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Are wine co-operatives creating value?

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Abstract

This article examines the introduction of Economic Value Added (EVA) as a performance measure that South African wine co-operatives can use to determine whether value has been created for members. A detailed explanation of EVA is given, and the components of EVA are calculated. The EVA's of a number of co-operatives have been calculated and analysed. Important trends have been identified. Recommendations have been made based on the conclusions drawn from these results. Finally, opportunities for potential improvement that could arise from using EVA as a performance measure in wine co-operatives are discussed.

1. INTRODUCTION

All assets, both financial assets and real assets, have a value. The key to successfully investing in and managing assets lies in understanding not only what that value is, but also the sources of that value. Any asset can be valued, but some assets are easier to value than others and the details of valuation vary from case to case. So, for example, in order to value a share of a real estate property, one needs different information than to value a publicly traded share or to value a wine co-operative; and the valuation process follows a different format. However, it is surprising, despite the differences in valuation techniques across assets, how similar the basic principles used are.

The traditional discounted cash flow model allows a rich and thorough analysis of all the different ways in which a firm can increase value, but the application of the model can become very complex as the number of inputs increases. If market efficiency is assumed, the unobservable value from the discounted cash flow model is replaced with the observed market price and the valuation of the business and/or the rewards for managers are based on the performance of the shares. Thus, a firm whose share price has gone up is

regarded as having created value, whereas a firm whose share price has dropped is believed to have destroyed value. Even if markets are efficient, share prices tend to fluctuate around the true value. Thus, a firm's share price may go up and its top management may be rewarded accordingly, even though it destroys value. Conversely, the managers of a firm may be penalized if a firm's share prices drop, even though the management may have taken appropriate action to increase the firm's value. Furthermore, the discounted cash flow model is only usable for firms with traded share prices. The question explored in this article is how wine co-operatives can be valued, since no shares are traded.

2. WHAT IS 'VALUE'?

It may be helpful to begin this article by defining the central term, 'value'. Value is simply the quality/price which is perceived/paid by the customer. The quality component of value includes the inherent quality of the particular product or service, as well as of all its auxiliary features (such as follow-up service or complaint resolution).

From the customer's perspective, the price of a product or service must at least be commensurate with – or, ideally, be commensurately lower than – the perceived value of the product or service received, or else the customer may feel that he or she has not received real value from the exchange (Ray, 2001). In the long run, if a firm's customers feel that they are not receiving value, then the firm will almost certainly become just another corporate fatality (assuming that the firm is operating in a free market).

3. VALUATION METRICS

In any discussion of what value is added, the key question is this: How is value measured? During the past three decades, one school of writers has begun to realize the shortcomings of measures such as earnings per share, return on assets and return on investment. These traditional measures of business performance are inadequate for the task at hand in the sense that none of them

isolate the most important concern of shareholders or members, namely whether management is adding value to or subtracting value from capital. The traditional performance measures are directly derived from accounting profits that can be easily manipulated using accounting procedures, and thus they may not necessarily give an accurate yardstick by which performance can be evaluated.

Even a brief review of accounting and finance literature suggests that accounting earnings play an important role in the stock market from an institutional perspective.

The traditional **accounting model** of valuation contends that stock exchanges set prices by capitalizing a company's earnings per share (EPS) at an appropriate price/earnings (P/E) multiple. The greatest advantage of the accounting model is its simplicity and apparent precision. Its greatest disadvantage is that the accounting model assumes, in effect, that P/E multiples never change. However, P/E multiples change all the time, due to acquisitions and divestitures, changes in financial structure and accounting policies, changes in share price and new investment opportunities. P/E multiples adjust to changes in the quality of a company's earnings, and that makes EPS a very unreliable measure of value.

The **economic model** acknowledges that while it is crucial to generate and then measure a profit or return from a business's operations, it is equally important to express that profit in relation to the amount of capital used to generate that profit. These methods then do have special ways (and definitions) to calculate a firm's economic profit and economic capital.

During the 1970's, Stern wrote about the problems encountered with and disadvantages of accounting-based methods. He believed firmly in economic-based methods. In 1986, his partner Stewart, in the consulting firm Stern Stewart, published a book entitled *The quest for value*, in which his method of determining shareholder value was called 'Economic value added (EVA)'. EVA as a measure of corporate performance has been developed, refined and

popularised by Stern and Stewart over almost 20 years of working together. According to Rutledge (1993), the value of economic profit is the economic return on equity capital used by managers. Therefore managers cannot claim to have made profits if an economic return on equity has not been earned.

