

The Investor's Guide
to
EVA[®]

Contents

Introducing Economic Value Added	3
The Unreliable Accounting Model of Value	3
Economic Profit: A New Valuation Paradigm	4
EVA Versus the Accounting Model	4
EVA's Time Has Come	6
Enter the Economic Model: An EVA Primer	8
EVA Definition.....	8
EVA is The Definitive Measure of Corporate Performance	10
MVA is The Measure of Shareholder Wealth	12
EVA Explains Stock Prices.....	12
A Sales-Driven EVA Forecast	14
EVA Momentum -- The Only ratio That Tells The Whole Story	17
The Path to Financial Truth.....	18
The Replacement for DuPont ROI.....	20
The Market's-Implied Momentum ("MIM")	21
A Capital-Driven Forecast	22
Summing Up.....	22

Notice

© COPYRIGHT 2011 EVA DIMENSIONS LLC. NO PART MAY BE TRANSMITTED, QUOTED OR COPIED WITHOUT EXPRESS WRITTEN CONSENT OF EVA DIMENSIONS LLC.

FOR INFORMATIONAL PURPOSES ONLY. ALL INVESTMENT COMMENTARY AND RATINGS CONTAINED HEREIN ARE FOR ILLUSTRATION ONLY AND ARE NOT INTENDED AS BUY/SELL RECOMMENDATIONS.

Introducing Economic Value Added

The Unreliable Accounting Model of Value

Many investment analysts have fallen into the trap of judging share prices with an “accounting model of value,” that is, by analyzing and capitalizing reported earnings and earnings-per-share, and variants like ROE and EBITDA. Yet profit measured according to generally accepted accounting rules is almost always a highly unreliable indicator of a firm’s real value.¹

Accounting profits are misleading because no charge is deducted for using shareholder funds, because operating and financing decisions are mixed, and because accounting reports are intentionally "conservative" -- which means financial statements are aimed at the analytical interests of creditors far more than shareholders. Lenders applaud expensing R&D outlays, for instance, because they want to lend only against assets that they think they can liquidate in a bankruptcy, and recent R&D spending is considered too unreliable for that purpose. But for shareholders, who in the main are buying into the value of a going-concern business, outlays for R&D and similar intangible investments should be included in balance sheet capital and written off over their expected economic lives, just like plant capital or any other investment that bears the potential to generate earnings in future periods.

Accountants won't follow this course because they are under the illusion that balance sheets should somehow determine or reflect a firm's market value². But that assumption is baseless. Quite the opposite is true if anything. What accountants call "assets" are generally liabilities -- at least from the shareholders' point of view. Consider two companies that are identical in every way, except one of them ties up more balance sheet capital to run its business. Say it has more inventories or more plant and equipment on hand. That firm is the more "bankable" of the two - it is able to borrow more, because the extra assets on its balance sheet provide more security to creditors in the event of liquidation or bankruptcy -- but it is less valuable to its shareowners. The extra capital is just a *deduction* from the value of the going concern -- which means those so-called "assets" are really liabilities. By the same token, non-interest bearing "liabilities," like customer deposits or deferred taxes, are in truth assets. They defray the amount of capital that must be pried from lenders and shareholders to run the business, which makes the company a

¹ See “Fix Accounting—Measure and Report Economic Profit,” by Bennett Stewart, *The Journal of Applied Corporate Finance*, Summer 2003, and “Why Smart Managers Do Dumb Things,” by Bennett Stewart, *The Wall Street Journal*, June 2, 2003..

² Perhaps accounting firms are simply afraid of being sued for overstating earnings -- obviously, they'd rather revise earnings upward than have to write earnings down to correct a book value overstatement.

more valuable cash machine as a going concern.³ Remarkably, even the most basic accounting terminology is at odds with economic reality.

Economic Profit: A New Valuation Paradigm

The solution is as revolutionary as it is necessary. The Wall Street community, along with the financial media and corporate bosses, would be far better served by a fundamentally new valuation paradigm, one that is based on reporting, analyzing, projecting, valuing and discounting a firm's underlying economic profit rather than its bookkeeping profit. Unlike accounting profit, economic profit -- which we call EVA^{®4}, standing for "economic value added" -- deducts the "cost" of giving shareholders a minimum acceptable return on their equity investment in the firm. It also avoids financing distortions that occur when debt/equity ratios temporarily shift. It does so by measuring the return generated on all capital against a strategic, long-run, weighted average cost of the capital that is based on a target blend of debt and equity. And finally, it eliminates distortions introduced by the principle of conservatism. Under EVA, R&D and other intangible outlays, even outlays to restructure operations, are treated as investments, and not expensed or charged to earnings as accounting rules dictate.

Ironically, although many in the analyst community seem to march to the beat of reported accounting measures, the EVA measures -- with the adjustments described, and a few more -- are actually far better at explaining and predicting stock prices, which is reason enough for an astute investor to pay attention.

EVA Versus the Accounting Model

EVA outperforms the accountants' valuation paradigm for many reasons, but foremost because it is based on economic principles as opposed to bookkeeping rules. Economists, for instance, consider all companies to be engaged in essentially the same business—the business of allocating, managing and re-deploying scarce resources. From that perspective, the cost of using a resource is the profit contribution it would make in its next best use. For the capital supplied by creditors and shareholders, that use would be an investment in a stock and bond portfolio that matches the risk of the company in question. The true cost of using capital is therefore not an identifiable cash cost, but an "opportunity cost" that equals the rate of return investors could expect to earn by investing in that benchmark portfolio. And consistent with this

³ Even this characterization is too simplistic. If, to take an example, all media companies charge for subscriptions in advance, and all software firms charge for licenses and services in advance, then the apparent advantage of getting paid up front and recording a deferred revenue liability that defrays capital is likely to be competed away. If it's not a unique advantage, it's just passed on to readers or advertisers in the form of lower prices. In the end, the only real asset any company has is its ability to earn economic profit as a going concern business enterprise.

⁴ EVA is a registered trademark of EVA Dimensions in the field of investment management and research, and valuation modeling.

economic point of view, EVA measures profit only after subtracting a charge for equity capital, even though accounting rules forbid that.⁵

The EVA model also differs from the bookkeepers' paradigm in that valuing shares is not the primary goal at the outset, and per-share measures are de-emphasized. The chief aim is to establish a firm's overall enterprise value – the total present value of its business operations – from which per-share values can readily be ascertained as a by-product. The economic model is thus entirely consistent with the basic corporate finance principle that operating and financing decisions should be kept apart, whereas the accounting model incorrectly mixes the two.

The economic model also discounts the importance of price-earnings multiples, and instead attaches greater significance to price-to-book multiples, or more specifically, to the spread between a company's aggregate market value and its invested capital. Where that spread is positive, a firm has transformed capital inputs into more valuable outputs, and it has added to the wealth of its investors -- which is a basic fact any investor or business manager should know about a firm.

We refer to that spread as MVA, standing for market value added. While we'll delve into details later, the main point is that projections of EVA discount to MVA, or as Fortune magazine once put it in a cover story article -- "EVA is the real key to creating wealth." A firm that earns no EVA creates no MVA, and trades, or should trade, close to its book capital -- absent some looming turnaround or takeover. The only way a firm can genuinely create wealth, develop a franchise value, if you will, and generate outsized returns for its investors in the process, is to generate positive EVA profit -- and the more the better – and sooner than later -- as will be shown.

