

Creation of shareholder value: A comparison of economic value added (EVA) with traditional performance measures

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Abstract

This study investigates the strength of association of Economic Value Added with Shareholder Value and compares this association to that of traditional performance measures.

It examines the correlation between MVA and EVA as well as other indicators over a ten year period in respect of industrial companies listed on the Johannesburg Stock Exchange, and finds that the strongest correlation exists between MVA and EVA. The correlation over the period is however only 0.155 which is weaker than the correlation found by other studies. Earnings per share showed the second strongest correlation at 0.102.

Key words

Economic Value Added (EVA)
Market Value Added (MVA)
Shareholder Value

1 Background

Many claims have been made about the strength of association of Economic Value Added (EVA) with changes in shareholder value (Stewart 1991:118, Sakata & Kim 1997:102, Stewart 1994:73).

In a study by O'Byrne (1996:116-125) regarding the explanatory value of EVA in respect of shareholder value, he found that EVA explains 55% of the variation in five-year share returns compared to earnings which explains only 24%. He also found that in regard to ten-year share returns EVA explains 74% of the variations in returns compared to the 64% explained by earnings. He comes to the conclusion that EVA is systematically linked to market value.

These views are not unanimously accepted. Baumol (1965:65) is for example of the opinion that earnings do ultimately and solely determine the value of shares, while De Villiers & Auret (1997:1-17) found in a study based on South African companies, that earnings per share has more explanatory power than EVA in explaining movements in share prices.

This study compares the strength of association between EVA and shareholders value, with the association between other traditional performance indicators and shareholders value, from a South African perspective.

The other traditional performance indicators evaluated in this study include cash flow per share, earnings per share, headline earnings per share, dividend per share, return on equity, as well as capital structure.

2 Market value added

2.1 Market value added as a measure of shareholder wealth

An important goal of any investor-owned organization is to maximise shareholder value, but it must be recognized that maximizing shareholder value is not the same as maximizing the organization's total market value. The total market value can be increased by raising more capital or debt, or ploughing back a high proportion of retained earnings, but this does not necessarily mean an increase in shareholder value (Gapenski 1996:56, Ross 1997:115). Shareholder value is increased by maximising the difference between an organization's total market value and the amount of capital that investors have supplied to the organization. The difference is called Market Value Added (MVA) (Gapenski 1996:56, Ross 1997:115, Stewart 1994:72).

MVA is directly related to the Net Present Value (NPV) of projects. Where projects generate positive NPV's this should increase the MVA of an organization (Stewart 1994:73-74, Gapenski 1996:58). For the purpose of this study changes in shareholder value will be equated to market value added.

2.2 Market Value Added (MVA) defined

Stern & Hahn (1993) define MVA as the difference between market value and total capital. The **market value** is defined as the market value of ordinary equity at year end plus the carrying value of all other components of total capital, including preferred equity, debt and minority interests.

Total capital is defined by Stern & Hahn (1993) as the carrying value of ordinary and preferred equity, equity equivalents, minority interests and total debt. Goodwill and other intangibles are not subtracted from ordinary equity. Bank overdrafts are treated as debt. Equity equivalents include deferred taxes, the lifo reserve, extraordinary losses cumulated since 1979 and the inflation adjustment to other fixed assets calculated by the Bureau of Financial Analysis, University of Pretoria (BFA).

For purposes of this study MVA is defined as the market capitalization plus the market value of preference shares and total debt less the carrying value of total debt and equity. **Market capitalization** is based on the equivalent number of fully paid up ordinary shares at the end of the company financial year times the average price of shares traded during the month of the company financial year end.

Total debt is defined as total long term loans, short terms loans and bank overdrafts. **Total equity** is defined as ordinary shareholders' interest, minority interest and preference share capital. The carrying value of the equity is adjusted with an inflation adjustment on other fixed assets as well as a lifo reserve adjustment. The other fixed assets include machinery, equipment, furniture and vehicles.

