

ECONOMIC VALUE ADDED: CORPORATE PERFORMANCE MEASUREMENT TOOL

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Abstract

Performance measurement matters in today's complex business arena irrespective of the type, nature, and volume diversity in business. If the result of the performance measurement goes wrong due to the faulty or inaccurate selection of tool(s), then the total process will prove wrong in due time hence an attempt to evaluate Economic Value Added (EVA) as an alternative to traditional performance measure. Generally, it is believed that EVA is truly designed for large companies and is the best performance measure. The possible advantages, opportunities and limitations of using EVA as a performance measurement tool is discussed that may encourage the users/readers to incorporate EVA with their current setup to reap the potential benefits from it.

Keywords: Economic Value Added, Corporate Performance

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***SBM, NMIMS*

1 Introduction

Performance has been one of the key interest areas among the researchers. Its measurement assumes further importance in the widely accepted form of business (i.e.) corporates. Segregation of ownership and management, which has been the uniqueness of this form, also brings in issues of agency. Maximization of firm's value as the objective of managerial decision making has been the propaganda of modern finance theory. Managers and practitioners have criticized the same for being the only objective of decision making and ignoring the interests of all the stakeholders and other aspects of corporate strategy. Over the period, however managers have accepted maximization of shareholder wealth as the primary objective of the firm.

Performance measurement systems were developed as a means of monitoring and maintaining organizational control, to ensure that an organization aims at strategies that lead to the achievement of its overall goals and objectives. Performance measures, the key tools for performance measurement system, play a vital role in every organization as they are often viewed as forward-looking indicators that assist management to predict a company's economic performance and many times reveal the need for possible changes in operations. Corporate financial valuation is one of the fastest growing areas in the field of finance in the post liberalized scenario. However, the choice of performance measure is one of the most critical challenges faced by organizations. The key aspect is the selection of a right performance measure, as faulty selection leads to faulty signals and poor decisions, leading to undesirable business results (Meditinos et al., 2006). Ferguson and Leistikow (1998) rightly mentioned that it is the wrongly chosen performance measures, which in turn push management to take improper decisions resulting into decline in market value of the company. Performance measures fail to show if the shareholder wealth is maximized as managers lack the requisite knowledge about correctly measuring the performance of the firm.

Many factors influence decisions of investors while investing in a company. The choice of performance measure influences the decision. Recent high in investment activities in Indian capital market is mainly based on investor's dependence on accounting or earning based measures for their investment decision. Firstly we attempt to understand from the literature, both in global and Indian contexts, the validity of Economic Value Added (henceforth EVA) as a measure of corporate performance measure in Indian market. This validation would enable investors to use EVA for investment decisions. Secondly, the study identifies and evaluates the association, if any, between EVA and market value of equity in Indian market

and further examines whether EVA outpaces other performance measures in explaining the contemporaneous MVA in India. It further aims to test which among the both, value based measure or traditional performance measure, better predicts market value added of Indian corporates.

The paper contributes to the literature in the following ways. Firstly, EVA data of the sample firms is sourced from Stern Stewart and Company. The company publishes EVA data for 1000 US companies. Studies in India have estimated EVA by making 5 to 6 relevant adjustments out of 164 adjustments as made by Stern Stewart and Company.

Secondly, there is evidence of relationship between EVA and market value of equity in US and other developed countries. This study provides evidence on the relationship between EVA and market value of equity in Indian context. We compared EVA with other measures of corporate financial performance such as EBEI, RI and CFO.

Thirdly, evidence on EVA will attempt to answer the criticism that it (EVA) is only a fad and not a superior measure of corporate financial performance. This has implications for corporate financial disclosure in India as more firms may estimate and report EVA. EVA may be accepted by investors and regulators as a better measure as firms will not benefit from manipulating the financial statements due to numerous adjustments made to estimate EVA.

This paper has 5 sections. Section 1 provides an introduction to the study. Theoretical framework of EVA is included in Section 2 while empirical evidence on EVA is discussed in Section 3. Section 4 elucidates the relationship between stock returns, EVA and other performance measures. Finally, section 5 provides conclusions drawn and highlights the emerging policy implications of the study.

