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The Validity of Economic Value Added as a Metric for Determining Intrinsic Value

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## Abstract

Economic Value Added has been discussed as a financial metric since its creation by Stern Stewart & Co. in the 1980s. Closely tied to value investing, which was pioneered by Benjamin Graham in the late 1920s and early 1930s, E.V.A. has been applied both as a tool for valuation by investors and as a tool for managers to measure the creation of value. While including and allowing for the cost of capital in its calculation, E.V.A. also integrates the present value of future cash flows.

This paper discusses not only the origins and application of E.V.A. but also explores the stock prices over seven years of ten companies who had the greatest Market Value Added (the sum of the present value of expected future E.V.A.) and the ten companies who returned the lowest M.V.A. as described by James L. Grant in *Foundations of Economic Value Added*. In addition, two companies who use E.V.A. as a management tool will be explored to help to determine its validity both as a tool for investors and managers.

## The Validity of Economic Value Added as a Metric for Determining Intrinsic Value

### Introduction

There is a constant need for investment managers and individual investors alike to determine companies that will maximize the wealth of their shareholders. Likewise, managers within companies are always looking for ways to better evaluate their decisions in regards to capital expenditures, investments, and many other factors that go into the ever-changing, fluid process of providing owners with their required rate of return. Evaluating the financial strength of a company, while involving many set principles of finance, is viewed as more as an art than a science. As such there are many different ways that an investment manager, individual investor, or a company's management can view the financial statements of a particular company along with its ratio analysis. While financial ratio analysis is certainly valid and useful when viewed through cross-sectional (comparing a firm to other firms within the same industry) and time series analysis (comparing a firm's progress over time), there are differences between the accounting figures that a financial statement provides and the reality of a company's financial activities. Accounting principles, while necessary for consistency, rely on historical costs, and as such are not necessarily accurate to the real costs of a company. The result of this is that many companies that appear to be profitable according to accounting standards are in reality destroying wealth. In his *1995 Harvard Business Review Article* "The Information Executives Truly Need," Drucker states, "What we call profits, the money left to service equity, is usually not profit at all. Until a business returns a profit that is greater than its cost of capital, it operates at a loss. Never mind that it pays taxes as

if it had a genuine profit. The enterprise still returns less to the economy than it devours in resources...Until then it does not create wealth; it destroys it” (as cited in Shapiro, 2007, p. 79). These concepts of creating wealth and identifying value resulted in the creation of the financial performance metric of Economic Value Added.

### Background

Value Investing was pioneered by Benjamin Graham who in 1934 published the book “Security Analysis” along with David Dodd. Graham also published “The Intelligent Investor” in 1949. These two publications have impacted countless modern investors including perhaps the most famous investor of the modern era, Warren Buffet. However, Graham did not always enjoy success. In the late 1920s, Graham managed several millions of dollars. Of this investment portfolio, \$2.5 million was invested in stocks and bonds. Graham held a long position on these investments, hoping that they would increase in price. In addition to the \$2.5 million that Graham had invested in a long position, he also held a short position for the same amount. Also, there was \$4.5 million dollars that Graham had invested in a long position, utilizing margin for much of this investment. The risky portfolio that Graham managed incurred significant losses in the stock market crash of 1929 and 70% of his investment was lost between the years 1929 and 1932. However, as stock prices continued to fall, Graham noticed that one third of stocks were trading at values less than their share of the companies net current assets. This undervaluing of stock prices became the foundation of value investing and helped Graham earn 17% annualized between the years 1929 and 1956 (this included the three year period when the market crashed and Graham’s investments lost 70% of their value) (Grant, 2007, p. 112).

