

Investment Basics XLVII. Cash value-added versus value-added: A note

1. INTRODUCTION

The publication of The Corporate Report (1975) in the United Kingdom advocated the inclusion of a value-added statement (VAS) in the annual financial report, although financial reporting in continental Europe had indicated a preference for the VAS for many years before 1970 (Rahman, 1990:89). The VAS shows how the benefits of the efforts of an enterprise are shared between employees, providers of capital, the government and an amount retained in the group to maintain and develop operations. Value-added (VA) by a company over a year can be measured by the difference between the market value of its production sold during the year and the cost of goods and services acquired from other producers. This measure excludes the contribution that other producers make to the total value of the company's production. By adding the value-added measures of all the companies and government, one arrives at a total for the whole economy (the Gross Domestic Product or GDP).

The first VAS presented by listed industrial companies in South Africa was published in 1977 by Romatex, Stewarts and Lloyds and Anglo Alpha. In 1991 The South African Breweries started publishing a cash value-added statement (CVAS), duly followed by 20 other listed companies (see Annexure 1). Whereas a VAS is based on the income statement, the CVAS is based on the cash flow statement.

The purpose of this note is to explain the composition and calculation of a CVAS and to contrast that to the calculation and composition of a VAS in respect of the 21 companies that did publish a CVAS. The note focuses on the differences in the value-added calculated under a VAS and a CVAS. One of the recommendations of The Corporate Report (1975:48) was that a VAS be included in the set of financial statements that companies had to produce each year.

No accounting standards on the preparation of a VAS or a CVAS exist in South Africa. It was therefore decided to standardise all the published cash value-added statements (PCVAS) into a standardised cash value-added statement (SCVAS) by using the relevant audited amounts for the various components in the cash flow statement. Likewise, a standardised value-added statement (SVAS) was prepared by using the relevant

audited amounts for the various components in the income statement.

Net interest (i.e. interest paid less interest received) rather than gross interest paid was used. Interest received from third parties forms part of the latter's own value-added data and should be excluded from the value-added of the recipient company.

Minority interest caused a problem. Minority interest can either form part of the distribution of VA (broader definition) or it can be excluded from the distribution of VA and therefore added to cost of materials and services (narrower definition). Both arguments have merits. The broader definition of VA was used in this note as it represents the VA by the group in total.

A simple example is used to explain the compositions of a VAS and a CVAS as well as the reconciliation between them. Consider the income statement and balance sheets in Tables 1 and 2. From Tables 1 and 2 a cash flow statement (Table 3) was prepared. Finally a VAS (Table 4) and a CVAS (Table 5) were prepared based upon the income statement and cash flow statement respectively.

Table 1: Income statement for the year ending 30 June 19.2

Income statement for the year ending 30 June 19.2	
Revenue (sales)	200
Cost of sales	80
Gross profit	120
Interest received	11
	131
Expenses:	83
Depreciation	18
Loss on sale of non-current assets	17
Expenses	5
Interest paid	30
Staff costs	13
Income before taxation	48
Taxation	12
Income after taxation	36
	15
Minority interest in income	7
Ordinary dividends	8
Retention of income	R21

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Table 2: Balance sheets at 30 June

	19.2	19.1
Non-current assets	223	200
Inventory	38	28
Receivables	60	49
Cash	23	3
	<u>R344</u>	<u>R280</u>
Ordinary share capital	100	100
Retained income	59	38
Minority interest	24	20
Long-term loans	111	80
Payables	40	35
Taxation (current liabilities)	4	3
Dividends (current liabilities)	6	4
	<u>R344</u>	<u>R280</u>

Table 3: Cash flow statement (CFS) for the year ending 30 June 19.2

OPERATING ACTIVITIES	
Earnings before interest and taxation	67
Non-cash items:	35
Depreciation	18
Loss on sale of non-current assets	17
Interest received	11
	<u>113</u>
Less increases in working capital:	-16
Inventory	-10
Receivables	-11
Payables	5
	<u>97</u>
Interest paid	-30
Taxation paid (-12+1)	-11
	<u>56</u>
Ordinary dividends paid (-8+2)	-6
Minority dividend paid	-3
Cash from operating activities (CFO)	<u>47</u>
INVESTING ACTIVITIES:	
Non-current assets acquired	-58
	<u>-11</u>
FINANCING ACTIVITIES:	
Long-term loan acquired	31
Increase in cash	<u>R20</u>

