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Inter-relationships between the January effect, market capitalisation and value investment strategies on the JSE

1. INTRODUCTION*

South African research has become increasingly circumspect regarding market efficiency on the JSE. Philpott and Firer (1995) indicated that the JSE may not efficient in the semi-strong form. Thompson and Ward's (1995) review of market efficiency concluded that the JSE was strong form inefficient, with "at best" mixed evidence regarding its weak and semi-strong form efficiency. Earlier authors had claimed that it was semi-strong form efficient (Knight and Affleck-Graves, 1985), efficient (Gilbertson and Roux, 1977) or efficient for that half of the market which is not thinly traded (Strebel 1978).

Cross sectional and time series analysis of share returns has uncovered apparent anomalies with the Capital Asset Pricing Model (CAPM) (Sharpe, 1964; Lintner, 1965; Black, 1972) and the Efficient Market Hypothesis, formalised by Fama (1970). These findings have been replicated in an extensive and growing body of research in a number of markets (Fama, 1991). Amongst the most prominent of these anomalies are the market capitalisation, value and January effects.

A number of CAPM anomalies have been found on the JSE. These include the P/E effect (Page and Palmer, 1991), December effect (Bradfield, 1990) public holiday effect (Bhana, 1994) and the value effect (Gates, 1997). Some anomalies found in other markets have not been found on the JSE. These include the Monday effect (Davidson and Meyer, 1993), January effect (Bradfield, 1990) and the low price effect (Waelkens and Ward, 1997).

The market capitalisation effect, first empirically reported by Banz (1981), is the observation that shares of companies with low market capitalisation outperform shares with a high market capitalisation, on a risk-adjusted basis. While this has been confirmed by numerous studies (e.g. Reinganum, 1981; Schultz, 1983; Jaffee, Keim and Westerfield 1989; Chan, Hamao and Lakonishok, 1991; Fama and French, 1992) there is no evidence that this occurs on the JSE (De Villiers, Lowings, Pettit, and Affleck-Graves, 1986; Page and Palmer, 1991; Barret, 1996; Hargreaves, 1997).

The value effect is the observation that shares, which have a low ratio of their market capitalisation to a balance sheet or income statement measure of value, provided a larger risk adjusted return than shares with a high ratio. This was first empirically demonstrated by Basu (1977). The most successful measure used to operationalise this effect is the price-to-book (P/B) ratio which is "the most powerful explanatory variable in the cross-section of average returns." (Fama, 1991:1592). The effect has been found in the U.S. (e.g. Rosenberg, Reid and Lanstein, 1985; Jaffe et al., 1989; Jacobs and Levy, 1988; Barber and Lyon, 1992; Fama and French 1992: Fuller, Hubers and Levinson, 1992; Davis, 1994), Japan (Chan, Hamao and Lakonishok, 1991), other countries (Capaul, Rowley and Sharpe, 1993; Sinquefield, 1996) and even between different countries (Asness, Liew and Steven, 1997).

A number of South African studies have found the value effect on the JSE, using value measures such as Tobin's Q ratio (Plaistowe and Knight, 1986; Bhana, 1992), the P/E ratio (Page and Palmer, 1991), prior return (Page and Way, 1993) and the P/B ratio (Gates, 1997).

The excess returns attributable to these effects are large. In the U.S., the differential return provided by a portfolio with a low P/B ratio is approximately twice the realised differential between equities and Treasury Bills (Haugen, 1995). Fama and French (1993) proposed a three factor model which posits that the P/B ratio, market capitalisation and a general market return factor can best explain share returns. These measures were better explanatory factors than Beta, which they found to be unrelated to share returns. However, this finding is contentious (Roll and Ross 1994; Black 1993; Ibbotson, Kaplan and Peterson, 1997).

While occurrence of these effects has withstood much critical replication, and is generally accepted (however see Kothari, Shanken and Sloan, 1995), what is contentious is the reason why these phenomena should occur and the theoretical ramifications associated with them. The rational pricing approach contends that there is a risk premium attached to value and small capitalisation firms consisting of unobservable common and thus undiversifiable "distress factors": (Fama and French, 1993). Distressed firms are more likely to be value or small capitalisation companies. This distress factor, it is argued, may not be reflected in risk measures such as standard deviation or Beta.

