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Economic Value Added

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Acceptance of Senior Honors Thesis

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Abstract

Economic Value Added (EVA), when applied properly in a company, impacts all departments and decisions. The equation for EVA as well as the adjustments that must be made to current accounting practices is the basis for an understanding of EVA. The success of EVA is displayed as companies that have implemented EVA to varying degrees are compared with companies that have not implemented EVA. Once the argument for the overall superiority of EVA is made, traditional performance measures and current accounting practices are evaluated. Then, the importance of creating value within corporations becomes apparent. Finally, a detailed example of the implementation process that took place several years ago at Harsco argued in favor of all companies adopting EVA.

Economic Value Added

Economic Value Added (EVA), for the last two to three decades, has been receiving an increasing amount of attention. Though it has become a viable business practice for many large corporations, it still has not successfully altered the approach of many corporate leaders. EVA approaches the financial aspect of corporations from a different perspective than that to which most executives are accustomed. To raise awareness of the benefits of EVA, it is imperative to gain a basic understanding of the ideas, concepts, and implications associated with the implementation of policies at corporations that have adopted EVA.

EVA Equation

At its core, the concept of Economic Value Added is relatively simple. The complexity is that the concept must be applied to every business decision at all levels of a particular company to realize the desired long-run effects (Stewart, 1991). The equation for EVA is as follows:

EVA = Net Operating Profit After Taxes (NOPAT) – (Capital x The Cost of Capital) 1
(Economic Value Added).

This idea helps managers integrate two basic principles of finance into their daily decision-making. First, the primary financial objective of all companies should be to maximize shareholder wealth. Second, the value of a company is based on investors' expectations of future earnings exceeding or falling short of the cost of capital. The cost of capital is a decisive measure pertaining to computing EVA (Stewart, 1991). The cost

of capital is the rate of return a company would expect to receive had they invested in a different venue with a similar risk (Cost of Capital). This amount is the figure that determines whether a corporation is performing well or badly. Although it may appear to be a cash cost, it is actually an opportunity cost. Calculating the trade-off between risk and reward derives an opportunity cost. The cost of capital consists of a risk free rate of return and a risk premium. Long-term U.S. government bonds are considered risk free because of the value of the entire economy as well as the taxing authority of the government. To illustrate, assume the rate for risk free government bonds is 6% and add to it the risk premium. Although, risk premiums vary by company and industry, most investors expect from 2% to 10% in addition to the government bond rate. Assume that the risk premium is 4%, add the risk free rate of 6%, and the cost of capital in this example would be 10%.

EVA Computation

Table 1 shows the calculation of EVA in a company experiencing growth. The right side depicts what happens to the company's financials when it uses capital to fund growth at a rate less than the cost of capital.

Table 1. EVA Calculation

Sales	$100	$200
Operating costs	80	160
Operating profit before tax	20	40
Tax at 40%	8	16
NOPAT	$ 12	$ 24
Loans	$ 40	$100
Shareholders' equity	80	200
Capital	$120	$300
x The cost of capital	10%	10%
Capital Charge	$ 12	$ 30
EVA	$ 0	$ - 6
(NOPAT less the Capital Charge)		

(Stewart, 2002a, 6)

Looking at the Sales and Net operating profit after tax (NOPAT), the company appears to be in a better position. However, EVA becomes significantly less as it decreases from breakeven to a $6 loss. The $180 additional capital investment to fund growth only increases NOPAT by $12. As such, management is earning 6.7% on its investments when the company's investors could have earned 10% in the market (Stewart, 2002a).

Employee Compensation

Employee compensation is arguably the integral part of EVA. Companies that implement EVA, in areas excluding compensation, performed a mere 1% better than their competitors. Therefore, to ensure that decisions are made that increase EVA, it is imperative that the manager's incentive programs be based on EVA. In most corporations today, bonuses are commonly associated with achieving the annually negotiated budgets. Therefore, the incentive is for the manager to negotiate a budget that can easily be achieved. Incentives, under the EVA system, attempt to make managers into owners by directly linking their bonuses to the increase in EVA. Thus, a manager is

rewarded for making business decisions that increase the value of the company in the future. This incentive plan will shift the focus of management to the long-term, rather than focusing on the short-term benefits without giving any regard to the long-term ramifications (Stewart, 1991).