In an extensive study in which traditional and value-added measures of performance are compared, Peterson and Peterson (1996) identify return on capital as another value-added measure. They examined these two measures and compare them with the market's assessment of company performance, namely stock returns. Their findings suggest that though traditional measures have no theoretical appeal, they should not be eliminated as a means of evaluating performance. This is because the traditional measures are not empirically less related to stock returns than return on capital. The possibility of value-added measures not being worthwhile is ruled out by Peterson and Peterson (1996). They state that the focus on economic rather than accounting profit plays an important role in the valuation of performance because managers' goal will be on value creation rather the mere manipulation of short-sighted accounting figures.

Stern (1994) admits that the financial concepts which underlie EVA were, of course, not invented at Stern Stewart & Co. Economists since Adam Smith have concluded that the goal of any firm and its managers should be to maximise the firm's value for its owners.

In more recent times, a number of writers have explored the principle that in order to account for all the cost of funds supplied to a firm, one must deduct the total cost of capital from the income earned. Solomons (1965) called 'the excess of net earnings over the cost of capital', residual income, a true measure of managerial success.

Fruhan (1979) recognized that the pure accounting-based methods used to determine shareholder value were not adequate. He argued that managers create economic value for their firm's shareholders when they undertake investments that produce returns that exceed the cost of capital. Rappaport

(1986) was another author who proposed an economic-based method. His articles during the early 1980's were followed by his book towards the end of that decade. By now, this new way of calculating shareholder value was well established. Copeland, Koller and Murrin (1990) called their economic-based method 'the economic profit model'.

Nobel laureate Merton Miller refocused the goal of maximising shareholder value creation towards maximising Net Present Value (NPV). While NPV is primarily a long-term capital budgeting tool, EVA is an attempt to break this concept down into annual (or even monthly) instalments which can be used to evaluate the performance of corporate managers and their businesses.

One of the claims of EVA is that this metric is superior to ROA and ROE. Turvey, et al. (2000) investigates this claim by examining 17 Canadian food processing companies. They find that high EVA per share firms also have high ROA and ROE while low EVA per share firms have lower measures of profitability. Their regression results found a dollar increase in EVA per share yields a 3.5% increase in ROA and an 11.3% increase in ROE.

It falls beyond the scope of this study to discuss all these models in detail, but, in essence, they all calculate the shareholder value that has been created.

4. EVA DEFINED

As can be deduced from the introductory discussion above on the principles underlying EVA, basically, EVA is a way of measuring the economic value (profitability) of a business after the **total** cost of capital – both debt **and** equity – has been taken into account (most traditional, accounting-based methods only take debt into account). The calculation of EVA also includes the often considerable cost of equity (Firer 1995).

The key principle underlying EVA is that value is created when the return on an investment exceeds the total cost of capital that correctly reflects its investment risk. One can improve EVA (and thus shareholder value) as long as one accepts

new projects on which the rate of return exceeds the cost. EVA is an **internal** performance measure of a company's operations on a year-to-year basis. It reflects the successes of the efforts of corporate managers to add value to the shareholders' investment. EVA is the residual income left over from the operating profits after the total cost of capital has been subtracted. A **positive** EVA implies that the rate of return on capital **must** exceed the required rate of return. To the extent that a company's EVA is greater than zero, the firm is creating (adding) value for its shareholders (Stern 1994).

EVA is a measure that accounts properly for all the complex trade-offs involved in creating value. It is calculated by multiplying the spread (difference between the generated return and the weighted average cost of capital) between the rate of return on capital (r) and the cost of capital (c) by the economic book value of the capital committed to the business (Stewart 1990):

$$EVA = (\text{rate of return} - \text{cost of capital}) * \text{capital}$$

$$EVA = (r - c) * \text{capital}$$

$$\text{and } r = \frac{\text{Net Operating Profit After Tax (NOPAT)}}{\text{capital}}$$

where

NOPAT

= Income attributable to ordinary shareholders

+ Increase in equity equivalents

= ADJUSTED NET INCOME

+ Preferred dividend

+ Minority interest provision

+ Interest payments after tax savings

and

Capital

= Common equity
+ Equity equivalents
= ADJUSTED COMMON EQUITY
+ Preferred share capital
+ Minority interest
+ Debt