The EVA model thus gives concrete meaning to a firm's intangible assets, which can include an established customer base and favorable reputation, recognized brands, technological prowess, organization structure, supplier relations, even a firm's management quality and its "culture." Though generally not recorded on corporate balance sheets,⁶ intangibles are still factored into a firm's share value to the extent that they enable a firm to earn an EVA profit. Coca-Cola for instance earned over \$5 billion in EVA profit in the four quarter year ending mid-year 2010 -- the 13th largest of an American company, and a tribute to the value of the firm's brands, distribution network and marketing skills. Projecting that KO could maintain and even expand its EVA, investors at the time bid KO to an \$86 billion MVA premium over the firm's \$35 billion capital base. Plainly, Coke's market value included the value of its intangible assets even though those assets were not at all recorded on the balance sheet. But that's the point. Every company's real

⁵ With the exception that public utilities are permitted under GAAP to capitalize the cost of equity associated with new plant construction (known as "Allowance for Funds Used During Construction," or AFUDC), which is subsequently charged to earnings as plant depreciation.

⁶ Ironically, intangible assets are valued on corporate balance sheets if they are acquired, but not if they are home grown as most are.

assets cannot be found on its balance sheet. They are to be found on the income statement -- in its ability to earn EVA.

The opposite is also true. An "impairment" is not a question of writing down a balance sheet asset because an accountant decides that there has been an erosion of value. A real impairment occurs when a company suffers a sustained loss in EVA -- when it makes an investment of any kind that fails to return more than the full cost of capital over time. Rather than writing down the investments as accounting rules mandate, EVA reverses impairment charges, leaves the balance sheet to measure the original invested capital -- what investors have put or left in the business -- and leaves EVA to measure the value added -- or lost -- compared to that capital base. EVA, in short, does not let the balance sheet do the job of the income statement. It relegates accounting to the role of measuring "capital," and elevates equity analysts back into the role of measuring value -- by projecting and discounting EVA -- a role that accountants are increasingly attempting to usurp with mark-to-market accounting, with unfortunate consequences.

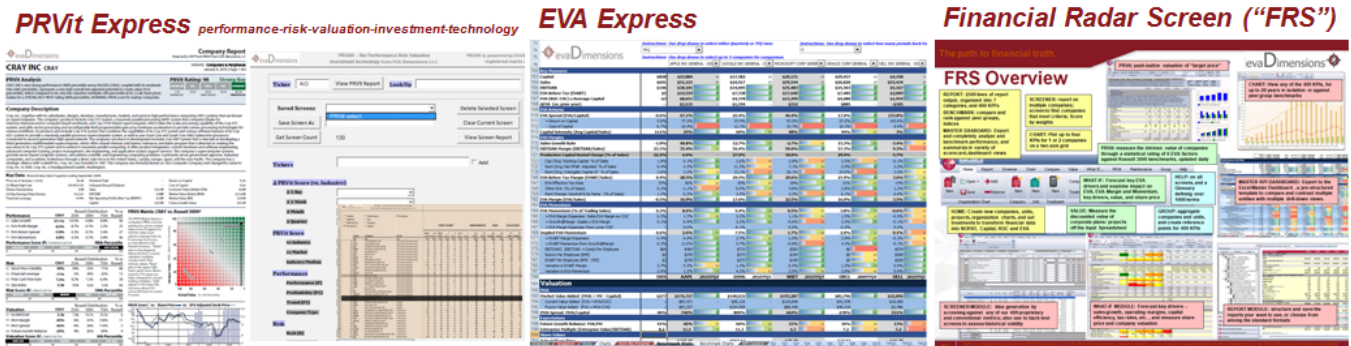
EVA also does one more thing. It bridges the job of the security analyst and corporate manager. EVA is entirely consistent with the NPV (net present value) decision rule that most well run companies employ for investment decisions. The rule directs corporate managers to undertake projects and adopt strategies that they believe will produce the largest spread between the initial cash investment and the present value of ensuing cash inflows -- which are the decisions that will maximize a firm's MVA. The rule leads managers to decisions that produce the greatest economic growth rate from a finite resource base. The economic model thus hinges common stock valuations to the greater goals of shareholder wealth maximization, sound corporate governance, and increasing overall well-being.

EVA's Time Has Come

Until recently, it has been extremely difficult for equity research analysts and fund managers to put EVA investing principles into practice. Financial databases did not support it, and Wall Street models did not deal with it. But that has changed, as EVA Dimensions LLC⁷ has developed a family of products that greatly facilitate EVA-based research. These range from FRS -- standing for the "Financial Radar Screen"[®] -- which is a full featured software system for projecting, valuing and screening stocks according to EVA, to "EVA Express," which automatically populates an Excel dashboard with a rich comparative financial analysis of up to 10 tickers at a time, to "PRVit"[®] (pronounced "prove-it", for the "performance, risk, valuation investment technology"), which is an EVA-based stock rating system covering the Russell 3000.

⁷ EVA Dimensions LLC acquired the EVA brand and related technologies for investment management and research, valuation modeling, software and data-base applications from Stern Stewart & Co., the management consulting firm that pioneered the corporate applications of the economic profit concept. EVA Dimensions CEO, Bennett Stewart, was a founding partner of Stern Stewart, and pioneered development of EVA with his book, *The Quest for Value* (1991, HarperCollinsBusiness)

These services -- as depicted below -- are making it possible for investment analysts and fund managers to put the complete power of the EVA model on their desktops in a form that best dovetails with their investment process.



- | | | | | | | | | |
|---|--|--|--|--|---|--|--|---|
| <p>Features:</p> <ul style="list-style-type: none"> ▪ The PRVIt score – a composite alpha signal based on “VARP” – buying “value at a reasonable price” ▪ Report, screen, rank performance trends, risk, and valuation multiples | <p>Applications:</p> <ul style="list-style-type: none"> ▪ Data feeds (Daily, PIT Back-test) ▪ Idea Generation (Screening) ▪ Snapshot (familiarization) ▪ Time Buys, discipline Sells ▪ Pair Trades ▪ Sector /Industry Scan ▪ Portfolio PRVIt Monitor/Score | <p>Benefits:</p> <ul style="list-style-type: none"> ▪ Proven efficacy -- #1 or #2 Bloomberg ranking on 1,100 stocks ▪ Unique, proprietary, uncorrelated metrics and valuation signals | <p>Features:</p> <ul style="list-style-type: none"> ▪ Step-by-step de-construction of a company’s performance, risk, and valuation, relative to peers, with power of EVA Momentum lens ▪ Populate dashboards with up to 10 tickers at a time – in seconds | <p>Applications:</p> <ul style="list-style-type: none"> ▪ Gain significant insights into performance and value drivers, and key trends ▪ Efficiently compare and contrast up to 10 companies at a time and put in perspective ▪ See the big picture, and details that count ▪ Back-drop for developing projection assumptions | <p>Benefits:</p> <ul style="list-style-type: none"> ▪ #1 best financial analysis tool on the market ▪ Faster, more accurate, more penetrating insights ▪ Enhanced ability to project real value | <p>Features:</p> <ul style="list-style-type: none"> ▪ Industrial strength software for valuation modeling, in-depth financial analysis, performance benchmarking, and custom screening -- fully incorporating “state-of-the-art” EVA framework | <p>Applications:</p> <ul style="list-style-type: none"> ▪ Measure intrinsic value of sell-side models ▪ Target price from built-in statistical model ▪ Accurately assess growth, margin, capital expectations built into stock prices ▪ Simulate value of key assumptions ▪ Screen and rank with 40 key metrics ▪ In-depth, custom analysis, benchmarking | <p>Benefits:</p> <ul style="list-style-type: none"> ▪ Interactivity – FRS as your research partner ▪ Speed, productivity, insight, alpha ▪ Examine 20 year history for Russell 3000 ▪ Multiple valuation, expectations, perspectives |
|---|--|--|--|--|---|--|--|---|

Enter the Economic Model: An EVA Primer

Well before accounting became the language of finance, economists developed a concept of a firm's profit that although more difficult to measure with precision, was far more useful and relevant to assaying market value and allocating resources. It is the notion of income as a residual after subtracting the opportunity costs of all factors of production. Eminent British classical economist Alfred Marshall [1890] eloquently captured the essential idea when he stated:

“What remains of his profits after deducting interest on his capital at the current rate may be called his earnings of undertaking or management.”

