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Why EVA Bonus Plans Failed—and How to Revive Them

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Most top executives and operating heads run their companies or businesses, set their goals, and reward their employees using earnings-based measures of performance. But the focus on earnings has two critical weaknesses that can undermine the alignment of earnings-based pay with shareholder wealth. First, it's often easy to boost current earnings by "underinvesting"—that is, by making shortsighted cuts in advertising or R&D that end up reducing future earnings. But less obvious is the reality that growth in earnings per share can also be achieved by "overinvesting"—pouring additional capital into projects with expected rates of return that, although well below the cost of capital, are higher than the after-tax cost of debt.

Stock compensation has been the conventional solution to the first, or "underinvestment," problem because stock prices are supposed to reflect discounted cash flow values; and significant stock holdings, to the extent they reward promising long-run investment, should discourage management from actions that sacrifice future earnings. Economic profit, or "EVA" in its best-known version, was once the most common answer to the "overinvestment" problem associated with earnings because EVA charged operating managers for the use of equity as well as debt capital. And because it includes such a capital charge, EVA, unlike GAAP earnings and most widely used performance measures, can be linked directly to the discounted cash flow value that gets reflected in stock prices.

But neither of these conventional solutions appears to have worked very well in practice, at least not for operating heads. Stock compensation, besides failing to reflect the performance and value of specific business units, often fails to provide the intended incentives for the (many) corporate managers who believe that meeting or beating current consensus earnings is more important than investing to maintain future earnings. EVA bonus plans have been tried by many companies, but the vast majority of these plans have been abandoned. Many if not most public companies adopted EVA-like bonus formulas (with charges for total capital) in the first half of the 20th century, but all of them eventually dropped fixed sharing of such EVA and adopted pay programs based on "competitive pay" concepts.[1] Stern Stewart & Co. was successful in creating a second wave of EVA use in the 1990s, but a 2009 study by David Young and me found that only six out of some 66 Stern Stewart clients using EVA in 1999 were still using it in 2008.[2]

EVA is ideally suited to and has tended to be used in multi-year comp plans that promise managers a fixed share of their business's EVA, increase in EVA, or some combination of the two.[3] As a result, any perceived deficiencies in how EVA is measured or used to set performance targets make it difficult for directors (or investors) to insist on the use of

1 For more detail on this transition, see O'Byrne, Stephen F. and E. Mark Gressle, "How Competitive Pay Undermines Pay for Performance (and How to Change That)," *Journal of Applied Corporate Finance*, Vol. 25 No. 2 (Spring 2013) and O'Byrne, Stephen F. and S. David Young, "The Evolution of Executive Pay Policy at General Motors 1918-2008," *Journal of Applied Corporate Finance*, Vol. 29 No. 1 (Winter 2017).

2 O'Byrne, Stephen F. and S. David Young,"Why Capital Efficiency Measures Are Rarely Used In Incentive Plans, and How to Change That," *Journal of Applied Corporate Finance*, Vol. 21 No. 2 (Spring 2009).

3 Fixed sharing plans are more demanding than competitive pay plans because, unlike the latter plans, they don't increase sharing to "make up for" the impact of poor performance.

these more demanding pay practices instead of falling back on conventional bonus plans that commonly treat investor capital as "free." My aim in these pages is to describe improvements in both the measurement of EVA and its use in designing targets that have the potential to contribute to a revival of the modern EVA bonus plan, one with the promise of providing not only a much stronger alignment of pay and performance than conventional plans, but a way of overcoming the charge of short-termism that is now so often directed at EVA plans.