2.3 Treatment of inflation

Due to the continued inflation, the replacement cost of fixed assets such as machinery, equipment, vehicles, office equipment as well as office furniture and fittings is usually significantly higher than the original cost price thereof. The aforementioned assets will hereinafter be referred to as "other fixed assets". This causes the total capital to be undervalued and the depreciation charge on these assets to be understated. Land and buildings are not adjusted for inflation since these assets are normally revalued from time to time.

In order to correct this situation, the value of the other fixed assets as well as the related depreciation, is adjusted for inflation. The approach followed is the standard approach of the Bureau of Financial Analysis at the University of Pretoria, namely by estimating the average age of these assets based on depreciation as a proportion of accumulated depreciation. With the exception of cash flow per share, published earnings per share and dividend per share, all other indicators including MVA and EVA are adjusted for inflation.

3 Economic value added

3.1 The association between Economic value added (EVA) and shareholder value

As has been stated previously, shareholder value is increased by maximising the organisation's MVA. Stewart (1994) is of the opinion that there is a direct link between EVA and MVA, and by implication that the same link exists between EVA and shareholder value. He subscribes to the following chain of reasoning:

$$\begin{aligned}\text{Shareholder's wealth} &= \text{Market value added} \\ &= \text{Total value} - \text{Total capital} \\ &= \text{The Present Value of Future Economic Value Added}\end{aligned}$$

3.2 The difference between EVA and accounting profit

According to Stewart (1994:73) EVA differs from accounting profit in three principal respects. Firstly, it is the residual income after subtracting the cost of *all* the capital, including equity, that has been employed to generate the operating profit.

Secondly, EVA is charged with capital at a rate that compensates investors for bearing the firm's explicit business risk. The assessment of the business risk is based upon the Capital Asset Pricing Model which allows for a specific market based evaluation of risk for a company.

Thirdly, EVA is calculated after adjusting reported accounting results. According to Stern (1994:42-44) there are more than 120 potential adjustments - accounting entries that may distort economic reality. He identifies three of the most important as the treatment of research and development costs, taxes and goodwill that arise from acquisitions. Whereas generally accepted accounting principles require that research and development cost be expensed in the current year, it is capitalised and amortised over a period of five to seven years in terms of EVA practices. The EVA practice is also not to write off the entire tax provision, but rather the actual taxes paid. The EVA practice is not to write goodwill off at all, unless the economic value thereof is substantially overstated.

3.3 Economic Value Added (EVA) defined

According to Stern & Hahn (1993), EVA can be calculated as total capital x (return - cost of capital).

They define **total capital** as the carrying value of ordinary and preferred equity, equity equivalents, minority interests and total debt. Goodwill and other intangibles are not subtracted from ordinary equity. Bank overdrafts are treated as debt. Equity equivalents include deferred taxes, the life reserve, extraordinary losses cumulated since 1979 and the inflation adjustment to other fixed assets calculated by the Bureau of Financial Analysis, University of Pretoria (BFA).

Return is calculated by them as **net operating profit after tax (NOPAT) expressed as a percentage of the total capital**. NOPAT equals trading profit plus investment income less operating expenses (including depreciation) and cash taxes. Also included as income is the change in the life reserve and an inflation holding gain on other fixed assets. Taxes exclude deferred taxes but include an estimate of taxes saved through interest paid (Stern & Hahn 1993).

Cost of capital is the weighted average cost of debt and equity. The cost of equity is estimated as the risk free rate plus a premium to reflect the market risk of the firm. Market risk is measured using historical betas. The cost of debt is the long-term after tax borrowing rate (interest rate after tax). For purposes of this study the above definition is applied.

4 Traditional indicators

4.1 Basis for selection of the indicators

The following eight indicators are included in the study based on a literature review of indicators that were frequently suggested to be associated with shareholder value. The literature references and specific reasons for inclusion of each indicator are discussed under the relevant indicator.

Another criteria for including these indicators in the study was the inclusion thereof in other studies, where these indicators were compared with EVA for its strength of association with MVA. Examples of these are earnings per share (O'Byrne 1996:116, De Villiers & Auret 1997), return on equity, dividends, cash flow and turnover (Stern & Hahn 1993).

