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Article

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Measuring capital intensity in South African companies listed in the Industrial Section of the Johannesburg Stock Exchange (JSE)

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The authors investigated selected listed companies in the Industrial Section of the JSE to determine the degree of capital-intensity of the selected companies. This is done by calculating various measures of capital intensity of the companies concerned and ranking the companies accordingly. Statistical analyses were done to investigate for significant differences between various measures, as well as between and within sectors of the Industrial Section of the JSE. It was found that overall there are no significant differences between the rankings of the ratios. Between sectors overall, there are significant differences between the rankings of ratios. Based upon years, however, there are no significant differences. Within sectors and between sectors per ratio, there are significant differences between the rankings of the ratios. From the analyses it is clear that the sectors are not homogeneously compiled, but are quite diversified. The measures of capital-intensity used also do not explain the same phenomenon. It has also been found that some companies display a dualism in that they are capital-intensive on some measures and capital-unintensive on others.

Introduction

It is common knowledge that sales or turnover is supported by the assets of a company. Should the company function at full capacity and wish to increase sales, it would require an increase in assets. Furthermore, it is also generally accepted that the assets of a company have to be maintained in order to maintain the level of output. Failure to do so would result in a decrease in the output of the particular company over time. This has obvious implications for the earnings potential of a company and is therefore closely monitored by investment analysts.

Shapiro (1982: 399) confirms the above by stating that investment occurs to increase the assets of a company as a greater output requires an increase in assets. He acknowledges that companies would be able to increase their output by using the existing assets more productively, but there are limits to what extent this could occur. Furthermore, the type of industry will also influence the size of assets required to produce a certain level of output. It is obvious that a company in the manufacturing industry will need more assets than a company in the services industry to generate a similar level of turnover. The use of assets and turnover not only indicates the extent to which a company needs assets to generate turnover, but is also an indication of how efficiently the assets have been used to generate turnover.

Capital intensity, which is the term for the above phenomenon, is a macro-economic term. It is interesting to note that production in South Africa increasingly becomes capital intensive at the same time capital becomes less available (Dornbusch & Fischer, 1998: 64). It is the intention of this article to investigate selected listed companies in the Industrial Section of the Johannesburg Stock Exchange (JSE) to determine the degree of capital-intensity of the selected companies. This will be done by calculating various measures of capital-intensity of the companies concerned and ranking the companies accordingly. The research is necessary to gain understanding of the underlying measures of capital-intensity and to identify certain trends, if possible.

The following hypotheses are tested in this article (sub-samples are as set out in the third section):

- H₁: There are significant differences between the rankings of the ratios for each sub-sample.
- H₂: There are significant differences between the rankings of the ratios based on sectors per sub-sample.
- H₃: There are significant differences between the rankings of the ratios based on years per sub-sample.
- H₄: There are significant differences in the rankings of the ratios between sectors per sub-sample.
- H₅: There are significant differences between the rankings of the ratios within sectors per sub-sample.

The following section will cover the literature survey, while the third part will cover the research method. The fourth part will cover the results of the survey and the fifth part contains the conclusion.

Literature survey

Garrison & Noreen (1997: 300) state that several factors have resulted in a shift toward greater fixed costs and less variable costs in organisations. This shift in cost structure has had an impact on product contribution margin ratios, on the break-even point, and on other cost-volume-profit factors in automated (capital-intensive) companies. Although there are many benefits to be derived from automation, certain risks are introduced when a company becomes more capital-intensive. According to Garrison & Noreen, the contribution margin ratio for a given product will be relatively higher for a capital-intensive company as the variable costs in an automated company will tend to be lower than in a labour-intensive company. Due to the higher fixed costs of a capital-intensive company, both the operating leverage and break-even point will be higher than for a labour-intensive company. As a result of this, the margin of safety at a given level of sales will be lower, and the latitude available to management in terms of economic stress will tend to be less for the capital-intensive company. In periods of increasing/decreasing sales, net income will tend to increase/decrease rapidly for the

capital intensive company, while the volatility of this net income with changes in sales will tend to be greater.

Dornbusch & Fischer (1998: 64) showed that South Africa experienced a structural decline in the growth of real fixed investment spending and eventually a static real fixed capital stock, while more and more investment was required to provide a given number of jobs. In other words, production became increasingly capital-intensive in a country in which capital is in short supply. They also showed that the fixed capital investment per worker at constant 1985 prices increased from R15 243 in 1960 in the mining industry and R11 972 in the manufacturing industry, to R53 682 in 1992 in the mining industry and R35 208 in the manufacturing industry. This is a clear indication that the capital intensity of the South African economy is increasing at a high rate. Dornbusch & Fischer (1998: 64) identified additional measures of capital-intensity, namely the capital-output ratio and the incremental capital-output ratio. The capital-output ratio is defined as the ratio between the value of the capital stock and the value of annual output.

Within the field of financial management, Ross, Westfield, Jordan & Firer (1996: 60) refer to the asset turnover ratios as measures used to determine the efficiency with which assets are utilized. In this regard they distinguish between the fixed asset turnover and the net asset turnover. The former refers to the efficiency of the fixed assets, while the latter refers to the efficiency of net assets. Ross *et al.* (1996: 84) also referred to the capital intensity ratio, which is described as the amount of assets needed to generate R1 in sales. The higher the ratio, the more capital intensive the firm. This ratio is the reciprocal of the net asset turnover. It is calculated by dividing total assets by sales.

Walsh (1996: 72–74) identifies the two prime subsidiary ratios of return on total assets as the margin on sales percentage and the sales to total assets ratio. He states that the latter ratio looks at the total sales achieved by the company in relation to its total assets, a measure whose contribution to return on total assets is just as powerful and important as the profit margin. The return on total assets is considered to be the most important driver of return on equity. Walsh (1996: 78) uses the sales to total assets ratio as an indicator of the level of investment required to support any given level of sales. He shows that research into top UK companies in 1992 revealed that both retailing and manufacturing sectors had high sales to asset ratios, but that it was more pronounced in retailing.

Although 'chemicals and stores' both had sales to asset ratios that were approximately 20% above the average, this advantage was mostly offset by their lower margins. 'Brewing' and 'health care' had ratios that were less than 1. The brewing sector required \$1.60 of assets to support \$1.00 of sales. Although the sales to total assets ratio of the health sector is also below average, this sector has a margin on sales that compensates by almost 200% for the somewhat high assets. In contrast, the high margins in 'brewing' were still not sufficient to pay for the very high investment in assets in this sector (Walsh, 1996: 78).

It is interesting to note that Walsh (1996: 84–87) identifies drivers of both margin on sales and sales to total assets. In the case of the sales margin, the following cost ratios are identified as drivers: materials/sales; labour/sales; factory over-

heads/sales; and administrative and selling costs/sales. To improve the sales margin, one or more of the cost percentages must fall. In the case of the sales to total assets ratio, he identifies the following ratios as drivers: sales/fixed assets; sales/inventories; and sales/accounts receivable. Walsh furthermore states that the sales to fixed assets ratio

'is one of the strong determinants of company performance and is heavily influenced by the nature of the industry. It is, therefore, less amenable to management action than are many of the other performance drivers. For many years, it has been difficult for very capital-intensive sectors of industry to earn high returns, except where there has been some element of monopoly' (1996: 92).

Van Horne (1997: 704) defines the asset turnover ratio as sales/total assets. It measures the relative efficiency with which the company utilizes its input in order to generate output. It varies according to the type of company being studied. He also refers to the total assets to sales ratio (total assets/sales) as a measure of operating efficiency. The lower this ratio, the more efficient the utilization of assets. It is the reciprocal of the total asset turnover ratio (Van Horne, 1997: 744).

Riahi-Belkaoui (1992) investigated the concept of value added-based ratio analysis. Value added represents the total return of the firm whereas the traditional financial analysis concentrates more on net income. In this context, total return refers to the sum of the returns for all the stakeholders of the firm, and not just to the returns for the owners, as measured by net income. Value added is calculated as sales minus bought in materials and services. Alternatively, it is equal to depreciation of fixed assets plus dividends paid plus net interest paid plus salaries and wages plus taxation plus retention of earnings. Riahi-Belkaoui suggested the following ratios be used:

- Managerial efficiencies: value added/total assets; value added/shareholders' equity; value added/cost of input of labour and capital.
- Productive efficiency: value added/sales; value added/salaries and wages; value added/machine hours; value added/employees.
- Contribution to total return: salaries and wages/value added; net income after tax/value added; taxation/value added; depreciation/value added; interest/value added.

Research method

The Graduate School of Business, University of Stellenbosch maintains a number of financial databases. These include, amongst others, a database on value added statements and one on the annual financial statements (balance sheet, income statement and cash flow statement). Data in these databases are standardised to allow for meaningful comparisons. It was decided to only use data on companies in the Industrial Section for the period 1991 to 1997. To be included in the sample, the company must have published a value added statement in 1997. If a company published a value added statement up to 1996, but did not publish a value added statement in 1997, the company was excluded from the sample. The reason for the inclusion of value added statements lie in the use of value added as a factor in the measurement of capital intensity.

Four sub-samples were defined:

- A:** Companies that published value added statements for the full period of 1991–1997 (referred to as FULCI).
- B:** Companies that started to publish value added statements any time during 1991–1997 (includes companies in sub-sample A) (referred to as ALCI).
- C:** Companies in A that provide employee data (referred to as EFUL).
- D:** Companies in B that provide employee data (referred to as EMPAL).

The following ratios for capital intensity were calculated for sub-samples A to D:

- **Fixed assets/total assets (*fata*):** The higher this ratio, the more capital-intensive the company. Capital-intensive companies are considered to have more fixed assets relative to current assets. Total assets are calculated as fixed assets plus other assets plus current assets.
- **Sales/total assets (*salta*):** The lower this ratio, the more capital-intensive the company.
- **Sales/fixed assets (*salfa*):** The lower this ratio, the more capital-intensive the company. This ratio is analogue to the previous ratio and it is expected that identical results will be achieved.
- **Depreciation as % of sales (*dep*):** The higher this ratio, the more capital-intensive the company. The annual depreciation of fixed assets for capital-intensive companies are expected to be higher relative to sales than non-capital-intensive companies.
- **Fixed assets/value added (*fava*):** The higher this ratio, the more capital-intensive the company. It is measured as the ratio of the book value of fixed assets relative to value added. It is also referred to as the capital-output ratio.
- **Salaries/sales (*salsa*):** The lower this ratio, the more capital-intensive the company.
- **Salaries/cost of sales (*salcos*):** The lower this ratio, the more capital-intensive the company.