While the main tenant of value investing is rather straightforward, finding stocks that are prices at below their value, there are different schools of thought as to what the definition of value is. The traditional approach to finding the intrinsic value of a company is a calculation of the present value of a firm's future free cash flows (Harper, 2008). Free cash flow is calculated as:

$$\begin{aligned} &\text{Net Income} \\ &+ \text{Amortization and Depreciation} \\ &- \text{Changes in Working Capital} \\ &- \text{Capital Expenditures} \\ &\text{Free Cash Flow} \end{aligned}$$

This calculation of cash flow is a better metric than that of Net Operating Profit After Tax which will be discussed below. Once free cash flows have been forecasted into the future, they must be discounted to the present value. Financial theory supports the belief that a dollar today is worth more than a dollar received in the future because of the fact that an amount of money can be invested and earn interest. In the same way, money or cash that is to be received in the future must be discounted to find a present value. There are two difficulties or inconsistencies that can arise when calculating the present value of the future free cash flows of a company. The first is that there can be different forecasts of a company's future free cash flows. Secondly, those future free cash flows could be discounted at different rates by different investors. For example, Investor A may require a rate of return of 10%. Investor B may require a rate of return of only 5%. For simplicity's sake one might assume that the future value of the investment is forecasted to be \$1,000 in one year. The greatest amount that Investor A would be willing to pay for

the investment would be \$909.09. According to the same information, Investor B would be willing to pay a maximum of \$952.38

Calculation:

Investor A:  $1,000/(1+10\%)$  or  $1,000/1.10 = 909.09$

Investor B:  $1,000/(1+5\%)$  or  $1,000/1.05 = 952.38$

According to these figures, if the particular investment being discussed were priced at \$925.00, Investor B would think that the investment was under priced and therefore be willing to purchase it. In contrast, Investor A would see the investment as overpriced as it would not give him or her the required rate of return.

This simplistic example shows some of the difficulty or inconsistencies of calculating the present values of the future cash flows. It is also important to note that in the given example, there is an assumption that both investors calculated the future free cash flows in the same way; the only place that they differed was with their required rate of return. This will certainly not always be the case.

The second method for calculating the intrinsic value of a company is the Economic Profit Approach which is calculated as follows:

$$\text{Intrinsic Value} = \text{Invested Capital} + \text{Present Value of Future Economic Profits}$$

These economic profits represent the remaining profits after the cost of capital has been taken into account (Harper, 2008).

In an interview with *Money's* Eric Schurenburg, Christopher Browne discussed his thoughts on value investing and its practicality and successful track record. Browne, who is the author of "The Little Book of Value Investing," follows Graham's principle of buying cheap stocks in managing the three mutual funds of Tweedy Browne, which were

founded by his father. He mentions that low price to earnings and price to book ratios can indicate that a company is trading below its intrinsic value and is in a position in which it provides a greater degree of safety and return (as cited in Schurenborg, 2008, pp. 76-77). The Price to Earnings, or P/E, ratio of a stock is calculated by dividing the price per share of a stock by the earnings per share of a stock. Historically, Price to Earnings ratios have hovered around 15 indicating that each dollar of earnings results in an average price of \$15. Therefore, a company with \$3 of Earnings Per Share would, according to the average, sell for around \$45. If a company sells for \$90 but only produces \$3 of earnings per share, its Price to Earnings Ratio would be 30 and could be an indication that a stock is overpriced. In contrast, if a company's stock is selling for \$30 per share and is able to produce earnings per share of \$3, its Price to Earnings ratio of 10 could indicate that the stock is under-priced.

The second financial metric that Browne mentions in his interview is the Price to Book Ratio. The metric is calculated by dividing a company's price per share by the book value of the company. Book value is defined as the assets of a company minus its liabilities, this is also known as Owner's Equity (Little, 2008). While by itself, a low Price to Earnings or Price to Book ratio does not guarantee that a stock is under-valued, these metrics can be used as a screening tool to find potential value stocks to invest in.

Another important aspect of value investing that Browne mentions is the idea of patience. Value investing is typically a long-term investment strategy. Rather than looking for a company that is small and has vast future growth potential, value investors are interested in finding under-priced stocks and then must be willing to wait for them to correct and be accurately priced in the capital markets (Schurenborg, 2008, pp. 76-77).



