

Economic Value Added: The Invisible Hand at Work

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Abstract

Adam Smith, one of the fathers of classical economic thought, observed that firms and resource suppliers, seeking to further their own self-interest and operating within the framework of a highly competitive market system, will promote the interest of the public, as though guided by an "invisible hand." (Smith, 1776)

The market mechanism of supply and demand communicates the wants of consumers to businesses and through businesses to resource suppliers. Competition forces business and resource suppliers to make appropriate responses. The impact of an increase in consumer demand for some product will raise that goods price. The resulting economic profits signal other producers that society wants more of the product. Competition simultaneously brings an expansion of output and a lower price.

Profits cause resources to move from lower valued to higher valued uses. Prices and sales are dictated by the consumer. In the quest for higher profits, businesses will take resources out of areas with lower than normal returns and put them into areas in which there is an expectation of high profits. Profits allocate resources.

The primary objective of any business is to create wealth for its owners. If nothing else the organization must provide a growth dividend to those who have invested expecting a value reward for their investment. As companies generate value and grow, society also benefits. The quest for value directs scarce resources to their most promising uses and most productive users. The more effectively resources are employed and managed, the more active economic growth and the rate of improvement in our standard of living as a society. Although there are exceptions to the rule relating to the value of economic wealth, most of the time there is a distinct harmony between creating increased share value of an organization and enhancing the quality of life of people in society.

In most companies today the search for value is being challenged by a seriously out of date financial management system. Often, the wrong financial focus, cash strategies, operating goals, and valuation processes are emphasized. Managers are often rewarded for the wrong achievements and in many cases they are not rewarded for the efforts that lead to real value. Balance sheets are often just the result of accounting rules rather than the focus of value enhancement. These problems beg for approaches to financial focus that are completely different from current approaches. New approaches must start nothing less than a revolution in thinking in the process of economic evaluation.

One of the focuses that have proved to be incorrect in the valuation of economic worth is earnings per share (EPS). Earnings per share has long been the hallmark of executives that appear in meetings of the shareholders, as the measure of their accomplishments. This, along with return on equity has long been thought of as the way to attract Wall Street investment.

There is nothing that points to EPS as anything more than a ratio that accounting has developed for management reporting. Many executives believe that the stock market wants earnings and that the future of the organization's stock depends on the current EPS, despite the fact that not one shred of convincing evidence to substantiate this claim has ever been produced. To satisfy Wall Street's desire for reported profits, executives feel compelled to create earnings through creative accounting.

Accounting tactics that could be employed to save taxes and increase value are avoided in favor of tactics that increase profit. Capital acquisitions are often not undertaken because they do not meet a hypothetical profit return. R&D and market expanding investments get only lip service. Often increased earnings growth is sustained by overzealous monetary support of businesses that are long past their value peak.

We must ask then, what truly determines increased value in stock prices. Over and over again the evidence points to the cash flow of the organization, adjusted for time and risk, that investors can expect to get back over the life of the business.

Economic Value Added (EVA) is a measurement tool that provides a clear picture of whether a business is creating or destroying shareholder wealth. EVA measures the firm's ability to earn more than the true cost of capital. EVA combines the concept of residual income with the idea that all capital has a cost, which means that it is a measure of the profit that remains after earning a required rate of return on capital. If a firm's earnings exceed the true cost of capital it is creating wealth for its shareholders.

Definition of Economic Value Added

A discussion on Economic Value Added has to begin with the origin of the concept. EVA is based on the work of Professors Franco Modigliani and Merton H. Miller. In October, 1961, these two finance professors published "Dividend Policy, Growth and the Valuation of Shares", in the Journal of Business. The ideas of free cash flow and the evaluation of business on a cash basis were developed in this article. These ideas were extended into the concept of EVA by Bennett Stewart and Joel Stern of Stern, Stewart & Company.

Economic Value Added is defined as net operating profit after taxes and after the cost of capital. (Tully, 1993) Capital includes cash, inventory, and receivables (working capital), plus equipment, computers and real estate. The cost of capital is the rate of return required by the shareholders and lenders to finance the operations of the business. When revenue exceeds the cost of doing business and the cost of capital, the firm creates wealth for the shareholders.