The following ratios were calculated additionally for sub-samples C and D:

- **Fixed assets per employee (*faemp*):** The higher this ratio, the more capital-intensive the company.
- **Value added per employee (*vaemp*):** The higher this ratio, the more capital-intensive the company.
- **Salaries/value added (*salva*):** The lower this ratio, the more capital-intensive the company.

The following statistical analyses were executed for the variables (ratios) per sub-sample:

- Descriptive statistics.
- Ranking of companies per measure of capital intensity.
- Test for differences between rankings of ratios for total sub-sample.
- Test for differences between rankings of ratios based on sectors.
- Test for differences between rankings of ratios based on years.
- Test for differences in rankings of ratios between sectors.
- Test for differences between rankings of ratios within sectors.

Due to the fact that a high ratio could in some instances refer to high capital-intensity while in other cases it could refer to low capital-intensity, it was decided to compare the

rankings of the ratios to test for significant differences between the ratios. This has the advantage that outliers do not influence the results. Furthermore, as the data to be analysed are ordinal level data, non-parametric tests were used to test for differences. In this regard the following tests were used:

- Kruskal-Wallis test
- Wilcoxon matched pair test
- Mann-Whitney test

Only the p-values for the differences between variables were noted. Tests for significant differences were conducted at the 5% significance level.

In order to test H_1 (significant differences between rankings of the ratios), the ratios for the total databank per sub-sample were compared with one another. For this test the Wilcoxon test was used. The test for H_2 (significant differences between rankings of ratios based on sectors) required that the Kruskal-Wallis test be used. This was also the case for testing H_3 (significant differences between rankings of ratios based on financial years). For testing H_4 (significant differences in rankings of ratios between sectors), the database per sub-sample was grouped per ratio, whereafter the significance of differences between sectors were tested using the Mann-Whitney test. The test for H_5 (significant differences between the rankings of ratios within sectors) required the Wilcoxon test. This required the data to be grouped per sector, whereafter the test for significant differences between the rankings of ratios were executed per sector.

The data were grouped into the following sectors. (The sector numbers are used as set out in the database of the USB. Sectors 16–20 and 37 do not exist.):

- Sector 15: Industrial Holding
- Sector 21: Beverage, Hotels & Leisure
- Sector 22: Building & Construction
- Sector 23: Chemicals, Oils & Plastics
- Sector 24: Clothing, Footwear & Textiles
- Sector 25: Food
- Sector 27: Furniture, Household & Allied
- Sector 28: Engineering
- Sector 29: Electronics & Electrical
- Sector 30: Motor
- Sector 31: Packaging & Printing (including Sappi)
- Sector 32: Pharmaceutical & Medical
- Sector 33: Media
- Sector 34: Steel & Allied
- Sector 35: Transport
- Sector 36: Stores
- Sector 38: Development Stage

Results

The results of the investigation are presented in the sequence of the analyses done. Due to a lack of space, only the results of ALCI and EMPAL will be provided in this article. The complete set of results is available from the first-mentioned author. The discussion of results, however, will also refer to the results of FULCI and EFUL.

Descriptive statistics

The descriptive statistics of the various sub-samples are set out below. The statistics for ALCI are as set out in Table 1. The descriptive statistics for EMPAL are as in Table 2.

Table 1 ALCI descriptive statistics

Variable	Mean	Median	Minimum	Maximum	Lower quartile	Upper quartile	Std. Dev	Coefficient of variation	Unit of measurement
Fata	38.88	36.46	1.10	96.65	23.18	52.41	20.62	53.03	%
salta	1.68	1.56	0.14	8.39	1.13	1.96	0.91	54.17	×
salfa	7.71	4.58	0.29	126.35	2.50	8.67	11.62	150.71	×
dep	3.11	2.33	0.21	27.53	1.56	3.51	2.99	96.14	%
fava	0.97	0.75	0.05	6.09	0.42	1.19	0.83	85.57	×
salsa	20.53	19.75	3.07	55.64	13.96	25.73	8.76	42.67	%
salcos	22.69	21.94	3.20	92.39	15.42	28.80	10.08	44.42	%

Table 2 EMPAL descriptive statistics

Variable	Mean	Median	Minimum	Maximum	Lower quartile	Upper quartile	Std. Dev	Coefficient of variation	Unit of measurement
fata	39.40	39.52	2.48	96.65	23.37	52.41	20.44	51.88	%
salta	1.64	1.57	0.14	8.39	1.14	1.95	0.83	50.61	×
salfa	7.02	4.30	0.29	100.78	2.49	8.25	8.57	122.08	×
dep	3.16	2.39	0.24	25.69	1.63	3.56	2.98	94.30	%
fava	1.01	0.77	0.05	6.09	0.43	1.19	0.86	85.15	×
salsa	20.47	19.82	3.07	55.64	14.14	25.49	8.43	41.18	%
salcos	22.58	21.95	3.20	92.39	15.66	28.44	9.68	42.87	%
faemp	92.19	45.87	1.85	2412.88	26.14	92.35	177.82	192.88	R'000
vaemp	79.65	65.30	10.26	553.68	46.31	96.31	55.38	69.53	R'000
salva	63.22	63.73	24.86	257.81	54.73	71.50	15.24	24.11	%

Although the detail of FULCI and EFUL are not provided, similar trends exist between ALCI and FULCI, as well as between EMPAL and EFUL.

Given the fact that one is a sub-sample of the other, this is to be expected. The most obvious difference between ALCI and FULCI is the difference in the maximum value of salcos, with that of ALCI equal to 92.39%, and that of FULCI equal to 57.81%. The maximum value of dep also differs, with that of ALCI being 27.53% and that of FULCI 20.63%. Other than this, the two sub-samples present quite similar descriptive statistics. What is also interesting, is the measure of coefficient of variation (C.V.) The range of this ratio, which relates standard deviation to the mean to make comparison possible, is quite extensive. It is obvious that the ratios differ substantially in their degree of homogeneity. Both sub-samples present the same phenomenon in that the C.V. of salfa, dep and fava are considerably higher than the other four ratios. The C.V. of salfa is actually quite in a league of its own.

When comparing the descriptive statistics of EMPAL and EFUL, the same observations as above can be made. Furthermore, the three additional ratios calculated for these two sub-samples are equally interesting. The difference between EMPAL and EFUL in terms of these three ratios are practically negligible. The C.V. of faemp is also quite extreme, while the C.V. of salva of EMPAL is the lowest of all the ratios of any sub-sample. When comparing all four sub-samples with one another, it is also clear that the differences (with a few excep-

tions already noted) are negligible. It is equally obvious that the ratios with a very high C.V. are those in which fixed assets play a role (salfa, dep, fava, faemp).

Results of rankings

For the purposes of this analysis, each of the sub-samples were sorted respectively for each of the ratios. They were ranked on an annual base, which means that a company could feature more than once during the period 1991–1997. The forty most capital-intensive companies per ratio per sub-sample and the forty least capital-intensive companies were listed. The results for ALCI are as in Appendix A and B respectively. As ALCI entails the total database from which the other sub-samples were compiled, it will be analysed in detail before moving on. The variables as ranked were renamed with an R preceding the name of the variable, to denote the ranked variable. Due to this, the variable fata becomes Rfata, salta becomes Rsalta, *et cetera*.

In Appendix A (most capital-intensive companies) it is interesting to note the predominance of sector 21 (Beverages, Hotels & Leisure) in Rfata, and to a lesser extent in Rsalta and Rsalfa. Sector 25 (Food) also figures prominently. However, both these sectors lose their prominence in Rdep, where sector 35 (Transport) is the sector with the greatest visibility. Sector 21 and sector 22 (Building & Construction) both have seven (7) appearances after sector 35's 13. In Rfava, there is no one sector that dominates the ratio. Sector 21 does lead the ratio, with sector 31 (Packaging & Printing) coming to the fore. However, one must bear in mind that Sappi is part of

sector 31 for the purposes of this research, and in this specific case is responsible for all seven (7) appearances. When the last two ratios, Rsalsa and Rsalcos, are analysed, three totally different sectors dominate, namely sector 36 (Stores) with 14 appearances in both cases, sector 30 (Motor) with 8 and 10 appearances respectively, and sector 23 (Chemicals, Oils & Plastics) with 8 and 9 appearances respectively. It is therefore clear that different sectors feature in the respective ratios. From this it can be suggested that the different ratios do not all measure the same phenomenon (in this case capital-intensity).

When analysing Appendix B (least capital-intensive companies), further interesting observations can be made. In Rfata no single sector dominates the rankings. Three sectors, namely sector 27 (Furniture, Household & Allied), sector 29 (Electronics & Electrical) and sector 30 (Motor) lead the number of appearance with 9 appearances each. Sector 36 (Stores) is a close second with 8 appearances. None of these sectors figured prominently in respect of Rfata in Appendix A. Rsalta is dominated by two sectors, namely sector 36 (Stores) with 23 appearances, and sector 30 (Motor) with 14 appearances. Sectors 36 and 30 again dominate Rsalfa, with 11 and 14 appearances respectively. This is also the case for Rdep. In Rfava, the dominating sectors are sector 29 (Electronics & Electrical) – 11 appearances; sector 30 (Motor) – 9 appearances; sector 36 (Stores) – 8 appearances, and sector 27 (Furniture, Household & Allied) – 7 appearances. In Rsalsa, totally different sectors dominate the list of appearances, namely sector 32 (Pharmaceutical & Medical) – 9 appearances; sector 38 (Development Stage) – 9 appearances; sector 35 (Transport) – 7 appearances; and sector 24 (Clothing, Footwear & Textiles) – 6 appearances. In Rsalcos a similar trend is observed. Again, as stated previously, different sectors dominate the different ratios, which suggests that the different ratios do not all measure the same phenomenon for individual companies.

