

Capital Efficiency Measures: Why They're Under-utilized in Incentive Plans and How They Can Be Improved

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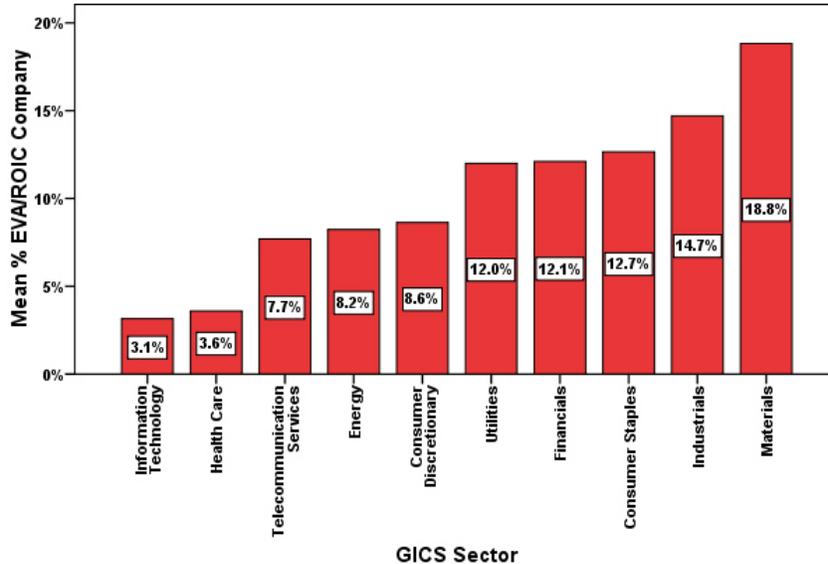
There is nearly universal acceptance that shareholder value is discounted cash flow value and discounted cash flow value implies that shareholders are better off when companies pay out any capital that promises to earn less than the shareholders' opportunity cost. Despite the wide acceptance of this principle, very few companies use a capital efficiency measure in their top management incentive plans. In this article, we document the limited use of capital efficiency measures in top management incentive plans, analyze three key problems of capital efficiency measures that account for their limited use, and explain how directors can use capital efficiency measures, with two key improvements, to hold managers accountable for long term performance.

The Limited Use of Capital Efficiency Measures

To estimate the prevalence of capital efficiency measures in top management incentive plans, we used the word search facility on the U.S. Securities & Exchange Commission's EDGAR database. We identified 220 companies using capital efficiency measures; 47% use an economic profit or "EVA" measure that deducts a capital charge from earnings and 53% use an ROE or ROIC measure. 142 of these companies are members of the S&P 1500. The prevalence of capital efficiency measures by industry sector (see Figure 1) ranges from 3.1% for information technology to 18.8% for the materials. Capital efficiency measures are more common in bigger and more diversified companies. 16.7% of companies in the top revenue quintile of the S&P 1500 use capital efficiency measures vs. 3.7% of companies in the bottom revenue quintile, and 13.4% of companies with 5+ business segments use capital efficiency vs. 5.0% for single segment companies. The impact of both size and number of segments is consistent across the sample in that each higher size and segment quintile has a higher percentage of companies using capital efficiency measures.

Figure 1

Percent EVA/ROIC Companies by Sector



Surprisingly, the use of capital efficiency measures is not consistently related to capital intensity, measured by capital/sales or capital/EBITDA. If we classify companies by the tangible capital intensity of their GICS industry, i.e., tangible capital/EBITDA, we do find that companies in more capital intensive industries are more likely to use capital efficiency measures. The relationship is consistent across industry capital intensity quintiles, but not very strong: 12.8% of companies in the top quintile use capital efficiency measures vs. 5.3% in the bottom quintile.

Our prevalence estimates are conservative because we exclude companies, like ExxonMobil, that say that a capital efficiency measure is considered in making compensation decisions but don't report having a threshold or target for the measure. But other data sources confirm the limited role of capital efficiency measures in top management incentive plans. For example, Towers Perrin's 2005 Annual Incentive Plan Design Survey reports the prevalence of 14 performance measures. The most commonly used measures are sales (31%), EPS (29%) and operating income (28%). The prevalence of the four capital efficiency measures surveyed ranges from 9% for ROE to 3% for EVA. On average, there are 2.1 performance measures per company with capital efficiency measures accounting for 11% of total performance measure use.