Economist and management guru Peter Drucker updated and expanded the definition in a 1995 *Harvard Business Review* article entitled, “*The Information Executives Truly Need.*”

“EVA is based on something we have known for a long time. Until a business returns a profit that is greater than its cost of capital, it operates at a loss. Never mind it pays taxes as if it had a genuine profit. It still returns less to the economy than it devours in resources. It does not cover its full costs unless the reported profit exceeds the cost of capital. Until then, it does not create wealth; it destroys it.”

EVA Definition

The most basic definition of EVA is a simple three-line calculation – sales less operating costs less financing costs. Operating costs includes the depreciation and amortization of business assets that must be replaced or replenished to stay in business, along with tax due on operating profit. The financing costs cover all capital, which includes the opportunity cost of equity as well as interest on borrowed funds. Said another way, EVA is net operating profit after taxes, or NOPAT, less a “capital charge” one computes by multiplying the amount of invested capital⁸ by the overall, weighted average cost of the capital⁹:

EVA	=	Sales – Operating Costs	–	Financing Costs
EVA	=	NOPAT	–	COC * Capital
\$50	=	\$150	–	10% * \$1,000

To illustrate, consider a company that earns NOPAT of \$150, and ties up \$1,000 in capital from debt and equity sources to finance business assets. Assume further that the firm's overall cost of capital is 10%, a rate that blends the after-tax cost of debt and equity at the proportions

⁸ Capital is the sum of all funds raised from debt and equity sources and from retained earnings, and which is now funding the firm's net assets – its total assets, less trade financing from payables and accrued expenses.

⁹ Consistent with the definition of capital, the cost of capital is the blended cost of the firm's debt and equity capital.

management would intend to use as a target (which is estimated by the 3 year average capital mix). In this case, the firm must set aside \$100 to rent its capital from the market, and its EVA is \$50, the profit residual¹⁰.

The capital charge is the key to understanding the significance of EVA to investors. It represents the amount a firm must earn to cover its interest expense – after-tax – and leave a net income remainder that provides shareholders with a minimum fair return on their investment. Consequently, a firm that just covers its capital charge and records zero EVA is actually doing okay. It is breaking even in economic terms and covering all its costs, including the cost of giving shareholders a decent, if unexceptional, return. By contrast, a firm with a positive EVA is truly doing well, and one with a negative EVA is truly falling short of the profit standard set by the market. No other measure so clearly and correctly separates good from bad corporate performance.

Another definition of EVA is derived by dividing and multiplying by capital, which makes EVA a function of a firm's return on capital, or ROC, as follows:

$$\begin{aligned}
 \text{EVA} &= \text{NOPAT} - \text{COC} * \text{Capital} \\
 \$50 &= \$150 - 10\% * \$1,000 \\
 \\
 \text{EVA} &= ((\text{NOPAT}/\text{Capital}) - \text{COC}) * \text{Capital} \\
 \text{EVA} &= (\text{ROC} - \text{COC}) * \text{Capital} \\
 \$50 &= (15\% - 10\%) * \$1,000
 \end{aligned}$$

In the example, the company's return on capital -- its NOPAT/Capital ratio -- is 15%, which is 5% more than its cost of capital, and it is earning the 5% spread on \$1,000 of capital, for an EVA of \$50, as before. This shows that EVA is the *dollar* spread between a firm's return capital and its cost of capital.

Let's put the formula in terms familiar to investment funds managers. The spread between ROC and COC is the equivalent of a corporate "alpha" -- the excess return earned over a benchmark return -- and capital is the equivalent of the "assets under management." EVA is thus a firm's dollar alpha - its dollar excess return.

Although EVA can be expressed as a function of ROC, that's perhaps misleading, because EVA and ROC frequently go in opposite directions. Take the example firm. Any new capital investment that returns more than the 10% cost of capital increases the firm's EVA. But any

¹⁰ EVA may also be thought of as the profit a company would report if it owned none of its assets but externally financed them all – if it consigned its inventories, factored its receivables, sold and leased back all plant assets, and conducted research in off-balance sheet partnerships, and so on. That done, the firm would have no balance sheet, only an income statement, and the costs of financing all assets and all of forms of capital would be directly subtracted as income statement finance charges, with the result that that firm's reported accounting profit would equal its EVA (aside from other accounting distortions).

investment that earns under 15% reduces its ROC. Growth at an incremental 13% return, for instance, adds EVA but dilutes ROC.

Best Buy provides a good example of that. From 2000 to 2007, as BBY's overall return on capital dropped from 19% to 15.5%, EVA surged from \$165 million to \$700 million. Judged by ROC, Best Buy was slipping, but by EVA, a smashing success. Which interpretation is correct? Over that period, Best Buy became the dominant consumer electronics retailer, eventually putting its closest rival, Circuit City, out of business. It opened many new stores that in the main out-earned the cost of capital and increased the firm's "net present value." And as it did, BBY's MVA doubled. The firm added \$6 billion to its shareholders' wealth and handed them a very attractive rate of return in the process. BBY is struggling today, but that does not invalidate the general point which is that increases in EVA are more predictive of share returns and intrinsic value than increases in return on capital, or any other measure for that matter.

Although an increasing ROC is often a sign of improved operational efficiency which leads to an increase in EVA performance, that is not always the case. ROC -- or RONA, or ROI, or ROE, or CFROI, or any of the return variations -- is defective as a measure because it does not consider the value added from incremental growth or retrenchment -- dimensions of corporate performance that EVA fully, and correctly, weighs.

EVA is The Definitive Measure of Corporate Performance

Taking that thought a step further, EVA is unique among all performance measures in measuring *all* the ways that a company is improving its performance and adding to its value, or is deteriorating. To begin with, EVA increases when a company streamlines costs and saves taxes, which adds to NOPAT without adding to capital (and EVA decreases when a company's costs are becoming more bloated). But there's no magic in that. Even EBITDA or net income tell that tale. Where EVA shines is when capital is added to or withdrawn from a business.

The second way EVA increases is when a company invests capital in some mix of working capital, plant assets, and even intangibles like R&D, and earns a rate of return above the full cost of capital. Profitable growth is absolutely recognized as a plus in the EVA realm. But, on the other hand, unprofitable growth is penalized, because EVA decreases when new investments earn less than the full cost of capital. By deducting the cost of capital, EVA establishes a sharp line between constructive and destructive growth

Measures like EBIT and EPS aren't so picky. EBIT goes up when a new investment earns any positive return. EBITDA is even worse. It increases when an investment generates any positive pre-tax-pre-depreciation cash flow whatsoever, a laughably low standard of excellence. EPS is at least a step in the right direction, because it imposes a charge for depreciation of wasting assets, and for taxes, and for interest expense, after tax. But it too is too lenient. It rises if a

company just covers the after tax cost of any borrowed capital -- assuming the equity part is financed by retained earnings, as most growth is. It is thus a fairly easy matter for corporate managers to chase growth and manufacture reported earnings by pouring capital into fairly low return projects that won't ever generate a competitive return. When EPS goes up, and EVA goes down, it is EVA that wins the argument, and shareholders that lose the value. Investors severely discount the share prices of firms that inflate book earnings growth at the expense of economic profit.