If, for example, the NOPAT is R500, capital is R2 000 and c is 15%, then r ($NOPAT/capital$) is 25% and the EVA is R200:

$$\begin{aligned} EVA &= (r - c) \times capital \\ &= (0.25 - 0.15) \times 2\,000 \\ &= R200 \end{aligned}$$

Although there are countless individual actions in a business that employees can perform to create value, eventually they all fall into one of the three categories (r , c and $capital$) reflected by EVA. Hence, EVA increases when operating efficiency is enhanced, when value enhancing investments are undertaken, and when capital is withdrawn from unrewarding activities.

To be more specific, EVA increases when:

- the rate of return (r) earned on the existing capital base improves; that is, the operating margin increases without investing more capital;
- additional capital is invested in projects that earn a rate of return (r) greater than the cost of capital (c); and
- capital is liquidated from unrewarding projects (where $r < c$).

These are the only ways in which shareholder value can be created, and EVA accounts for them all.

5. RESEARCH METHOD

The research method used to achieve the objective of this research was, firstly, to obtain the financial statements of all the wine co-operatives in South Africa from the Registrar of Co-operatives. Secondly, the financial statements were standardized and captured electronically in a database. The next step was to calculate the EVA – with all its components, such as NOPAT, capital, cost of equity and the weighted average cost of capital (WACC) – of each co-operative. The research method is illustrated below with an example. The selection of the example was random.

Table 1: Extracts from the financial statements of Aan de Doorns Winery for the financial years ending 28 February 2000 and 2001

Balance sheet for the year ended	2000 (R)	2001 (R)
Reserves and undistributed income		
Total own resources	3,912,072	4,144,170
Total members' sources	2,060,280	2,063,790
Total members' interest	5,972,352	6,207,960
External Long Term (LT) liabilities		
Total interest-bearings external liabilities	3,549,259	4,158,469
Deferred tax	181,295	400,397
Total LT liabilities interest free	181,295	400,397
Total LT liabilities	3,730,554	4,558,866
Total current liabilities	2,270,831	2,508,053
Total external liabilities	6,001,385	7,066,919
Total members' interest and liabilities	11,973,737	13,274,879
Fixed assets		
Total LT assets	6,773,831	7,985,670
Total current assets	5,199,906	5,289,209
Total assets	11,973,737	13,274,879
Income statement for the year ended	2001 (R)	
Net operating income before taking the following into account	2,294,234	
Plus all interest received	209,145	
Adjusted net income	2,503,379	
Income from investments	3,010	
Lease monies	-	
Depreciation of fixed assets	1,056,666	
Directors remuneration	36,317	
Auditors remuneration	58,922	
Provisions	-	
Irrecoverable debts written off	270,000	
Interest paid	664,485	
Capital profit/(loss) on the disposal of fixed assets	-	
Net income/(Loss) before taxation and other items	413,979	
Tax	(219,102)	
Extraordinary items		
Net income/(Loss) for the year (after tax)	194,877	

5.1 NOPAT

EVA is an accounting-based measure of periodic operating performance, and is defined as the difference between accounting earnings and the cost of invested capital used to generate those earnings. EVA depends on net operating profit after taxes (NOPAT). To calculate economic profit properly, a variety of adjustments must be made to most financial statements. Certain

expenditures, such as research and development and employee training costs, are capitalized and then amortized rather than expensed (Burkette & Hedley 1997). Other adjustments include goodwill and operating leases (Mills Rowbotham & Robertson 1998). Given the format of the financial statements of the co-operatives, the NOPAT for the selected co-operatives can be calculated as follows:

$$NOPAT = Net\ income(loss) + (interest\ paid * (1 - Tax)) + (Def\ tax - Def\ tax_{prev})$$

where:

$$Def\ tax = Deferred\ tax$$

The NOPAT for Aan De Doorns Winery is then:

$$\begin{aligned} NOPAT &= 194,877 + (664,485 * (1 - 0.3)) + (400,397 - 181,295) \\ &= 879,119 \end{aligned}$$

5.2 Capital

The following equation was used to determine capital:

$$Capital = Adjusted\ common\ equity + Total\ debt$$

Adjusted common equity consisted of the sum of the total members' interest and deferred taxes from the previous year. Total debt consisted of the sum of the total interest-bearing external long-term liabilities and the total interest-bearing current liabilities of the previous years. The previous year was used, because starting amounts must be used in determining EVA.