EVA = Net Operating Profit – Taxes – Cost of Capital

Calculating Net Operating Profit After Taxes (NOPAT)

NOPAT is easy to calculate. From the income statement we take the operating income and subtract taxes. Operating income is sales less cost of sales and less selling, general and administrative expenses. The following example from XYZ Company illustrates the NOPAT calculation.

XYZ Company

Sales	\$2,436,000
Cost of Goods Sold	<u>1,700,000</u>
Gross Profit	736,000
Selling, General & Admin Expenses	<u>400,000</u>
Operating Profit	336,000
Taxes	<u>134,000</u>
NOPAT	202,000

Calculating Cost of Capital

Many business don't know their true cost of capital, which means that they probably don't know if their company is increasing in value each year. There are two types of capital, borrowed and equity. The cost of borrowed capital is the interest rate charged by the bondholders and the banks.

Equity capital is provided by the shareholders. An investor's expected rate of return on an investment is equal to the risk free rate plus the market price for the risk that is assumed with the investment. The relationship between expected return and risk is measured by comparing a company to the market.

The risk of a company can be decomposed into two parts. An investor can eliminate the first component of risk by combining the investment with a diversified portfolio. The diversifiable component of risk is referred to as non-systematic risk.

The second component of risk is non-diversifiable and is called the systematic risk. It stems from general market fluctuations which reflects the relationship of the company to other companies in the market. The non-diversifiable risk creates the risk premium required by the investor. In the security markets the non-diversifiable risk is measured by a firm's beta. The higher a company's non-diversifiable risk, the larger their beta. As the beta increases the investor's expected rate of return also increases. (Levy, 1982)

Current estimates of beta for a wide variety of companies are available from Value Line and Bloomberg.

Shareholders usually expect to earn about six percent more on stocks than government bonds. With long term government bonds earning 7.5%, a good estimate for the cost of equity capital would be about 13.5 %. The true cost of capital would be the weighted average cost of debt and equity.

Measuring Capital Employed

The next step is to calculate the capital that is being used by the business, from the economist point of view. Accounting profits differ from economic profits. Under generally accepted accounting principles, most companies appear to be profitable. However, many actually destroy shareholder wealth because they earn less than the full cost of capital. EVA overcomes this problem by explicitly recognizing that when capital is employed it must be paid for.

In financial statements, created using generally accepted accounting principles, companies pay nothing for equity capital. As discussed earlier, equity capital is very expensive.

Economic profits are defined as total revenues less total costs, where costs includes the full opportunity cost of the factors of production. The opportunity cost of capital invested in a business is not included when calculating accounting profits.

Capital would include all short and long term assets. In addition, other investments that have been expensed using accrual accounting methods are now included as capital. For example, research and development, leases, and training, which are investments in the future, that GAAP requires to be expensed in the year they occur, would be treated as a capital investment and assigned a useful life. (Stern, 1996)

If the business invest in developing new products this year, that amount would be added back to operating profits and to the capital base. If the product has a five-year life, deduct 1/5 of the investment would be deducted each year from operating profits and from the capital base in each of the next five years. For XYZ Company we determine that the adjusted capital balance is \$1,500,000.

Weighted Average Cost of Capital

Weighted average cost of capital examines the various components of the capital structure and applies the weighting factor of after-tax cost to determine the cost of capital. (O'Byrne, 1996) The following example will show the formation of the weighted average cost of capital.

XYZ Company

Long Term Debt		\$500,000
Preferred Stockholders' Equity		\$200,000
Common Stockholders' Equity		
Common Stock	\$300,000	
Paid in Surplus	\$100,000	
Retained Earnings	\$300,000	
Total Common Equity		<u>\$700,000</u>
Total Capital		\$1,400,000

Long Term Debt

Long Term Debt includes bonds, mortgages and long term secured financing.

