A PRE- AND POST-EVENT ANALYSIS OF LEVERAGE CHANGES BY JSE-LISTED FIRMS: UNDERSTANDING THE RATIONALE

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ABSTRACT

This study investigates the capital structure practices of companies listed on the JSE by analysing their operating performance before and after significant leverage events defined as increases or decreases of more than 30% in a year.

We develop a performance scorecard that acts as a complete synopsis of firm performance on aspects relating to leverage. We use a fixed effects regression on unbalanced panel data to test the relationship between the leverage change and 12 concurrent performance variables selected on the basis of their pre-established impact on firm leverage according to prior studies. We also test the relationship between the leverage change and the same set of performance variables five years before and five years after the event. We run a multiple discriminant analysis to test the predictive ability of our model. A 20% hold-out sample achieves a 48% correct classification rate.

Observed trends indicated that firms who increased their leverage introduced more operational risk than those who decreased their leverage. Increases were preceded by lower profitability but followed by higher profitability and higher ROI. Increases were also preceded by higher tax shields and resulted in improved PE ratios. Increases were also associated with higher total assets (size indicator). Decreases were associated with higher liquidity, DSCR's, ROI's, profitability and share prices.

The regression results identify significant lead- and lag periods only around increase events and establish the significance of the variables liquidity, size, operating cash and profitability relative to same-year leverage changes. The study also identifies significant performance variables at specific time periods – liquidity (t-3, t-4), operating cash (t-2, t-3), effective tax rate (t-4, t+1, t+3), size (t-4) and ROI (t-4). We confirm a positive relationship between liquidity, cash and effective tax rate but the coefficients for the latter two variables, size and ROI, are contrary to what we expect based on previous studies' findings. On the whole most of the results are inconsistent though and fail to conclusively substantiate the practice of any particular theory practiced by companies listed on the JSE.

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1. INTRODUCTION

There are many ways in which a company can fund operations or investment. Firstly, by means of internally-retained prior year's profits. Secondly, by means of liquid assets such as cash and short-term marketable securities. Thirdly, by means of external capital such as short-or long-term debt funding or equity issuances.

There is much in the way of literature on the rationale behind capital structure choices and the effects thereof on company performance (Modigliani & Miller, 1958, Donaldson, 1961, Myers, 1977, Myers & Majluf, 1984, Jensen, 1986, Barclay & Smith, 1999) but limited consistent consensus on the practical importance of the factors behind these theories (Long & Malitz, 1985, Harris & Raviv, 1991, Rajan & Zingales, 1995, Titman & Wessels, 1988, Shyam-Sunder & Myers, 1999, Baker & Wurgler, 2002, Frank & Goyal, 2003). In particular, disparities exist between empirical evidence and theoretical models (agency conflict, asymmetric information, product market and corporate control) and particularly, against the background of the specific context within which each one was formulated (Harris & Raviv, 1991).

Of course, all companies experience a growth lifecycle in which their funding requirements and operational activities as well as their asset base change and develop. The natural phases of expansion and contraction necessitate different management approaches. In the Literature Review that follows, we assimilate multiple views on the subject of capital structure. In this study we try to refine the different schools of thought into a coherent model which identifies the point at which a select combination of performance variables impacts upon management's leverage decisions. In this way we aim to establish which factors drive capital structure policy amongst JSE firms and by implication, which capital structure theories are being implemented in practice by JSE-listed companies.

1.1. RESEARCH QUESTION

What are the catalysts and resultant effects of corporate leverage changes measured by changes in operating performance at specific leads and lags?

Previous work on the topic of capital structure has focused on proposed methodologies to explain how companies set their debt/equity ratios based on a deeper analysis of the particular traits of debt and equity as sources of capital while understanding that a trade-off occurs between the risk introduced (through higher debt levels or the loss of corporate control through issuing equity) and the need to turn the wheels of profit-yielding investment. This is important because the DER attests to the fine line that a company walks between risk and return.

Many studies have justified the importance of one or more significant influential operators in capital structure decisions due to its/their association with leverage decisions in capital structure management. For example, Berger and Udell (1988) find the size/age/information continuum, Titman & Wessels (1988) find the relevance of profitability and investment opportunities, Barclay and Smith(1999) and Rajan and Zingales (1995) find the market-to-book ratio as a proxy for investment opportunities, Harris and Raviv (1991) find tangible assets, Long and Malitz (1985) find the potential for risk-shifting between shareholders and debtholders, Barclay, Smith and Watts (1995) find the dividend yield, and Korajczyk and Levy (2003) understand the importance of existing financial constraints on leverage decisions. Other papers have extended their findings to specifically support certain theories. For example, Modigliani and Miller's (1958) Irrelevance Theorem is based on the importance of the asset capitalisation rate rather than the type of capital used, Loughran and Ritter (1995) and Lucas and McDonald (1990) find the importance of recent share price performance in the Market Valuation theory, Myers' (1977) Underinvestment theory highlights the value of future discretionary investment spending, Myers and Majluf's (1984) Pecking Order theory centres around the importance of information asymmetry and Jensen's (1986) Free Cash Flow theory has at its core, the usefulness of excess cash.

Of notable interest is survey evidence from the US (Graham & Harvey, 2001) and international non-US markets (Brounen, de Jong & Koedjik, 2004) which finds that financial flexibility is of primary importance for capital structure policy makers - in support of the Underinvestment theory. Limited practical evidence is found in support of the Pecking Order-, Trade-off- and Market Valuation theories.

The main points of interest in this study are firstly, an analysis of corporate practice on the JSE as a reference to the South African market, and secondly, the relationship between operational performance (and associated capital structure theories to which those variables relate) and leverage events at specific points in time. We have distinguished between pre- and post-event performance in order to facilitate our understanding of key influential operators.

1.2. RESEARCH OBJECTIVES

The objective of this study is to investigate the catalysts and resultant effects of significant capital structure changes by analysing the evolution of certain operational factors in the five years leading up to- and following the change.

1.3. DELIMITATIONS

- The sample size may be excessively limited if suitable companies on the JSE display a trend towards targeting a constant debt/equity ratio (DER).
- Lack of data availability may limit the sample size if a complete analysis cannot be performed.
- JSE biases may influence the outcome of the study as the exchange tends to be predominated by large market capitalisation companies which may be united by a common capital structure rationale that determines their capital structure choices (correlation between cross-sectional units).
- Firm heterogeneity may complicate regression testing in a standardised model.
- A quintile categorical study is not particularly precise as it is backward-looking considering the fact that the sample period values are known up front and strong trends may unduly affect the definition of quintile

categories. This is the case with the data on Compagnie Finansiere Richemonte (Richemonte) where the share price jumped 120% in the last two years of the sample period, stretching the period range and raising the fifth quintile considerably. A rolling period quintile range would be more current and better reflect year-to-year operational considerations. This is better measured on an "event-level" in the regression analyses using annual percentage changes in both the DER and determinant variables at each event time period.