In this article, I will start by showing that the one largely unrecognized fundamental challenge in EVA performance measurement is that the increases in current EVA that are rewarded by such plans are more often than not associated with declining expectations for *future* EVA increases (or what I'll later call declining "future growth values"). The EVA bonus plans of the 1990s were typically designed to reward increases in EVA over and above the expectations for such "EVA improvement" that were reflected in their stock prices at the start of the plans. But because such plans made no effort to capture any changes in investor expectations from that point onward, managers were often effectively rewarded for EVA improvements that may well have been achieved at the *expense* of future growth opportunities. In other words, the EVA increases being rewarded by such plans may have resulted from margin improvements at the expense of growth or from managers' decisions to pass up positive-NPV growth projects that would have reduced their current EVA.[4]

As one potential solution to this problem, I close by suggesting the possibility of developing current operating measures—based on factors such as revenue growth, dollar profit margin from capital growth, and increases in R&D and capital spending—that provide reasonably reliable proxies for future EVA improvement. Such proxy measures could provide the basis for "dynamic" EVA improvement targets that are raised when managers increase EVA by increasing margins (instead of growth) and are adjusted downward when managers make growth investments that typically reduce current EVA, with the aim of counteracting and even eliminating the EVA bias toward "short-termism."

A Brief History of EVA Bonus Plans

The earliest EVA bonus plans gave managers a fixed share of their operation's EVA. In 1918, General Motors adopted an incentive plan that gave its senior management team 10% of the company's dollar profits above a capital charge equal to 7% of net assets.[5]

The program was remarkably durable—undoubtedly the world's longest-lived EVA bonus plan—lasting from 1918 to 1982. Similar plans were adopted by many public companies during this period, though few lasted beyond the 1960s, mainly because of the rise of "competitive pay practices" that rewarded companies for growth (in EPS as well as sales) rather than profitability.[6]

When I joined Stern Stewart & Co. to run its incentive comp practice in the early 1990s, most of the EVA plans still in existence had evolved into plans that gave management a share of not only EVA, but also the *increase* in EVA—with the latter aimed at providing stronger incentives for low-profit, but improving businesses. But this structure made it difficult to achieve a key objective of compensation plans: providing "market" compensation for executives when, and only when, there was enough EVA improvement to ensure that investors would earn a cost-of-capital return on the company's market value at the start of the plan.

In response to this challenge, we developed the "modern EVA bonus plan" that made the bonus earned equal to a target bonus plus a fixed share of what we called "excess EVA improvement." Our analysis shows that a company's current stock price implies a certain level of expected increase in its current EVA; and a company's excess EVA improvement was the difference between the actual increase in EVA during the performance period and the "expected EVA improvement," or "EI." Our estimate of EI was the annual increase in EVA that, given the company's stock price at the start of the plan, was required to provide investors with a rate of return on market value equal to the company's cost of capital

And since excess EVA improvement could—and often did—turn out to be negative, the managers' share of excess EVA improvement, and the total bonus earned, could also be negative. Negative bonuses were recorded as entries in a "negative bonus bank" that had to be recouped before additional bonus was paid. The target bonus was set so as to provide a market level of total compensation. The point of this design was to ensure that executives would earn competitive compensation in the labor market when and only when investors earned competitive returns in the capital market.

4 EVA improvement from underlying business growth normally has a more positive effect on future growth value than EVA improvement from margin improvements (e.g., price increases and cost cuts). When managers shift EVA improvement from business growth to margin improvement, expectations of future EVA improvement typically decline.