A third way that EVA goes up is when assets are better managed. EVA increases when a company turns working capital faster, when it more fully utilizes production assets and generates faster turns, when management refrains from overpriced acquisitions, when lines of business and product lines with negative EVA are purged, when activities and assets best handled by others are outsourced, when assets worth more to others are sold, and generally, when management develops a higher-velocity, capital-leaner business model that competitors cannot match.

The key insight is that by charging fully for *all* capital, EVA correctly accords value to companies when they use capital more diligently, sparingly and intelligently. As a result, EVA can increase even when a company's sales and reported earnings decline, so long its capital charge falls even more. A good example comes from Coca-Cola which in the 1980s adopted EVA as its main financial goal. That prompted a decision to switch from using stainless steel containers to cardboard containers to ship concentrate to bottlers. The shift reduced reported profit and margins and raised the unit cost of production, because unlike stainless steel canisters, cardboard ones were not reusable and were expensed. But EVA increased because the firm's capital charge fell even more as the steel vessels were sold and capital was liquidated.

Accounting measures like EBIT, EBITDA, net income or EPS, just don't get this point at all. By entirely neglecting the cost of capital or grossly understating it, they are biased to overvalue firms that under-manage capital, and to overlook firms that have achieved excellence in asset management and in capital stewardship.

A fourth and final way EVA and shareholder value increases is when a company "strategically" reduces its overall, weighted average cost of capital, such as by adopting and sustaining a capital structure more tilted toward debt while still preserving flexibility to weather economic depressions and capture fleeting investment opportunities. Within limits, debt is cheaper than equity because interest payments are tax deductible, and because debt better disciplines management to pay out surplus cash than reinvest it unwisely. Leverage also enables a company to concentrate more equity in the hands of management, thereby increasing their incentive to maximize the firm's residual earnings (i.e., its EVA). Whatever the reason, a

reduction in the overall cost of capital increases EVA by reducing the price paid for its capital, just as a reduction in the price of jet fuel would increase the profits and value of an airline.

The overall cost of capital goes down, however, only when management *permanently* changes its financial policies. It does not go down when a company temporarily borrows -- such as to fund a stock buyback or make an acquisition -- which is why the immediate run up in EPS that generally accompanies such maneuvers often has little impact on share price -- or why the share price actually falls. Seeing that the earnings have become more geared, risky, and sensitive to economic cycles, investors react by more steeply discounting the earnings, and assigning a lower P/E multiple which counters, perhaps even more than fully offsets, the one-time bump in EPS. EVA does not emit the false positive signal EPS does, because the cost of capital used in computing the capital charge goes down only when management implements and sustains a permanently higher debt-equity blend in its capital structure.

MVA is The Measure of Shareholder Wealth

Not only does EVA measure all potential sources of added market value along the lines that common sense dictates. An exact formula explains stock prices as a function of the EVA profit that a company is projected to earn. As has been mentioned, it does that via a sister measure called MVA¹¹, or market value added. MVA is defined as the difference between the total market value of a company, given its share price, and the capital employed on its balance sheet -- measured the EVA way. For example, a firm that trades for a \$1 billion market value and that has a \$700 million capital base has an MVA of \$300 million, the difference:

$$\begin{array}{rclcl} \text{MVA} & = & \text{Market Value} & - & \text{Capital} \\ \$300 \text{ million} & = & \$1 \text{ billion} & - & \$700 \text{ million} \end{array}$$

MVA measures the amount of wealth that a company has created for its shareholders, since the start of the company, because it compares the total cash amount that investors have put or left in the business with the present value of the cash they can expect to take out of it. Every company's most important mission is to maximize it, and every analyst's job is to find firms that are trading under -- or over -- their true "intrinsic" MVA value -- before other analysts.

EVA Explains Stock Prices

And that is where EVA comes in, because to be "fairly" valued, a firm's MVA should equal the total sum of EVA profit it can earn over its projected life, discounted to a present value, which, miraculously, gives the exact same valuation as discounting project free cash flow:

$$\begin{array}{rclcl} \text{MVA} & = & \text{Market Value} & - & \text{Capital} \\ \text{MVA} & = & \text{Present Value of Projected EVA} & & \end{array}$$

¹¹ The term MVA was coined by Bennett Stewart and first described in detail in his book, *The Quest for Value* (HarperCollinsBusiness, 1991).

The formula is not a rough estimate or rule of thumb. It is an exact equation that is mathematically equivalent to projecting and discounting the cash flow distributable to investors over the life of the business to a present value at the firm's overall cost of capital.

Although mathematical proofs are available¹², the EVA valuation formula is intuitively simple to grasp. The key point is that EVA discounts to MVA because EVA deducts the cost of capital. EVA sets aside the amount of profit that must be earned in each projection period to recover the value of any capital that already has been or will be invested. Thus, firms that just earn their cost of capital, and that break even on EVA, break even on MVA. They are just worth the sum of capital that has been put or left in the business. Firms that earn more than their cost of capital, and that generate a true economic profit, are worth a positive MVA premium. What's more, the larger the projected EVA, and the faster it grows, the longer it endures and the lower its risk, the greater is the firm's "intrinsic" MVA. On the other hand, companies that are bound to earn negative EVA profits should trade for negative MVAs -- they should trade at market values that discount the capital invested in the business -- with a bigger discount warranted the more negative the EVA is, and the longer it is likely to take to turn it around¹³.

Although discounting EVA and discounting "free" cash flow¹⁴ always produce the same net present value answer from a given forecast, EVA is the far preferable method. Whereas an increase in EVA from period to period is a sign management has made sound operating and investing decisions which have expanded the firm's net present value and share price, it is impossible to tell whether more free cash flow over any interval is a good or bad outcome. Granted, many successful companies like Microsoft exhibit a strong cash flow, but negative "free" cash flows are actually quite common at many highly valued firms that are pouring capital into high returning, EVA enhancing opportunities. And the longer the firms can continue to make positive EVA investments and forestall the day their overall cash flow turns positive, the more valuable they are. That may be hard to grasp in terms of discounted cash flow -- because one has to visualize a distant, receding but ever increasing "terminal value" overcoming an ever expanding up-front cash flow deficit -- but just remember, so long as a firm is increasing its EVA, it is increasing the net present value of its cash flows and adding to its per share stock price. Therefore, and ironically, the most effective way to measure a firm's discounted cash flow value is actually not to project and discount cash flow at all. It is to analyze, project, and discount EVA instead¹⁵!

¹² For a proof, see "Free Cash Flow (FCF), Economic Value Added (EVA®) and Net Present Value (NPV): A Reconciliation of Discounted Cash Flow (DCF) Valuation," by Ronal E. Shrives and John M. Wachowicz, *Engineering Economist*, Vol. 41 (2001), No. 1, pp. 36-52.)

¹³ In practice, investors typically price a turnaround or takeover of some kind to stem the EVA red ink, and thus negative EVA firms tend to sell closer to book value than a strict discounting of their current EVA levels would indicate.

¹⁴ "Free" cash flow is the cash flow from operations net of all investment. It is the cash flow distributable to investors, or if it is negative, that must be raised from them. It is the net cash flow that an analyst would discount to estimate the fair market value of a company's debt and equity. It is likewise the cash flow a corporate analyst would discount to measure the NPV of an investment project.