Why Don't More Companies Use Capital Efficiency Measures?

The characteristics of companies that use capital efficiency measures don't provide a lot of help in explaining why more companies don't use capital

efficiency measures. Companies that are bigger, more diversified and in more capital intensive industries are more likely to use capital efficiency measures, but the vast majority of companies with these characteristics don't use capital efficiency measures, so size, diversification and capital intensity don't explain why a large majority of companies don't use capital efficiency measures. We believe that the limited use of capital efficiency measures is attributable to perceptions that limiting incentive pay to high return profits is 1) not practical when companies need to attract and retain managers in a competitive labor market, 2) not desirable because it discourages value enhancing growth ("good growth") or 3) not necessary because share based compensation, annual target setting for profit goals and capital budgeting provide capital efficiency incentives.

Negative Perception, Not Lack of Awareness, Is The Problem

We are confident that negative perceptions, not lack of awareness, underlie the limited use of capital efficiency measures. We never encounter public company directors or senior managers who are unaware of all capital efficiency measures. Moreover, the history of companies using EVA suggests that the number of companies that have used capital efficiency measures in the past might be 5 times as great as the number of current users. In 1999, Stern Stewart & Co., the consulting firm that pioneered the EVA measure, published a list of 66 EVA companies that were clients of the firm. In 2008, 39 of those 66 were still independent public companies with financial data being reported in Standard & Poor's Compustat database, and 6 of these 39 companies were still using EVA. This means that there are 5.5 former EVA users for every current EVA user. If all our capital efficiency measures have a similar ratio of former to current users, 781 (or 52%) of the S&P 1500 companies would be former users of capital efficiency measures and 923 (or 62%) would be current or former users.

Negative Perception #1: Not Practical in the Labor Market

The fact that 85% (33 of 39) of one time EVA companies no longer use the measure for incentive compensation is strong evidence that tying EVA to compensation is not easy. A closer look at the compensation practices of the six long time EVA companies, Ball Corporation, Briggs & Stratton, Herman Miller, Manitowoc, Vulcan Materials and Whirlpool, provides some insight on why it's difficult. To understand their difficulties, we first need to review the design of the "modern" EVA bonus plan used by most Stern Stewart clients (and a number of other companies).

We're focusing on EVA, rather than ROIC, for two reasons. EVA incentive plans are usually simpler than ROIC plans: they can often be described in terms of simple sharing between management and shareholders, e.g., management gets a fixed share of EVA or a fixed share of EVA improvement. ROIC plans are more complicated. Almost all ROIC companies combine ROIC with earnings growth because rewarding ROIC alone would create an incentive to shrink the

business to its most profitable components. A “simple” ROIC plan that rewards profit growth subject to an ROIC threshold involves more complicated sharing than EVA because the reward for incremental investment depends on both historical and incremental ROIC. And a more elaborate plan that combines ROIC and earnings growth in a payout matrix involves even more complex sharing arrangements that would needlessly complicate our discussion of accountability issues. The second reason we’re focusing on EVA is that it provides a richer historical record for understanding the incentive problems associated with capital efficiency measures. We can identify and track the experience of a large number of EVA companies going back to the early 1990s.

The modern EVA bonus plan makes the bonus earned equal to the sum of a target bonus and a fixed share of “excess” EVA improvement. (Earlier EVA bonus plans made the bonus earned equal to a percentage of EVA or to a percentage of EVA plus a second percentage of EVA improvement). Excess EVA improvement is current year EVA improvement minus a target or “expected” EVA improvement. The target bonus is calibrated to give management competitive compensation in the labor market and the expected EVA improvement is calibrated to give investors a cost of capital return on the market value of their investment. Thus, the plan is designed to give management competitive compensation in the labor market when investors achieve a competitive return in the capital market.