### Berkshire Hathaway

Warren Buffet, the most famous pupil of Benjamin Graham, has been able to apply the principles of value investing in a way that no other individual has been able to match. Buffet, who is the chairman of Berkshire Hathaway, has been able to produce an average 21.4% annualized on its shares of stock each year since 1965. In comparison, the S&P 500 has returned annualized gains of 10.4% in the same time period. From the time period of 1965–2006 Berkshire Hathaway has produced an overall gain of 361,156% while the S&P 500 has produced an overall gain of 6,479% (Buffet, 2007, p. 2). As of December 31, 2007, Berkshire Hathaway's class A shares were trading at \$144,300 per share (Yahoo Finance 2008). The outstanding results that Warren Buffet and Berkshire Hathaway have been able to obtain have come from a consistent and disciplined investment approach that focuses on the true value of the companies that Berkshire Hathaway seeks to acquire. The prominence of value investing would eventually lead to the creation of economic value added.

### EVA Background

Before addressing the accounting definition and uses of Economic Value Added, it is important to look at its development. Economic Value Added was developed during the 1980s by G. Bennett Stewart III and Joel Stern of Stern Stewart & Co which is a global consulting firm. There were two main reasons that Economic Value Added gained the acceptance of those in the financial community. First, this new financial measure was a different way of looking at a company's true profitability. Second, Economic Value Added is based on sound financial theory. According to SternStewart (2007), Over 300 client companies in the world now use Economic Value Added, many of which

outperform other companies in their industry. Companies such as AT&T, Coca Cola, and Quaker Oats use Economic Value Added as a guide to help maximize shareholder wealth. In addition, many of the bonuses and incentives received by managers are closely linked to their ability to generate positive Economic Value Added within their respective divisions (Grant, 1995, p. 1).

SternStewart also notes that Economic Value Added has also become popular at for brokerage houses as a principal method in equity valuation. Two prominent brokerage houses that routinely use Economic Value Added are Goldman Sachs and Credit Suisse First Boston.

Now that the foundations of the background of Economic Value have been explored, the metric itself will be described in terms of its accounting definition, how it is calculated, and what exactly it measures.

#### Description

In the terms of an accounting definition, Economic Value Added is equal to the Net Operating Profits After Tax minus the dollar Cost of Capital.

$$EVA = NOPAT - \$ \text{ Cost of Capital}$$

Further, the dollar cost of capital is equal to capital investment multiplied by the percentage cost of capital.

$$\$ \text{ Cost of Capital} = [\% \text{ Cost of Capital} / 100] \times \text{Investment}$$

Finally, the percentage cost of capital can be calculated by doing a weighted average of the after tax cost of debt and equity capital within a firm

$$\begin{aligned} \% \text{ Cost of Capital} = & [\text{Debt Weight} \times \% \text{ After-Tax Debt Cost} \\ & + \text{Equity Weight} \times \% \text{ Cost of Equity}] \quad (\text{Grant, 1997, p. 2}). \end{aligned}$$

Lloyd and Davis theorize:

The cost of equity is the return necessary to compensate shareholders for their investment in the company. Unfortunately, many business owners often overlook the cost of equity. This is a big mistake from an individual wealth-accumulation perspective. Business owners, just like other investors, have a choice- they can either keep their capital in the company or move it to an alternative investment. If the capital stays invested, its return should reflect the risk of doing so (2007, pp. 56-57)

It is also vital to establish the connection that exists between Economic Value Added and Market Value Added. Traditionally, Market Value Added is defined as the Firm Value minus the Total Capital. However Stern Steward & Co., because the Economic Value Added of a firm and its intrinsic value seem to be closely correlated, concluded that Market Value Added can be defined as the present value of expected future Economic Value Added, or:

$$\text{MVA} = \text{PV of Expected Future EVA}$$

According to this definition it is clear that the added market value of a firm can be calculated as long as the Economic Value Added of the firm can be forecasted into the future (Grant, 1997, p. 3).

Now that an accounting foundation and equation have been constructed for Economic Value Added, it is vital to discuss the theories that surround this financial metric. In addition, the practicality of this measure will be explored through the use of market research over a seven-year period.