- In the study it is found that a general increase occurs in most variables and most sample companies by the end of the sample period. This is probably due to inflationary financial statement swelling that has not explicitly been accounted for. Naturally this phenomenon skews the maximum period value for each variable upwards and raises the fifth quintile, creating the illusion of growth towards the end of the sample. Without indexing the performance variables to a base year, the quintile sort deceptively makes it look like general operating performance was improved across the board towards the end of the sample.
- Highly correlated determinant variables may raise doubts about the strength and authenticity of the link between leverage changes and the variables included in the study, potentially exacerbated by omitted variables (endogeneity).

2. LITERATURE REVIEW

In this section, we outline various different perspectives on the importance of the debt/equity ratio as well as the most common theories on what decision factors motivate capital structure policy. All studies undertaken were based on the US market unless stated otherwise.

2.1. THE RELEVANCE OF THE DEBT/EQUITY RATIO

Scott and Martin (1975) note that of great concern to financial managers is the absence of a single valuation formula to determine a firm's optimal capital structure. Bhandari (1988) analyses the New York Stock Exchange (NYSE) and describes the DER as a 'natural proxy' for common equity risk apart from that contained within the Beta measure and finds a significant positive relationship between leverage and returns. Barbee, Mukherji and Raines (1996) use data from the NYSE and AMEX and find that the sales/price ratio (S/P) together with the DER have greater explanatory power than either the book-to-market value of equity (BMVE) or the market value of equity (MVE), albeit only for the period from 1979 to 1991.

Along with the findings of Kothari, Shanken and Sloan (1995) - whose study finds little significance between BMVE and S&P returns between 1947 and 1987 - these results are in sharp contrast with the findings of Fama and French (1992) who find that the BMVE and firm size (proxied by MVE) have the greatest explanatory power for expected equity returns specifically for the period from 1963 to 1990.

Hamada (1972) finds that corporate leverage in the US has a definite impact on levels of systematic risk to the extent of 21% to 24%. In this way, a firm's capital structure becomes relevant as an indication of firm operational risk and a determinant of future equity performance through compensation for operational risk borne. It would appear that firm leverage is recognised and rewarded by investors.

Berger and Udell (1988) describe the different capital structures that arise in their study of the US market as the firm moves through the stages of the lifecycle, evolving in both size and age. Informational opaqueness becomes

of paramount importance in determining suitable sources of funding – public or private. The ability to accurately communicate firm quality to potential funders of capital and to build credible reputations becomes the solution to surmounting informational penalties imposed by nervous lenders. They generate a 'size/age/information' continuum displaying the lifecycle growth stages experienced by developing companies. Smaller, younger, informationally-opaque companies often without steady cashflow and with predominantly intangible assets, must rely on private insider funding initially with aspirations of accessing public external markets becoming a realistic option only after proven continued growth. At this later stage, the business can be considered informationally-transparent yet moral hazard conflicts may arise and business owners may select debt as a preferred source of financing to maintain control of their businesses. In contrast, equity financing may transfer ownership risk and responsibility to external shareholders.

Zwiebel (1996) notes that the benefits of debt include constraining entrenched management (and promoting responsible investment thereby achieving some degree of credible takeover resistance) while also avoiding diffusion of ownership and loss of control. However, the costs of debt centre around the increased threat of bankruptcy associated with onerous repayments which may limit future investment and squeeze bottom-line profits.

Capital structure decisions thus, revolve around balancing operational expansion and future viability with maintaining corporate control (and some degree of entrenchment). Positive net present value (NPV) investments and enhanced managerial efficiency reduce the need for debt as a means of resisting takeovers. Profitable firms tend to have lower leverage and firms with higher investment opportunities have lower leverage (Titman & Wessels, 1988). Furthermore, negative market reactions to new equity issues are explained as being a response to a loss in control through diffusion of ownership (Myers & Majluf, 1984). This would logically lead to an increase in firm value under new debt issues as any corporate activity that reduces management's ownership stake would result in management deciding to lever up to fend off the threat of a takeover.

2.2. MODIGLIANI AND MILLER: CAPITAL STRUCTURE IRRELEVANCE

Modigliani and Miller's (1958) Irrelevance Theory states that in a perfect capital market (no transaction costs, no bankruptcy costs, no income taxes) the market value of a company is independent of its capital structure and purely a function of the expected return on its assets capitalised at an asset class-specific capitalisation rate. Substituting equity funding with cheaper debt funding will have no effect on the average cost of funds because the higher proportion of debt will offset the lower cost of borrowed funds by increasing the cost of equity funds. Similarly, an investment decision "cut-off" point is described as being a function of the asset capitalisation rate in all cases, regardless of whether debt or equity is used to fund the investment. A feasible investment should be evaluated only on the basis of whether the return on investment exceeds the relevant capitalisation rate.

2.3. UNDERINVESTMENT THEORY

Myer's (1977) shows that it is rational to limit debt funding because the presence of risky debt reduces the present value of future discretionary spending on growth opportunities by introducing a sub-optimal investment strategy. Firms with risky debt may forego positive investment opportunities. The higher the value of future growth opportunities, the lower the amount of leverage a company should maintain. This is known as the Underinvestment- or Contracting-Costs Theory and it constitutes an agency conflict between bondholders and shareholders. Bondholders may be satisfied to invest in low-risk/low-return projects for which shareholders are never recompensed. When existing debt levels are high, any new equity funding would largely be allocated to debt service making new equity funding prohibitively expensive. In this scenario, it is likely that positive-NPV projects may be foregone. This problem is particularly acute for high growth firms with mostly intangible assets who need to maintain sufficient reserve debt capacity to fund future growth.

Barclay and Smith (1999) ask the question, "What is the optimal capital structure that maximises firm value?" This study tests the Contracting Costs theory using as a proxy for growth opportunities, the ratio of market-to-book value of assets. Their regression analysis shows that companies with high

market-to-book ratios had significantly lower leverage ratios. The same result was also found in the earlier study by Rajan and Zingales (1995) who tested data outside the US but came to the same conclusion – firms with higher market-to-book ratios had lower leverage. The authors conclude that the Contracting Costs theory presents the most unified framework of competing theories. Furthermore, they suggest that companies will select "coherent packages" of financial policy choices relating not only to capital structure choice but also dividend policy and equity option compensation.

