



Performance Equity Plans: The Design and Valuation Under FAS 123(R)



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As the corporate world adapts to the regulatory requirement for the expensing of employee stock options, corporate boards and executives are searching for ways to control compensation expenses while still maintaining equity-based incentive plans that optimize and incent employees.

Overwhelmed with the new regulatory accounting rules such as FAS 123(R), the Security and Exchange Commission's Staff Accounting Bulletin No. 107 and section 409(a) of the Internal Revenue Code, some companies have discarded traditional service-based stock option plans and replaced them with alternative forms of compensation to avoid taking a charge for an instrument that may not deliver compensation. Frequently, this has come in the form of restricted shares, such as Microsoft's high-profile decision in September 2003 to replace option grants with restricted shares.

Although this thinking might make logical sense to management and employees, shareholders should be very concerned with this trend. Restricted shares will always compensate employees, even with sharp declines in stock price, and not necessarily align the recipient's compensation delivered with shareholder returns. Sometimes traditional service-based restricted share plans are characterized as "lay-low" or "pay-for-pulse" plans, because the most important incentive is to avoid layoff.

The post-FAS 123(R) solution adds performance measures to equity



instruments. This is intended to more tightly align the compensation delivery with shareholder return, and the compensation charge to the income statement. Because FAS 123(R) no longer requires “variable” accounting for performance plans, they have gained favor in the marketplace.

FAS 123(R) identifies two distinct types of performance plans, those with *performance conditions*, and those with *market conditions*. A *performance condition* stipulates a target that is defined solely by reference to the employer’s operations, such as a specified growth rate in return on assets, earnings per share (EPS) or earnings before interest, taxes, depreciation and amortization (EBITDA). On the other hand, a *market condition* stipulates that certain price levels (either in the form of percentage appreciation or an intrinsic value gain) must be achieved with regard to the companies’ stock or the relative stock performance against comparator companies. A market condition should be reflected in the grant date valuation and *not* adjusted as a result of the outcome of the condition. The valuation should use a probabilistic approach to calculate fair value based upon an underlying model of future stock prices. In general, these plans will have a discount over similar plans that only require a service condition to be met for the instrument to deliver value to the employee.

There has been a great deal of discussion with respect to the pros and cons of performance and market conditions. Both plans have considerable merit, and depending on the facts and circumstances of any particular situation, both can be advantageous.

This paper summarizes types of equity plans containing market conditions observed in the marketplace, as well as provides a broad understanding of the resulting valuations. The most prevalent types of market-based conditions found in equity and cash plans can be described as *absolute performance plans* and *relative performance plans*. Absolute performance plans

base vesting on the performance of the granting entity regardless of how the rest of the market performs. Relative performance plans compare returns of the granting entity to the returns of a selected group of peer companies. This type of plan is more complex but will protect employees in the case of a general market downturn because the company will only have to outperform its peers for the instrument to vest. These plans are summarized in greater detail in Figure 1.

FIGURE 1 Absolute Performance Plans and Relative Performance Plans	
Absolute Performance Plans	
1. Contingent Vesting Plans (vesting only occurs if the market condition is achieved)	<ul style="list-style-type: none"> • Vesting occurs at the service period, if the market condition is achieved at or before the service period. • Vesting occurs at the latest point of achieving the market condition or a specified service period.
2. Vesting Accelerator Plans (vesting occurs at the earliest point of attaining the market condition or a specified service period).	
Relative Performance Plans	
1. Relative vesting	
2. Indexed Exercise Prices (stock option or stock appreciation rights only).	

Further, there are many different ways the plans can be customized—stock options, restricted shares or units, stock appreciation rights or even with cash incentives. Please note, however, that the accounting consequences may be materially different. For example, SARs settled in cash or cash incentive plans will be deemed a *liability*, and need to be marked-to-market for each successive reporting period. Liability plans may face unlimited potential liability, depending on the share price appreciation, unless the plan also caps the potential compensation delivered at some multiple. The benefit to shareholders of a market-based hurdle is that compensation delivered and share price are tightly correlated. As many know, even if internal metrics are met, the share price of a company’s stock can still decline.

