Are South African co-operatives creating value

Hall, J.H. & Geyser, J.M.

Department of Agricultural Economics,
Extension and Rural Development
University of Pretoria
Pretoria, 0002
South Africa

University of Pretoria

ARE SOUTH AFRICAN CO-OPERATIVES CREATING VALUE?

- **JH Hall**

- **JM Geyser**

Abstract

This article examines the use of Economic Value Added (EVA) as a performance measure that South African agricultural 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 EVAs of a number of co-operatives have been calculated and analysed. In addition the EVA of specific types of co-operatives indicate that the fruit and vegetable sector is a constant value creator. It is clear that in order to create value, the rate of return on invested capital must be greater than the cost of capital. Certain co-operatives and types of co-operatives provided the blue print for this.

Keywords: Economic Value Added, Agricultural Co-operatives, Value, Economic model

1. INTRODUCTION

In the previous decade, value-based performance measures, such as Economic Value Added (EVA) have gained immense popularity and is used widely by various companies. The literature reports that more and more large companies are deciding to adopt the EVA performance measure as the guiding principle for their corporate policy (Tully, 1998). Several research

studies focused on EVA in south Africa, but no research was done to develop EVA as a measurement tool for agricultural co-operatives.

Frequently, EVA is regarded as a single, simple measure that gives a real picture of stockholder wealth creation (Tully, 1998). The reports claim that implementing an EVA policy triggers a company's stocks to rise (Lee, 1995, Burkette & Hedley, 1997, and Turvey *et.at.*, 2000) and its leading managers to act more like owners (Tully, 1993). In addition to motivating managers to create shareholder value and being a basis for management compensation (Stern, Stewart, & Chew, 1989), value based performance measurement systems have further practical advantages. An EVA system helps managers to make better investment decisions, identify opportunities for improvement and consider short-term as well as long-term benefits for the company (Stewart, 1994). Furthermore, studies suggest that EVA is an effective measure of the quality of managerial decisions (Lehn & Makhija, 1996) as well as a reliable indicator of a company's value growth in the future (Fisher, 1995). In summary, constant positive EVA values over time will increase company value, while negative EVA implies value depreciation.

Even though EVA is one of the hottest managerial tools, reports about its implementation in co-operatives in South Africa do not exist. The purpose of this study has been to examine how EVA can be calculated for agricultural co-operatives using financial statements. The study furthermore compared the EVA results of the agricultural cooperatives per sector and found that only one sector constantly created value, with the rest destroying value.

2.   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.

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.

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.

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'.

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.

3.   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 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):

$$EVA = (rate\,of\,return - \cos t\,of\,capital\,)*capital$$
$$EVA = (r - c)*capital$$

and $\quad r = \dfrac{Net\,Operating\,\Pr ofit\,After\,Tax(NOPAT)}{capital}$

where

NOPAT

= Income attributable to ordinary shareholders

<u>+ Increase in equity equivalents</u>

= ADJUSTED NET INCOME

+ Preferred dividend

+ Minority interest provision

+ Interest payments after tax savings

and

Capital

$\qquad$= Common equity

$\qquad$<u>+ Equity equivalents</u>

$\qquad$= ADJUSTED COMMON EQUITY

$\qquad$+ Preferred share capital

$\qquad$+ Minority interest

$\qquad$+ 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:

$$EVA = (r - c) \text{ x } capital$$
$$= (0.25 - 0.15) \text{ x } 2\ 000$$
$$= R200$$

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.