2.4. PECKING ORDER THEORY

Myers and Majluf (1984) present an "issue-invest" model showing that under conditions of asymmetric information between management and investors, firms will demonstrate a preference for internal capital funding. Unless the increment to existing shareholders from the new investment exceeds the value of slack and assets-in-place, a portion of which becomes due to new shareholders, the firm will not issue equity to fund the investment. In this case, the project will either be funded from internal available funds or not undertaken at all. This is known as the Pecking Order theory. The theory presents a scenario whereby the company may forego positive-NPV projects rather than issue new equity at a discount that would prejudice existing shareholders. Finally, according to option pricing theory (used as the basis of the model), the opportunity loss of debt is always less than that of equity. Thus, debt is more likely to be issued before equity. The motivation hereof, according to the authors, is purely in the best interests of existing shareholders and not related to the 'managerial capitalism' theory discussed later in this paper.

The Pecking Order theory is primarily motivated by information asymmetry – the value of debt is less likely to fluctuate once manager's inside information is revealed. This characteristic makes it more certain and preferred to equity for this reason. Likewise, internal funds are tantamount to riskless debt and preferred to risky debt for the same reason. Myers (1984) suggests a simple rule-of-thumb: issue debt when the firm is undervalued and equity when it's overvalued. This approach would effectively create a Pecking Order policy

since equity issuances would always be met with investor scepticism making it a ‘last resort’ option.

Baskin (1989) says, in support of the Pecking Order (which he describes as having developed originally as a description of corporate practice), “established firms normally avoid new equity issues, and borrowing tends to be determined as the residual between desired investment and a relatively inelastic supply of retained earnings”. He finds that leverage is positively related to past growth, negatively related to past profitability and positively related to past dividends.

Fama and French (2002) find evidence in support of both the Pecking Order and Trade-off Theories: firstly, profitable firms have less leverage, firms with more investments have less leverage and notably, short-term cashflow fluctuations in investment and earnings are managed by means of debt. Importantly, they summarise the two primary drivers of both theories as being profitability and investment. On the one hand (what the authors describe as the ‘simple’ version of the Pecking Order), debt increases when investment exceeds earnings providing that new investment cannot be financed with retained earnings (or equity under certain favourable conditions as discussed below). Leverage is less for profitable firms and more for firms with many profitable investment opportunities.

The ‘complex’ version of the Pecking Order, according to Myers (1984), states that firms that anticipate worthwhile forthcoming investment opportunities are likely to budget for them by maintaining sufficient debt reserves to avoid having to forego valuable business opportunities or reduce future investment profits as a result of having to finance them with expensive high-risk funding such as risky debt or equity. This becomes something of a trade-off in that excessive leverage reduces profitability and increases the threat of bankruptcy, thus, firms with many favourable investment opportunities are more conservative in their use of debt. Firms with many profitable investment opportunities will maintain lower levels of leverage.

The fundamental premise of the Pecking Order is one of preference under ideal conditions. Common sense and logic would dictate that where the informational asymmetry associated with risky debt or equity is favourable to new lenders, or where management pre-empts a negative reaction by issuing at a discount in order to ensure viable projects are accessible, there may be situations where equity finance is preferential to debt - specifically where the fundamental premise of the Pecking Order, namely, informational asymmetry, actually works in favour of new investors.

Naturally the Pecking Order is a theory devised in a perfect world which fails to explicitly consider every possible financing scenario. Mitigating circumstances may include a high level of existing debt, recessionary macroeconomic conditions that increase the cost of debt, sudden cashflow squeezes, temporary negative earnings shocks or unexpected and irresistibly-favourable market conditions. By the same token, a particularly uninviting equity market (poor market sentiment or a market recession) may be the primary reason a company raises debt financing.

The option to maintain retained earnings to fund operations if management anticipates tough times ahead may make new risky security-funding look more attractive than cash. Perhaps above-average investment returns would provide sufficient incentive for management to issue new risky securities at a discount to avoid the opportunity cost of foregone investment. Alternatively, management might be motivated to find ways to successfully communicate favourable informational asymmetry to new lenders.

Under the Pecking Order, new lenders would assume the informational asymmetry was negative and further discount the issue price. It doesn't seem entirely reasonable that lenders would always be suspicious of management's intentions but it seems that if management could be transparent in their financing decisions and as a result, trusted by the market, then the barriers of informational asymmetry would less likely hold power over what funding options best suit a company's cashflow needs over time, through up and down-markets and favourable and unfavourable market sentiment such that each financing decision would be motivated by the specific merits of individual

situations. Fama and French (2002) also note an implied but obvious ‘pecking order’ of cashflow expenditure in that the payout ratio, according to Myers (1984), is inversely related to investment opportunities and leverage. Debt repayments and future positive investment returns take precedence over dividend payouts.

This is logical business sense - certain cashflows are prioritised over others for good reason, and in the same way, certain financing options are prioritised over others based on their associated advantages and disadvantages but clearly such merits are contextual and not fixed in stone. Notably they find weak evidence to support the ’simple’ version of the Pecking Order (positive relationship between leverage and investment) but strong evidence in support of the ‘Complex’ version (also support for the Trade-off Theory). Fama and French (2002) conclude by saying that the biggest ‘scar’ (p. 30) of the Trade-off model is the negative relationship between leverage and profitability while the Pecking Order falls down where small, high-growth non-dividend paying firms (high agency cost firms) issue new equity.

Frank and Goyal (2003) are considerably less enthusiastic about the Pecking Order theory in their study of American firms from 1971 to 1998. They find that on average, amongst US-listed firms, net equity issues exceed net debt issues (after excluding the IPO-effect) and track the financing deficit more closely. However, they also acknowledge that many small firms entered the market in the 1980’s and 1990’s (preferred equity-issuers). The correlation between net equity issues and the financing deficit is 0.80 while that between net long-term debt issues and the financing deficit is only 0.48. They also find that despite the fact that small, high-growth firms are more vulnerable to adverse selection costs as a result of higher information asymmetry, they are even less likely to adhere to the Pecking Order.

The authors state that under the Pecking Order, high-growth companies will “end-up with more debt because of a manager’s reluctance to issue equity” (p. 219). However, according to the theory this will only happen if internal funds are insufficient to fund activities and of course, there are situations where more debt may be advantageous (particularly given the lower informational cost

associated with debt relative to equity) . Harris and Raviv (1991) clarify that according to the theory of the Pecking Order, firms with more tangible assets can support more debt. The rationale is twofold: firstly, they can support more debt as a result of higher collateral and concomitant lower borrowing costs and secondly, even though the probability of bankruptcy is higher, they will have a higher liquidation value at bankruptcy due to the nature of their assets making liquidation the best option under the circumstances.

