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The value-added statement: An appeal for standardisation

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ABSTRACT

Owing to the absence of accounting standards for the preparation of a value-added statement (VAS), a large variety of methods are used in financial statements. In this study the published value-added statements (PVAS) of companies listed on the JSE Securities Exchange during the period 1976-2005 have been standardised by the Graduate School of Business of the University of Stellenbosch (USB) in order to quantify the differences between the standardised VAS (SVAS) and the PVAS.

These differences consist of the inclusion of items that do not belong in the VAS, items that are erroneously allocated among the distribution to stakeholders, and interpretation differences in whether a certain item forms part of the calculation of value added or the distribution thereof. The greatest difference quantified was the overstatement of the distribution to government that amounted to 54.4% of total differences.

For users, including government, to properly calculate and compare the value added of different business entities, a standard for the preparation and presentation of VAS ought to be published. In the South African context the need of a precise measurement of each business entity's contribution to the growth of the national economy is relevant, and this need should also be addressed.

INTRODUCTION

In 1996 the government unveiled a new macro-economic plan, namely the Growth Employment and Redistribution (GEAR) programme, drawn up by 15 economists. The goal of GEAR was to transform the South African economy into a sustainable, fast-growing, internationally competitive,

labour-intensive and export-focused economy. For this ambition to succeed, an economic growth rate in real terms of 6% per annum would be needed (Streak, 2004). GEAR promised to reduce poverty and inequality via a surge in economic growth, and thus employment creation was to be the mechanism linking growth to the reduction of poverty and inequality or linking growth to wealth redistribution.

ASGISA (Accelerated and Shared Growth Initiative for South Africa) is the government's latest attempt to overcome the country's poverty and unemployment challenges, after having realised that the stabilisation of the macro-economy is not sufficient in itself. ASGISA (What is Asgisa?, 2006) is aimed at elevating South Africa's economic growth rate and sharing the benefits of growth (Accelerated and shared growth initiative for South Africa: Asgisa in a nutshell, 2006).

The aim is to achieve a sustainable annual rate of real Gross Domestic Product (GDP) growth of 4.5% over the period 2004-2009, and at least 6% over the period 2010-2014. By 2014 poverty and unemployment have to be halved. The plan of action involves an aggressive, fixed-investment programme in public infrastructure (e.g. electricity generation, roads, schools, hospitals and clinics) as this investment will improve the economy's growth potential. The overall objective remains that of creating an environment of private-sector growth and employment creation. The government believes that, with ASGISA, it has laid the foundation for a national effort to achieve faster and shared economic growth which will radically reduce inequality and virtually eliminate poverty.

On a macro-economic level, value added (VA) can be described as the measuring of the economic performance of an economic entity, and as being synonymous with wealth creation (Haller and Stolowy, 1998: 24). The sum of all the VA of all business entities in a country is equal to the GDP of the country and thus represents an entity's

contribution to the country's national prosperity for a given period (Schuitema, 2001: 8). As VA represents the wealth a business entity creates by its own and its employees' efforts, it is important at the micro-economic level to measure the contribution of an entity (or even a division of an entity) to the GDP (and hence to the growth in the GDP) and the resulting possible minimising of the South African unemployment problem.

THE RESEARCH PROBLEM

Following the publication of The Corporate Report in The United Kingdom (Accounting Standards Steering Committee, 1975), South African subsidiaries of UK companies started publishing a VAS in 1977, with comparatives for 1976. Although South African companies did not disclose reasons for publishing a VAS (Du Plessis, 1987), a reason for publishing a VAS might be to improve financial reporting in an accounting sense. However, the importance of VA (and therefore VAS) for South Africa, is much wider than an accounting concept. A business entity can only sustain its payments of wages, taxes, interest, and dividends by creating wealth, and "the levels of these payments can increase by creating additional wealth over what the firm has achieved previously" (Meek and Gray, 1988). To combat unemployment in South Africa, a higher growth rate of the GDP is required, and VA can be used to gauge economic growth at a company level.

From the South African perspective, all business entities should be encouraged to obtain as high as possible a contribution to the GDP (and therefore as high as possible VA). All business entities should therefore strive to increase their VA to be in line with the required GDP growth rate for South Africa. It is of the utmost importance that business entities should be able to calculate their own VA. However, the publication of a VAS is not compulsory in South Africa, and therefore they are only published on a voluntary basis. Furthermore, no South African accounting standards exist on how to prepare and present a VAS. This caveat has resulted in a wide variety of methods and items (components) that have appeared in South African financial statements since 1977.

Three types of variations are found in published Value Added Statements (PVAS), namely:

Type A: A classification difference between the distributions of the wealth created, which will only lead to a misstatement of the proportion of wealth created and distributed to those specific stakeholders, but the value created in total will still be accurate.

Type B: An interpretation difference of whether an item should be included in the calculation of the wealth created, or whether it should be shown as

part of the distribution of the wealth created. Although there may be merit in each of the alternative classifications, one method should be decided upon as the better alternative, because the inclusion, or not, of such an amount in the top half of the VAS will lead to a different amount for the value created by the company, and as such, VA is open to manipulation.

Type C: The inclusion of items in the VAS that have nothing to do with the business entity and its contribution to the national economy. An example is when the entity only serves as conduit for payments between two other parties, but includes these amounts in its VAS, which leads to a totally incorrect calculation of VA and/or the distribution thereof.

In this study the methods and components used by listed South African companies that published a VAS are recalculated in a standardised VAS (hereafter referred to as SVAS). The purpose is to try to quantify the need for the standardisation of the preparation and presentation of the VAS. This is done by quantifying the difference between the PVAS and the SVAS. This aggregate difference is then analysed in order to identify the underlying reasons for the difference.