Table 4: Value added statement (VAS) for the year ending 30 June 19.2

Revenues	200
Less: Cost of materials and services*	-102
Value-added created	<u>R98</u>
Value-added distributed as follows:	
Staff costs	13
Providers of capital:	34
Interest (net)	19
Dividends	8
Minority interest	7
Government	12
Re-invested in the company to maintain and develop operations:	39
Depreciation	18
Retained profit	21
	<u>R98</u>
*Cost of materials and services:	
Cost of sales	80
Expenses	5
Loss on sale of non-current assets	17

Table 5: Cash value added statement (CVAS) for the year ending 30 June 19.2

Revenues	200
Less: Cost of materials and services (See Table 4)	-102
Accrued value-added	98
Adjusted for non-cash movements included above:	
Changes in working capital:	-16
Inventories	-10
Receivables	-11
Payables	5
Other non-cash items included:	
Loss on sale of non-current assets	17
Cash value-added created	<u>R99</u>
Cash value-added distributed:	
Staff costs	13
Providers of capital:	28
Interest (net)	19
Dividends: ordinary	6
minority	3
Government	11
Re-invested in the company to maintain and develop operations:	
Cash from operating activities (CFO)	47
	<u>R99</u>

The income statement and the VAS are products of accrual accounting, whereas the cash flow statement and the CVAS are based on realised cash flows. Realised cash flows suffer from timing and matching problems and accrual accounting was developed to smooth the realised cash flows in order to provide a better measure of firm performance. Accrual accounting is, however, more open to subjectivity and distortion because of differing accounting practices (Dechow, 1994). It is not surprising that the different views and preferences on accrual and cash flow accounting found their way to the VAS and CVAS.

A number of articles on the VAS have been published in South Africa. However, only one reference to a CVAS was found in South Africa. Stainbank (1996) discussed the 1994 CVAS of Associated Furniture Companies. Stainbank did not reconcile a CVAS with a VAS.

The contention of the CVAS is to negate any accrual accounting and focus on the VA by the group as measured by realised cash flows. Cash value-added (CVA) can be calculated using the same principles as the indirect method for calculating cash flows from operations. Starting with the income statement amounts and calculating VA, the accrual-based VA is adjusted for any non-cash items included in VA, as well as the changes in working capital. The result is the realised cash value-added (Table 5).

It is interesting to note that depreciation (a non-cash item) does not form part of the difference between VAS and CVAS. As depreciation does not form part of

cost of materials and services, it is not specifically used in calculating the VA and it is therefore not necessary to add it back as a non-cash item in calculating CVAS. The depreciation is absorbed in the amount retained in the company to maintain operations for both the VAS and the CVAS.

The differences between the distributions of the VA and the CVA are also based in the fact that CVAS focuses on explaining distributions taking place in cash and not those that accrued during the period. In this example the differences are:

- An ordinary dividend of R8 was declared during the year, however only R6 of the declared dividends as well as the amounts outstanding in the beginning of the year have been paid in cash;
- The minority interest in income that accrued was R7, while only R3 was paid in cash as dividends;
- R12 taxation was provided during the year, however only R11 was paid in cash; and
- Another major difference between a VAS and a CVAS is the item retention. In a VAS, retention represents the retention of profit after dividends, whereas the equivalent item in the CVAS is cash from operating activities after dividends (CFO).

2. METHODOLOGY

Due to the fact that no formal Accounting Standards of VAS have been published in South Africa, wide discrepancies occurred in the publication of a VAS between different companies and over time. All PCVAS were therefore standardised using amounts appearing in the audited income and cash flow statements. The only item appearing in a PCVAS that was accepted at face value was salaries and wages. Up to 1999, it was not necessary in South Africa for companies to disclose salaries and wages in a separate note.

If a company first published a CVAS in, say, 1996, but published comparative amounts for 1995 in 1996, then such a company's 1995 results were also calculated and included in the survey.