The following list of indicators is by no means comprehensive. Due to the scope of the study, it was however not possible to include all known indicators that could be associated with shareholder value.

4.2 Cash flow per share

4.2.1 The association between cash flow per share and shareholder value

Cash flow information gives an indication of the ability of the enterprise to generate funds from operating and financing activities. According to Thomson (1995:57) there is a closer correlation between the movements in share prices and cash flow than between movements in share prices and earnings.

4.2.2 Cash flow per share defined

Cash flow per share as defined by Koen, Oberholster, Van der Laan (1994) is the cash flow from operating activities less preference dividends divided by the weighted average number of ordinary shares. For the purposes of this study it was calculated as retained income plus dividends paid and items in the income statement that do not represent cash flow items including depreciation. This was divided by the number of ordinary shares issued.

4.3 Earnings per share

4.3.1 The association between earnings per share and shareholder value

It has long been common practice in business to define financial performance in terms of growth in earnings per share (O'Hanlon & Peasnell 1996:44). According to Everingham & Hopkins (1996:65), earnings per share is one of the most widely used statistics employed by financial analysts and it is the key ratio used by analysts for purposes of comparing and determining the profitability of an enterprise over time and with other enterprises. According to Kay (1994:34) two measures dominate performance measurement namely price/earnings ratio and earnings per share. Investors frequently refer to a company's price-earnings ratio which is calculated by dividing the market price of a share by the reported earnings per share (Everingham & Hopkins 1996:65).

4.3.2 Earnings per share defined

Earnings per share for any class of equity share is the earnings attributable to that class for the period, in cents, divided by the weighted average number of shares of that class (SAICA 1992). Earnings is described as the net income for the period after tax, outside shareholders' interest and preference dividends but before extraordinary items and transfers to or from reserves and includes the retained equity income or deficit for the period in which has been equity accounted (SAICA 1992). For the purposes of this study earnings per share is calculated as profit after taxation less minority interest in profit, preference

dividends and extraordinary profits less an inflation adjustment in respect of depreciation on other fixed assets, divided by the equivalent number fully paid up ordinary shares.

4.4 Headline earnings per share

4.4.1 The association between headline earnings per share and shareholder value

As suggested in section 4.3.1 an association exists between earnings per share and shareholder value. Subsequent to the implementation of the revised AC 103 in 1995, the earnings per share figure as calculated in 4.3.2 encompasses the outcome of all activities, except those that are clearly distinct from the ordinary activities of the enterprise (SAICA 1995). This earnings per share figure may therefore be significantly more volatile, since it now includes the majority of those items that were previously reported as extraordinary (SAICA 1995b). As a result of this volatility, this earnings per share figure may not provide users with the information that they need in order to assess the operating performance of the enterprise (SAICA 1995b).

4.4.2 Headline earnings per share defined

Another measure, namely headline earnings is described in AC 306, and incorporates all the trading profits and losses for the year and separates profits and losses arising on capital items (SAICA 1995b).

Prior period adjustments, i.e. the effect of changes in accounting policies and past fundamental errors, do not affect the current year's calculation of headline earnings and extraordinary items arising in terms of AC 103 (Revised) are excluded (SAICA 1995b).

For the purposes of this study headline earnings per share has been defined in accordance of AC 306 (SAICA 1995b).

4.5 Dividend per share

4.5.1 The association between dividend per share and shareholder value

A share entitles the owners to a stream of future dividends. One approach to determining and predicting the value of a share is therefore to base it upon the present value of the future stream of dividends. This is the view of Gordon (1959). According to him the value of a share is determined by the stream of future dividends as well as any gains on the capital appreciation of the shares

when realised. The capital gain is however again based on the expected stream of future dividends when the share is sold. Graham, Dodd and Cottle (1962) subscribe to this view by stating that "a common stock is worth the sum of all the dividends to be paid in the future, each discounted to its present worth".