2 Theoretical framework of EVA

Managers and researchers have been attempting to measure firm's value by various performance measures both traditional accounting measures and financial ratios. Misused performance measures have enormous hidden costs. Traditional performance measures fail to incorporate the cost of capital employed and hence lack appropriateness to measure firm's financial performance. The empirical literature to date indicates that there is no single accounting-based measure which can be relied upon to explain changes in shareholder wealth. Should such a measure exist it would prove invaluable to the various parties interested in aspects of company performance (Worthington and West, 2001). This led to the development of a financial performance matrix that overcomes the limitation of conventional performance measures and focuses on true value added/destroyed by the organization.

Alfred Marshall (1890) pioneered the notion of economic profit, expressed in terms of real profits besides various operating cost and cost of invested capital. Later in 1991, New York based management consultancy firm Stern Stewart and Co. coined and popularized the concept of EVA. They contend that a trademarked variant of residual income, EVA, be used instead of earnings or cash from operations as a measure of both internal and external performance. EVA is the financial performance measure that most accurately reflects company's true profit (Stewart, 1991). As a starting point its developer and principal advocate, USA based business consultants Stern Stewart and Co. (hereafter referred to as Stern Stewart) argue: "earnings, earnings per share, and earnings growth are misleading measures of corporate performance, the best practical periodic performance measure is EVA". It is the financial performance measure that comes closer than any other to capture the true economic profit of an enterprise and is directly linked to the creation of shareholder wealth over time. Financial reporting has been criticized for low-quality and lack of relevance in today's information-rich environment. Widespread interest in revisiting the quality of financial reporting suggests that alternatives to currently mandated performance measures should be evaluated for value-relevance.

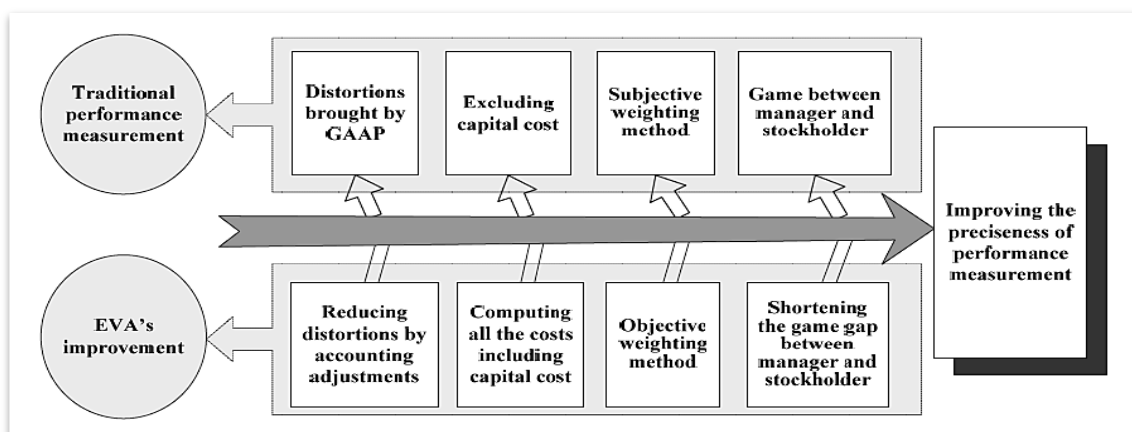
EVA is calculated after deducting the cost of equity capital and debt from the operating profits. It is a revised version of Residual Income (RI) with a difference in the way economic profit and the economic capital is calculated. It is based on the meaning of economic profit by considering the cost of invested capital (equity and debt) which was not considered in traditional approach (Kyriazis and Anastassis, 2007). Traditionally, using residual income, two companies could be equally successful if they have equal return on equity. But under the EVA model, we might have different opinion due to varied cost of capital or if there is variance in economic profit or residual income. EVA is Stern Stewart's proprietary version of Residual Income (Biddle et al., 1997). It is closer to the real economic value of the firm and enables management to monitor and control usage of invested capital. It can be adopted as an integrated financial

management system facilitating better decision making in long run at all levels as it brings change in management and thus enhances firm value.

