EVA VERSUS TRADITIONAL ACCOUNTING MEASURES OF PERFORMANCE AS DRIVERS OF SHAREHOLDER VALUE – A COMPARATIVE ANALYSIS

Dumitru Andreea Paula, Assistant Ph., “Romanian-American University”, Bucharest
Dumitru Cristina Elena, Assistant Ph., “University Politehnica of Bucharest”

Several researchers and practitioners have claimed that economic value added (EVA) is superior to traditional accounting measures in driving shareholder value. Other researchers have refuted these claims by supplying data in support of traditional accounting indicators such as earnings per share (EPS), dividends per share (DPS), return on assets (ROA) and return on equity (ROE).

This study endeavoured to analyse the results of companies listed on the Securities Exchange, using market value added (MVA) as a proxy for shareholder value. The results suggest stronger relationships between MVA and cash flow from operations.

The study also found very little correlation between MVA and EPS, or between MVA and DPS, concluding that the credibility of share valuations based on earnings or dividends must be questioned.

Introduction

To create value for the entire company means to maximize the total value. Traditional financial measures reflect historical performance, having a limited relevance for anticipate the future evolution of performance. These measures take into account only the effects of using the invested capital into affair and not the cost of capital too. Most companies have superior financial performances, but in fact their activities don’t generate value but drive to a permanent loss in value. The modern measures are based on the concept “to create value”.

Is there a single measure of corporate performance enabling investors to identify investment opportunities and motivate managers to make value-added business decisions?

The usefulness of traditional accounting measures, such as earnings per share (EPS), return on assets (ROA) and return on equity (ROE), and their effect on shareholder (market) value, has been discussed for some time.
Using data from listed companies the article investigate the strength of the relationship between EVA and other traditional accounting measures relative to market value added (MVA). The financial managers and analysts try to find a way to identify the driver(s) of value with the strongest impact on MVA and to develop financial strategies that can optimize value creation for shareholders.

It can be proven theoretically that EVA is superior to other measures of performance (excluding residual income), on the grounds that it accounts for the full cost of capital, including the cost of equity. It is therefore a measure of pure economic profit; it reflects the full cost of the limited (capital) resources used by a company during a given period. The difference between EVA and residual income lies in the adjustments required to the net assets and operating profits for the calculation of EVA.

Several studies have concluded that EVA has a stronger correlation with MVA than the other accounting measures tested, but the other studies indicate that EVA does not explain MVA better than other measures.

The calculation of EVA and MVA and the link between EVA and MVA

A company’s total market value is equal to the sum of the market value of its equity and the market value of its debt. In theory, this amount is what can be ‘taken out’ of the company at any given time. The market value added (MVA) is the difference between the total market value of the company and the economic capital (Reilly & Brown).

The economic capital (invested capital) is the amount that is ‘put into’ the company and it basically refers to the fixed assets plus the net working capital.

\[ \text{MVA} = \text{Market value of company} - \text{invested capital} \]

From an investor’s point of view, MVA is the best external measure of a company’s performance. Stewart states that MVA is a cumulative measure of corporate performance and that it represents the stock market’s assessment from a particular time onwards of the net present value (NPV) of all a company’s past and projected capital projects. The MVA is calculated at a given moment, but, in order to assess performance over time, the difference or change in MVA from one date to another can be determined to see whether value has been created or destroyed.

Company creates value when \( \text{MVA} > 0 \), that is when the market value capital exceeds the capital invested. A negative value for MVA proves that the previsions concerning the ability of management to use efficiently the capital are unfavourable.

MVA grows only if the additional capital invested generates a bigger return of present cost of capital. MVA doesn’t take into account the dividend
policy. A company which returns dividends has a bigger ability to create value than another with the same MVA, but without a dividend policy.

EVA is an internal measure of performance that determines MVA. ‘A company’s EVA is the fuel that fires up its MVA.’

As defined by Stern Stewart Management Services of New York City, EVA is the difference between a company's net operating income after taxes and its cost of capital of both equity and debt.