5 The minimum return was 6% from 1918 to 1922 and 7% from 1922 to 1947.

6 See O'Byrne and Young (2009) above.

Figure 1
Capitalized EVA and FGV for Apple

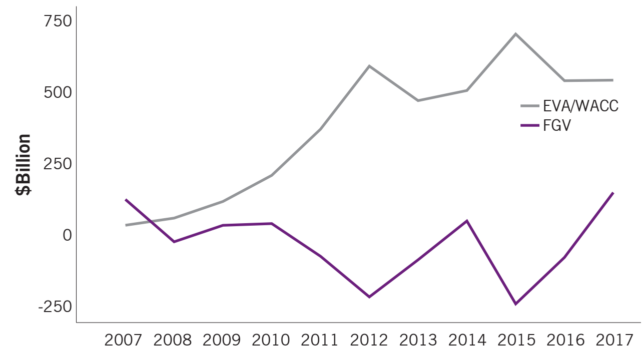
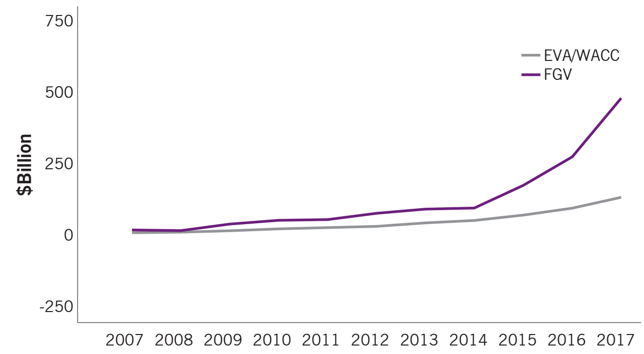


Figure 2
Capitalized EVA and FGV for Amazon



Future Growth Value Often Falls When Current EVA Goes Up

To understand why current EVA improvement is frequently associated with declines in expected future EVA improvement, let's take a look at the "EVA math."[7] The first component of the EVA math says that a company's current enterprise value—the market value of its equity plus its debt—can be broken down into three components: (1) book capital (which can also be viewed as a rough proxy for the amount of capital that (debt and equity) investors have put into a company); (2) the capitalized (or perpetuity) value of its current EVA (assuming it remains at that level forever); and (3) what we refer to as its "future growth value," or "FGV."

A company's FGV can be calculated in two different ways. First, and most straightforward, since FGV is the part of a company's market enterprise value that cannot be explained by its current capital and EVA, it can be calculated just by subtracting the first two components—book capital plus the capitalized value of current EVA (EVA/WACC)—from its current market enterprise value. The alternative is to view—and attempt to quantify—a company's FGV as the discounted present value of expected future increases in EVA. The sum of the first two components of market value—book capital plus capitalized current EVA—is what we call a company's "current operations value," or "COV." And so a company's market enterprise value can also be thought of as the sum of its current operations value (COV) and its future growth value (FGV).

One reason this distinction between COV and FGV is important, as discussed in more detail below, is that the steadily growing importance of intangible assets in today's economy has caused FGVs to account for ever larger fractions of corporate enterprise values, at least on average, during the past two or three decades.

An Aside on MVA as the Corporate Goal

But that said, Stern Stewart has long advocated an alternative way of viewing a company's market enterprise value—namely, as the sum of its book capital and its "Market Value Added" (or "MVA"). When viewed as part of the EVA math, MVA is the sum of the second and third components of market enterprise value—capitalized current EVA and FGV. And as its name suggests, Market Value Added has long been cited by Stern Stewart as both the most definitive measure of investors' wealth gain—that is, the value of their ownership in excess of the cost of their investment—and, as such, the most reliable measure of management's cumulative, long-run success.

But as I show in the Appendix, MVA is a potentially highly misleading proxy for what really matters to investors—what I call their "dollar excess return." And more important for purposes of this article, a focus on MVA obscures the negative correlation of the two components of MVA—current EVA performance and future growth value—which I show below has proved to be a critical problem in EVA performance evaluation.

To see where the problem originates, Figures 1 and 2 show the relationship between the two components of MVA—the capitalized value of current EVA and FGV—for two very well-known companies, Apple and Amazon, over the years 2007-2017.

Figure 1 shows Apple's experience of what is in fact a very common pattern: the two components of MVA often moving in opposite directions. In fact, in six of the ten years we looked at—2008, 2011, 2012, 2013, 2015, and 2016—Apple's capitalized EVA and FGV went in opposite directions. And

7 A more complete discussion of the EVA math is available in O'Byrne, Stephen F., "A Better Way to Measure Operating Performance (or Why the EVA Math Really Matters)," *Journal of Applied Corporate Finance*, Vol. 28 No. 3 (Summer 2016).

though the annual change in Apple's capitalized EVA explains 58% of the variation in its annual FGV changes, the statistical relationship is in fact negative: on average, each additional $1 of capitalized EVA was associated with a $0.57 reduction in FGV. Amazon is a much more unusual case in that its FGV is consistently moving in the same upward direction as its EVA.