EVA over the years has gained popularity as a reliable measure of corporate performance. In the later years, the concept has received recognition and support from various corporate houses; those adopted it as an internal control measure. The selling point of EVA is that it considers economic profit and economic capital in order to know the value created and destroyed by an organization during a particular period. Economic profit and economic capital is calculated by making certain adjustments into the accounting profits. Several United States listed companies like AT and T, Coca Cola, Eli Lilly, Georgia Pacific, Polaroid, Quaker Oats, Sprint, Teledyne and Tenneco have adopted EVA as a performance measurement and/or incentive compensation system. These companies experienced considerable enhanced shareholder's wealth. Their peers in developing markets also started adopting EVA to measure financial performance and shareholder value enhancement. Indian companies like Tata Consultancy Services, Infosys Technologies Ltd., Hindustan Unilever Ltd., Dr. Reddy's Laboratories Ltd., Godrej Industries Ltd., and Hero Honda Motors Ltd. extensively base their decisions using the value added measure.

Anecdotal evidence quote EVA as "today's hottest financial idea", "the real key to wealth creation" and "A new way to find bargains". EVA's growing popularity reflects, amongst other things the demand of the information age for a measure of the total factor productivity (Drucker, 1995). Herzberg (1998) stated that instead of using dividend discount approach, the EVA model measure value from the point of the firm' capacity for ongoing wealth creation rather than simply wealth distribution.

Figure 1. Comparative view of Traditional performance measures and EVA



Source: Lin, C. and Zhilin, Q. (2008)

Because of the deficiency of GAAP in describing a company's real financial position (Clinton and Chen, 1998), Stewart proposes up to 164 adjustments to regain the real picture of a firm's financial performance (Stewart, 1991; Blair, 1997). These adjustments are needed to eliminate financing distortions in a company's NOPAT and capital, some accounting items such as costs for research and product development, restructuring charges, and marketing outlays are considered more as capital investments as opposed to expenses (Stewart, 1991). Consisting of some 120 to 150 possible adjustments, these changes are made on the basis of both empirical and theoretical concerns. First, it is argued that adjustments to accounting numbers are required in order "...to achieve higher correlations between the short term measure (in this case EVA), and share prices, which in turn can lead to more congruent goals for divisional managers and shareholders as well as a more reliable indicator of corporate performance for security analysts and portfolio managers (Young, 1999). Second, at its root is the argument that not only are accounting earnings an inappropriate proxy for value creation, but that managers who are evaluated and compensated on the basis of earnings "...may take actions that increase earnings but destroy value, or fail to take actions that may reduce earnings but create value" (Young, 1999). Young (1999) concludes that EVA figure is closer to cash flows and therefore less subject to the distortions of accrual accounting; removing the arbitrary distinction between investments in tangible assets, which are capitalized, and intangible assets, which tend to be written off as incurred; bring off-balance sheet debt into the balance sheets and correct biases caused by accounting depreciation. To compute EVA, Stern Stewart adjusts the NOPAT and capital components of residual income for "accounting anomalies" or "distortions". Some of their more common adjustments undo traditional accounting accruals (such as eliminating deferred tax

accounting in favor of actual cash taxes paid). Other adjustments switch accrual methods (e.g. from LIFO to FIFO). Still others introduce new accruals not used in traditional GAAP-based accounting (e.g., capitalization and amortization of marketing and R&D expenditures).

Stern Stewart argues that these EVA adjustments produce a better measure of residual income that enhances comparability and also corrects distortions of managerial incentives introduced by standard GAAP accounting. Table 1 narrates examples of typical Stern Stewart adjustments required to compute NOPAT and economic capital.

Table 1. Examples of Typical Stern Stewart Adjustments for Alleged Accounting Distortions

Common Areas where GAAP based Accounting is Adjusted	GAAP Treatment	Nature of Adjustments
Marketing and R&D costs	Expense	Record as asset and amortize
Deferred taxes	Record as asset and/or liability	Reverse recording of asset and/or liability to reflect cash basis reporting
Purchased goodwill	Record as asset; amortize over up to 40 years	Reverse amortization to reflect original asset amount
Operating leases	Expense	Record asset and amortize; record liability and related interest
Bad debts and warranty costs	Estimate accrual	Reverse accruals to reflect cash basis reporting
LIFO inventory costing	LIFO permitted	Convert to FIFO
Construction in progress	Record as asset	Remove from assets
Discontinued operations	Include in assets and earnings	Remove from assets and earnings

Stern- Stewart and Business Today (BT) conducted a study of Indian companies titled as India’s Biggest Wealth Creators during 2002- 2004 and identified various important adjustments for estimation of EVA as per Indian GAAP. The survey was published in Business Today and popularly known as BT-SS study. Figure 1 states the formula for calculating EVA after making the adjustments (see Table 2) as per BT SS study.

