CREATING A NEW VALUATION TOOL FOR SOUTH AFRICAN AGRICULTURAL CO-OPERATIVES

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Abstract

Long-term shareholder wealth is equally important for all profit seeking organizations, regardless of their size. This paper examines introducing Economic Value Added (EVA) as a performance measure for agribusinesses and co-ops in South Africa. EVA is an effective measure of the quality of managerial decisions as well as a reliable indicator of an enterprise's value growth in future. The question posed is whether South African agribusinesses and cooperatives are capable of creating shareholder and member value after the deregulation of the agricultural markets.

1. INTRODUCTION

Every asset, financial as well as real, has a value. The key to successfully investing in and managing these assets lies in understanding not only what the value is but also the sources of the value. Any asset can be valued, but some assets are easier to value than others and the details of valuation will vary from case to case. Thus, the valuation of a share of a real estate property will require different information and follow a different format than the valuation of a publicly traded share and the valuation of an agricultural co-operative. What is surprising, however, is not the differences in valuation techniques across assets, but the degree of similarity in basic principles.

The traditional discounted cash flow model provides for a rich and thorough analysis of all the different ways in which a firm can increase value, but it can become complex, as the number of inputs increases. It is also difficult to tie management compensation systems to a discounted cash flow model, since many of the inputs need to be estimated and can be manipulated to yield the results management wants.

If market efficiency is assumed, the unobservable value from the discounted cash flow model is replaced with the observed market price, and valuation of the business and/or reward for managers is based upon the performance of

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the share. Thus, a firm whose share price has gone up is viewed as having created value, whereas one whose share price has fallen has destroyed value. However, while market prices have the advantage of being up to date and observable, they are also 'noisy'. Even if markets are efficient, share prices tend to fluctuate around the true value. Thus, a firm may see its share price go up and its top management rewarded even as it destroys value. Conversely, the managers of a firm may be penalized as its share prices drops, even though the management may have taken actions to increase firm value. The other problem with using share prices as the basis for compensation is that the price only reflects the value of the entire firm. Share prices cannot be used to analyse the managers of individual divisions of a firm or for their relative performance. Furthermore, the discounted cash flow model is only usable for firms with traded share prices.

In the past decade, while firms have become more focused on value creation, new mechanisms for measuring value have been created. The two mechanisms that seem to have made the most impact are:

- economic value added (EVA), which measures the surplus value created by a firm in its existing environment, and
- cash flow return on investment (CFROI), which measures the percentage return made by a firm on its existing investments.

These mechanisms enable all types of firms to determine their value creation. In this article, we look at how the calculation of EVA can be adapted for usage by agricultural co-operatives.

2. WHAT IS EVA?

EVA is a value based financial performance measure, an investment decision tool and a performance measure reflecting the absolute amount of shareholder value created. It is computed as the product of the "excess return" made on an investment or investments and the capital invested in that investment or investments. EVA is the net operating profit minus an appropriate charge for the opportunity cost of all capital invested in an enterprise or project. It is an estimate of true economic profit, or the amount by which earnings exceed or fall short of the required minimum rate of return investors could get by investing in other securities of comparable risk (Stewart, 1990).

EVA is not new. Residual income, an accounting performance measure, is defined to be operating profit with a capital charge subtracted. Thus, EVA is a

variant of residual income, with adjustments to how one calculates income and capital. Stern Stewart & Co, a consulting firm based in New York, introduced the concept of EVA as a measurement tool in 1989, and trademarked it. The EVA concept is often called Economic Profit (EP) to avoid problems caused by the trade marking. EVA is so popular and well known that all residual income concepts are often called EVA even though they do not include the main elements defined by Stern Stewart & Co (Pinto, 2001).

Up to 1970 residual income did not get wide publicity and it was not the prime performance measure for companies (Mäkeläinen, 1998). However, in the 1990's, the creation of shareholder value has become recognised as the ultimate economic purpose of a corporation. Firms focus on building, operating and harvesting new businesses and/or products that will provide a greater return than the firm's cost of capital, thus ensuring maximisation of shareholder value. EVA is a strategy formulation and a financial performance management tool that help 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.