It's easy to come up with explanations why FGV would decline, as it's often done at Apple: investors expect slower growth or lower EVA margins, or the company is perceived as nearing the end of a finite period of competitive advantage. It's also easy to explain why FGV would even be negative, as it's been in six of the 11 years for Apple: it's a sign that investors don't believe that its current EVA can be sustained. That could be due to expectations of price cuts needed to meet competitive pressures or falling sales volume as iPhones and other Apple products capture a larger percentage of the potential market. It's more challenging to explain why FGV might increase continuously, as it appears to be doing at Amazon (and we'll use more of the EVA math below to do that).

The negative relationship between changes in FGV and EVA that we see at Apple is very common. In 66 (GICS) industries I looked at, the median correlation of ΔFGV and ΔEVA was -0.53.[8] The FGV "offset" was particularly large in the case of companies making improvements in negative EVA. The change in FGV associated with each $1 of capitalized improvement by negative EVA companies was -$0.49 or more negative in every industry except for one.[9] And the median change in FGV associated with a $1 increase in capitalized EVA for *all* companies with negative EVA was -$1.03. For companies with positive EVA, the change in FGV associated with $1 of capitalized EVA improvement was negative in 33 of the 66 industries, with a median value of -$0.49 for these 33 industries.

But now let's turn to those companies, like Amazon, where EVA and FGV have a positive relationship. For the 33 industries with positive ΔFGV associated with $1 of capitalized improvement in positive EVA, the median value is $0.41. And the five industries with the highest ΔFGV "multiples" of capitalized positive ΔEVA are Communications Equipment, Internet Software & Services, Software, Commercial Services & Supplies, and Specialty Retail. As one might expect, these are industries with strong growth trajectories; and, in such industries, every dollar of capitalized EVA improvement adds more than a dollar of future growth value.

The Apple and Amazon Challenges to the Modern EVA Bonus Plan

Companies like Apple pose a challenge for the modern EVA bonus plan because the value of its positive EVA improvement is frequently offset by a negative change in its FGV. From 2007 to 2015, Apple's capitalized EVA increased by $674 billion, but its FGV declined by $368 billion, or offsetting more than half of the EVA improvement that would have been rewarded by an EVA bonus plan. And to the extent that managerial decisions that increase EVA actually *contribute* to the reductions in future growth value—say, by increasing prices at the expense of growth—a comp plan that rewards EVA improvement without any offset for the decline in FGV would make management's percentage pay premium far higher than investors' percentage excess return.

Amazon is also a challenge for the modern EVA bonus plan because it has created so much shareholder value that is not now captured—and would be difficult to capture—in the value of its capitalized EVA. In theory, both of these challenges could be addressed by carefully adjusting the EI.[10] For example, the expectation of positive ΔFGV associated with increases in current EVA could be accommodated by reducing the EI (or even making it negative), thereby boosting the bonus earned; conversely, an expectation of negative ΔFGV would call for raising the EI, which would reduce the bonus earned for a given level of EVA. These adjustments would raise the EVA bonus at Amazon and reduce it at Apple, bringing both more in line with investor excess returns.

But perhaps the biggest challenge in designing such plans is that the abrupt changes in FGV experienced by Apple and Amazon suggest the difficulty, if not impossibility, of precision forecasting of FGV. After all, Apple's FGV increased by almost $400 billion in the period 2015-2017 after declining by $368 billion in the prior seven years—and Amazon's FGV increased by $386 billion in the three years 2014-2017 after increasing by only $77 billion in the previous seven years.