Excess EVA improvement can be positive or negative, and when it’s sufficiently negative, can make the total bonus earned negative. The bonus earned, both positive and negative, is uncapped. To help ensure that negative bonuses are recovered from the manager, the plan includes a bonus “bank”. The bank balance is credited with any positive bonus earned and debited with any negative bonus earned. At the end of year, the bonus paid is determined by the bank balance: if the bank balance is negative, the bonus paid is zero; if the bank balance is less than the target bonus, bonus paid is the bank balance; and if the bank balance is greater than the target bonus, the bonus paid is the target bonus plus 1/3 of the bank balance in excess of the target bonus.

The bank plays a critical role in providing management accountability for the company’s cumulative EVA improvement. The cumulative bonus earned is equal to the sum of the cumulative target bonus plus the fixed share of the cumulative excess EVA improvement which, in turn, is equal to the sum of the cumulative bonus paid plus the ending bonus bank balance. The bonus bank balance documents whether management has been paid too much or too little for cumulative EVA improvement achieved. When the bonus bank is negative, management has been paid more than is warranted for the cumulative EVA improvement achieved. The possibility of a negative bonus bank makes the EVA bonus plan considerably more demanding than a conventional bonus plan. With a negative bank, the current year bonus paid can be zero even though the company achieves the target EVA improvement. In a conventional bonus plan,

which takes no account of prior years' performance, target performance will always earn the target bonus.

Three Case Studies

Only three of the six long time EVA users – Briggs & Stratton, Herman Miller and Manitowoc – originally adopted an EVA bonus plan with a provision for negative bonus banks. The struggles these three companies have endured to maintain some form of a negative bonus bank and the changes they have made in the bonus bank provide compelling testimony to the difficulty of reconciling full EVA accountability with the demands of the labor market. Their inability to maintain full accountability is particularly telling because all three companies are led by a CEO who played a key role in the company's adoption of EVA and who has maintained an enduring enthusiasm for EVA as an operating measure of shareholder value. Briggs & Stratton CEO John Shiely was the general counsel when the company adopted EVA in 1990 and subsequently co-authored a book on EVA with Stern Stewart founder Joel Stern. Herman Miller CEO Brian Walker was the CFO when the company adopted in 1996. Manitowoc CEO Glenn Tellock was the Controller when the company adopted EVA in 1993.

We'll first summarize the current plan features to make the three histories easier to follow. Herman Miller has adopted a bonus floor of 0x target bonus and a bonus cap of 2x target bonus. It has also dropped the "bonus bank" label, but did adopt a limited carryover target adjustment that is equivalent, for continuing employees, to a bonus bank with a floor of -1x and a cap of +1x. Manitowoc has adopted a bonus floor of 0x and a bonus cap of 2.5x and completely eliminated its bonus bank. Briggs & Stratton has adopted a bonus floor of -1x, a bonus cap of 3x and a bonus bank floor of -1x. It also adopted a second, supplemental incentive plan that paid a bonus of 1x target in 2008 when the EVA bonus multiple was -1x.

Herman Miller dropped its bonus bank in fiscal 2002 when "recession-like conditions in the office furniture industry" caused a 25 percent decline in industry revenue, "the largest decline on record," and reduced the bonus earned to -2.9x target. The Compensation Committee explained that negative banks "could have a significant detrimental impact on the company's ability to retain key executives." The Committee made sure that management did not get a windfall gain from the abolition of the bonus bank by approving a special, one time increase in the EVA improvement target from \$3.2 million to \$71 million. It also made the 2003 target bonus contingent on the achievement of 5.5% revenue growth. In fiscal 2003, the bonus payout was only 11% of target and the Committee approved a change in the target pay mix, raising salaries and reducing target bonuses, because "as the industry experienced its second year of contraction and incentive targets were not achieved, executive compensation became uncompetitive". In fiscal 2004, the bonus payout was 55% of target and Committee approved a revised EVA bonus plan that established a floor of zero

and a cap of 2x target bonus but also provided for “limited over- or under-performance to be reflected in adjustments to the following year’s target.” The carryover target adjustment is limited to +/- 1x target bonus. For managers who participated in the bonus plan in the prior year, the carryover target adjustment for poor performance is equivalent to a negative bonus bank with a maximum size of -1x target bonus.