Bonus Options

Stock Options

Many companies frequently use stock options as incentives for their employees to perform well. In doing so, several problems arise; there is only one overall stock price for a company, employees are unclear as to how their performance drives the company stock price, and the company's stock price cannot outpace the overall stock market indexes indefinitely. Large companies and many small companies may find it difficult to motivate their employees through stock options because an individual person does not have a great impact on the stock price. For this method to be successful, every employee would need to act as if the stock price were solely dependent upon his or her own performance. However, there are too many free riders for this type of incentive program to be successful. For an incentive program to be successful, the company must be broken into smaller segments so that each employee feels that they have an ownership interest in activities in which they are directly involved. Secondly, if managers are unclear about how their actions impact the stock prices, they will likely make decisions to achieve wrong financial goals. Finally, the company's stock performance will eventually plateau even though its profits may continue to increase which has recently happened to Dell computer. With their stock prices leveling off, they have encountered difficulty in using stock options to entice and keep talent.

Cash Bonuses

The use of stock options should be minimized as part of the compensation mix while the use of cash bonus plans should be maximized. By using cash bonuses, employees will no longer have an incentive to enjoy a free ride. This will foster teamwork and collaboration for a common goal. In addition, it is generally much easier for an employee to understand the correlation between his individual performance and a cash bonus than to relate how their performance could positively influence stock prices (Stewart, 2002a).

The Success of EVA

To quantify the extent to which companies that implement EVA outperform their competitors, data were collected by Stern Stewart (2002b). Companies have seen high returns when they utilize Stern Stewart's EVA framework for performance management, value-based planning and incentive compensation. Throughout the 1990s these same companies, on average, outperformed their competitors by 8.3% annually during the first five years after they first adopted EVA. Improved operating margins, stronger cash flow generation, and quicker asset turnover were the catalysts responsible for greater stock market performance, which caused a $116 billion increase in shareholder wealth beyond that of their competitors. Figure 1 depicts the performance of EVA companies from March 24, 2000 to June 30, 2002, a time when the economy slowed and the stock market as a whole performed poorly. During this same time period, companies that were clients of Stern Stewart beat the S&P 500 by 69.8% and earned a total return of 36.5%. The margin of performance is greater still for companies that use EVA as a performance measure and a tool for determining management compensation. Companies that only

used EVA as a performance measure did not obtain such impressive results (Stewart, 2002b).

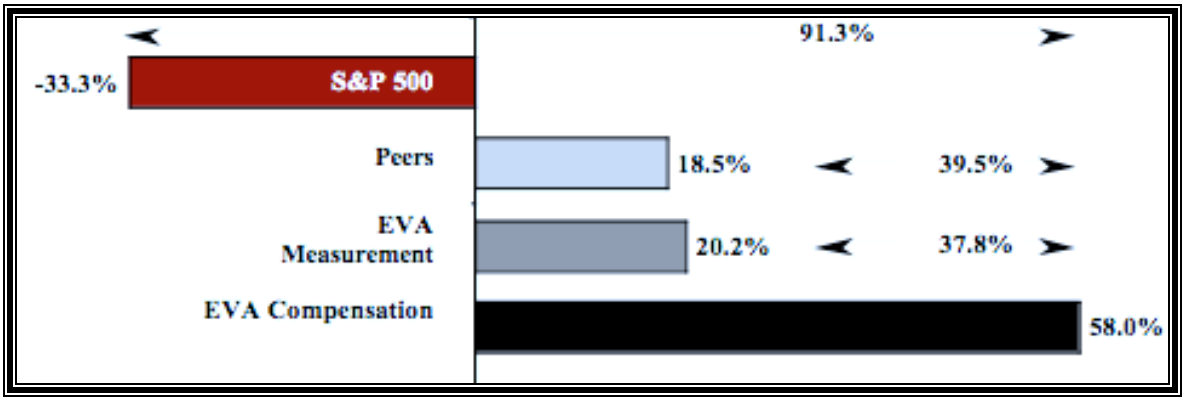

Figure 1. Total Return From Market Peak: March 24, 2000 – June 30,2002

(Stewart, 2002b, 1)

Figure 2 depicts the results of the same study conducted over the five-year period from July 1, 1997–June 30, 2002. The findings were as expected; tying bonuses to EVA led to much higher than average increases in shareholder value.