Frank and Goyal (2003) cite evidence that low information-cost debt such as capitalised leases and secured debt is generally not issued before high information-cost unsecured debt, as it should be according to the Pecking Order. Barclay and Smith (1995a, b) find that 50% of their sample firms have no short-term debt (less than one year maturity), 23% have no secured debt and 54% have no capital leases. This evidence strongly refutes the Pecking Order theory.

Frank and Goyal (2003) further reason that firms with fewer tangible assets have a higher degree of information asymmetry (which can be argued given the fact that it would be difficult to submit intangible assets to the market for valuation purposes) and thus, would accumulate more debt. But this conclusion fails to acknowledge that additional debt would become progressively more expensive and eventually increase the threat of bankruptcy to an unsustainable point. In fact for that very reason, it would be difficult to raise a stream of further debt funding backed only by intangible assets.

Of course, the Pecking Order theory addresses separately the ideas of the benefits of asset composition and the informational characteristics of sources of funds and says nothing of the informational costs of different types of assets. The authors find furthermore, that internally retained funds become progressively less important as a source of financing in the study sample period and for a sub-sample period in the 1990's that support for the Pecking Order is weaker than in the 1970's and 1980's.

Shyam-Sunder and Myers (1999) find that a Pecking Order model explains more of the variance of DER's than a target adjustment model. Simulation

results on the Trade-off Theory fail to reject the model when it is false, while those on the Pecking Order are more powerful. The authors suggest that the Trade-off Theory gives false positives because capital expenditure is serially correlated and earnings are cyclical. Furthermore, dividends are inflexible and as such, the DER will appear to increase for a few years and then decrease for a few years as general operational conditions develop. Thus, the results of the model fit are highly dependent on the measurement of the target ratio and using an ex-post mean captures natural mean-reversion which may appear to be target adjustment. They acknowledge that the Pecking Order model was particularly successful for their sample of larger, mature firms.

2.5. TRADE-OFF THEORY

Myers (1984) divides the capital structure decision into two schools of thought: firstly, a static Trade-off hypothesis (DeAngelo & Masulis, 1980) of the risks and costs of potential financial distress against the potential tax saving of additional interest repayments, and secondly, the Pecking Order theory in which internal funds are preferred to debt and debt preferred to equity. The former theory leads the authors to conclude that: a) risky firms should borrow less as the threat of financial distress is relatively more likely, and b) that firms with specialised intangible assets or growth opportunities have a higher opportunity loss in times of financial distress. Firms with more assets-in-place with active secondary markets can thus, afford to borrow more than firms with more intangible growth opportunities.

2.6. AGENCY CONFLICT

Myers (1984) cites Donaldson (1961) who raises the matter of the agency conflict known as “managerial capitalism” - managerial avoidance of external capital markets as a disciplining mechanism being non-synchronous relative to the “maximising shareholder wealth” view frequently espoused in financial literature. The suggested solution to this problem is probably best addressed by Jensen’s (1986) Free Cash Flow theory. If shareholder wealth is actively being maximised, companies generating excess operating cash without adequate growth opportunities should apply any operating cashflow that cannot be profitably invested within the company, towards new debt funding

repayments rather than wasting it on low- or negative-NPV projects. He also notes that contractually-obligated debt repayments are a more effective means of distributing excess cash than discretionary dividend payments. Additional debt in this situation acts as an incentive to management to critically evaluate capital spending.

Long and Malitz (1985) show that under cases of moral hazard where the agency conflict of debt may lead to risk shifting between stakeholders, the type of available investment opportunities chiefly determines the amount of leverage a firm can support. With predominantly intangible assets, firms can easily invest in low-return projects (such as R&D) and shift risk towards bondholders. However, with predominantly tangible assets, this behaviour is observable and easier to control. Firms with more intangible growth opportunities can best control the agency conflict of debt by issuing less risky debt while firms with tangible assets can support a higher level of risky debt. Intangible investment opportunities effectively reduce available debt capacity.

2.7. LEVERAGE AND OTHER OPERATING VARIABLES

Frank and Goyal (2009) find that the most important determinant variables of leverage decisions are industry median leverage, the market-to-book ratio, assets as collateral, profits, whether the company pays a dividend, log of total assets and inflation.

Long and Malitz (1985) analyse firms listed on the NYSE and AMEX and find a negative relationship between investment in advertising and R&D (used as a proxy for intangible growth opportunities) and leverage, and a positive relationship between capital expenditure and leverage - confirming the presence of a limit on borrowing for firms with more intangible growth opportunities. This is corroborated by Williamson (1981) who used as his proxy for intangible growth opportunities, the difference between the market value of debt and equity and the replacement cost of tangible assets.

Barclay, Smith and Watts (1995) introduce the results of their study showing that leverage ratios are significantly negatively related to dividend yields. The higher the market-to-book ratio, the lower the dividend yield suggesting that

dividend policy and capital structure policy are complementary strategies motivated by a common goal. The notion of a package of financial policy choices is investigated by Smith and Watts (1992) who find that measures of a firm's investment opportunity set (growth opportunities and firm size) have implied associations with its financing, dividend and executive-compensation policies. Their results show that leverage and dividend yields are positively related, and firms with more growth opportunities have lower leverage.

Lemmon, Roberts and Zender (2008) find a surprising amount of persistence in capital structures of US and UK firms over their sample period of two decades. This implies stability in factors that determine variation in capital structure. They note that existing determinants appear to explain a very small portion of the unconditional standard deviation of book leverage (defined as the ratio of total debt to total assets). Interestingly, they notice a transitory component associated with rebalancing towards a target, and a long-run permanent component which is largely time-invariant.

Harris and Raviv (1991) find that leverage increases with fixed assets, non-debt tax shields, investment opportunities, and size; and decreases with volatility, advertising expenditure, the probability of bankruptcy, profitability, and product uniqueness.

Rajan and Zingales (1995) examine the determinants of leverage across G7 countries and find similarities in the extent to which these countries are levered despite differences in their regulatory and institutional environments. They note that the size effect is ambiguous – large firms may be more diversified and less likely to fail (in which case size and leverage should be positively related), but size may also proxy for the degree of information asymmetry associated with a firm. The more information outsiders have (the lower the information asymmetry), the higher the firm's preference for equity funding should be given the fact that equity is perceived as being more sensitive to the market assessments of its true value. However, their results show that large firms (lower informational asymmetry) issue less equity. They also find that asset composition is consistently positively correlated with leverage, the market-to-book (assets) ratio as a proxy for investment opportunities is

consistently negatively correlated with leverage, size is positively correlated with leverage everywhere except Germany, and profitability is negatively correlated with leverage in most countries except Germany and France (where it shows no significant correlation).