When comparing Appendices A and B with each other, some interesting observations are made. Sectors 30 and 36 dominate Rsalsa and Rsalcos on the list of most capital-intensive companies. However, on the list of least capital-intensive companies, these two sectors figure quite prominently in the following ratios: Rfata, Rsalta, Rsalfa, Rdep, Rfava. They do not figure at all in Rsalsa and Rsalcos, which is to be expected given the fact that they are deemed to be capital-intensive in respect of these two ratios. This can be interpreted in one of three ways:

- The different ratios do not measure the same phenomenon (point already made).
- There is a dualism in respect of companies being low on capital-intensity in respect of the extent to which they rely on fixed assets, while at the same time they are paying out a low % of sales in the form of salaries.
- The sectors are not homogeneous, but are diversified.

The second option suggests that a non-capital-intensive company is not necessarily a labour-intensive company when the latter is expressed in terms of salaries to sales or salaries to costs. The two forms (capital-intensive *versus* labour-intensive) are therefore not necessarily mirror images of each other.

Individual companies that appear on the two lists (high capital-intensive in terms of Rsalsa and Rsalcos, and low capital-intensive in terms of Rfata, Rsalta, Rsalfa and Rdep), are, amongst others, the following: Micor Industrial, LA Retail, Omega, Mustek, Brian Porter Holdings, Combined Motor Holdings, Cashbuild, Metro Cash & Carry, Shoprite and Redgewoods Holdings.

When analysing Rfava, it is apparent that the same companies appear on both Appendices A and B, whilst some sectors also appear on both the lists. However, these are the exception rather than the rule. Examples of companies appearing on both are Cullinan Hotel and JD.

The FULCI sub-sample was drawn up to investigate only those companies of ALCI that published value added statements for the full period of 1991 to 1997, in order to establish whether a different picture was presented. One finds similar results as in the case of ALCI. The dualism that was reported in ALCI, is also present in FULCI. Sectors that figure on the list of most capital-intensive sectors in terms of Rsalsa and Rsalcos that also figure on the list of least capital-intensive sectors in terms of Rfata, Rsalta, Rsalfa and Rdep, are sectors 29 (Electronics and Electrical), 30 (Motor), and 36 (Stores). Companies that demonstrate this dualism include Bidvest, Omega Holdings, Brian Porter Holdings, Combined Motor Holdings, Cashbuild, Metje and Ziegler, and Metro Cash and Carry. In respect of Rfava of FULCI, JD repeated its dual listing.

As stated earlier, EMPAL is a sub-sample of ALCI and includes all the companies of ALCI that published employee data. The aim of this step was to determine ratios of capital intensity based on employees. However, the majority of the ratios (7) remain as for ALCI. As EMPAL is a sub-sample of ALCI, one would expect similar trends as for ALCI. The rankings for EMPAL was done and the results are as in Appendices C and D for the most capital-intensive and least capital-intensive companies respectively.

In Appendix C (most capital-intensive companies-EMPAL) it is clear that similar trends to Appendix A exist, with a few minor differences. In Rsalta, sector 21 (Beverages, Hotel & Leisure) decreased its listing from 14 in Appendix A to 9 appearances. In Rdep, sector 35 (Transport) decreased its listing from 13 to 7 appearances. Rsalsa had two notable changes, with sector 30 (Motor) decreasing from 8 in Appendix A to three appearances, and sector 36 (Stores) increasing from 14 in Appendix A to 17 appearances. Rsalcos exhibits the same trend with sector 30 decreasing from 10 in Appendix A to 4, and sector 36 increasing from 14 in Appendix A to 17 appearances. In the new ratios, Rfaemp, Rvaemp and Rsalva, sector 23 (Chemicals, Oils & Plastics) dominate in all of them. Sector 23 is also prominent in Rsalsa and Rsalcos.

In terms of Appendix D (least capital-intensive companies – EMPAL), the results are quite similar to those of ALCI. Differences include the following: in Rsalta and Rdep sector 30 (Motor) decreased its listings from 14 in Appendix B to 7 appearances; in Rsalsa sector 32 (Pharmaceutical & Medical) decreased from 9 in Appendix B to 0 appearances. Whereas sector 23 dominated in Appendix C in terms of Rfaemp, Rvaemp and Rsalva, sector 24 (Clothing, Footwear & Textiles) is by far the prominent sector in Appendix D in terms of these three ratios.

When comparing Rsalsa and Rsalcos of Appendix C with Rfata, Rsalta, Rsalfa and Rdep of Appendix D, similar trends as in ALCI and FULCI are observed. Companies that are noted in both groups include Micor Industrial, Bidvest, Metje and Ziegler, Siltek, Brian Porter Holdings, Metro Cash and Carry, Cashbuild and Redgewoods. In respect of the new ratios, the following was observed:

- Cullinan Hotel featured on Appendix C in Rfaemp, as well as on Appendix D in Rfata.
- Companies that featured on Appendix C in respect of Rvaemp as well as on Appendix D in respect of Rfata-Rdep, include Dimension Data, Home Choice and Siltek.
- This was also the case for Home Choice in respect of Rsalva on Appendix C and Rfata-Rdep on Appendix D.

The trend of dualism is therefore quite robust in terms of composition of sub-samples.

EFUL is a sub-sample of EMPAL, and includes those companies which published a full set of value-added statements from 1991 to 1997. One should expect similar results as for EMPA. The results in respect of the most capital-intensive companies are quite similar to those in EMPA, except for the ratios of Rsalsa and Rsalcos which are closer to the results of ALCI than for EMPA. The results in respect of the least capital-intensive companies are similar to those in EMPA, with minor differences here and there. The dualism reported elsewhere is also apparent in EFUL.

The dualism reported refers to the phenomenon that companies are listed as being most capital-intensive in respect of Rsalsa and Rsalcos, while also listed as being least capital-intensive in respect of Rfata, Rsalta, Rsalfa and Rdep. This is also the case in respect of sectors listed. However, a cursory glance at the appendices also reveals that this dualism

reported also runs from Rfata, Rsalta, Rsalfa and Rdep on the most capital-intensive list to Rsalsa and Rsalcos on the least capital-intensive list. The possible explanations hereof are as for ALCI.

Results of tests for significant differences between rankings

The results of the tests that were executed to test for significant differences between rankings, will be presented in the sequence of the tests done.

Tests for differences between rankings of ratios within each sub-sample

Tests were conducted per sub-sample to determine whether significant differences exist between the ratios within each sub-sample. Note that the results reported are the p-values of the significance of the differences. A p-value < 0.05 indicates a significant difference between the ratios. The results are as follows:

- ALCI: No significant differences between the variables, except between Rsalta and Rsalfa and Rsalsa and Rsalcos. See Table 3.
- FULCI as for ALCI.
- EMPAL: No significant differences between the rankings of the ratios, except between Rsalta and Rsalfa, and between Rsalsa and Rsalcos. See Table 4.
- EFUL: As for EMPAL.

From Tables 3 to 4 it can be concluded that there are no significant differences between the rankings of the respective ratios, except between Rsalta and Rsalfa, and between Rsalsa and Rsalcos. This is slightly contrary to the comparisons done on the top 40 listings. It must be borne in mind however, that

Table 3 ALCI : Test for differences between variables: 1991-1997

Variables	Rfata	Rsalta	Rsalfa	Rdep	Rfava	Rsalsa	Rsalcos
Rfata	*	0.65	0.99	0.97	0.99	0.70	0.55
Rsalta	0.65	*	0	0.23	0.42	0.72	0.82
Rsalfa	0.99	0	*	0.84	0.07	0.87	0.96
Rdep	0.97	0.23	0.84	*	0.91	0.82	0.85
Rfava	0.99	0.42	0.07	0.91	*	0.96	0.85
Rsalsa	0.70	0.72	0.87	0.82	0.96	*	0
Rsalcos	0.55	0.82	0.96	0.85	0.85	0	*

Table 4 EMPAL : Test for differences between variables : 1991-1997

Variables	Rfata	Rsalta	Rsalfa	Rdep	Rfava	Rsalsa	Rsalcos	Rfaemp	Rvaemp	Rsalva
Rfata	*	0.10	0.41	0.68	0.60	0.92	0.98	0.91	0.87	0.65
Rsalta	0.10	*	0	0.39	0.42	0.73	0.83	0.39	0.44	0.65
Rsalfa	0.41	0	*	0.90	0.16	0.85	0.93	0.65	0.78	0.88
Rdep	0.68	0.39	0.90	*	0.85	0.89	0.90	0.58	0.90	0.96
Rfava	0.60	0.42	0.16	0.85	*	0.95	0.95	0.97	0.93	0.85
Rsalsa	0.92	0.73	0.85	0.89	0.95	*	0	0.50	0.36	0.39
Rsalcos	0.98	0.83	0.93	0.90	0.95	0	*	0.71	0.54	0.90
Rfaemp	0.91	0.39	0.65	0.58	0.97	0.50	0.71	*	0.38	0.80
Rvaemp	0.87	0.44	0.78	0.90	0.93	0.36	0.54	0.38	*	0.99
Rsalva	0.65	0.65	0.88	0.96	0.85	0.39	0.90	0.80	0.99	*

the statistical analyses were done for the total database per sub-sample. The results show that the one ratio basically tells the same story as the other, when considered in total.

Tests for differences between rankings of ratios based on sectors

The results of these tests are reported in Tables 5 to 6. Note that the p-values are reported. Where a p-value < 0.05 it indicates a significant difference between the rankings.

Table 5 Test for differences between variables based on sectors

Variables	ALCI	FULCI
Rfata	0	0
Rsalta	0	0
Rsalfa	0	0
Rdep	0	0
Rfava	0	0
Rsalsa	0	0
Rsalcos	0	0

Table 6 Test for differences between variables based on sectors

Variables	EMPAL	EFUL
Rfata	0	0
Rsalta	0	0
Rsalfa	0	0
Rdep	0	0
Rfava	0	0
Rsalsa	0	0
Rsalcos	0	0
Rfaemp	0	0
Rvaemp	0	0
Rsalva	0	0

From Tables 5 and 6 it is clear that the rankings of the different ratios differ significantly when compared on a sectoral level. This is to be expected, as the different sectors are compiled with the issue of homogeneity in mind.