Figure 1. Formula as per BT-SS study for the calculation of EVA

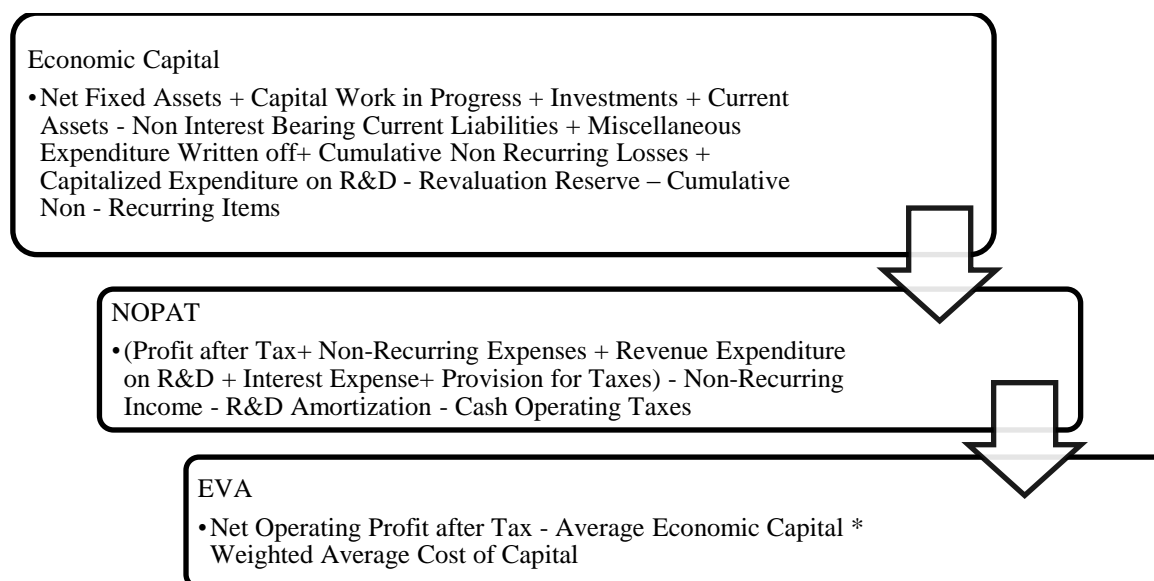
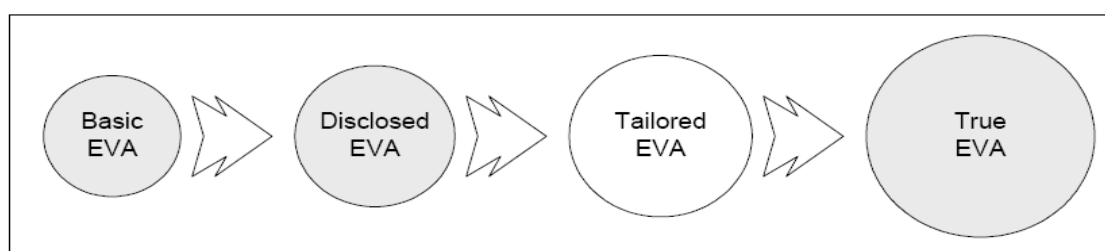


Table 2. Adjustments for computation of NOPAT and economic capital based on BT SS Study

Research and Development	The after-tax R&D expenditure is included in capital and added back to NOPAT. The amount included in capital is amortized over five years.
Goodwill	Goodwill amortization is excluded from the NOPAT, and gross goodwill is included in capital.
Interest	All interest expenses are added back to profits. The tax-benefits of interest are also removed, and the cash operating taxes are adjusted accordingly. This does not apply to the Banking and Financial Sector (BFS) companies.
Non-Interest Bearing Current Liabilities (NIBCLs)	NIBCLs are excluded from the capital in non-BFS companies.
Construction in Progress:	Construction in progress is included in capital. It does not apply to the BFS sector.
Non-Recurring Income and Expenditure:	Nonrecurring items are excluded from NOPAT, and capitalised after tax. Non-recurring expenditure is taken as addition to capital and non-recurring income as reduction.
Asset Gains	Gains or losses from BFS transactions are amortized to spread returns of assets over their lives.
Cash-Operating Taxes	Tax provision is restated to reflect taxes paid on operations. The tax-effects of financing and non-recurring items are eliminated.
Investments in Marketable Securities	These are included in capital, and the income from them shown in the books of accounts is included in the NOPAT.
Revaluation Reserve	Revaluation reserve is excluded from capital while calculating Economic Capital.