Korajczyk and Levy (2003) investigate the US market and find that financially unconstrained firms tend to issue equity around market peaks but this is not the case for relatively more constrained firms (those without sufficient cash-generation to fund investments and those subject to material penalty agency costs when accessing external funding). They also find that larger firms have more leverage, firms with a higher proportion of tangible assets have more leverage while those with more unique assets have less. Firms with non-debt tax shields such as depreciation have lower leverage. More profitable firms (measured by operating income) have less leverage. They reason that this evidence supports the Pecking Order theory in that internal funds are preferred over external, and debt over equity due to the higher informational cost of equity.

2.8. TAXES

Miller (1977) adds the effect of investor's personal income taxes to the Trade-off theory argument and finds that the additional tax liability that falls to investors as a result of being taxed on interest income (taxed at a higher rate than equity gains) must be offset by higher corporate bond yields. This ultimately negates the tax advantage of issuing more debt at the corporate level.

While Miller (1977) compares the size of expected bankruptcy costs in the Trade-off debate as being tantamount to the horse in a horse-and-rabbit stew, (unrealistically large to offset the tax savings of debt), DeAngelo and Masulis (1980) find that the existence of non-debt tax shields such as depreciation and investment tax credits effectively overturns the Irrelevancy theorem. They present a model in which the market prices of debt and equity adjust so that the difference between the personal tax disadvantage and the corporate tax advantage is similar in magnitude to the expected cost of bankruptcy.

Graham (2000) notes that the tax benefit of debt is 9.7% of firm value (or 4.3% net of personal taxes) and most firms could double their use of debt under the reasoning of the Trade-off theory. Large, liquid, profitable firms with a low threat of bankruptcy are conservative in their use of debt. This is largely due to an increasing tax benefit function as tax rates fall as interest expenses increase.

2.9. PREVIOUS STUDIES

Marsh (1982) cites three important studies: Taub (1975), Baxter and Cragg (1970) and Martin and Scott (1974). Their results indicate that small companies, companies with high PE ratios and highly-geared companies showed a greater likelihood of issuing equity. Marsh (1982) studies UK firms and concludes that the PE ratio is a “timing’ variable suggesting those equity issues were related to current favourable market valuations and/or strong share price performance. Baxter and Cragg (1970) also found that companies raising larger amounts of capital favoured debt as a means to do this. Marsh (1982) suggests that this is due to concerns over loss of control. Companies with high market capitalisations relative to total assets favoured equity.

Martin and Scott (1974) found that a high dividend payout, low profitability and a high degree of fixed assets were prevalent amongst debt issues. The first two factors support the Pecking Order theory if companies are paying out a substantial portion of earnings or if earnings are low, while the third factor supports the Asset Composition argument. Marsh (1982) finds that risky companies tend to favour equity and concludes by saying that three variables appear consistently important – operating risk, size and asset composition (although the measurement of operating risk is inconsistent).

Baker and Wurgler (2002) find a strong relationship between current capital structure and historical market values suggesting that companies time equity issues and that this method is successful on average. The authors mention a ‘dynamic’ version of the Pecking Order whereby companies with forthcoming investment opportunities reduce leverage to avoid having to issue equity at some unknown point in the future. In the sense that the Pecking Order theory is based upon informational asymmetry and the associated costs of

uncertainty, the use of equity as a 'last resort' supports the theory and adds weight to the preference for issuing equity under conditions of certainty particularly where the outcome is positive for shareholders.

Titman and Wessels (1988) assess the explanatory power of previously identified determinants of capital structure. They find that leverage is negatively related to firm 'uniqueness', transaction costs of debt may be an important determinant of leverage (although like Miller, 1977, they conclude are insignificant relative to other determinants), and that past profitability is negatively related to leverage (scaled by the market value of equity).

Friend and Hasbrouck (1986) find that in addition to previously identified relationships such as asset risk (proxied by operating leverage), variation in operating income or return on assets (negative correlation), profitability (negative correlation) and firm size (positive correlation), they also find a link between past growth and leverage (positive) and the size of insider holdings and leverage (negative correlation) due to a higher vested interest in ensuring the firm remains viable which is more likely at lower leverage ratios.

2.10. SURVEY EVIDENCE

International survey evidence (Brounen, de Jong & Koedjik, 2004) has shown that, in setting the appropriate amount of debt, the majority of companies consider financial flexibility of above average importance, followed by credit ratings (particularly in the US). Earnings volatility and the tax advantage of debt are of moderate importance. Costs of financial distress are only slightly important and issuing debt as an incentive to management is not a priority to most companies. Other factors of moderate importance are the level of interest rates on debt and the availability of sufficient profits to fund activities. Debt as an alternative source of funds to undervalued equity is of less importance. Debt as a signalling device is of little importance as is the effect of investors' personal taxes.

Graham and Harvey (2001) focus on the US market and find that the predominant factors influencing debt issuance are financial flexibility and credit ratings (above-average importance), followed by earnings and cashflow

volatility, insufficient internal funds, the level of interest rates and the tax advantage of debt (slightly less than average importance). Bankruptcy costs again are of little importance but are relatively more important for speculative firms. Investor's personal taxes are also of very little importance.

Despite the appearance of financial flexibility as the most important consideration in selecting the amount of debt in both survey's (confirmed by Graham, 2000), the authors conclude that without evidence of informational asymmetry (proxied by size or status as dividend-payer), financial flexibility on its own does not constitute proof of the Pecking Order theory at work. It does lend some support however, to the Underinvestment theory and the good sense of limiting debt funding for future investment.

The appearance of insufficient internal funds as a key determinant in the decision to issue debt supports the Pecking Order theory particularly because it is more important for small firms who are more affected by information asymmetry issues. However, the evidence that firms issue equity when access to debt funding is restricted is limited which is contrary to the Pecking Order Theory.

The appearance of a preference for issuing equity when market valuations are positive supports the Market Valuation theory that companies take advantage of 'windows of opportunity' when issuing new equity. Recent share price performance is considered to be of above-average importance in the decision to issue equity, again supporting the 'window of opportunity' theory of market timing (Lucas & McDonald, 1990 and Loughran & Ritter, 1995). This is corroborated by the Graham and Harvey (2001) survey evidence that companies will issue convertible debt instead of undervalued equity. This supports Stein's (1992) theory that convertible debt instruments are "back-door" equity in that they are a cheaper way of issuing delayed common equity also cited by Graham and Harvey, 2001. The indication that companies prefer to issue debt when interest rates are favourable lends further support to the Market Valuation theory.

When asked whether debt policy is affected by the desire to repay long-term profits to shareholders not bondholders, the scores were low. However, it

appeared to be a more important factor for growth firms rather than non-growth firms which does lend some support for the Underinvestment problem being of concern when issuing debt.

