

EVA Momentum: The One Ratio That Tells the Whole Story

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As long as there has been commerce, managers and proprietors have turned to ratios as a way of setting goals, analyzing operations, and measuring success or failure. Some have a favorite ratio that they believe captures the true essence of performance, while others use an array of them. But almost everything important in business is measured and debated in terms of statistics like growth rate, profit margin, market share, and the like.

Despite their obvious appeal, ratios can be ruinous. They all can mislead managers into making incorrect decisions because, at root, every ratio is wrong. As Michael Jensen, a Harvard Business School professor emeritus, has put it, “If it is a ratio and it is a performance measure, it is wrong and you are paying people to do bad things.”¹ Jensen is right. Every ratio can be “improved” in ways that actually diminish performance and reduce shareholder value.

All conventional business ratios fail for one or both of two reasons. The first flaw is that many are based on numerator measures that are incomplete or misleading in some way. Sales growth rate considers sales—and nothing else. Profit margins gauge income efficiency—and nothing else. Ratios like these put managers in the position of blind men groping at elephants. They see just one performance dimension when many count.

The second common flaw is that many ratios are scaled by a denominator—such as sales or capital (or square feet of selling space for a retailer)—that doesn’t sit still as decisions are made. The ratios are misleading in the same way that shooting percentage is for a basketball player who can decide how many shots to take. To maximize it, the player might just take one sure shot—a layup—and then quit, when he should keep taking shots as long as his chance to score is better than passing it off.

Consider return on capital, or ROC. Developed by DuPont in the early 1900s and long a mainstay of corporate financial management, return on capital easily backfires because capital is not a constant. If they feel pressure to increase ROC, managers in high-return businesses will reject fundamentally attractive projects, and grow and innovate more slowly than they should. They will behave like a basketball team that aims for shooting percentage instead of scoring the most points. Worse, just as weak players may be tempted to shoot when better players would score even more, managers in lackluster units will be drawn into making value-reducing investments because they promise returns slightly higher than the substandard ones they are now producing.

¹ Michael Jensen, remarks at 2000 EVA Institute Seminar in LaQuinta, California.

In sum, ROC motivates companies to starve their “stars” and feed the “dogs”—quite the opposite of the intended consequence. It is a static measure in a dynamic world. It measures performance *on average* when decisions should be made at the margin.

Return on capital—or sales per square foot, or manufacturing yield, or any productivity measure, for that matter—is simply not a measure to be maximized because it leaves out things that also matter, such as growth and the scale of resources used by management. It is impossible to tell by examining ROC alone if a company or division is actually performing better or worse from one period to the next. Managers should never be paid to increase it because that will encourage them to do bad things that make no economic sense, just as Jensen predicts. And the same goes for all other ratios (see Table 1 for more examples).

Some will protest that no ratio should be viewed in isolation. A manager should balance return on capital and growth objectives in some proportion, for instance. But how should a manager actually do that? What are the relative values of growth and rate of return, or of margins and days-on-hand? And with multiple metrics in play, how can top management know that the correct tradeoffs are being made down the line without stifling creativity through bureaucratized micromanagement?

The classic textbook solution dodges the issue. Managers are glibly admonished to maximize the net present value of incremental cash flows and to ignore ratio measures. While no one can argue with that in theory, in practice it doesn’t work. Ratios are so advantageous in so many ways—in expressing goals and priorities, facilitating comparisons, maintaining control, even grading bonus pay—that corporate managers will not give them up. Nor should they have to.

The solution is to find a single overarching ratio that accurately consolidates all the pluses and minuses of decisions into a reliable score that can’t be increased without truly creating value. Although Jensen’s rule states that such a ratio does not exist, I believe I have discovered one that fits the bill. The new measure, which I call EVA Momentum, is the change in a firm’s economic profit in a given period divided by its sales in the *prior* period. For example, if a company increases its economic profit by \$10 million on last year’s sales base of \$1 billion, then its EVA Momentum is 1%. Said another way, it is the *size-adjusted* change in economic profit, and it qualifies as the missing link in business management because it alone possesses all the following attributes:

1. It’s based on economics, not accounting. Many ratios stumble simply because they are derived from reported profit figures that are a far cry from real economic profit or, as I like to call it, EVA, which is short for economic value added. EVA corrects accounting distortions in a number of ways—first and foremost, by deducting a charge for all the capital a company employs, its equity as well as its debt. It doesn’t begin to count profit until shareholders earn at least the return on capital they could expect to earn elsewhere at the same risk.

Table 1: A Sampling of Where Ratios Go Wrong

Ratio	Definition	Problems
Sales growth rate	delta sales/sales	1. Ignores costs and capital expended to achieve the growth
Earnings-per-share (EPS)	net income/shares	<ol style="list-style-type: none"> 1. Net income follows accounting logic rather than business economics. To meet short-term goals, managers defer or cut discretionary spending, postpone valuable restructuring initiatives, and manipulate bookkeeping entries instead of generating cash 2. EPS incorrectly mixes operating and financing decisions, tempting managers to boost EPS with transitory share repurchases and off-balance-sheet financings 3. EPS is easily “manufactured” by investing in low return projects that give investors less profit than they could earn elsewhere at the same risk
Market Share	sales/sector sales	<ol style="list-style-type: none"> 1. Market share is not a value driver per se, but is the result of doing other things well 2. A temptation is to “buy” share as GM has done instead of earning it through a superior business model as Toyota has done
Profit Margins	profit/sales	<ol style="list-style-type: none"> 1. Lower margins can be more than offset by more rapid growth 2. Lower margins can be more than offset by more rapid asset turns (for example, outsourcing assets and vertical de-integration tend to reduce margins in exchange for reducing capital)
Return on Capital (ROC)	profit/capital	<ol style="list-style-type: none"> 1. Value increases when new projects cover the cost of capital, but ROC increases when new projects earn more than the existing average return on capital 2. To increase ROC, profitable divisions will reject projects they should accept, and struggling ones will accept ones they should reject 3. ROC goals encourage managers to scale individual projects to maximize incremental return, which is generally well short of the size that maximizes total net present value

With that simple adjustment, EVA correctly consolidates earnings and assets into a reliable score. It increases when managers intelligently pare costs (that is, without reducing longer-run earnings potential), when they invest in positive “NPV” projects that return more than the overall cost of capital, and when they release capital from assets and activities that are earning less. It decreases when managers misallocate or mismanage capital, such as by scaling inferior business models that cannot earn

at least the cost of capital, or overpaying for acquisitions. The bottom line is that EVA measures all the ways that performance can be improved and wealth created. That alone makes EVA Momentum superior to all other ratios.