Absolute Performance Plans

Contingent vesting plans (Vesting occurs at the service period if the market condition is achieved at or before the service period): The most common type of market condition stipulates that shares or options only vest if they reach a specified return threshold such as 10 percent or 25 percent of Total Shareholder Return (“TSR”) for 30 consecutive trading days from the date of grant during a predefined service period. The market condition must be achieved during the service period or the shares would be cancelled. Further, the recipient continues to have a service condition on the option and, therefore, must continue employment during the entirety of the service period. The plan’s benefit is recipients only get compensated when creating shareholder value, and therefore are aligned with investors. The drawback is sometimes TSR is not correlated by employee performance, and is frequently affected by outside market factors. Figure 2 summarizes the pros and cons of this type of plan.

FIGURE 2 Absolute Performance Plans	
Pros	Cons
+ Compensation Tied to Shareholder Returns	– TSR now always correlated to actual performance
+ Fixed accounting	
+ Lower expense than absent the market condition	

Figure 3 on page 27 summarizes valuations based upon many different stretch performance periods and targeted stock appreciation levels. Further, we have illustrated the reductions in fair value, given expected stock price volatilities of 20 percent and 50 percent. (Outside of the prescribed market conditions, the other valuation assumptions remain the same—an expected life consistent with the simplified approach prescribed

by SAB 107 equal to the average of the vesting period and the contractual term, a risk-free rate commensurate with the expected life, and a constant dividend yield). We have also assumed the service vesting is cliff vesting during a period equal to the performance period. Please observe that more volatile stocks are *more* likely to achieve higher market condition thresholds, and thus smaller reductions in fair value are attributable to the market condition.

If Company XYZ would like to determine the effect of adding a market condition to its stock option grant it can do so by following the methodology described in Example 1.

Example 1

Suppose Company XYZ plans on granting 250,000 stock options with a three-year cliff vesting schedule. The expected volatility is 50 percent and the current stock price is \$50. The fair value of traditional “vanilla” stock options would be \$6.7 million, determined with the charts shown in Figure 3.

$$53.57\% \times \$50.00 \times 250,000 = \$6,696,250$$

Suppose Company XYZ would like to see the effect of adding a performance hurdle to the plan, of maintaining a stock price of \$60 for 30 consecutive trading days on or before the third anniversary of the grant date, or of approximately an 8-percent annual return compounded for three years. To calculate the fair value of the same plan with the market condition the company would reference the charts shown in Figure 3. The table shows that a plan with three-year vesting and an 8-percent vesting hurdle would reduce the valuation by 9.71 percent. The resulting fair value would be 48.37 percent of grant, or \$24.19. This would result in total compensation expense for the grant of approximately \$6 million, a reduction in expense of approximately \$700,000.

$$53.57\% \times (1 - 9.71\%) \times \$50.00 \times 250,000 = \$6,046,044$$

Figures 3, 4 and 5 and this paper serve as a guide for compensation planning only and should not be used in lieu of more exact valuations for FAS 123(R).

Because the options valued in Figure 3 also have a service condition, management can maintain the retention benefits of a traditional service-based plan, but will not allow compensation delivery in the case of poor stock performance. The plan has a market condition *and* a service period commensurate equal to the performance period. Therefore, the fair value of the instrument can be reversed if the option

is forfeited due to termination prior to satisfying the service vesting criteria. Assuming the option is not forfeited prior to vesting, it will have fixed accounting, and will not need to be reconciled during future reporting periods, regardless of the achievement of the market condition. From an accounting perspective, it is beneficial that this plan will always have a fixed-service period, because it becomes easier to manage and project compensation expense.

Contingent vesting plans (Vesting occurs at the later of the service vesting date and the date at which the market condition is achieved): Frequently, plans are designed that allow for vesting at the later of the service period and the achievement of the market condition.