### Economic Value Added Theory

The metric of Economic Value Added was unique and innovative at its creation because of one main distinction that separates it from accounting measures such as Earnings Before Interest, Tax, and Depreciation or Net Operating Profit After Tax. The difference is that Economic Value Added incorporates the Cost of Capital in an attempt to arrive at a number that accurately represents the amount of wealth that is created by a firm. As was previously stated by Drucker (1995), accounting figures such as Earnings Before Interest, Tax, and Depreciation can be deceptive and provide an appearance of profits when wealth is actually being destroyed. An example of this would be a firm with a negative Economic Value Added, in which case the Cost of Capital would exceed the Net Operating Profit After Tax. In contrast, a firm whose Net Operating Profit After Tax exceeds its Cost of Capital would be a firm that is creating wealth for its shareholders rather than destroying it. While Economic Value Added does have merit in looking at historical information to determine whether a company has created or destroyed wealth, its true merit may lie in the fact that it can be used, when forecasted into the future, as a method for corporate valuation. One method of valuation that incorporates Economic Value Added is the Constant Growth Model.

### Constant Growth Model

The Constant Growth Model is the most simplistic way to value a corporation using Economic Value Added as a metric. There are two assumptions that must be agreed upon for the Constant Growth Model to be valid. The first, as the name implies, is that the Economic Value Added will grow at a constant rate each year into perpetuity.

While this, in reality, will most likely not occur, the constant growth model will still be fairly accurate as long as the growth rate that is used is close to the average Economic Value Added that occurs in future time periods. The second premise that must be true for the Constant Growth Model to be valid is that the average cost of capital exceeds the growth rate of Economic Value Added. The equation for the Constant Growth Model is as follows:

$$MVA = EVA(1) / (COC - g)$$

Again the Market Value Added is simply a measure of the discounted net present value of expected Economic Value Added in the future. EVA(1) in this equation represents the current Economic Value outlook of the firm. COC is equal to the cost of capital and  $g$  represents the predicted growth rate of Economic Value Added in future periods. As was previously stated the value for constant growth must be less than the average cost of capital for this equation to work (Grant, 1997, p. 20). Grant states that “According to the Constant Growth Economic Value Added Model a decrease in the cost of capital and / or an unanticipated increase in predicted growth rate will increase the Market Value Added of the firm” (1995, p. 63). If the Constant Growth Model can be applauded for its simplicity in thinking of future Economic Value Added and for its accuracy if a firm’s Economic Value Added is expected to grow at a constant rate (mature growth), it certainly has limitations if a firm’s Economic Value Added is not expected to increase at a constant growth rate.

#### Variable Growth Model

The Variable Growth Economic Value Added Model present two stages of growth for a corporation. This model is much more accurate than the Constant Growth

Model for firms that are growth oriented, particularly in industries such as beverages, computer software and services, and semiconductors. According to the Variable Growth Model, a corporation can expect to undergo a period of large or abnormal Economic Value Added Growth in its early stages before converting into a constant growth once the company has matured. As can be expected, the equation for the Variable Growth Economic Value Added Model is more complex than that for the Constant Growth Model. It can be represented as follows:

$$MVA(0) = \sum T EVA(t) / (1 + COC)^t + PVIF_{COC,T}[MVA(T)]$$

In this equation the term MVA(T) represents the firm's market value added at the point when the firm's abnormal Economic Value Added growth phase is terminated. The concept of discounting future expectations back to the present is a common theme between the Constant Growth Model and the Variable Growth Model. This is also a common ground in many other methods of corporate valuation such as the Free Cash Flow Method of Corporate Valuation (though the metric that is discounted varies) (Grant, 1997, pp. 63-64).

Typically speaking, a model of Economic Value Added will include both a historical analysis of a company's Economic Value Added and a projected future Economic Value Added under varying assumptions. An example of various assumptions that can be used would be different values for revenue growth or the future operating margins of the company. The use of different variables allows management to view the effects of different value creating initiatives (Tools for Creating and Measuring Value, 2007, p. 58).