Correcting accounting distortions doesn't end with the cost of capital, though. As one example, consider that almost every firm's true assets nowadays—the ones that actually enable it to generate EVA profit as opposed to just generate sales—are its capabilities and brands, broadly speaking. Yet accounting rules dictate that the outlays to cultivate intangible assets be expensed as if they have no ongoing value. In contrast, EVA is typically measured while “capitalizing” such expenditures—adding the spending on training, R&D, and brand-building to balance-sheet capital and amortizing the investment over time, subject to a capital charge on the unamortized balance, just like plant and equipment. Besides permitting managers to more accurately measure and benchmark the returns from all forms of capital, capitalization encourages them to maintain or increase the spending if they believe it will generate an attractive payoff rather than slashing it just to make a reported earnings goal.²

In the same spirit, restructuring and impairment charges are taken out of earnings and added to balance sheet capital for the purpose of measuring EVA. That motivates managers to ignore irrelevant sunk costs and mere bookkeeping entries. It encourages them to adopt strategies that will maximize incremental cash flow, which is a more pressing mandate than ever amid the current economic recession and liquidity crisis.

Practical considerations will prevent a company from eliminating all accounting distortions, of course. But a handful can generally bring EVA—and hence EVA Momentum—far closer to measuring true added value than just taking accounting numbers at face value as other ratios do.³

2. It is a measure to maximize. By definition, EVA Momentum always moves in perfect lockstep with the change in EVA, because the trailing sales denominator is fixed once any period begins. It is thus the only ratio that is an exception to the Jensen rule—the only percentage metric that managers can safely attempt to maximize without misleading them into doing bad things.

3. Size-neutral. EVA Momentum uniquely bridges two worlds: the dollars-and-cents domain where aiming to increase EVA is the right rule for making decisions that maximize value, and the ratio arena where performance is scaled to the size of a business or level of activity in some manner, which facilitates making comparisons and setting goals in ways not easily performed by examining absolute figures.

² In a recent survey, roughly 80% of CFOs reported that they would cut discretionary spending on research, advertising and maintenance if required to meet short term earnings goals, as reported in "The Economic Implications of Corporate Financial Reporting" (January 11, 2005), by John R. Graham, Campbell R. Harvey, and Shivaram Rajgopal.

³ For more details on accounting adjustments, consult “How to Fix Accounting – Measuring and Reporting Economic Profit” by Bennett Stewart, *The Journal of Applied Corporate Finance*, Vol 15, No.3, Summer 2002

4. Situation-neutral. Because it is based on the *change* in economic profit rather than the level, EVA Momentum neutralizes comparisons across companies and internal divisions that differ in inherited circumstances.

For one thing, a star performer gets no credit for legacy assets like strong brands or a low-cost distribution network. The value of those assets is already reflected in the level of EVA the company earns, and EVA Momentum is only concerned with change—with measuring the increase in the value of assets by measuring the increase in the EVA profit that the assets enable the firm to earn. The forward-looking bias of EVA Momentum poses a constant challenge for the best performers to do even better. It keeps up the pressure on managers to expand already profitable business models and refresh them with innovation rather than resting on their laurels.

There is likewise no penalty for managers that inherit acquisition goodwill or an inefficient production platform. Those irrelevant “sunk costs” are already reflected as deductions from (the lower beginning-period) EVA, and do not limit their ability to adopt new strategies to increase EVA looking ahead. Thus, in the case of competitively challenged businesses, EVA Momentum provides both absolution from past sins and renewed hope for the future.

Because it measures performance “at the margin” and doesn’t make the mistake of valuing the same asset more than once or penalizing the same error time and again, EVA Momentum is an ideal “spanning” measure, one that top management can fairly apply across business divisions to set goals and measure performance, and to direct resources to those most capable of using them productively regardless of prior successes or failures.

5. Early warning system. EVA Momentum is positive for turnaround candidates that are genuinely mending their businesses and earning more than the cost of capital on incremental investments, and is negative in cases where performance champions are maturing or facing more intense competition and EVA is starting to slide. In either case, EVA Momentum is a financial canary in the cave, alerting management to favorable or unfavorable trends well before other ratio indicators get in the game.

6. Market-calibrated. For all other ratios, performance benchmarks are ambiguous and hard to divine. How high should profit margin be, for instance? What improvement in days-on-hand is it reasonable to target? The answers are ultimately somewhat arbitrary and highly debatable. But by virtue of deducting the cost of capital, EVA Momentum incorporates an objective hurdle rate that is set in global capital markets, with three important consequences.

First, EVA Momentum is intrinsically risk-adjusted. Homebuilders, securities brokers, and electronics firms are charged a far higher cost for their capital than stable food processors and utility concerns—as much as 5% per annum more, for example. EVA momentum shows which businesses are adding to profit only after a relevant risk-adjusted return has first been earned.

Second, EVA Momentum is endowed with economic significance. A firm for which EVA Momentum is zero is neither increasing nor decreasing its economic profit. It's just producing the return that investors expect it to earn on new investments and retained earnings, and thus it is neither adding to or subtracting from its per share value. A razor sharp line divides success from failure—positive EVA Momentum is “good,” negative is “bad,” and zero is just “breaking-even” in an economic sense. No other ratio has such clarity and breadth of application.

Third, the EVA Momentum companies historically earn is consistent with the workings of competitive markets. Over the period from 1995-2007, for instance, the average EVA Momentum for the median Russell 3000 firm was just 0.3% (see Table 2: EVA Momentum for the Russell 3000). As expected, competitive markets drive returns at the margin to an essentially break-even proposition.

Table 2: EVA Momentum for the Russell 3000 (1995-2007)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Avg
EVA Momentum														
90th	7.6%	4.9%	5.5%	6.1%	4.8%	7.1%	5.8%	10.1%	11.1%	10.0%	9.4%	11.3%	6.8%	7.7%
75th	3.5%	1.8%	2.0%	2.3%	1.4%	2.0%	1.2%	3.0%	3.6%	3.6%	3.3%	3.7%	2.4%	2.6%
50th	1.0%	0.2%	0.4%	0.6%	-0.3%	-0.2%	-1.0%	0.4%	0.7%	0.7%	0.8%	0.8%	0.4%	0.3%
25th	-0.6%	-1.6%	-1.2%	-1.6%	-3.1%	-4.2%	-5.8%	-2.3%	-1.2%	-1.2%	-1.2%	-1.1%	-1.8%	-2.1%
10th	-3.2%	-6.6%	-5.6%	-7.7%	-10.5%	-57.2%	-24.6%	-10.3%	-5.7%	-6.5%	-7.3%	-5.8%	-8.4%	-12.3%
EVA Mo - 5 Yr Cum														
90th	4.5%	3.7%	4.0%	3.6%	3.8%	3.9%	3.4%	3.2%	3.5%	4.1%	5.5%	8.8%	7.8%	4.6%
75th	1.6%	1.5%	1.5%	1.3%	1.4%	1.2%	0.7%	0.7%	0.9%	1.3%	1.9%	2.8%	3.0%	1.5%
50th	0.4%	0.6%	0.5%	0.4%	0.3%	0.1%	-0.4%	-0.3%	-0.2%	0.0%	0.4%	0.8%	0.9%	0.3%
25th	-0.2%	-0.2%	-0.2%	-0.6%	-0.8%	-1.4%	-2.4%	-2.2%	-1.6%	-1.2%	-0.8%	-0.2%	-0.3%	-0.9%
10th	-1.1%	-2.0%	-2.0%	-5.2%	-5.6%	-8.6%	-16.7%	-11.0%	-7.5%	-6.9%	-4.4%	-2.3%	-2.9%	-5.9%

