

*i* NEWS  
REGULATORY UPDATE

THE HIDDEN  
INTERDEPENDENCY  
OF SECTION 409a  
AND FAS 123r

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**W**ith the myriad of new financial and legal regulations facing companies today, ensuring a reasonable level of compliance can be a daunting task for most chief financial officers. In the context of employee stock options, two of the key new regulations are IRC Section 409a and Financial Accounting Standards Board 123r. Section 409a imposes new and unfavorable tax treatment as well as an additional 20% tax penalty on discounted stock options. FAS 123r changes the way that employee stock options are valued and requires the fair value to be amortized as part of compensation expense.

Although Sec. 409a and FAS 123r are often seen as being wholly independent, for non-public companies, they are actually intimately connected when addressing overall compliance. This connection is based on the requirements under both regulations that private companies develop public firm “peer groups” in order to estimate measures of the “riskiness” of the firm. Since risk is a key driver of value and accurate valuation is key to compliance under both regulations, it is important to avoid inconsistencies that can arise when these peer groups are developed independently. Such inconsistencies can provide questionable results and increased auditor scrutiny. An integrated approach, on the other hand, to the development of peer groups and the

related determination of firm risk will offer greater consistency and therefore better results.

### Interdependencies of Sec. 409a and FAS 123r

The interdependencies of Sec. 409a and FAS 123r trace back to the estimation of the fair value of a company’s equity. In both cases, companies are forced to make assumptions about the inherent “riskiness” of a firm. Unlike public companies that are traded on a stock exchange, non-public companies must develop a strike price for their employee stock options since there is no known market price. The determination of market price has become even more critical as a result of Sec. 409a which requires that the exercise price be equal to the fair market value of the equity on the date of grant to avoid the unfavorable tax treatment that now applies to discounted stock options. The new regulations promulgated in 2004 limit the ability to continue to use less formal approaches in determining fair market value, such as compensation committee discretion, “rule of thumb,” or the last round of financing.

Sec. 409a requires the use of peer groups of public companies to determine the discount rate that will be applied to future cash flows during the estimation of the company’s equity value and, subsequently, the option strike price. FAS 123r requires the use of peer groups of public companies to determine the volatility input for the Black-Scholes option valuation formula. In both cases, these values are key inputs to the valuation methods and can have a major impact on the results.

## Why is Inconsistency a Problem?

Inconsistencies with respect to the determination of the discount rate for Sec. 409a or the volatility input for FAS 123r can arise when public peer groups are developed for non-public companies in isolation of one another. This is typically a result of hiring multiple independent consultants for assistance in complying with each regulation.

While the development of independent peer groups of public companies may seem of little consequence, the assumptions developed by using such methods can lead to large inconsistencies about firm risk across the two regulations when in fact, the company has the same level of risk no matter what regulation you are attempting to comply with. Essentially, the total risk of a company is independent of what regulation you are complying with or what methods you are using.

As explained in the example below, if you use different peer groups to develop the assumptions necessary under Sec. 409a and FAS 123r, you run the risk of coming up with different values for the total risk of the same company. In so doing, you are either over-estimating or under-estimating total risk which leads to the same estimation error for either the discount rate used in firm valuation under Sec. 409a or the volatility input used for option valuation under FAS 123r. Such inconsistency will either indicate a potential error in one of the valuation methods or at a minimum give rise to additional auditor scrutiny.

## Understanding Total Risk

Total risk of a firm is a factor of what is referred to as “systemic risk” and “specific risk.”

Systemic risk is the risk of holding the market portfolio, sometimes referred to as non-diversifiable risk. This form of risk is explained by the correlation in returns between the firm and the market portfolio and is captured in the market beta of the firm. This can be referred to as the risk which is attributable to the underlying business activity of the firm. One would expect that a well-chosen peer group of companies would have a similar fundamental risk as the target company. In most cases, the market beta is the key component of the discount rate used in the valuation of a company’s equity under Sec. 409a.

Specific risk is the risk that is unique to the individual company and reflects the impact of factors that are specific to the target company. This so-called specific risk represents the remaining amount of risk that is not correlated to the market and is not captured in the market beta of the company. Both forms of risk, systemic and specific, are interdependent when determining the total risk of a company.