Differences between PCVAS and SCVAS (referred to as classification differences) are the direct result of the components of a CVAS chosen by the authors of this note. It was decided to include leasing as part of bought-in materials and services and not in the distribution of cash value-added. Only income taxation and STC from the different categories of taxation were included as part of the distribution of CVA. As a result of the above definition of taxation, the following items were regarded as classification differences as they were included in bought-in goods and services: excise duties, regional council levies, rates and taxes paid to

governments, grants and subsidies. General sales taxation (GST) and value-added taxation (VAT) were also classified as classification differences.

Differences between a SVAS (standardised value-added statement) and a SCVAS (referred to in this note as conceptual differences) can be accounted for by:

- (a) Non-cash items (excluding depreciation)
- (b) Movements in working capital
- (c) Differences between an income statement and a cash flow statement relative to:
 - extraordinary items
 - exceptional items
 - abnormal items
 - income from associated companies
 - a few sundry items.

3. RESULTS

The results of the statistical procedures are presented in this section. In this section and Annexures 2 to 4, published cash value-added amounts will be referred to as PCVA, standardised cash value-added as SCVA and standardised value-added as SVA.

The reconciliation of the three methods can be found in Annexure 2 in which the Rand amounts of all the items in the sample were pooled. All the items were scaled by revenues. The major differences, i.e. differences due to classifications by the authors (referred to as classification differences) between a PCVA and a SCVA are due to leasing 0,49%, excise duties 3,52% and VAT 0,29%. These sum to 4,30% out of a total of 4,59% classification differences.

The difference between value-added according to a SCVA and a SVA is 1,67%. The major difference (referred to as conceptual differences due to conceptual differences between an income statement and a cash flow statement) is due to changes in working capital $1,05\% + 1,38\% - 0,96\% = 1,47\%$.

To facilitate comparison between companies of different sizes, it was necessary to scale PCVA, SCVA and SVA by either revenues, total assets, etc. An income statement item, revenues, was preferred.

In Table 6 descriptive statistics are presented for SCVA and SVA, all relative to revenues (see Table 6). Whereas Annexure 2 is based on weighted averages (i.e. larger amounts carrying a larger weight), Table 6 is based on simple averages (i.e. averages of percentages).

Table 6: Descriptive statistics of published cash value-added (PCVA), standardised cash value-added (SCVA) and standardised value-added (SVA) relative to revenues (percentages)

	PCVA Revenues	SCVA Revenues	SVA Revenues
Average	37,94	34,29	36,90
Median	36,48	32,50	33,58
Standard deviation	10,19	9,53	11,52
Kurtosis	1,83	0,41	5,16
Skewness	1,19	0,82	1,91
Minimum	21,57	17,21	16,34
Maximum	75,08	61,10	89,60
Count	128	128	128

It is evident that the mean is higher than the median in the case of all three variables, indicating positive skewness.

The absolute level for SVAx100/revenues is based upon aspects like vertical integration as well as the credit policy relative to receivables and payables. A vertical integration strategy is relatively independent of suppliers or owning its marketing outlets. A manufacturer will therefore be classified as more vertically integrated *vis-à-vis* a merchandiser (all other things being equal).

Table 7: Descriptive statistics of differences between published cash value-added (PCVA), standardised cash value-added (SCVA) and standardised value-added (SVA) relative to revenues, published cash value-added and standardised value-added (percentages)

	$\frac{[PCVA - SCVA]}{Revenues}$	$\frac{[SVA - SCVA]}{Revenues}$	$\frac{[PCVA - SCVA]}{PCVA}$	$\frac{[SVA - SCVA]}{SVA}$
Mean	3,62	2,59	8,79	5,69
Median	1,11	1,73	2,71	5,79
Standard deviation	5,69	6,54	13,46	14,65
Kurtosis	2,67	14,77	2,29	8,55
Skewness	1,78	2,84	1,48	-1,31
Minimum	-5,16	-13,50	-18,90	-76,38
Maximum	22,07	39,05	55,17	48,94
Count	128	128	128	128

5. CONCLUSION

It would appear that the difference between $\frac{SCVA}{Revenues}$ and $\frac{SVA}{Revenues}$ is not substantial. The differences were 1,67% on average (Annexure 2) and

The means and medians SVAx100/revenues in Table 6 are somewhat higher than the corresponding ratios obtained by Hamman and Burger (1999) based upon 1 049 observations for the period 1991-1997. They documented a mean of 32,98% and a median of 31,61%.