In a follow-up study, the concept of VA will be addressed from a managerial perspective. To solve South Africa's unemployment problems, the government has given very clear objectives for the required GDP growth rate for the period up to 2014. VA as per a VAS (on a micro level) and GDP (on a macro level) are the same concepts. Managers must therefore be in a position not only to establish (calculate) the VA of their own entity, division, etc., but also be able to reward above-standard performances and even penalise below-standard performances. In both cases the reward and penalty will improve productivity and contribute to the GDP. Amongst other definitions, "productivity" could be defined as VA/number of employees (The Value Added Scoreboard, 2006).

VALUE ADDED AND THE VALUE-ADDED STATEMENT IN THE LITERATURE

When considering the importance of VA, care must be taken not to confuse the VA concept of this study with economic value added (EVA), market value added (MVA) and value-based management. EVA is calculated by taking a business entity's after-tax operating profit and subtracting the weighted average annual cost of capital (WACC) of all the capital the entity uses (Ehrhardt and Brigham, 2006: 630). MVA is the difference between the market values of equity shares, preference shares and debt, less the book value of the three items (Ehrhardt and Brigham, 2006: 632). Value-based management is described by Ehrhardt and Brigham (2006: 638) as managing a firm with

shareholder value in mind. Usually it involves the use of a corporate valuation model. The latter concept is equal to the present value of expected future free cash flows, discounted by WACC (Ehrhardt and Brigham, 2006: 415).

The concept of VA has been used for decades in economics, and as such the concept of VA will appear in all basic economic text books. However, the VA concept was never prominent in accounting circles. The publication of The Corporate Report in 1975 introduced the VA concept to the accounting fraternity in the United Kingdom and was duly followed by South Africa.

The Corporate Report that was published by the Accounting Standards Steering Committee of the United Kingdom recommended the use of a VAS. It provided a minimum list of eight items (components) needed for a statement to be regarded as a VAS. These eight items (components) are: sales, bought-in materials and services, salaries and wages (including benefits), dividends, interest, taxation, depreciation of non-current assets, and retention of profits. These items show that the VAS can be computed from the income statement for a specific period:

$$VA = S - B \quad (1)$$

$$VA = W + T + I + D + Dep + R \quad (2)$$

$$VA = W + EBITDA \quad (3)$$

where:

VA	=	Value added
S	=	Sales
B	=	Bought-in materials and services
W	=	Salaries and wages
T	=	Taxation
I	=	Interest expense less interest income
D	=	Dividends paid
Dep	=	Depreciation of non-current assets
R	=	Retained earnings
EBITDA	=	Earnings before interest, before taxation, before depreciation and amortisation

Equation 1 represents the value created by an entity, whereas Equation 2 represents the distribution thereof among the different stakeholders. VA therefore not only illustrates the contribution a business entity makes to the national economy, but also shows the portion distributed to each business stakeholder (Van Aswegen, Steyn and Hamman, 2005: 139). Equation 3 represents a simplified accounting version of Equation 2.

Unfortunately, The Corporate Report did not spell out in detail the specific definitions of the above components. The components of a VAS are therefore open for interpretation differences. The different classifications have been discussed in previous studies (Gourley and Rossler, 1983), and therefore only a synopsis of the components of distribution is presented here.

Employees' wages and benefits

Employees' wages and benefits are to be shown before the deduction of employees' tax (Morley, 1978: 69), as that represents the gross cost of employment. Another viewpoint is to deduct employees' tax (PAYE and SITE) and only show the net cost of employment as a distribution to employees, because that is the amount that they will receive in their pocket. In this case the PAYE and SITE are included in the distribution to the government. These alternatives represent a Type A variation.

Although it is quite clear that direct benefits must be included with salaries and wages, indirect benefits, for instance a gymnasium for the use of all employees, constitutes another variation (Van Staden, 1999). The cost of these indirect benefits will either be included with salaries and wages or with bought-in materials and services – a Type B variation.

Taxation payable

Three variations exist for the distribution to government. The Corporate Report specified that corporate taxation on profits be shown under this heading. Morley (1978: 84) and Rossler and Gourley (1983: 225) felt that deferred taxation should not be reflected under the heading “taxation”, but rather under the heading “retention of profits”. The reasoning was that this amount was calculated by means of the accrual principle and was no real distribution to government (Type A variation).

Some business entities tend to “load” the distribution to the government by including every payment to government. PAYE, excise duties and municipal levies are examples of taxes other than corporate taxes (normal tax, deferred tax and secondary tax on companies). Although The Corporate Report included only corporate taxation under the heading of taxation payable, Rossler and Gourley (1983: 224-225) feel that this approach will not fully reflect all the benefits which Government receives from undertakings. According to Morley (1978), excise duties should not form part of the distribution to government, but should be included with bought-in materials and services - this is a Type B variation.

Taxes that are not an expense for all entities which create value, but where the entity serves as a conduit between the government and a third party, for example Value-added tax (VAT), should not be included in the distribution to the government (Smiddy, 1980). The only way for the VAS to balance will be by including the VAT in the sales as well as in bought-in materials and services (Van Staden, 1999). To include VAT as a part of VAS will be a total misrepresentation of VA, as VAT never was, nor will be, for the account of the entity. The inclusion of VAT in a VAS represents the most serious variation, the Type C variation.

Interestingly enough, the publication of a statement of money exchanges with government was also mentioned by The Corporate Report. Such statements should include the following information in addition to the VAS:

- PAYE collected and paid over
- VAT collected and paid over
- Rates and similar levies paid over to local authorities
- Other sums paid to government departments and agencies, and
- Any receipts from government, including grants and subsidies.

Interest paid

Items such as interest received and the business entity's share of an associate's earnings provide a problem as they do not arise from the entity's normal production activities, which are usually used in the calculation of the value created from an economic prospective. However, these amounts do affect the company's wealth (Meek and Gray, 1988). Rutherford (1982) recommends that the value created by the entity's own economic activities should be calculated and disclosed separately, with value arising from other sources, for example interest received being added to calculate the distributable value created. Another alternative is to show net interest (interest paid less interest received) as a distribution. This alternate treatment results in a Type B variation.