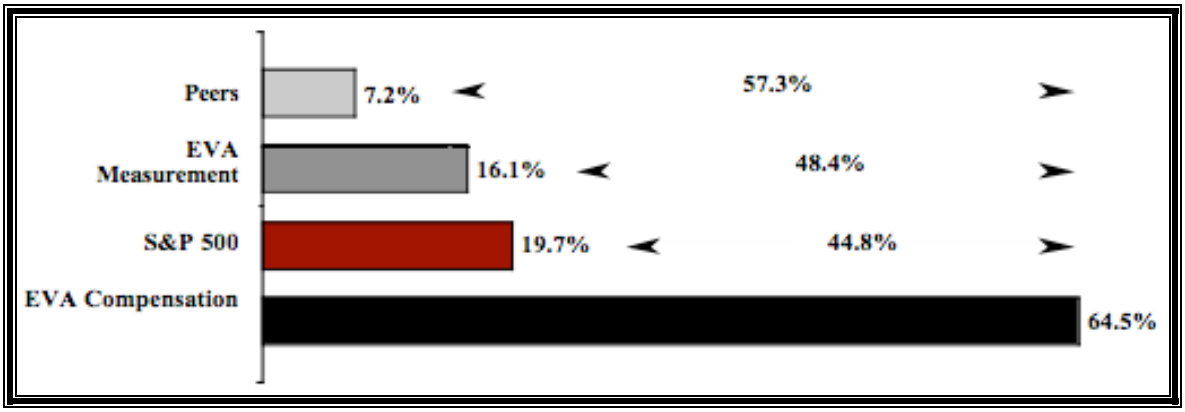

Figure 2. 5-Year Total Return: July 1, 1997–June 30, 2002

(Stewart, 2002b, 2)

As the preceding data indicate, "EVA works best when it is used in a powerful bonus plan that stimulates the incentives of ownership and directly aligns the interests of managers and employees with those of the owners" (Stewart, 2002b, 1).

Complete Adopters of EVA

Companies that use EVA as a foundation for management and incentives are in a wide variety of sectors and range in size, from firms in the retailing sector such as Best Buy with annual sales of over $21 billion to Bradley Pharmaceuticals with annual sales of a mere $33 million. Although not a comprehensive list, the firms in Table 2 are a small representation of firms that have fully adopted EVA. Regardless of sector, all but three of these companies have one thing in common--the annualized EVA far surpassed the returns of their peers (Stewart, 2002b).

Table 2. Firms That Have Fully Adopted EVA

Company	Sector	Sale $Mil.	EVA Date	Annualized Return* EVA	Annualized Return* Peers
Best Buy	Retailing	$21,330	Jan 1998	39.1%	10.4%
Bradley Pharmaceuticals	Pharmaceuticals	$33	Jul 1998	62.2%	- 0.2%
Briggs & Stratton	Capital Goods	$1,529	Jan 1990	-2.5%	-0.7%
Centura Banks	Banking	$239	Mar 1994	32.3%	2.0%
Genesco	Retailing	$774	Apr 1999	29.0%	8.1%
Herman Miller	Office Furniture	$1,469	Mar 1996	3.1%	4.8%
Manitowoc	Construction, Marine, Food	$1,237	Mar 1993	12.4%	0.8%
Molson	Brewing	$2,223	May 1999	39.3%	-4.5%
Schnitzer Steel	Steel	$289	Jul 2000	26.2%	34.7%
SPX Corporation	Diversified Mfg.	$4,912	Oct 1995	14.2%	2.1%

* Annualized returns from 7/1/1997 for companies on EVA at 7/1/1997 or EVA Date for those that implemented EVA post 7/1/1997

(Stewart, 2002b, 2)

EVA vs. Other Financial Performance Measurements

Those in favor of using EVA as a performance measure argue that it is superior to other performance measures for the four following reasons: it is nearer to the real cash flows of the business entity; it is easy to calculate and understand; it has a higher correlation to the market value of the firm and it aligns the goals of management with the interests of the shareholders. EVA is superior to conventional measures such as Return on Investment (ROI), Return on Equity (ROE), and Return on Assets (ROA) because these calculations are based on accounting figures. Using Generally Accepted Accounting Principles (GAAP), the assets in the balance sheet are carried based on historical costs while, with the exception of depreciation, revenues and expenses are recognized as either a profit or a loss at their current value. Due to this inaccuracy in the calculation of the value of assets, the rates of return do not accurately determine the actual return on a given investment. As such, the rate of return is usually lower in the first few years and higher in the latter years. However, if the value of the mix of assets is close to the current value of the assets, the distortion will not be as significant as when the value of the assets is far below the current value. Most companies rarely have the needed asset mix to make these accounting measures accurate; therefore, they cannot be regarded as true indications of the performance of the company.

Insignificance of Earnings per Share and Cash Flow in the Short-Term

To operate a business under the EVA format, one must disregard many other variables previously thought to determine the value of a company. It is of utmost importance to recognize that EVA measures total factor productivity. Therefore, for EVA to be successfully applied, it must supersede other financial measurements such as

Earnings per Share. In doing so, other financial measures once thought to be among the most important will be set aside. Increasing Earnings per Share (EPS) is at the forefront of many executives' thoughts and subsequent actions. However, it is this way of thinking that has caused corporate executives to make decisions truly not in the best interest of the company for the sake of artificially inflating EPS. In fact, several corporate downfalls can be attributed to viewing increased EPS as a key financial measurement. Regardless of how important cash flow is, it is a poor measure of performance in the short-term. As management invests money in rewarding projects, the immediate effect on cash flow will be negative, although it is increasing the overall value of the company. Therefore, cash flow regains significance when it is considered over the life of the business.

