The Three Dimensions of Pay for Performance

Stephen F. O'Byrne
Shareholder Value Advisors Inc.

In the early days of management-incentive plans, it was common to think of incentive plans as a partnership between managers and investors. Long-time head of General Motors (GM) Alfred P. Sloan said that the objective of the General Motors Bonus Plan was to make "key employees partners in the corporation's prosperity" (Sloan 1963). The GM bonus-plan formula gave employees 10% of economic profit, that is, after-tax operating profit in excess of a 7% return on capital. The fixed sharing percentage aligned the interests of the employee "partners" with investors because employees could not increase their bonus without increasing investors' share of economic profit in equal proportion. *The ratio of the percent change in employee pay to percent change in investor value*, 1.0 for the GM bonus plan, is termed "leverage" and provides a basic measure of the sensitivity of pay to performance.

This article shows that leverage, alignment and relative cost are the three dimensions of pay for performance, explains how to measure the three dimensions using historical pay data, shows how the leverage and alignment of top-management and director pay has changed

in the past 15 years and presents a simple pay plan with annual grants of performance shares that provides perfect pay for performance. This article also highlights the common failure of companies to include discussion of leverage in their Compensation Discussion and Analysis (CD&A) and argues that most companies fail to understand that leverage is a critical component of pay for performance and that their compensation "philosophy" is incomplete when it does not include target pay leverage. Two companies, PPG and General Electric (GE), are used to illustrate the calculation and analysis of pay leverage. PPG is a company where pay leverage increased dramatically over the past decade, while GE is a company where pay leverage declined markedly over the past decade

THE THREE-DIMENSIONS: LEVERAGE, ALIGNMENT AND RELATIVE COST

Figure 1 and Figure 2 show the measurement of the three dimensions of pay for performance for PPG Industries. Figure 1 shows pay for performance for the five

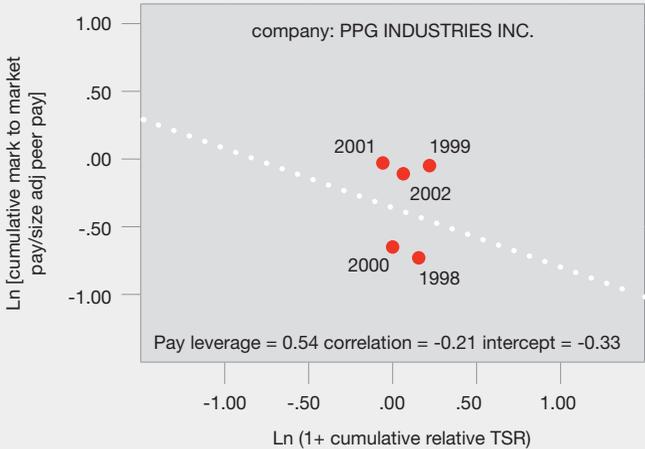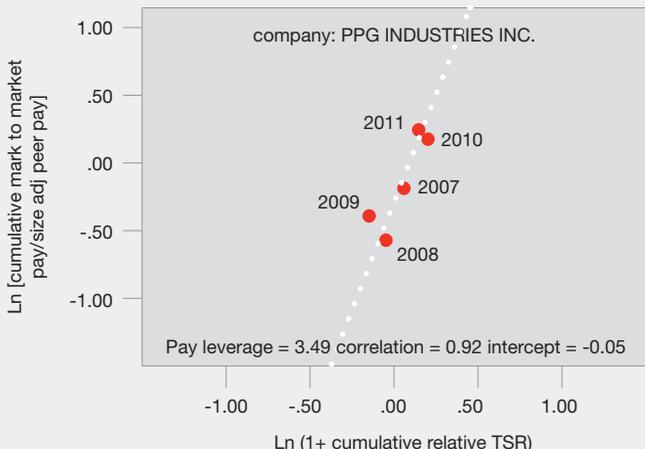**FIGURE 1** Relative Mark to Market Pay Versus Relative Performance

company: PPG INDUSTRIES INC.

Pay leverage = 0.54 correlation = -0.21 intercept = -0.33

y-axis: Ln [cumulative mark to market pay/size adj peer pay]
x-axis: Ln (1+ cumulative relative TSR)

FIGURE 2 Relative Mark to Market Pay Versus Relative Performance

company: PPG INDUSTRIES INC.