As economic theory also predicts, EVA Momentum for any one company is magnetically drawn to the median over time, as evidenced by the tight clustering of the five-year average Momentum in Table 2 around the 0.3% median. Companies that are rocked by a downturn in their EVA are apparently galvanized to improve it, while peak performers mature, face increasingly stiff competition, or make mistakes such as overpaying for acquisitions, all of which tend to flatten their EVA growth rate.

In light of this finding, it is unrealistic for board members or investors to expect continued *improvement* in a firm's EVA Momentum, at least not for any extended period of time. That is not as troubling a limitation as it may seem. If a firm's EVA Momentum is 4% in one year and declines to 2% the next, its economic profit actually increased both years. The 2% EVA Momentum was earned on top of the prior year's 4%. Any positive EVA Momentum indicates an increase in EVA, which represents genuine progress.

In sum, EVA Momentum is eminently suited to serve as the corporate objective function—the single ratio measure that every business should aim to maximize over time. So long as a company is mature enough to consider earnings-per-share, EBITDA, or return on capital as relevant financial metrics, the management team is likely to be far better off using EVA Momentum in place of such traditional metrics to summarize and grade its performance, set financial goals, anchor a scorecard of

metrics to value, diagnose competitive strengths and weaknesses and formulate strategies, and even to meter discretionary pay awards.

The full range of corporate applications of EVA Momentum will become more apparent as EVA Momentum is traced to a set of underlying performance drivers and shareholder value. As a first step on that path, let's apply it to measure the resurgence of one of America's best managed companies, Emerson Electric, a diversified manufacturing and technology concern with \$22.6 billion in sales in 2007. In Table 3, Emerson's EVA is measured in two ways: first, as net operating profit after tax, or NOPAT, less a capital charge computed by multiplying the firm's total capital by the weighted average cost of capital; and second, as the percentage spread between the return on capital and cost of capital, times the firm's total invested capital.

Table 3: Emerson's EVA and EVA Momentum – A First Pass

EMERSON ELECTRIC	2000	2001	2002	2003	2004	2005	2006	2007
EVA = NOPAT - Capital Charge								
NOPAT	\$ 1,508	\$ 1,320	\$ 964	\$ 1,020	\$ 1,335	\$ 1,542	\$ 2,021	\$ 2,244
Capital	\$12,625	\$12,529	\$11,278	\$11,405	\$11,721	\$12,551	\$14,747	\$13,990
Cost of Capital COC	8.9%	8.5%	8.1%	7.9%	8.0%	7.6%	8.1%	7.9%
Capital Charge COC x Avg Capital	\$ 1,048	\$ 1,064	\$ 969	\$ 897	\$ 920	\$ 921	\$ 1,106	\$ 1,129
EVA NOPAT - Capital Charge	\$ 460	\$ 256	\$ (5)	\$ 123	\$ 414	\$ 621	\$ 916	\$ 1,115
EVA = (ROC-COC) x Capital								
Return on Capital ROC	12.8%	10.5%	8.1%	9.0%	11.5%	12.7%	14.8%	15.6%
Cost of Capital COC	8.9%	8.5%	8.1%	7.9%	8.0%	7.6%	8.1%	7.9%
ROC - COC Spread EVA/Capital	3.9%	2.0%	0.0%	1.1%	3.6%	5.1%	6.7%	7.8%
EVA (ROC-COC) x Capital	\$ 460	\$ 256	\$ (5)	\$ 123	\$ 414	\$ 621	\$ 916	\$ 1,115
EMERSON ELECTRIC	2000	2001	2002	2003	2004	2005	2006	2007
Delta EVA change in EVA	\$ 5	\$ (204)	\$ (261)	\$ 128	\$ 291	\$ 206	\$ 295	\$ 199
Sales	\$15,545	\$15,480	\$13,824	\$13,958	\$15,615	\$17,305	\$20,133	\$22,572
EVA Momentum Delta EVA/Trailing	0.0%	-1.3%	-1.7%	0.9%	2.1%	1.3%	1.7%	1.0%
Percentile	52	48	31	52	62	55	58	58
90th	7.1%	5.8%	10.1%	11.1%	10.0%	9.4%	11.3%	6.8%
75th	2.0%	1.2%	3.0%	3.6%	3.6%	3.3%	3.7%	2.4%
50th	-0.2%	-1.0%	0.4%	0.7%	0.7%	0.8%	0.8%	0.4%
25th	-4.2%	-5.8%	-2.3%	-1.2%	-1.2%	-1.2%	-1.1%	-1.8%
10th	-57.2%	-24.6%	-10.3%	-5.7%	-6.5%	-7.3%	-5.8%	-8.4%

After a strong start in 2000, Emerson's EVA plunged a total of \$465 million over the next two years. But how significant a decline is that? The raw dollar amount doesn't say. But in relation to *trailing* sales, the changes were minus 1.3% and minus 1.7%, and in relation to Russell 3000 firms Emerson's EVA Momentum was just below median in 2001, a generally tough year, but in 2002 it stood out like a sore thumb, tumbling to the 31st percentile. After that, however, Emerson's management team engineered a remarkable turnaround, racking up a \$1.1 billion increase in EVA on the strength of five years of above-median EVA Momentum, in the process adding \$20 billion to shareholder wealth (see sidebar: *Emerson's EVA powers its share performance*).