According to one interpretation of the Apple graph, the modern EVA bonus plan can work well without any modification. This view says that the annual fluctuations in FGV are largely "noise," and that we should accordingly focus on the fact that the *cumulative* FGV change at Apple is trivial—amounting to only 5% of the cumulative change in capitalized EVA over the ten-year period.

But, as it turns out, the modest cumulative impact of changes in EVA on ΔFGV that we see at Apple is not representative of most companies. When I looked at ten-year

8 Based on 50,997 five-year periods for S&P 1500 companies ending in 1985-2018 and limited to GICS industries with at least 50 company five year periods available.

9 The negative EVA multiple for Construction Materials (GICS 151020) is -0.12.

10 The second component of the EVA math says that EI = WACC x FGV – expected ΔFGV, so higher expected ΔFGV leads to lower EI and vice versa.

Figure 3
Capitalized EVA and FGV for Colgate-Palmolive

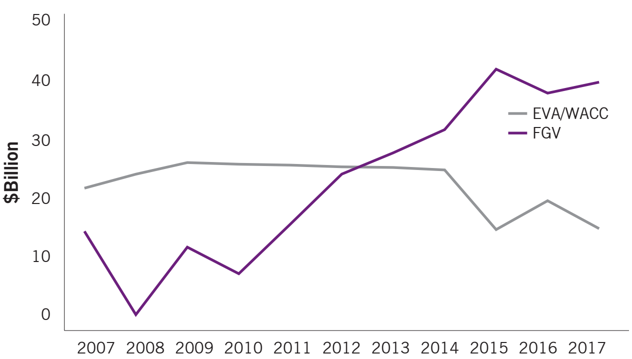
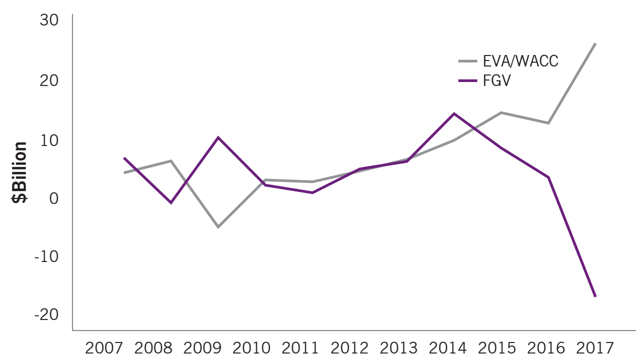


Figure 4
Capitalized EVA and FGV for Kroger



periods for S&P 1500 companies ending in 1990-2018, I found that the change in FGV was greater than 10% of the change in capitalized ΔEVA in about 95% of some 36,000 ten-year periods.[11] Ten-year changes in FGV moved in the same direction as ten-year changes in EVA at both Amazon and Apple, but that turns out to be unusual, too. For in fully 70% of the cases, ten-year ΔFGV and ΔEVA went in opposite directions.

Two More Challenges to the EVA Bonus Plan

Figures 3 and 4 show two well-known companies—Colgate-Palmolive and Kroger—that are drawn from the bottom half of the distribution of capitalized EVA change to FGV change, where the ratios are all negative.[12]

Colgate-Palmolive and Kroger both pose major, though different, challenges for the modern EVA bonus plan. In the case of Colgate, the plan would effectively penalize the company's declining EVA by paying below-market bonuses while ignoring the company's rising FGV, which is likely reflecting investor optimism about future payoffs from the company's strategy. Since the increase in FGV is much larger than the decline in capitalized EVA, Colgate's investors will have positive excess returns while its managers get below-market pay—a case of underpaying for superior performance.

In the case of Kroger, the EVA performance looks great, but it's offset by declining FGV that is not captured in the bonus formula. And to the extent that Kroger's EVA improvement resulted from decisions that also contributed to the drop in FGV, the bonus formula would be overpaying for current EVA performance. This is where the modern EVA bonus plan has the potential to encourage short-termism.