2.1 Advantages of EVA

EVA is frequently regarded as a single, simple measure that provides a real picture of shareholder wealth creation. In addition to motivating managers to create shareholder value and to serving as a basis for the calculation of management compensation, there are further practical advantages that value based measurement systems can offer. An EVA system helps managers to (Roztoci & Needy, 1998):

- make better investment decisions;
- identify improvement opportunities; and
- consider long-term and short-term benefits for the company.

EVA is an effective measure of the quality of managerial decisions and a reliable indicator of a company's value growth in the future. Constant positive EVA values over time will increase company values, while negative EVA values might decrease company values.

2.2 Limitations of EVA

Like other financial performance measures, such as return on investment (ROI), EVA, on its own, is inadequate for assessing a company's progress in achieving its strategic goals and in measuring divisional performance. Other more forward-looking measures, often non-financial in nature, should be included in regular performance reports to provide early warning signs of problem areas (Wood, 2000). In certain industries EVA alone is an inappropriate measure of financial performance. For new high growth companies, such as those in the new technology-intensive industries, year-on-year changes in EVA, which may be negative at times, are unlikely to explain changes in a firm's value, given that the value is dependent on future expected cash flows (Wood, 2000).

Another problem of EVA is that it is distorted by inflation, with the result that it cannot be used during inflationary times to estimate actual profitability. A superior measure, the adjusted EVA, corrects for inflationary distortions.

3. EVA RESEARCH IN SOUTH AFRICA

Several research studies have focused on the use and measurement of EVA in South Africa, although no research has been conducted into the development of EVA as a measurement tool for agricultural co-operatives. Several studies have examined the relationship between EVA and shareholder value maximisation. Bottger (1999), for example, found that basic corporate finance and microeconomic theory indicates that the primary financial directive of any firm ought to be to maximize the wealth of the shareholders. The EVA concept is considered from a financial management perspective. He found that one of the major challenges facing EVA implementation is changing traditional methods of financial reporting. You Lee (1995) researched the use of EVA as a corporate performance measurement tool. His main research finding was that, within the context of the JSE, EVA is at best marginally better than measures such as ROA and ROE.

Lloyd (1996) examined the use of four traditional share valuation techniques that are based on different versions of economic value added, while Pearson (1998) compared the explanatory power of EVA to that of Refined Economic Value Added (REVA) for share returns on the mining sector of the JSE. He found that, while EVA partially explains share returns, REVA does not appear to explain these returns at all. Manipulating the EVA information to obtain the annual change in EVA leads to the finding that the annual change explains a significant portion of share returns in the mining sector. This suggests that

positive changes in EVA from one year to the next could be a reliable measure of management performance. Pretorius (1997) and Jansen (1998) both researched EVA as an investment decision-making measure.

4. CALCULATING EVA

The definition of EVA highlights the three basic inputs needed for its computation — the return on capital earned on investments, the cost of capital for those investments and the capital invested in them. The formula for determining EVA is:

$$EVA = \left(\frac{NOPAT}{Capital\ invested} - Cost\ of\ Capital \right) x\ Capital\ invested$$

How much *capital is invested* in existing assets? While an obvious solution is to use the market value of the firm, market value includes capital invested not just in assets in place, but also in expected future growth. Since the quality of assets needs to be evaluated, the market value of only those assets needs to be estimated. The book value of capital as a proxy for the market value of capital invested in assets can be used (Kramer & Pushner, 1997). The book value, however, is a number that reflects not just the accounting choices made in the current period, but also accounting decisions made over time on how to depreciate assets, value inventory and deal with acquisitions. At the minimum, three adjustments need to be made to capital invested when computing EVA — converting operating leases into debt, capitalizing R&D expenses and eliminating the effect of one-time or cosmetic charges (O'Byrne, 1996).

To evaluate the return on this invested capital, the *after-tax operating income* (NOPAT) earned by a firm on these investments needs to be estimated. Again, the accounting measure of operating income has to be adjusted for operating leases, R&D expenses and one-time charges to compute the return on capital.