Figure 4 on page 28 summarizes valuations based upon various stretch performance periods and targeted stock appreciation levels, and a 20-percent and 50-percent expected volatility. Please note the fair value for this type of plan will be higher than a plan without the market condition. This is because the holding period will increase on this type of plan, as employees must wait for the market condition to be satisfied before the instruments vest. This results in a longer option holding period and a higher fair value.

Vesting accelerator plans (Vesting occurs at the achievement of the market condition or a specified service period, whichever occurs earlier): Frequently, companies design plans that accelerate vesting prior to a preset service-based

FIGURE 3 Vesting Occurs if Hurdle is Met Prior to the Service Condition—Cliff Vesting

		20% Volatility				
		1 Year	2 Years	3 Years	4 Years	5 Years
Vesting Hurdle (Total Annual TSR)	Black-Scholes Value ¹	26.40%	28.20%	30.03%	31.83%	33.49%
	Reduction of Valuation from Traditional Service-Based Options					
	2%	-9.02%	-8.56%	-7.04%	-5.07%	-3.10%
	4%	-13.70%	-13.21%	-12.71%	-9.98%	-7.96%
	6%	-24.20%	-22.22%	-19.91%	-17.21%	-15.42%
	8%	-28.95%	-27.75%	-26.63%	-25.75%	-25.26%
	10%	-37.20%	-35.80%	-34.76%	-34.60%	-33.95%
		50% Volatility				
		1 Year	2 Years	3 Years	4 Years	5 Years
Vesting Hurdle (Total Annual TSR)	Black-Scholes Value ¹	49.23%	51.43%	53.57%	55.60%	57.46%
	Reduction of Valuation from Traditional Service-Based Options					
	2%	-5.02%	-4.44%	-3.42%	-0.95%	-0.15%
	4%	-7.65%	-6.62%	-5.31%	-2.87%	-1.28%
	6%	-9.99%	-8.21%	-7.34%	-4.98%	-2.90%
	8%	-13.02%	-11.50%	-9.71%	-6.67%	-4.96%
	10%	-15.80%	-13.29%	-12.29%	-10.50%	-7.18%

¹ Assumes a Black-Scholes valuation with an expected life equal to the midpoint of the service period and the contractual term (for example, a one-year service period and a 10-year contractual term would yield an expected life of 5.5 years), a volatility of 20 percent, no dividend yield and a risk-free rate commensurate with the expected life.

¹ Assumes a Black-Scholes valuation with an expected life equal to the midpoint of the service period and the contractual term (for example, a one-year service period and a 10-year contractual term would yield an expected life of 5.5 years), a volatility of 50 percent, no dividend yield and a risk-free rate commensurate with the expected life.

vesting condition at the achievement of some specified target threshold.

Figure 5 on page 29 summarizes valuations based upon various stretch performance periods and targeted stock appreciation levels, and a 20-percent and 50-percent expected volatility. The pros and cons of this plan are detailed in Figure 6.

Please note that because the plan vests at the earlier period of attainment of the performance and the service conditions, it is required to calculate a *derived service period*, which is the period of time the compensation expense needs to be amortized over. The derived service period is obtained as an output from the Monte-Carlo modeling process.

As seen in Figure 5, there can be substantial discounts

over standard options with this type of performance condition. The discount will increase as the vesting target increases. Also note that the discount will be greater for companies with lower volatility, because it would be more difficult for a low-volatility company to achieve substantial stock price growth.

Relative Performance Plan

Relative vesting: A typical relative performance plan stipulates that the equity instrument will vest on a sliding scale that is determined by comparing the performance of the company's Total Shareholder Return (TSR) with the TSR of a selected group of publicly traded companies. Figure 7 on page 30 summarizes the vesting provisions of alternative relative vesting plans.