EVA measures the surplus value created by a firm in its existing environment. It’s a strategy formulation and a financial performance management tool that helps companies make a return greater than the firm’s cost of capital. Firms adopt this concept to track their financial position and to guide management decisions regarding resource allocation, capital budgeting and acquisition analysis. The economic principle is that the firm must earn more on its funds than the cost of those funds or it is not creating value.

Unlike traditional profitability measures, both MVA and EVA measures take into account the cost of equity capital. MVA is most appropriate for investor-owned healthcare organizations and EVA is the best measure for not-for-profit organizations.

MVA assesses the effect of managerial actions on shareholder wealth from an organization's inception, while EVA assesses managerial effectiveness in a given year.

EVA is calculated as follows:

$$EVA = (ROIC - WACC) \times IC,$$

where

- **ROIC** = return on invested capital
- **WACC** = Weighted Average Cost of Capital
- **IC** = Invested Capital (at the beginning of the year)

The ROIC minus the WACC is also called the ‘return spread’. If the return spread is positive, it means the company is generating surplus returns above its cost of capital and this translates into a higher MVA.

Lehn and Makhija describe EVA as follows: “EVA and related measures attempt to improve on traditional accounting measures of performance by measuring the economic profits an enterprise – after-tax operating profits less the cost of the capital employed to produce those profits”.

The link between EVA and MVA is that MVA is the present value of all the future EVAs a company is expected to generate, discounted at the WACC.

Hawawini and Viallet define MVA as follows:

$$MVA = \frac{EVA}{(WACC – \text{constant growth rate})}$$

The external measure of performance (MVA) can be maximised by maximising the internal measure of performance, the EVA.

EVA is not only the performance measure that tries to capture the true economic profit of a company but also most directly is linked to the creation of
shareholder wealth over time through the implementation of a complete EVA-based financial management system.

The first advantage of EVA comes from its consideration to capital charge, which makes managers pay attention to the Balance sheet and the Income statement.

Peter Drucker says: "Until a business return 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”.

EVA recognizes that when managers employ capital they must pay for it, just as if it were a wage.

EVA aligns decision making with shareholder wealth. The primary financial objective of any company should be to maximize the wealth of its shareholders. The value of a company depends on the extent to which investors expect future profits to exceed or fall short of the cost of capital.

An increase in EVA will bring an increase in the market value of a company.

By assessing a charge for using capital, EVA makes managers care about managing assets as well as income, and helps them properly assess the tradeoffs between the two.

The common focus of decision making must be how to improve EVA.

EVA can be used as a bonus plan tool which finally changes the behavior of the manager from employee to owner.

Important for shareholders and potential investors is not just a positive EVA, but to keep it constant or even an EVA in growth. The company’s value grows if EVA excels over time the investors’ expectations. Constant positive EVA values over time will increase company values. Positive EVA is obtained when return on assets exceeds the cost of the capital.

EVA has many distinctive advantages:

- Earnings per share and return on investment/assets do not reflect the true cost of capital, there is no hinge whether shareholders value have been created or destroyed,
- It helps managers to make better investment decisions, identify improvement opportunities and consider long-term and short-term benefits for the company;
- It measures the quality of managerial decisions and indicates the value growth in the future. The higher the EVA in any year, the better job managers are doing in using fund capital to create additional value,
- It’s very easy to compute EVA, extracting the data from both the income statement and the balance sheet and adjusting it.
- EVA is also really the discounted free cash flows of a business,
-EVA is an estimate of a true economic profit

Limitations of EVA are:
-EVA, on its own, is inadequate for assessing a company’s progress in achieving its strategic goals and in measuring divisional performance,
-in certain industries EVA alone is an inappropriate measure of financial performance,
-EVA is distorted by inflation; it cannot be used during inflationary times to estimate actual profitability,
-EVA is distorted by the fact of the upfront normal depreciation being small at the beginning of a project and big at the end of the project. Therefore companies with a lot of new investments have lower EVA than their true profitability would imply and companies with a lot of old investments have bigger EVA than their true profitability would imply. The extent of this challenge depends on the asset structure (the relative proportions of current assets, depreciable assets, un-depreciable assets) and on the length of the investment period,
-another problem is how we measure relative value within the overall marketplace. A company can experience positive EVA, but have a declining share of value within the marketplace. If the competition is gaining more and more of the wealth within the marketplace, it will take a lot more than positive EVAs to sustain long-term values.