The Proper Use of Leverage

In creating value for a company using the EVA methodology, financial restructuring will become a key issue. One very important aspect of financial restructuring is the proper usage of debt or leverage. Although it may seem to contradict common sense, increasing the leverage of a company actually has several desirable effects: it saves taxes, cures the risk of unproductively reinvesting surplus cash flow, creates the urgency to perform well, and forces the sale of underperforming or unrelated businesses or assets. Finally, there are some methods of financial restructuring that may have a positive impact on the value of a company such as paying dividends and partial public offerings (PPO), but they must be carefully considered as they inherently can have costs associated with them.

Adjustments to Accounting Figures

Although EVA is a relatively simple concept with an uncomplicated equation, it often becomes more confusing and difficult to calculate as adjustments are made in accounting figures to calculate a proxy for economic capital. The objectives for these adjustments are to measure capital at closer to current value, to include all investments that are treated as period costs by accountants (such as Research and Development), and to bring EVA closer to the real cash flows of the company. Approximately 160 adjustments to the accounting figures are recommended to produce a realistic estimate of EVA. Not only do these adjustments complicate the calculation of EVA, but also most firms do not maintain the type of data that is needed to make the adjustments. If it is maintained, it is usually not accessible to outsiders. For the occasion that insiders have access to the information, they must in most cases hire a consultant to make these computations. Due to these additional costs, Stewart recommended that the distortions in GAAP-based accounting should only be corrected if the amounts are significant, managers can impact the outcome of the item being adjusted, the information required is easily accessible, and non-finance professionals can understand them. With these stipulations, the 160 adjustments are narrowed down to 15 adjustments.

Relation of Productivity to Value

EVA can also be applied to the corporate world as a philosophy to improve the productivity of a firm. The productivity of a firm can be measured by creation of wealth for the shareholders. For a firm to increase its value, it must operate at optimal productivity over a long period of time. For years firms have implemented programs and techniques in an attempt to increase productivity in physical terms, disregarding the

concept of value. These techniques, though they have increased the bottom-line of the firm, do not guarantee an increase in shareholder wealth.

EVA as a Corporate Philosophy

EVA is a concept that is not easy to understand but can be implemented with care at every level of an organization. Corporations across the globe, even some state owned enterprises in the United States, have adopted EVA as a corporate philosophy. One important advantage of EVA is that it improves business literacy because of its simplistic concept. Business literacy is the attempt of management to make all employees aware that for any activity to create value, the return needs to exceed the cost of capital for that particular activity. It also takes into consideration the cost of capital, which many other conventional techniques fail to incorporate into their calculations.

What Determines Company Value?

In dealing with the topic of Economic Value Added, many questions surface for which the most astute professionals in business cannot agree. The most common of these is how one is to determine the value of a company. To begin, several myths that abound in the market are followed by some valuation concepts. If one was to ask several top executives how value was determined and share prices set, there may be answers using the combination of several financial performance factors such as earnings, growth rates, returns book values, cash flows, dividends, and trading volumes. With this wide variety of answers, it is easy to understand the confusion many top managers have in determining what investors want. Therefore, they cannot realistically make wise business decisions that will maximize shareholder wealth – the ultimate goal in business (Stewart, 1991). In

1993, Fortune magazine named EVA "The Real Key to Creating Wealth" in its cover article (Stewart, 2002a).

Earnings or Earnings per Share

One area of controversy is determining whether earnings or cash flows determine stock prices. To calculate share prices, one may use earnings per share (EPS) and the price/earnings multiple (P/E). This method is particularly appealing because it is so simple. However, it is the very simplicity that makes it an unreliable measure of value. The accounting model asserts that Wall Street determines share prices by multiplying EPS by an appropriate P/E. If this were the case, a company with EPS of $0.50 and a P/E of 5, would sell at $2.50. The major fault with this method is that it assumes that the P/E remains static. In reality, P/E changes frequently with acquisitions, new investment opportunities, and with changes in financial structure and accounting policies. Therefore, EPS do not provide a reliable measure of value.

In contrast, the economic model assumes share prices are the result of evaluations of future cash flows and the risk of the cash receipts of a business by sophisticated investors. In many firms, cash flow and earnings rise and fall simultaneously, so it is difficult to determine which factor is the primary cause for the resulting stock price. Studies have been conducted to find the events, which cause cash flow and earnings to depart in a particular company. These studies conclude that future cash flows are more important in the calculation of share prices than earnings. Investors care more about cash than a company's reported earnings. Many companies inflate their sales to show higher earnings for the benefit of the investor. If an investor is to invest wisely, he will ignore

the earnings and look at the company's future cash flows to be produced during the business' existence.