Emerson's EVA powers its share performance

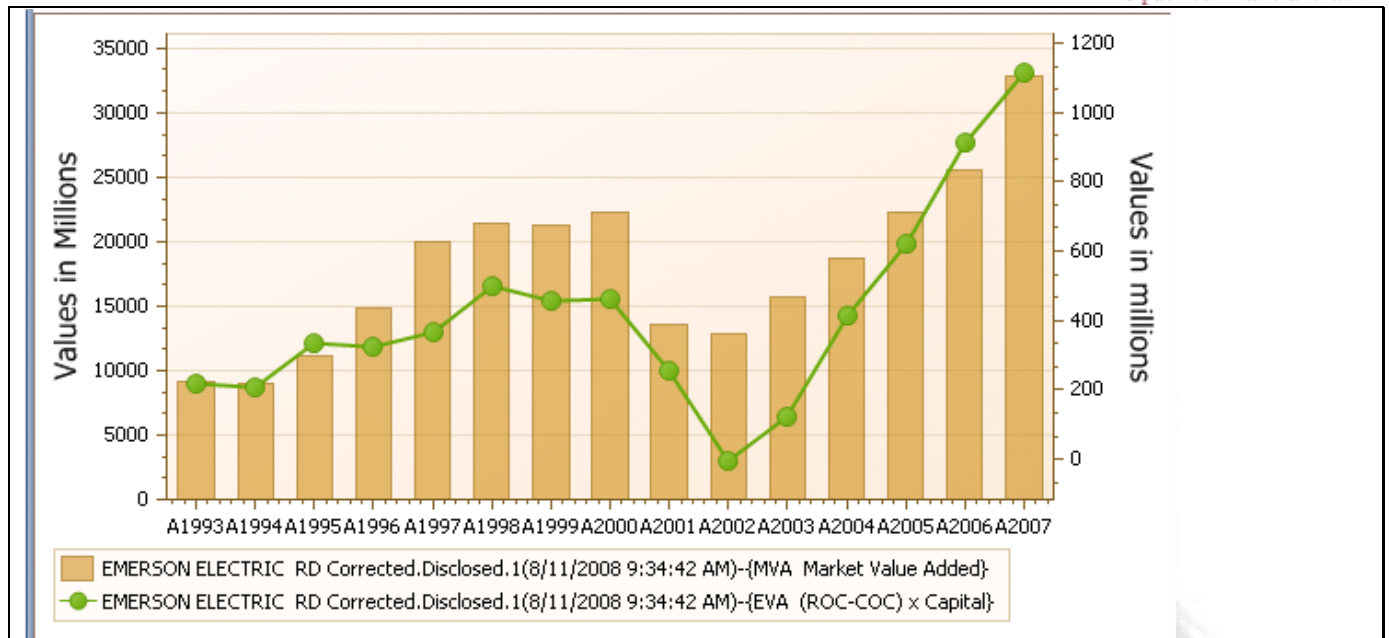
Professional investors and securities analysts are fond of expressing valuations in terms of EPS, price-earnings (PE) multiples and predictions of earnings growth. The jargon can be misleading. Markets have shown the ability to see through accounting figures and pay only for what they calculate to be long-run sustainable cash flow. While corporate managers have other uses for performance measures like EPS, ROE, or same stores sales growth, sophisticated investors value them only insofar as they shed light on a company's ability to generate *future* cash returns.

I believe that even for that purpose, EVA best captures the performance that all investors are attempting to value, even if only a minority of them calculate it or call it EVA. The case for EVA can best be seen through a companion measure called MVA, or *market value added*. MVA is the spread between a company's market value and the capital employed on its balance sheet. It is the difference between the sum of cash that investors have put into or left in the business and the present value of the cash they could expect to take out of it, if only by selling their shares. As such, it represents how much *wealth* the firm has created.

MVA, moreover, is identical to "net present value"—the familiar NPV—of a company. It is a summing up in the market's mind of the net present value of a firm's entire capital portfolio – the NPV of all existing and all planned investments. MVA thus provides real financial intelligence, showing how successful a company has been at allocating, managing, and re-deploying scarce capital to maximize its net present value and in the process, to maximize the wealth of its investors.

How does this tie to EVA? MVA is the present value of expected future EVA. By deducting the cost of capital and setting aside the return that must be earned to recover the value of invested capital, EVA discounts to MVA at the corporate level; and in the case of project evaluation, EVA gives the same answer as discounting cash flow to an NPV. As a result, companies that are expected to earn zero EVA should trade at or close to the book value of their capital—properly measured—and thus create no MVA. Only companies that are earning more than their cost of capital and producing real economic profit actually create real wealth for their investors.

The relationship between *current* EVA and MVA is not precise, of course, because the market is forward looking. But statistically speaking, changes in MVA are more closely correlated with changes in EVA than any other performance measure. And this means that EVA does the best job of capturing the performance that investors value—whether they call it EVA, economic profit, or sustainable earnings.



As the theory predicts, and can be seen in the chart above, Emerson’s MVA moved in tandem with its EVA. The link doesn’t always work so well at all companies, since the market’s ability to forecast EVA by extrapolating recent trends varies among companies and industries. But for any reasonably established firm, and certainly ones where projecting and discounting cash flow is a useful and generally valid decision tool, projecting and discounting EVA is likely to prove a simpler, more informative, and more accountable way to measure NPV and simulate how a firm’s share value will respond to corporate decisions involving capital investments, new strategies, and even the price of an acquisition.

The New DuPont Formula

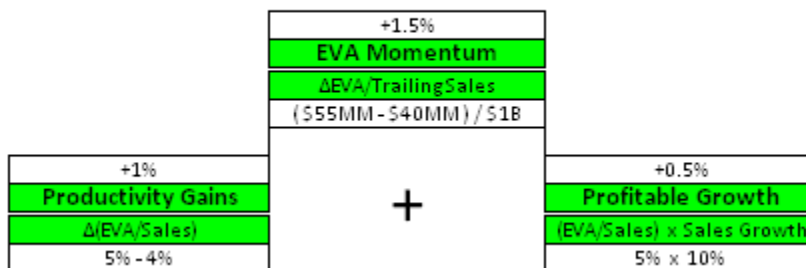
Besides summing up corporate performance in a convenient ratio statistic, EVA Momentum is also the basis for a new diagnostic tool, one that represents a significant advance over the traditional DuPont formula. Besides just measuring gains from profit margin improvements and faster asset turns, which is the concern of the DuPont model, EVA Momentum also incorporates the added value from dynamic factors such as profitable growth, strategic retrenchment, and the quality of resource allocation decisions in general. In other words, it directs managers to pay attention to a broader range of tradeoffs—such as between profitability and growth—that the traditional ROC formula simplistically ignores. Thus informed, managers are able to make more intelligent, and ultimately more valuable, decisions.