Not all agree with the above views though. Modigliani and Miller (1961) are of the opinion that, given a certain set of assumptions, the dividend decision is irrelevant in determining a share price.

4.5.2 Dividend per share defined

Dividends can include regular cash dividends, extra dividends, special dividends as well as liquidation dividends. Normally all cash dividends are included when calculating the dividend per share (Ross, Westerfield, Jordan & Firer 1996:449). According to SAICA (1992) dividend per share is the dividends declared or proposed for the period divided by the respective number of shares in issue at the date of each dividend declaration.

For purposes of this study the dividends per share is determined as the total value of ordinary dividends declared according to the income statement divided by the equivalent number of fully paid up ordinary shares at the end of the financial year.

4.6 Return on equity

4.6.1 Association between return on equity and shareholder value

According to Ross, Westerfield, Jordan and Firer (1996:61) return on equity is a measure of how the shareholders fared during the year. They are of the opinion that return on equity is, in an accounting sense, the true bottom line measure of performance, based on the premise that the goal of the company is to enhance their shareholder value.

4.6.2 Return on equity defined

Return on equity is the return shareholders earn on their investment and is defined as net income after tax and preference dividends as a percentage of ordinary shareholder's equity (Koen, Oberholster & van der Laan 1994:53-54).

For purposes of this study return on equity is defined as retained income plus ordinary dividends paid, adjusted for inflation and expressed as a percentage of equity. Equity is determined as ordinary capital and reserves plus the amount with which the market value of investments exceeds the directors' value plus the inflation adjustment on other fixed assets.

4.7 Capital structure

4.7.1 The association between capital structure and shareholder value

The question of whether a the value of a company can be increased due a specific choice of capital structure has elicited a wide debate over many years, among academic and non-academic circles.

In broad term the debate revolves around the facts that debt is a cheaper form of finance but is also more risky from the shareholder's point of view. Traditionally, as indicated by Breally & Myers (1996:457) as well as Lumby (1991:383), the perception was that a company has an optimal capital structure which is reached at the point where the reduction in cost due to an increase in the debt proportion of the capital structure, is cancelled out by an increase in the risk associated with an increase in debt.

The traditional view was challenged by Modigliani and Miller (1958:267-271) when they suggested that there is no such thing as an optimal capital structure. They argued that the benefit of cheaper debt will be directly cancelled out by the increased risk due to an increase in the debt proportion of the capital structure. Central to their argument is the concept of *arbitrage*, in terms of which investors will sell securities yielding a lower return, borrow and invest in securities with a higher return, thus eventually eliminating any inequalities in the market created purely by means of capital structure (Modigliani & Miller 1958:269). Their view was based on a number of restrictive assumptions, including:

- the existence of a perfect capital market where individuals and companies can borrow unlimited amounts at the same rate of interest;
- no taxes or transaction cost;
- personal borrowing is a perfect substitute for corporate borrowing;
- firms exist with the same business or systematic risk but different levels of gearing;
- all projects and cash flows relating thereto are perpetuities, and any debt borrowed is also perpetual (Samuels *et al.* 1995:649-650).

The original view of Modigliani and Miller was however amended by them (1963:433-434), when they suggested that the effect of taxation on the cost of debt causes the optimal structure to be found at that point where the use of debt is maximised.

The amended view of Modigliani and Miller (1963) however did not specifically address the issue of increased financial distress due to increased levels of debt in the capital structure. According to Baxter (1967:396-398) as well as Warner (1977:345-346) the costs related to the threat of financial distress reduce the benefits of tax relief on debt achieved by higher levels of gearing. They suggest that there is an optimal level of gearing at which bankruptcy costs, the cost of capital and tax relief are balanced. Therefore the cost of capital is not independent of the capital structure.

4.7.2 Capital structure defined

There are various approaches to calculating capital structure. Debt can either only refer to long term debt, all interest bearing debt, including a bank overdraft as well as a short term loans (Samuel *et al.* 1995:636), or might even include all forms of long term and short term debt (Koen *et al.* 1995:44).