In most cases, however, not all of these (150-160) adjustments are relevant and only a small number will be performed. For an average firm about 25 adjustments are normally considered, while as few as five to ten are usually implemented (Stewart, 1994 ; Stern et al., 1995). Figure 2 explains the various variants of EVA.

Figure 2. EVA Spectrum

Source: Fabozzi, J. F and Grant, J.L. (2000)

The ‘Basic’ EVA is the unadjusted EVA quoted from the GAAP operating profits and balance sheet. ‘Disclosed’ EVA is used by Stern Stewart in its published MVA/EVA ranking and computed after a dozen standard adjustments to publicly available accounting data. ‘True’ EVA, at the extreme right is the accurate EVA after considering all relevant adjustments to accounting data and using the precise cost of capital for each business unit in a corporation. ‘Tailored’ EVA is what each company develop their EVA definition, peculiar to its organizational structure, business mix, strategy and accounting policies, i.e., one that optimally balances the trade-off between the simplicity and precision.

Academic researchers have argued for the following benefits of employing EVA:

- Goal congruence of managerial and shareholder goals achieved by tying compensation of managers and other employees to EVA measures (Dierksand Patel, 1997)
- Better goal congruence than ROI (Brewer, 1999)
- Annual performance measure tied to executive compensation
- Provision of correct incentives for capital allocations (Booth, 1997)

- Long-term performance that is not compromised in favor of short-term results (Booth, 1997)
- Provision of significant information value beyond traditional accounting measures of EPS, ROA and ROE (Chen and Dodd, 1997)

However, the few empirical studies so far done have produced inconsistent conclusions. Biddle et al., (1997), Chen and Dodd (1997), and Stark and Thomas (1998) have mostly not found any evidence to support EVA's superiority and measure of corporate value creation. Tully (1993; 1997), Lehn and Makhija (1996; 1997), Zafiris and Bayldon (1999), Young and O'Byrne (2001), Grant (2003), Worthington and West (2004), and Feltham et al., (2004) have asserted contribution made by EVA on theoretical and/or empirical grounds.

3 Empirical evidence on EVA

The existing literature on EVA can be grouped into three broad categories.

- EVA and other financial performance measures with MVA.
- Evidences on superiority of EVA in explaining stock returns.
- Relationships between stock returns, EVA and other performance measures.

3.1 EVA and other financial performance measures

As regards EVA- MVA relationship, there is almost settled opinion that EVA is a better measure of market value of the companies as compared to traditional accounting measures (Stewart, 1991). Relationship between EVA and MVA is found to be significant in comparison with other accounting based measures. Some authors have even concluded that MVA is nothing but discounted EVA (Kramer and Pushner, 1997). The inconclusive and mixed results of these studies raise an important question, "Is EVA really superior to conventional performance measures?" This conflicting evidence thus necessitates further studies that may provide better insight to understand this complex yet crucial relationship between shareholder wealth creation and EVA. Further, Lovata and Costigan (2002) stated, "EVA is a concept that requires much additional research to support or contest the claims of its developers". Likewise, Feltham et al., (2004) suggests that the debate should be reopened regarding whether EVA has greater relevance than other performance measures.

The relevant studies employing empirical research for testing relative and incremental information content in explaining market value of the firm have been mainly conducted in United States and other developed countries. Shah et al., (2014) found that there exists a positive relationship between Economic Value Added and Market Value Added in the context of an emerging market – India. Their results support the Stern- Stewart claim that Economic Value Added components have greater information than earnings. Indian studies also make a case for adopting EVA as a tool to enhance financial flexibility within the firm (Shah et al., 2014).