¹⁵ Another advantage is that EVA tells an analyst when extending the forecast horizon no longer adds to current share value -- which is when the firm's EVA no longer can grow because competition, saturation, and substitution have driven returns on incremental investments to the cost of capital

A Sales-Driven EVA Forecast

One way to project EVA is to forecast sales and the corresponding EVA/sales margin, which is the percent of sales that is forecast to drop to the EVA bottom line after covering all operating and capital costs. In other words, just project how big a market the company will serve, and how profitable that market will be as measured by its EVA Margin, then multiply those two together to generate a projection for EVA, and discount that to a present value to measure the firm's warranted MVA, from which it is a simple matter to derive the share price¹⁶. With this method a security analyst can readily estimate a firm's discounted cash flow value and per share intrinsic value without ever having to resort to the complication of forecasting a balance sheet or calculating cash flow. How so? Because the cost of the capital that a company has invested or will invest is already implicitly deducted as a charge against its projected EVA/Sales margin. It is a math transformation that makes financial analysis remarkably more productive and insightful.

Of course, this does put a premium on measuring a firm's EVA Margin, putting it in perspective with other firms, understanding the underlying operational and strategic factors that are driving it, and ultimately, how it is likely to change over time. But with a little practice in the databases and software tools from EVA Dimensions, it is actually a simple matter to acquire the intuition and finger-tip feel into EVA Margin that can turn an experienced analyst into an even more capable valuation expert. As an example, consider the deconstruction of Apple's EVA Margin shown below:

6	APPLE INC GENERAL - DISCLOSED	2005TFQ2	2006TFQ2	2007TFQ2	2008TFQ2	2009TFQ2	2010TFQ2
26	EVA Margins						
30	Cash Operating Costs (% of Sales)	83.4%	80.9%	77.0%	74.1%	70.4%	64.6%
31	COGS Adjusted Chrg: % of Sales	70.4%	70.0%	66.7%	63.7%	60.7%	56.7%
34	SG&A Adjusted Chrg: % of Sales	13.0%	10.9%	10.4%	10.4%	9.7%	7.9%
37	EBITDAR Margin (EBITDAR/Sales)	16.6%	19.1%	23.0%	25.9%	29.6%	35.4%
40	Productive Capital Rental Charge (% of Sales)	11.7%	8.4%	8.2%	7.8%	8.0%	6.9%
41	Cap Chrg: Working Capital % of Sales	-0.1%	0.1%	0.1%	0.0%	0.2%	0.1%
61	Rent Chrg: Net PP&E Adjusted % of Sales	4.5%	3.3%	3.3%	3.4%	3.7%	3.3%
80	Rent Chrg: Intangible Capital AT % of Sales	7.2%	5.0%	4.8%	4.4%	4.2%	3.5%
115	EVA Before Tax Margin (EVABT/Sales)	4.9%	10.7%	14.8%	18.1%	21.6%	28.5%
118	EVA Effective Tax Rate	43.1%	38.9%	37.2%	36.8%	36.5%	36.2%
121	Other EVA % of Sales	1.1%	1.3%	1.5%	2.0%	1.8%	-1.1%
158	Rent Charge: Goodwill & Sp Items % of Sales	0.7%	0.5%	0.4%	0.3%	0.2%	0.2%
167	EVA Margin (EVA/Sales)	3.1%	7.4%	10.5%	13.1%	15.2%	16.9%
168	Percentile	69	81	88	95	95	95
169	50th	0.4%	0.3%	1.2%	0.7%	-0.6%	-0.5%

Apple managed to increase its EVA/Sales Margin from 3.1% to 16.9% over the 6 year interval ending March 2010, rising from the 69th percentile to better than 95th percentile against all Russell 3000 firms (only a handful are higher). How did Apple do that? In financial terms, by very successfully attacking what we call the "3-P's" -- price, product and process. Apple earned

¹⁶ To do that, first add the projected MVA to the company's existing capital base to arrive at the intrinsic value of the firm's business operations. Take our hypothetical company earning \$50 of EVA at a 10% cost of capital on a \$1,000 capital base. Assume the firm is only able to maintain its EVA as a perpetuity. The present value of \$50 at 10% is an MVA of \$500, which leads to a total operations value of \$1,500, including an add back for the capital. Next, fold in the value of non-operating assets like excess cash, and deduct the value of all prior claims to arrive at the implied common equity value. Then divide that by outstanding shares (taking account of options and other "dilutive" securities), and the result is the share price implied by the projection.

and exerted *price* power, developed an outstanding, EVA-positive *product* portfolio, and radically improved *process* excellence -- management ran a very tight operational ship and minimized the total sum of operating and capital costs spanning the income statement and balance sheet. As Apple aptly illustrates, a firm's EVA Margin provides an accurate and comprehensive measure of the total profitability and productivity of the firm's business model from all sources. For this purpose, the EVA profit margin is actually a better tool than using the classic DuPont ROI formula which we suggest be retired from service along with discounted cash flow.

The table above illustrates this superiority by showing how a firm's EVA Margin can be traced to a family of underlying drivers that give analysts ready insights into individual performance elements -- each of which can be benchmarked against peers and examined in terms of trends, shortfalls, and opportunities. The schedule starts with EBITDAR margin¹⁷ as a measure of the firm's cash operating profit, from which a series of line item charges are deducted for individual categories of balance sheet capital¹⁸. The schedule for instance shows that Apple's working capital days are so low, just 1-2 days on hand typically, that there is virtually no capital charge associated with it -- especially when expressed as a percent of sales (for reference, even discount retailers typically have a working capital charge only as low as 0.5%, and the working capital charge generally escalates from there -- up to 2-4% or more -- for product companies; at an outer edge, Tiffany's working capital charge is over 6% -- which really casts Apple in a very favorable light!).

AAPL is also extraordinarily efficient in generating sales with an extremely low "rental" charge for its plant and equipment -- which reflects a combination of depreciation and cost of capital on the net plant it owns plus rent paid on the assets it leased¹⁹. One reason the overall charge is so low -- just 3.3% of sales, down from 4.5% six years before -- is that Apple generates a lot of revenue from internet downloads, which is an extremely efficient production process. Another reason is that AAPL outsources the bulk of production to third party suppliers, which means that a large portion of the cost of the plant capital in its supply chain is actually incurred by other firms. The suppliers just don't swallow those costs, or course. In a Thomas Friedman-esque "flat world," all companies compete to cover the global cost of capital in their operations. Apple's suppliers therefore must factor the capital costs they incur into the product prices they charge Apple. In the final analysis, outsourcing does not enable Apple to avoid the capital costs in its

¹⁷ EBITDAR is essentially EBITDA plus rent. EBITDAR is computed as if a firm owned all its assets, even the ones rented. The EBITDAR margin is therefore unaffected by the mix of owning and renting assets. Also, consistent with the EVA theory, EBITDAR is measured *before* deducting R&D and other intangible spending. EBITDAR also is measured after substituting retirement service costs -- which measures the increase in the retirement liability due to service in the period -- for reported costs -- which are distorted by all manner of assumptions and accounting tomfoolery. The intent is to make the EBITDAR margin a more reliable and comparable a measure of gross cash operating profit than the standard EBITDA margin, and then to deduct charges for R&D, rent and the like farther down the EVA Margin schedule, as is shown.