### Economic Value Added as a Management Tool

Now that Economic Value Added has been viewed in the light of corporate valuation, its effectiveness as a management tool will be briefly described. The basic concept behind using Economic Value Added as a management tool lies in the fact that a rise in Economic Value Added will often result in an increase in the price of a firm's stock and accordingly an increase in the wealth of the owners. Keeping this in mind, many firms are using Economic Value Added as a way to give bonuses to managers within their company. As a manager increases the Economic Value Added of his or her projects, he or she receives an incrementally higher bonus.

The idea of Economic Value Added bonuses is that if management can be paid some bonuses, the shareholder have always earned higher return on their capital than they can expect. This kind of bonus system is usually beneficial both to management and the shareholders, because the performance level is likely to rise after introducing Economic Value Added bonus system. Economic Value Added bonus paid is far from a cost to shareholders, because it is often a share in the discretionary value created. With well designed bonus plan, the higher the bonuses that are paid, the better it is for the shareholders. In order to be successful, Economic Value Added based bonus systems should be long-term, based mainly on changes of Economic Value Added and offer considerable bonuses for considerable shareholder value improvements. (Mäkeläinen, 1998, para. 185).

Despite the benefits that can occur when management bonuses are implemented on the basis of Economic Value Added, it is also important to the moral hazard that can occur with such a system. As Krishnan points out, it is possible for

management to invest in projects with unacceptable levels of risk since they are in a risk averse situation. The motivation for such acts which could potentially harm the company would be the possibility of the manager maximizing his or her wages. Such situations must be monitored and avoided if a company wants to implement a successful management bonus system (2007, p. 303).

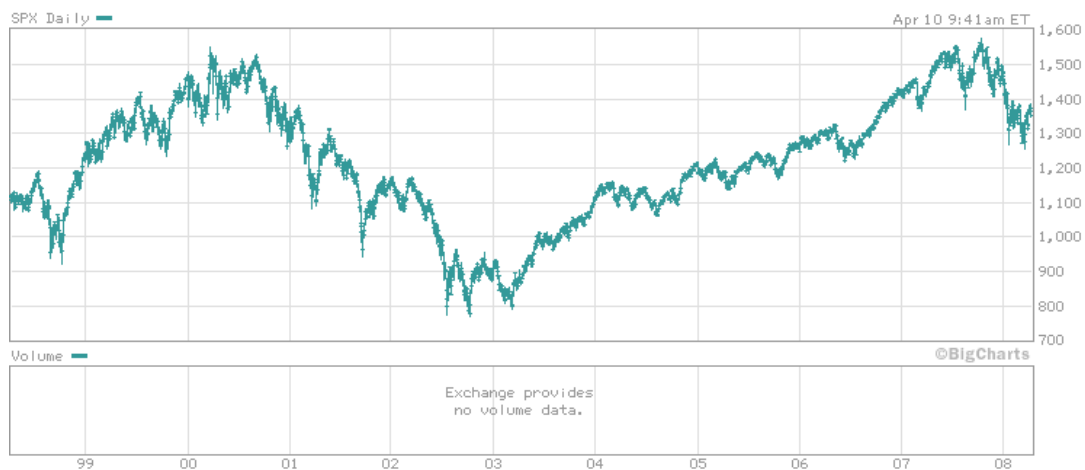
### Market Research

Grant (2003) provides a list of the bottom and top 10 companies in the performance universe at the year end of 2000. The list was compiled by showing the bottom and top 10 companies based on the metric of Market Value Added. In addition to the values that Grant provides for these companies at year end 2000 which include Market Value Added, Economic Value Added, Return on Capital, and Cost of Capital, the stock prices of these companies were researched for the year end of 2000, 2004, and 2007. The stock price that was used was adjusted for dividends and splits. This was done to insure consistency, as a stock split, if not accounted for would result in twice as many shares outstanding at half of the previous market price. In addition to the 20 companies that Grant notes in his book as the bottom and top performers, two companies were tracked that use Economic Value Added as a method of management according to Stern Steward & Company. These companies were Coca-Cola and AT&T. Again, adjusted stock prices were researched at year end 2000, 2004, and 2007. Before looking at the gains and losses of individual stock prices over the seven year period being studied, it is vital to look at how the market performed as a whole during this period. The S&P 500 is typically viewed as the best measure of the equities market in the United States. The reason for this is