Pay leverage = 3.49 correlation = 0.92 intercept = -0.05

y-axis: Ln [cumulative mark to market pay/size adj peer pay]
x-axis: Ln (1+ cumulative relative TSR)

years from 1998 to 2002 and Figure 2 shows pay for performance for the five years from 2007 to 2011. Both charts are based on pay data for the "top 5" executives reported in the proxy statement. The vertical axis in each chart is the natural log of relative pay and the horizontal axis is the natural log of relative performance. Relative pay is top-five aggregate pay, measured on a "mark-to-market" basis, divided by market top-five pay. Relative performance is PPG shareholder wealth divided by shareholder wealth assuming the median peer-group returns from the start of each five-year period. The dashed line is the regression trendline relating log relative pay to log relative performance. The line's slope is pay leverage, that is, the ratio of change in log relative pay to change in log relative performance. For small changes, the change in log relative pay or log relative performance is close to the percentage change in relative pay or the percentage change in relative performance. PPG's 1998-2002 pay leverage of -0.54 means that a 1% increase in relative performance reduces relative pay by -0.54% and PPG's 2007-2011 pay leverage of 3.49 means that a 1% increase in relative performance increases relative pay by 3.49%.

The second dimension of pay for performance is *alignment*, or *the correlation of relative pay and relative performance*. PPG's 2007-2011 alignment of 0.92 implies that relative performance explained 85% (= 92% x 92%) of the variation in relative pay during the five years. The third dimension of pay for performance is *performance adjusted cost*, or the *pay premium at peer-group average performance*. This is the intercept of the regression trend line. The 2007-2011 intercept of -0.05 means that log relative pay is -0.05 when log relative performance is zero. Taking the anti-log, this means that the relative pay ratio is 0.95 when the relative performance ratio is 1.00, or that pay is 5% below market when performance is average.

PAY MEASURES, MEASUREMENT PERIODS AND PEER GROUPS

Figure 1 and Figure 2 measure pay for performance using cumulative measures of relative pay and relative performance. In Figure 1, 1998 is relative pay for 1998 with pay marked to market at the end of 1998, 1999 is relative pay for the two years 1998 and 1999 with pay marked to market at the end of 1999 and 2002 is relative pay for the five years 1998 to 2002 with pay marked to market at the end of 2002. Mark to market pay, also known as "realizable pay," values equity compensation based on the stock price at the end of each measurement period and adjusts for the expected vesting of performance share and performance cash awards. Relative performance is also measured on a cumulative basis.

For example, relative performance for 2001 is PPG shareholder wealth, with dividends reinvested since the start of 1998, divided by shareholder wealth assuming the median peer company total return since the end of 1997, that is, the PPG 1997 ending stock price multiplied by (1 + median peer company TSR since 1997) where "TSR" is total shareholder return. Pay for performance is analyzed using cumulative pay and cumulative performance as the goal is to design a pay plan perfectly aligning cumulative pay with cumulative performance.

Calculation of relative pay for the PPG top-five executives requires identification of a peer group and estimates of competitive compensation. The data source for this paper, Standard & Poor's Execucomp database, provides pay data for top-five executives beginning in 1992. Calculation of relative pay for all the executives in Execucomp requires peer groups and competitive pay estimates for more than 2,000 companies and 16,000 five-year periods. So a peer group selection algorithm is essential to make the calculations manageable. Similar to the peer group selection algorithm of the proxy voting advisory firm Institutional Shareholder Services (ISS), the algorithm used for this article starts with a company's Global Industry Classification Standard industry (also called its "six digit GICS category") and selects the companies closest in size to the subject company as its "peers." Peers are added to a total of 24 companies as long as they are within the GICS industry. If there are at least 14 peer companies within the GICS industry, the peer group is complete. If there are less than 14 companies, the selection algorithm moves to the industry group (the "four digit GICS category") and again selects the companies closest in size, up to a maximum of 14 companies in total (i.e., including the companies from the GICS industry). If there are less than 14 companies in the industry and industry group, the selection algorithm moves to the industry sector (the "two digit GICS category") until 14 peer companies are included. Unlike ISS, no size restriction is imposed on the companies as a regression trend line is used to statistically adjust for differences in company revenue size.

For PPG in 2011, this process gives a peer group with 14 companies from PPG's industry, Chemicals (GICS 151010). The 14 companies are: Air Products & Chemicals, Airgas, Ashland, Dow Chemical, DuPont, Eastman Chemical, Ecolab, Lubrizol, Monsanto, Praxair, RPM International, Scotts Miracle Gro, Sherwin Williams and Valspar.

Once the peer group is identified, competitive mark to market pay is calculated in two steps. First, competitive grant date pay for PPG's revenue size is calculated, and, second, an adjustment is made for the average, or expected, difference between grant date pay and mark to market pay. A regression of log pay on log revenue, based on peer group pay for the prior four years, is used to calculate competitive grant date pay. Four years of history data broadens the sample and permits a calculation of market pay before the current year's end. For the 2011 PPG peer group, company revenue size explains 67% of the variation in top-five grant date pay with a modest time trend. The regression trend line is:

Ln(pay in $000) = 5.958 + 0.416 x ln(revenue in $mil) + 0.029 x (year – 2006)

Market grant date pay for the PPG top 5 in 2011 is $24.387 million, based on PPG's 2011 revenue of $14,940 million. Cumulative market top-five grant date pay for the five years (2007 through 2011) is $110.544 million.