The third and final component needed to estimate EVA is the *cost of capital*. The cost of capital should be estimated based upon the market value of debt and equity in the firm, rather than book values (Kramer & Pushner, 1997). There is no contradiction between using book value for purposes of estimating capital invested and using market value for estimating cost of capital, since a firm has to earn more than its market value cost of capital to generate value. From a practical standpoint, using the book value cost of capital will tend to understate the cost of capital for most firms and will understate it more for more highly

leveraged firms than for lightly leveraged firms. Understating the cost of capital will lead to overstating the economic value added. The capital asset pricing model (CAPM) is used to determine the cost of capital.

The formula of CAPM is:

$$Rj = Rf + b(Rm - Rf)$$

where: Rj = cost of capital
Rf = risk-free rate
b = beta
Rm = market return

5. APPLYING EVA TO AGRICULTURAL CO-OPERATRIVES

The concept of EVA has been adjusted and applied to four agricultural co-operatives in South Africa. The selection of the co-operatives was random[2] and EVA was only determined for 2000. Table 1 indicates NOPAT, the capital invested and the cost of that capital for three agricultural co-operatives.

Table 1: NOPAT, capital, the cost of capital and EVA of three agricultural co-operatives for 2000

	Co-operative A	Co-operative B	Co-operative C
NOPAT	3,719,598.50	9,926,734.00	24,292,500.32
Capital	41,442,518.00	65,113,060.00	209,807,000.00
Cost of capital	16.38	10.07	16.22
EVA	(3,067,389.47)	3,372,559.00	(9,730,231.68)

In determining the cost of capital, the following assumptions were made:

- the average of the R150 government stock during 2000 was used as the risk-free rate;
- the average beta of three listed companies in the food and related sector was used as the beta; and
- a market risk premium of 6%[3] was used.

[2] *This is research in progress and the main objective of the research is to determine the EVA of all trading co-operatives in South Africa for the period 1997 to 2001.*

[3] *Stern Steward & Co in South Africa uses 6% in all their valuations.*

The financial statements of the three selected co-operatives are given in appendixes A and B. The financial statements were obtained from the Registrar of Co-operatives. It is clear from the table that only Co-op B succeeded in creating value for its members for the financial year ending 2000.

6. CONCLUSION

The value of a co-operative has three components. The first is its capacity to generate cash flows from existing assets, with higher cash flows translating into higher value. The second is its willingness to reinvest to create future growth and the quality of these reinvestments. The final component of value is the cost of capital. To create value then a co-operative has to:

- generate higher cash flows from existing assets, without affecting its growth prospects or its risk profile;
- reinvest more and with higher excess returns, without increasing the riskiness of its assets; and
- reduce the cost of financing its assets in place or future growth, without lowering the returns made on these investments.

In this study, we consider EVA as a value enhancement measure for agricultural co-operatives. EVA measures the excess return on existing assets. It is important to remember when using EVA as a value enhancement measure that it will not work unless there is a commitment on the part of managers to make value maximization their primary objective. Finally, there are no magic bullets that create value. Value creation is hard work in competitive markets and almost always involves a trade off between costs and benefits. Everyone has a role in value creation and it certainly is not the sole domain of financial analysts. In fact, the value created by financial engineers is smaller and less significant than the value created by good strategic marketing, production and personnel decisions.

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Appendix A: Balance sheets of three selected co-operatives for the financial years 1999 and 2000 (R'000)