The irrational pricing approach suggests that these effects are due to cognitive and agency biases in market prices, such as over-optimism, regression to the mean, the representative heuristic, glamour investing, agency theory and others. (Kahneman and

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Tversky, 1973; De Bondt and Thaler, 1985; Statman, 1988; Bhana, 1992; Lakonishok, Schleifer and Vishny, 1994; Haugen, 1995). Daniel and Titman (1997) show that a "distress" factor would not explain the value effect, which they found to be due to the intrinsic characteristics of a share (such as P/B amongst others). This has major implications for modern portfolio theory.

The investment management industry has interpreted the value and market capitalisation effects as investment strategies or "styles". Many investment practitioners and funds now specialise in investment styles such as investing in small companies or value shares. The University of Pretoria's Quarterly Unit Trust Survey lists 10 "smaller company" funds and at least three of the major fund managers in the survey offer "value" funds. It is argued that the choice of "styles" dictates a major portion of return and is in a sense equivalent to an asset class within equities (Sharpe, 1992; Christopherson, 1995).

Returns in January have been found to be higher than returns in other months (Rozeff and Kinney, 1976). As well as in the U.S., this has been found in Australia (Brown, Keim, Kleidon and Marsh, 1983), Canada (Berges, McConnel and Schlarbaum, 1984), Holland (Van den Bergh and Wessels, 1984) and Paris and Brussels bourses (Corhay, Hawawinin and Michel, 1987). Gultekin and Gultekin's (1983) study of 17 countries from 1959-1979 found the January effect in South Africa. Bradfield (1990) did not find evidence of a January effect on the JSE from 1974 to 1984, but rather a December effect. A study by Vos (1990) over the 1970-1989 period reported mixed results.

The value, market capitalisation and January effects are interrelated. Companies with a low P/B ratio tend to have a small market capitalisation. As market capitalisation declines (rises), the P/B ratio will consequentially decrease (increase), as book values are not impacted. While some studies report that the market capitalisation effect is a function of the value effect (Banz, 1981), or the value effect is a manifestation of the market capitalisation effect (Reinganum, 1981), more recent studies have found that they both provide independent effects (Cook and Rozeff, 1984; Jacobs and Levy 1988, Chan et al., 1991; Fama and French, 1992).

The superior returns of small capitalisation shares tend to occur primarily in January and account for much of the January effect (Keim, 1983; Blume and Stambaugh, 1983; Jaffe et al., 1989) as do the superior returns of low P/B ratio shares (Rosenberg, Reid and Lanstein, 1985; Davis, 1994). While the bulk of the market capitalisation and value effects occur in January, these effects have been found to be significant in other months as well (Fama and French, 1992).

2. HYPOTHESES

This study examines the interrelationships between the effects stated above and risk adjusted returns on the JSE.

Hypothesis 1

Shares with below (above) median market capitalisation will have a below (above) median P/B ratio.

Hypothesis 2

2A: The risk-adjusted return of a portfolio composed of shares with below median P/B ratios is greater than that of a portfolio composed of shares with above median P/B ratios.
2B: The risk-adjusted return of a portfolio composed of shares with below median market capitalisation is greater than that of a portfolio composed of shares with above median market capitalisation.
2C: (a logical consequence of Hypotheses 2A and 2B): A portfolio composed of shares with a below median market capitalisation and a below median P/B ratio provides the highest risk-adjusted return.

Hypothesis 3

3A: The risk-adjusted return of a portfolio of shares with below median P/B value is higher on a monthly basis in January than during the remainder of the year.
3B: The risk-adjusted return of a portfolio of shares with below median market capitalisation is higher on a monthly basis in January than during the remainder of the year.

Hypothesis 4

Risk-adjusted monthly portfolio returns are higher in January than in the other months of the year.

3. METHODOLOGY

3.1 Overview

The standard methodological paradigm for studying the value and market capitalisation effects (e.g. Basu, 1977; De Villiers et al., 1986; Fama and French, 1992; Waelkens and Ward, 1997) was followed. This involved creating annual portfolios in November composed of shares representing the cross-sectional factors being studied, and calculating their monthly total returns over the subsequent 12-month period (November to November). At the end of the 12-month period, the portfolios were rebalanced using a new sample of shares free of survival bias. Shares were assigned into one of 4 portfolios based on whether they were above or below the median in terms of the cross-sectional factors of market capitalisation and P/B ratios. At the time of portfolio formation, an investor

would have had available the identical public information which was used to form the portfolios. The portfolios were equally weighted and R100 was apportioned to purchase each share at the portfolio formation date. It was assumed that fractions of shares could be purchased. The monthly total excess return for each share, and hence each portfolio, was determined.