4.   RESEARCH METHOD

The research method used to achieve the objective of this research was, firstly, to obtain the financial statements of all the agricultural 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	2001
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	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**	
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**

4.1 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:

$$NOPAT = Net\ income\,(loss) + \left(\mathrm{int}\ erest\ paid\ *\ \langle 1 - Tax\rangle\right) + \left(Def\ tax - Def\ tax_{prev}\right)$$

where:

$$Def\ tax = Deferred\ tax$$

The NOPAT for Aan De Doorns Winery is then:

$$NOPAT = 194877 + \left(664485 * \left\langle 1 - 0.3\right\rangle\right) + \left(400397 - 181295\right)$$
$$= 879119$$

4.2   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:

$$Capital = (5972352 + 181295) + (3549259 + 650789)$$
$$= 10\,353\,695$$

4.3   Cost of equity capital

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:

$$EVA = (rate\,of\;return - \cos t\,of\;capital)*capital$$

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:

$$Rj = Rf + \boldsymbol{b}(Rm - Rf)$$

where:

$$Rj = Cost\,of\;equity\,capital$$
$$Rf = Risk - free\,rate$$
$$\boldsymbol{b} = Beta$$
$$Rm = Average\,market\;return$$

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).

The cost of equity capital for the Aan De Doorns Winery for 2001 is calculated as follows:

$$Rj = 10.78\% + 0.83(16.78 - 10.78)$$
$$= 15.75\%$$

4.3.1 Risk-free rate

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%

4.3.2 Beta

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 and 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

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

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

where:

$$id = after\ tax\ \cos t\ of\ debt$$

4.5   WACC

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

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

where:

E   =   adjusted common equity

A   =   assets

D =   debt

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

$$WACC = \left(15.75\% * \frac{6153647}{10353695}\right) + \left(\langle 10.78 + 2 \rangle \langle 1 - 0.3 \rangle * \frac{4200048}{10353695}\right)$$
$$= 12.99\%$$

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:

$$EVA = \left(\frac{879119}{10353695} - \frac{12.99\%}{100}\right) * 10353695]$$
$$= (465387)$$

5.   RESULTS AND INTERPRETATION

Four co-operatives were randomly selected to discuss the EVA-results in detail. The EVA results for seven of the 65 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	Capt	Return	WACC	Spread	EVA
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)
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)

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 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.

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

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

Wine		1998	1999	2000	2001
EVA	Total	(6,623,035)	(44,024,292)	(19,892,992)	(15,657,220)
	Average	(200,698)	(1,222,897)	(552,583)	(434,923)
NOPAT	Total	43,075,963	21,362,911	34,820,170	28,248,962
	Average	1,305,332	593,414	967,227	784,693
Capital	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	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	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)
Timber		**1998**	**1999**	**2000**	**2001**
EVA	Total	9,523,490	57,021,351	42,660,219	(12,093,800)
	Average	3,174,497	14,255,338	10,665,055	(3,023,450)

NOPAT	Total	47,461,548	95,031,868	82,543,152	21,004,422
	Average	15,820,516	23,757,967	20,635,788	5,251,105
Capital	Total	220,260,446	230,761,479	244,434,607	271,522,625
	Average	73,420,149	57,690,370	61,108,652	67,880,656
Equity	Total	130,187,586	148,600,077	182,118,556	213,424,266
	Average	43,395,862	37,150,019	45,529,639	53,356,067
Debt	Total	90,072,860	82,161,402	62,316,051	58,098,359
	Average	30,024,287	20,540,351	15,579,013	14,524,590
Return	Average	19.15	29.34	23	6.21
WACC	Average	15.72	16.72	17	12
Spread	Average	3.43	12.62	6.45	(5.88)
Tobacco		**1998**	**1999**	**2000**	**2001**
EVA	Total	(2,100,590)	(1,698,025)	(915,146)	(4,101,536)
	Average	(700,197)	(566,008)	(305,049)	(1,367,179)
NOPAT	Total	1,757,311	1,381,135	1,964,814	(842,061)
	Average	585,770	460,378	654,938	(280,687)
Capital	Total	24,903,330	17,546,523	17,451,706	26,412,005
	Average	8,301,110	5,848,841	5,817,235	8,804,002
Equity	Total	12,593,132	13,768,257	13,427,322	13,194,106
	Average	4,197,711	4,589,419	4,475,774	4,398,035
Debt	Total	12,310,198	3,778,266	4,024,384	13,217,899
	Average	4,103,399	1,259,422	1,341,461	4,405,966
Return	Average	5.67	3.94	7.02	(1.35)
WACC	Average	16.52	18.41	17.41	14.13
Spread	Average	(10.84)	(14.47)	(10.40)	(15.48)
Fruit & vegetable		**1998**	**1999**	**2000**	**2001**
EVA	Total	10,837,108	7,863,176	14,338,984	7,601,775
	Average	1,806,185	1,310,529	2,389,831	1,266,962