The second step in computing competitive mark to market pay is to adjust competitive grant date pay for the expected difference between mark to market pay and grant date pay. The expected difference, 10%, is based on two data sources:

- One is a sample of 16,643 five-year periods ending in a year between 1996 and 2011 where the median difference between top-five mark to market pay and top-five cumulative grant date pay is 8.4%.
- The second is a pay simulation where it was assumed that 50% of pay is in stock granted at the end of the year, and the stock appreciates at 9% annually. This simulation gives a difference of 9.8% between cumulative mark to market pay and cumulative grant date pay.

The denominator of the relative pay measure should reflect the expected industry return rather than the actual industry return to avoid the paradoxical result that perfect pay for performance, that is, having relative pay track relative performance, cannot be achieved without matching the peer company pay impact of the actual industry return. This would imply that pay can only track the excess return if it also rewards the industry return, which makes no sense.

An example can help to explain why competitive mark to market pay should reflect the expected industry return, not the actual industry return. For the five years ending in 2002, the median total return of PPG's peer group was -1%, while for the five years ending in 2007, the median total return of its peer group was +122% or roughly 17% annually. Assuming annual stock grants at year end, ending stock compensation for the median company in the period from 2003 to 2007 is 43% higher than it is in the 1998-2002 period. If stock is 50% of the total compensation, this means that ending total compensation in the period from 2003 to 2007 is 22% higher than it is in 1998-2002, and about 21% higher than grant date compensation. A company with average performance in both periods will have a relative performance ratio of 1.0 in both periods, and hence, will need to have a relative pay ratio of 1.0 in both periods to maintain perfect pay for performance. If expected mark to market pay is used to compute relative pay, the company only needs to match the 10% expected pay growth from the industry return to maintain a relative pay ratio of 1.0. But if actual, unexpected, mark to market pay is used to compute relative pay, the company needs to match the 11% unexpected pay growth as well to maintain a relative pay ratio of 1.0. This implies that a company can only pay for relative performance if it also pays for unexpected industry performance.

LEVERAGE AND ALIGNMENT AT S&P 1500 COMPANIES

The dramatic increases in alignment and leverage that PPG experienced from 2002 to 2011 are not typical of S&P 1500 companies. Figure 3 shows top-five, CEO and director alignment for the median S&P 1500 company by year. Each year's value is alignment for the five years ending in that year. Alignment for top-five executives ranges from a high of 0.73 in the five years 2003 through 2007 to a low of 0.61 in the five years 2005 through 2009. This means relative performance explained 53% (= 73% x 73%) of the variation in relative pay in the best five-year period and 37% in the worst. As the figure shows alignment for the median company, it implies that relative performance explained less than 37% of the variation in

FIGURE 3 Median Mark to Market Pay Alignment

For S&P 1500 Companies

CEO
Top 5 Executives
Directors
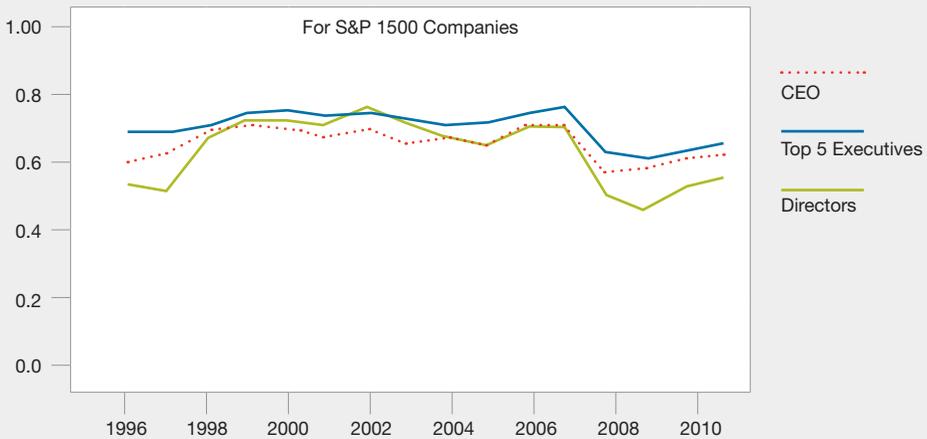
relative pay for almost one-half of the S&P 1500 companies in the period from 2005 to 2009. CEO pay alignment is less than top-five pay alignment in every year and director pay alignment is less than top-five pay alignment in all but one year. In the worst year, 2009, director pay alignment falls to 0.46. So relative performance only explains 21% of the variation in director relative pay during the five years from 2005 to 2009.