Tests for differences between rankings of ratios based on years

The results of these tests are reported in Tables 7 and 8. The p-values of the tests are reported. Where a p-value < 0.05 it indicates a significant difference between the rankings.

Table 7 shows that in respect of ALCI and FULCI, there are no significant differences in the rankings of all the ratios based on years. This means that the rankings of Rfata of 1991 does not differ significantly from the other years. This is the case for all the ratios investigated for ALCI and FULCI. What this means is that the rankings of the ratios did not change significantly over the period of investigation.

Table 8 indicates that, except for Rfaemp and Rvaemp, the rankings of the ratios of EMPAL and EFUL do not differ sig-

Table 7 Test for differences between variables based on years : 1991–1997

Variables	ALCI	FULCI
Rfata	0.31	0.93
Rsalta	0.83	0.87
Rsalfa	0.82	0.99
Rdep	0.67	0.91
Rfava	0.86	0.97
Rsalsa	0.34	0.73
Rsalcos	0.43	0.78

Table 8 Test for differences between variables based on years : 1991–1997

Variables	EMPAL	EFUL
Rfata	0.15	0.80
Rsalta	0.99	0.92
Rsalfa	0.61	0.98
Rdep	0.80	0.91
Rfava	0.82	0.96
Rsalsa	0.54	0.77
Rsalcos	0.57	0.79
Rfaemp	0	0
Rvaemp	0	0
Rsalva	0.24	0.47

nificantly over time. What is interesting is the significant difference in the rankings of Rfaemp and Rvaemp for both EMPAL and EFUL. The reasons for this requires further research that falls outside the scope of this article. It does mean that in terms of faemp and vaemp, there were significant changes in the rankings. One can therefore say that some companies became more and others less capital-intensive in respect of faemp and vaemp over time.

Tests for differences in rankings of ratios between sectors

Previously tests were done to determine the significance of differences between rankings of ratios based on sectors. It was determined that there were significant differences in the rankings of ratios between sectors. This section determines the significance of differences between the rankings of each sector within each ratio. This test can be seen as an extension of the test done previously. The statistical results are available from the first-mentioned author.

In spite of the fact that there are significant differences between the rankings of the ratios based on sectors, it is quite evident that for each ratio, there are instances where there are no significant differences in the rankings of the ratios between sectors. For example, in sub-sample ALCI for ratio Rfata, there are significant differences in the rankings between sectors 15 and 21 ($p = 0$), but none between sector 15 and 22 ($p = 0.87$). Other than the fact that overall there are significant differences in the ratios between sectors, there are no specific trends to be observed in the rankings within sectors.

Test for differences between rankings of ratios within sectors

For the purposes of this test, the ratios were compared with one another within each sector per sub-sample. The statistical results are available from the first-mentioned author.

From the results it appears that overall there are significant differences within each sector between the rankings of the respective ratios. This is interesting as one would expect the sector to be homogeneous in respect of the rankings of the ratios. For example, in ALCI in sector 21, it is clear there are significant differences in the rankings of the ratios. One would have expected no significant differences in the same sector between Rsalta and Rsalfa. Yet in sectors 15 to 31, 33, 35 and 36 of ALCI there are significant differences. Similarly, one would have expected no significant differences in the same sector between Rsalsa and Rsalcos. Yet, this is only the case for sectors 23, 25, 27, 29, 31, 32, 33, 35 and 36 of ALCI. In the other eight sectors there are significant differences. This phenomenon is probably attributable to the fact that sectors are not as homogeneous as generally thought.

In sector 25 of FULCI, it is only between the rankings of Rsalsa that there are no significant differences between the ratios. The rest of the rankings of the ratios all differ significantly. On the other hand, in sector 22 of FULCI there are no significant differences between the rankings of the ratios. Why the rankings of sector 22 (Building & Construction) should not differ significantly, whilst the rankings of sector 25 (Food) does, defies logic. The only possible reason is that the sectors are not compiled homogeneously.

This absence of a logical trend between the rankings of the ratios within sectors, is continued in EMPAL and EFUL. In these two sub-samples, three additional ratios are calculated. Yet the same phenomenon is observed in the rankings of these three ratios as well. This reinforces the argument in favour of sectors constructed in a haphazard manner.

Conclusion

The following conclusions in respect of the hypotheses stated can be drawn from the above:

- H_1 (There are significant differences between the rankings of the ratios) is rejected for the majority of the ratios at the 0.05 level.
- H_2 (There are significant differences between the rankings of the ratios based on sectors per sub-sample) is accepted at the 0.05 level.
- H_3 (There are significant differences between the rankings of the ratios based on years per sub-sample) is rejected for all but Rfaemp and Rvaemp at the 0.05 level.
- H_4 (There are significant differences in the rankings of the ratios between sectors per sub-sample) delivers a mixed bag of results.
- H_5 (There are significant differences between the rankings of the ratios within sectors per sub-sample) also delivered

a mixed bag of results.

As stated in the introduction, the objective of this research was to get an indication of the degree of capital-intensity of selected companies listed in the Industrial Section of the JSE, and, where possible, to identify trends. The hypotheses as stated were investigated and the results produced reported. Possible reasons for the significant differences between the rankings of ratios where none were expected, include the following (as stated elsewhere):

- The different measures of capital-intensity are of such a nature that they will produce unexpected results.
- There is a dualism in that companies are capital-unintensive on some measures and capital-intensive on others.
- The sectors are not homogeneous.
- Valuation of assets.
- Age of assets *et cetera*.

As stated, a company that is not capital-intensive is not necessarily labour-intensive in terms of salaries/sales.

When the descriptive statistics are brought into the picture, some more light is shed upon the lack of clear trends or even contradictory evidence. Salta and salfa were expected to produce similar results. However, they do not. A possible reason for this lies in the fact that the degree to which companies commit themselves to fixed assets, differ greatly. The concept of operating leverage which measures this phenomenon comes to mind. This possibility is borne out by the coefficient of variation of salfa and dep which greatly exceeds that of salta. This is due to the variability of fixed assets.

In conclusion, it is clear that overall there are no significant differences between the rankings of the ratios. When viewed within the context of sectors, there are significant differences between the rankings of the ratios. Within the context of years, there are no significant differences in the rankings of ratios. The results show that within sectors there are also significant differences between the ratios. This is also the case when the rankings are tested between sectors per ratio.