Economic Model vs. Accounting Model

The most important difference between the two models is that the accounting model relies on the balance sheet and income statement while the economic model relies on uses of cash and its source. This becomes significant when a company chooses from a variety of accounting methods. Using the accounting model, it makes a big difference whether a cash outlay is expensed on the income statement or capitalized on the balance sheet because earnings are the driving force. Using the economic model, it only matters where the cash outlay is recorded when it affects taxes. Ultimately, earnings are affected by the accounting procedures a company uses, such as choosing an inventory costing method, amortizing goodwill, accounting for research and development, and determining book value.

Accounting Methods

LIFO vs. FIFO

Companies must choose an inventory costing method, whether it is last in, first out (LIFO) or first in, first out (FIFO). Each method produces a different outcome. During times of rising prices, a shift from FIFO to LIFO will reduce a company's earnings while allowing the accumulation of more cash. This happens because the newest and most expensive inventory is expensed first. This allows for a tax savings, which increases the amount cash remaining. Shyam Sunder conducted a study that revealed share prices increased 5% the very day a company announced its intent to change from FIFO to LIFO. Further research was conducted which found that share

price growth is directly proportionate to the present value (PV) of the tax savings that would result from implementing the change.

Amortization of Goodwill

The way a company amortizes goodwill also has an impact on earnings. Using the purchase method to account for an acquisition, the buyer amortizes any amount paid for the asset in excess of the fair market. In the accounting model, this matters because it reduces earnings, but it does not matter using the economic model because the amortization of goodwill has no effect on cash because it is a non-tax-deductible, non-cash expense. Another method is pooling of interests accounting in which buyers are able to add the book value (BV) of an asset they acquire directly to their own BV without having to record or amortize any goodwill. This makes ROE and reported earnings higher in comparison to using the purchase accounting method. Pooling transactions often are ruled out because either the seller will only accept cash, or the buyer is not willing to issue the equity. Many profitable transactions are not pursued because they must be recorded under the purchase accounting method. Numerous studies have been conducted to determine if there is a difference in the stock price of companies that make acquisitions using the purchase or pooling method. One such study performed by Hai Hong, Gershon Mandelker, and Robert Kaplan determined that accounting entries that do not have an effect on cash do not affect the value of the company. They sampled a large number of companies in the 1960s that made acquisitions using both methods. If increased earnings did affect value, one would expect the stock prices of companies using the purchase method to underperform in relation to companies using the pooling method. However, no significant difference was found. Therefore, the accounting method for

recording the transaction has no impact on value. Rather, it is amount of cash spent to make the deal happen relative to the expected future cash flow that makes the difference. Earnings reflect a company's share price by the same degree that earnings reflect cash.

Accounting for Research and Development

Another problem arises in companies that spend a significant amount on research and development. R&D is most often an expense for companies. To handle R&D properly, it should first be capitalized onto the balance sheet and then amortized against earnings during the time in which the projected payoff from its successful R&D efforts will take place. Not all R&D outlays produce value, but they are expected to, and so they should be capitalized and amortized. When companies heavy in R&D are acquired, the purchaser is able to record the R&D as goodwill, however the seller was already forced to record the same R&D as an expense. According to accountants, R&D is not an asset when it is developed within a company, but it is an asset when it is purchased.

A common objection to the capitalization of R&D is that it may leave an asset recorded longer than it retains its value. Successful efforts accounting would eliminate this, but would lead to the overstatement of future rates of return, tempting some managers to invest more than they should in projects that are not profitable. Successful efforts accounting capitalizes only the costs of R&D associated with successful research that will benefit the company monetarily. All unsuccessful efforts are expensed immediately. Full cost accounting, on the other hand, capitalizes all costs onto the balance sheet and amortizes them during the time of successful results.

Book Value

Future cash flow is still the most important factor in calculating the book value of a company. A company's book value should not be viewed as an accurate determination of the value of that company. Cash that has been invested in a project is a sunk cost and has no impact on the value of a given company. Capital invested in a company translates into value when management earns a return on discounted cash flows that exceeds their cost of capital.

Corporation Valuation

Decisions in any company should be made exclusively on the basis of which decisions increase the value of the company the most. Therefore, a method is needed to determine the outcome of different business strategies and financial structuring in relation to the company's stock market value. That method is to project the most likely scenarios for a variety of business decisions in areas such as costs, benefits, risks, and rewards. Not only can a valuation framework provide management a way to select a strategy, but also, it can place a value on a consolidated company and its individual business units as well as on acquisition and divesture candidates.