The capital for the Aan De Doorns Winery was calculated as follows:

$$\begin{aligned} Capital &= (5,972,352 + 181,295) + (3,549,259 + 650,789) \\ &= 10,353,695 \end{aligned}$$

5.3 Cost of equity capital

Accordingly, EVA represents residual income that is left after investors have earned the minimum rate of return which they require to compensate them for the risk they incur by investing in the company. This residual approach, as stated in Section 4, is:

$$EVA = (\text{rate of return} - \text{cost of capital}) * \text{capital}$$

The capital asset pricing model (CAPM), with its assumptions that there are no transaction costs or private information, concludes that marginal investors hold portfolios that include every traded asset in the market, and that the risk of any investment is the risk added to this 'market portfolio'. The expected return from the model can be expressed as follows:

$$R_j = R_f + b(R_m - R_f)$$

where:

$$R_j = \text{Cost of equity capital}$$

$$R_f = \text{Risk-free rate}$$

$$b = \text{Beta}$$

$$R_m = \text{Average market return}$$

The cost of equity capital is the opportunity cost which shareholders forgo by investing in a specific company. While this opportunity cost does not appear in any financial statements, Stern Stewart approximates it, based on the CAPM, by adding an individual company's adjusted risk premium to the return on long-term government bonds. The adjusted risk premium equals the company's stock beta multiplied by 6% (see Stewart 1991), a long-term risk premium common to equities in general (Stewart 1991; Stern Stewart 1993). Since the cost of equity capital is not reflected in the income statement, no tax adjustment can be made on such a cost. The cost of equity capital for the Aan De Doorns Winery for 2001 is calculated as follows:

$$\begin{aligned} R_j &= 10.78\% + 0.83(16.78 - 10.78) \\ &= 15.75\% \end{aligned}$$

5.3.1 Risk-free rate

Before the CAPM can be applied, the question of what the risk-free rate is must first be answered. To understand what makes an asset risk free, it is necessary to determine how risk is measured in finance. Investors who buy assets expect to receive a certain return over the time horizon that they will hold the asset. The actual returns that they make over this holding period may be very different from the expected returns, and this is where risk comes in. Risk in finance is viewed in terms of the variance in actual returns around the expected return. For an investment to be risk-free in this environment, the actual returns should always be equal to the expected return.

Under what conditions would the actual returns on an investment be equal to the expected returns? One condition is that there can be no default risk. Essentially, this rules out any security issued by a private firm, since even the largest and safest firms have some measure of default risk. The only securities that have a chance of being risk-free are government securities, not because governments are better run than companies, but because they control the printing of currency. At least in nominal terms, they should be able to fulfil their promises. Even this assumption, straightforward though it might seem, does not always hold up, especially when governments refuse to honour claims made by previous regimes and when they borrow in currencies other than their own. In this study, the average return on the R150 government bond is used as the risk-free rate. Table 2 indicates the return on the R150 from 1997 to 2001.

Table 2: Average return of the R150 from 1997 to 2001

1997	1998	1999	2000	2001
14.57%	15.03%	14.49%	13.17%	10.78%

Source: McGregor BFA database

5.3.2 Beta

The last input in the CAPM is the beta. The beta or betas that measure risk in models of risk in finance have two basic characteristics that must be borne in mind during estimation. The first is that they measure the risk added onto a

diversified portfolio, rather than total risk. Thus, it is entirely possible for an investment to be high risk in terms of individual risk, but to be low risk in terms of market risk. The second characteristic that all betas share is that they measure the relative risk of an asset, and thus are standardized around one. The market-capitalization weighted average beta across all investments, according to the CAPM, should be equal to one. In any multi-factor model, each beta should have the same property. The average betas, over a 5-year period, of the selected companies were used in the CAPM to determine the expected return. The companies were chosen on the basis of their main activities. The selected companies were:

- Afgri
- Distell
- KWV-Bel
- Omnia
- Rainbow
- SAPPI
- Tigerbrands

Table 3 indicates the betas used in determining the costs of capital from 1998 to 2001.