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APPENDIX A

ALCI Most Capital- Intensive Companies													
Rfata		Rsalta		Rsalfa		Rdepa		Rfava		Rsalsa		Rsalcos	
COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR
SUN INTERNATIONAL	21 93	TRENCOR	35 91	GRIFFIN	15 94	AVIS HOLDINGS	21 97	UNISPIN HOLDINGS	24 92	ENGEN	23 96	ENGEN	23 96
CITY LODGE HOTELS	21 97	GRIFFIN	15 94	GRIFFIN	15 95	GRIFFIN	15 97	GRIFFIN	15 94	ENGEN	23 97	ENGEN	23 97
SUN INTERNATIONAL	21 92	GRIFFIN	15 95	TRENCOR	35 91	GRIFFIN	15 94	GRIFFIN	15 95	ENGEN	23 91	MICOR INDUSTRIAL	15 95
SUN INTERNATIONAL	21 94	GRIFFIN	15 97	GRIFFIN	15 97	GRIFFIN	15 98	SAPPI	31 92	MICOR INDUSTRIAL	15 95	ENGEN	23 91
SUN INTERNATIONAL	21 95	CULLINAN HOTEL	21 97	CITY LODGE HOTELS	21 97	TELJOY HOLDINGS	21 93	CAFCA	29 96	ENGEN	23 95	ENGEN	23 95
CROOKES BROTHERS	25 95	SAPPI	31 95	CULLINAN HOTEL	21 97	TELJOY HOLDINGS	21 91	SAPPI	31 94	ENGEN	23 93	ENGEN	23 93
CROOKES BROTHERS	25 91	STOCKS HOTELS	21 97	CITY LODGE HOTELS	21 94	TELJOY HOLDINGS	21 94	GRIFFIN	15 97	ENGEN	23 94	ENGEN	23 94
CROOKES BROTHERS	25 94	CITY LODGE HOTELS	21 97	CITY LODGE HOTELS	21 96	TELJOY HOLDINGS	21 92	ENGEN	23 97	MICOR INDUSTRIAL	15 96	MICOR INDUSTRIAL	15 96
SUN INTERNATIONAL	21 97	ALPHA	22 91	SAPPI	31 95	ALPHA	22 92	SAPPI	31 93	ENGEN	23 92	ENGEN	23 92
CITY LODGE HOTELS	21 94	CITY LODGE HOTELS	21 96	CROOKES BROTHERS	25 94	ALPHA	22 91	ALPHA	22 91	MUSTEK	29 97	COMBINED MOTOR HOLDINGS	30 95
SUN INTERNATIONAL	21 96	CITY LODGE HOTELS	21 94	CROOKES BROTHERS	25 91	ALPHA	22 93	ENGEN	23 95	COMBINED MOTOR HOLDINGS	30 95	MUSTEK	29 97
CROOKES BROTHERS	25 92	ALPHA	22 92	CROOKES BROTHERS	25 93	AUTOPAGE HOLDINGS	29 94	SAPPI	31 91	COMBINED MOTOR HOLDINGS	30 96	COMBINED MOTOR HOLDINGS	30 96
CITY LODGE HOTELS	21 96	CROOKES BROTHERS	25 93	ALPHA	22 91	AUTOPAGE HOLDINGS	29 91	ENGEN	23 92	OMEGA HOLDINGS	29 97	COMBINED MOTOR HOLDINGS	30 94
GRIFFIN	15 95	CROOKES BROTHERS	25 94	CROOKES BROTHERS	25 92	AUTOPAGE HOLDINGS	29 93	CROOKES BROTHERS	25 94	METRO CASH AND CARRY	36 97	METRO CASH AND CARRY	36 97
CITY LODGE HOTELS	21 95	CROOKES BROTHERS	25 91	CITY LODGE HOTELS	21 95	HIGHVELD STEEL	34 91	SAPPI	31 95	COMBINED MOTOR HOLDINGS	30 94	OMEGA HOLDINGS	29 97
CROOKES BROTHERS	25 93	SAPPI	31 92	ALPHA	22 92	AUTOPAGE HOLDINGS	29 92	ALPHA	22 92	METRO CASH AND CARRY	36 92	METRO CASH AND CARRY	36 92
SUN INTERNATIONAL	21 91	CROOKES BROTHERS	25 96	CROOKES BROTHERS	25 96	HIGHVELD STEEL	34 93	CROOKES BROTHERS	25 93	METRO CASH AND CARRY	36 95	METRO CASH AND CARRY	36 95
KERSAF INVESTMENTS	21 93	ALPHA	22 93	ALPHA	22 93	ALPHA	22 94	KERSAF INVESTMENTS	21 93	METRO CASH AND CARRY	36 96	METRO CASH AND CARRY	36 96
GRIFFIN	15 94	CITY LODGE HOTELS	21 95	SAPPI	31 91	TELJOY HOLDINGS	21 95	CROOKES BROTHERS	25 91	METRO CASH AND CARRY	36 94	METRO CASH AND CARRY	36 94
TELJOY HOLDINGS	21 93	CROOKES BROTHERS	25 92	CROOKES BROTHERS	25 95	HIGHVELD STEEL	34 92	SAPPI	31 96	METRO CASH AND CARRY	36 93	METRO CASH AND CARRY	36 93
GRIFFIN	15 97	SAPPI	31 91	CROOKES BROTHERS	25 97	PUTCO	35 95	CITY LODGE HOTELS	21 97	COMBINED MOTOR HOLDINGS	30 97	COMBINED MOTOR HOLDINGS	30 97
KERSAF INVESTMENTS	21 92	CROOKES BROTHERS	25 97	SAPPI	31 92	HIGHVELD STEEL	34 94	CROOKES BROTHERS	25 92	OMEGA HOLDINGS	29 96	COMBINED MOTOR HOLDINGS	30 93
SAPPI	31 91	NETWORK HEALTHCARE	32 97	SUN INTERNATIONAL	21 93	UNITRANS	35 93	CITY LODGE HOTELS	21 94	MICOR INDUSTRIAL	15 97	OMEGA HOLDINGS	29 96
CROOKES BROTHERS	25 96	LION MATCH CO.	15 96	SUN INTERNATIONAL	21 92	UNITRANS	35 94	ENGEN	23 93	COMBINED MOTOR HOLDINGS	30 93	MICOR INDUSTRIAL	15 97
TELJOY HOLDINGS	21 92	LION MATCH CO.	15 95	KERSAF INVESTMENTS	21 97	HIGHVELD STEEL	34 95	SAPPI	31 97	METRO CASH AND CARRY	36 91	METRO CASH AND CARRY	36 91
ALPHA	22 91	LION MATCH CO.	15 97	KERSAF INVESTMENTS	21 93	UNITRANS	35 95	CULLINAN HOTEL	21 97	REDWOODS HOLDINGS	36 97	COMBINED MOTOR HOLDINGS	30 92
TELJOY HOLDINGS	21 91	SAPPI	31 93	SAPPI	31 93	UNITRANS	35 91	ALPHA	22 93	COMBINED MOTOR HOLDINGS	30 92	REDWOODS HOLDINGS	36 97
TELJOY HOLDINGS	21 94	CROOKES BROTHERS	25 95	NETWORK HEALTHCARE	32 97	ALPHA	22 95	ENGEN	23 96	CASHBUILD	36 91	COMBINED MOTOR HOLDINGS	30 91
CROOKES BROTHERS	25 97	KERSAF INVESTMENTS	21 97	SUN INTERNATIONAL	21 94	PUTCO	35 94	JD	27 92	COMBINED MOTOR HOLDINGS	30 91	BRIAN PORTER HOLDINGS	30 96
KERSAF INVESTMENTS	21 97	ALPHA	22 94	STOCKS HOTELS	21 97	UNITRANS	35 96	ENGEN	23 94	CASHBUILD	36 93	CASHBUILD	36 91
SUNCRUSH	21 93	SAPPI	31 94	ALPHA	22 94	UNITRANS	35 97	SUN INTERNATIONAL	21 93	LA RETAIL	24 97	CASHBUILD	36 93
ALPHA	22 92	KERSAF INVESTMENTS	21 94	SUN INTERNATIONAL	21 95	UNITRANS	35 92	KERSAF INVESTMENTS	21 92	CASHBUILD	36 94	CASHBUILD	36 94
CLINIC HOLDINGS	32 93	UNISPIN HOLDINGS	24 93	KERSAF INVESTMENTS	21 94	PUTCO	35 93	HIGHVELD STEEL	34 96	BRIAN PORTER HOLDINGS	30 96	CASHBUILD	36 92
SUNCRUSH	21 94	AVIS HOLDINGS	21 97	KERSAF INVESTMENTS	21 92	PUTCO	35 92	SUN INTERNATIONAL	21 92	CAFCA	29 94	SHOPRITE(TRADEGRO)	36 97
AUTOPAGE HOLDINGS	29 91	KERSAF INVESTMENTS	21 93	SAPPI	31 94	ALPHA	22 96	CITY LODGE HOTELS	21 96	CASHBUILD	36 92	BIDVEST GROUP	15 94
SUNCRUSH	21 96	SUN INTERNATIONAL	21 93	KERSAF INVESTMENTS	21 95	PUTCO	35 97	CROOKES BROTHERS	25 95	BIDVEST GROUP	15 94	CASHBUILD	36 95
ALPHA	22 93	KERSAF INVESTMENTS	21 96	KERSAF INVESTMENTS	21 96	PUTCO	35 96	GRINCOR	15 97	SHOPRITE(TRADEGRO)	36 97	BRIAN PORTER HOLDINGS	30 97
HLH	25 95	KERSAF INVESTMENTS	21 95	HLH	25 94	TELJOY HOLDINGS	21 96	HLH	25 96	CASHBUILD	36 95	BRIAN PORTER HOLDINGS	30 95
KERSAF INVESTMENTS	21 91	SUN INTERNATIONAL	21 92	ALPHA	22 95	UNISPIN HOLDINGS	24 92	KERSAF INVESTMENTS	21 97	SILTEK	29 97	HOECHST SOUTH AFRICA	23 97
LASER TRANSPORT	35 97	ALPHA	22 95	SASOL	23 93	CERAMIC INDUSTRIES	22 96	SAFREN	15 93	HOECHST SOUTH AFRICA	23 97	HOECHST SOUTH AFRICA	23 96