Dividends paid

No problems were identified with dividends paid, except perhaps the treatment of dividends to minority interests. The Corporate Report did not explain how minority interests should be accommodated in the VAS. Morley (1978) is of the opinion that it should be included as a separate item(s) in the distribution. Another viewpoint is that it can be included with the distribution to shareholders, while others believe that the shareholders are not yet entitled to that part of profits, and that the minority interest should be included with retained earnings (Type A variation).

Depreciation

According to Boshoff and Vorster (1996: 5) there is more than one method of handling depreciation in the VAS. The first possibility is to group depreciation with bought-in materials and services. This is regarded as the so-called "net VA method" (Renshall, Allan and Nicholson, 1979; Morley, 1978). The second method is to show depreciation as a separate distribution (or included in retained earnings) in the VAS (the so-called "gross method"). This method was recommended by The Corporate Report.

Amounts retained for investment (including depreciation)

The problems arising under this heading are largely a function of whether items like depreciation, minority interest in earnings of subsidiaries and extraordinary items should be reflected as part of bought-in materials and services (Equation 1) or whether such items must form part of Equation 2. The amount shown for amounts retained for investment (and therefore part of Equation 2) will therefore be a function (amongst others) of how the above three items (amongst others) will be reflected.

Extraordinary items

Again The Corporate Report gave no indication of the treatment of extraordinary items. Boshoff and Vorster (1996: 5) suggest that extraordinary items should be disclosed as a separate section in the VAS. Stainbank (1997) in her survey finds that the preferred method in South Africa was to include extraordinary items with bought-in costs (B). This alternate treatment results in a Type B variation. Morley (1978) suggests that one possibility is to ignore such extraordinary items. Since the use of extraordinary items has been prohibited by accounting standard setters, this problem will no longer be relevant in current VAS.

RESEARCH METHOD

The first South African listed industrial companies published a VAS in 1977 (and also gave comparatives for 1976). It was soon established that, owing to the absence of accounting standards on the presentation of a VAS, a large variety of methods occurred in the presentation of a VAS. A database was thus established by the Graduate School of Business of the University of Stellenbosch (USB) to provide for more than one method to calculate VA, by standardising all the components of a VAS.

The standardisation of a VAS implied that all published components of a VAS were checked against the income statements. If required, amounts were altered, and thus the published VA totals (PVAS) were changed. The only component in the VAS that was accepted at face value was salaries and wages, because such amounts have not appeared in South African income statements or notes to the income statement for the largest part of the study. The absence of the disclosure of salaries and wages for the largest part of the period, resulted in a restriction of the population to companies that actually published a VAS (the VAS could not be calculated by the authors when no VAS was published), in order to enable the research to cover the period 1976-2005.

Standardisation by the USB started in 1994. Numerous letters were sent by the USB to companies making mistakes in the preparation of their VAS, and also to those companies using different methods from those proposed by the USB. However, the response rate was poor. This poor response is unfortunate because the USB, to date, is the only institution in South Africa that has tried to establish a standardised VAS databank.

The following guidelines were used by the authors in compiling the population of companies for this study:

- The company must have published a VAS in the period 1976-2005.
- All delisted companies were included and the results of this study will therefore not contain a survivor bias.
- If a company first published a VAS in 1994, but published comparative amounts for 1993 in 1994, then such company's 1993 data were also included.
- Companies publishing a cash value-added statement (CVAS) instead of a VAS were excluded because VAS and CVAS were based on different concepts.
- No financial and mining companies were included.

The differences between a PVAS and a SVAS (the so-called "percentage mistake") for the period 1976-2005 are examined and will be expressed as a percentage of both sales and PVAS. The results will be shown in two separate tables for the two different denominators.

In this study the following definitions are used for the standardised VAS:

- $VA = \text{sales} - \text{bought-in materials and services}$.
- $\text{Distribution of } VA = \text{salaries and wages} + \text{interest expense} - \text{interest received (excluding interest received on receivables)} + \text{taxation} + \text{dividends paid (excluding dividends out of share premium)} + \text{depreciation (including amortisation)} + \text{minority interest in earnings} + \text{retained earnings}$.

The standardisation encompassed the following for the various components:

- *Sales* excluded VAT/General Sales Tax (GST) (Stainbank, 1997; Du Plessis and Joubert, 1991) as well as excise duties.
- The amounts for *salaries and wages* in the VAS were accepted at face value. The only change effected was when PAYE payments were reflected as taxation in the VAS. In such a case, taxation was reduced and salaries and wages were increased to reflect gross salaries and wages.
- Ordinary dividends and preference dividends paid were included under *dividends payable*. Dividends

paid out of share premium were excluded under this heading and included with retention of profits (i.e. as if the dividend out of share premium was not paid), because these dividends were not a distribution of the wealth that was created during the year.

- Net interest i.e interest paid less interest received, was used as the distribution to external providers of capital. However, interest charged to customers (if disclosed) was not regarded as interest paid to outsiders.
- Only company taxation (including deferred taxation and STC) was used under the heading *taxation payable*. Excise duties, VAT/GST, rates and taxes to local governments, import duties, subsidies etc. were excluded from the published taxation-payable amounts in the VAS (Stainbank, 1997) and reflected as taxation errors as part of the difference between PVAS – SVAS.
- In the SVAS it was decided to treat *retention of profits* after including extraordinary items. Extraordinary items were therefore not classified as bought-in materials (B) or an additional item of wealth created.
- Dividends paid to the *minority interest* in subsidiaries as well as the retention of minority interest were combined as a single item in the distribution of VA.

Rutherford (Eggington, 1983) is of the opinion that care should be taken when suggesting that the business entity's VA should report the entity's contribution to national income, because of possible double counting, as well as problems in respect of entities with international operations. Because of limited information available, VA is simplified in this study, focusing purely on the company-specific interpretation of VA as it has been published during the period under review, irrespective of whether it included any wealth created outside South Africa.