Bond Cost Let's say we can issue bonds with a face value of \$100 per bond and it is estimated that the bond will generate \$96.00 net proceeds to the company after discounting and financing costs. The normal interest is \$14.00 or approximately \$9.00 after taxes (assuming a 35% tax rate). To obtain the cost, we divide the after tax interest by the proceeds.

$$\$9.00 / \$96.00 = 9.475\% \text{ which is the after tax cost of bond financing}$$

Mortgage and Long Term Financing Costs Our banker has informed us that our long term rate is two points above prime, which is currently 10%, putting our lending rate at 12%. With a 35% tax rate it comes to a 7.8% cost. Our banker has informed us that our mortgage rates are presently 11%, which would give us an after tax cost on mortgage money of 7.15%.

We weight the cost of long term debt, by taking the average of the cost of long term debt, which would give us:

$$(7.8\% + 7.15\%) / 2 = 7.48\%$$

and multiplying the long term debt of \$500,000 by 7.48% will give us a weighted average cost of LTD of \$34,400.

Preferred Stock Costs

We take the present market value of the preferred stock less discounts or finance costs and divide dividends per share by this value. For example, Preferred stock of \$100 per share less \$2.00 finance costs or \$98.00 proceeds. Dividends on Preferred are \$11.00 per share.

$$\$11.00 / \$98.00 = 11.2\% \text{ after tax cost of preferred}$$

To calculate the weighted preferred stock, we multiply the after tax cost of 11.2% by the preferred stock of \$200,000 which gives us \$22,400.

Common Equity Costs

Common equity has three components – common stock, paid in surplus and retained earnings. From the shareholder's viewpoint, all three are costs. If retained earnings are used in the business, the stockholders cannot use them elsewhere to earn money and therefore they carry an opportunity cost.

Stockholders invest because they expect to receive benefits, which will be equivalent to what they would receive on the next best investment when risk is considered. Stockholders expect two benefits from common stock, dividends present and future and capital appreciation from growth. The valuation of common equity must take into consideration both the present and future earnings of the stock.

To calculate the weighted cost of common equity we consider the present market price of the stock less issuing costs. For example we issue common stock for \$100 a share less \$15.00 issuing cost or proceeds of \$85.00 per share. This is divided into the future earnings per share estimate by investors or reliable analysts. If we use \$12.00 per share, then the weighted cost will look like this:

$$\$12.00/\$85.00 = 14.1\% \text{ after tax cost of common stock}$$

Using the 14.1% and the total common equity of \$700,000 our cost of common equity is \$98,700.

Total Weighted Average Cost of Capital

A summary of the three components gives us the weighted average cost of capital.

XYZ Company

Long Term Debt	\$500,000 * 7.48%	\$37,400
Preferred Stockholders' Equity	\$200,000 * 11.2%	\$22,400
Common Equity	<u>\$700,000 * 14.1%</u>	<u>\$98,700</u>
Total Capital	\$1,400,000	\$158,500

The Weighted Average Cost of Capital is $\$158,500/\$1,400,000 = 11.3\%$. Cost of capital is calculated by multiplying total capital by the weighted average cost of capital.

Calculating EVA

After tax operating earnings less the cost of capital is equal to EVA. From the above example we can calculate XYZ Company's EVA and determine if this business is creating wealth for its owners.

XYZ Company

NOPAT	\$202,000
Charge for Capital	
Capital Employed	\$1,500,000
Cost of Capital	11.3%
Capital Charge	\$169,500
ECONOMIC VALUE ADDED	\$32,500

Methods Used to Increase EVA

The only way to increase EVA is through the actions and decisions of managers. People make the decisions and changes that create value. Companies that use EVA as their financial performance measure focus on operating efficiency. It forces assets to be closely managed. There are three tactics that can be used to increase EVA: earn more profit without using more capital, use less capital, and invest capital in high return projects. (Tully, 1998)

Conclusion

EVA is both a measure of value and also a measure of performance. The value of a business depends on investor's expectations about the future profits of the enterprise. Stock prices track EVA far more closely than they track earnings per share or return on equity. A sustained increase in EVA will bring an increase in the market value of the company.

As a performance measure, Economic Value Added forces the organization to make the creation of shareholder value the number one priority. Under the EVA approach stiff charges are incurred for the use of capital. EVA focused companies concentrate on improving the net cash return on invested capital.

EVA is changing the way managers run their businesses and the way Wall Street prices them. When business decisions are aligned with the interest of the shareholders, it is only a matter of time before these efforts are reflected in a higher stock price.

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