However, based upon the SCVA sample, $\frac{PCVA}{Revenues}$ exceeded $\frac{SCVA}{Revenues}$ by 2,65% (37,94 – 34,29) whilst $\frac{SVA}{Revenues}$ exceeded $\frac{SCVA}{Revenues}$ by 2,61% (36,90 – 34,29).

Table 7 concentrates on differences between PCVA, SCVA and SVA. Ratios were calculated per company per year and descriptive statistics were conducted on 128 observations. Different classifications by the authors resulted in a mean difference of 3,62% between PCVA and SCVA. Conceptual differences between SVA and SCVA indicated that SCVA/revenues would be 2,59% lower than SVA/revenues or 5,69% lower if the differences are scaled by SVA. The standard deviations throughout Table 7 are very high.

2,59% (Table 7) with $\frac{SVA}{Revenues}$ in each case being the larger of the two measurements. The difference caused by changes in working capital only amounted to 1,47% (1,05 + 1,38 – 0,96) according to Annexure 2. It would

appear that increases in inventory and receivables were financed to some extent by payables.

Because South African Breweries stopped publication of a CVAS and a number of the subsidiaries of South African Breweries either delisted or were taken over by other companies, the number of CVAS companies will probably be less than ten in 2001/2.

6. REFERENCES

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ANNEXURE 1: LIST OF CASH VALUE-ADDED STATEMENTS PUBLISHED BY SOUTH AFRICAN LISTED INDUSTRIAL COMPANIES

	No.	1 st Publ.		Period		
1	Amalgamated Beverage Ind	10	1992	1991-2000		
2.	Associated Furniture Companies	7	1993	1992-1998	Renamed Cornick Group	3-8-98
3.	Bonnita	3	1995	1995-1997	Delisted	2-10-98
4.	CNA Gailo	5	1994	1993-1997	Renamed Millennium Enterpr	3-11-97
5.	Connection Group	1	1998	1998	Stopped publishing	
6.	Conshu Holdings	6	1994	1993-1998	Delisted	19-5-99
7.	Da Gama Textile Company	8	1992	1991-1998	Delisted	8-1-99
8.	Distell Group	9	1993	1992-2000		
9.	Edgars Consolidated Stores	11	1991	1990-2000		
10.	Fasic (was Lion Match)	10	1992	1991-2000	Delisted	5-1-01
11.	Independent Newspaper Holdings	4	1995	1994-1997	Delisted	9-6-99
12.	Iskor	7	1995	1994-2000		
13.	Johnnic Comm (was Omnia Media)	5	1997	1996-2000		
14.	Kersaf Investments	4	1998	1997-2000		
15.	Kohler	2	1997	1996-1997	Delisted	7-8-98
16.	M-Cell	2	2000	1999-2000		
17.	Plate Glass & Shatterprufe Ind	7	1993	1993-1999	Delisted	2-11-99
18.	Relyant Retail (was Amrel)	10	1992	1991-2000		
19.	Seardel Inv Corp	7	1995	1994-2000		
20.	South African Breweries	9	1991	1990-1998	Stopped publishing	
21.	Sweets from Heaven	1	1998	1998	Stopped publishing	

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ANNEXURE 2: RECONCILIATION BETWEEN THE AGGREGATE PCVA, SCVA AND SVA

	R'000	Relative to Revenues %
Revenues	519 470 840	
PCVA	189 490 913	36,48
Classification differences:		
Dividends	112 622	0,02
Interest (net)	-924 491	-0,18
Leasing	-2 531 900	-0,49
Taxation	30 391	0,01
Excise duties	-18 261 813	-3,52
VAT	-1 530 667	-0,29
Other taxation errors	58 447	0,01
Retention	-566 764	-0,11
Others	-210 232	-0,04
Total classification differences	-23 824 407	-4,59
SCVA	165 666 506	31,89
Conceptual differences:		
Non-cash items	-514 640	-0,10
Working capital changes:		
Inventory	5 444 992	1,05
Receivables	7 152 002	1,38
Payables	-4 985 217	-0,96
Others	22 169	0,00
Extraordinary items	74 004	0,01
Exceptional items	-571 182	-0,11
Abnormal items	51 600	0,01
Retained income from associates	2 246 369	0,44
Others	-264 428	-0,05
Total conceptual differences	8 655 669	1,67
SVA	174 322 175	33,56