Table 3: Average beta used from 1998 to 2001

1997	1998	1999	2000	2001
0.65	0.66	0.78	0.85	0.83

Source: McGregor BFA

5.4 Cost of debt

To determine the cost of debt, the return on the R150 was used and a risk premium of 2% was added. The cost of debt must be after tax to take the tax benefit of debt into consideration. The R150 was used to ensure uniformity amongst all the cooperatives, since some cooperatives were sensitive in sharing the rate at which they borrowed their funds.

The cost of debt for the Aan De Doorns Winery for 2001 was calculated as follows:

$$\begin{aligned} id &= (R_f + 2)(1 - Tax) \\ &= (10.78\% + 2\%)(1 - 0.3) \\ &= 8.94\% \end{aligned}$$

where:

$$id = \text{after tax cost of debt}$$

The cost of debt is calculated on an after-tax basis because the interest portion (the cost of the debt) is reflected in the income statement and deducted from taxable income before the tax payable is calculated. Therefore the cost of debt is on an after-tax basis and the cost of equity is before tax (no deduction from taxable income).

5.5 WACC

The WACC was used in determining the cost of capital. WACC can be defined as follows:

$$WACC = R_j * (E / A) + id * (D / A)$$

where:

$$\begin{aligned} E &= \text{adjusted common equity} \\ A &= \text{assets} \\ D &= \text{debt} \end{aligned}$$

The WACC for the Aan De Doorns Winery for 2001 was calculated as follows:

$$\begin{aligned} WACC &= \left(15.75\% * \frac{6,153,647}{10,353,695} \right) + \left((10.78 + 2)(1 - 0.3) * \frac{4,200,048}{10,353,695} \right) \\ &= 12.99\% \end{aligned}$$

The WACC of the co-operatives reflects their unique composition between debt and equity, thus reflecting the risk of the co-operative. An advantage of using EVA as a financial performance measure is that it takes into account the company's total cost of capital.

The EVA for the Aan De Doorns Winery for 2001 is calculated as follows:

$$\begin{aligned} EVA &= \left(\frac{879,119}{10,353,695} - \frac{12.99\%}{100} \right) * 10,353,695 \\ &= (465,387) \end{aligned}$$

6. RESULTS AND INTERPRETATION

Seven co-operatives were randomly selected to discuss the EVA-results in detail. The EVA results for seven of the 36 co-operatives are presented in Table 4 below.

Table 4: EVA calculation of seven selected co-operatives for 1998 to 2001

Co-op	Year	NOPAT (R)	Capital (R)	Return (%)	WACC (%)	Spread	EVA (R)
Agterkliphoogte	1998	191,425	2,249,100	8.5	16.5	-8.0	(179,279)
	1999	156,711	2,296,727	6.8	17.0	-10.2	(233,965)
	2000	19,017	2,415,541	0.8	16.2	-15.4	(371,509)
	2001	184,086	2,671,236	6.9	13.4	-6.5	(172,687)
Badsberg	1998	339,404	5,641,457	6.0	16.0	-10.0	(562,292)
	1999	485,001	6,797,409	7.1	15.6	-8.4	(573,013)
	2000	463,481	6,418,551	7.2	14.8	-7.5	(484,436)
	2001	572,739	7,812,535	7.3	12.0	-4.6	(362,805)
Barrydale	1998	444,638	3,029,292	14.7	15.0	-0.3	(10,602)
	1999	(213,288)	5,148,568	-4.1	13.8	-18.0	(924,591)
	2000	191,795	4,913,393	3.9	12.1	-8.2	(402,455)
	2001	535,561	4,439,763	12.1	10.1	1.9	86,519
Citrusdal	1998	392,467	8,263,821	4.7	16.9	-12.1	(1,003,649)
	1999	355,894	12,714,809	2.8	15.7	-12.9	(1,637,155)
	2000	3,346,959	15,693,623	21.3	14.2	7.1	1,116,031
	2001	2,987,721	19,802,316	15.1	11.9	3.2	633,378
Perdeberg	1998	1,096,830	5,658,112	19.4	15.9	3.5	198,202
	1999	1,379,548	6,559,484	21.0	16.0	5.1	332,413
	2000	4,854,874	4,430,484	109.6	13.5	96.1	4,257,464
	2001	5,023,152	27,197,480	18.5	10.4	8.0	2,187,529
Robertson	1998	2,846,005	27,408,688	10.4	15.0	-4.6	(1,267,121)
	1999	341,319	26,071,958	1.3	15.6	-14.3	(3,720,630)
	2000	1,598,275	28,570,232	5.6	15.0	-9.4	(2,675,237)
	2001	1,004,042	37,265,347	2.7	12.6	-9.9	(3,686,064)
Spruitdrift	1998	1,756,337	13,727,786	12.8	13.3	-0.5	(65,664)
	1999	2,664,039	19,336,668	13.8	12.7	1.1	205,338
	2000	2,387,933	24,540,542	9.7	11.6	-1.9	(466,491)
	2001	2,491,378	24,993,419	10.0	9.9	0.1	17,638