Total risk is defined in the equation below:

$$\text{Total Risk} = \text{Beta}^2 \times \text{Variance Market} + \text{Variance}(\varepsilon)$$

Where:

Beta = market beta of the firm or peer group

Variance Market = the variance of the market portfolio  
Variance( $\varepsilon$ ) = the variance in the error term of the beta regression model<sup>1</sup>

By examining this equation, we can further illustrate the interdependency of FAS 123r and Sec. 409a in terms of total

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<sup>1</sup> This regression model uses the returns of the firm (i.e. peer group) and the market portfolio (i.e. S&P 500, etc.) to determine the risk of the firm associated with the overall market.

risk. Again, FAS 123r compliance for non-public companies requires a stock price volatility estimate which is equivalent to total risk, as defined in the previous equation (*total risk = stock price volatility*). For private firms, this estimate is derived by taking the median of the volatility estimates derived for each public company in the peer group.

Compliance with Sec. 409a for non-public companies requires the calculation of the common equity value for a company (*the option strike price*) which is largely dependent upon the discount rate applied to future cash flows. The discount rate is driven by the systemic risk portion of total risk which is the largely based on the beta value, as shown in the previous equation. For private firms, the estimate of the beta value is based on the median of the beta values for each of the individual public companies in the peer group (*private firm beta = median beta of the public peer group*).

How does this all tie back to the use of multiple peer groups? Well, the use of multiple peer groups for compliance with FAS 123r and Sec. 409a will, barring pure coincidence, result in groups with different total risks (*stock price volatility*). Understanding that a firm has a fixed total risk at any point time, this approach is inconsistent, as it suggests that a company can simultaneously have different levels of risk.

In addition to differences in total risk (*stock price volatility*), the use of multiple peer groups can result in different allocations of the total risk across the systemic and specific risk buckets. We can easily imagine that the pieces of total risk, other than the variance of the

market<sup>2</sup>, will vary from one group to the next. Thus, the final estimate of the beta used to develop the common equity value for a company is likely to be different across any two groups. This means that the use of multiple peer groups for FAS 123r and Sec. 409a compliance will lead to greater levels of inconsistency in estimating the strike price.

## Using a Hypothetical Grant Model

To further illustrate the impact that the use of multiple peer groups has upon FAS 123r and Sec. 409a valuations, we offer another example.

In this example, we assume that a private firm needing Sec. 409a and FAS 123r valuation services engages two independent consultants, each of which provides one of these services. During the course of these valuations, both consultants develop independent, fully compliant peer groups. The results of these two peer groups for this example are shown below:

### **Peer Group 1** (from the FAS 123r consultants)

Stock price volatility = 55%

### **Peer Group 2** (from the Sec. 409a consultants)

Beta estimate = 1.2<sup>3</sup>

Based on the discussion above, we can reasonably assume that the total risk of Group 2 is not equal to that of Group 1 (55%). For this example, we assume

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<sup>2</sup> The variance of the market is independent of the group we are analyzing

<sup>3</sup> The beta estimate is an input to the final discount rate used to calculate the present value of future cash flows to equity owners of the firm

that Group 2 has a total risk of 45%. In addition to differences in total risk, we can also assume that Group 1 has a different beta than that of Group 2 (1.2). For this example, we assume that Group 1 has a beta of 1.5.

How do these values impact our final estimates? In this case, our hypothetical private firm will be using the volatility estimate from Group 1 for stock option valuation and the beta estimate from Group 2 for common equity valuation. Using this multiple peer group approach, we can see there will be inconsistencies based on the different estimations of risk.

In this example, we are either overestimating the stock price volatility (55% versus 45%) or underestimating the beta (1.2 versus 1.5). This means that our firm is either overestimating the fair value of each option for the purposes of FAS 123r by applying a higher volatility or they are overestimating the common equity valuation and therefore the strike price for the purposes of Sec. 409a by applying a lower beta. However, which one is it?

Given that both peer groups in this example are compliant, the answer to this question isn't clear. Or you could say, which of these groups is more

compliant? This is a question that you would like to avoid and may ultimately be answered by your auditors. Regardless of the right answer, it is clear that the use of multiple peer groups leads to inconsistency and potential error, as shown in the previous example.

## Conclusion

The requirement of non-public companies to determine public peer groups for valuation purposes under both Sec. 409a and FAS 123r creates an inherent interdependency between these new regulations. The potential for large inconsistencies exists when an isolated approach is taken to the development of these peer groups. To mitigate the potential inconsistency, non-public companies should use the same set of public peer firms for both Sec. 409a and FAS 123r valuations. Clearly, the risk of a company does not change based on what type of valuation is being done and under what set of regulations. Likewise, the public peer group companies should not change. If complete transparency and consistency are the company's goals, it should consider how it will determine its public peer group companies in advance of the valuation process for both Sec. 409a and FAS 123r.

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