The deconstruction of EVA Momentum begins with the “EVA margin,” which is the ratio of EVA to sales; it is the percentage of sales that ends up as EVA after all operating expenses and capital charges have been paid. Companies produce high EVA margins when they are able to offer their customers an added value at a lower total cost than their competitors. And they *increase* their EVA margins by improving that equation and enhancing the productivity derived from all sources—from customers, costs, and capital.

Suppose, for example, that a company manages to increase its EVA from 4% to 5% of sales. Then it has created value through some combination of improvements in operational efficiency, asset management, and pricing power. And that 1% gain directly adds to its EVA and EVA Momentum in the period.

But EVA also increases when a firm adds sales at positive EVA margins. EVA Momentum thus includes a second term—optimistically titled “profitable growth”—that is the product of the firm’s sales growth rate and the EVA margin it earned over the period. To continue the foregoing example, suppose the firm that increased its EVA margin by 1% also expanded its sales by 10% during the same period. Then, as depicted in Figure 1, its EVA Momentum actually totals 1.5%, with the added half percent due to its 10% sales growth at the 5% EVA margin.

Chart 1: EVA Momentum Tree Diagram



To illustrate, assume sales in the first period were \$1 billion followed by \$1.1 billion the next, for a growth rate of 10%, and that EVA was \$40 million, or 4% of sales, in the first period followed by \$55 million, or 5% of sales, in the second. EVA Momentum is 1.5%—the \$15 million increase in EVA divided by the \$1 billion in *trailing* sales. The firm’s EVA Momentum can also be expressed, and perhaps better understood, as stemming from a 1% improvement in the EVA margin—from 4% to 5%—plus the 0.5% contribution from “profitable growth,” which is the product of the 10% sales growth rate and the concluding 5% EVA margin.

Although it would be nice if both components always increased a company’s EVA Momentum, that’s not always possible or wise. Google’s a good example of the tradeoffs that often are involved. In 2007, Google achieved a phenomenal 8% EVA Momentum—close to the highest rate of increasing EVA attained by any company. Yet, its EVA margin actually *shrank* by 2% that year—and so did its

ROC, and by a lot. Although ROC-minded managers would never want to do that, Google's wisely decided to load up on servers, systems, and infrastructure and forfeited some degree of pricing power in order to snag the far greater value offered by exceptionally profitable revenue growth—in this case, 55% revenue growth at an 18% EVA margin that year.

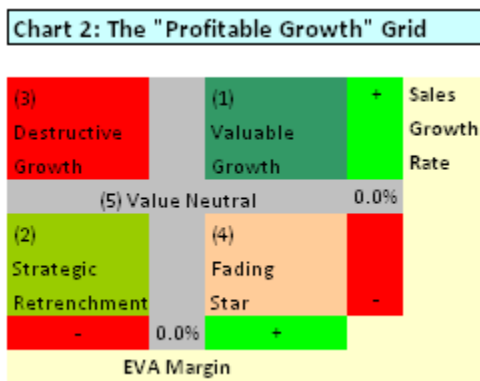
But what's sensible for Google is not the best course for every business. That is because the relative importance of profitability and growth are highly interrelated. The value of additional sales growth *depends on the firm's profitability*, and the value of improving profitability depends on the firm's underlying sales growth rate. No fixed value can be ascribed to either metric in isolation, which is why it is so hard for top management to set meaningful performance goals with any measure other than EVA Momentum. It is also the reason managers actually need to consult the EVA Momentum math if they are to choose the strategies that will create value in the particular circumstances that they face.

For instance, since most businesses do not enjoy anything approaching Google's 18% EVA margin, managers routinely overestimate the value of growth and misallocate resources accordingly. Suppose a company churns out 20% sales growth at a 5% EVA margin, which is a rare and admirable and accomplishment in any sector. Yet, that combination adds just 1%, the product of the two measures, to EVA Momentum. It adds no more to Momentum and hence to shareholder wealth than a 1% expansion in the firm's EVA margin. If anything, increasing the margin would likely prove more worthwhile. Beyond its intrinsic worth, margin expansion makes subsequent sales growth both more valuable and all the more likely, since profitable firms are generally better positioned to take market share away from less efficient players. But without taking the EVA Momentum math to heart, most managers play the game with the opposite emphasis—valuing growth over profitability—when profitability is generally far more important.

The flip side of the pro-growth bias is the tendency to underestimate the value that can be added by pruning and restructuring. Most companies engage in it reluctantly, and well after taking action would be optimal. But what does the EVA Momentum math say? For instance, what is the value of shutting or selling business lines saddled with a negative 5% EVA margin? If the firm's sales decrease by 20% as a result, EVA Momentum *increases* by 1%—because a negative times a negative is a positive.

An example of such a double minus ending up a plus was Ford's decision to sell Jaguar and Land Rover several years ago, a move that lifted EVA Momentum and per share value at the time. Even though it reduced the automaker's sales, EBITDA, and market share, it may have saved the company. Another example was Starbucks' decision to shutter 600 EVA-sapping locations, which was made even while the firm remained highly profitable (its EVA margin was 5.6% in 2007). Strategic retrenchment is a prescription for wealth creation for the healthy as much as the infirm, one that EVA Momentum highly recommends even as managers all around have tended to give it short shrift.

Besides “profitable growth” and “strategic retrenchment,” which add value, there are three other combinations of growth and margin to consider, several of which do real damage. As is illustrated in Figure 2, the upper left hand quadrant is the most combustible mixture. It is occupied by companies that persist in “destructive growth”—adding sales at negative EVA margins, as many auto, steel, and commodity forest products and chemicals companies have done for years on end. Managers committed to increasing earnings-per-share or market share without realizing their EVA margin is negative can easily make that mistake. So can others swept along by the tide of continuing to fund units whose EVA margins have imperceptibly swung from positive to negative, a transition that can easily go unnoticed in firms that are not measuring EVA by line of business. Paying more for acquisitions than can be justified by synergies can also land companies in the bright red zone, and earn their CEOs a quick exit.



For the “fading stars” dwelling in the lower right quadrant, sales are shriveling in fundamentally positive EVA lines, such as when a competitor enters or a substitute product or service comes on the scene. By acts of omission—a failure to innovate and fend off unwanted intruders—valuation suffers as EVA Momentum wanes.