APPENDIX B

ALCI Least Capital- Intensive Companies

Rfata		Rsaita		Rsafa		Rdep		Rfava		Rsalsa		Rsalcos	
COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR
OMEGA HOLDINGS	29 97	MICOR INDUSTRIAL	15 95	OMEGA HOLDINGS	29 97	COMBINED MOTOR HOLDINGS	30 96	SEARTEC	29 96	CULLINAN HOTEL	21 96	CULLINAN HOTEL	21 97
OMEGA HOLDINGS	29 96	MICOR INDUSTRIAL	15 96	COMBINED MOTOR HOLDINGS	30 96	COMBINED MOTOR HOLDINGS	30 95	OMEGA HOLDINGS	29 97	CULLINAN HOTEL	21 97	CULLINAN HOTEL	21 96
SEARTEC	29 97	COMBINED MOTOR HOLDINGS	30 94	COMBINED MOTOR HOLDINGS	30 97	COMBINED MOTOR HOLDINGS	30 94	SEARTEC	29 97	CULLINAN HOTEL	21 95	CULLINAN HOTEL	21 95
PROFURN	27 91	COMBINED MOTOR HOLDINGS	30 96	COMBINED MOTOR HOLDINGS	30 95	PROFURN	27 91	SEARTEC	29 95	SHO-CRAFT	38 92	SHO-CRAFT	38 92
SEARTEC	29 96	COMBINED MOTOR HOLDINGS	30 93	MICOR INDUSTRIAL	15 95	PROFURN	27 92	PROFURN	27 91	SHO-CRAFT	38 95	MEDI-CLINIC CORPORATION	32 94
SEARTEC	29 95	COMBINED MOTOR HOLDINGS	30 97	OMEGA HOLDINGS	29 96	MCCARTHY RETAIL	36 96	PROFURN	27 92	SHO-CRAFT	38 97	CROOKES BROTHERS	25 96
PROFURN	27 93	BRIAN PORTER HOLDINGS	30 94	COMBINED MOTOR HOLDINGS	30 94	COMBINED MOTOR HOLDINGS	30 97	PROFURN	27 93	LOG-TEK HOLDINGS	29 97	MEDI-CLINIC CORPORATION	32 92
PROFURN	27 92	BRIAN PORTER HOLDINGS	30 96	COMBINED MOTOR HOLDINGS	30 92	MCCARTHY RETAIL	36 97	OMEGA HOLDINGS	29 96	PUTCO	35 97	MEDI-CLINIC CORPORATION	32 91
OMEGA HOLDINGS	29 95	COMBINED MOTOR HOLDINGS	30 95	MICOR INDUSTRIAL	15 96	COMBINED MOTOR HOLDINGS	30 91	COMBINED MOTOR HOLDINGS	30 97	PUTCO	35 91	SHO-CRAFT	38 97
LA RETAIL	24 97	COMBINED MOTOR HOLDINGS	30 91	SEARTEC	29 96	COMBINED MOTOR HOLDINGS	30 93	CULLINAN HOTEL	21 95	PUTCO	35 96	MEDI-CLINIC CORPORATION	32 93
HOUSEWARES GROUP LTD	36 97	PICK 'N PAY STORES	36 91	COMBINED MOTOR HOLDINGS	30 93	MUSTEK	29 97	COMBINED MOTOR HOLDINGS	30 96	TEJ	24 93	MAST HOLDINGS	36 97
JD	27 97	PICK 'N PAY STORES	36 92	SEARTEC	29 97	MCCARTHY RETAIL	36 95	CULLINAN HOTEL	21 96	MEDI-CLINIC CORPORATION	32 94	LOG-TEK HOLDINGS	29 97
COMBINED MOTOR HOLDINGS	30 95	COMBINED MOTOR HOLDINGS	30 92	SEARTEC	29 95	OMEGA HOLDINGS	29 97	DIMENSION DATA HOLDINGS	29 91	SHO-CRAFT	38 91	SHO-CRAFT	38 91
AUTOQUIP GROUP	30 92	PICK 'N PAY STORES	36 93	COMBINED MOTOR HOLDINGS	30 91	MICOR INDUSTRIAL	15 96	COMBINED MOTOR HOLDINGS	30 95	MEDI-CLINIC CORPORATION	32 91	INDEPENDENT NEWSPAPERS	33 94
COMBINED MOTOR HOLDINGS	30 97	METRO CASH AND CARRY	36 91	MUSTEK	29 97	MICOR INDUSTRIAL	15 95	JD	27 97	LOG-TEK HOLDINGS	29 96	SHO-CRAFT	38 93
COMBINED MOTOR HOLDINGS	30 96	PICK 'N PAY STORES	36 94	METRO CASH AND CARRY	36 94	COMBINED MOTOR HOLDINGS	30 92	AUTOQUIP GROUP	30 92	INDEPENDENT NEWSPAPERS	33 94	PUTCO	35 93
HOME CHOICE HOLDINGS	36 97	BRIAN PORTER HOLDINGS	30 95	METRO CASH AND CARRY	36 93	PROFURN	27 93	JASCO	29 94	PUTCO	35 93	FRASER ALEXANDER	28 97
JD	27 96	BRIAN PORTER HOLDINGS	30 97	PROFURN	27 92	METRO CASH AND CARRY	36 93	HOUSEWARES GROUP LTD	36 95	SHO-CRAFT	38 93	PUTCO	35 96
PROFURN	27 94	METRO CASH AND CARRY	36 92	MIDAS	36 97	BRIAN PORTER HOLDINGS	30 91	HOUSEWARES GROUP LTD	36 97	MEDI-CLINIC CORPORATION	32 92	EDUCATION INVESTMENT	33 97
HOME CHOICE HOLDINGS	36 96	BRIAN PORTER HOLDINGS	30 93	PROFURN	27 91	METRO CASH AND CARRY	36 94	AUTOQUIP GROUP	30 92	SHO-CRAFT	38 94	SHO-CRAFT	38 95
HOUSEWARES GROUP LTD	36 95	METRO CASH AND CARRY	36 93	METRO CASH AND CARRY	36 92	METRO CASH AND CARRY	36 92	LA RETAIL	24 97	SHO-CRAFT	38 96	PUTCO	35 97
JD	27 95	BRIAN PORTER HOLDINGS	30 91	BRIAN PORTER HOLDINGS	30 97	SOFTLINE	29 97	JASCO	29 93	PUTCO	35 94	LOG-TEK HOLDINGS	29 96
DIMENSION DATA HOLDINGS	29 91	PICK 'N PAY STORES	36 96	MIDAS	36 96	HOUSEWARES GROUP LTD	36 95	MIDAS	36 97	TEJ	24 96	CLINIC HOLDINGS	32 92
PROFURN	27 95	PICK 'N PAY STORES	36 95	AUTOQUIP GROUP	30 92	BRIAN PORTER HOLDINGS	30 94	COMBINED MOTOR HOLDINGS	30 92	PUTCO	35 92	INDEPENDENT NEWSPAPERS	33 95
AUTOQUIP GROUP	30 97	PICK 'N PAY STORES	36 97	REDGWOODS HOLDINGS	36 97	SILTEK	29 95	JD	27 96	MEDI-CLINIC CORPORATION	32 93	INDEPENDENT NEWSPAPERS	33 96
MIDAS	36 92	SHOPRITE(TRADEGRO)	36 93	PROFURN	27 93	BRIAN PORTER HOLDINGS	30 96	JASCO	29 92	TEJ	24 97	TEJ	24 96
AUTOQUIP GROUP	30 91	BRIAN PORTER HOLDINGS	30 92	REDGWOODS HOLDINGS	36 95	BRIAN PORTER HOLDINGS	30 95	AUTOQUIP GROUP	30 91	PUTCO	35 95	PUTCO	35 92
MIDAS	36 97	SHOPRITE(TRADEGRO)	36 92	METRO CASH AND CARRY	36 96	HOUSEWARES GROUP LTD	36 96	PROFURN	27 95	ALUDIE	38 96	PRESMED INVESTMENTS	32 97
COMBINED MOTOR HOLDINGS	30 92	SHOPRITE(TRADEGRO)	36 94	METRO CASH AND CARRY	36 97	BRIAN PORTER HOLDINGS	30 93	MIDAS	36 96	INDEPENDENT NEWSPAPERS	33 95	MEDI-CLINIC CORPORATION	32 97
HOUSEWARES GROUP LTD	36 96	METRO CASH AND CARRY	36 97	BRIAN PORTER HOLDINGS	30 96	METRO CASH AND CARRY	36 95	HOME CHOICE HOLDINGS	36 96	TEJ	24 94	PUTCO	35 91
MUSTEK	29 97	METRO CASH AND CARRY	36 94	AUTOQUIP GROUP	30 97	BRIAN PORTER HOLDINGS	30 97	HOME CHOICE HOLDINGS	36 97	ALUDIE	38 97	PUTCO	35 94
MIDAS	36 96	METRO CASH AND CARRY	36 95	BRIAN PORTER HOLDINGS	30 94	METRO CASH AND CARRY	36 91	DIMENSION DATA HOLDINGS	29 92	TEJ	24 92	PUTCO	35 95
ALLIANCE PHARMACEUTICALS	32 97	MCCARTHY RETAIL	36 96	BOUMAT	22 93	BRIAN PORTER HOLDINGS	30 92	COMBINED MOTOR HOLDINGS	30 91	CLINIC HOLDINGS	32 96	TEJ	24 97
AMREL	27 94	MICOR INDUSTRIAL	15 97	METRO CASH AND CARRY	36 95	MCCARTHY RETAIL	36 94	JASCO	29 91	CLINIC HOLDINGS	32 92	ALUDIE	38 96
CULLINAN HOTEL	21 95	MCCARTHY RETAIL	36 93	BRIAN PORTER HOLDINGS	30 93	LA RETAIL	24 97	JD	27 95	PRESMED INVESTMENTS	32 97	SHO-CRAFT	38 96
BOUMAT	22 93	SHOPRITE(TRADEGRO)	36 95	MIDAS	36 92	OMEGA HOLDINGS	29 96	MIDAS	36 92	YORKCOR	22 96	TEJ	24 95
AUTOQUIP GROUP	30 93	METRO CASH AND CARRY	36 96	REBHOLD	21 97	METRO CASH AND CARRY	36 96	ALLIANCE PHARMACEUTICALS	32 97	CLINIC HOLDINGS	32 95	SHO-CRAFT	38 94
MICOR INDUSTRIAL	15 95	SHOPRITE(TRADEGRO)	36 97	LA RETAIL	24 97	METRO CASH AND CARRY	36 97	COMBINED MOTOR HOLDINGS	30 94	INDEPENDENT NEWSPAPERS	33 96	CLINIC HOLDINGS	32 91
JASCO	29 94	MCCARTHY RETAIL	36 95	BRIAN PORTER HOLDINGS	30 95	IMPERIAL HOLDINGS	15 91	KLIPTON	15 91	TEJ	24 95	TEJ	24 93
COMBINED MOTOR HOLDINGS	30 94	CASHBUILD	36 91	BOUMAT	22 95	SILTEK	29 96	HOUSEWARES GROUP LTD	36 96	CLINIC HOLDINGS	32 97	MEDI-CLINIC CORPORATION	32 95

