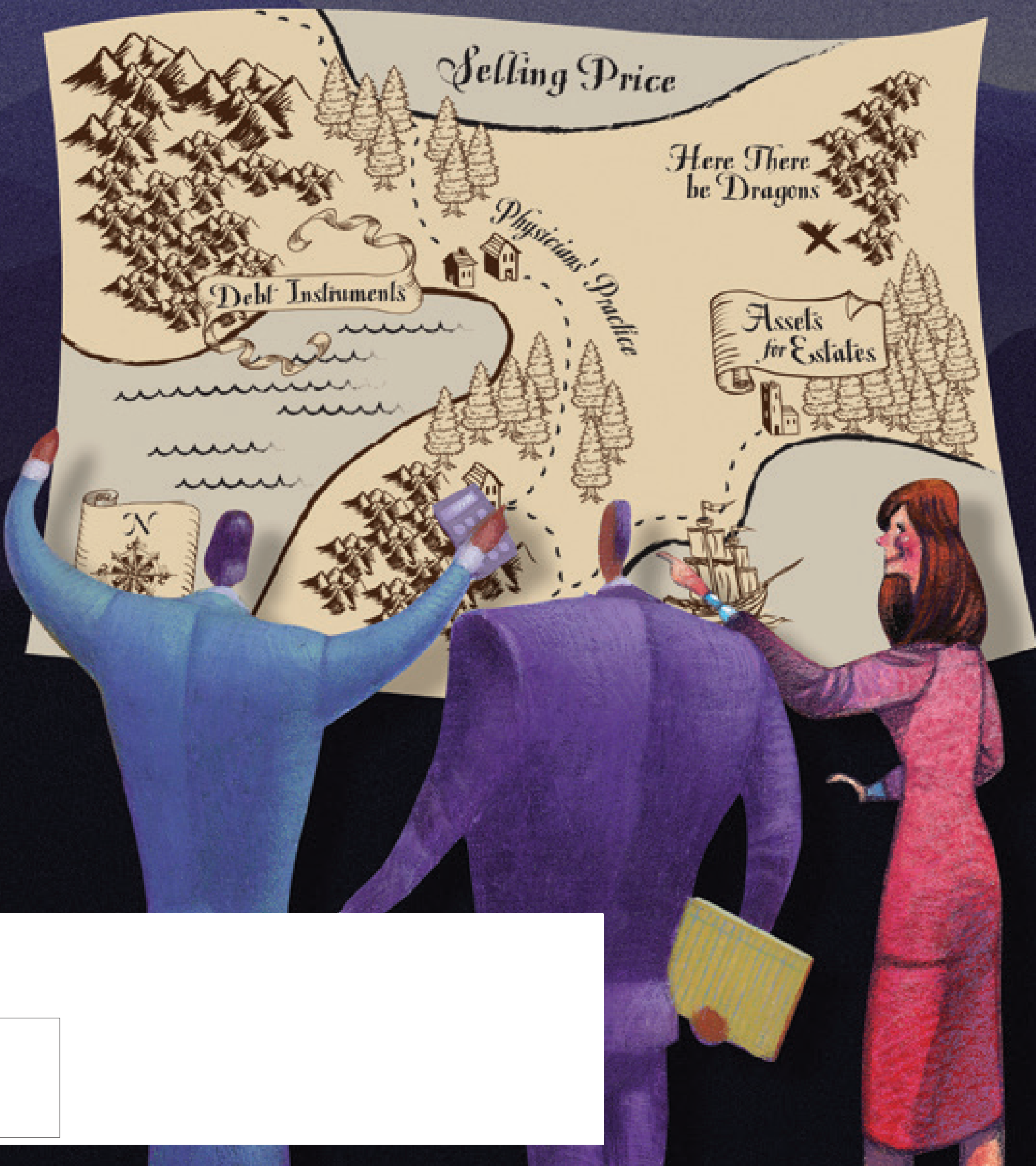
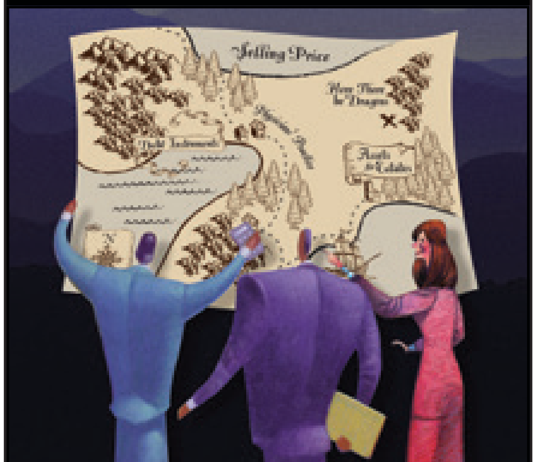
The Value Examiner®