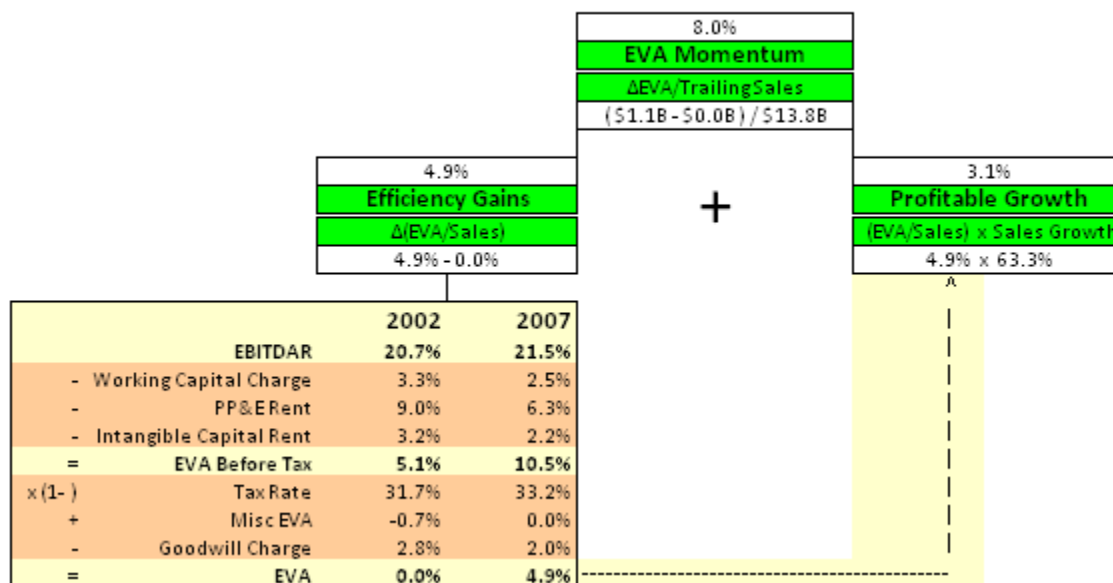
Consider, lastly, “value-neutral” businesses occupying the gray zones. Those firms are either not growing much or, more likely, have break-even EVA margins, which at any time is true of 30-40% of all enterprises. Regardless of the growth the firm registers in sales, EBITDA, or in their earnings per share, if its EVA margin is zero or close to it, EVA remains resolutely stuck in neutral. Upgrading the business model to make EVA margin positive to some minimum degree is an essential prerequisite for sales growth to begin to add to per share value.

Emerson Electric’s management was in just that predicament in 2002, as the firm’s overall EVA margin was essentially breaking even that year (see Chart 3). Rather than stepping on the accelerator as many EPS-minded managers are inclined to do, Emerson’s management applied the brake and articulated a set of strategies clearly aimed at restoring profitability, including “continued restructuring

to establish superior cost positions and faster access to local markets,” increased emphasis on “sales from international markets and new products” and on “markets where Emerson can hold the number one position,” and continued “improvements in operating capital performance in the areas of trade working capital, lean manufacturing, and outsourcing initiatives.”

Emerson was so successful in executing its strategy that its EVA margin rebounded to 4.9% by 2007, a level higher than it had been anytime for at least the past 20 years (see Figure 3). The increase not only added to EVA Momentum in its own right. It paid a double dividend by making the firm’s 63% sales growth over the interval into a profitable, value-adding proposition, adding another 3% to EVA Momentum and bringing the total to 8% over the five-year span. As often happens, Emerson’s EVA margin gain significantly understated the firm’s true performance because profitable growth matters, too.

Chart 3: Emerson's 2002-07 EVA Momentum Tree Diagram



As should be clear by now, increasing EVA margin is a real key to generating EVA Momentum and creating wealth. I have developed a new income schedule that enables managers to peer under the hood of EVA margin and develop strategies to improve it. As depicted for Emerson in the lower left section of Figure 3, the EVA margin schedule begins with EBITDAR—that is, with EBITDA plus rent expense as a measure of cash flow from operations—from which a series of capital charges are deducted. The charges consist of the cost of capital, plus depreciation and amortization expenses on any and all forms of “wasting” assets—just as if the assets had been sold and leased back, and rent paid to a third party. Even intangibles such as R&D and marketing outlays, which are capitalized in measuring EVA, are deducted below the EBITDAR line as distinct “rental” charges. The same treatment applies to

rent expenses on operating leases. They are capitalized and deducted along with the rent charge for property, plant, and equipment assets in order to allow comparisons among companies that own or lease assets in varying proportions.

An advantage to formatting financial data in this manner is that it consolidates income efficiency and asset management into a single statement of economic profit and loss. As far as managing operations, it's all there. Moreover, because the entire schedule has been divided by sales, each line item on it is directly comparable. If the working capital charge is currently running at 3% of sales, for instance, a manager knows instantly that speeding cash conversion and turning working capital a third faster is the exact equivalent of adding 1% to the profit margin. No longer are managers forced to engage in the mental equivalent of FX transactions to compare the impact of reducing working capital days-on-hand with an increase in plant yield, for example. All costs and all benefits are converted to a common currency, which is the impact on EVA margin and EVA Momentum. As a result, the schedule heightens managers' ability to spot problems, rank opportunities, and correctly make decisions that involve tradeoffs—other reasons CFOs should prefer to it to the DuPont formula as a way of evaluating and managing the financial drivers of value.

A glance at the schedule reveals that nearly the entire gain in Emerson's EVA margin came from exceptionally effective asset management. The combined pre-tax rental charge for working capital, net plant, and intangible capital was slashed from 15.6% of sales in 2001 to just 11.0% in 2007.⁴ A significant increase in Emerson's EVA margin, EVA Momentum, and shareholder wealth occurred while the firm's cash operating profit margin—as measured by EBITDAR/sales—remained essentially unchanged. As is true of many companies, Emerson's cash margin was a woefully incomplete, and thus potentially misleading, measure of its performance. (Moreover, as discussed in the sidebar, this lesson has not been lost on private equity firms.)

The savings in Emerson's charges for renting capital can be traced to some of the strategic imperatives articulated by management in 2002 and accomplishments like the following: reducing inventory from 77 to 60 days on hand; increasing vendor funding from 28% to 39% of working capital; reducing gross PP&E assets from 59 cents to 45 cents per sales dollar (and aging the plant base slightly, which reduced the net asset subject to the capital charge); and slowing the rate of growth in R&D, such that the firm's capitalized R&D balance fell from 11 cents to 7 cents per dollar of sales, without weakening the firm's commitment to innovation. Bottom line, Emerson increased its EVA Momentum and created significant value through attentive balance sheet management—an opportunity that many income statement-oriented managers overlook, but which the EVA margin statement brings into sharp relief.

⁴ In this computation, the cost of capital is grossed up to a pre-tax equivalent—a 9% cost of capital becomes 15% at a 40% tax rate, for instance—so that the capital “rental” costs are directly comparable to pre-tax operating costs appearing on the schedule)

As the foregoing is intended to suggest, the deconstruction of EVA Momentum should always be taken to the next level, linking the line item elements with related non-financial performance indicators and strategic objectives. Not only does that linkage provide managers with a more rounded and precise understanding of what's actually driving their economic profit. It also enables top management to institute "scorecards" that are truly balanced, fully anchored to value, and topped with an actual "score."