APPENDIX C

EMPAL Most Capital- Intensive Companies

Rfata		Rsalta		Rsalta		Rdeo		Rfava		Rsalza		Rsalcos		Rfamp		Rvamp		Rsalva	
COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR	COMPANY	SE YR
SUN INT	21 93	TRENCOR	35 91	GRIFFIN	15 94	GRIFFIN	15 97	UNISPIN	24 92	ENGEN	23 96	ENGEN	23 96	ENGEN	23 97	ENGEN	23 97	CAFCA	29 91
SUN INT	21 92	GRIFFIN	15 94	GRIFFIN	15 95	GRIFFIN	15 94	GRIFFIN	15 94	ENGEN	23 97	ENGEN	23 97	GRIFFIN	15 97	GRIFFIN	15 97	GRIFFIN	15 97
SUN INT	21 94	GRIFFIN	15 95	TRENCOR	35 91	GRIFFIN	15 95	GRIFFIN	15 95	ENGEN	23 91	MICOR	15 95	GRIFFIN	15 95	GRIFFIN	23 96	GRIFFIN	15 95
SUN INT	21 95	GRIFFIN	15 97	GRIFFIN	15 97	TELJOY	21 93	SAPPI	31 92	MICOR	15 95	ENGEN	23 91	ENGEN	23 96	SILTEK	29 96	ENGEN	23 91
CROOKES BRO	25 95	CULLINAN HOTEL	21 97	CULLINAN HOTEL	21 97	TELJOY	21 91	CAFCA	29 96	ENGEN	23 95	ENGEN	23 95	ENGEN	23 95	POLIFIN	23 97	GRIFFIN	15 94
CROOKES BRO	25 91	SAPPI	31 95	SAPPI	31 95	TELJOY	21 94	SAPPI	31 94	ENGEN	23 93	ENGEN	23 93	GRIFFIN	15 94	GRIFFIN	15 95	CAFCA	29 94
CROOKES BRO	25 94	ALPHA	22 91	CROOKES BRO	25 94	TELJOY	21 92	GRIFFIN	15 97	ENGEN	23 94	ENGEN	23 94	ENGEN	23 94	ENGEN	23 94	ENGEN	23 93
SUN INT	21 97	ALPHA	22 92	CROOKES BRO	25 91	ALPHA	22 92	ENGEN	23 97	MICOR	15 96	MICOR	15 96	ENGEN	23 93	ENGEN	23 95	ENGEN	23 97
SUN INT	21 96	CROOKES BRO	25 93	CROOKES BRO	25 93	ALPHA	22 91	SAPPI	31 93	ENGEN	23 92	ENGEN	23 92	SAPPI	31 97	SASOL	23 97	ENGEN	23 96
CROOKES BRO	25 92	CROOKES BRO	25 94	ALPHA	22 91	ALPHA	22 91	MUSTEK	29 97	MUSTEK	29 97	ENGEN	23 92	PERSETEL	29 97	CAFCA	29 93	CAFCA	29 93
GRIFFIN	15 95	CROOKES BRO	25 91	CROOKES BRO	25 92	AUTOPAGE	29 94	ENGEN	23 95	METRO	36 97	METRO	36 97	SAPPI	31 96	GRIFFIN	15 94	ARMATO	25 97
CROOKES BRO	25 93	SAPPI	31 92	ALPHA	22 92	AUTOPAGE	29 91	SAPPI	31 91	METRO	36 92	METRO	36 92	SAPPI	31 95	ENGEN	23 93	ENGEN	23 94
SUN INT	21 91	CROOKES BRO	25 96	CROOKES BRO	25 96	AUTOPAGE	29 93	ENGEN	23 92	METRO	36 95	METRO	36 95	SASOL	23 97	ADCOCK-INGRAM	32 97	ADCOCK-INGRAM	32 97
KERSAF	21 93	ALPHA	22 93	ALPHA	22 93	HIGHVELD STEEL	34 91	CROOKES BRO	25 94	METRO	36 96	METRO	36 96	ENGEN	23 91	POLIFIN	23 96	CARSON	32 97
GRIFFIN	15 94	CROOKES BRO	25 92	SAPPI	31 91	AUTOPAGE	29 92	SAPPI	31 95	METRO	36 94	METRO	36 94	CAFCA	29 96	SILTEK	29 97	POLIFIN	23 96
TELJOY	21 93	SAPPI	31 91	CROOKES BRO	25 95	HIGHVELD STEEL	34 93	ALPHA	22 92	METRO	36 93	METRO	36 93	ALPHA	22 96	OMNIA	23 97	CAFCA	29 92
GRIFFIN	15 97	CROOKES BRO	25 97	CROOKES BRO	25 97	ALPHA	22 94	CROOKES BRO	25 93	MICOR	15 97	MICOR	15 97	SASOL	23 96	COATES	31 97	SASOL	23 91
KERSAF	21 92	LION MATCH CO.	15 96	SAPPI	31 92	TELJOY	21 95	KERSAF	21 93	METRO	36 91	METRO	36 91	ALPHA	22 95	SAPPI	31 97	DISTILLERS	21 91
SAPPI	31 91	LION MATCH CO.	15 95	SUN INT	21 93	HIGHVELD STEEL	34 92	CROOKES BRO	25 91	REDGWOODS	36 97	REDGWOODS	36 97	CAFCA	29 97	ADCOCK-INGRAM	32 97	SASOL	23 94
CROOKES BRO	25 96	LION MATCH CO.	15 97	SUN INT	21 92	PUTCO	35 95	SAPPI	31 96	CASHBUILD	36 91	BRIAN PORTER	30 96	ALPHA	22 92	CONSOL	31 97	AUTOPAGE	29 91
TELJOY	21 92	SAPPI	31 93	KERSAF	21 97	HIGHVELD STEEL	34 94	CROOKES BRO	25 92	CASHBUILD	36 93	CASHBUILD	36 91	CAFCA	29 95	HOECHST	23 97	SASOL	23 97
ALPHA	22 91	CROOKES BRO	25 95	KERSAF	21 93	HIGHVELD STEEL	34 95	ENGEN	23 93	CASHBUILD	36 94	CASHBUILD	36 93	ALPHA	22 93	OMNIA	23 96	TELJOY	21 91
TELJOY	21 91	KERSAF	21 97	SAPPI	31 93	ALPHA	22 95	SAPPI	31 97	BRIAN PORTER	30 96	CASHBUILD	36 94	ALPHA	22 94	SASOL	23 95	HOME CHOICE	36 97
TELJOY	21 94	ALPHA	22 94	SUN INT	21 94	PUTCO	35 94	CULLINAN HOTEL	21 97	CAFCA	29 94	CASHBUILD	36 92	SASOL	23 95	OCEANA	25 97	POLIFIN	23 97
CROOKES BRO	25 97	SAPPI	31 94	ALPHA	22 94	PUTCO	35 93	ALPHA	22 93	CASHBUILD	36 92	BIDVEST GROUP	15 94	ALPHA	22 91	GRINTEK	29 96	ENGEN	23 92
KERSAF	21 97	KERSAF	21 94	SUN INT	21 95	PUTCO	35 92	ENGEN	23 96	BIDVEST GROUP	15 94	CASHBUILD	36 95	SASOL	23 93	DIMENSION DATA	29 96	SASOL	23 96
SUNCRUSH	21 93	UNISPIN	24 93	KERSAF	21 94	ALPHA	22 96	JD	27 92	CASHBUILD	36 95	BRIAN PORTER	30 97	GRINCOR	15 97	ENGEN	23 91	CROOKES BRO	25 96
ALPHA	22 92	KERSAF	21 93	KERSAF	21 92	PUTCO	35 97	ENGEN	23 94	SILTEK	29 97	BRIAN PORTER	30 95	HIGHVELD STEEL	34 97	CAFCA	29 97	COATES	31 97
SUNCRUSH	21 94	SUN INT	21 93	SAPPI	31 94	PUTCO	35 96	SUN INT	21 93	HOECHST	23 97	HOECHST	23 97	SAPPI	31 94	CAFCA	29 94	PPC	22 91
AUTOPAGE	29 91	KERSAF	21 96	KERSAF	21 95	TELJOY	21 96	KERSAF	21 92	BRIAN PORTER	30 97	HOECHST	23 96	SASOL	23 94	PERSETEL	29 96	DISTILLERS	21 92
ALPHA	22 93	KERSAF	21 95	KERSAF	21 96	UNISPIN	24 92	HIGHVELD STEEL	34 96	BRIAN PORTER	30 95	SILTEK	29 97	HIGHVELD STEEL	34 96	USKO	29 97	SASOL	23 95
HLH	25 95	SUN INT	21 92	HLH	25 94	SERVGRO	21 97	SUN INT	21 92	HOECHST	23 96	METJE AND ZIEGLER	15 96	POLIFIN	23 97	HOME CHOICE	36 97	TRENCOR	35 91
KERSAF	21 91	ALPHA	22 95	ALPHA	22 95	CROOKES BRO	25 94	CROOKES BRO	25 95	REDGWOODS	36 95	REDGWOODS	36 95	SAFREN	15 97	SAPPI	31 96	ENGEN	23 95
LASER TRANSPORT	35 97	SASOL	23 93	SASOL	23 93	UNISPIN	24 93	GRINCOR	15 97	CAFCA	29 95	CASHBUILD	36 96	SAPPI	31 93	ENGEN	23 92	MUSTEK	29 97
SAPPI	31 93	TRENCOR	35 93	SUN INT	21 97	TELJOY	21 97	HLH	25 96	MCCARTHY RETAIL	36 96	MCCARTHY RETAIL	36 96	HIGHVELD STEEL	34 95	PPC	22 97	SUNCRUSH	21 95
KERSAF	21 95	HLH	25 94	SUN INT	21 91	CROOKES BRO	25 93	KERSAF	21 97	CAFCA	29 91	CAFCA	29 97	ALPHA	22 97	CHEMICAL SERVICES	23 97	PPC	22 92
KERSAF	21 96	SASOL	23 92	HLH	25 95	SASOL	23 91	SAFREN	15 93	CAFCA	29 97	METJE AND ZIEGLER	15 97	PPC	22 97	SASOL	23 94	TELJOY	21 92
SUNCRUSH	21 95	CARSON HOLDINGS	32 97	SAFREN	15 93	GRINCOR	15 97	SAFREN	15 97	CASHBUILD	36 96	CASHBUILD	36 97	TRENCOR	35 97	ALPHA	22 95	SUNCRUSH	21 94
SASOL	23 91	UNISPIN	24 92	GRINCOR	15 97	PUTCO	35 91	HIGHVELD STEEL	34 94	CASHBUILD	36 97	BRIAN PORTER	30 94	CULLINAN HOTEL	21 97	MUSTEK	29 97	PPC	22 93
HLH	25 94	KERSAF	21 92	ALPHA	22 96	ALUDIE	38 96	KERSAF	21 95	METJE AND ZIEGLER	15 97	METJE AND ZIEGLER	15 95	POLIFIN	23 96	CARSON	32 97	SUN INT	21 92