TESTS FOR NORMALITY

The Kolmogorov-Smirnov test is used to test whether the data to be analysed are normally distributed. It compares an observed cumulative distribution function to a theoretical cumulative distribution. The column specified as "absolute" in Tables 1A and 1B, indicates the largest absolute difference between the theoretical cumulative distribution, which in this case is the normal distribution, and the observed cumulative distribution function. Since the means and standard deviations were estimated from the sample data, the Lilliefors probabilities are used in determining the significance of the Kolmogorov-Smirnov Z-statistic. Large p-values indicate that the observed distribution corresponds to the normal distribution. A p-value is said to be large if it is greater than 0.05. The reason is that in this study the test is conducted at the 5% significance level.

TABLE 1A
[PUBLISHED VAS - STANDARDISED VAS] X 100/PUBLISHED VAS

Variable name	N	Kolmogorov-Smirnov test for normality					Shapiro-Wilk test for normality	
		Most extreme differences			K-S Z-stat	p-value	W-stat	p-value
		Absolute	Positive	Negative				
1976	2	0.260	0.260	-0.260	0.368	0.999	—	—
1977	7	0.203	0.203	-0.181	0.537	0.936	0.909	0.392
1978	10	0.284	0.284	-0.182	0.897	0.397	0.871	0.104
1979	11	0.270	0.270	-0.235	0.895	0.399	0.755	0.002
1980	31	0.280	0.280	-0.201	1.559	0.016	0.619	0.000
1981	43	0.328	0.328	-0.215	2.151	0.000	0.505	0.000
1982	48	0.250	0.250	-0.205	1.731	0.005	0.621	0.000
1983	63	0.244	0.244	-0.181	1.933	0.001	0.700	0.000
1984	76	0.193	0.193	-0.156	1.680	0.007	0.800	0.000
1985	87	0.202	0.186	-0.202	1.882	0.002	0.802	0.000
1986	91	0.295	0.295	-0.209	2.811	0.000	0.634	0.000
1987	104	0.243	0.243	-0.208	2.480	0.000	0.727	0.000
1988	128	0.281	0.175	-0.281	3.182	0.000	0.595	0.000
1989	141	0.210	0.210	-0.150	2.491	0.000	0.811	0.000
1990	158	0.168	0.168	-0.168	2.110	0.000	0.824	0.000
1991	164	0.193	0.186	-0.193	2.467	0.000	0.736	0.000
1992	157	0.158	0.136	-0.158	1.982	0.001	0.871	0.000
1993	167	0.192	0.192	-0.182	2.482	0.000	0.712	0.000
1994	175	0.197	0.197	-0.173	2.612	0.000	0.744	0.000
1995	181	0.263	0.189	-0.263	3.538	0.000	0.583	0.000
1996	193	0.195	0.195	-0.184	2.711	0.000	0.769	0.000
1997	200	0.196	0.194	-0.196	2.769	0.000	0.762	0.000
1998	213	0.373	0.273	-0.373	5.443	0.000	0.250	0.000
1999	208	0.243	0.189	-0.243	3.511	0.000	0.553	0.000
2000	175	0.237	0.237	-0.230	3.129	0.000	0.516	0.000
2001	139	0.165	0.154	-0.165	1.950	0.001	0.864	0.000
2002	126	0.284	0.284	-0.251	3.186	0.000	0.447	0.000
2003	111	0.445	0.357	-0.445	4.693	0.000	0.127	0.000
2004	107	0.212	0.212	-0.155	2.193	0.000	0.802	0.000
2005	99	0.223	0.223	-0.189	2.217	0.000	0.753	0.000
PSB pooled	3415	0.311	0.241	-0.311	18.157	0.000	0.226	0.000

The results, as reported in Tables 1A and 1B, indicate that only the p-values for 1976-1979 are greater than 0.05, which can be considered as evidence to suggest that the

data are normally distributed. However, these variables have very few observations, ranging from 2 to 11. Such small sample sizes are likely to have contributed to the lack of significance of the tests. The rest of the variables reject

TABLE 1B
(PUBLISHED VAS - STANDARDISED VAS) X 100/SALES

Variable name	N	Kolmogorov-Smirnov test for normality					Shapiro-Wilk test for normality	
		Most extreme differences			K-S Z-stat	p-value	W-stat	p-value
		Absolute	Positive	Negative				
1976	2	0.260	0.260	-0.260	0.368	0.999	—	—
1977	7	0.235	0.235	-0.198	0.622	0.834	0.872	0.193
1978	10	0.277	0.277	-0.145	0.875	0.429	0.909	0.276
1979	11	0.273	0.273	-0.218	0.907	0.383	0.782	0.005
1980	31	0.332	0.332	-0.236	1.847	0.002	0.433	0.000
1981	43	0.366	0.366	-0.286	2.402	0.000	0.332	0.000
1982	48	0.280	0.280	-0.238	1.942	0.001	0.423	0.000
1983	63	0.268	0.267	-0.268	2.131	0.000	0.538	0.000
1984	76	0.190	0.171	-0.190	1.660	0.008	0.839	0.000
1985	87	0.227	0.217	-0.227	2.113	0.000	0.687	0.000
1986	91	0.298	0.298	-0.243	2.843	0.000	0.506	0.000
1987	104	0.274	0.274	-0.231	2.793	0.000	0.592	0.000
1988	128	0.317	0.195	-0.317	3.583	0.000	0.543	0.000
1989	141	0.228	0.228	-0.175	2.709	0.000	0.669	0.000
1990	158	0.230	0.230	-0.198	2.888	0.000	0.674	0.000
1991	164	0.209	0.184	-0.209	2.682	0.000	0.732	0.000
1992	157	0.191	0.186	-0.191	2.388	0.000	0.773	0.000
1993	167	0.240	0.233	-0.240	3.103	0.000	0.547	0.000
1994	175	0.234	0.234	-0.207	3.096	0.000	0.609	0.000
1995	181	0.240	0.230	-0.240	3.228	0.000	0.667	0.000
1996	193	0.205	0.205	-0.171	2.846	0.000	0.714	0.000
1997	200	0.220	0.205	-0.220	3.109	0.000	0.671	0.000
1998	213	0.274	0.208	-0.274	4.002	0.000	0.549	0.000
1999	208	0.253	0.217	-0.253	3.649	0.000	0.578	0.000
2000	175	0.379	0.279	-0.379	5.013	0.000	0.205	0.000
2001	139	0.212	0.212	-0.192	2.502	0.000	0.717	0.000
2002	126	0.345	0.247	-0.345	3.877	0.000	0.386	0.000
2003	111	0.206	0.206	-0.192	2.171	0.000	0.731	0.000
2004	107	0.221	0.221	-0.201	2.285	0.000	0.652	0.000
2005	99	0.247	0.212	-0.247	2.455	0.000	0.619	0.000
PSS pooled	3415	0.276	0.226	-0.276	16.132	0.000	0.400	0.000