	CO-OP A		CO-OP B		CO-OP C	
	1999	**2000**	**1999**	**2000**	**1999**	**2000**
Reserves & undistributed income						
Reserve	18,108,608	4,475,572	17,842,080	21,228,265	60,096,000	63,699,676
Undistributed income	-	-	-	-	-	-
Total own resources	**18,108,608**	**4,475,572**	**17,842,080**	**21,228,265**	**60,096,000**	**63,699,676**
Sources from members						
Paid-up share capital	2,552,084	196,323	1,729,103	1,729,183	20,915,000	21,251,374
Members funds	17,437,462	2,903,520	-	-	108,560,000	111,582,036
Total members' sources	**19,989,546**	**3,099,843**	**1,729,103**	**1,729,183**	**129,475,000**	**132,833,410**
Total members interest	**38,098,154**	**7,575,415**	**19,571,183**	**22,957,448**	**189,571,000**	**196,533,086**
External LT liabilities						
Land Bank loans	2,902,208	14,595,623	3,432,159	3,364,241	-	-
Other loans	-	-	2,494,414	2,770,932	-	39,818
Total interest-bearings external	**2,902,208**	**14,595,623**	**5,926,573**	**6,135,173**	**-**	**39,818**
Deferred tax	-	2,065,075	-	-	-	-
Total LT liabilities	**41,000,362**	**24,236,113**	**25,497,756**	**29,092,621**	**189,571,000**	**196,572,904**
Current liabilities						
Land bank loans	-	-	34,337,549	40,248,770	-	-
Total Land Bank loans	-	-	34,337,549	40,248,770	-	-
Bank overdraft and acceptances	-	-	4,755,311	1,405,721	-	-
ST portion of LT liabilities	442,156	-	522,444	301,123	20,236,000	-
Total interest bearing current	**442,156**	**-**	**39,615,304**	**41,955,614**	**20,236,000**	**-**
Creditors	24,145,110	9,888,810	9,860,771	17,276,335	47,824,000	50,876,697
Total current liabilities	**24,587,266**	**9,888,810**	**49,476,075**	**59,231,949**	**68,060,000**	**50,876,697**
Total external liabilities	**27,489,474**	**26,549,508**	**55,402,648**	**65,367,122**	**68,060,000**	**50,916,515**
Total members interest & liab	**65,587,628**	**34,124,923**	**74,973,831**	**88,324,570**	**257,631,000**	**247,449,601**
Fixed assets						
Fixed assets	20,422,908	14,069,499	16,044,353	19,972,911	22,816,000	32,538,265
Investments and loans	1,565,815	12,069,706	6,040,784	5,856,883	2,740,000	186,212
Total LT assets	**21,988,723**	**26,139,205**	**22,085,137**	**25,829,794**	**25,556,000**	**32,724,477**
Current assets						
Members debtors	1,283,092	1,545,072	27,367,994	31,138,301	118,452,000	118,668,523
Other debtors	6,280,500	19,955	4,703,772	6,071,615	-	6,354,379
Total debtors	7,563,592	1,565,027	32,071,766	37,209,916	118,452,000	125,022,902
Prepaid expenses	8,538	-	-	-	-	-
Total debtors	7,572,130	1,565,027	32,071,766	37,209,916	118,452,000	125,022,902
Net agents' stock & pool accounts	20,709,166	6,362,723	-	-	75,979,000	35,781,297
Stock	2,131,417	57,968	19,129,821	23,414,487	20,536,000	26,921,071
Cash on hand & in bank	13,186,192	-	1,687,107	1,870,373	17,108,000	26,999,854
Total current assets	**43,598,905**	**7,985,718**	**52,888,694**	**62,494,776**	**232,075,000**	**214,725,124**
Total assets	**65,587,628**	**34,124,923**	**74,973,831**	**88,324,570**	**257,631,000**	**247,449,601**

Appendix B: Income statements of three selected co-operatives for the financial year ending 2000

	CO-OP A	CO-OP B	CO-OP C
	(R'000)	(R'000)	(R'000)
Net income/(Loss) for the year (after tax)	**671,111**	**3,386,185**	**16,906,363**
Extraordinary items	-	-	-
Tax	(287,619)	-	(2,893,456)
Net income/(Loss) before taxation and other items	**958,730**	**3,386,185**	**19,799,819**
Other income/(Expenditure)	-	-	(84)
Net income/(Loss)	**958,730**	**3,386,185**	**19,799,735**
Lease monies	-	-	-
Depreciation of fixed assets	1,810,400	954,627	8,562,946
Directors renumeration	-	384,000	396,460
Auditors renumeration	35,726	200,200	392,440
Provisions	-	-	705,949
Irrecoverable debts written off	-	3,071,631	40,206
Interest paid	1,404,875	6,540,549	8,650,245
Capital profit/(loss) on the disposal of fixed assets	-	53,840	148,959
Income from investments	-	186,234	277,004
Adjusted net income	**4,209,731**	**14,297,118**	**38,122,018**
Plus all interest received	721,848	5,694,739	13,050,154
Net operating income	**3,487,883**	**8,602,379**	**25,071,864**
Distributable income	671,111	3,386,185	7,809,432