Figure 4 shows that median top-five pay leverage fluctuated around 0.6, falling to 0.53 in 1996 and again in 2007, and rising to a peak of 0.70 in 2007. Leverage of 0.6 means that a 1%-increase in relative shareholder wealth increases relative pay by 0.6%. Figure 4 also shows that top-five pay leverage has been less than CEO pay leverage in every year and that director pay leverage changed dramatically – up and down – during the past 16 years. Director pay leverage rose from a low of 0.24 in 1996 to a peak of 0.69 before falling back to 0.30 in 2010 and 0.33 in 2011.

Median top-five pay leverage and alignment remained relatively steady as

FIGURE 4 Median Mark to Market Pay Leverage

For S&P 1500 Companies

CEO
Top 5 Executives
Directors
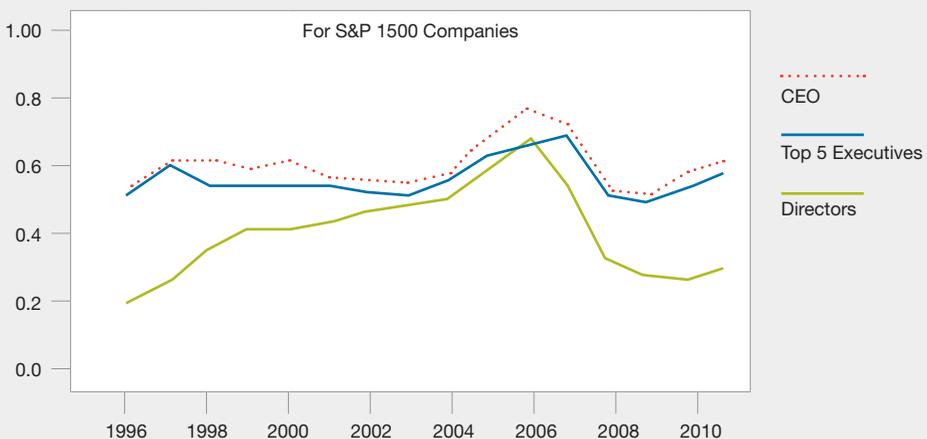
companies like PPG, with rising leverage and alignment, were balanced by companies like GE, with declining leverage and alignment. Figure 5 and Figure 6 show that GE top-five pay leverage declined from 1.14 in the period from 1996 to 2000 to 0.02 in the period from 2007 to 2011.

THE SURPRISING ABSENCE OF LEVERAGE DISCUSSION

PPG shows a remarkable increase in leverage from 2002 to 2011, increasing from -0.54 to 3.49. It also shows a large increase in alignment, increasing from -0.21

FIGURE 5 Relative Mark to Market Pay Versus Relative Performance
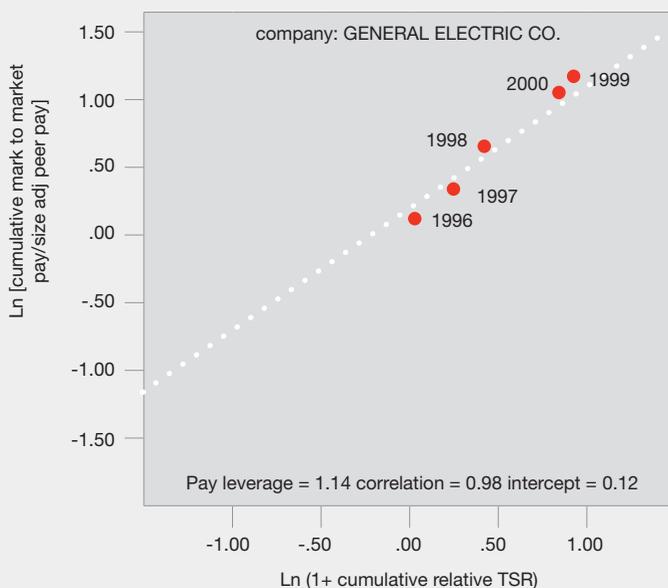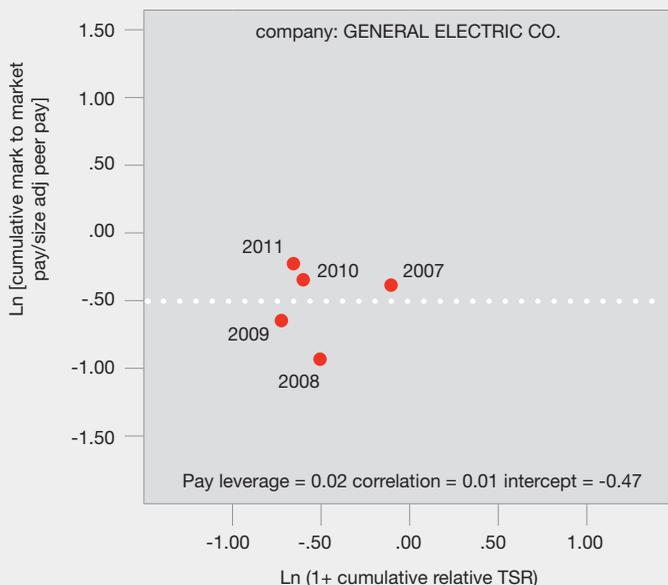