Private Equity Firms Actually Use EVA and Not EBITDA

In recent years, EBITDA has become an increasingly popular performance metric, spurred by its widespread use as the numerator in the "enterprise" valuation multiples preferred by private equity investors. But corporate managers who conclude that increasing EBITDA is the key to financial success are misapprehending how most PE firms actually use it. Like any rational investor, financial sponsors seek to maximize the returns on their investments by maximizing exit values in relation to buy-in values, after accounting for all interim cash flows. In that calculus, decisions make sense only if the capitalized value of an increase in EBITDA exceeds any corresponding additions to invested capital. And that happens only when incremental EVA is positive—that is, when the added EBITDA covers the cost of the added capital.

To illustrate, suppose that a PE firm is presented with an opportunity to delay debt retirement and invest \$100 million into a project that is expected to increase a portfolio company's EBITDA by \$10 million. If the PE sponsor assumes it will exit the deal at an EBITDA multiple of 8, for example, then they figure the decision to invest will add \$80 million to the firm's enterprise value, but that still leaves their equity valued \$20 million lower after deducting the extra \$100 million in debt they could have retired. Although EBITDA and the firm's total value would increase as a result of it, a rational PE sponsor would reject the investment and extinguish the debt. And that is the same decision that EVA would give, just multiplied by 8. The lesson for corporate managers is that EBITDA or any of its variants is not the Holy Grail. That is always and everywhere to increase economic profit after the cost of capital.

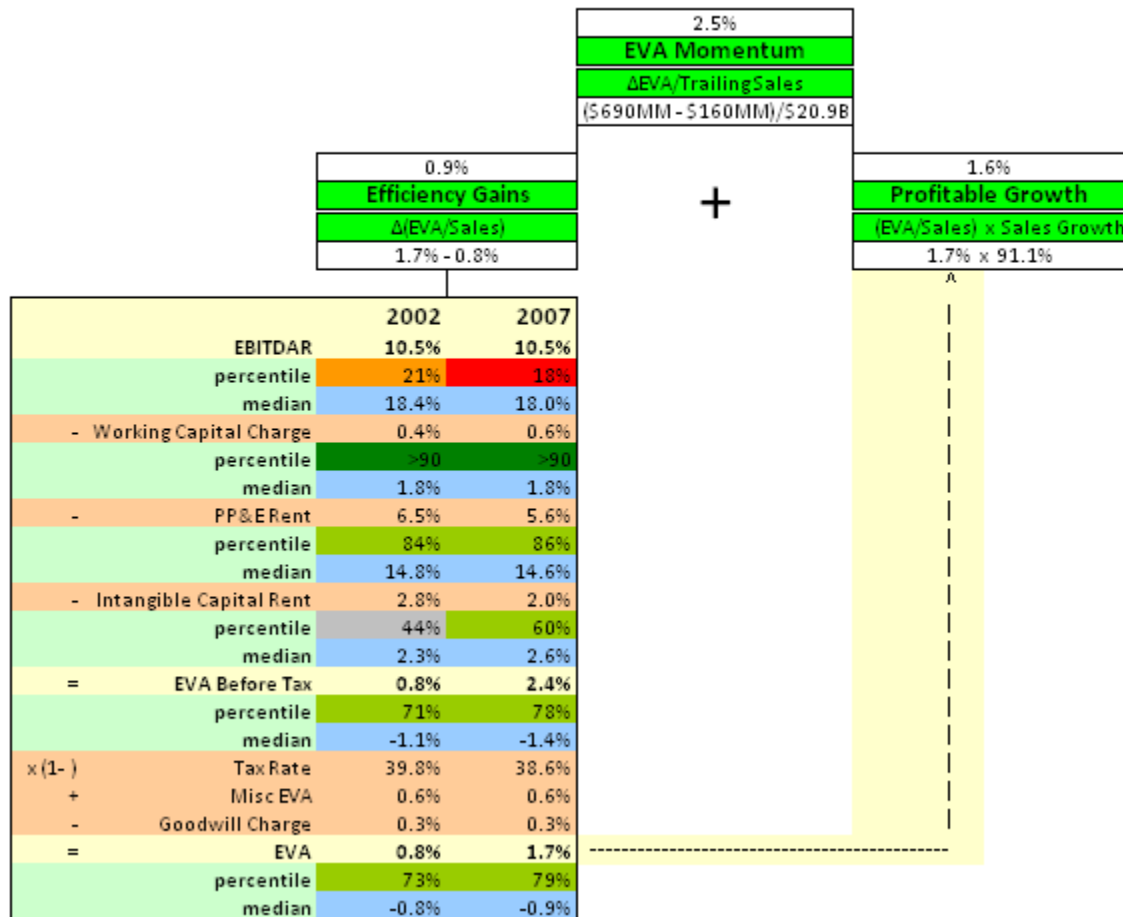
EVA Momentum Offers Freedom within a Framework: The Case of Best Buy

A key implication of EVA Momentum is that managers should make common sense strategic choices that they believe will produce the greatest economic value and just let the chips fall where they may on any other metric. The electronics retailer Best Buy provides a nice illustration.

During the period 2002-07, Best Buy's EVA expanded sharply from \$160 to \$690 million. Yet, the firm's cash profit margin—its EBITDAR/sales ratio—was a surprisingly lackluster 10.5%, which

pegged the firm at just the 20th percentile among specialty retailers, whose *median* margin was 18.0%. Some managers might worry about that shortfall. Best Buy sees it as irrelevant.

Best Buy's 2002-07 EVA Momentum Tree Diagram



But Best Buy's unimpressive EBITDAR margin is simply an inescapable product of its strategy. Belying the moniker "discount retailer," and in contrast to big box competitors like Wal-Mart, Best Buy strongly emphasizes customer satisfaction by providing exceptional service. Selling floors are flooded with "blue shirts," a cadre of well-trained and highly-motivated sales representatives that generate league-leading sales per square foot of retail space, and rapid asset turns. Repeat business, and sales of services-like warranties and the "Geek Squad" that generate revenues without tying up capital, are also part of the recipe. The result is an unusually large charge to the EBITDAR margin to cover the staff cost, but world class asset management that more than compensates. Working capital productivity is upper 10th percentile in sector. The combined depreciation and cost of capital "rental" charge for its property, plant and equipment is a whopping 9.0% lower than it is for the median firm. Even the rental

charge for advertising and promotion spending (which was written off over three years in this analysis) was cut from 2.6% of sales in 2003 to 1.9% in 2007, representing another win relative to peers.