APPENDIX D

EMPAL Least Capital- Intensive Companies

Rfata		Rsalta		Rsalfa		Rden		Rfava		Rsalisa		Rsalcos		Rfaemo		Rvaemo		Rsalva	
COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR	COMPANY	SEC YR
SEARTEC	29 97	MICOR	15 95	MICOR	15 95	PROFURN	27 91	SEARTEC	29 96	CULLINAN HOTEL	21 96	CULLINAN HOTEL	21 97	PROFURN	27 91	CROOKES BROTHERS	25 93	UNISPIN	24 92
PROFURN	27 91	MICOR	15 96	MICOR	15 96	PROFURN	27 92	SEARTEC	29 97	CULLINAN HOTEL	21 97	CULLINAN HOTEL	21 96	PROFURN	27 92	CROOKES BROTHERS	25 91	YORKCOR	22 96
SEARTEC	29 96	BRIAN PORTER	30 94	SEARTEC	29 96	MCCARTHY RETAIL	36 96	SEARTEC	29 95	CULLINAN HOTEL	21 95	CULLINAN HOTEL	21 95	PROFURN	27 93	CROOKES BROTHERS	25 94	RAINBOW CHICKEN	25 97
SEARTEC	29 95	BRIAN PORTER	30 96	SEARTEC	29 97	MCCARTHY RETAIL	36 97	PROFURN	27 91	SHO-CRAFT	38 92	SHO-CRAFT	38 92	SEARTEC	29 95	UNISPIN	24 92	RAINBOW CHICKEN	25 96
PROFURN	27 93	METRO	36 91	SEARTEC	29 95	MUSTEK	29 97	PROFURN	27 92	SHO-CRAFT	38 95	CROOKES BROTHERS	25 96	SEARTEC	29 96	CROOKES BROTHERS	25 92	ROMATEX	24 97
PROFURN	27 92	PICK 'N PAY	36 94	MUSTEK	29 97	MCCARTHY RETAIL	36 95	PROFURN	27 93	SHO-CRAFT	38 97	SHO-CRAFT	38 97	SEARTEC	29 97	YORKCOR	22 91	CITY INVESTMENT	28 97
JD	27 97	BRIAN PORTER	30 95	METRO	36 94	MICOR	15 96	CULLINAN HOTEL	21 95	PUTCO	35 97	MAST	36 97	SEARDEL	24 91	YORKCOR	22 92	UNISPIN	24 97
AUTOQUIP	30 92	BRIAN PORTER	30 97	METRO	36 93	MICOR	15 95	CULLINAN HOTEL	21 96	PUTCO	35 91	SHO-CRAFT	38 91	CULLINAN HOTEL	21 95	JD	27 92	MAST	36 95
HOME CHOICE	36 97	METRO	36 92	PROFURN	27 92	PROFURN	27 93	DIMENSION DATA	29 91	PUTCO	35 96	INDEPENDENT NEWS	33 94	AUTOQUIP	30 92	CROOKES BROTHERS	25 95	METJE AND ZIEGLER	15 96
JD	27 96	BRIAN PORTER	30 93	MIDAS	36 97	METRO	36 93	JD	27 97	TEJ	24 93	SHO-CRAFT	38 93	SEARDEL	24 93	YORKCOR	22 93	FRAME	24 91
PROFURN	27 94	METRO	36 93	PROFURN	27 91	BRIAN PORTER	30 91	AUTOQUIP	30 97	SHO-CRAFT	33 91	PUTCO	35 93	CONCOR	22 93	PEPKOR BPK	36 92	METRO	36 91
HOME CHOICE	36 96	BRIAN PORTER	30 91	METRO	36 92	METRO	36 94	JASCO	29 94	INDEPENDENT NEWS	33 94	PUTCO	35 96	CONCOR	22 94	SEARDEL	24 91	YORKCOR	22 92
JD	27 95	PICK 'N PAY	36 96	BRIAN PORTER	30 97	METRO	36 92	AUTOQUIP	30 92	PUTCO	35 93	SHO-CRAFT	38 95	SEARDEL	24 92	YORKCOR	22 94	NEI AFRICA	28 97
DIMENSION DATA	29 91	PICK 'N PAY	36 95	MIDAS	36 96	BRIAN PORTER	30 94	JASCO	29 93	SHO-CRAFT	38 93	PUTCO	35 97	CONCOR	22 92	SHO-CRAFT	38 93	TEJ	24 93
PROFURN	27 95	BRIAN PORTER	30 92	AUTOQUIP	30 92	SILTEK	29 95	MIDAS	36 97	SHO-CRAFT	38 94	INDEPENDENT NEWS	33 95	PROFURN	27 94	METRO	36 91	REDGWOODS	36 94
AUTOQUIP	30 97	METRO	36 97	REDGWOODS	36 97	BRIAN PORTER	30 96	JD	27 96	SHO-CRAFT	38 96	INDEPENDENT NEWS	33 96	CULLINAN HOTEL	21 96	LENCO	15 91	CHUBB HOLDINGS	28 97
MIDAS	36 92	METRO	36 94	PROFURN	27 93	BRIAN PORTER	30 95	JASCO	29 92	PUTCO	35 94	TEJ	24 96	NINIAN & LESTER	24 94	YORKCOR	22 96	ISCOR	34 97
MIDAS	36 97	METRO	36 95	REDGWOODS	36 95	BRIAN PORTER	30 93	PROFURN	27 95	TEJ	24 96	PUTCO	35 92	NINIAN & LESTER	24 93	CROOKES BROTHERS	25 97	PUTCO	35 91
MUSTEK	29 97	MCCARTHY RETAIL	36 96	METRO	36 96	METRO	36 95	MIDAS	36 96	PUTCO	35 92	PUTCO	35 91	KLIPTON	15 91	FRAME	24 91	CONCOR	22 92
MIDAS	36 96	MICOR	15 97	METRO	36 97	BRIAN PORTER	30 97	HOME CHOICE	36 96	TEJ	24 97	PUTCO	35 94	CONSHU	24 91	PEPKOR BPK	36 91	CONCOR	22 93
AMREL	27 94	MCCARTHY RETAIL	36 93	BRIAN PORTER	30 96	METRO	36 91	HOME CHOICE	36 97	PUTCO	35 95	PUTCO	35 95	AMREL	27 94	TEJ	24 91	LASER	35 92
CULLINAN HOTEL	21 95	METRO	36 96	AUTOQUIP	30 97	BRIAN PORTER	30 92	DIMENSION DATA	29 92	ALUDIE	38 96	TEJ	24 97	LTA	22 91	SEARDEL	24 92	GLODINA HOLDINGS	24 92
BOUMAT	22 93	MCCARTHY RETAIL	36 95	BRIAN PORTER	30 94	MCCARTHY RETAIL	36 94	JASCO	29 91	INDEPENDENT NEWS	33 95	ALUDIE	38 96	SEARDEL	24 94	LASER	35 91	GROUP FIVE	22 93
AUTOQUIP	30 93	CASHBUILD	36 91	BOUMAT	22 93	METRO	36 96	JD	27 95	TEJ	24 94	SHO-CRAFT	38 96	CONSHU	24 94	GROUP FIVE	22 92	KLIPTON	15 93
MICOR	15 95	MCCARTHY RETAIL	36 94	METRO	36 95	METRO	36 97	MIDAS	36 92	ALUDIE	38 97	TEJ	24 95	AMREL	27 93	TEJ	24 92	NEI AFRICA	28 95
JASCO	29 94	USKO	29 95	BRIAN PORTER	30 93	SILTEK	29 96	KLIPTON	15 91	TEJ	24 92	SHO-CRAFT	38 94	SEARDEL	24 95	SHO-CRAFT	38 94	CONSHU	24 97
MORKELS	36 95	CASHBUILD	36 94	MIDAS	36 92	MCCARTHY RETAIL	36 93	PROFURN	27 94	YORKCOR	22 96	TEJ	24 93	PROFURN	27 95	SEARDEL	24 93	ROMATEX	24 96
AUTOQUIP	30 96	CASHBUILD	36 92	BRIAN PORTER	30 95	METJE AND ZIEGLER	15 95	DIMENSION DATA	29 94	INDEPENDENT NEWS	33 96	AUTOPAGE	29 93	AUTOQUIP	30 93	LENCO	15 92	NEI AFRICA	28 94
REDGWOODS	36 96	CASHBUILD	36 95	BOUMAT	22 95	MICOR	15 97	HUDACO	28 97	TEJ	24 95	ALUDIE	38 97	CONSHU	24 92	SHO-CRAFT	38 95	GROUP FIVE	22 94
BOUMAT	22 95	CASHBUILD	36 93	REDGWOODS	36 96	SA DRUGGIST	32 91	KLIPTON	15 96	MAST	36 97	CROOKES BROTHERS	25 97	BRIAN PORTER	30 91	CONSHU	24 94	MIDAS	36 93
BOUMAT	22 92	MCCARTHY RETAIL	36 97	BRIAN PORTER	30 91	JD	27 91	HUDACO	28 96	YORKCOR	22 92	TEJ	24 94	TEJ	24 92	CONSHU	24 91	SHO-CRAFT	38 95
REDGWOODS	36 97	REDGWOODS	36 95	METRO	36 91	GRINTEK	29 95	CONCOR	22 93	FRAME	24 91	LION MATCH CO.	15 97	CONSHU	24 95	BIDVEST	15 94	KLIPTON	15 94
CULLINAN HOTEL	21 96	LTA	22 91	MIDAS	36 93	SEARTEC	29 96	AUTOQUIP	30 96	LASER	35 92	AUTOPAGE	29 94	CONSHU	24 93	SHO-CRAFT	38 91	MURRAY AND ROBERTS	15 97
JASCO	29 92	AUTOPAGE	29 96	DIMENSION DATA	29 91	SEARTEC	29 97	MAST	36 94	ADVTech	29 95	TEJ	24 92	NINIAN & LESTER	24 95	GLODINA HOLDINGS	24 91	CITY INVESTMENT	28 96
DIMENSION DATA	29 92	AUTOPAGE	29 97	MCCARTHY RETAIL	36 95	SILTEK	29 94	REDGWOODS	36 96	CROOKES BROTHERS	25 94	LION MATCH CO.	15 96	PEPKOR BPK	36 91	LTA	22 91	NEI AFRICA	28 96
MORKELS	36 91	REDGWOODS	36 97	BRIAN PORTER	30 92	NEI AFRICA	28 96	AMREL	27 94	LEISURENET	21 94	CROOKES BROTHERS	25 93	TEJ	24 94	LENCO	15 94	GROUP FIVE	22 92
BOUMAT	22 91	BIDVEST	15 95	BOUMAT	22 92	CASHBUILD	36 91	MICOR	15 95	CHUBB HOLDINGS	28 96	CROOKES BROTHERS	25 94	LENCO	15 91	YORKCOR	22 95	FRAME	24 92
AUTOQUIP	30 95	METJE AND ZIEGLER	15 96	SILTEK	29 94	SEARTEC	29 95	REDGWOODS	36 97	YORKCOR	22 93	LEISURENET	21 94	BRIAN PORTER	30 92	NINIAN & LESTER	24 93	BOLTON FOOTWEAR	24 97
AMREL	27 97	PEPKOR BPK	36 93	AUTOQUIP	30 93	REDGWOODS	36 97	JASCO	29 96	CROOKES BROTHERS	25 93	INDEPENDENT NEWS	33 97	BIDVEST	15 94	SEARDEL	24 94	BRIAN PORTER	30 94
AMREL	27 93	CASHBUILD	36 96	MCCARTHY RETAIL	36 96	BOUMAT	22 95	CONCOR	22 94	CHUBB HOLDINGS	28 92	CHUBB HOLDINGS	28 96	MIDAS	36 92	DA GAMA TEXTILES	24 93	KLIPTON	15 95