FIGURE 4 Vesting Occurs at the Later of the Stretch Target and Achievement of the Vesting Hurdle—Cliff Vesting

		20% Volatility				
		1 Year	2 Years	3 Years	4 Years	5 Years
Vesting Hurdle (Total Annual TSR)	Black-Scholes Value ¹	26.40%	28.20%	30.03%	31.83%	33.49%
	Reduction in Fair Value from Traditional Service-Based Options					
	2%	4.60%	4.02%	3.16%	2.84%	2.31%
	4%	5.92%	5.47%	4.90%	4.50%	3.79%
	6%	6.58%	7.04%	7.01%	6.12%	4.94%
	8%	8.00%	8.72%	8.52%	7.35%	5.09%
	10%	8.71%	10.36%	10.14%	7.66%	5.43%
		50% Volatility				
		1 Year	2 Years	3 Years	4 Years	5 Years
Vesting Hurdle (Total Annual TSR)	Black-Scholes Value ¹	49.23%	51.43%	53.57%	55.60%	57.46%
	Reduction in Fair Value from Traditional Service-Based Options					
	2%	4.53%	4.20%	3.48%	3.72%	3.53%
	4%	5.12%	4.53%	4.18%	4.36%	4.16%
	6%	5.39%	4.99%	4.69%	4.93%	4.62%
	8%	5.78%	5.42%	5.55%	5.38%	5.17%
	10%	6.33%	6.48%	6.22%	6.24%	5.67%

¹ Assumes a Black-Scholes valuation with an expected life equal to the midpoint of the service period and the contractual term (for example, a one-year service period and a 10-year contractual term would yield an expected life of 5.5 years), a volatility of 20 percent, no dividend yield and a risk-free rate commensurate with the expected life.

¹ Assumes a Black-Scholes valuation with an expected life equal to the midpoint of the service period and the contractual term (for example, a one-year service period and a 10-year contractual term would yield an expected life of 5.5 years), a volatility of 50 percent, no dividend yield and a risk-free rate commensurate with the expected life.

FIGURE 5 Vesting Occurs at the Later of the Stretch Target and Achievement of the Vesting Hurdle—Cliff Vesting

		20% Volatility				
		1 Year	2 Years	3 Years	4 Years	5 Years
Vesting Hurdle (Total Annual TSR)	Black-Scholes Value ¹	26.40%	28.20%	30.03%	31.83%	33.49%
	Reduction in Fair Value from Traditional Service-Based Options					
	2%	-22.96%	-17.37%	-15.70%	-16.05%	-16.76%
	4%	-28.99%	-21.54%	-19.18%	-18.10%	-17.52%
	6%	-31.93%	-26.58%	-24.52%	-22.12%	-21.67%
	8%	-38.54%	-32.29%	-30.03%	-28.90%	-29.13%
	10%	-42.05%	-38.59%	-38.18%	-36.89%	-37.51%
¹ Assumes a Black-Scholes valuation with an expected life equal to the midpoint of the service period and the contractual term (for example, a one-year service period and a 10-year contractual term would yield an expected life of 5.5 years), a volatility of 20 percent, no dividend yield and a risk-free rate commensurate with the expected life.						
		50% Volatility				
		1 Year	2 Years	3 Years	4 Years	5 Years
Vesting Hurdle (Total Annual TSR)	Black-Scholes Value ¹	49.23%	51.43%	53.57%	55.60%	57.46%
	Reduction in Fair Value from Traditional Service-Based Options					
	2%	-19.11%	-13.03%	-11.35%	-11.89%	-11.99%
	4%	-21.93%	-14.22%	-12.31%	-12.01%	-12.35%
	6%	22.40%	-15.61%	-13.54%	-12.58%	-12.75%
	8%	-24.94%	-16.85%	-15.08%	-13.77%	-13.20%
	10%	-28.20%	-20.03%	-17.02%	-14.95%	-13.92%
¹ Assumes a Black-Scholes valuation with an expected life equal to the midpoint of the service period and the contractual term (for example, a one-year service period and a 10-year contractual term would yield an expected life of 5.5 years), a volatility of 50 percent, no dividend yield and a risk-free rate commensurate with the expected life.						