Research in support of EVA as the best driver of MVA

Financial analysts Stern Stewart & Co. started tracking the best 1000 industrial and services companies in the United States of America in “EVA versus traditional accounting measures of performance as drivers of shareholder value” (Stewart, 1989), after he had become disillusioned with the company rankings of the magazine Business Week at the time. These rankings were based on market capitalization and not on performance. Stern Stewart & Co. began to rank companies based on MVA. As they had expected, the new rankings were dramatically different from the Business Week rankings.

They did some research on the EVA and MVA of 613 companies in the USA. The companies were ranked in terms of the average EVA for 1987 and 1988. The research found that for companies with a positive EVA, there was a very high level of correlation between the level of EVA and the level of MVA, both for the average values used and the changes in values. The relationship for the changes in values was even better than that for the average values. For the groups of companies with a negative EVA, the correlation between the EVA and MVA levels was not as good. Stewart’s (1991) explanation for this was that the market value of shares always reflects at least the value of net assets, even if the company has low or negative returns. The potential for liquidation, recovery, recapitalization or a
takeover sets a floor on the market value (in other words, the market value does not drop far below the net asset value).

Stern Stewart&co’ study try to shows the stock price increase after EVA adoption. EVA, unlike NOPAT or other earnings measures like net income or earning per share, is systematically linked the market value. It provides a better predictor market value than other measures of operating performance.

Investors capitalize positive EVA at much higher multiples than negative EVA. Positive EVA is a sign of future EVA improvement because a growing company can create EVA improvement simply by maintaining its current rate of return. Lower multiples on negative EVA imply that the market expects a turnaround.

Big companies that don’t generate positive EVA now are less likely to generate any EVA improvement in the future.

They find that levels of EVA and its changes are significantly better predictors of current market values and changes than levels and change of NOPAT or free cash-flows.

On average the EVA companies outperform their peers by 9 percentage points in the fourth year and 7 percentage points in the fifth year. This suggests that the stock market did not fully anticipate the benefit of EVA and continued to be surprised by superior operating results well after a company made the change.

Another EVA supporting studied performed by Robert Kleiman who address the issue” Do companies adopting EVA add more value for their industry competitors?” Choosing 71 companies adopting EVA during the period of 1987-1996, he compares total return to shareholders with those of companies in the same industries. The result was that the stock market performance of EVA companies was significantly better than the other companies.

In 1991 Finegan extended the initial analysis discussed above to include other measures. He focused on the middle 450 companies where the MVAs were ‘tightly clustered’ and compared the power of EVA to that of more conventional measures such as EPS, growth in capital, return on capital and even growth in cash flow. The results of the regression of MVA against EVA and other common performance measures showed that EVA outperformed the other measures quite considerably with a level of correlation of 61%, compared to the second best other measure, which was return on capital, with a level of correlation of 47%. The explanatory power of EVA was found to be six times better than that of growth in EPS.

Finegan repeated the analysis of changes in MVA and again found EVA to be superior to the other measures (return on capital, earning per share).

In 1993 Stern argues that the key operating measure of corporate performance is not popular accounting measures such as earnings, earnings growth,
dividends, dividend growth, ROE, or even cash flow, but in fact EVA. The changes in the market value of a selected group of companies (specifically their MVAs) have been shown to have a relatively low correlation with the above accounting measures. His research showed that the correlation for the relationship between MVA and various independent variables ranged from 9% for turnover growth to 25% for ROE rates. By comparison, the correlation for EVA relative to MVA was 50%.