Manitowoc also struggled to find a bonus bank formula that was compatible with its competitive pay objectives. In 2002, it modified the bonus payout rules to provide a bonus payout in a year which the bonus earned was positive but the beginning bonus bank was negative. The bonus payout was equal to the sum of 1) the bonus earned up to the target bonus, 2) 50% of the bonus earned in excess of target up to the point at which the negative bank balance is repaid, and 3) a third of the bonus earned above the amount needed to repay the negative bank balance. This type of provision helps retain managers because the expected bonus payment can be at or above target even though the beginning bonus bank is negative. Three years later, Manitowoc established a floor of zero and a cap of 2.5x target bonus and eliminated the bonus bank saying only that the new plan design “eliminates some of the volatility” of the old plan design.

As early as 1994, Briggs & Stratton’s EVA bonus plan had a provision providing for payment of the bonus earned up to 75% of target in a year in which the beginning bonus bank balance was negative. In 2004, a year in which the bonus earned was 2.53x target, the Compensation Committee decided to establish a floor of -1x target bonus and a cap of 3x target bonus. It also adopted a requirement that 100% of the bonus earned in excess of target be banked. In 2007, after bonuses of -1.26x in 2005 and -3.25x in 2007, the Committee decided to limit the negative bonus balance to -1x and, when the beginning bank balance is negative, to pay out any positive bonus earned 100% up to the target bonus and 50% in excess of the target bonus. The Committee noted that the changes were “intended to re-establish financial incentives for senior executives to exceed targeted performance, given that recent financial results on a company-wide basis have created substantial Bonus Bank deficits for senior executives and the Bonus Bank deficits are expected to exceed Extraordinary Bonus Accruals for several years.” The Committee also restored the payout of 1/3 of any positive bank balance in excess of the target bonus and established a “Powerful Solution Incentive Plan” to supplement the EVA bonus plan. This plan provides a maximum award equal to the EVA target bonus for achieving goals for a variety of measures including re-structuring, cost reduction, market share, new products, gross margin and sales volume. In 2008, the bonus earned under the EVA bonus plan was -1.02, but all the senior executives reported in the proxy received a bonus equal to their EVA target bonus under the Powerful Solution plan.

The Herman Miller history does the best job of highlighting the key dilemma faced by the Compensation Committee. The negative bonus bank forces the Committee to hold management accountable for poor performance that the

Committee believes is largely due to market and industry factors. In this situation, the Committees believed that they had two choices. They could maintain the bonus bank and risk losing good managers or they could limit or abolish the bonus bank and lose the formal accountability mechanism the bank provides. As stewards of shareholder value, it's not surprising that they decided that losing good managers was a bigger risk than losing a formal accountability mechanism. But there is a third alternative they could have pursued. They could have developed a quantitative estimate of the bonus impact of market and industry factors and provided bonus bank relief for the negative balance attributable to market and industry factors.

There are two common ways to estimate the impact of industry factors on EVA improvement. One is to calculate excess EVA improvement as a percent of beginning capital for a group of peer companies and then use the median excess EVA improvement as a percent of capital as a measure of the impact of industry factors. The second is to develop a regression model relating excess EVA improvement as a percent of beginning capital to the level or change in level of an industry production measure and then use the predicted excess EVA improvement as a percent of capital at the current value of the industry production measure as a measure of the impact of industry factors. When industry factors have a substantial negative impact on the bonus earned, for example, -1x or more negative, bonus bank relief can be granted to offset the negative impact of industry factors. The second method of estimating the industry impact is better for two reasons. It provides a more statistically reliable adjustment because the regression model can make use of a long history period, not just current year data, and it provides a timely adjustment because industry production data is normally available sooner than individual company financial reports.

We have worked with several companies to develop these industry adjustment models. SPX Corporation used a peer model to provide negative bonus bank relief at the end of 2003. The model worked well, but the company was unwilling to disclose the model and other details of its EVA bonus plan when it was attacked by Relational Investors in 2004 for excessive top management pay and director conflict of interest (because the directors received a bonus based on EVA). When its CEO (and EVA champion) John Blystone left the company at the end of 2004, the board decided to drop EVA. For another company using an alternative capital efficiency measure, we developed a model of the earnings impact of an industry production measure. In this case, the board decided to rely on a discretionary adjustment for industry factors because they were concerned, based on the results of historical simulations, that the size of the industry adjustment would be difficult to explain to shareholders. This is a reasonable concern, but not, in our opinion, sufficient reason to forego the benefits of formula based pay.