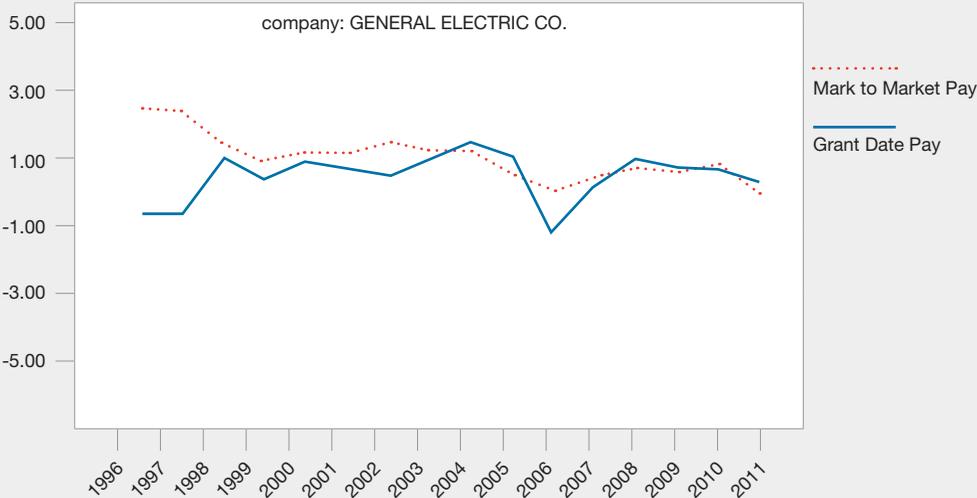**FIGURE 6** Relative Mark to Market Pay Versus Relative Performance

to 0.92. GE, on the other hand, shows a substantial decline in leverage, dropping from 1.14 to 0.02, and a remarkable decline in alignment, falling from 0.98 to 0.01. These differences are not just two points in time that happen to differ. Figure 7 shows a strong pattern of increasing leverage at PPG since 1996 and Figure 8 shows a strong pattern of decreasing leverage at GE since 1996. Given these big changes, one might anticipate an extensive discussion in the CD&A of the company's leverage objectives and how they changed. Remarkably, neither PPG nor GE provides any discussion of leverage. In the early days of management incentive plans, there was little need for a discussion of leverage as the fixed sharing percentage ensured employee bonus leverage of 1.0. But now, a discussion of leverage is vital as few companies use sharing formulas to determine total-incentive compensation.

FIGURE 7 Pay Leverage

company: PPG INDUSTRIES INC.

Mark to Market Pay

Grant Date Pay

FIGURE 8 Pay Leverage

company: GENERAL ELECTRIC CO.

Mark to Market Pay

Grant Date Pay

Both companies talk about alignment, but neither provides a quantitative measure of alignment to support its assumption that alignment is high. For example, the 2012 GE proxy indicated that "our compensation program rewards sustained financial and operating performance and leadership excellence, aligns the executives' long-term interests with those of our shareowners and motivates executives to remain with the company for long and productive careers built on expertise," but GE provides no measure of reward sensitivity to performance nor any measure of alignment (GE 2012).

A SIMPLE PAY PLAN PROVIDING PERFECT PAY FOR PEFORMANCE

Some compensation committees may feel that leverage and alignment are somewhat "accidental" results of compensation-program design and decision making and not susceptible to deliberate management. To demonstrate that leverage and alignment can be "designed into" a program, this article illustrates how PPG could have achieved leverage and alignment of 1.0 and relative cost of 0.0 for the years from 2007 to 2011 with a simple compensation program that provided annual grants of performance shares.

This perfect pay for performance (PP4P) plan has two critical features:

❚ The grant value of the annual performance share grant is equal to market total compensation adjusted for relative performance since the start of the five-year measurement period.

❚ Each performance share grant vests at the end of the fifth year with a vesting multiple equal to 1/(1 + the industry return since the date of grant).

For simplicity, assume that the performance share grant is made at each year's end and that PPG pays no dividends, that is, the actual PPG stock price is adjusted to include reinvested dividends since 2006.