the normality assumption at the 5% significance level. The results of the Shapiro-Wilk test for normality are also reported in Tables 1A and 1B. This test is preferred in testing for normality because of its good power properties compared to a wide range of alternative tests (Shapiro,

Wilk and Chen, 1968). With the Shapiro-Wilk test, there was overwhelming evidence to reject the normality assumption in almost all the variables subjected to the test, except for the few characterised by small sample sizes.

The rejection of the normality assumption disqualifies the mean as the measure of central location. In this study attention will therefore focus on the median and the interquartile range, rather than the mean and standard deviation. In addition, parametric methods of analysing data become inapplicable. One would thus have to resort to nonparametric techniques to analyse the data.

RESULTS OF DESCRIPTIVE STATISTICS

A very interesting result is given in Tables 2A and 2B under the heading: Size. The number of industrial companies that published a VAS reached a maximum of 213 in 1998. After that a decreasing trend resulted in only 99 companies doing the same in 2005. Pong and Mitchell (2005) have found that the publication of VAS in the United Kingdom (UK) also decreased, and they provide three possible reasons for the decline:

- One of the purposes for the publication of the VAS was that it can be used in wage negotiations. However, trade negotiators place a very low premium on the specific company's performance in their negotiations for wage increases, and where the VAS was prepared mainly for this purpose, it has fallen in disuse.
- Preparers tended to bias figures in order to emphasise contributions to certain shareholders, for instance to demonstrate to employees the large part of the value created that they already receive. This could be done as there is no standard for the preparation of the VAS. This presentational variation "may have lead to user suspicions about its susceptibility to manipulation" (Pong and Mitchell, 2005).
- Since the late 1980's (in the UK), the annual report contains all the information required to prepare the VAS, and therefore the VAS could be perceived as "technically redundant".

Van Staden (2003) refers to the legitimacy theory and the political economy of accounting theory as providing the best explanation for the continued publication of the VAS in South Africa. Van Staden (2003) reports that nearly 50% of all companies listed on the JSE published a VAS. While this might have been true in 1998 in respect of industrial companies, the number of industrial companies still publishing a VAS in 2003 was already reduced from 213 to 111.

These reasons (Pong and Mitchell, 2005) for the downward trend of the number of VAS published in the UK could be applied to the South African situation as well. However, another two possible reasons exist. Firstly, 117 companies (of the 213 in 1998) were delisted between 1998 and 2005, and 25 (of the 213) stopped publishing a VAS in the same period. Of the original 213 companies,

only 71 companies have still published a VAS in 2005. The 117 delisted companies were in fact companies that did publish a VAS for a considerable number of years. Secondly, the decrease in numbers since 1998 might be the result of the discontinuance in 1999 of a joint annual competition sponsored by *The Financial Mail* and the Bureau of Financial Analysis (BFA) of the University of Pretoria. The publication of a VAS earned relatively high scores in this competition. The increase in the number of companies publishing a VAS whilst the competition lasted should therefore probably be credited to the BFA to promote the "best annual report" competition. This fact was also recorded by Van Staden (1998: 240) in a survey of South African companies in 1998. The second most important reason for publishing a VAS was "to earn points in annual financial statement awards".

The important information in calculating the contribution of companies to the national economy is the total of VA created during the year, as well as the growth in VA from year to year, as these indicate the company's contribution to the growth in GDP. It is therefore of the utmost importance that the VA can be calculated in a standardised manner in order for the contribution to be accurately measured and for there to be a truthful comparison between companies.

The difference between a published VA total and a standardised VA total will not be affected by a misclassification between the components of the distribution of VA (Type A variation). For instance, there will be no difference between the totals of a PVAS and a SVAS if dividends are paid out of share premium (and shown as dividends in the PVAS), but are reflected as an increase in retention of profits (as if no dividends paid).

However, the difference between PVAS and SVAS will be affected when a dividend paid is disclosed as a distribution, but not deducted from retained profits (Type C variation). This mistake was fairly common when South Africa switched to disclosing dividends in the changes in equity statement and no longer in the income statement.

The results of the descriptive statistics are given in Tables 2A and 2B. Table 2A indicates that the median difference between PVAS and SVAS expressed as a percentage of PVAS was 2.372% for all the companies in aggregate for the period 1976-2005. This percentage stayed below 2% till 1990 and then increased to a high of 4.541% in 1999. The percentage dropped to 2.411% in 2005.

In Table 2B we find the median difference was expressed as percentage of sales for the industry level to be 0.698%. Similar to Table 2A, an increasing trend was observed till 1999 (1.336%) and from then onwards a downward trend to 0.769% in 2005.