Negative Perception #2: Discourages Good Growth

The second negative perception of capital efficiency measures is that they discourage value enhancing earnings growth. There is a clear preference for earnings measures over capital efficiency measures. The Towers Perrin survey found that earnings measures account for more than half the performance measures used in annual incentive plans vs. 11% for capital efficiency measures. Similarly, in a study we did some years ago of companies that dropped EVA, we found that most of them adopted earnings growth as their new performance measure. Some of this preference may reflect a simple-minded belief that earnings is all that analysts and investors care about, but there is strong empirical evidence that the EVA capital charge does not do a good job of distinguishing value enhancing earnings growth from value destroying earnings growth.

We did an analysis of investor returns for S&P 1500 companies and found that changes in NOPAT (“Net Operating Profit After Tax”) explained 46% of the variation in five year returns. EVA changes should explain even more of the return variation if the EVA capital charge helps to distinguish good growth from bad growth, but, in fact, we found that EVA changes only explained 22% of the variation in five year returns. Both regressions are based on 11,283 five year periods ending in the years 1994-2007. The analysis suggests that investors don’t care about capital costs, but the real problem is that the EVA capital charge doesn’t distinguish between “new” and “old” capital.

Recent investment tends to have a lower rate of return than old investment for two reasons. One reason is the conventional accounting for depreciable assets. When straight line depreciation is used in computing NOPAT, a project with a constant annual cash flow will show a rising ROIC as the capital base is depreciated. The project’s accounting ROIC is below its economic, or internal, rate of return in the early years and then exceeds its economic return in the later years. The problem can be corrected by using sinking fund depreciation, but that’s not allowed by GAAP and few companies are willing to accept the complexity of two sets of depreciation calculations. The second reason recent investment tends to have a lower rate of return than old investment is real economic “delayed productivity,” i.e., the investment generates higher cash flows in later years than it did initially. This can be true for a variety of reasons, e.g., introductory pricing is no longer necessary, capacity utilization increases, etc.

If we distinguish between old and new capital, we can show that investors do care about capital costs. To do this, we developed a model of five year investor returns using the change in NOPAT, the future value of free cash flow over the period and the annual changes in capital for years 0, -1, -2, -3 and -4 as explanatory variables. The model explains 50% of the variation in five year investor returns vs. 46% for NOPAT alone. The coefficient of the five year NOPAT change is 9.0 which says that an incremental dollar of NOPAT increases investor wealth by \$10, \$9 from the capitalized value of the incremental dollar

and \$1 from its contribution to free cash flow. The coefficient of the future value of free cash flow is 1.0 which says that an incremental dollar of cash increases investor wealth by \$1. But contrary to the assumption implicit in the calculation of the EVA capital charge, \$1 of capital investment in year 0 does not have the same impact on investor wealth as \$1 of capital investment in year -4. The coefficient of capital investment in year 0 is \$1.47 while the coefficient of capital investment in year 4 is \$0.74.

We can use the capital coefficients to calculate the ROIC needed to justify \$1 of capital investment, i.e., give investors the same wealth they would have realized from a capital distribution. If \$1 of capital investment is made at the start of the year 0, the year end opportunity cost is \$1.10 (assuming a 10% cost of capital). The capital coefficient of \$1.47 implies that \$1 of current year capital investment increases investor wealth by \$0.37 with \$0 of NOPAT. The investment will not reduce investor wealth unless the current year ROIC falls below -3.7% (since $-.037$ times the NOPAT multiple of 10 = $-\$0.37$). If \$1 of capital investment is made at the start of year -4, the opportunity cost at the end of the five year period is \$1.61 (again, assuming a 10% cost of capital). This means that \$1 of year -4 capital investment reduces investor wealth by \$0.87 (= $\$0.74 - \1.61) if it produces \$0 of NOPAT. To avoid reducing investor wealth, \$1 of year -4 capital investment must generate \$0.097 of current year NOPAT since $\$0.097$ times the NOPAT multiple of 9.0 is \$0.87. This analysis shows that the EVA capital charge should be negative in the first year of investment, but increase to 9.7% in the fifth year after investment. If we re-calculate EVA using an increasing capital charge, we can show that EVA improvement explains 43% of the variation in five year returns vs. 22% for conventional EVA with a fixed capital charge. This “delayed productivity” capital charge does reduce the aggregate capital charge, but only by 18%. More importantly, it provides accountability for capital without discouraging good growth.