that it provides a representative sample of 500 leading companies who conduct business within leading industries in the United States. Additionally, the S&P 500 covers approximately 75% of the United States' equities market. (S&P 500, 2007)

The chart below shows the level of the S&P 500 over the past decade. It is important to note inflation of stock prices in the late 1990s and early 2000s as a result of the tech bubble and the subsequent crash in the market before stock prices began to steadily rise again.



### Top Ten Wealth Destroyers By MVA

Below is a chart showing the bottom ten companies by Market Value Added at year end of 2000 along with the company's ticker symbol and share price as of the date listed (Grant, 2003, p. 88):

### Bottom Ten Companies in Performance Universe at Year End 2000

<b>Company</b>	<b>Ticker</b>	<b>12/29/00</b>	<b>12/31/04</b>	<b>12/31/07</b>
VeriSign, Inc.	VRSN	74.19	33.6	37.61
Kmart Corp.				
3Com Corp.	COMS	8.5	4.17	4.52
Xerox Corp.	XRX	4.58	16.97	16.19
Bank of America Corp.	BAC	17.23	41.13	41.26
First Union Corp.				
Lucent Technologies Inc.	LU			
General Motors Corp.	GM	37.36	35.2	24.89
WorldCom Inc.				
AT&T Corp.	T	35.02	22.23	41.16

It is important to note, before looking at the increases and decreases in stock prices of these ten companies, that four of the companies no longer have individual stock tickers and therefore cannot have their individual stock prices noted. There are two reasons for this. In 2004, Kmart was purchased by Sears in an \$11 billion merger (Bhatnagar, 2008). Similarly, First Union Corp. was purchased by Wachovia in a merger on September 4, 2001 (Wachovia, 2008). In yet another merger deal, Lucent was purchased by Alcatel in 2006 for \$11 billion (Reardon, 2008). WorldCom Inc. is a more interesting, if not devastating, story. In 2002, the company went bankrupt after misstating billions of dollars in its financial reports. The fraud resulted in thousands of individuals losing their jobs and investors in the company losing their investment in WorldCom stock (World-Class Scandal, 2008).

Of the six remaining stocks on the list, three returned positive gains from the period of 2000 to 2007. These three included Bank of America, Xerox, and AT&T. During the seven-year period, Xerox returned a 253.49%  $[(16.19-4.58) / 4.58]$  total gain. Similarly, Bank of America and AT&T returned a total gain of 139.47% and 17.53% respectively (Yahoo Finance, 2008).

In contrast to the three companies that were able to produce positive returns, three companies from the bottom ten in performance according to Market Value Added returned negative gains over the seven year period being studied. Of the three companies whose stock price declined over this period, VeriSign, Inc. returned the greatest loss, losing 49.31% of its value. 3Com Corporation dropped 46.82% over the period and General Motors Corporation lost 33.38% (Yahoo Finance, 2008).

In summary, of the ten companies listed in 2000 as being the worst performers according to Market Value Added three were the targets of a merger. One company, WorldCom, was caught in a corporate scandal approximately a year later and went bankrupt. Three companies were able to produce positive gains over the seven year period with Xerox returning a total of 253.49%. The remaining three companies saw the price of their stock drop during the seven year period with VeriSign losing the most value at 49.31% of its stock price at the year end of 2000 (Yahoo Finance, 2008).