Corporate valuations can determine whether a company is currently trading for fair value and whether it should raise or retire equity at the current prices. Privately held companies should conduct valuations periodically to determine the share value for employee stock ownership plans as well as for management incentives. It is helpful for privately held companies to have this valuation done as a way of determining their progress in creating value for the firm.

A valuation framework for individual business units shows which ones are performing well by creating value and which are underperformers. Doing so will give management a clearer picture as to which business units need to be invested in most heavily and which ones should be divested or restructured to maximize their value. This is crucial for any business because poor performance of part of one company's business has the capability to destroy market value. A study conducted by Stewart (1991) found that in one particular company, 30% of its business accounted for 200% of its total market value while the other 70% of the business was destroying 100% of its market value. Hence, the company was unknowingly devoting large amounts of resources to business that never earned its cost of capital.

Lastly, a valuation framework will help management determine how much it should pay for a potential acquisition. Overpaying will quickly reduce the acquirer's own market value while increasing its chances for getting acquired in the future. Valuation can also be used in reverse. As mentioned previously, stock prices convey the expectations of investors regarding a company's prospects and risks. Therefore, a valuation framework can be used to develop projections that equate to that company's actual market value. Then an investor can use these projections to set break-even goals. This will ensure that investors earn their required rate of return on initial investment (Stewart, 1991).

The Creation of Value

EVA can be created in four ways: by enhancing operating efficiency, by enhancing asset management, by increasing profitable growth, and by reducing the cost of capital. Operating efficiency is enhanced when additional operating profits are

generated without the use of any additional capital. Proper asset management aims to eliminate investments in assets that earn less than the cost of capital. To increase profitable growth, investments must be made that earn more than the cost of capital. A reduction in the cost of capital is made possible by practicing effective financial and investor relation strategies and by increasing transparency to the stock market (Stewart, 2002a).

Firms that are able to earn more than their cost of capital produce positive EVAs and build up premiums into their market values. On the other hand, firms that are not able to earn more than the cost of capital generate negative EVAs, which means they must discount the value of the capital they employ. EVA valuation is not a new theory of valuation. Rather, it is just a rearrangement of discounted cash flow. Using EVA will allow people to see more clearly the connection between their operating and strategic investment decisions and the appraisal of their past performance. Even free cash flow is not able to accomplish this. EVA is the only performance measure that matters as earnings, EPS, earnings growth, dividends, and even cash flow all have flaws. EVA is the most important performance measure for several reasons: it drives a premium in the market value of any company, it represents the net present value of all past and projected capital projects, and it will lead to building a premium valued company. EVA yields the same value as discounting free cash flow, but is better because it connects forward-looking valuation procedures with the subsequent evaluation performance.

EVA is the best measure for setting goals, allocating capital, and evaluating performance. Decision-making will become more effective if EVA is adopted as the most important corporate objective. EVA, as previously discussed, is possibly the best

measure of financial performance and should be considered by every company that is serious about increasing its market value (Stewart, 1991).

EVA Implementation at Harsco

The most important part of any plan is not the plan itself, but rather, the correct implementation of that plan. A great plan performed poorly is far less valuable than a mediocre plan executed precisely (Thompson, Strickland, and Gamble, 2007). The same is true of EVA; although it is a viable business concept, it must be carried out properly to engender the desired outcome. A prime example took place when Harsco Corporation began using the EVA management system with the assistance of Stern Stewart. Harsco is a $2 billion industrial services and products company and did not turn to EVA as a display of desperation. Until the adoption of EVA, Harsco had historically been well managed and financially sound. The decision to implement EVA was done solely to unify and formalize current practices under a common framework in lieu of recent acquisitions that were made in its international operations. The process at Harsco was built around Stern Stewart's "Four Ms" - measurement, management, motivation, and mindset (Stewart, 2003).

The concept of EVA is general in nature. However, to optimize the results, the implementation process should be tailored to fit the specific industry and more specifically the company. The first step in the implementation process is measurement. This step entails making the necessary adjustments to GAAP as mentioned earlier. In doing so, financial statements are taken from an accounting framework and translated into an economic framework. The adjustments vary according to industry as well as company. Adjustments are made after considering factors such as behavioral impact,

materiality, and complexity. Capitalization of R&D, operating leases, and restructuring charges are examples of some of the most common adjustments. Despite varying adjustments by industry and company, in all instances, EVA seeks to capture the economic performance of the measured unit. Management refers to the phase that actually begins the implementation process. Its goal is to improve the decision-making process in the entire organization by using various tools to improve the analysis of business issues, improve consistent decision-making, documentation, and approval processes. Motivation refers to linking incentives to creating shareholder wealth only when it is accomplished by improving operating performance in ways that are able to be sustained. Mindset refers to the training of staff members on EVA, and it creates a corporate culture that demands all actions be made with the creation of value in mind.