3.2 Sample

Barret (1996) studied the market capitalisation effect on the JSE. In doing so, he selected, on an annual basis from November 1985 to November 1994, a stratified sample of 100 ordinary JSE shares which were free of survival bias. The sample was stratified based on market capitalisation, using the technique of De Villiers et al. (1986). This sample was used as a basis for the sample for the present study, excluding the first year and adding data for 1995.

Consistent with the practice of other South African studies using this methodology (e.g. Waelkens and Ward, 1997; Gates, 1997), Barret's (1996) sample included all shares except those in the mining sector, the financial sector or non-main board shares. The mining sector is highly dependent on the gold price, which is determined by exogenous factors and would be detrimental to the assumption of homogeneity (De Villiers et al., 1986; Gates, 1997). Financial companies have a different treatment of book value and Fama and French (1992) excluded them in their study.

Each year, for 9 years, 100 shares were selected. Of these 900 shares, 24 had to be excluded - 14 because they were suspended at the beginning of the portfolio formation period and 10 because book values were not available. This may have added selection bias, as some of these companies were liquidated and delisted soon afterwards. The resultant sample therefore consisted of 876 shares, which is an average of 97,3 shares per year. The minimum number of shares for any one year was 95.

3.3 Data

Average monthly historical prices for all the shares were provided by the University of Pretoria's Bureau for Financial Analysis (BFA), from their historical financial database. Gaps in BFA's data were filled by using share prices in the JSE's Monthly Bulletin as a proxy. About 1500 share prices (15% of the total) were entered in this manner.

The BFA data was adjusted for share splits, share consolidations and share swaps. If a share was suspended or delisted during the 12-month portfolio-holding period, it was conservatively assumed the share was worth nothing, even if the share was re-instated at a later period.

Barret's (1996) calculation of the monthly cash portion of return accruing to each share was used in this study. These are the dividends received, nil paid letters and offers for cash. The cash portion was compounded each month at the BA rate. Each share's value to the portfolio was the share price at the relevant month, plus the cash portion for that month.

BFA and FACtS Investors' Guide were used to provide book values for each share as at the end of July of the year of portfolio formation. The JSE requires listed companies to publish their annual financial statements within 3 months. Thus there is assurance that any financial statements with a July year-end or earlier would have been publicly available to an investor in November, the portfolio formation period. This avoids a "look ahead" bias.

Portfolio formation P/B ratios were calculated by dividing each share's market capitalisation at the portfolio formation data by its end of July book value. Market capitalisation was calculated by multiplying the share price at portfolio formation by the number of shares outstanding at this period.

3.4 Calculations

For each portfolio, the monthly excess total return was calculated using the following formula for the continuously compounded rate of return (De Villiers et al., 1986).

$$R_{pi,j,t} = \ln(P_{i,j,t} / P_{i,j,t-1}) - R_{Fj,t}$$

Where:

$R_{pi,j,t}$= the portfolio value at the end of month t for portfolio P_i in year j, where portfolio value is share price appreciation plus cash receipts

$P_{i,j,t-1}$= the portfolio value of portfolio P_i in year j at the end of month t-1

$\bar{R}_{Fj,t}$= the monthly risk free rate of return for month t in year j. The monthly BA rate was used as the proxy for the risk free rate.

Each year's monthly returns were placed back-to-back to create the study's dataset. Consequently there were 108 monthly excess returns (12 months times 9 years), for each of the 4 portfolios.

From the dataset the following statistics were calculated:

$$\bar{R}_{pi} = \sum_{j=1}^{9}\sum_{t=1}^{12} R_{pi,j,t} / N$$

Where:

$\bar{R}_{pi}$ = Mean monthly excess return for portfolio Pi

N = number of monthly observations (108)

This is the non risk-adjusted average return measure.

$$S_{pi} = \bar{R}_{pi} / \sigma_{Pi}$$

Where: S_{pi} = the Sharpe ratio for portfolio P_i

σ_{pi} = the standard deviation of the average monthly excess returns for portfolio P_i

This provides a measure of return, adjusted for total risk.

$$T_{pi} = \bar{R}_{pi}/\beta_{Pi}$$

Where:

T_{pi} = the Treynor index of monthly excess return for portfolio P_i

β_{pi} = the Beta for Portfolio P_i

This provides a measure of return adjusted for systematic risk. Beta was calculated over the entire 9-year period using the OLS method, with the JSE's market-capitalisation weighted All Share Index as the market proxy.