As regards the role of performance measures and executive compensation, there are mixed evidences about the validity of value based measures and their role in creation of firm value. Brewer et al., (1999), Irala (2005) conclude that EVA can provide a valuable measure of wealth creation and can be used to help align managerial decision making with firm preferences. Studies by Stern (1990), Burkette and Headley (1997), Todd(1997), Riceman, et al (2000), Malmi and Ikaheimo (2003), Lin and Zhilin (2008) point out that performance of companies adopting EVA as base for executive compensations, have been significantly increased. Robertson and Batsakis (1999) found that investors respond favorably to the adoption of an EVA-based compensation plan, and that a flow-on effect would be that investors view increases in EVA more favorably than improvements in traditional accounting based performance measures. Durant (1999) describe that EVA is both a measure of value and also a measure of performance. A sustained increase in EVA will bring an increase in the market value of the company. Phani and Bhattacharya (2000) discuss EVA can be adapted as a corporate philosophy for motivating and educating employees to differentiate between value creating and value destructing activities to direct all efforts in creating shareholder value. Girotra and Yadav (2001) opined that EVA encourages managers to think like owners and, in the process, may impel them to strive for better performance. Sharma, et al (2007) conclude that EVA does not only serve as a good proxy as a valuation of Intellectual Capital(IC) but can be further used as an objective measure for Knowledge Management initiatives.

3.2 Superiority of EVA in explaining Stock Returns

Lehn and Makhija (1997) studied the relation between six performance measures and stock returns. They used data from 452 U.S. companies from 1985 to 1994. The results revealed that EVA and MVA are effective measures of performance. Moreover, the correlation of EVA with stock returns (.59) was slightly higher than the correlation of MVA (.58), ROE (.46), ROA (.46), or ROS (.39). Thus, EVA and MVA appear to be somewhat better long-run performance measures than conventional accounting performance measures.

Garvey and Milbourn (2000) examine the issue of relationship of performance measures with stock returns in a different way. They use a relatively standard principal-agent model, but recognize that while the variability of each measure is observable; their exact information (signal) content is not. The model provides a formal method for ascertaining the relative value of such measures based on two distinct uses of the stock price. First, as is well-known, prices provide a noisy measure of managerial value-added. They further found that stock prices can also reveal the signal content of alternative accounting-based performance measures and show how to combine stock prices, earnings, and EVA to produce an optimally weighted compensation scheme. The results find that the simple correlation between EVA or earnings and stock returns is a reasonably reliable guide to their value as an incentive contracting tool. This is not because stock returns are themselves an ideal performance measure; rather it is because correlation places appropriate weights on both the signal and noise components of alternative measures. Author then calibrate the theoretical improvement in incentive contracts by optimally using EVA in addition to accounting earnings at the firm and industry level. That is, they empirically estimate the value-added of EVA by firm and industry. These estimates are positive and significant in predicting which firms have actually adopted EVA as an internal performance measure.

Worthington and West (2004) extended their earlier work (Worthington and West 2001) by using three alternative formulations for pooling data analysis, namely, the common-effects, fixed-effects and random-effects models. Fixed-effects approach was found to be the most. Relative information content tests reveal returns to be more closely associated with EVA than residual income, earnings and net cash flow, respectively. An analysis of the components of EVA confirms that the GAAP-related adjustments most closely associated with EVA are significant at the margin in explaining stock returns.

De Wet and Hall (2004) analyses the relationship between EVA, MAV and leverage. The analysis showed that the effect of high financial leverage is offset perfectly by the lower cost of own capital (EVA leverage).

Maditinos et al., (2006) used pooled time-series, cross sectional data of listed companies in the Athens Stock Exchange (ASE) over the period 1992 – 2001 to examine whether EVA or earnings are associated more strongly with stock returns. Relative information content tests reveal that stock returns are more closely associated with earnings per share (EPS) than with EVA while incremental information content tests suggest that EVA adds considerable explanatory power to earnings per share.

Erasmus (2008) investigates the relationship between the Cash Value Added (CVA) and market adjust share returns, and compares it to EVA, residual income, earnings and operating cash flow. An approach similar to that of Biddle et al., (1997) was applied to a sample of South African industrial firm to evaluate the relative information content test of individual measures, as well as the incremental information content test of CVA components. Relative information content tests suggest that earnings have the strongest relationship with stock returns. The results from incremental information content tests that although the CVA and EVA components provide statistically significant information content beyond that provided by residual income, the level of significance is low.