Table 1 shows the calculation of the performance shares granted at each year's end. For example, market compensation in 2009 is $21.213 million. To calculate target compensation, adjust for the expected industry return and for relative performance since 2006. Add 10% to adjust for the expected industry return and multiply by the relative wealth ratio, 0.93, to adjust for relative performance since 2006. This results in a target compensation of $21.702 million:

$$\$21.702 \text{ million} = \$21.213 \text{ million} \times (1 + 10\%) \times 0.93.$$

Dividing by the stock price (adjusted for dividends) of $65.53 gives a stock grant of 331,165 shares. These calculations assume target pay leverage of 1.00. If target pay leverage is different from 1.0, target compensation is market compensation, adjusted for the expected industry return, multiplied by the relative wealth ratio raised to the target pay leverage power. For example, if target pay leverage were 3.49, target compensation would be $18.113 million:

$$\$18.113 \text{ million} = \$21.213 \text{ million} \times (1 + 10\%) \times 0.93^{3.49}.$$

TABLE 1 Calculation of Target Compensation and Stock Grant Shares

YEAR	Market Compensation ($000)	Stock Value	Company Cumulative Wealth Ratio	Peer Group Cumulative Wealth Ratio	Company Relative Wealth Ratio	Premium for Loss of Expected Industry Return	Target Compensation ($000)	Stock Grant Shares
2006		64.21	1.00	1.00				
2007	19,302	72.27	1.13	1.10	1.02	10%	21,692	300.141
2008	22,943	45.30	0.71	0.75	0.93	10%	23,593	520.811
2009	21,213	65.53	1.02	1.10	0.93	10%	21,702	331.165
2010	22,698	97.22	1.51	1.39	1.09	10%	27,175	279.536
2011	24,387	99.14	1.54	1.45	1.07	10%	28,649	288.978
TOTAL	110,544							

Stock value is PPG stock price with re-invested dividends; calculation of stock grant shares assumes stock price = stock value
Target comp = market comp x company relative wealth ratio^target leverage x (1 + premium for loss of expected industry return)
Stock grant shares = target compensation divided by ending stock price

Table 2 shows the vesting multiples and the calculation of the cumulative stock value year-by-year. The vesting multiple depends solely on industry (that is, peer group) performance since the date of grant. For example, when the 2009 grant is made at the end of 2009, the peer group cumulative wealth ratio is 1.10. At the end of 2011, the peer group cumulative wealth ratio is 1.45. This implies that the peer group return from the end of 2009 to the end of 2011 is:

$$(1.45/1.10) - 1 = 0.32.$$

This makes the vesting multiple 0.76:

$$0.76 = 1/ (1 + 0.32).$$

TABLE 2 Calculation of Vesting Multiples

YEAR	Stock Grant Shares (000s)	Projected Vesting Multiple 2007	Projected Vesting Multiple 2008	Projected Vesting Multiple 2009	Projected Vesting Multiple 2010	Projected Vesting Multiple 2011
2006						
2007	300.141	1.00	1.46	1.00	0.79	0.76
2008	520.811		1.00	0.69	0.54	0.52
2009	331.165			1.00	0.79	0.76
2010	279.536				1.00	0.96
2011	288.978					1.00
Stock Price		72.27	45.30	65.53	97.22	99.14
Stock Value		21,692	43,442	64,920	103,151	129,864
Cumulative Adj Mkt Comp		21,232	46,470	69,805	94,773	121,598
PPG Relative Wealth Ratio		1.022	0.935	0.930	1.088	1.068

Projected vesting multiple = 1 / (1 + peer group return)
Stock value = shares x price x vesting multiple
Since 1 + relative TSR = (1 + TSR) / (1 + peer group return), the vesting stock value is equal to initial stock value x (1 + relative TSR); this means that the vesting stock value will perfectly track relative TSR from the date of grant forward
Adj mkt comp is market compensation plus 10% to recognize the expected industry return on equity compensation

The rationale for the vesting multiple is that it strips out the industry component of the stock return, leaving just the initial grant value plus the dollar excess return:

initial grant value + dollar excess return = $shares_0$ x $price_0$ x (1 + excess return).

= $shares_0$ x $price_0$ x (1 + stock return)/(1 + industry return) = stock value/(1 + industry return)

When the stock value is multiplied by the vesting multiple, the result is the initial grant value plus the dollar excess return:

stock value x vesting multiple = stock value x [1/(1 + industry return)]

= $shares_0$ x $price_0$ x (1 + excess return) = initial grant value + dollar excess return

This vesting multiple calculation is for target pay leverage of 1.0. When target pay leverage differs from 1.0, a slightly more complicated formula is needed:

vesting multiple = $(1 + TSR)^{(\text{target leverage} - 1)}$ x $1/[(1 + \text{peer group return})^{\text{target leverage}}]$