On an after-tax basis, and after falling way behind at the start, Best Buy managed to convert 1.8% of its sales into EVA in 2007, a year in which the median specialty retailer *lost* 0.8%. Best Buy thus makes an excellent example of why companies do not need to win on every line—or even any one particular line—on the EVA Momentum schedule. All that matters is that their strategies and business models win on the EVA bottom line.

Setting Financial Targets Based on Investors' Expectations

It's now time to introduce one of the most useful features of EVA Momentum, the ability to set targets for it by “reverse engineering” stock prices. Using simple math, it is possible to compute how much a firm's EVA needs to increase in equal annual increments over a finite horizon such as five, ten, or 20 years so that the total projected sum discounts back to the firm's market value at a given point in time.⁵ The annual improvement in EVA that is implied by the firm's stock price is then divided by its sales over the most recent trailing four quarters to compute the “market-implied” or “target” EVA Momentum. For example, if the expected annual EVA improvement was \$10 million, and sales were running at \$1 billion over the trailing four quarters, the target EVA Momentum would be 1% per year.

The result of that calculation for Emerson Electric, as shown in Table 4 (in the row labeled Implied EVA Momentum), was close to 1% in all years. With an appreciation for Emerson's reputation for disciplined management, investors were apparently willing to factor steady, long-run performance expectations into the company's stock price, which is certainly not the case for most companies.

Table 4: Emerson's Realized versus Implied EVA Momentum

EMERSON ELECTRIC	2000	2001	2002	2003	2004	2005	2006	2007
Realized EVA Momentum	0.0%	-1.3%	-1.7%	0.9%	2.1%	1.3%	1.7%	1.0%
Implied EVA Momentum	1.3%	0.7%	1.0%	1.0%	0.9%	0.8%	0.7%	0.8%
Realized - Implied	-1.3%	-2.0%	-2.7%	-0.1%	1.2%	0.5%	1.0%	0.2%
MVA and Shareholder Wealth								
MVA Market Value - Capital	\$22,328	\$13,558	\$12,805	\$15,678	\$18,670	\$22,273	\$25,610	\$32,832
Delta MVA	\$ 1,120	\$(8,771)	\$ (753)	\$ 2,873	\$ 2,992	\$ 3,602	\$ 3,338	\$ 7,221

The market-implied target for EVA Momentum is an extremely important statistic with a wealth of applications.⁶ For one thing, it provides an indication of the degree of investors' confidence in the quality of management's forward plan. The higher the market-implied target, the stronger investors' conviction that management has positioned the company for long-term growth in EVA. Conversely, a

⁵ Technically, in the calculation, the present value of EVA is equated to the firm's prevailing MVA, its market value less adjusted book capital measure of shareholder wealth. Refer to the sidebar, *Emerson's EVA powers its share performance*, for an explanation of MVA and its tie to EVA.

⁶ And private companies can look to the expected EVA Momentum of public peers for a similar if less precise set of insights and guidelines.

drop in implied EVA Momentum, particularly in comparison with peers', is an early warning sign that the firm's competitive advantage and profitable growth opportunities may be shrinking.

The market-implied Momentum target is also a benchmark for judging a company's actual EVA Momentum results. If a company's market value at the beginning of a year implies an EVA Momentum target of 2%, but the firm delivers, say, only 1%, then investors are likely to bid the firm's share price down (and vice versa if the company exceeds expectations).

Emerson's share price closely mirrored that equation. As shown in Table 4, the realized EVA Momentum initially fell short of the market's implied target and, as expected, Emerson's shareholder wealth contracted sharply. But over the ensuing 2003-07 period, the turnaround interval when Emerson's actual EVA Momentum smartly outpaced expectations for it, the firm's MVA—and hence its shareholder returns—increased markedly. Though not perfect, the difference, or “spread,” between a company's expected and realized EVA Momentum is a sufficiently compelling driver of shareholder returns to warrant monitoring by managers and directors.

A third main application is in setting planning targets. For instance, given its fiscal 2007 end stock price, Emerson's EVA Momentum target was 0.8%, which implied that management would need to deliver a five-year EVA improvement of 4% of 2007 sales, or a cumulative EVA increase of \$940 million.

Of course, no senior manager worth her salt would actually commit to such an important goal without considering other inputs. Emerson's management would certainly want to put the target in the context of the company's prior EVA Momentum results, and compare it with the EVA Momentum the market is expecting from Emerson's public competitors, as well as the EVA Momentum implied by security analysts' earnings forecasts.

Management should also consult the EVA Momentum arithmetic to assess the probability of actually achieving the goal. For instance, with its EVA margin currently running close to 5%, a 10% growth rate in sales would make a 0.5% downpayment on the hypothetical 0.8% target, leaving the 0.3% balance to come from continued expansion in EVA margin, from even more profitable growth, or more assiduous pruning of marginal business lines. Top management needs to ask how likely that is, and what specific steps it requires.

Lastly, management should “deconstruct” the past and planned EVA Momentum of each individual line of business to be sure no opportunity for improvement is left unexamined, and that the projections for EVA Momentum by business line add up to the firm's aggregate goal.

In sum, EVA Momentum can play an important role in any company's planning process, giving the top team the ammunition it needs to set financial targets that are challenging but realistic, while giving line managers an arsenal of analytical tools to help them achieve the goals.

Conclusion

EVA Momentum is the single best ratio measure of corporate performance for any company mature enough to consider EPS growth and return on capital as relevant metrics. Unlike all other ratios, it applies equally well to companies and operating units regardless of their inherited circumstances or industry sector. It is the only percent metric where more of it is always better than less, where increases happen only when managers allocate and manage resources wisely and do things that make economic sense, and where targets for it can be derived from stock prices. EVA Momentum offers CFOs a new and powerful diagnostic framework that makes it easy for anyone to understand how well a business is truly performing, and why—both in general and in the details that matter. It is an exceptionally valuable tool for giving top managers and boards a bird's eye perspective on performance and market expectations, and for insuring that all team players are united in achieving a financial mission that matters. With such advantages, EVA Momentum deserves to replace the longstanding DuPont formula as the method for converting raw accounting data into real financial intelligence that managers can use to drive performance and increase shareholder value.

Bennett Stewart co-founded Stern Stewart in 1982, pioneered development of the EVA framework with his 1992 book, *The Quest for Value*, and now serves as Chief Executive Officer of EVA Dimensions, a company providing EVA-based software tools, valuation models, and financial data bases. He can be reached at gbstewart@evadimensions.com