The original EVA bonus plan—the General Motors plan mentioned earlier—took account of only the *level* of EVA. The modern EVA bonus, as developed at Stern Stewart in the 1990s, took account of the changes in EVA—and it also took account of the *initial* level and *expected* change of FGV. But it still misses a component of investors' excess return, which depends on three things: (1) the change in current EVA; (2) EI (which takes account of the initial level and expected change of FGV); and *(3) the unexpected change in FGV*.[13]

When the cumulative change in FGV is small, as it was for Apple (from 2007-2017), the modern EVA bonus plan can work reasonably well. But when the cumulative unexpected change in FGV is significant—as in the cases of Amazon, Colgate-Palmolive, and Kroger—the modern EVA bonus plan can lead to critical problems, such as under-payment of talented executives in cases like Amazon and Colgate, and rewarding short-termism in cases like Kroger.

To adapt the modern EVA bonus plan for these more challenging cases, we need to answer two questions: Is it possible to anticipate changes in FGV? And is it possible to find operating measures that are good proxies for unexpected changes in FGV? To answer these questions, we first need a better understanding of what drives FGV.

Profitability and Growth Are the Drivers of Future Growth Value

To better understand the drivers of future growth value, let's work through a simple example of a profitable and grow-

11 Using absolute values for the changes in FGV and capitalized EVA.

12 Colgate-Palmolive is in the bottom decile of ΔEVA/ΔFGV ratios, roughly corresponding to Amazon in the top decile. Kroger is at the 30th percentile, roughly corresponding to Apple at the 70th percentile.

13 See O'Byrne (2016) for more detail.

ing business. Start by assuming the business has beginning capital of $1,000, ROIC of 15%, WACC of 10%, and capital growth expected to average 3% forever. EVA will be $50 [(15% – 10%) x $1,000] in year 1, $51.50 [(15% – 10%) x 1,030] in year 2 and $53.05 [(15% – 10%) x 1,060.90] in year 3. FGV at the end of year 1 will be the present value of future EVA that is greater than $50.

We can also express FGV as the capitalized present value of future annual ΔEVA, which makes it easier to calculate. ΔEVA in year 2 is $1.50 and grows at 3% a year thereafter. The capitalized present value of $1.50 growing at 3% is $235.71 [(1 + 10%)/10% x $1.50/(10% – 3%)]. When we do the same calculation at the end of year 2, we get FGV of $242.79. Thus, we can see that EVA increases by $1.50 in year 2 and FGV increases by $7.08.

This example shows that long-horizon FGV growth has two basic drivers: profitability and capital growth. With an EVA spread (ROIC – WACC) of 5% and a capital growth rate of 3%, we get FGV of $235.71 at the end of year 1 and $242.79 at the end of year 2, an increase of $7.08. If the EVA spread was 10% instead of 5%, we would get FGV of $471.43 at the end of year 1 and $485.57 at the end of year 2, an increase of $14.14. If the EVA spread was 10% and the capital growth rate was 5%, not 3%, we would get FGV of $1,100.00 at the end of year 1 and $1,155.00 at the end of year 2, an increase of $55.00.[14]

Delayed Productivity of Capital Is a Big Reason Why ΔEVA Is a Poor Proxy for ΔFGV

Because EVA and FGV both increase with the profitability spread (ROIC – WACC) and with growth in investment, we might expect the change in EVA to be the most useful proxy for changes in FGV and excess return.[15] In practice, however, the change in EVA turns out to be no better than the change in NOPAT in explaining differences in excess return. In an analysis of 36,000 ten-year periods across 66 industries, I found that the change in NOPAT explained 44% of excess returns for the median industry, as compared to 39% for the change in EVA. And since the change in EVA is the change in NOPAT minus the change in the capital charge, this finding implies that inclusion of the capital charge actually *reduces* explanatory power when it should be adding it.

In earlier research, David Young and I found evidence that the underlying problem is what we call the "delayed productivity of capital."[16] When it takes several years for capital to be fully productive, the increase in the capital charge actually becomes a fairly reliable precursor of and proxy for business growth, not just an adjustment for the cost of investment.