As one can see from the EVA of the Agterkliphoogte Co-operative, negative EVA values occur during each of the four years under review. During 2000 the highest negative value of R371,509 occurs, whilst the lowest negative value (R172,687) was recorded in 2001. Bearing in mind the formula of EVA – (r –

WACC) x capital, it is a positive sign for the four-year period for this co-operative that the WACC has decreased from 17.01% in 1999 to 13.36% in 2001. In addition, the rate of return (r) has increased from 6.82% in 1999 to 6.89% in 2001. This means that the spread is still negative, but is becoming smaller.

The EVA results for the Badsberg Co-operative were also negative for the four years under review. However, the negative EVAs became smaller from 1999 (R562,292) to 2001 (R362,805). This improvement was the result of the continuous increase in the return (from 6.02% in 1998 to 7.33% in 2001) as well as the decrease in the WACC (from 15.98% in 1998 to 11.97% in 2001). Although the spread is still negative, it is becoming smaller. The improvement in the EVA of this co-operative is even more remarkable if one takes into account that it has been achieved with an increased amount of capital employed over the four-year period under review.

The Barrydale Co-operative has improved its EVA from negative R924,591 in 1999 to positive R86,520 in 2001. Whilst the rate of return has improved from negative 4.14% in 1999 to 12.06% in 2001, the WACC has declined from 13.82% to 10.11% over the same period, thereby creating the first positive spread during 2001. The co-operative's NOPAT over this period has improved and capital employed has remained constant. One can see that this co-operative is now in the position to invest more capital and become a constant value creator.

The EVA of the Citrusdal Co-operative improved from negative R1,637,155 in 1999 to positive R633, 378 in 2001. This is a good example of a value destroyer that has become a value creator. The reason for this improvement lies in the increased rate of return (up from 4.75% in 1998 to 15.09% in 2001), as well as in the decline of WACC (from 16.89% in 1998 to 11.89% in 2001). This means that a positive spread has been achieved, Then the correct action appears to have been undertaken: the capital employed was increased. With the positive spread, capital has been increased from R8,263,821 in 1998 to R19,802,316 in 2001.

The Perdeberg Co-operative is an example of a consistent value creator. A positive and increasing EVA has been achieved over the four-year period under review. The co-operative's EVA improved from R198,202 in 1998 to R2,187,529 in 2001. Whilst the rate of return has remained constant at around 18% during this period, the WACC has declined from 15,88% in 1998 to 10.43% in 2001. The WACC of 10.43% is one of the lowest in the whole sample of 37 co-operatives. This consistently positive spread has caused the increase in EVA, together with an increase in the capital employed, over the four-year period.

The Robertson Co-operative is an example of a consistent value destroyer. A negative EVA has been recorded over the four-year period. The EVA went from negative R1,267,121 in 1998 to negative R3,686,064 in 2001. Whilst the rate of return has declined from 10.38% in 1998 to only 2.69% in 2001, the WACC has declined from 15,01% in 1998 to 12.59% in 2001. This means that a negative spread has been recorded. This value destruction situation has been worsened by the fact that in addition to a negative spread of around 10% for 2000 and 2001, an ever-increasing amount of capital has been employed. The capital employed increased from R27,408,688 in 1998 to R37,265,347 in 2001. This amount of capital employed is amongst the highest noted in the total sample of 37 co-operatives.