Negative Perception #3: Needless Complexity

The third negative perception limiting the use of capital efficiency measures is that they are not necessary to create capital efficiency incentives. When managers hold stock or options and either receive the full economic benefit of dividends or have the ability to re-purchase company stock, they have a capital efficiency incentive even though their compensation is not tied to an explicit capital efficiency measure. If we make the simplifying assumption that the P/E multiple is constant, we can show that the manager is better off re-purchasing stock rather than re-investing in the company if the expected return on the operating investment is less than $(1 + \text{COE})/(\text{P/E multiple} + 1)$ where COE is investors' opportunity cost. This means, for example, that the minimum return for value enhancing re-investment is 8.5% if $\text{COE} = 10\%$ and $\text{P/E} = 12$.

The capital budgeting process provides a second deterrent to low return investment that is not contingent on the use of explicit capital efficiency

measures in incentive plans. A third deterrent to low return investment is the target setting process. If incentive compensation is tied to earnings targets, but new investment leads to higher earnings targets, there is a deterrent to low return investment even though the incentive plan is based on earnings without an explicit capital efficiency measure.

In our view, none of these needless complexity arguments are very convincing. Share based compensation does provide a capital efficiency incentive for top management, but provides little incentive for capital efficiency at the business unit level. Capital budgeting has no feedback mechanism to encourage unbiased forecasting. Earnings targets that adjust for capital won't be effective in motivating managers unless managers understand how capital investment changes the earnings target – and that means using a capital efficiency measure.

What Should Directors Do?

In theory, director discretion can provide more efficient incentives than formulas based on capital efficiency measures and industry adjustments. When investment is rising, directors can demand higher profit targets, and when capital is being distributed to investors, directors can reasonably approve lower profit targets. When profit shortfalls are due to market and industry factors, the directors can set targets that don't force management to make up the shortfall before it earns a target bonus; and when profit shortfalls are due to poor management performance, the directors can set targets that do force management to make up the shortfall before it earns a target bonus.

Most boards are comfortable with single year incentive formulas, but strongly convinced that director discretion provides more efficient incentives than multi-year incentive formulas based on capital efficiency measures and industry adjustments. Our research suggests that directors' confidence in their own discretion is misguided. We have done extensive research on pay for performance in S&P 1500 companies. Our measure of pay for performance is the sensitivity of relative pay to relative performance. Relative pay is the ratio of total compensation to average total compensation for the executive's position in companies of similar revenue size in the same industry. Relative performance is shareholder return net of the industry average shareholder return.

We find considerable pay for performance when we look at the sensitivity of current pay to current performance. On average, a 10% excess shareholder return is associated with a relative pay premium of 5%. However, we find very little pay for performance when we look at the sensitivity of current pay to prior year performance. On average, a 10% excess shareholder return in the prior year is associated with a current year relative pay premium of 0.2%. In a pay system that provides accountability for cumulative performance, current pay will be sensitive to prior year performance. If earnings targets are not reduced in response to poor management performance, if there are negative bonus banks

that reduce current year bonus payouts or if annual equity compensation is a fixed number of shares, poor performance in the prior year will lead to lower pay relative to the market in the current year.

The fact that current year pay has almost no sensitivity to prior year performance is a sign that directors have no memory and don't use their discretion to tie cumulative pay to cumulative performance. The insensitivity to prior year performance is entirely consistent with a competitive pay policy that provides 50th (or 75th) percentile compensation regardless of prior performance. Directors should be embracing capital efficiency measures instead of scorning them. Capital efficiency measures are essential because they separate management's contribution to shareholder value from capital's contribution to value. They do require work to implement because the measures need to take account of the delayed productivity of capital so they don't discourage good growth and the incentive plan design needs a formula to provide relief for negative industry conditions beyond management's control. Directors need to understand that there are no simple solutions, but there are much better solutions than limiting management's accountability to current year earnings.