Figure 9 shows the pay-for-performance analysis for the PP4P plan with leverage of 1.0. With PP4P and target leverage of 1.0, the cumulative mark to market pay of the PPG top-five executives would be $129.864 million (See Table 2), or about 17% less than actual PPG top-five mark to market pay of $157.096 million. With PP4P and target leverage of 3.49, the cumulative mark to market pay of the PPG top-five executives would be $152.970 million, or about 3% less than actual top-five mark to market pay. Cumulative mark to market pay under the PP4P plan always can be expressed as:
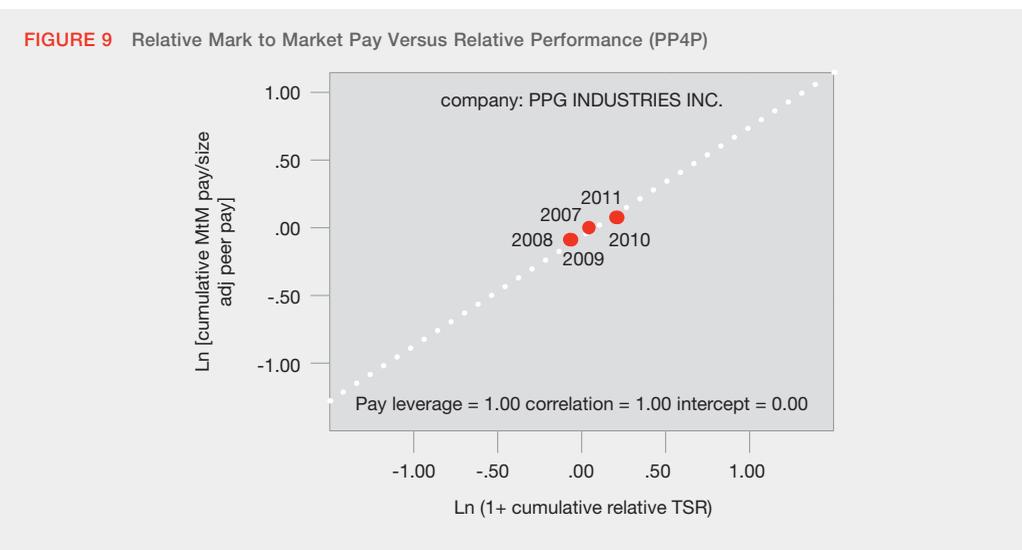
PP4P cumulative mark to market pay = CMC x (1 + EIR) x RWR^{TPL}

Where: CMC is cumulative market compensation

EIR is the pay premium for the loss of the expected industry return

RWR is the company's relative wealth ratio

TPL is target pay leverage.

FIGURE 9 Relative Mark to Market Pay Versus Relative Performance (PP4P)

With target pay leverage of 1.0, this is $129.864 million:

$$\$129.864 \text{ million} = \$110.544 \text{ million} \times 1.1 \times (1.068^{\wedge}1.00)$$

With target pay leverage of 3.49, PP4P cumulative mark to market pay is $152.970 million:

$$\$152.970 \text{ million} = \$110.544 \text{ million} \times 1.1 \times (1.068^{\wedge}3.49).$$

This example shows that it's essential to determine leverage to make a fair judgment that managers or directors are overpaid for their company's performance.

HOW PAY PROGRAM FEATURES AFFECT LEVERAGE AND ALIGNMENT

Two changes are needed to raise PP4P pay leverage from 1.0 to 3.49: (1) increase the leverage of target compensation from 1.00 to 3.49 and (2) increase the leverage of the performance shares from 1.00 to 3.49. High grant date pay leverage and leveraged equity compensation are the two basic sources of high leverage. PPG has high mark to market pay leverage because its grant date pay leverage is 1.97 and its equity compensation is highly leveraged. PPG's equity compensation has three components: stock options, TSR shares and performance-based restricted stock units (RSUs). Options are more leveraged than equity. For a 10 year at the money option, initial leverage is typically about 1.5, that is, a 1%-increase in the stock value increases the Black-Scholes value of the option by 1.5%. The TSR shares vest based on PPG's total return percentile relative to the companies in the S&P 500. The vesting percentage is 0% below the 30th percentile, 30% at the 30th percentile, 100% at the 60th percentile and 220% at the 90th percentile. These shares have high leverage. Between the 30th and 60th percentile:

$$\text{TSR share leverage} = 7/3x + 10/3$$

where x is the decimal return difference between the 30th and 60th percentile. As the stock value increases from 1 to 1 + x, the vested TSR stock value goes from 0.3 to (1+x). The percentage change in the vested TSR stock value is ((1+x)/.3) – 1 = 7/3 + (10x/3). Dividing by the percentage change in the stock, x, gives leverage of 7/3x + 10/3. If x = 25%, leverage is 12.7. Leverage between the 60th and 90th percentiles is 1.2/x + 2.2. If x = 25%, leverage is 7.0. The vesting of the performance-based RSUs is tied to achievement of annual earnings per share (EPS) and return-on-invested capital (ROIC) goals during a three-year vesting period, a total of six annual goals during three years. Vesting is 25% for achieving one goal, 100% for achieving three goals and 180% for achieving all six goals. Leverage between one goal and six goals is 6.2/x + 7.2 where x is the excess return difference associated with six goals versus one goal. If the excess return difference is 100%, leverage is 13.4.