The median percentages in Tables 2A and 2B might seem fairly small. However, when the interquartile ranges as

TABLE 2A
[PUBLISHED VAS - STANDARDISED VAS] X 100/PUBLISHED VAS

	Size	Average	Median	Standard deviation	Interquart range	Min	Max	Skewness	Kurtosis
Industry level	3415	4.258	2.372	28.529	3.614	-1315.714	268.479	-30.603	1378.979
Yearly level									
1976	2	0.485	0.485	0.659	0.349	0.020	0.951	-	-
1977	7	1.815	0.263	4.624	2.057	-4.139	10.681	1.122	2.243
1978	10	2.252	-0.044	4.538	4.196	-3.898	9.017	0.468	-1.404
1979	11	0.410	0.008	2.968	0.573	-3.243	8.311	1.941	5.681
1980	31	2.115	0.000	12.815	2.743	-13.740	59.040	3.280	13.555
1981	43	1.503	0.000	8.892	1.180	-9.177	47.820	4.127	19.326
1982	48	2.959	0.366	8.916	1.910	-6.867	46.708	3.352	13.454
1983	63	2.819	1.246	8.591	1.794	-21.407	37.755	2.162	8.340
1984	76	3.318	1.419	8.523	0.709	-10.558	39.591	1.958	5.428
1985	87	2.225	0.876	9.980	2.141	-25.930	38.910	1.166	5.252
1986	91	3.480	0.653	8.919	1.860	-10.011	43.707	2.865	9.235
1987	104	2.421	0.472	11.337	1.929	-51.373	44.346	0.650	8.374
1988	128	3.428	1.641	21.645	4.537	-161.185	53.043	-4.061	29.328
1989	141	4.986	1.581	9.925	3.232	-14.511	57.342	1.983	6.105
1990	158	4.830	1.501	9.063	3.572	-13.829	47.473	1.755	4.340
1991	164	5.311	2.312	10.784	3.867	-30.883	76.397	2.633	13.794
1992	157	4.564	2.712	8.888	3.697	-26.821	42.137	1.014	4.397
1993	167	5.810	2.668	11.025	4.075	-21.532	72.587	2.924	13.235
1994	175	6.378	3.111	11.876	4.027	-24.118	74.119	2.615	10.825
1995	181	4.900	2.302	15.205	3.739	-133.473	79.392	-3.107	41.207
1996	193	5.381	3.221	10.758	3.448	-29.077	74.475	2.278	12.165
1997	200	4.913	3.560	10.728	3.314	-26.251	73.559	2.062	11.195
1998	213	2.722	3.971	39.958	4.616	-510.670	85.240	-10.651	132.458
1999	208	5.276	4.541	21.775	4.967	-202.554	68.743	-4.694	44.286
2000	175	6.672	2.734	25.416	4.240	-80.576	268.479	6.271	65.602
2001	139	4.323	2.384	14.801	4.772	-59.502	59.245	0.066	5.170
2002	126	7.291	2.294	26.068	4.300	-44.475	236.011	6.304	51.179
2003	111	-8.380	3.127	126.288	3.430	-1315.714	51.438	-10.273	107.181
2004	107	5.646	2.990	12.715	3.979	-36.122	61.990	1.666	6.886
2005	99	5.160	2.411	13.551	4.160	-63.767	53.221	0.104	9.108

well as the large differences between minimum and maximum are considered, it is obvious that wide variances on the individual level are experienced, which indicates inconsistent treatment and calculation of VA amongst

companies. We contend that the credibility of the VAS for the user will be lost if the preparation thereof is not standardised. It is therefore no wonder that the number of companies still willing to spend time and money on the preparation thereof is decreasing.

TABLE 2B
[PUBLISHED VAS - STANDARDISED VAS] X 100/SALES

	Size	Average	Median	Standard deviation	Interquart range	Min	Max	Skewness	Kurtosis
Industry level	3415	1.641	0.698	7.178	1.200	-245.184	101.219	-12.103	440.033
Yearly level									
1976	2	0.164	0.164	0.224	0.119	0.006	0.323	-	-
1977	7	0.684	0.088	1.919	0.692	-1.715	4.501	1.356	3.080
1978	10	0.799	-0.019	1.695	1.271	-1.589	3.948	0.598	-0.446
1979	11	0.152	0.002	0.876	0.187	-1.042	2.463	1.877	5.423
1980	31	1.108	0.000	5.687	0.973	-3.738	30.311	4.782	25.045
1981	43	0.664	0.000	4.115	0.365	-2.623	26.128	5.904	37.069
1982	48	0.996	0.093	3.851	0.551	-2.715	25.276	5.558	35.076
1983	63	0.751	0.307	3.859	0.774	-16.613	22.517	1.577	22.300
1984	76	0.905	0.426	2.459	0.750	-5.169	12.008	1.615	5.712
1985	87	0.595	0.227	3.522	0.596	-18.146	18.263	-0.026	15.898
1986	91	0.976	0.189	3.025	0.450	-2.541	21.280	4.503	24.860
1987	104	0.855	0.136	4.544	0.526	-18.803	24.051	2.076	14.202
1988	128	0.956	0.396	8.689	1.309	-63.277	25.707	-3.931	27.367
1989	141	1.856	0.460	4.183	1.162	-5.522	24.406	3.039	11.528
1990	158	1.878	0.489	4.171	1.340	-5.701	23.443	2.844	9.878
1991	164	1.658	0.748	3.663	1.304	-18.463	19.740	0.870	10.634
1992	157	1.626	0.856	3.673	1.161	-15.826	17.629	0.738	8.423
1993	167	2.100	0.868	5.176	1.254	-10.811	43.525	4.794	33.704
1994	175	2.721	0.939	5.610	1.517	-8.646	42.235	3.940	21.540
1995	181	1.996	0.789	5.034	1.212	-19.213	35.684	2.274	15.735
1996	193	1.996	0.996	3.729	1.280	-5.198	30.331	3.378	19.050
1997	200	1.912	0.987	4.551	1.293	-14.529	29.556	2.744	16.151
1998	213	1.872	1.141	6.982	1.578	-66.560	27.899	-4.394	46.842
1999	208	2.357	1.336	7.689	1.707	-51.812	49.969	-0.878	26.420
2000	175	1.058	0.828	20.576	1.333	-245.184	101.219	-9.276	122.323
2001	139	1.536	0.707	5.173	1.170	-26.822	32.910	0.974	16.150
2002	126	0.271	0.523	11.576	1.363	-87.987	31.862	-5.776	42.368
2003	111	1.789	0.845	4.863	1.249	-15.459	31.682	2.393	14.715
2004	107	2.383	0.798	5.291	1.487	-4.639	38.860	3.822	21.697
2005	99	1.957	0.769	6.550	1.512	-39.694	25.915	-1.332	18.955

From Table 3 it is clear that the sum total of PVAS exceeded the sum total of SVAS by R120.4 billion. The differences per individual companies per individual years were classified into about 30 categories, and from there they were summarised into nine broad differences.