4 RESULTS

4.1 Hypothesis 1

The average number of shares over the 9 portfolio formation periods that fell into each portfolio was tabulated (see Table 1). Shares with above (below) median P/B ratios were more likely to have above (below) median market capitalisation. A chi square test (df=1, χ^2 = 16,46) indicated that this was significant at the 0.00005 level. Accordingly, hypothesis 1 was supported.

Table 1 Distribution of shares per portfolio

Average number of shares in portfolio	Above median P/B ratio	Below median P/B ratio
Above median Market Capitalisation	34,4 (71%)	14,3 (29%)
Below median Market Capitalisation	14,3 (29%)	34,2 (71%)

Only 29% shares with a below (above) median P/B ratio fell into the above (below) median market capitalisation category. Consequently, there were on average only 14 shares per year that fell into each of these portfolios. As a sufficiently diversified portfolio for research purposes requires 20 shares (De Villiers et al., 1986; Page and Palmer, 1991; Waelkens, 1995), this was problematic for the present study. Had any significant interactions been found across these portfolios, these results would have had to be disregarded.

4.2 Hypothesis 2

The average excess returns per month over all the years for each portfolio are presented in Table 2. Sharpe and Treynor risk-adjusted return measures were calculated using the standard deviation and Beta of the excess mean returns for these portfolios. The direction of results is consistent with hypothesis 2A. The portfolio composed of below median P/B ratio shares had a higher risk-adjusted return in terms of both total risk (Sharpe ratio=1,48) and systematic risk (Treynor index = 0,0081), than the portfolio composed of above median P/B ratio shares (Sharpe ratio = 0,74, Treynor index = 0,0059). The excess return of the former (1%) was 3 times that of the latter (0,37%). The below median P/B ratio portfolio has less total risk (σ=0,4%) but more systematic risk (β=1,33) than the above median portfolio (σ=0,56; β=0,36).

The directions of the results were consistent with hypothesis 2B for systematic risk but not for total risk. The below median market capitalisation portfolio had a higher return (0,79%) and Treynor index (0,008) than the above median portfolio (return = 0,59%, Treynor = 0,006). However, it had a marginally lower Sharpe ratio (1,41 vs. 1,50) due to its higher standard deviation (0,56% versus 0,39%). The combined portfolio with the highest risk adjusted return was the below median P/B and market capitalisation portfolio (Sharpe ratio = 1,48; Treynor = 0,0089). Table 2 shows that all portfolios across all these segments had a higher risk-adjusted return (Sharpe = 1,97, Treynor 0,009) than any of the component portfolios. This is consistent with the CAPM and portfolio theory (Markowitz, 1959.)

To determine whether the directions of the results were statistically significant, a 2-way Analysis of Variance (ANOVA) with interactions was performed on all 3 of the return measures separately. The results of the ANOVA (df=428) are shown in Table 3 below. The main effects of P/B, market capitalisation and the interactions between them were not significant. The lack of main effects did not support hypothesis 2A and 2B. The lack of an interaction did not support hypothesis 2C.

Table 2: Average monthly returns per portfolio

All Months Monthly Average	High Price to Book Ratio	Low Price to Book Ratio	Total Price to Book Ratio	Statistic
	0,54%	0,63%	0,59%	Mean Return (R_{pi})
Large	0,49%	0,62%	0,39%	σ
Market	1,11	1,01	1,5	Sharpe
Capitalisation	0,86	0,85	0,91	β
	0,0063	0,0074	0,006	Treynor
	0,20%	1,37%	0,79%	Mean Return (R_{pi})
Small	0,63%	0,93%	0,56%	σ
Market	0,32	1,48	1,41	Sharpe
Capitalisation	0,37	1,54	1,02	β
	0,0055	0,0089	0,008	Treynor
	0,37%	1,00%	0,67%	Mean Return (R_{pi})
Total	0,56%	0,40%	0,34%	σ
Market	0,74	1,48	1,97	Sharpe
Capitalisation	0,63	1,33	0,74	β
	0,0059	0,0081	0,009	Treynor