Equity can also be calculated in a manner of ways. Preference shares can be defined as either debt or equity, depending on factors such as whether these shares are convertible or redeemable, and the time frame of redemption, in the case of redeemable shares. Deferred taxation is another item that can be treated as either debt or equity, depending on the perception of the preparer of the financial information regarding the underlying nature of this item.

It is usual to measure capital structure by referring to the balance sheet figures. The ratio can however also be expressed in terms of market values, which may bear little resemblance to the balance sheet figures (Samuel *et al.* 1995:635)

For purposes of this study debt is defined as the total of long term and short term borrowing as well as bank overdrafts. Equity consists of ordinary paid up shares as well as reserves and is adjusted for inflation on other assets.

5 Research methodology

5.1 Population

The database of the Bureau of Financial Analysis (BFA) at the University of Pretoria was used to obtain information about the companies referred to in the study.

The population includes all the companies that have been listed on the Johannesburg Stock Exchange during the ten year period from 1987 to 1996, but specifically exclude financial institutions, mining companies as well as shell,

pyramid and property holding companies. The population further exclude companies of which the shares are thinly traded.

Financial institutions are not included due to the fact that the capital structures and the cost of equity of these companies are incomparable with industrial companies. Mining companies are excluded because of the incomparable depreciation policies and treatments of reserves of these companies.

Shell, pyramid and property holding companies are excluded due to the fact that these companies are normally not deemed to be operating companies, and will therefore not generate operating income. Operating income plays an integral role in most of the indicators being investigated.

The companies with shares that traded thinly during the period were excluded since the calculation of EVA is based on the capital asset price model, which in turn is based on an assumption of perfectly competitive markets. The total number of companies included in the population amounts to 135.

5.2 Statistical analysis

A Pearson correlation coefficient analysis was performed with market value added as the dependent variable and the other indicators as independent variables. The analysis was carried out at a 1% level of significance. Although multi-collinearity might exist among some of the independent variables such as earnings per share and dividend per share, this does not affect the results of the study since there is no reason to suspect any multi-collinearity between EVA and any of the other independent variables.

The correlation was performed between MVA and the independent variable for the whole ten year period as well as on a year-for-year basis.

It is possible to calculate EVA and MVA in a variety of ways, e.g. to adjust or not to adjust for inflation; to use information that is standardised according to the size of the companies or not, or to use the discounted or actual value of all future EVA's.

It was decided to adjust the data for inflation as discussed per 2.3, since MVA is automatically adjusted for inflation by means of market powers. The EVA's were not standardised according to the size of the companies since the companies were not compared to each other. Lastly the EVA's were not based on the discounted value of the future EVA's, since the limited ten year period does not allow for it.

6 Results

6.1 Correlation

The correlation analysis between MVA and the indicators, during the ten years from 1987 to 1996, is summarised on the next page:

Correlation analysis between MVA and the indicators from 1987 to 1996

	EVA	CPS	EPS	HEPS	DPS	ROE	CS
Whole period	0.155*	0.048	0.102*	0.068	0.079*	0.061	0.001
signif	0.0001	0.0822	0.0002	0.0146	0.0044	0.0289	0.98
1996	0.296*	0.128	0.199	0.229*	0.143	0.129	0.062
signif	0.0005	0.1406	0.0219	0.0081	0.1017	0.1435	0.4838
1995	0.216	0.116	0.144	0.17	0.179	0.012	-0.027
signif	0.012	0.1847	0.0989	0.0509	0.0389	0.8898	0.7571
1994	0.111	0.248*	0.363*	0.327*	0.304*	0.128	-0.025
signif	0.2008	0.0042	0.0001	0.0001	0.0004	0.1485	0.7776
1993	0.375*	0.134	0.257*	0.184	0.198	0.136	0.006
signif	0.0001	0.1288	0.0032	0.0357	0.0242	0.1266	0.9424
1992	0.379*	0.207	0.283*	0.219	0.201	0.229*	-0.002
signif	0.0001	0.0182	0.0011	0.0123	0.022	0.0097	0.9852
1991	0.442*	0.125	0.084	0.144	0.081	0.131	0.114
signif	0.0001	0.1568	0.3403	0.1026	0.3608	0.1395	0.2028
1990	0.347*	-0.02	0.118	-0.017	0.025	0.046	0.117
signif	0.0001	0.8225	0.1808	0.8518	0.777	0.6065	0.1884
1989	0.251*	0.134	0.229*	0.005	0.207	0.102	0.059
signif	0.0035	0.1281	0.0087	0.9531	0.0183	0.252	0.5061
1988	0.381*	0.04	0.124	0.103	0.129	0.082	0.122
signif	0.0001	0.6516	0.1586	0.2444	0.1424	0.3554	0.1692
1987	-0.415*	-0.022	0.023	0.013	0.002	-0.012	-0.057
signif	0.0001	0.8016	0.7972	0.8855	0.9778	0.8889	0.5231