¹⁸ A pre-tax cost of capital is used to compute the line item capital charges in order to put them on a scale directly comparable to the EBITDAR margin, which is also measured pre-tax. A firm that has a 9% weighted average cost of capital post tax, and 40% tax rate, is charged at a 15% rate for its capital, pre-tax, for instance. The gross-up in the cost of capital is reversed in the computation of the EVA tax, which leaves the bottom line EVA the same as if a post-tax cost of capital was directly applied to the capital for the capital charge.

¹⁹ EBITDAR assumes all assets are owned, even those rented, but the PP&E rental charge assumes all assets are rented, even those that are owned, which makes both measures more comparable across companies, between sectors, and over time.

supply chain, but only to shift them from a balance sheet charge to a cost of goods sold charge on its income statement. That artificially reduces its EBIT and EBITDA, but artificially inflates its return on capital -- because lower-returning production capital is removed from its books, leaving just higher returns to be reported off a lower capital base. None of that makes any economic difference one way of the other, which is why it is so essential for an analyst to focus on EVA and EVA Margins to judge the total productivity of companies' supply chains and the economic merits of their business models.

Taking this notion a step further, EVA Margins makes it possible to meaningfully compare companies in asset light service businesses that require little capital, and which like Wal-Mart can generate a bountiful EVA profit with relatively meager operating margins, versus companies in asset intense sectors, such as semiconductor fabricators or paper mill operators that must tie up significant capital to generate sales, and which therefore are obliged to earn far higher operating margins to cover the cost of their capital before they can begin to earn EVA -- which again is something that you cannot do with any other margin or return on capital type measures. And in case you were wondering, there is no correlation between EVA Margins and capital intensity. Many capital intensive firms, such as ExxonMobil, earn excellent EVA Margins. And here's Google, another one:

6	GOOGLE INC GENERAL - DISCLOSED	2005TFQ2	2006TFQ2	2007TFQ2	2008TFQ2	2009TFQ2	2010TFQ2
29	EVA Margins						
30	Sales Growth Rate						
33	Cash Operating Costs (% of Sales)	98.3%	83.3%	63.7%	46.0%	13.6%	17.7%
34	COGS Adjusted Chrg: % of Sales	39.4%	35.9%	34.6%	33.7%	31.6%	32.4%
37	SG&A Adjusted Chrg: % of Sales	14.2%	14.0%	13.7%	14.9%	13.3%	12.8%
40	EBITDAR Margin (EBITDAR/Sales)	46.4%	50.1%	51.7%	51.3%	55.2%	54.8%
43	Productive Capital Rental Charge (% of Sales)	17.5%	16.6%	19.7%	23.7%	27.9%	25.0%
44	Cap Chrg: Working Capital % of Sales	1.6%	1.8%	2.0%	2.3%	2.5%	2.5%
64	Rent Chrg: Net PP&E Adjusted % of Sales	7.2%	8.1%	10.3%	11.6%	12.9%	9.3%
83	Rent Chrg: Intangible Capital AT % of Sales	8.7%	6.8%	7.4%	9.8%	12.4%	13.2%
118	EVA Before Tax Margin (EVA BT/Sales)	28.9%	33.4%	32.0%	27.7%	27.3%	29.8%
121	EVA Effective Tax Rate	40.9%	39.3%	36.5%	34.6%	34.7%	34.6%
124	Other EVA % of Sales	0.5%	2.0%	1.7%	1.7%	-0.5%	1.2%
161	Rent Charge: Goodwill & Sp Items % of Sales	0.6%	0.6%	1.2%	2.1%	2.7%	2.4%
170	EVA Margin (EVA/Sales)	16.9%	21.7%	20.9%	17.7%	14.7%	18.3%

The paragon of the "new economy" (which is not so new anymore), and a wildly successful generator of EVA profit, Google is actually one of the most capital intensive companies around. The total pre-tax charges it must set aside to cover its "productive capital" -- that is, its working capital charge, a rental charge on its PP&E base, and the amortization and cost of capital on all intangibles²⁰, except for goodwill (which is deducted farther down the schedule) -- is a whopping 25% of sales for the four quarter year ending June, 2010, compared to just under 7% for Apple. Google is effectively a power plant in reverse, drawing electricity through servers to deliver BTUs of information. It's extremely valuable, but incredibly plant intensive. Google must therefore earn a far higher EBITDAR margin -- in the vicinity of 55% -- to earn roughly the same bottom

²⁰ For this purpose intangibles consists of purchased intangibles, except goodwill, and the unamortized balances of R&D and advertising and promotion outlays that Google is using to innovate, increase its brand power, and launch new services.

line EVA Margin as Apple does. Clearly, EBIT margins, and even better variants like EBITDAR margin, are woefully incomplete and misleading ways to measure performance and judge value as compared with EVA Margins that neutralize the playing field by totally and accurately consolidating income statement performance and balance sheet asset management.

Suffice to say, the EVA Margin is a very important and useful statistic that fully covers and correctly weights all factors that go into generating EVA from sales. Any analyst worth his or her salt should be intimately familiar with the EVA Margins of firms in their investment portfolio, including recent levels and trends, underlying risks, and the likely outlook.

EVA Momentum -- The Only Ratio That Tells The Whole Story

Recognizing that share prices depend critically on projections for EVA, actually on changes in EVA, on the growth rate in EVA, analysts need a ratio indicator that tells them if the overall projected *rate* of increase in EVA is aggressive or conservative, such as when judged against the rate the company and like firms have achieved in the past or against the EVA growth rate that is baked into the firm's share price.

EVA Dimensions has developed such a ratio. We call it "EVA Momentum." It is defined as the *change* in EVA over a period, divided by the sales in the *prior* period. For example, if a company's sales were \$100 in 2008, and its EVA increased from \$10 in 2008 to \$11 in 2009, then the firm's EVA Momentum rate that year was 1% $((\$11-\$10)/\$100)$. It is essentially just the growth rate in economic profit, though scaled to sales. For reference, the EVA Momentum rate for the median Russell 3000 firm has averaged just 0.3% per annum over the past 20 years. The 75th percentile has ranged from 1-1.5%, and 90th percentile, from 3-4%. Those are perhaps surprisingly low figures, but remember, Momentum is a function of growth in profit after covering the cost of capital, and, as will be shown, it requires a company to do two hard things at once -- to become more profitable, and, to achieve profitable growth.

EVA Momentum turns out to be an incredibly important metric that has a number of very useful and unique qualities. First, it is the *only* ratio in all business, finance or investment research where bigger is generally always better. Why? Because the Momentum ratio gets bigger when EVA does, which means that the firm's NPV, MVA and share value are expanding and management is doing things that make economic sense. That cannot be said of margin, market share, growth rate, return on capital, or any other ratio metric. All of them can "improve" when a firm's performance and value are actually deteriorating. They all have blind spots, one way or another (see "EVA Momentum -- the one ratio that tells the whole story," by EVA Dimensions CEO Bennett Stewart, for more information; appearing in *The Morgan Stanley Journal of Applied Corporate Finance*, Spring, 2009).

Also, more than any other measure, EVA Momentum levels cross-company comparisons by scaling results according to size and by concentrating on performance improvements – focusing on *changes* in EVA – which means that legacy assets or liabilities that are already reflected in the base level of EVA are ignored. Momentum is positive for negative EVA businesses that are on the mend, negative for positive EVA businesses whose business models are fatiguing, and zero for firms whose EVA is side slipping, all of which makes EVA Momentum the proverbial “canary in the cave,” presciently signaling changes of direction or lack of progress well before conventional measures even get in the game.