Typical indices are the S&P 500 or a specific industry index, but generally, it is recommended that at least 30 companies be included in the indices.

It should be noted that generally payout percentages are linearly interpolated in whole-percentage increments between the target thresholds. Figure 7 on page 30 has more

significant and harder-to-achieve performance thresholds.

These types of plans can be valued for accounting purposes quite easily by using the *capital asset pricing model* along with modeling techniques such as Monte Carlo simulation. Several valuation inputs are required: the risk-free rate of return, the expected volatility of the index, the expected return of the index (which is typically based on observed historical returns), the correlation of the index with all of the components of the index and Company XYZ, and the beta of each component of the index and of Company XYZ. Beta measures the volatility of the security, relative to the asset class, and can be obtained through many different service providers. For example, a company's stock price with a beta of 1 would move parallel with the market, and a beta of 0.50 would move half as much as the

FIGURE 6 Pros and Cons for Plans with Vesting Acceleration Market Condition

Pros	Cons
+ Compensation tied to shareholder returns	- TSR not always correlated to actual performance
+ Fixed accounting	- Shorter retentive handcuffs
+ Lower expense than absent the market condition	- Tougher to manage and predict expense because it requires derived service period

FIGURE 7 Vesting Schedules for the Two Relative Performance Plans Valued

Percentile	Vesting Percent	Percentile	Vesting Percentage
≥75th	200%	≥85th	200%
50th to 75th	100%	65th to 85th	100%
25th to 50th	50%	35th to 65th	50%
<25th	0%	<35th	0%

market. The two largest drivers in this type of valuation are the beta of Company XYZ as it compares to the betas of the components of the index and the percentile rankings at which the vesting percentages increase.

Figures 8 and 9 show simulation results for plans with the vesting schedules shown in Figure 7. The results display the resulting vesting percentage for various levels of beta for Company XYZ. A company wishing to estimate the percentage of the grant that would ultimately vest can compare its beta to the betas of its selected peer group and use Figures 8 and 9 as a guide.

Please note that because this is a market condition, this expense would not be trued up to reflect the final outcome of the number of shares that will be granted.

As stated earlier, the two most influential drivers of fair value in this type of plan are the beta of Company XYZ as it compares to the betas of the components of the S&P 500 index, and the percentile rankings at which the vesting percentages increase with an increase in ranking in the S&P 500 Index. The shape of the distribution of betas for the components of the S&P 500 Index will also have an effect on the fair value. The distribution of betas shown in Figure 10 were used to calculate the vesting percentages shown in Figures 8 and 9.

FIGURE 8 Plan 1

Beta Percentile	Beta	Vest%
0%	0.0000	4.35%
10%	0.6947	63.17%
20%	0.7851	68.74%
30%	0.8790	75.48%
40%	0.9690	80.17%
50%	1.0482	84.06%
60%	1.1097	84.85%
70%	1.1841	87.33%
80%	1.2950	89.67%
90%	1.5069	90.30%
100%	2.3430	80.20%

FIGURE 9 Plan 2

Beta Percentile	Beta	Vest%
0%	0.0000	70.23%
10%	0.6947	107.12%
20%	0.7851	105.56%
30%	0.8790	111.93%
40%	0.9690	114.26%
50%	1.0482	109.13%
60%	1.1097	109.18%
70%	1.1841	110.29%
80%	1.2950	107.41%
90%	1.5069	105.73%
100%	2.3430	83.23%