A PROFESSIONAL DEVELOPMENT JOURNAL *for the* CONSULTING DISCIPLINES

SPECIAL ISSUE



On The Cover



SPECIAL ISSUE

The Challenges Facing Business Valuators

In this Special Issue of *The Value Examiner*, we take a look at some of the "hot button" issues facing business valuators. Our contributors examine challenges facing estate planners and valuation professionals, explore the factors that are complicating the valuation of medical practices, and delineate the impact of federal income taxes on transaction prices and terms. In addition, our columnists and guest panel evaluate software tools, highlight a very hardworking sole practitioner, and give tips on getting paid. Finally, our litigation discussions center around two cases that have long reaching impact.

In This Issue...

Departments

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ALL SUBMISSIONS
The Value Examiner is devoted to current, articulate, concise, and practical articles in business valuation, litigation consulting, fraud deterrence, matrimonial litigation support, mergers and acquisitions, exit planning, and building enterprise value. Articles submitted for publication should range from 500 to 3,000 words. Case studies and best practices are always welcome.

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LITIGATION CONSULTING

Understatement of the Valuation Impact of Future Stock-Based Compensation Grants: Implications from the *Ancestry.com* Opinion

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In recent years, more than half of the compensation for CEOs of large firms was in the form of stock-based compensation (SBC), such as restricted stock or stock options. Although SBC expense is a non-cash accounting charge, there is a true economic cost to the firm when issuing SBC. The pervasive issue is how to determine the valuation impact of SBC on the fair value of the firm's equity. In the January 2015 *Ancestry.com* Opinion by the Delaware Chancery Court, the court adopted the Respondent's expert's SBC calculation, in which the expert valued SBC as equal to the present value of the after-tax projected SBC expense. Since accounting rules require the expensing of SBC over its required service period (e.g., vesting period), the value impact of SBC expenses incorporated in the explicit projection period mostly relates to future SBC grants. As we explain below, the approach used by Respondent's expert in *Ancestry.com* understates the economic cost of future SBC grants and, all else being equal, overstates the fair value of the firm's equity.

Let us go through the following example to make this point clear. Consider a start-up that just hired its first CEO with a compensation package comprised of $600,000 in cash salary plus SBC, where the SBC has a grant date fair value of $400,000. Suppose the valuation date equals the grant date of the SBC and a thirty percent tax rate, the valuation impact is equal to the after-tax value of the SBC or an economic cost of $280,000. To see why, note that the above compensation package is equal in value to paying the CEO one million dollars in cash salary on the valuation date. In the case of cash salary, the firm would have booked an additional $400,000 in salary expense and would have been able to take a thirty percent tax shield of $120,000 on that incremental cash salary. Therefore, the valuation effect would be a reduction of $280,000 in the firm's equity value. All else equal, switching one liability worth $400,000 in lieu of another liability worth $400,000 should yield the same valuation impact.