The EVA created by the Spruitdrif Co-operative is an example of mixed results over the four-year period. The EVA varied from negative R466,491 in 2000 to positive R205,338 in 1999. What is also interesting about this co-operative is the very small spread. From 1998 to 2001 it appears that both the return and the WACC decreased. However, the co-operative produced a very consistent and relatively high NOPAT throughout the four-year period. In addition to that, the capital employed was not only at a high level, but has been increasing. It seems that a small increase in the rate of return or a small decrease in the WACC could definitely bring about a large value-creating opportunity.

Table 5 sets out the EVA-performance of all the wine co-operatives to provide an overview of the industry.

Table 5: EVA for all the wine co-operatives in the sample from 1998 to 2001

		1998	1999	2000	2001
EVA (R)	Total	(6,623,035)	(44,024,292)	(19,892,992)	(15,657,220)
	Average	(200,698)	(1,222,897)	(552,583)	(434,923)
NOPAT (R)	Total	43,075,963	21,362,911	34,820,170	28,248,962
	Average	1,305,332	593,414	967,227	784,693
Capital (R)	Total	318,772,524	428,276,370	372,307,226	409,063,147
	Average	9,659,773	11,896,566	10,341,867	11,362,865
Equity (R)	Total	165,675,762	208,390,704	198,459,584	186,418,027
	Average	5,020,478	5,788,631	5,512,766	5,178,279
Debt (R)	Total	153,096,762	219,885,666	173,847,642	222,645,120
	Average	4,639,296	6,107,935	4,829,101	6,184,587
Return (%)	Average	13.74	7.05	10.70	7.18
WACC (%)	Average	15.37	15.25	14.52	12.12
Spread	Average	-1.63	-8.20	-3.82	-4.94

The total EVA in each of the four years under review has negative values. There is, however, some improvement, because from 1999 to 2000 the EVA has improved from negative R44,024,292 to negative R15,657,220. During the same period, the NOPAT increased from R21,362,911 to R28,248,962. This is a very positive sign and can be one of the reasons for the improvement in the EVA.

Interesting changes in capital, equity and debt can be noted over the four-year period. Whilst there was a steady increase in the total capital employed (from R318, 772,542 in 1998 to R409,063,147 in 2001), the mix or ratio between equity and debt changed over this period. Equity declined steadily (from R208,390,704 in 1999 to R186,418,027 in 2001). Debt, on the other hand, showed an increase in value and the highest level of R222,645,120 was reached in 2001. Debt as a ratio to total capital increased (from 48% in 1998 to 54% in 2001). This is an indication that debt as a financing alternative in

now preferred, possibly due to declining interest rates during the period under review.

The rate of return is a cause of concern as it declined from 13.74% in 1998 to 7.18% in 2001. As the rate of return is central in the value creating process and the calculation thereof, this decline is another explanation of the negative EVA values that have been recorded over the period. It is also alarming that a decline in the rate of return has occurred despite an increase in the value of NOPAT over the four-year period. The profit margins and cost structures of the co-operatives should therefore be subjected to intense scrutiny by management.

The WACC declined over the four-year period, from 15.37% in 1998 to 12.12% in 2001. This means that, from the cost of capital point of view, it has become easier to be in a position to render a positive spread. The reason for the decline in WACC is firstly due to the fact that debt (which is arguably the least expensive after-tax source of capital to the firm) has become a bigger portion of the total capital and has therefore reduced the WACC of the co-operatives. Secondly, the component cost of debt itself declined over the four-year period.

The spread is the difference between the rate of return (r) and the WACC. A positive spread (r greater than the WACC) implies a value-creating situation, while a negative spread is indicative that value is being destroyed. As can be observed from Table 5, the spread is negative in each of the four years under review. This situation occurred despite a constant decline in the WACC. This highlights once again that the rate of return is arguably the main problem area or stumbling block that prevents these co-operatives from being in a value-creating situation.

On the basis of the above analysis, a number of recommendations can be made.

7. CONCLUSION AND RECOMMENDATIONS

The shareholders of any enterprise want to know whether value is being created or destroyed by the management of that enterprise. While there are many ways in which 'value' can be expressed, the so-called 'economic' methods take into account not only the total cost of capital, but also the amount of capital needed to generate the accompanying profit.