In 1996 Lehn and Makhija conducted a study to find out how well EVA and MVA relate to share price performance and to see whether chief executive officer (CEO) turnover is related to EVA and MVA. They selected 241 large US companies and computed six performance measures per company for four years (1987, 1988, 1992, 1993), namely three accounting rates of return (ROA, ROE and return on sales [ROS]), share returns (dividends and changes in share price), EVA and MVA. All six measures correlated positively with share returns. EVA correlated slightly better with the share returns than the other measures did. The study revealed that the CEOs of companies with high EVAs and MVAs had much lower rates of dismissal than CEOs responsible for low EVAs and MVAs. As expected, a strong inverse relationship was found between share prices and CEO turnover.

The study prove that a greater focus on business activities leads to higher levels of EVA and MVA and concluded that EVA and MVA are effective performance measures that contain information about the quality of strategic decisions and that serve as signals of strategic change.

O’Byrne used nine years of data (1985-1993) for capitalized EVA (which is EVA divided by the cost of capital), net operating profit after tax (NOPAT), and free cash flows (FCFs) relative to market value divided by invested capital. His initial findings showed that FCF explained 0% of the change in the market value divided by the capital ratio, while NOPAT explained 33% and EVA-31%. It looked as if NOPAT and EVA had almost the same explanatory power.

O’Byrne concluded that EVA, unlike NOPAT or other earnings measures, is systematically linked to the market value and that EVA is a powerful tool for understanding the investor expectations that are built into a company’s current share price.

Another research used a sample of the 100 largest US banks for the ten-year period from 1986 to 1995 to calculate MVA and to test the correlation with EVA, as well as four other accounting measures, namely net income (amount), EPS, ROE and ROA.

The analysis above clearly shows that EVA is the measure that correlates the best by far with shareholder wealth creation. In an alternative approach where
changes in the performance measures were regressed against standardized MVA, the results were not very different.

Grant studied the relationship between MVA divided by capital and EVA divided by capital for 983 companies selected from the Stern Stewart Performance 1000 for 1993 and 1994. The results for 1993 showed a correlation of 32% for all the companies. For the 50 largest US wealth creators, the correlation was 83%. For the 50 biggest US wealth destroyers, it was only 3%.

His findings revealed a high level of correlation between MVA and EVA for companies with a positive EVA, but low levels of correlation for companies with a negative EVA.

Grant found that the real corporate profits should be measured relative to the amount of capital needed to generate that level of profitability. He concluded that EVA has a significant impact on a company’s MVA.

The value of a company responds to variations in both the near-term EVA outlook and movements in the long-term EVA growth rate.

Milunovich and Tsuei investigated the correlation between frequently used financial measures (including EVA) and the MVA of companies in the US computer technology industry for the period from 1990 to 1995.

Clearly EVA demonstrated the best correlation and it would be fair to infer that a company that can consistently improve its EVA should be able to boost its MVA and therefore its shareholder value.

Milunovich and Tsuei argue that the relatively weak correlation between MVA and FCF is due to the fact that FCF can be a misleading indicator. They point out that a fast-growing technology start-up company with positive EVA investment opportunities and a loss-making company on the verge of bankruptcy can have similar negative cash flows. They concluded that growth in earnings is not enough to create value, unless returns are above the cost of capital. They are of the opinion that EVA works best as a supplement to other measures when one is evaluating shares and that EVA sometimes works when other measures fail.

Criticisms of EVA and MVA

Kramer and Pushner studied the strength of the relationship between EVA and MVA, using the Stern Stewart 1000 companies for the period between 1982 and 1992.

They found that although MVA and NOPAT were positive on average, the average EVA over the period was negative. This illustrated the significant impact of the cost of capital and the high future growth expectations for EVA.

NOPAT explained more of the total variation in market value than EVA did; changes in EVA were negatively related to changes in MVA, while the
correlation between changes in MVA and changes in NOPAT was positive. These authors suggest that this means that the market is more likely to react favourably to profits than to EVA, at least in the short term. They found no clear evidence to support the general idea that EVA is the best internal measure of shareholder value creation. In fact, from their studies it seems as if the market is more focused on profits than on EVA. They also suggest that compensation schemes must rather be tied to profits than to EVA.