Of interest is the survey finding that firms do not use debt in order to commit cashflow to additional interest payments and thereby incentivise managers or impose efficiency constraints, contrary to Jensen's (1986) Free Cashflow Theory.

The survey of 16 European markets by Bancel and Mittoo (2004) largely confirms prior evidence – of most importance is financial flexibility (ranked stronger than the two previous studies) and credit ratings. The tax advantage of additional debt features higher in importance than the two previous studies, followed by earnings volatility, customers/suppliers concerns about future financial stability and finally the potential costs of distress. This provides more support for the Trade-off theory. Again, market valuation affects the timing of equity issues in accordance with the Market Valuation theory. The level of interest rates also presents itself as a factor relevant in issuing debt again supporting the Market Valuation theory.

According to the survey, however, there is limited support for the Pecking Order Theory as few firms issue debt when internal profits are insufficient to fund activities. Interestingly, this motivation is stronger for new equity issues meaning that firms will resort to equity funding to make up a shortfall in profits but less often to debt. This is confirmed by Korajcyk, Lucas and McDonald (1990a) who suggest that it is not excessively high current debt capacity that prompts companies to issue further equity but rather that equity issues are used to finance new investments (based on their finding that Tobin's q's – market value of assets to book value of assets – rise before an equity issue and falls afterwards).

South African survey evidence by Correia and Cramer (2008) is of limited scope but reveals that only 21% of companies do not apply a target debt-equity ratio, compared to Graham and Harvey's (2001) finding that 19% of companies do not apply any kind of target. However, the Correia and Cramer study shows that in South Africa, the targets appear to be applied more strictly.

They conclude that the South African market is under-geared according to the predictions of the Trade-off theory, possibly due to a combination of high profitability and limited growth prospects and an unwillingness to expand into foreign markets. High interest rates may also have restricted the use of debt along with increased private equity investment involving highly geared financing structures.

In summary, there are a number of feasible theories on what motivates capital structure. Survey evidence has shown that these theories are not practiced consistently in corporate management. It is this divergence between literature and practice that opens up a need for a study, particularly in the South African market, to reconcile this gap in order to better understand the driving forces of capital structure management decisions and the effects thereof and to what extent capital structure theories are supported in South Africa.

2.11. METHODOLOGIES EMPLOYED

Marsh (1982) uses a probit and a logit regression applied to a hold-out sample to estimate the likelihood of a company issuing either debt or equity based on its current debt ratio relative to a target. Their model correctly classified 75% of issues. Baxter and Cragg (1970) also use probit and logit regressions. Taub (1975) uses logit analysis to generate maximum likelihood estimates for the issuance of debt or equity depending on the current debt ratio relative to a desired target. Martin and Scott (1974) use multiple discriminant analysis (MDA) to classify their sample as either a debt-issuer or an equity-issuer and generate a 75% prediction rate on their original sample. They describe the MDA approach of making multivariate comparisons based on comparative financial ratios as being rational. Interestingly, total assets is the primary differentiator between debt- or equity-issuing groups, followed by the PE ratio and their liquidity measure CA/TA.

Baker and Wurgler (2002) run univariate and multivariate regressions on the annual Debt/Asset ratio for a period of 10 years after an IPO to assess the development over this period of net debt issues, net equity issues and retained earnings as well as pre-specified determinants including market-to-book (to measure investment opportunities and market mispricing), asset composition

(ratio of net property, plant and equipment to total assets), profitability (EBITDA scaled by total assets) and size (log of net sales).

Elsas and Florysiak (2008) analyse the US market and highlight the importance of considering the econometric time series aspect of capital structure studies in that the panel structure of the data as well as the endogeneity that is likely to be embedded within the independent variable determinants may lead to severe biases of estimators unless directly accounted for. They suggest that the full information content may not be correctly analysed and that inferences drawn may be incorrect. Furthermore, they suggest that the Fama/Macbeth (1973) procedure of standard error adjustment where firm heterogeneity is present or where endogeneity is present due to significant variables being omitted is inadequate for capital structure research and produces larger test statistics than are justified thereby rejecting the null hypothesis too frequently. They suggest the use of fixed effects panel estimators as being more effective in such situations as it allows for firm-specific intercepts in the regression. Thus, the time-invariant and firm-specific component is removed from the regression residual term.

3. METHODOLOGY

3.1. RESEARCH DESIGN

Previous research has established the link between certain operational variables and leverage. We employ the following financial variables as specific measures of different aspects of operating performance that, according to previous research, relate directly to capital structure and the extent of leverage employed. Thus, it becomes useful to address these facets of operating performance in our study in order to assess how leverage is being determined.

3.1.1. Liquidity- CA/CL

Short-term liquidity has a direct bearing on the choice between debt and equity as a means of financing working capital requirements. Greater liquidity enables greater debt capacity, measured by the ratio of Current Assets to Total Assets in the study by Martin and Scott (1974).

3.1.2. Asset Composition- FA/INTANGIBLES

Companies with higher tangible assets relative to intangible growth opportunities can support higher DER's (Martin and Scott, 1974, Myers, 1977, Long and Malitz, 1985). Tangible assets act as collateral against debt and reduce the cost of borrowing making debt funding more affordable. Firms with higher intangible growth opportunities prefer to maintain lower DER's to preserve further borrowing capacity and avoid having to forego profitable investment opportunities. This also introduces a potential agency conflict where bondholders may reap all the benefits of new debt if existing leverage is very high. Shareholders may become compromised as profits from new projects are more likely to be applied towards existing debt service. Bondholders may also specifically select low-risk/low-return projects from which shareholders reap no benefit. A higher degree of fixed assets reduces the potential for wealth transfer. We use FA/INTANGIBLE ASSETS as a measure of asset composition.

3.1.3. Threat of Bankruptcy – DSCR, log(TA)

Companies with high existing levels of debt run the risk of having to forego new positive NPV investment opportunities (Myers, 1977). They are more constrained in terms of raising new funding or adapting to changing business conditions. Reduced financial flexibility increases the likelihood of financial distress. High leverage companies where financial distress is more imminent are likely to find their shares discounted by the market at a higher rate (Fama & French, 1992) thereby reducing the amount of debt they can afford. We use Debt Service Coverage ratio (DSCR) defined as the ratio of earnings before interest and tax (EBIT) to interest expense to measure the existing debt burden (Rajan & Zingales, 1995 and Martin & Scott, 1974) and a size variable (log of total assets) as an inverse proxy for potential distress (Marsh, 1982, Harris & Raviv, 1991, Rajan & Zingales, 1995).

3.1.4. Cash Flow Generation – CF operations

Companies that generate large amounts of free cashflow should increase their DER in order to allocate excess cashflow to debt repayments rather than invest it on low- or negative NPV projects (Jensen, 1986). We compare cash generation to profitability of existing investment. If excess cash is being generated for which there is no suitable use, additional debt would absorb it efficiently without the risk of wealth transfer occurring between shareholders and bondholders. We use cash from operations to measure cash generation.