Four Ms

Measurement

At Harsco, EVA was implemented with simplicity at the forefront of importance so EVA would more easily be built into the corporate culture. Therefore, changes in this stage were limited to the changes that would create a behavioral change. In this particular case, for example, lease adjustments that recognize lease agreements as an investment in capital were not put into practice. Although Harsco has numerous operating leases, an investigation into the matter confirmed that there were sufficient controls currently in place to thwart employees from cheating the system to artificially improve EVA without actually creating value. Only changes in the operating results of the company are pertinent to the EVA measure. Therefore, rates such as the cost of capital and tax rates are fixed and normally held constant so managers can more readily

comprehend their hurdle rates. With these rates being fixed, changes in interest rates and unordinary tax events do not disproportionately affect the measure of operating performance. Another essential consideration for Harsco as an international company concerned their U.S. investor base. International results were recorded in U.S. dollars as the investors had originally invested with the U.S. dollar. Once EVA was put in place, they continued this procedure, but added a system to combat the potential risk of volatile exchange rates.

Management

The use of EVA also impacts the decision making of management. One of the tools put into practice is known as the Terms Evaluator. This tool enables sales representatives and purchasing managers to easily see the relationship between price changes and receivable/payable days. Another tool put in place was the "Repair versus Replace" model. Under normal circumstances this decision is difficult due to the different expected lives of the two options. By using the model, managers are able to focus their attention on the operating results while the calculation is made in the background. Also developed were a Capital Budgeting Model and an International Cost of Capital framework (Stewart, 2003). Capital budgeting is the process firms must go through to determine if particular capital expenditures are worth pursuing. Forecasted cash inflows and outflows are analyzed to decide if the project will yield the firm's target rate of return. Common capital budgeting techniques include calculating net present value (NPV), internal rate of return (IRR), discounted cash flow (DCF), and payback period (Capital Budgeting). The International Cost of Capital framework makes adjustments for sovereign and currency risks in various local markets. When it is

combined with the Capital Budgeting Model, managers can more easily complete an analysis of international issues regarding finances. This gives managers more time to interpret and evaluate the results of the analysis without spending an extensive amount of time putting the numbers together. All of these models and ideas were brought together and put into a manual that covers major corporate finance issues. In doing so, the company has standardized procedures and assumptions, which will result in consistent decision-making at the corporate level.

Motivation

One basic concept of motivation is to create an incentive plan that will align the goals of employees with the goals of the organization. By using EVA as a performance measure, management can be sure to only make decisions that create value. In addition, managers should be given a sense of ownership in the company. In large companies such as Harsco it can be more difficult as it encompasses many industries and geographic regions. Despite its difficulty, the success of the company relies upon this sense of ownership. To create the mindset of ownership, incentives are based on the performance of each business unit. Incentive plans are also used to revamp the process of budgeting. Most companies tie bonuses to whether or not a certain division is able attain its budgeted level of performance. Although this type of incentive is meant to induce strong performance, it most often results in lower budget targets negotiated by managers to ensure they receive a large bonus. Instead, bonuses should be tied to targeted levels of EVA improvement in stock prices. With no incentive to create easily attainable budgets, managers are encouraged to be more aggressive in their budgeting as they will not be penalized for failing to meet the budget. Lastly, the board of directors at Harsco

approved three years of incentive goals rather than one. This increased the decision-making timeline for all managers so they will not only consider short-term goals but also remain committed to creating value continuously.

Mindset

Mindset refers to the corporate culture of an organization. At Harsco, changing the corporate culture began with training in three areas: a two day capital budgeting training, two day managers training, and three day EVA experts training. The EVA experts training course gives key finance staff an overview of the EVA management system as well as the details of the actual EVA calculation at Harsco. The managers' training gave key operations managers information on topics such as the EVA measure and the details of the compensation plan. This training is designed to create the mindset of value creation throughout the company. Lastly, the capital budgeting training was intended to ensure the finance staff had a complete understanding of EVA and would make consistent decisions as a result. In addition, administrative managers and non-financial operations were given a basic training on the principles and applications of EVA.

Results

Harsco faced great barriers to success such as the slowdown in commercial construction as well as the slowdown of the U.S. economy. Despite these obstacles, Harsco's shares have had a total return of 22.7% since they began to implement the EVA management system. This is a remarkable accomplishment when compared to a negative 35.8% return for the S&P 500 and a negative 10.9% return for other diversified industrial

companies (Stewart, 2003). Figure 3 depicts the performance of Harsco compared to its competitors as well as the S&P 500 for three years beginning in January of 2001.