Better Proxies for FGV: Expected Dollar Margin from Capital Growth

As we saw earlier, when ROIC and WACC are both fairly constant, we can estimate ΔFGV as a multiple of the (ROIC – WACC) spread times the expected increase (in dollars) in capital spending. But at the same time, we found that, for most companies, changes in EVA are generally unreliable proxies for changes in FGV in practice.

In more recent research, we have gotten better estimates of ΔFGV by multiplying a company's expected capital growth (again in dollars) by a profitability "spread" that is calculated before WACC and before deducting expenses associated with what we call the delayed productivity of capital. In fact, our best results have come when using an ROIC measure that is calculated *before* depreciation, capital charge, R&D, advertising, and stock compensation. All of these expenses tend to have future period benefits, and hence cause a downward bias in the EVA spread when no adjustment is made for such benefits.[17]

We use industry models to estimate expected capital growth rates from historical growth rates, multiply the expected capital growth rate by the dollar capital base to get the expected dollar increase in capital, and then multiply that expected dollar increase in capital by the company's adjusted ROIC spread to obtain a measure that we call the "expected dollar margin from growth." For example, if a company with a capital base of $1 million is expected to grow its capital at 3% a year and its adjusted ROIC spread is 20%, then its expected margin from growth is $30,000 x 20%, or $6,000.

We use a second industry model to estimate the change in FGV from the change in expected margin from growth. Using these operating performance estimates of ΔFGV, we came up with significantly more accurate estimates of actual excess returns.[18]

As can be seen in Figure 5, when using industry models for S&P 1500 companies in 36,000 ten-year periods from 1980 to 2018, we found that, on average, the change in EVA explained 41% of the variation in excess returns. The addition

14 More generally, with constant ROIC, WACC and capital growth g, expected capital growth is beginning capital x g, ΔEVA is (ROIC – WACC) x expected capital growth and ΔFGV is (1 + WACC)/WACC x ΔEVA/(WACC – g).

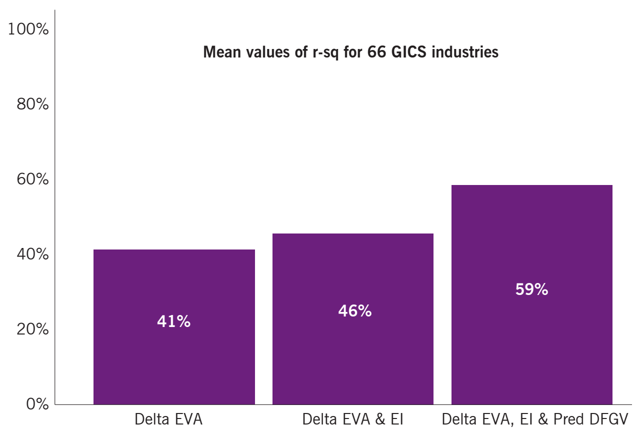
15 ROIC is rarely constant in practice. And since ΔEVA is equal to (ROIC – WACC) x capital growth plus ΔROIC x beginning total capital, we can think of ΔEVA as a weighted average of spread and ΔROIC, where the weight on spread is far less than the weight on ΔROIC.

16 O'Byrne and Young (2009) above.

17 For simplicity, we use a WACC of 0% instead of estimating a "grossed-up" WACC that captures average levels of all the missing expenses, including cost of capital.

18 Our industry models also use ΔEVA+ and ΔEVA – as explanatory variables.

Figure 5
Excess Return R-Sq



of EI, calculated at the start of each ten-year period, increases the r-squared to 46%. The addition of estimated ΔFGV—estimated using the change in expected dollar margin from growth—increases the r-squared to 59%.