Table 3: 2-way ANOVA results

2 Way ANOVA	Mean Return ($\bar{R}_{pi}$)		Mean Sharpe (S_{pi})		Mean Treynor (T_{pi})	
Term	F-Ratio	Prob <	F-Ratio	Prob <	F-Ratio	Prob<
P/B	0,94	0,34	0,36	0,55	0,07	0,80
Market Cap	0,12	0,73	0,01	0,93	0,01	0,94
P/B X Market Cap	0,54	0,47	0,31	0,58	0,00	0,94

4.3 Hypotheses 3

Hypotheses 3A and 3B relate to whether the P/B and market capitalisation effects occur primarily during January. A one-way ANOVA for P/B and for market capitalisation was run on a database of January returns, for each of the three return variables. None of the ANOVAs was significant for any return measure at the 0,025 level. Therefore, no support was found for Hypothesis 3A or 3B. The limitation of this test was the small sample size, only 18 observations per cell.

4.4 Hypotheses 4

The average returns ($\bar{R}_{pi}$) each month, the standard deviation (σ) of these returns and the resultant Sharpe ratio ($\bar{R}_{pi}/\sigma$) are shown in Table 4. January returns are double those of the second highest month, May and show the greatest monthly variability. On a risk-adjusted basis, January yielded the highest return, evident in the largest Sharpe ratio.

To statistically test for the January effect, a one-way ANOVA was performed on return ($\bar{R}_{pi}$) and month. Month had a significant effect ($F=3,49$; $p<0,0002$). Multiple comparison tests at the 0.05 level, e.g. Sherffe, Duncan, Fisher's LSD, and Newman-Keuls, were run and all found January to be different from all other months.

Table 4: Returns by month

Month	Median Return ($\bar{R}_{pi}$)	σ	Sharpe
January	6,29%	2,20%	2,86%
February	0,56%	0,96%	0,59
March	0,78%	0,78%	1,00
April	0,80%	0,74%	1,08
May	2,37%	1,24%	1,91
June	0,95%	0,79%	1,21
July	0,63%	1,15%	0,55
August	0,20%	0,79%	0,25
September	(1,53%)	0,70%	(2,19)
October	(1,39%)	0,67%	(2,07)
November	(1,92%)	1,78%	(1,08)
December	0,27%	0,80%	0,34
Average	0,67%	0,34%	1,97

It is evident from Table 5 that the excess return attributable to January compared to the other months is large. Over the 9-year period, January yielded a return and a risk-adjusted return more than 15 times

greater than the average of the other months' returns. Sixty percent of total risk-adjusted return was attributable to January.

For external validation, the excess monthly returns on the JSE industrial index over the study period were calculated in the same manner. These are also shown in Table 5. It is evident that the Industrial Index had a higher return during January than during other months. To test this, the Mann-Whitney U test was run on the Industrial Index's January returns and the "not January" returns. The superior performance in January was significant at the 0,05 level, for both excess returns and the risk-adjusted Sharpe ratio. For the former, the statistic was z=1,87 (p<0,031) and for the latter, z=1,96 (p<0,025). While the extent of January excess returns on the Industrial Index was large, it is less than half as large as the excess return found in the study's portfolio. On a risk-adjusted basis, this difference is smaller.

4.5 Outlier

There was an outlier in January for the portfolio formed in November 1992. The outlier had a below median P/B ratio and market capitalisation. Its price increased from R1 in December 1992 to R50 in January 1993, thus producing an excess return of 4899%. The dataset was adjusted as if the outlier produced a zero excess return throughout the life span of the portfolio. Removing this outlier reduced the excess January return in 1992 to 3,99% and the overall January excess return to 4,11%.