#### Top Ten Wealth Creators by MVA

Below is a chart showing the Top Ten Wealth Creators according to Market Value Added at the year end of 2000 along with the company's stock price as of the date listed:

**Top Ten Wealth Creators in Performance Universe at Year-End 2000**

<b>Company</b>	<b>Ticker</b>	<b>12/29/00</b>	<b>12/31/04</b>	<b>12/31/07</b>
General Electric Co.	GE	40.12	33.5	37.07
Cisco Systems Inc.	CSCO	38.25	19.32	27.07
Microsoft Corp.	MSFT	18.48	25.67	35.6
Wal-Mart Stores	WMT	49.39	50.45	47.53
Merck & Co.	MRK	70.23	28.5	58.11
Oracle Corp.	ORCL	29.06	13.72	22.58
American International Group	AIG	94.64	63.87	58.3
Citigroup Inc.	C	38.46	42.59	29.44
Pfizer Inc.	PFE	38.54	24.02	22.73
Intel Corp.	INTC	28.05	22.18	26.66

(Grant, 2003, p. 91)

Of the ten companies listed as top wealth creators in 2000, all ten have remained in business over the seven-year period. Surprisingly, however, only one company (Microsoft) was able to produce a gain in its stock price over the seven-year period being studied. In the case of Microsoft, its stock price was listed at \$18.48 per share at the year end of 2000. At the year-end of 2007 the stock price was able to rise a total of 92.64% to \$35.60 per share. The remaining nine companies that made the list produced negative returns over the seven-year period with pharmaceutical giant Pfizer's stock price dropping a total of 41.02% (Yahoo Finance, 2008).

These figures are particularly staggering considering the overall rise in the S&P 500 index fund over this same period. It would seem that top-wealth creators would be able to continue their trend of creating rather than destroying wealth and would accordingly see their stock prices rise. Also surprising about these figures is the well-respected and successful companies that constitute the ten top-wealth

creators list. The fact that these well-respected companies were not able to produce positive returns on share price over a seven-year period is staggering.

#### Economic Value Added Management

The twenty companies listed above as the top performing and worst performing companies at the end of the year in 2000 do not necessarily use Economic Value Added as a tool for management. However, Stern Stewart and Company mentioned some companies on their website that use Economic Value Added as a method of management and as a metric for bonuses and incentives. Two of the companies that were listed by Stern Stewart and Company were AT&T and Coca-Cola. Interestingly, at the year end of 2000 AT&T was one of the 10 companies listed as being the worst performing. However, over the seven year period from 2000 to 2007, it was one of the three companies on that list that returned a positive gain to its shareholders. Coca-Cola also saw its stock price rise over the seven year period, returning a total gain of 16.90%.

Both of these stocks dropped significantly over the period of 2000 to 2004 when the stock market corrected after soaring to record highs at the time. However, in the period of 2004 to 2007, both of these stocks saw significant appreciation in their price per share. AT&T's price per share rose 85.16%, going from \$22.23 to \$41.16. Coca-Cola also saw significant gains over the three year period gaining 59.53% and going from \$38.47 to \$61.37 per share.

#### Summary

Of the 20 companies studied over the period of 2000 to 2007 only 4, or 20%, saw their stock prices rise. However, both companies that used Economic Value

Added saw their stock prices rise over the same period. These results show that a high or low level of market value added or economic value added in one year does not indicate the creation or destruction of wealth in the future. These results indicate that a company whose management is aware of the concept of wealth creation and destruction will perform better in the long run than a company that is more concerned with figures such as NOPAT (Net Operating Profit After Tax) that are not as relevant.

### Reaction

As evidenced by the success of Stern Stewart & Co. and firms around the world that are successfully using Economic Value Added, this is a metric that is useful and practical. Not only has it been used for corporate valuation, but its merits extend into the management of a company, where it is often closely tied to the compensation received by managers. As was previously mentioned, there are several reasons why the information that is presented in the financial statements of a company may be unrealistic. While they very well may be accurate according to the Generally Accepted Accounting Principles that are in place, at the same time they may not be a realistic representation of a company's financial state. First of all, Generally Accepted Accounting Principles calls for an accountant to report historical costs, which may be totally different from the real costs of a company. Secondly, a company may have profits on its income statement but in reality may be destroying wealth. This is the true merit of Economic Value Added. While still based of the Net Operating Profit After Tax, Economic Value Added places an allowance for the cost of capital of a firm. Included in the cost of capital is both the cost of debt and