Fontaine et al., (2008) examine whether EVA can be used to generate two portfolios with statistically different cumulative returns. The analysis is done using a portfolio separation test that examines the statistical significance of the regression coefficient generated when the cumulative returns from one portfolio are regressed against the cumulative returns from the other portfolio. They concluded that EVA does provide economically useful information that can be used to forecast portfolio separation. Specifically, forming portfolios based on higher and lower values of EVA divided by the average book value of debt and equity from a buy list yields portfolios with cumulative returns that are statistically different.

3.3 Relationships between Stock Returns, EVA, and other performance measures

Dodd and Chen (1996) examined 566 American companies for the period 1986–92, discovered that EVA can explain only 20% of the variability of stock returns, in contrast with ROA which can explain 24.5% of the corresponding variability. They found that EVA appeared to have higher explanatory power when it was compared with ROE and EPS, but when it was compared with a simple measure of residual income (without the accounting adjustments of Stern Stewart) they could not identify any significant incremental informational content.

Bacidore et al., (1997) suggested a refinement of EVA, the REVA. REVA assesses a capital charge for a period equal to WACC times the market (rather than book) value of the company at the beginning of the period. Their sample was based on 600 companies randomly selected from the Stern Stewart Performance 1,000 database. They compared EVA to REVA and found that although both measures were statistically related to abnormal stock returns, REVA outperformed EVA.

Biddle et al., (1997) tested the assertions that EVA is associated with stock returns and firm values than accrual earnings, and evaluated which component of EVA, if any, contributed to these associations. The results indicated that earnings ($R^2 = 12.8\%$) were significantly associated with market adjusted annual returns than either Residual Income ($R^2 = 7.3\%$) or EVA ($R^2 = 6.5\%$) and that all three of these measures dominate cash from operations ($R^2 = 2.8\%$). Correlations between the independent variables were all positive and significant except EVA and RI, which were negatively correlated with cash from operations (CFO). Earnings before extraordinary items (EBEI) had the highest correlation with market-adjusted return. The empirical results do not support the conclusion that EVA dominates earnings in relative information content, and suggest rather that earnings generally outperform EVA.

Chen and Dodd (1997) extended the previous research and examined the explanatory power of EPS, ROA, ROE, RI, and four EVA related measures. Firstly, they found that improving EVA performance is associated with higher returns. However this association is not as strong as suggested by EVA proponents. No single EVA measure was able to account for more than 26 per cent of the variation in stock returns. Secondly, the EVA measures provided relatively more information than the traditional accounting measures in terms of the strength of their association to the stock returns. Moreover, they suggested that the accounting earnings provided significant incremental explanatory power above EVA. Their findings concluded that companies should not completely replace traditional accounting measures with EVA and suggested that along with EVA, companies should continue monitoring the traditional measures of accounting profits such as EPS, ROA and ROE. Finally, consistent with their previous results (Dodd and Chen 1996), they found that RI provided almost identical results to EVA, without the need of accounting adjustments advocated by Stern Stewart and Co.

Bao and Bao (1998) examined the relative informational content of net income, abnormal economic earnings (their definition of EVA) and value added (defined as sales – cost of goods sold – depreciation) using a sample of 166 American companies for the period 1992–93. Their results did not support the argument of superior informational content of the EVA, since they found inconsistent behavior in the abnormal economic earnings variable, which produced a negative sign when the dependent variable was the value of the firm, and then changed to positive when the dependent variable was either the stock price or the stock return. The only variable, which consistently generates positive signs with high explanatory power in all three models, was the value added.

Biddle et al., (1999) discuss the Stern Stewart claims about superiority of EVA and provide empirical evidences on the same. Independent examination suggests that some of these claims are over stated. While evidence confirms that managers respond to EVA incentives, there is no evidence thus far to support claims that EVA is more closely associated with equity returns or firm value than is net income. To the contrary, and in contrast to claims by Stern Stewart, result suggests that earnings generally dominate EVA in value relevance to market participants. Results of the study are consistent with those reported by Chen and Dodd (1997).