Table 5: Annual returns in January compared to the rest of the year

	Mean Return ($\bar{R}_{Pi}$)		JSE Ind. Index Return		Mean Sharpe (S_{Pi})		JSE Ind. Sharpe	
Year of Portfolio Formation	January	Other Months	January	Other Months	January	Other Months	January	Other Months
1986	6,62%	1,23%	4,91%	2,47%	3,01	2,86	3,68	1,74
1987	8,22%	(1,26%)	3,50%	(2,71%)	3,74	(1,40)	2,62	(0,34)
1988	8,96%	(0,71%)	7,38%	1,09%	4,07	(0,87)	5,53	0,67
1989	0,42%	(2,25%)	5,17%	(1,77%)	0,19	(2,97)	3,87	(1,65)
1990	1,20%	2,03%	(4,16%)	2,68%	0,54	2,37	(3,12)	2,10
1991	1,12%	(2,31%)	4,73%	(1,91%)	0,51	(2,63)	3,54	(1,42)
1992	23,65%	0,36%	3,37%	(0,38%)	10,75	(0,16)	2,52	(0,34)
1993	6,23%	3,69%	5,93%	1,74%	2,83	3,86	4,44	1,04
1994	0,24%	0,63%	(4,32%)	0,39%	0,10	0,71	(3,24)	0,03
Overall	6,29%	0,15%	2,95%	0,18%	2,86	0,17	2,21	0,20

The Kruskall-Wallis test on return and the Mann-Whitney test on the Sharpe ratio were rerun, with the outlier observation excluded. Return remained significant (H = 27,86; p<0,005). Significance was in fact increased on the Sharpe ratio (z=2,36; p<0.01) due to the outlier increasing the standard deviation of January returns, which was the denominator of the Sharpe ratio for all January observations.

A characteristic of low P/B and small market capitalisation shares may be the dramatic change in fortunes that could occur to these companies, many of which come off a small base. Knez and Ready (1996) found that the market capitalisation effect, but not the P/B effect, could be attributable to just 1% of share returns. It could therefore be just such outliers which specifically underpin the market capitalisation effects.

5. DISCUSSION

The support for hypothesis 1 suggests that "small company" and "value" mutual funds may be purchasing the same shares and may thus effectively have very similar portfolio compositions. Seventy one percent of the shares which were in a small market capitalisation portfolio, were in the low P/B ratio portfolio as well. Accordingly, an investor who holds both a small company and a value mutual fund might not be well diversified. Performance of a market capitalisation fund may be driven by factors relating to P/B, which are not directly related to firm size. This highlights the importance of the decomposition of the components of portfolio return for the evaluation of portfolio performance (Sharpe, 1992).

Support was found for the January effect the 1986-1995 period for both the study's equally-weighted portfolio and the value-weighted JSE Industrial Index. This was consistent with some South African studies (Gultekin and Gultekin, 1983; Vos, 1990) and inconsistent with others (Bradfield, 1990). A caveat is the short time horizon of the study, 9 years.

With the exception of the January effect, the results of

the study accord with the CAPM and the EMH. On a risk-adjusted basis, no combination of P/B ratio or market capitalisation resulted in superior risk-adjusted returns during January or during the other months. This suggests that the January effect in South Africa is unrelated to the value and market capitalisation effects. This is in contrast to the international literature which finds that these effects occur primarily in January (Keim, 1983; Blume and Stambaugh, 1983; Jaffe et al., 1989; Rosenbert et al., 1985; Davis, 1994). The occurrence of the January effect on the value-weighted JSE Industrial Index is a further indication that the January effect is not related to the market capitalisation or value effects.

The lack of support for the value effect is in contrast to other South African studies (Plaistowe and Knight, 1986; Page and Palmer, 1991; Bhana, 1992; Page and Way, 1993; Gates, 1997) while the lack of support for the market capitalisation effect accords with other South Africa studies (De Villiers et al., 1986; Page and Palmer, 1991; Barret, 1996; Hargreaves, 1997). Not uncovering these effects might have been due to the experimental design of this study. Using only 2 groups (above and below) may be too coarse a segmentation to pick up the effects, especially if the effect is due to the extremes in value or market capitalisation (Knez and Ready, 1996). Fama and French (1992) utilised 10 levels of P/B ratios and market capitalisation. Gates (1997) subdivided his dataset into 5 P/B levels. However, other studies have used median splits on these factors and have found significant differences in return (e.g. Capaul, Rowley and Sharpe, 1993; Sinquefield, 1996).

Some authors have suggested that different rules might apply on the JSE due to its lack of liquidity, low turnover, dominance of institutional investors and the extent of cross holdings. It is suggested that these factors might explain why various anomalies in the U.S. have not been found on the South African market (De Villiers et al., 1986). The factors are influential, but as an explanation for the non-occurrence of anomalies they are unconvincing. The number of seemingly arbitrary CAPM anomalies which have been found in South Africa, the January effect found in this study being one, suggests that the JSE is no different from other markets despite its idiosyncrasies.

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