We now extend the above example by expensing the SBC over its required service period. Assuming a four-year required service period, the SBC with fair value of $400,000 would result in $100,000 of pre-tax SBC expenses in each of years one through four. Using a thirty percent tax rate, the after-tax SBC expense would equal $70,000 in each of the next four years. Assuming a ten percent discount rate, the present value of these after-tax SBC expenses is $221,891, which is $58,109 less than the SBC economic cost of $280,000 on the valuation date. Consequently, by using the present value of after-tax SBC expenses as a proxy for the economic cost of SBC, we understate the economic cost of SBC by $58,109 and, thus, overstate the fair value of the firm's equity by the same amount. From this simple example, we can see that the understatement of SBC occurs because of the timing difference arising from spreading the fair value of the SBC grant across

TABLE 1: Economic Cost of SBC vs. Present Value of After-Tax SBC Expense

	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4
SBC Economic Cost	$280,000				
SBC Expense - Grant Year 0		$70,000	$70,000	$70,000	$70,000
PV of SBC Expense	$221,891				
Total SBC Economic Cost	$280,000				
Understatement of SBC	$58,109				

TABLE 2: Sensitivity of Understatement of Economic Cost of SBC to Different Tax Rate and Discount Rate Assumptions (Grant in Year 0)

DISCOUNT	TAX RATE		
Rate	20%	30%	40%
0%	$0	$0	$0
5%	$36,324	$31,783	$27,243
10%	$66,411	$58,109	$49,808
15%	$91,602	$80,152	$68,701
20%	$112,901	$98,789	$84,676

the four-year required service period. Table 1 presents the details that appear on page 34.

Note: SBC economic cost and SBC expenses are reported as after-tax amounts assuming a thirty percent tax rate. Present values are calculated using a ten percent discount rate.

Table 2 demonstrates that the understatement is sensitive to the tax rate and discount rate assumptions. For example, the table shows that had we kept the discount rate at ten percent but instead used a forty percent tax rate across all years, the understatement of the economic cost of SBC decreases to $49,808. The table also shows that had we kept the tax rate at thirty percent but instead used a twenty percent discount rate, the understatement of the economic cost of SBC would increase to $98,789. In fact, the only time no understatement of SBC occurs in this example is when we have an unrealistic discount rate of zero.

SBC grants during each year of the projection period further exacerbate the understatement of the economic cost of SBC. For simplicity, we assume that the fair value of SBC granted grows at three percent annually. Since we know the fair value of SBC grants in each year, we can simply discount these values to arrive at the total SBC economic cost as of the valuation date (i.e., grant date of the first SBC grant). Table 3 shows that this calculation yields a total SBC economic cost of $1,434,350

TABLE 3: Economic Cost of SBC vs. Present Value of After-Tax SBC Expense

	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
SBC Economic Cost	$280,000	$288,400	$297,052	$305,964	$315,142	$324,597
Annual Growth		3.0%	3.0%	3.0%	3.0%	3.0%
SBC Expense - Grant Year 0		$70,000	$70,000	$70,000	$70,000	
SBC Expense - Grant Year 1			$72,100	$72,100	$72,100	$72,100
SBC Expense - Grant Year 2				$74,263	$74,263	$74,263
SBC Expense - Grant Year 3					$76,491	$76,491
SBC Expense - Grant Year 4						$78,786
Total SBC Expense		$70,000	$142,100	$216,363	$292,854	$301,640
Annual Growth			103.0%	52.3%	35.4%	3.0%
PV of SBC Expense	$730,949					
Total SBC Economic Cost	$1,434,350					
Understatement of SBC	$703,401					

TABLE 4: Sensitivity of Understatement of Economic Cost of SBC to Different Tax Rate and Discount Rate Assumptions (Grants in Year 0 to Year 5)

DISCOUNT	TAX RATE		
Rate	20%	30%	40%
0%	$900,798	$788,198	$675,599
5%	$848,310	$742,271	$636,232
10%	$803,887	$703,401	$602,915
15%	$765,886	$670,150	$574,414
20%	$733,066	$641,432	$549,799

assuming a ten percent discount rate.