NOPAT	Total	20,591,333	20,135,554	25,259,948	17,058,276
	Average	3,431,889	3,355,926	4,209,991	2,843,046
Capital	Total	61,113,609	76,148,273	69,587,567	68,297,891
	Average	10,185,602	12,691,379	11,597,928	11,382,982
Equity	Total	34,964,598	45,499,864	46,179,863	49,228,446
	Average	5,827,433	7,583,311	7,696,644	8,204,741
Debt	Total	26,149,011	30,648,409	23,407,704	19,069,445
	Average	4,358,169	5,108,068	3,901,284	3,178,241
Return	Average	20.72	16.59	25.54	16.57
WACC	Average	16.87	16.83	16.27	14.01
Spread	Average	3.85	(0.24)	9.26	2.56
Meat		**1998**	**1999**	**2000**	**2001**
EVA	Total	(446,174)	(11,668,948)	(23,517,484)	1,565,747
	Average	(89,235)	(2,333,790)	(4,703,497)	313,149
NOPAT	Total	4,453,708	(5,541,435)	(20,353,959)	13,468,437
	Average	890,742	(1,108,287)	(4,070,792)	2,693,687
Capital	Total	32,940,723	42,506,707	24,511,365	138,869,387
	Average	6,588,145	8,501,341	4,902,273	27,773,877
Equity	Total	13,781,530	15,949,454	3,199,791	(7,580,663)
	Average	2,756,306	3,189,891	639,958	(1,516,133)
Debt	Total	19,159,193	26,557,253	21,311,574	146,450,050
	Average	3,831,839	5,311,451	4,262,315	29,290,010
Return	Average	11.09	(2.70)	(43.06)	7.17
WACC	Average	16.85	16.70	14.30	13.07
Spread	Average	(5.77)	(19.40)	(57.35)	(5.91)
Grain & oil		**1998**	**1999**	**2000**	**2001**
EVA	Total	(63,783,116)	(77,572,913)	(79,975,533)	(50,812,365)
	Average	(15,945,779)	(19,393,228)	(19,993,883)	(12,703,091)
NOPAT	Total	53,097,736	51,509,827	42,005,179	43,977,349

	Average	13,274,434	12,877,457	10,501,295	10,994,337
Capital	Total	737,735,714	831,606,865	837,544,435	744,010,309
	Average	184,433,929	207,901,716	209,386,109	186,002,577
Equity	Total	409,791,506	432,308,225	432,036,053	415,360,976
	Average	102,447,877	108,077,056	108,009,013	103,840,244
Debt	Total	327,944,208	399,298,640	405,508,382	328,649,333
	Average	81,986,052	99,824,660	101,377,096	82,162,333
Return	Average	8.10	6.07	5.54	6.15
WACC	Average	15.21	14.90	14.12	11.90
Spread	Average	(7.11)	(8.83)	(8.58)	(5.75)
General		**1998**	**1999**	**2000**	**2001**
EVA	Total	(78,237,831)	(188,271,403)	(83,839,622)	(116,851,561)
	Average	(26,079,277)	(62,757,134)	(27,946,541)	(38,950,520)
NOPAT	Total	14,174,909	(62,208,337)	17,946,611	(26,573,267)
	Average	4,724,970	(20,736,112)	5,982,204	(8,857,756)
Capital	Total	501,278,279	778,298,117	682,507,759	701,970,890
	Average	167,092,760	259,432,706	227,502,586	233,990,297
Equity	Total	462,420,253	473,269,217	383,263,767	404,306,223
	Average	154,140,084	157,756,406	127,754,589	134,768,741
Debt	Total	38,858,026	305,028,900	299,243,992	297,664,667
	Average	12,952,675	101,676,300	99,747,997	99,221,556
Return	Average	9.16	3.21	5.25	4.39
WACC	Average	17.00	15.97	14.72	12.76
Spread	Average	(7.85)	(12.76)	(9.47)	(8.37)
Requisites		**1998**	**1999**	**2000**	**2001**
EVA	Total	2,246,039	(7,660,323)	(3,317,195)	(5,675,624)
	Average	1,123,019	(3,830,161)	(1,658,597)	(2,837,812)
NOPAT	Total	13,103,784	3,550,956	7,289,967	4,525,164
	Average	6,551,892	1,775,478	3,644,984	2,262,582