In this study EVA has been identified as a helpful method to express the value created or destroyed by the management of wine co-operatives. After a thorough explanation and calculation of the components of EVA, the EVAs of a number of co-operatives were calculated and analysed. Important trends were identified, allowing conclusions to be drawn and recommendations to be made.

It was illustrated that, of the 36 co-operatives, only a few created value, as expressed in terms of a positive EVA. By far the majority destroyed value, which resulted in a negative EVA. In many instances this situation has continued for a number of years in succession.

It was evident from the data that, over the four-year period under review, the WACC declined consistently (this was partly due to declining interest rates throughout the period, as well as to increased use of cheaper debt in the capital structure). Whilst this was a positive factor in the value creation process, it was virtually nullified by the fact that the rate of return declined, which resulted in a negative spread. In addition, more capital was committed to the enterprises. This was a recipe for value destruction.

On the basis of these results it can be recommended that, in the first place, a co-operative must determine its position in terms of value creation and destruction – does it have a positive or a negative EVA? Once it has established its position in this regard, it is clear what must be done to improve the EVA:

- The co-operatives need to increase the rate of return by improving the operating margins under which each co-operative operates. This will require a thorough analysis of operating activities as well as of the markets within which the co-operative operates and the products which it sells.
- The co-operatives need to decrease the WACC, firstly, by obtaining financing at the lowest possible rates and, secondly, by structuring the capital base of the co-operatives in such a way as to take into account the fact that debt is the cheapest form of financing.
- The co-operatives should invest in projects that render a rate of return greater than the WACC.
- The co-operatives must liquidate capital from projects where the cost (WACC) is greater than the return thereon.

As a value-based management system, EVA includes measures to gauge financial performance, evaluate strategic plans and acquisition candidates, identify unprofitable product lines, and increase working capital focus. The system is designed to focus on key value drivers and the cost of capital, while establishing a basis for incentive compensation and communications within the firm and with the investment community. It is strongly recommended that the South African wine co-operatives implement EVA as an evaluation tool for investment and compensation decisions. The goal of co-operatives in the 21st century is the same as for any business: to maximise member's value.

Bibliography

Burkette, G. & Hedley, T. 1997. 'The truth about Economic Value Added.' *CPA J.*, 67(July):46-49.

Copeland, T., Koller, T. & Murrin, J. 1995. *Valuation. Measuring and managing the value of companies*. 2nd edition. New York: John Wiley & Sons.

Firer, C. 1995. Investment basics XXX. EVA: the real key to creating value! *Financial Analysts Journal*, 40:57-59.

Fruhan, W.E. Jr. 1979. *Financial strategy. Studies in the creation, transfer, and destruction of shareholder value*. Illinois: Richard D. Irwin.

Mills, R., Rowbotham, S. & Robertson, J. 1998. Using economic profit in assessing business performance. *Management Accounting*, 76, November:34-37.

Peterson, P. and Peterson, D. 1996. Company performance and measures of value added. *Research Foundation, American Institute of Chartered Financial Analysts*.

Ray, R. 2001. Economic Value Added: theory, evidence, a missing link. *Review of Business*, Summer:65-70.

Rappaport, A. 1986. *Creating shareholder value*. New York: The Free Press,.

Rutledge, J. 1993. De-jargoning EVA. *Forbes*, 152(10) October 25, 148.

Solomons, D. 1965. *Divisional performance: measurement and control*. Illinois: Richard D. Irwin.

Stern, J.M. 1994. Stern Stewart EVA Roundtable. *Journal of Applied Corporate Finance*, 7(2):46-70.

Stern Stewart and Company. 1993. The Stern Stewart Performance 1000 Database Package: Introduction and Documentation. New York, NY: Stern Stewart Management Services.

Stewart, G.B. 1990. *The quest for value: a guide for senior managers*. HarperCollins.

Stewart, G. B. 1991. *The quest for value: a guide for senior managers*. New York, NY: HarperCollins.

Turvey, C., Lake, L., Van Duren, E. and Sparling, D. 2000. The relationship between economic value added and the stock market performance of agribusiness firms. *Agribusiness*, 16: 399 – 416.