While our operating models of ΔFGV thus provide an operating measure with significantly more explanatory power than ΔEVA alone, there is a great deal of room for improvement. Our models explain only 24% of the excess return variation that's not explained by EVA and EI.[19] The good news is that our operating models of ΔFGV don't go beyond operating margin and capital growth. More accurate models could, and no doubt will, be developed that make use of other variables. Among the most promising candidates are measures of customer acquisition, lifetime value, and satisfaction—and measures of employee satisfaction, turnover, and pay alignment with company value added.

One way to adapt the modern EVA bonus plan to the challenges of Amazon, Apple, Colgate-Palmolive, and Kroger cases is to incorporate a "dynamic EI." In each year, the operating model of change in FGV would be used to "true up" the EI to reflect the expected impact of the company's operating performance on FGV from the start of the plan.[20]

Conclusion

EVA is the only financial performance measure that ties directly to discounted cash flow value, and the EVA math that divides all companies' value into current operations values (COVs) and future growth values (FGVs) can be used to provide critical insights for valuation, target setting, and performance analysis. EVA bonus plans have been tried again and again but without addressing a fundamental challenge—the tendency of increases in current EVA to be associated with declining expectations of future EVA improvement (or reductions in FGV)—and the converse tendency of decreases in EVA to be associated with increases in FGV.

One result of this negative correlation between EVA and FGV has often been excessive rewards for EVA improvement that comes at the expense of future growth opportunities—for example, from pursuing margin improvements at the expense of business growth or passing up positive-NPV projects that would reduce current EVA. The solution outlined here is designed to stimulate new research on better operating proxies for change in future growth value and a reinvigoration of EVA bonus plans using dynamic EI to help companies achieve better alignment of management pay with contribution to shareholder value.

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19 (59% – 46%)/(100% – 46%) = 24%.
20 For additional discussion of "dynamic EI" see O'Byrne (2016).

APPENDIX: Why MVA Is Not a Good Proxy for Investors' Excess Return

The excess return is the dollar difference between the return the company's investors actually earned on the capital they invested, and their expected return based not on the broad market return, but on the company's cost of capital. For example, if the cost of capital is 10% and investor's initial investment is $1 million, the investor's expected wealth is $1.61 million at the end of five years and $2.59 million at the end of ten years.[21] MVA—which, again, is the dollar difference between a company's current market enterprise value and its book capital—overstates the excess return achieved by negative EVA companies and understates the excess return achieved by positive EVA companies because it ignores distributions during the period. Two companies can have the same current MVA even though one company has earned and distributed a 40% return on capital over the last ten years, while the second company has earned a zero return on capital and distributed nothing over the last ten years.[22] The investors who received the 40% return distributions are far better off than the investors who received no distributions, even though their current MVAs are the same.

With different EVA accounting rules, MVA would be equal to the cumulative excess return. This would be the case if all positive EVA were treated as a distribution of capital and all negative EVA were treated as a contribution to capital.[23]

To get a better sense of the practical importance of this theoretical shortcoming of MVA, I looked at the correlations between MVA and dollar excess return across 39,000 ten-year periods for S&P 1500 companies. When I divided the sample in half based on MVA as a percentage of year 10 expected investor wealth, I found startling differences.

In the top half of the sample—where MVA is 149% of year 10 expected investor wealth, on average, MVA turns out to be a reasonably good proxy for the dollar excess return. MVA was only 6 percentage points higher than the excess return, on average, and it explained 91% of the variation in excess returns.[24]

But in the bottom half of the sample, where MVA was –11% of year 10 expected investor wealth, on average, MVA is a largely unreliable proxy for the excess return. MVA was 20 percentage points higher than the excess returns, on average, and explained only 6% of the variation in the excess return.

21 $1.61 million = (1 + 10%)^5 x $1 million.

22 Both companies would have the same current MVA if both now have the same ROIC.

23 See Young, S. David and Stephen F. O'Byrne, *EVA and Value-Based Management*, McGraw-Hill, 2001, p. 42.

24 In the bottom half of the sample, an incremental $1 of MVA adds only $0.60 of excess return, while in the top half of the sample, an incremental $1 of MVA adds $1.09 of excess return.

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