EVA Momentum can also be measured and contrasted over varying time intervals to trace out the arc of the EVA curve. It can be computed, for instance, using a company's actual results year by year, as was illustrated above, or for the most recent quarter vs. the same quarter the prior year, or over trailing three to five year horizons. It can be measured using actual EVA figures or a trend line change. And more to the point, it can also be measured over the entire span of a forward plan to quantify how aggressive or realistic it is.

Let's suppose, to continue the example above, the company's sales increased to \$110 in 2009, and that a five year forecast shows EVA reaching \$22 by 2014 versus the \$11 in EVA actually earned in 2009. The overall 5 year projected Momentum rate is 10% -- the \$11 increase in EVA from \$11 to \$22 divided by the \$110 in sales in the last history period -- which is an average Momentum rate of 2% per year.

Perhaps without being aware of it, the analyst has projected a doubling in the EVA Momentum rate compared with the 1% rate the firm generated the past year. It's an aggressive assumption, that could misleadingly trigger a buy signal when more caution or at least an examination of the underlying assumptions is warranted. Another benchmark is that a sustained 2% EVA Momentum rate is considerably in excess of the 1-1.5% Momentum rate that the 75th percentile companies have actually achieved over the past two decades. Both indicate the forecast estimate is perhaps aggressive, and the resulting target stock price may be a stretch. Which begs questions like -- what are the projected sources of the added Momentum, are they individually and collectively credible, and, how does the analyst's projected Momentum rate compare to the rate built into the firm's stock price and stock prices of comparable firms?

The Path to Financial Truth

EVA Momentum even supersedes the EVA Margin ratio in helping an analyst address those questions because it even more fully accounts for all drivers of performance and value. EVA Momentum is always the math sum of two main drivers, from which all others descend. It is the sum, first, of the *change* in EVA Margin -- which reflects *enhancements* in the total productivity of the firm's business model -- and second, it derives from "*profitable growth*," which is from the

product of the firm's sales growth rate and its EVA Margin. Those two levers enable analysts to summarize the essence of their projections without getting lost in the details.

Let's again use Apple to illustrate how EVA Momentum can be unraveled in this manner -- though we'll use its actual results over the past six years rather than a projection at this stage. With EVA increasing from \$347 million in 2005 to \$8.7 billion by 2010, the overall Momentum has obviously been superb. Even in the most recent four quarter year portrayed in the table below, after which Apple had become a far larger company, EVA Momentum clocked in at the phenomenal pace of 8.6% -- which derived from dividing the \$3.1 billion increase in EVA by \$36.3 billion in sales from the prior year. But how did that happen? First, Apple's already quite impressive EVA Margin widened 1.7% -- from 15.2% the year before to 16.9% in that year. But the far more significant source of added value was from chalking up 40.8% sales growth at the 16.9% EVA Margin -- for a "profitable growth" product of 6.9% (there is also a component due to the change in the cost of capital, which is generally negligible).

6	APPLE INC GENERAL - DISCLOSED	2005TFQ2	2006TFQ2	2007TFQ2	2008TFQ2	2009TFQ2	2010TFQ2
170	EVA Momentum						
171	EVA (ROC-COC) x Capital	\$347	\$1,282	\$2,256	\$3,776	\$5,536	\$8,651
172	ΔEVA (vs. prior year)	\$543	\$935	\$975	\$1,519	\$1,760	\$3,115
173	Sales	\$11,097	\$17,306	\$21,586	\$28,747	\$36,323	\$51,123
175	EVA Momentum (% of Trailing Sales)	7.6%	8.4%	5.6%	7.0%	6.1%	8.6%
178	= EVA Margin Expansion Delta EVA Margin	5.9%	4.3%	3.1%	2.7%	2.1%	1.7%
181	EVA Margin (EVA/Sales)	3.1%	7.4%	10.5%	13.1%	15.2%	16.9%
182	+ Growth@Margin Gsales x EVA Margin	1.7%	4.1%	2.6%	4.4%	4.0%	6.9%
185	Sales Growth Rate	54.7%	56.0%	24.7%	33.2%	26.4%	40.8%
186	+ EVA Margin Expansion from lower COC	0.0%	0.0%	-0.1%	0.0%	0.0%	0.0%
187	Implied EVA Momentum 10 Yr (Sales)	3.3%	2.8%	3.5%	4.0%	0.6%	2.6%
254	MVA						
255	Market Value Added (MVA = MV - Capital)	\$27,054	\$44,124	\$67,978	\$109,134	\$69,469	\$176,727

Apple's EVA Momentum was consistently among the highest achieved by any American company. Recall that the 90th percentile is a sustained 3-4% Momentum, and Apple's was never under 5%, in fact, it was in a 6-8% range over the entire 6 year span, and was highest -- 8.6% -- in the most recent year, after Apple had grown to a much larger company. Looking ahead, Apple will find it harder and harder to sustain its remarkable EVA Momentum record. Now that its sales exceed \$50 billion, and with an EVA Margin already at almost 17%, how much better can it get? Assuming the Margin stays at 17%, which will be tough in an increasingly competitive world, sustained sales growth of 30% per annum, which implies sales of \$185 billion in 5 years, translates into an average EVA Momentum rate of 5.1% (30% x 17%). But even that comparatively relaxed pace -- relaxed for Apple that is -- is more than the market is currently expecting Apple to do, as we shall shortly see.

Besides working the EVA Momentum math to get a rough feel for the art of the possible, an analyst can deconstruct the EVA Momentum implied by a detailed forward plan he or she has prepared. For an example, let's go back to the 2% EVA Momentum projection for the hypothetical company we presented above. Suppose analysis of the projection shows that the

underlying EVA Margin is expected to increase from 4% in the last history period to reach 5% by the end of the plan, and that sales are forecast to grow at an average rate of 20% a year. In that case, one half of the projected 2% Momentum is due to assuming that the overall productivity and profitability of the firm's business model increases, and the other half from assuming 20% growth at the 5% margin -- both of which are fairly aggressive assumptions. Yes, Apple easily exceeded those benchmarks, but Apple is the Roger Federer of EVA Momentum. You cannot use Apple as the standard. Among mere mortal firms, sustained EVA Momentum of 2% is upper quartile, and generally requires on-going improvement in profitability and significant sales growth at a reasonably positive EVA Margin, which are tough feats to conjure up simultaneously. Judging just how aggressive, or credible, the projection is would require additional benchmarking against like situated firms and more granular analysis of underlying factors. But even taken just to this stage, an analyst has a better feel for what they are assuming and must defend in their own mind to make a stock a worthwhile investment.

Aside from its utility as a financial analysis tool, the EVA Momentum math serves up a platter of interesting insights. One implication: firms with low and stagnant EVA Margins are incapable of generating EVA Momentum -- no matter how rapidly their book income, EBITDA or EPS are expanding. EVA Margin laggards must first raise the productivity and profitability of their business models to a minimum positive EVA Margin before they have any chance to add value as they grow sales or expand their book earnings. An analyst should know that, and should be alert to breakout trends in the EVA Margin, and a management and management strategy that can credibly deliver that.

Another implication: a profitable firm can increase its EVA Momentum rate even while forfeiting some of its EVA Margin. Google actually did that in 2007, a year it racked up nearly 8% in EVA Momentum on the strength of an \$800 million EVA increase on top of a \$10.5 billion sales base. Compared to the prior year, though, Google's EVA Margin shrank from 20% to 18% (and its ROC fell from 58% to 48%). But that was more than compensated by generating 55% sales growth at the 18% EVA Margin, which together accounted for a 10% contribution to the Momentum rate! Management wisely committed more capital to systems, servers, infrastructure, and acquisitions, and forfeited some degree of pricing power, in order to snare the greater value of scaling an already profitable business model -- although the EVA Margin, or ROI for that matter, would not indicate that was the case.