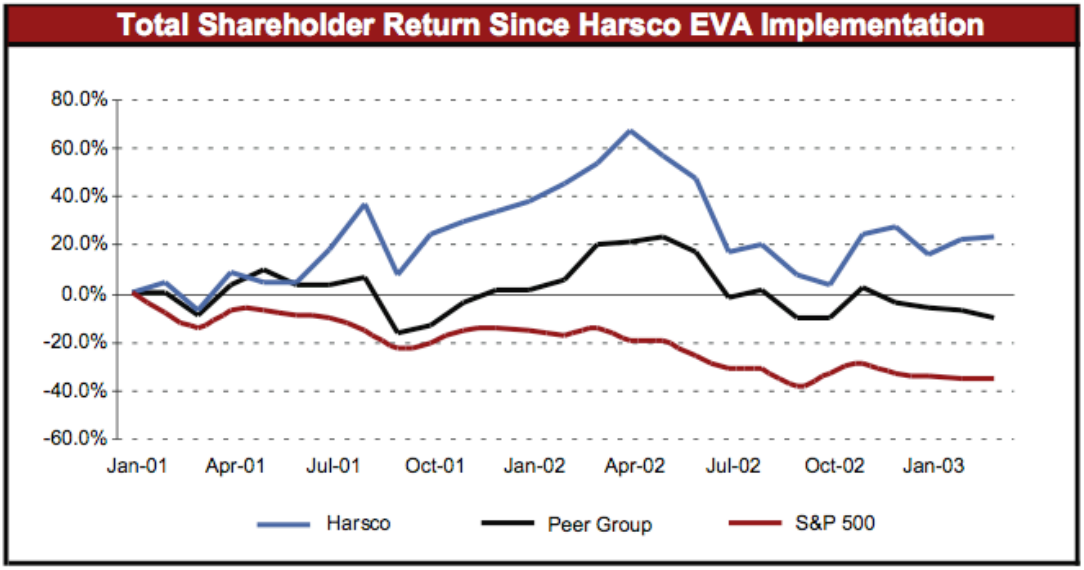

Figure 3. Total Shareholder Returns Since Harsco EVA Implementation (Stewart, 2003, 7)

This type of performance can be accomplished when managers make decisions with the cost of capital in mind (Stewart, 2003). Figure 4 was developed through a joint effort between Harsco and Stern Stewart and displays possible methods to generate improvements in EVA.

Figure 4. EVA Drivers: Strategies for Improving EVA

(Stewart, 2003, 8)

Although all companies can implement EVA in different ways, the success of Harsco offers a great example of the primary factors for success. Senior management must have strong leadership and show a commitment to increasing shareholder value. Companies such as Enron and Worldcom offer good examples of management where the goal was not to increase shareholder value but rather to increase accounting earnings. Chasing accounting earnings at all costs has led these companies into bankruptcy and many of their executives have even faced criminal charges as a result of their unethical and illegal actions (Stewart, 2003).

Data in Support of EVA

EVA, although not a new idea in the financial world, is still met with some criticism. Despite this, companies that utilize the EVA methodology have proven to

consistently and substantially outperform their peers. The study found that companies that implement EVA with Stern Stewart's assistance produce about 50% more wealth after five years than if they had made equal investments in shares of their competitors with similar market capitalization. In addition, the companies that used the full Stern Stewart compensation architecture produced 84% more wealth than their competitors. All combined, these companies created about $116 billion more in market value than they would have performing the same as their competitors. Even the companies that decided to implement EVA without the help of Stern Stewart performed 25% better than their competitors. To summarize these findings, the performance of companies that adopt EVA is directly related to how fully they implement Stern Stewart's program (About EVA).

In response to this information, it seems that the argument of using EVA as a financial measurement is valid. As previously mentioned it has many benefits that traditional accounting methods do not. The only difficulty with EVA is the actual calculation, which is determined by making adjustments for accounting procedures. One of the biggest benefits of EVA comes from making managers into owners. In doing this, the managers and other employees are receiving compensation directly related to the outcome of their actions. In effect, they are making company decisions as if the company's money were their own. This logic makes perfect sense and if all companies began to implement this aspect of EVA, they would see a great increase in the success of companies around the world. It is people's human nature to act in the best interest of themselves. The incentive plan under the EVA format, unlike more traditional methods,

will align the best interest of the company with the best interest of its managers and lower level employees.

Conclusion

Economic Value Added is a topic that encompasses all levels of business operations. It is imperative that measures be taken to ensure all members of a company are committed to the principles of EVA. "EVA is more than a performance measure; it is the focal point of a management system and a mindset. EVA affords the Company the ability to establish clear, accountable links between strategic thinking, capital investment, day-to-day operating decisions, and shareholder value" (Stewart, 2003, 1).

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