Note: SBC economic cost and SBC expenses are reported as after-tax amounts assuming a thirty percent tax rate. Present values are calculated using a ten percent discount rate.

In the above example, we can spread out the fair value of SBC grants in each year over the subsequent four-year period because we know what those fair values are in each year. This allows us to calculate the total SBC expense in each year given these specific SBC grants. However, if the SBC expense projections were not constructed by explicitly determining the fair value of each year's SBC grants, we may not be able to accurately estimate the economic cost of SBC. An example of this approach is projecting SBC expense as a percentage of projected revenues, which is the approach Respondent's expert in the *Ancestry.com* matter used to construct his SBC expense projections. In such a situation, we implicitly assume that the SBC expense as a percentage of revenue is somehow related to a series of SBC grants that generate that exact stream of SBC expenses. However, this assumption is unlikely to hold and can only be correct by coincidence. Moreover, as Table 3 shows, if we only observe the Total SBC Expense line in the projections (even one that, by construction, is a result of spreading out the fair value of future SBC grants) and discounted those after-tax SBC expenses, the present value of after-tax SBC expenses is $730,949, assuming a ten percent discount rate. This results in an understatement of the economic cost of SBC by $703,401. Consequently, by using the present value of after-tax SBC expenses as a proxy for the economic cost of SBC, we overstate the fair value of the firm's equity by $703,401.

Table 4 shows the sensitivities of the analysis in Table 3 to different tax rate and discount rate assumptions. Unlike the sensitivities presented in Table 2, a discount rate of zero still yields valuation differences if we assume multiple years of SBC grants. This is because the understatement of SBC is not only due to timing differences but also due to SBC grants in years two through five not being fully accounted for in the SBC expense by the end of the projection period (i.e., year five). For example, with regards to the SBC grant in year five, the SBC economic cost in year five is $324,597, yet the corresponding SBC expense is zero because the SBC expenses related to the year-five grant would have been projected in years six through nine. This observation is particularly relevant for valuations based on discounted cash flow (DCF) analysis, as such an issue will always happen because we have to end our projection period at a finite time (e.g., typically between five to fifteen years).

In addition, calculating a terminal value in a DCF implicitly calculates a terminal value for the after-tax SBC expense that results in a further understatement of the economic cost of SBC. In Table 3, our example shows that not until year five does the annual growth of the SBC expense equal three percent, which is equal to the assumed constant growth rate of the SBC economic cost in our example. However, the dollar amount of the SBC economic cost is higher than the dollar amount of the SBC expense in year five, which implies that, even with the same assumed constant growth rate of three percent, the amount of understatement generated annually will also grow by three percent into perpetuity.

The degree of understatement is potentially significant. Assuming a perpetuity growth rate of three percent and a discount rate of ten percent, the total economic cost of SBC into perpetuity is equal to $4,400,000 (i.e., $1,434,350 for years zero through five plus a terminal value of $2,965,650) and the total SBC expense into perpetuity is equal to $3,486,852 (i.e., $730,949, for years one through five plus a terminal value of $2,755,903). As such, the total understatement is $913,148, or twenty-one percent of the total SBC economic cost of $4,400,000.

The analysis we presented demonstrates that, all else equal, using the approach used by Respondent's expert in *Ancestry.com* to value future SBC grants understates the true economic cost of SBC and, consequently, overstates the fair value of the firm's equity. The above analysis suggests that to determine the valuation impact of future SBC grants, we would need an estimate of the fair value of those projected SBC grants. If such future SBC grants are explicitly modeled in the projections, we still have to test the reasonableness and reliability of such forecasts. If such future SBC grants are not explicitly modeled in the projections, we have to come up with a reliable estimate of future SBC grants. Regardless, the ability to project future SBC grants accurately would depend on the availability of the data and the facts and circumstances of each engagement. VE

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