Chen and Dodd (2001) empirically examine the value-relevance of three profitability measures: Operating Income (OI), Residual Income (RI), and EVA and conclude that the market may place higher reliance on audited accounting earnings than the unaudited EVA metric. Their findings failed to support the assertion that EVA is the best measure for valuation purposes.

Worthington and West (2001) applied the methodology used by Biddle et al., (1997) on the data of 110 Australian companies over the period 1992-1998 to examine whether EVA is more highly associated with stock returns than conventional accounting-based measures: namely, earnings before extraordinary items, net cash flow from operations and residual income. The five components of EVA examined includes net cash flows, operating accruals, after-tax interest, and cost of capital and accounting adjustments. Relative information content tests reveal returns to be more closely associated with earnings than residual income, net cash flow and EVA respectively. However, consistent with the construction of EVA, incremental information content tests suggest that EVA adds more explanatory power to earnings than either net cash flow or residual income. An analysis of the components of EVA confirms that the capital charges and GAAP related accounting adjustments closely associate with EVA and add more explanatory power to net cash flow than accruals or after-tax interest, though these measures are relatively more significant alone in explaining market returns.

Ismail (2006) found that net operating profit after tax (NOPAT) and net income (NI) outperform EVA and residual income in explaining stock return. He applied panel data regressions to examine the value relevance of EVA, RI, NI, NOPAT and OCF. Our results pointed out that NI and NOPAT outperform EVA and RI in their association with stock return. We also used changes in independent variables rather than levels and found that our conclusions of the relative information content tests were once again confirmed, i.e. that EVA does not outperform earnings. Our incremental information content tests of EVA components revealed that all the components are highly significant but the one unique to EVA (Accounting Adjustments) has less incremental information content than the others (Accruals and OCF).

Kyriazis and Anastassis (2007) investigated the relative explanatory power of the EVA model with respect to stock returns and firms' market value, compared to established accounting variables (e.g. net income, operating income), in the context of a small European developing market, namely the Athens Stock Exchange, in its first market-wide application of the EVA measure. Relative information content tests reveal that net and operating income appear to be more value relevant than EVA. Additionally, incremental information tests suggest that components unique to EVA add only marginally to the information content of accounting profit. Moreover, EVA does not appear to have a stronger correlation with firms' Market Value Added than the other variables.

Lee and Kim (2009) introduce refined EVA (REVA) to the hospitality industry and compared it to EVA, market value added (MVA) and other traditional accounting measures (i.e.) cash flow from operations (CFO), return on assets (ROA), and return on equity (ROE) on market adjusted returns from each of the three hospitality sectors (i.e., hotel, restaurant, and casino) and cumulatively (all three hospitality sectors). According to the findings, REVA and MVA are, apparently, valuable performance measures for evaluating hospitality firms. Results conclude that traditional accounting performance measures (i.e., CFO, ROA, and ROE) do not explain much of market adjusted return after considering REVA and MVA. One of the exceptions is that ROA shows a positive explanatory power only in the hotel sector. The study provides interesting and meaningful findings that REVA and MVA can be considered good performance measures throughout the three hospitality sectors (i.e., hotel, restaurant and casino). According to the findings, REVA and MVA significantly explain the market adjusted return by presenting positive coefficients.

4 Conclusions

EVA provides additional information as compared to earnings. Components unique to EVA outperform traditional performance measures in explaining shareholder wealth (as measured by MVA). EVA provides additional information to investors and can be adapted as a corporate philosophy. EVA can be used as a better measure of firm performance for motivating and educating employees to differentiate value creating activities from those that destroy value. EVA is positively correlated with Market Value Added and is a useful measure of corporate performance and better predictor of market value added of Indian companies.

5 Emerging policy lessons

It is important that uniformity in disclosures is ensured. Use of EVA as mandatory corporate performance reporting in India can benefit Indian companies. Adoption of EVA as internal management control technique and availability of data publicly, will reflect in market as investors may start appreciating such strategies that will result into the reflection of true value. EVA may be accepted by investors and

regulators as a better measure as firms will not benefit from manipulating the financial statements due to numerous adjustments made to estimate EVA. Faulty choice of corporate financial performance measure results in showing better financial performance even for firms lacking good governance, on the other hand right financial performance measure reflects the impact of good governance on financial performance.

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