Capital	Total	77,042,794	75,453,399	77,597,893	88,348,442
	Average	38,521,397	37,726,700	38,798,947	44,174,221
Equity	Total	23,705,922	32,681,394	30,946,016	33,812,479
	Average	11,852,961	16,340,697	15,473,008	16,906,240
Debt	Total	53,336,872	42,772,005	46,651,877	54,535,963
	Average	26,668,436	21,386,003	23,325,939	27,267,982
Return	Average	13.35	5.05	3.41	3.18
WACC	Average	16.04	16.63	15.25	12.18
Spread	Average	(2.69)	(11.58)	(11.84)	(8.99)

The **wine** co-operatives had produced negative EVA values over the 4 year period under review. However, the negative values are declining, especially from 1999 (negative R44m) to 2001 (negative R15m). This shows an improvement in the value creation process due to the fact that every year less value is destroyed. This improvement is more remarkable if it is taken into account that NOPAT had declined over the last 2 years under review. One of the reasons for this improvement is the fact that WACC has declined, but so has the return. If one look at the debt/equity mix, it is clear that debt has increased in value and equity has decreased during 2001, which provides the reason for the lower WACC, as debt is the cheapest capital source.

The **timber** co-operatives had produced a positive EVA from 1998 to 2000, but a negative EVA of R12m during 2001. If one look for possible explanation for this, it can firstly be found in the decline of NOPAT during 2001. This in turn has caused the return to decline and although WACC has declined as well, a negative spread (negative 6%) was the result during 2001. To make

matters worse, capital employed has increase over the 4 year period under review, especially in 2001.

The **tobacco** co-operatives, amongst the smallest of the 8 types of co-operatives in terms of capital and NOPAT, had produced negative EVA values over the 4 year period. These negative values fluctuate widely from negative R1m in 2000 to negative R4m in 2001. During 2001 the first negative NOPAT was reported. This resulted in a negative return for this year. The tobacco co-operatives kept their use of equity constant from 1998 to 2001, but increased their usage of debt (and therefore total capital) dramatically from R4m in 2000 to R13m in 2001. This increase in capital expenditures might explain the decline in NOPAT. If however the capital was wisely invested, an improvement in the NOPAT and EVA should result in subsequent years.

The **fruit & vegetables** co-operatives produced a positive EVA in all of the four years under review and are the only group of co-operatives to do so. The reason for this situation is obvious if one look carefully at the figures presented in table 5. These co-operatives achieved a return which is greater than the cost of capital. In 1999 and in 2001 the return on invested capital was 16% in each year, whilst in 1998 the return was 21% and in 2000 it was 25%. The value creation process was further enhanced with the decline in the cost of capital from 16% in 1998 to 14% in 2001.

The **meat** co-operatives have shown a positive EVA for the first time during 2001. This is in line with the positive NOPAT of R13m for 2001. What is also

very good about this situation is the fact that capital employed has increased nearly 5 times to R138m in 2001, solely to the increased usage of debt. Although WACC has declined from 17% in 1998 to 13% in 2001, a positive return was also generated during this year. It seems therefore that this industry has got their value creation action right in 2001. The total equity for 2001 is negative. This is due to an accumulated deficit for Stock Owners Co-operative amounting to nearly R37,6 million for 2000.