*significant at the 0.01(1%) level

MVA = Market Value Added, EVA = Economic Value Added, CPS = Cash flow per share, EPS = Calculated earnings per share, HEPS = Headline earnings per share, PS = Calculated dividend per share, ROE = Return on equity, CS = Capital structure.

6.2 Interpretation of the results

Based on the above it appears as if the strongest correlation for the whole period exists between the contemporaneous MVA and EVA, followed by the earnings per share and the dividend per share figures. Only EVA, EPS and DPS showed significant correlations with MVA over the whole period.

It is also interesting to note that the correlation between EVA and MVA is the strongest in respect of single periods as well. During 1991 and 1988 the correlation is 0.44 and 0.381, respectively, which is stronger than any correlation between MVA and the other indicators for a specific year.

The negative correlation during 1987 can most probably be ascribed to the crash of the Johannesburg Stock Exchange in that year. None of the indicators showed a particularly strong correlation with MVA in 1987, and the only correlation of significance at the 0.01 level is EVA, which indicated a negative correlation. A negative EVA correlation can be interpreted as a reduction in shareholder value, also termed "value destroyed".

The weakest correlation is between MVA and the capital structure, namely 0.001. During four of the ten years this correlation was negative. This is in accordance with Modigliani and Miller's original suggestion (1958:267-271) that capital structure is irrelevant in the process of creating shareholder wealth, and that there is no such thing as an optimal capital structure.

7 Conclusion

Economic Value Added does appear to have a stronger association with Market Value Added than the other traditional performance measures such as earnings per share and dividend per share.

The correlation for the industrial companies listed on the Johannesburg Stock Exchange, does not however appear to be as strong as the association between MVA and EVA as found in other studies. The discrepancy might be explained by the fact that this study includes a cross section of companies, including those that do not have a high EVA or even a negative EVA, whereas some of the other studies mentioned above, ranked companies based on their EVA figures, and excluded those with unacceptably low EVA's. Another explanation of the discrepancy might be found in the fact that not all of the above studies adjusted MVA and the other variables with inflation.

The lower than expected correlation might also be ascribed to the fact that this study is based on contemporaneous figures, whilst MVA is per definition the present value of all future EVA's. This implies that the strongest association should be found between MVA and the discounted value of future EVA's, and could be an area for further study.

Bibliography

Baxter, N. 1967. *Leverage, risk of ruin and the cost of capital*, Journal of Finance: 395-403.

Baumol, W.J. 1965. *The Stock Market and Economic Efficiency*, Fordham University Press: New York.

Brealy, R.A. & Myers, S.C. 1996. *Principles of Corporate Finance, Fifth edition*. McGraw Hill: New York.

The Corporate Strategy Board. 1996. *Economic Value Added*. Washington, DC.

De Villiers, J. & Auret, C. 1997. *A comparison of EVA as explanatory variables for share price*, Conference of the Southern African Finance Association: Cape Town.