The Replacement for DuPont ROI

Analysts that currently use the DuPont ROI formula would be far better off using EVA Momentum model to deconstruct and analyze financial performance. Like the ROI formula, the EVA Momentum model traces performance to a set of underlying operational ratios that

characterize income efficiency and asset management. But the similarities end there because, far better than ROI or ROC, EVA Momentum puts all the performance drivers on one common scale -- as a percent of sales -- which facilitates assessing their relative importance and making benchmark comparisons. DuPont ROI, by contrast, involves a multiplication of operating margins and asset turns, which makes it very difficult to sort out and compare the individual performance elements. But besides that, EVA Momentum explicitly includes the value of growth, which is a crucial performance factor that ROI just completely ignores. Why explain a measure not worth explaining?

The Market's-Implied Momentum ("MIM")

Another important benchmark for judging a company's past and projected EVA Momentum is the projected Momentum rate that investors have factored into its share price. To determine that, we first simulate the annual EVA improvement amount that over a 10 year horizon discounts back to the firm's MVA, given its prevailing share price, and then divide that projected increase by trailing sales. If the Market-Implied Momentum rate -- or "MIM" as we call it -- turns out to be 1%, then for every \$1 billion in sales, an analyst must confidently project that the firm can increase EVA a minimum average of \$10 million per year or cumulative total of \$50 million over 5 years just to make the firm a *fairly valued* proposition. An analyst would need to project a comfortable cushion over that rate to make the stock a buy.

As it so happened, that is exactly what happened at Apple. As is shown on the preceding chart, the MIM rate for Apple typically hovered around 3% over the past six years, but year after year Apple surprised investors and handsomely outpaced that expectation. Just as a tectonic pressure buildup eventually moves continents, the accumulation of EVA over the target pace drove Apple's MVA up from a \$27 billion premium to 2005 to phenomenal \$177 billion in aggregate shareholder wealth by 2010.

As of writing, in mid-year 2010, the current forward looking MIM rate for Apple is 2.6% per year. Now that Apple's sales have reached \$51 billion, that calls for EVA to increase at an average annual pace of \$1.3 billion -- for at least 10 years. That's plainly a tall order. But that is the expansion rate the firm must achieve at a minimum for a strategic investor just to earn a cost-of-capital rate of return from buying the stock at its current price. Apple may do it for a while, it has a great head of steam built up, but eventually, competition, saturation, substitution, bureaucratic creep, fading fads, overpriced acquisitions, departures of key talent, and sheer size and the paw of large numbers, tend to weaken the value proposition of even of the very best firms. Just think, GE and Microsoft.

Before moving on, let's compare MIM with "consensus EPS." First, the so-called "consensus" is bogus. Truth is, it is an arbitrary aggregation of sell-side analyst projections -- as if the "buy-

side" doesn't matter -- for a measure -- EPS -- that is a highly flawed, inconsistent, and malleable indicator that in no way discounts to share value. To be blunt, there is little reason to suspect, and certainly no guarantee, that the alleged consensus for EPS means anything at all. By contrast, the MIM rate for EVA is a true consensus for long run performance expectations that are incorporated into current share prices. If an analyst is trying to quickly size up or sum up how their expectations compare to the "Street's," he or she will be far better served by comparing their expectation for EVA Momentum against the Market-Implied target rate, than from looking at EPS.

A Capital-Driven Forecast

All of the forgoing measures and models that we have been discussing are based one way or another on expressing EVA as a function of sales. An alternative is to make capital the driver, for instance, by expressing EVA as a function of EVA divided by capital -- as some kind of return on capital measure -- then multiplying times capital, like so:

$$\text{EVA} = \text{EVA/Capital} \times \text{Capital}$$

The ratio of EVA/Capital is referred to as the "EVA Spread" because it is mathematically the same as the spread between the firm's ROC and its COC. It shows the risk-adjusted yield the firm is earning on its invested capital, and it is an indicator of whether a firm can add value as it adds capital. Yet, as a practical means of forecasting and deconstructing value, capital drivers like the EVA Spread, and close cousins like CFROI[®], are considerably less effective than sales drivers.

With capital drivers, an analyst is forced to project EVA (or cash flows) by forecasting return on capital and capital, both of which are highly unintuitive and problematical undertakings. Rates of return are far more the result of other underlying assumptions than an assumption that can be conjured up on its own. Capital, too, is more derived from meeting the requirements of a sales forecast than it is an independent variable in its own right. Ask yourself, are you better able to forecast the sales a company will generate, or the capital it will invest? Are you better able to size up and compare profit margins or returns? Methods like CFROI[®] -- cash flow return on investment -- for all their theoretical appeal, are not as easy to use or accurate in practice as forecasting value by forecasting EVA as a function of sales and the EVA Margin on the sales.

Summing Up

Projecting and discounting EVA is the simplest and most accurate way to value equities. It's the best way for analysts to convert their expectations into an estimate of a company's true worth. Analysts that attempt to screen stocks, rate performance, and measure value according to standard accounting metrics, like EBIT, EBITDA, operating margins, net income, EPS, ROE,

RONA and the like, are severely handicapping their professional careers. They are wasting time using unreliable, incomplete and inefficient metrics and models to determine which stocks to buy and sell. They are incurring needless transactions costs, introducing noise into market prices, and generally making their job more difficult and less rewarding than it should be.

This is not to say that valuing stocks according to EVA is a snap. But it unquestionably enables an analyst to better and more quickly hone in and appraise the real issues that are at stake.

On one end of the spectrum, an analyst could prepare a full line-by-line income statement and balance sheet forecast (or import one from a sell-side analyst), and let the "Value" module in the FRS software do the work of computing the implied EVA and discounted value, and summarizing the economic substance of the projection in terms of the EVA Momentum and EVA Margins it implies.

Preparing a full forecast is not usually the best place to begin, however. Once an intuitive feel for EVA Margin is gained, it is far simpler to forecast EVA by forecasting sales and the EVA Margin, and sizing up the reasonableness of the resulting EVA Momentum compared to the "Market-Implied Momentum" rate incorporated into the prevailing share price, which is an analytical approach directly supported in the "What-If" module built into FRS. "What-if" also enables a user to drill down to the next level and ask how the EVA Margin, and EVA will change, as key ratios like the EBITDAR margin or working capital days are altered. This approach enables an analyst to focus on the big picture summary EVA drivers and statistics and not get lost in the details, which is a good idea before creating an elaborate model.

EVA Dimensions has also developed two tools that take advantage of the power of statistics to aggregate data and provide first pass indicators of intrinsic value. An advantage is that neither tool requires a forecast. Both are based on sizing up recent financial performance against a broad market universe. For example, the "StatVal" model in FRS estimates a company's fundamental share value with a regression analysis that shows how firms with similar EVA Margins and EVA Momentum ratios are being valued in the market. The second one, PRVit, is a stand-alone model that creates a buy/sell/hold rating by comparing a broad range of 22 key EVA-based measures for a company against all 3000 Russell stocks. PRVit can be used to screen stocks and generate ideas, rate a whole industry, assign a score to a portfolio, vet and time buy and sell decisions, and to obtain a quick, reliable read on the real economic status of a company before a meeting with management.

For More Information

Bennett Stewart
Founder & CEO
(516) 759-3711
gbstewart@evadimensions.com

Craig Sterling
Head of Global Equity Research
(917) 882-1403
csterling@evadimensions.com