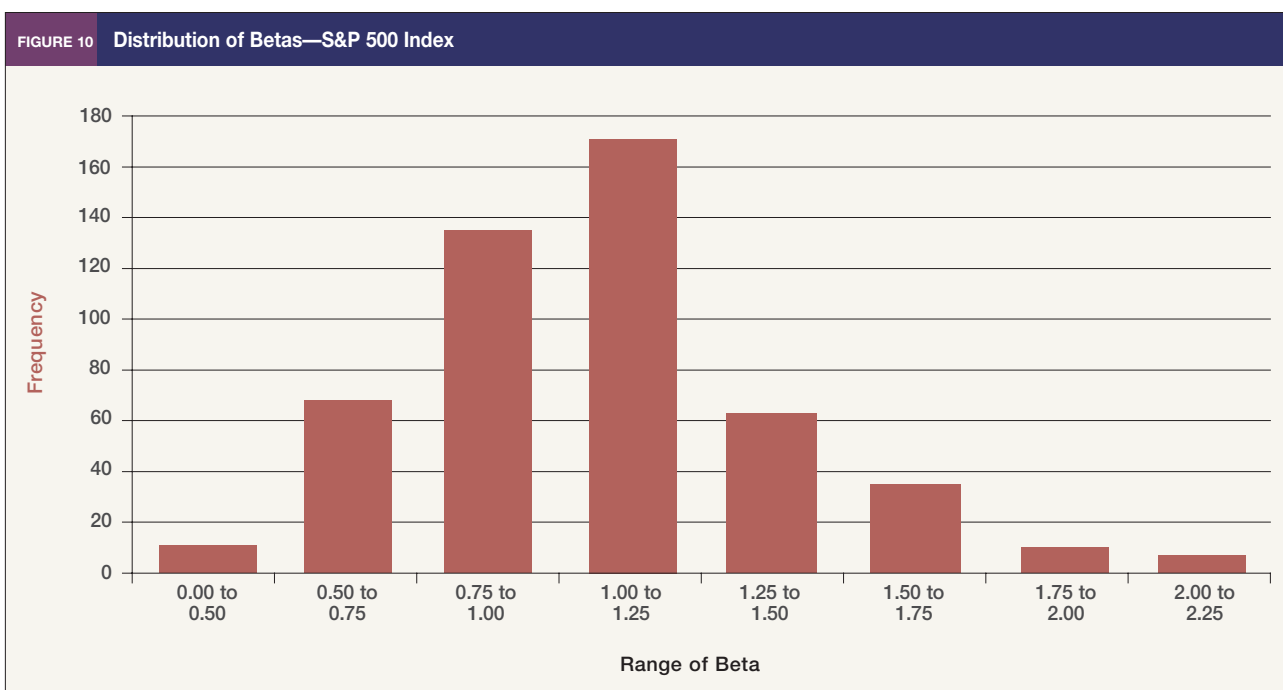



FIGURE 11 Relative Performance Plan

Pros	Cons
+ Compensation tied to shareholder returns	- TSR not always correlated to actual performance
+ Fixed accounting	- Challenging to determine representative peer companies
+ Creation of a competitive compensation framework	

The distribution of betas for this peer group is distributed approximately normally, with a high kurtosis. Figure 11 summarizes the pros and cons of this type of plan. *Indexed exercise price:* Some performance plans vary the exercise price of the option based upon the performance of the companies' stock as compared to the performance of an index of stocks such as the S&P 500 Index. This type of plan ensures that the company must outperform the marketplace for compensation to be delivered. This type of plan can be valued with a Black-Scholes model that is adapted to take into account the cross-volatility of the index and the company.

Conclusions

In the competitive job market, where employers strive to retain talented employees, equity compensation remains a critical retention tool. Since the inception of FAS(R), employers are struggling with the correct balance of the retention aspects of equity-based awards and a financial statement impact. Performance-based awards, greatly ignored in the past, are becoming popular incentives. The intent of this piece is to describe in detail performance awards that have "market conditions." Further, we hope that the estimated valuations will provide a framework for companies in estimating the financial statement impact of such market conditions. As compensation consultants and plan designers gain a greater understanding of the types of plans and a greater intuitive understanding of the discounted valuations, we expect these instruments to become even more commonplace in the market. 

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