Pay-plan simulation across a wide range of performance scenarios is helpful in understanding the differences between perfect and actual pay for performance.

For the median S&P 1500 company in 2011, top-five leverage was 0.60 and alignment was 0.64. Simulation can quantify the impact of three common pay practices that depart from PP4P: (1) grant date compensation with little sensitivity to past performance, (2) paying compensation in cash, not stock, and (3) stock compensation that rewards the industry return as generously as the excess return. Simulation also shows the effect of a fourth common practice, leveraging the stock return with the use of performance shares and stock options.

The first step in the analysis is simulating a PP4P plan for every five-year period for each company in the Standard & Poor's Execucomp database. The Execucomp database has top-management compensation data for S&P 1500 companies back to 1992. Limiting the sample to companies with at least 14 peer companies provides a total of 2,238 companies and 16,643 five-year periods. Each simulated PP4P plan has leverage of 1.00, alignment of 1.00 and relative cost of 0.00. The second step in the analysis is changing a feature of the simulated plans and re-calculating leverage and alignment for all the plans. The changes in median leverage and alignment across all 16,643 five-year periods are used to measure each change's effect.

Grant date compensation with little sensitivity to past performance and paying compensation in cash, not stock, significantly reduce leverage but modestly affect alignment. Reducing grant date pay leverage from 1.00 to 0.11, the top-five average for 2007 through 2011, reduces median mark to market pay leverage from 1.00 to 0.65, but only reduces median alignment from 1.00 to 0.96. Paying 54% of total compensation in cash, the top-five average for 2011, reduces leverage from 0.65 to 0.34, but doesn't cause any further reduction in alignment. Dropping the PP4P vesting conditions on stock compensation reduces alignment to 0.79 and leverage to 0.27.

Compared to actual pay for performance, this provides too little leverage and too much alignment. The missing pieces are the leverage provided by performance share vesting conditions and option exercise prices and the alignment lost through inconsistent leverage from year-to-year. An increase in the leverage of stock compensation from 1.0 to 2.2, increases leverage to 0.55, while alignment drops to 0.73. Adding random "noise" to grant date pay leverage, comparable in magnitude to the variation in grant date pay leverage from year to year for S&P 1500 companies, increases pay leverage to 0.59 and reduces alignment to 0.65. This approaches median leverage (0.60) and alignment (0.65).

PERFECT PAY FOR PERFORMANCE MAY NOT BE PERFECT TO ALL SHAREHOLDERS

The PP4P plan provides pay leverage of 1.0, pay alignment of 1.0 and relative cost of 0.0, but this may not be "perfect" in the eyes of all shareholders. A model of excess returns, with pay leverage and relative cost for top-five executives and directors as explanatory variables, was used to assess the value of pay for performance to investors. For company-years where pay leverage was not statistically

significant, a weighted average of calculated pay leverage and median pay leverage was used, and relative cost was re-computed based on this adjusted leverage. As statistical significance takes account of alignment, alignment was not used as a separate explanatory variable. The model, which was based on excess returns for S&P 1500 companies for five year periods ending in 1996-2011, shows that top-five and director pay practices explain 8% of the variation in contemporaneous excess returns.

Three key findings of the model are that (1) pay leverage greater than 1.0 has no statistically significant impact on the excess return, (2) relative cost negatively impacts the excess return, even when negative, and (3) director pay practices are as significant as top-five pay practices. As the model implies that negative relative cost, that is, below average pay at peer group average performance, increases the excess return, the PP4P plan, with average pay at peer group average performance, is not perfect in the eyes of all shareholders.

CONCLUSION

This article shows how to use historical pay data to measure the three dimensions of pay performance — leverage, alignment and relative cost — and how to design a simple pay plan with annual performance share grants that achieves perfect pay for performance. Target pay leverage should be a standard element of compensation "philosophy," but few companies, including companies where pay leverage changed dramatically over time, such as PPG and GE, even discuss pay leverage, much less articulate pay leverage targets. Analysis of historical pay data shows that top-five pay alignment at the median S&P 1500 company has changed little during the last 16 years, declining slightly from 0.67 in the five years 1992 to 1996 to 0.64 in the five years from 2007 to 2011. Since pay alignment of 0.64 implies that relative performance explains only 41% of the variation in relative pay at the median S&P 1500 company, there is considerable room for improvement in pay for performance. ▌

AUTHOR

Stephen F. O'Byrne (sobyrne@valueadvisors.com) is the president of Shareholder Value Advisors Inc. He has more than 30 years of experience as a consultant to companies on compensation, performance measurement and valuation issues. He is the author of EVA and Value-Based Management (with Professor David Young of INSEAD) and numerous articles.

REFERENCES

General Electric 2012 Proxy Statement. 2012. p 20.

Sloan, A. 1963. *My Years With General Motors*, New York: Doubleday.