Everingham, G.K. & Hopkins, B.D. 1996. *Generally Accepted Accounting Practice: A South African viewpoint, Second edition*. Juta: Cape Town.

Gapenski, L.C. 1996. *Using MVA and EVA to measure financial performance*. Healthcare Financial Management, 50(3): 56-60.

Gordon, M. 1959. *Dividends, earnings and financial policy*, Review of Economics and Statistics, May.

Graham, B., Dodd, D.L. & Cottle, S. 1962. *Security Analysis, Third edition*, McGraw Hill: New York.

Hall, J.H. 1998. *Variables determining shareholder value of industrial companies listed on the Johannesburg Stock Exchange*, Unpublished thesis: University of Pretoria.

Kay, H. 1994. *Capital City*. Director, October 1994: 34-40

Koen, M, Oberholster ,J.G.I. & van der Laan, H.A. 1994. *Analysis and Interpretation of Financial Statements, First Edition*, Juta & Co, Johannesburg.

Lumby, S. 1991. *Investment Appraisal and Financing Decisions, Fourth edition*. Chapman & Hall: London.

Mills, R. & Print, C. 1995. *Strategic Value Analysis*, Management Accounting, February 1995:35-37.

Modigliani, F. & Miller, M.H. 1958. *The cost of capital, corporation finance and the theory of investment*, American Economic Review, 48: 261-297.

Modigliani, F & Miller, M.H. 1961. *Dividend policy, growth and the valuation of shares*. Journal of Business, October 1961: 411-433.

Modigliani, F. & Miller, M.H. 1963. *Taxes and the cost of capital: a correction*, American Economic Review, 53: 433-443.

O'Byrne, S.F. 1996. *EVA and Market value*, Journal of Applied Corporate Finance, 9(1), Spring 1996:116-125.

O'Hanlon, J. & Peasnel, K. 1996. *Measure for measure*, Accountancy International edition, February 1996.

Rappaport, A. 1986. *Creating Shareholder Value*, Free Press: New York.

Ross, S.A., Westerfield, R.W., Jordan, B.D. & Firer, C. 1996. *Fundamentals of Corporate Finance, South African edition*. Irwin: London.

Ross, I. 1997. *The Stern Stewart Performance 1000*. Journal of Applied Corporate Finance, 9(4) Winter 1997: 115-128.

SAICA. 1992. *AC 104: Earnings and dividends per share*. Johannesburg: The South African Institute of Chartered Accountants.

SAICA. 1995a. *AC 103: Net profit and loss for the period, fundamental errors and changes in accounting policies*. Johannesburg: The South African Institute of Chartered Accountants.

SAICA. 1995b. *AC 306: Headline earnings effect of the issue of AC 103 (Revised) on the calculation and disclosure of earnings per share*. Johannesburg: The South African Institute of Chartered Accountants.

Sakata, K. & Kim, E.H. 1997. *EVA and shareholder value in Japan*, Journal of Applied Corporate Finance, 9 (4): 94-114.

Samuels, J.M., Wilkes, F.M. & Brayshaw, R.E. 1995. *Management of Company Finance, Sixth edition*. Chapman & Hall: London.

Stern, J. & Hahn, T.K. 1993. *More value - MVA and EVA measures underscore market perceptions*, Finance Week, March 18-24 1993.

Stern, J. 1994. *Management: its mission and measure*, Director, October 1994:42-44.

Stewart, G.B. 1991. *The Quest for Value*. Harper Collins Publishers Inc: United States of America.

Stewart, G.B. 1994. *EVA: Fact and Fantasy*. Journal of Applied Corporate Finance, 7(2), Summer 1994:71-84.

Thomas, B. 1983. *Deregulation and Cash Flow Reporting: One viewpoint*, Financial Executive, January 1983: 21.

Thomson, R. 1995. *Who needs earnings?* Management Today, June 1995:56-59.

Tully, S. *The Real Key to Creating Wealth*, Fortune, September 20, 1993.

Warner, J.B. 1977. *Bankruptcy costs: some evidence*, Journal of Finance, 26: 337-348.

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