the cost of equity of a firm. By including this cost of capital in its calculation, Economic Value Added presents the amount of wealth that a company has either created or destroyed, rather than profit. Similar in concept to Net Present Value, where a firm should not embark on a project that has a negative Net Present Value, a company should not make an investment of capital expenditure if the cost of capital will exceed the net operating profit that the investment will return. Additionally, Economic Value Added takes into account the present value of future cash flows.

Just as Economic Value Added can be used in evaluating potential projects or investments for a company, it can be used by investors to track the amount of wealth that a company has historically created or destroyed. This can then be forecasted into the future and discounted to the present value to provide an estimate of what the company is currently worth. The use of Economic Value Added by prominent brokerage houses seems to provide further evidence of its merit in terms of making investment decisions.

While Economic Value Added is practical and useful for large brokerage houses and large companies, there are certain drawbacks to using Economic Value Added that could exist for either small business owners or individual investors. The main problem that these two groups may experience is that the calculation of Economic Value Added, though seemingly simple in the formula, actually involves some complexities. For one, the cost of capital is something that may be difficult for an individual to accurately calculate. Further, any use of Economic Value Added for corporate valuation involves forecasting into the future. While this is certainly not something that even a large brokerage house can always accurately predict, and

while there exist similar problems with corporate valuation using the Free Cash Flow Model, an individual investor may improperly calculate the Economic Value Added of a company. This could easily result in those individuals making an investment decision based on misinformation. It is also important to realize that Economic Value Added can be skewed by the effects of inflation. Additionally, as shown by the research of the top ten wealth creating companies and the ten worst companies whose stock prices were charted over a seven year period, there was not a clear correlation between a high Market Value Added and a rise in stock price.

It is also important to understand that many investors place emphasis on intangible resources. It is difficult, if not impossible, for these intangible resources to be portrayed on a balance sheet or income statement. One example of an intangible resource would be a company's brand recognition. Another example of an intangible resource is the management prestige of a company. In a study conducted by Certo and Hodge, it was found that "there were direct relationships between investor perceptions of a firm's total management team prestige and its future financial performance risk. . . and that prestige and organizational legitimacy represent intangible resources that investors take into account when assessing firm performance" (Certo & Hodge, 2007, p. 472).

While there are problems that exist with Economic Value Added, they are problems that consistently appear throughout the field of finance. Predicting the future Economic Value Added or Cash Flows of a company is something that will always be an art and never a science. Mistakes in calculation by individual investors will always be possible, and the basing of costs on historical costs will always be



present in the field of accounting and thus in the financial statements of a company. Despite these apparent shortcomings, Economic Value Added as a whole is a good way to measure the amount of wealth that a company has created or destroyed. By modifying the value of Net Operating Profit After Tax to include the cost of debt and equity capital, both companies and investors are able to more accurately see where a firm stands financially. It is also important to note that, just as with the analysis of financial statements, no single metric can easily solve a problem. It can only provide questions that might eventually lead to a solution. Also it is important to compare the wealth that a firm creates or destroys to the amount of wealth that is created or destroyed by other firms within the same industry. The use of cross-sectional analysis leads to a more accurate representation of what values should be than if one simply looked at the value for an individual company.

### Conclusion

Having described Economic Value in terms of its accounting definition, components, uses for corporate valuation and management bonuses, and its relevance for making investment decisions, while also discussing its shortcomings, it is apparent that Economic Value Added is a metric that has merit in the world of finance. While, by itself, Economic Value Added is not an accurate predictor of a company's future creation of value, perhaps its greatest value lies in its application as a management tool. Although everyone may not agree on how accurate of a measure it is, it is undisputable that it provides a more accurate measure of the wealth that a company creates or destroys than the accounting figure for Net Operating Profit After Tax which fails to take into account a company's Cost of Capital.

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