3.1.5. Market Valuation – PE, Share price return

Companies are more likely to time the issuance of equity to take advantage of favourable market conditions. A high market-to-book ratio, a high PE ratio and a good recent share price return indicate favourable market conditions for issuing equity (Marsh, 1982, Barclay & Smith, 1999, Baker & Wurgler, 2002). We use the PE ratio and share price return to measure market sentiment.

3.1.6. Operational Risk – % annual change in OI

Companies with more earnings volatility are less likely to fund activities with debt (Marsh, 1982, Friend & Hasbrouck, 1986). Long and Malitz (1985) use an unlevered beta, we use earnings volatility to measure operational risk. Contrary to Titman and Wessels (1998) who use the standard deviation of operating income, we use the annual percentage change in operating income following the methodology used to identify significant DER changes.

3.1.7. Profitability – OI/TA

Companies prefer to fund growth with internally retained earnings before accessing external capital markets in order to reduce the informational costs associated with raising funds in external capital markets (Myers & Majluf, 1984). If companies are forced to access external capital markets, debt is preferred to equity due to its lower informational cost. This also enables companies to maintain flexibility and avoid prohibitive funding commitments unless absolutely necessary. Profitability - measured as earnings before interest, tax, depreciation and amortisation [EBITDA] following Baker and Wurgler (2002) or as the ratio of net income to total assets following Martin and Scott (1974) - indicates the availability of internal funds to fund investment activities. We use as the proxy for profitability, the ratio of operating income to total assets (Titman & Wessels, 1988).

3.1.8. Tax Advantage - T

Companies trade-off the tax advantage of additional debt with the increased costs of potential distress (DeAngelo & Masulis, 1980, Myers, 1984). The higher the potential costs of distress, the lower the DER all other things equal. We use the effective tax rate (calculated as the ratio of the annual taxation expense to net income) to estimate the potential tax savings on interest payments based on the actual cost of taxation relative to earnings.

3.1.9. Underinvestment Risk - ROI

Where existing debt levels are high, firms may invest in low-risk/low-return projects to avoid introducing excessive operational risk (Myers, 1977). However, this may prejudice existing shareholders who earn a below-par return on equity. This situation is exacerbated by high-growth companies with predominantly intangible growth opportunities who have a greater incentive to maintain lower debt ratios and thereby, preserve future borrowing capacity. We use the ratio of net profit to investments (ROI) to measure the profitability of current investments and assess this in combination with the existing debt burden and asset composition discussed above.

3.1.10. Macroeconomic activity – Real Interest Rates

We use a macroeconomic indicator, Real Interest Rate (calculated as the historic prime rate adjusted by the Consumer Price Index [CPI]) to isolate and analyse the change in capital structure within the context of the associated business cycle environment to properly understand the causes and effects of such a change. In the case where macroeconomic conditions are the sole drivers of a change made to leverage, this variable should enable us to isolate business environment effects from material developments in operational variables.

Korajczyk et. al, (2003) find that firms are influenced by macroeconomic conditions as well as financial variables in their financing decisions. However, those firms that are relatively more constrained in their financing options are less reliant than unconstrained firms on favourable macroeconomic conditions when making the debt-/equity issue decision. They also note that equity issues tend to be pro-cyclical (more frequent during economic expansions) while debt issues are generally counter-cyclical (generally relied upon during economic recessions) for unconstrained firms. Again this trend is less pronounced for constrained firms who appear to have less flexibility in their funding options. It is reasoned that in fact leverage for constrained firms is in fact, pro-cyclical. The capital structure of such firms tends to be more closely driven by

collateral asset values as they tend to lever up when collateral is most highly valued during or post-economic expansions.

Hackbarth, Miao and Morellec (2004) also find evidence of counter-cyclical leverage, noting that considerable evidence exists to indicate the increased likelihood of default on debt under macroeconomic recessions due to constrained cashflows. Their model suggests that optimal capital structure should be adjusted to macroeconomic conditions since this is the primary determinant of operating cashflows. They cite Schleifer and Vishny (2003) who find that a firm's debt capacity in an expansion is 40% greater than during a recession.

Levy and Hennessy (2007) also find that leverage for unconstrained firms that are able to access external public markets is counter-cyclical while that for more severely constrained firms is pro-cyclical. Furthermore, they find that investment contraction for high agency cost firms is particularly acute in economic recessions, leading to a feedback effect and resultant excessive volatility in investment that surpasses fluctuations in economic activity. Their model suggests that manager compensation is lowest during periods of economic recession and thus, it becomes reasonable to expect higher leverage ratios during such periods. This is re-affirmed by the use of more equity funding and concomitant improved risk-sharing during expansions – re-enforcing the pattern of counter-cyclical leverage.

These factors, when assessed in combination, may form a web of indicators that are capable of suggesting, irrefutably, the practice of one particular capital structure policy over any others. Given the fact that most capital structure theories are systematically structured within a carefully designed context, addressing the multi-faceted nature of each theory is more likely to prove or disprove the practice.

3.2. PREDICTIONS

Reduced profitability and insufficient internal funds leading up to a leverage increase would indicate clear support for the Pecking Order theory if combined with a clear decision to select debt in preference to equity (corroborating the higher informational cost of equity). Positive share price returns would increase the appeal of equity in support of the Market Valuation theory. If a company, particularly a high informational cost company, chose to issue debt despite the context of favourable market sentiment, it would lend support to the Pecking Order theory.

The combination of higher tax rates and a high DER along with comfortable debt service levels amidst easily accessible equity financing may indicate that the Trade-off theory is being applied. A company generating excess free cash flow, particularly one without a high degree of current investment opportunities and concomitant use for such excess cashflow, may increase leverage to absorb excess cash and increase investment and growth – in support of the Free Cashflow theory. A company with high tangible assets should, all things equal, be able to support more debt. Thus, an increase in the proportion of tangible assets held prior to a leverage increase could be seen as support for the Asset Composition theory, all other things being equal.

Conclusive proof for the Pecking Order theory would be evidence that firms prefer to fund internally even when debt-issuance circumstances are favourable (or at the least, not unfavourable); or that firms issue debt even when there's no obvious obstacle to issuing equity. A debt issue where available internal funds exist or an attractive equity issue before debt capacity has been fully (optimally) utilised would irrefutably contradict the Pecking Order theory. So if our results show a leverage increase under favourable market conditions where debt service capacity and profitability and cashflow generation is high, we may conclude that under this scenario the Pecking Order is not being applied.