Taxation

The largest difference between PVAS and SVAS was caused by taxation (i.e. contribution to government over and above normal taxation, deferred taxation and STC) of

TABLE 3
MAJOR COMPONENTS TO RECONCILE THE OVERSTATEMENT OF THE TOTAL PVAS OVER
THE TOTAL SVAS FOR THE PERIOD 1976-2005

	PVAS SVAS R Billion	Per cent of total difference
Contributions to government (excluding normal taxation, deferred taxation and STC)		
VAT, GST and withholding taxes	17.2	14.3%
Other taxes included	36.3	30.1%
Unexplained taxation differences	<u>12.1</u>	<u>10.0%</u>
Taxation overstated	65.6	54.4%
Dividends paid	6.2	5.2%
Net interest received (i.e. interest paid overstated)	52.9	43.9%
Minority interest understated	-26.1	-21.7%
Sundries overstated	16.8	14.0%
Leasing	7.3	6.1%
Retention of profits (including depreciation, amortisation, impairment and fair value adjustments)	<u>-2.3</u>	<u>-1.9%</u>
TOTAL	<u>120.4</u>	<u>100.0%</u>

R65.6 billion (or 54.4% of the total difference of R120.4 billion). In most cases the amounts paid to government in respect of VAT, GST, rates and taxes etc. were accurately specified. An amount of R17.2 billion (14.3% of the total difference) represents a Type C variation, where VAT, GST and withholding taxes were included in the VAS. The Type B variation amounted to 30.1%, where other payments to government that should rather have been part of bought-in goods and services were included in the contribution to the government.

Of the 43 companies that included VAT under the distribution to government, only seven still included VAT in 2005: Amalgamated Appliances, Ellerrine Holdings, Peermont Global, Rainbow Chicken, Rebserve Holdings, Reunert and Unitrans. Like VAT, GST was also included under the distribution to government by 31 companies. The inclusion of GST was discontinued in 1992.

Examples of companies that included various other payments to government in the distribution to government are: Aspen Pharmacare Holdings, Barloworld, Ceramic Industries, City Lodge Hotels, Illovo Sugar, JD Group, Lewis Group, Masonite (Africa), Nampak, New Clicks Holdings, Pretoria Portland Cement Company and Tiger Brands.

In a number of cases the taxation indicated in the PVAS exceeded the taxation amounts in the income statement, without the differences being explained. Such amounts amounted to 10.0% of the total difference between PVAS and SVAS.

Dividends paid

Some companies included dividends declared in their distribution of VA, but these dividends were not deducted from retained income.

Net interest

The majority of companies only include interest paid (gross interest) as a distribution of VA. However, we are of the opinion that gross interest is the wrong approach, and that net interest (i.e. gross interest paid less interest received) should be shown as the distribution to external providers of capital. The alternative treatment—i.e. to show interest received as addition to S – B to obtain VA, is not economically sound. Several companies that do reflect net interest are: African Oxygen, Avis, Bell Equipment, Dorbyl, Hudaco Industries, Imperial Holdings, Nampak and Transpaco.

In practice, it also happens that companies do not deduct the interest received from interest paid in the distribution of VA, but they also overlook interest received in the calculation of VA. This omission is a Type C mistake, which results in an erroneous VA.

Minority interest

Minority interest created a dilemma for us. One could easily argue that VA should exclude minority interest (the narrow definition seen from the point of view of the group). On the other hand, one can just as well decide to use

the broader definition of VA and include the full minority interest that has been shown in the Income Statement. In this study the second alternative was followed. The understated minority interest as indicated in Table 3 therefore represents an interpretation difference that does not necessarily lead to an incorrect VA. However, the different treatments still create confusion for the user of the financial statements.

Leasing

In the 1980s 24 companies listed leasing as a distribution in the VAS. In 2005 only 8 companies still included leasing as part of the VAS: AVI, Consol, Dorbyl, Edgars Consolidated Stores, Lewis Group, New Clicks Holdings, PeerMont Global and Truworths International.

Sundries overstated

A large variety of different items were classified as part of the companies' VAS. The largest single example occurred in the Wooltru group of companies. Wooltru (1987-2001), Woolworths Holdings (1996-2001) and Massmart (2000-2002) wrongly included amounts for "cost of services and other operating expenses" in the income statement as a separate component in their distribution of VA. Wooltru discontinued the publication of a VAS in 2002, whilst Woolworths Holdings did not repeat the mistake from 2002 onwards. Likewise, Massmart corrected their error in 2003. The impact of this mistake was quite substantial. The difference between PVAS and SVAS expressed as a percentage of PVAS for Woolworths Holdings was about 37% for 1996-2001. The difference reduced to about 0% for the period 2002-2005.

PeerMont Global had a very interesting item in their distribution of VA: beneficiaries of corporate social responsibility programmes (including educational and community trusts, community upliftment, infrastructure improvements and responsibility gaming programmes).

Comparex Holdings included buy-backs (repurchase of own shares) as part of their distribution of VA in 2001 and 2002. Although it could be argued that very little difference exists between a buy-back (i.e. the compulsory 10% buy-back by Sanlam in 2005) and a special dividend paid, we are of the opinion that a buy-back should not be reflected in a VAS, as the substance over form of this type of transaction is similar to the issue of shares that do not form part of the VAS.

Sekunjalo Investments does not publish a VAS and therefore cannot form part of the difference between a PVAS and a SVAS. However, in their 2005 Annual Report they refer to the VA produced by Sekunjalo. Interestingly enough, their announced VA exceeded their total sales!