*Dodd and Chen* used Stern Stewart 1000 database as a starting point and added some supplementary data for the ten years from 1983 to 1992. They set out to test the claim that EVA is a superior measure of shareholder value performance. Although they did find a correlation between share returns and EVA, it was not as high correlation of share returns and ROA. The correlation for the other accounting measures tested, namely EPS and ROE, was very low.

Based on the data for this large number of companies over as long a period as 10 years, it appears that EVA does not relate well to share returns. The results that Dodd and Chen (1996) obtained imply that 80% of changes in share returns could not be accounted for by changes in EVA. In their study, the ROA displayed a better explanatory ability than EVA did.

Dodd and Chen also found that residual income, which is similar to EVA, except for the adjustments required to deal with the so-called accrual accounting distortions, gave results almost identical to those achieved using EVA.

*Biddle* state that numerous claims have been made about EVA and MVA, most based on ‘anecdotal evidence’ or ‘in-house studies’. They endeavoured to present “independent research” covering a sample of more than 600 companies for the period from 1984 to 1993.

Their findings showed that current period accounting earnings is significantly more highly associated with market-adjusted annual share returns than residual income and EVA. Their results show no evidence that EVA is superior to earnings in its association with share returns.

A fully study regarding performance measure was made by *Biddle, Bowen and Wallace*. They insisted that EVA do not dominate earnings in relative information content and suggest rather that earnings generally outperform EVA in terms of explanation for firm value and stock returns. They tried to find out association between performance measure and stock return and for first time they used each EVA component.

Their results was: EVA doesn’t dominate earnings in its association with stock returns; accounting earnings appears to outperform EVA on average; EVA components contribute only marginally to the information already available to
market participants in net income; EVA doesn’t outperform earnings in explaining firm values.

Conclusion

Some initial studies indicated that EVA does indeed have greater power to explain market value than other traditional accounting measures do. However, subsequent studies have contradicted these findings and have produced findings that support the claim that traditional accounting indicators are superior to EVA in explaining changes in market value.

EVA has been proven excellent performance measure to motivate management and employees in any company due to its highest correlation with the MVA, the theoretically definitive performance measure and EVA adopting companies’ superior performance compared with peer non-EVA adopting companies.

A study based on the data of companies listed for the period from 1994 to 2004 revealed that on a year-on-year basis, EVA did not show the strongest correlation with MVA. It is acknowledged that only 89 industrial companies were included in the final sample and that this imposes a limitation on the conclusions that can be drawn.

However, of the performance indicators chosen for the study, the changes in the standardized cash flow from operations explained the biggest percentage of changes in standardized MVA (38%). ROA came second best (15%) and standardized EVA (8%) third.

When data in the years when spreads were negative were left out, the results were only slightly better, with no difference in the ranking of the indicators. MVA is actually equal to the present value of all future expected EVAs. Therefore one can expect there not necessarily to be a strong correlation between MVA and EVA on a year-on-year basis. On a practical note, the study has reaffirmed the importance of cash flow management. The findings suggest that some caution is merited when focusing only on EVA as the measure of choice for internal company performance.

Another interesting finding of the study was the insignificant correlation between MVA and EPS and DPS. Considering the fact that both earnings and dividends are still frequently used as the basis for share valuations, one can infer that, at least for locally listed companies, these valuation methods are unreliable in the extreme.
Bibliography


Bunea, S. 2007. L’analyse de la coherence des theories concernant la creation de valeur avec le concept de resultat global impose par l’IASB, *Analele Universitatii din Oradea*;


O’Byrne, S.F. 1996. EVA and market value. *Journal of Applied Corporate Finance*, 9;

Simion, D. 2007, Economic Value Added-measure for value achievement (enterprises’s performance), *Analele Universitatii din Oradea*;


www.iasb.uk

www.sternstewart.com