The **grain & oil** co-operatives produced consistently negative EVAs over the 4 year period under review. However, a positive NOPAT is an indication that the reason for this value destruction situation lies somewhere else. If one look at the capital employed, it is clear that this industry is very capital intensive – anyway much more than the other co-operatives. It is further interesting to note that the ratio between debt an equity remained constant from 1998 to 2001. The reason why these co-operatives destroy value lies in the fact that a to low return is generated on the invested capital. A return of around 6% is achieved during the last 3 years. Although WACC has consistently declined from 15% in 1998 to 12% in 2001, the spread (difference between the return and WACC) still remains negative. If the WACC is regarded as reasonable, the only conclusion that one can draw is that the return is to low – even a relatively big positive NOPAT is to small for the total capital charge that must be accounted for.

A very similar situation is found at the **general** co-operatives. A negative EVA value in each of the 4 years (with a positive NOPAT in 1998 and 2000) is

achieved in a very capital intensive industry. The reason once again lies in the fact that the WACC is consistently higher than the return earned on the capital employed.

The **requisites** co-operatives has created value in only 1998, but has produced negative EVA values since then. A positive NOPAT is achieved in each of the 4 years under review and capital has remained relatively constant but increased in 2001. A big problem for these co-operatives lies in the fact that the return is constantly declining from 1998 to 2001. With this situation, it is virtually impossible to achieve a positive EVA and a value creation situation.

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

6. 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 agricultural co-operatives. After a thorough explanation and calculation of the components of EVA, the EVAs of

a number of individual co-operatives were calculated and analysed. In addition, an analysis of all farming co-operatives, classified by means of their type or activity, was performed in order to provide further insights in to the reasons behind value creation. Important trends were identified, allowing conclusions to be drawn and recommendations to be made.

The value creation process, as explained in the literature review above, simply requires the return on invested capital to be greater than the cost of capital. If an individual co-operative or a type of co-operative do not achieve this, value will be destroyed for the owners.

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 which occurred in the majority of the cases.

It was however the Perdeberg co-operative amongst the individual examples that consistently produced a positive EVA due to the fact than the return was greater than the cost of capital. The same situation was found with the fruit and vegetable co-operatives.

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.

In addition to the above recommendations, one must take into account that the data used for this study depended upon the annual financial statements. In order to analyse and identify the reasons for value creation, further research should include a detailed analysis of those co-operatives that created value. This analysis should include analysing not only the working papers to the financial statements, but an investigation on site of the actual

operating processes and activities of the co-operation concerned.

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 agricultural 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.

Fisher, A. B. 1995. Creating Stockholder Wealth. *Fortune, 132*(12), p. 105-116.

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

Lee, Y. 1995. EVA as a measure of corporate performance. MBS dissertation. Graduate School of Business Administration. University of Witwatersrand. South Africa.

Lehn, K., & Makhija, A. K. 1996. EVA & MVA as Performance Measures and Signals for Strategic Change. *Strategy & Leadership, 24*(3), p. 34-38.

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

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,.

Stern, J. M., Stewart, G. B., & Chew, D. H. 1989. *Corporate restructuring and executive compensation.* Cambridge, MA: Ballinger Publishing Company.

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. 1994. EVA: Fact and Fantasy. *Journal of Applied Corporate*

Finance, 7(2), p. 71-84.

Tully, S. 1993. The Real Key to Creating Wealth. *Fortune,* September 20, p.
38-40, 44, 45, 48, 50.

Tully, S. 1998. America's Greatest Wealth Creators. *Fortune,November 9.* p.
193-204.

Turvey, C.G., Lake, L., Van Duren, E. & Sparling, D. 2000. The relationship
between Economic Value Added and the Stock Market performance of
agribusiness firms. *Agricusiness.* Vol. 16, No. 4, p. 399 – 416.