Salaries and wages

Electronic Media Network and Supersport International Holdings probably had the most unique method of presenting their PVAS. Right through the specific periods in which they published a VAS (until 2003), they classified salary and wages (staff costs) as part of bought-in materials and services. However, they very clearly specified their unique method as "cost of products, services and labour". Both companies continued the above method until 2003 before they were delisted in 2004.

CONCLUSION

The differences between a PVAS and a SVAS were analysed over a period from 1976-2005. The median of the difference between a PVAS and a SVAS was small. However, on an individual basis, differences varied significantly (large outliers and large interquartile ranges). Owing to the presence of outliers, the distributions of the differences between PVAS and SVAS were not normally distributed. As a result, nonparametric statistics (median and interquartile range) were used, rather than parametric statistics (mean and standard deviation).

The two most serious differences between a PVAS and a SVAS that lead to a totally wrong calculation of VA are the inclusion of VAT in the VAS and the double counting of dividends paid. Items included in the distribution to the government and not in bought-in goods and services, and the inclusion of interest received as a contribution to VA instead of a decrease in the distribution to external providers of capital, are the largest differences between the PVAS and the SVAS. These two differences confuse the user and arouse suspicion on the manipulation of the calculation of the business entity's contribution to the national economy.

As a result of the large individual differences between a PVAS and a SVAS, cross-sectional analysis on PVAS is not feasible. Users should therefore not base their analysis of aggregate VA on the VAS that companies publish, as very little benefit is obtained by doing cross-sectional analysis and ratio analysis on PVAS. Only in a standardised format will any cross-sectional studies result in valid outcomes.

For users, including government, to properly calculate and compare the VA of different companies, a standard for the preparation and presentation of VAS ought to be published. In the South African context there is a need for a precise measurement of each company's contribution to the growth of the national economy, and this need should be addressed.

REFERENCES

- Accelerated and shared growth initiative for South Africa (AsgiSA). South African Government Information. [Online] Available: <http://www.info.gov.za/asgisa/asgisa.htm> Accessed: 23 August 2006.
- Accounting Standards Steering Committee. 1975. The Corporate Report. London: Moorgate Place.
- Asgisa in a nutshell. 2006. In Laubscher, P. (Ed.). Economic Prospects, 21(2), Second Quarter: 8-9.
- Boshoff, A. and Vorster, Q. 1996. Waarde toegevoeg: Die rekeningkundige dilemmas. Meditari, 1-13.
- Du Plessis, A.P. 1987. Toegevoegde waarde in jaarverslae van Suid-Afrikaanse maatskappye: 'n Kort oorsig van die praktyk. South African Journal of Business Management, 18(4): 243-249.
- Du Plessis, A.P. and Joubert, D.S. 1991. Die staat van toegevoegde waarde as komponent van finansiële verslaggewing in die RSA. Suid-Afrikaanse Tydskrif vir Bedryfsleiding, 22(3): 53-62.
- Eggington, D.A. 1983. In defence of profit measurement: some limitations of cash flow and value added as performance measures for external reporting. Accounting and Finance, 23(2).
- Ehrhardt, M.C. and Brigham, E.F. 2006. Corporate Finance: A Focused Approach. Thompson South-Western.
- Gourley, B.M. and Rossler, G.M. 1983. Reporting value added. Accountancy S.A., September, 21-25.
- Haller, A. and Stolowy, H. 1998. Value added in financial accounting: A comparative study between Germany and France. Advances in International Accounting, 11(1): 23-51.
- Meek, G.K. and Gray, S.J. 1988. The value added statement: An innovation for U.S. Companies? Accounting Horizons, 2(2), June: 73-81.
- Morley, M.F. 1978. The Value Added Statement: A Review of its Use in Corporate Reports. London: Institute of Chartered Accountants of Scotland, Gee and Co Publishers Ltd.
- Pong, C. and Mitchell, F. 2005. Accounting for a disappearance: A contribution to the history of the value added statement in the UK. Accounting Historians Journal, 32(2): 173-196.
- Renshall, M., Allan, R. and Nicholson, K. 1979. Added Value in External Financing Reporting. London: Institute of Chartered Accounting in England and Wales.
- Rossler, G.M and Gourley, B.M. 1983. The value-added statement. Die Suid-Afrikaanse Geoktrooierde Rekenmeester, August, 221-225.
- Rutherford, B.A. 1982. Easing the CCA transition in value added statements. Accountancy, May, 121-122.
- Schuitema, J. 2001. Value added statement: The case for its wider use and sensible standard. Accountancy SA, October, 8-9.
- Shapiro, S.S., Wilk, M.B. and Chen, H.J. 1968. A comparative study of various tests for normality. Journal of the American Statistical Association, 63(324): 1343-1372.
- Smiddy, P. 1980. Let's standardise value added statements. Accountancy, November: 80-82.
- Stainbank, L.J. 1997. Value added reporting in South Africa: Current disclosure patterns. SA Journal of Accounting Research, 11(2): 69-91.
- Streak, J.C. 2004. The Gear legacy: Did Gear fail or move South Africa forward in development? Development Southern Africa, 21(2), June: 272-288.
- United Kingdom. 2006. The Value Added Scoreboard 2006. London. Department of Trade and Industry, Business Finance and Investment Unit.
- Van Aswegen, N., Steyn, B.W. and Hamman, W.D. 2005. Economic growth, employment, labour productivity and remuneration in South Africa: Evidence from published financial data. Journal for Studies in Economics and Econometrics, 29(3): 137-152.
- Van Staden, C. 1999. Revisiting the value added statement: A case for the formulation of statutory requirements for financial reporting. Meditari Accounting Research, 7: 257-275.
- Van Staden, C. 2003. The relevance of theories of political economy to the understanding of financial reporting in South Africa: The case of value added statements. Accounting Forum, 27(2), June: 224-245.
- What is Asgisa? FIN 24: Empowering Financial Decisions. [Online] Available: http://www.fin24.co.za/articles/economy/display_article.a_spx?Nav=nsandlv12=econandArticleID=1518-25_1964999 Accessed: 23 August 2006.