Conclusive proof of the Trade-off theory would be an indication that the company is clearly using the tax benefits of additional debt to its advantage and simultaneously and deliberately steering clear of alternative forms of

funding such as available internal funds or equity (assuming those options are viable). Evidence that a company issues equity when further debt is affordable (or when market sentiment is less than favourable) and when the marginal tax benefits of debt represent a material reduction to the firm's tax liability, would irrefutably contradict the Trade-off theory.

A company with a high degree of cash generation that is not fully invested (or is investing at below-par returns) could feasibly issue more debt under the Free Cash Flow theory to improve current investment returns. Companies with high existing levels of debt combined with unprofitable investment returns should be concerned about underinvestment and potential agency conflicts arising should management become engaged in resource squandering activities. While further debt might limit management discretion it may not be affordable or accessible. In this scenario we would expect to see an increase in investment funded by equity (possibly bringing with it increased shareholder monitoring) to lower the debt ratio and improve the profitability of capital employment. High-growth companies with promising future discretionary opportunities should be particularly concerned with maintaining flexibility in their funding options. This doesn't rule out issuing further debt but it does suggest that they shouldn't lever up to a point where debt repayments limit operational capacity or future investment opportunities. Should debt reserve capacity become squeezed, we would expect to find that the firm issues equity before debt, provided that equity markets are not prohibitively unfavourable.

In dealing with a multi-faceted argument, the puzzle is likely to become clear only when all the pieces are in their proper place.

3.3. REGRESSION MODELS

We sort firms into two groups - an increase or decrease group (I or D group) - to assess any significant differences that persist between these groups that may enhance our understanding of the conditions that lead to either of these events. We generate a fixed effects regression for unbalanced panel data for both groups around the leverage events identified using lead and lag financial indicator variables as the independent variables. We perform this analysis on a company-, event- and sector-level basis in anticipation that this will suggest

the existence of a sufficiently substantial 'golden thread' that could reliably indicate an approaching leverage adjustment. We also analyse the corresponding changes in the selected performance variables in the build-up to the event and subsequent operating years in the hope of identifying key variables for either a leverage increase or a decrease.

In this way we are able to identify and understand the catalysts that collectively affect company performance preceding a leverage change via the indicator variables used. In this way we can assess the nature of the relationship between the leverage change implemented by management and the evolution of the relevant determinant variables leading up to- and following on after the event.

We consider financial year-end data regardless of the calendar date thereof, given the fact that sample firm's year-ends are likely to be within six months of each other and unlikely to be materially affected by business cycle or other effects.

The regression model for the impact of DER changes at an overall sample-level on all the selected concurrent performance variables at time *t* for company *j* appears as follows:

Equation 1:

$$\Delta DER_{jt} = a.\Delta\frac{CA}{CL}_{jt} + b.\Delta\frac{FA}{INT.A}_{jt} + c.\Delta DSCR_{jt} + d.\Delta LOG(TA)_{jt} + e.\Delta FCF_{jt} + f.\Delta PE_{jt} + g.\Delta SP\ RETURN_{jt} + h.\Delta OI_{jt} + i.\Delta\frac{OI}{TA}_{jt} + j.\Delta T_{jt} + k.\Delta ROI_{jt} + l.\Delta I_{jt}$$

At event-level we assess the complete series of variable changes (denoted Event) per company in the event-year at time *t* (events numbered *n* for company *j* and followed by I or D depending on whether it was an increase or decrease) against the five year pre- and post-event complete series of variable changes (similarly numbered by company event, followed by I or D and at pre-

event or post-event years *t*+-*m* from 1 to 5). We do this at event-level and then stack the data into panel format to run the test at company- and sector-level also – and finally, overall sample-level. In this analysis the model appears as follows:

Equation 2:

$$EVENT_{jnI,D} = EVENT_{jnI,Dt\pm m}$$

Finally, we run a test of the event change only excluding any other concurrent variables, against all other variables at each time lead or lag at a sample-level.

Equation 3:

$$\begin{aligned}\Delta DER_{I,Dt} = a.\Delta\frac{CA}{CL}_{I,Dt\pm m} + b.\Delta\frac{FA}{INT.A}_{I,Dt\pm m} + c.\Delta DSCR_{I,Dt\pm m} \\ + d.\Delta LOG(TA)_{I,Dt\pm m} + e.\Delta FCF_{I,Dt\pm m} + f.\Delta PE_{I,Dt\pm m} \\ + g.\Delta SP\ RETURN_{I,Dt\pm m} + h.\Delta OI_{I,Dt\pm m} + i.\Delta\frac{OI}{TA}_{I,Dt\pm m} \\ + j.\Delta T_{I,Dt\pm m} + k.\Delta ROI_{I,Dt\pm m} + l.\Delta I_{I,Dt\pm m}\end{aligned}$$

3.4. PERFORMANCE SCORECARD

We assess leverage 'performance' for each company on an annual basis using a scale of 1 to 5 (low to high) to evaluate the operational state in nine leverage-related categories. We group the performance ratios in each category into quintiles for best- to worst performance over the sample period to quantify a period high or low measurement. The resultant leverage performance dashboard details their performance leading up to the leverage event for each of the following criteria, as in the hypothetical scenario below:

Table 1: Leverage performance scorecard

		SCORE					
	CATEGORY	**1**	**2**	**3**	**4**	**5**	**Explanation**
1	**Liquidity**				X		Good short-term access to funding
2	**Asset Composition**		X				Mainly intangible assets
3	**Threat of Bankruptcy**	X					Mainly equity-funded
4	**Cash Generation**				X		High positive cashflow
5	**Market Valuation**				X		Sector favourite
6	**Operational Risk**					X	Recent profits through new projects, volatile earnings with no track record
7	**Profitability**				X		Newly profitable
8	**Tax Advantage**			X			Average tax burden
9	**Underinvestment Risk**		X				Low due to recent influx of profitable investment ventures
10	**Macroeconomic Activity**		X				Interest rates are near historic lows, favourable borrowing costs

The use of a scorecard creates a one-stop evaluation tool for performance assessment, albeit a subjective assessment, allowing the user to immediately evaluate the various facets of a company's leverage state in order to better understand the rationale behind their capital structure decisions. From the hypothetical example above, we might deduce this company is an early-stage profitable venture with the capacity for new long-term debt funding and tangible asset expansion provided that current operations and investments remain profitable and continue to generate sufficient cash to fund such financing. If these criteria remain in place, we might anticipate a leverage increase event.

As an example, an analysis of AECI performance (Table 2 below) reveals an historic high DER in 2008. The five years prior to this event show higher than average profitability (EBIT) and ability to service debt (DSCR). The share price was also high in the year immediately preceding the event while the P/E ratio (the measure of market valuation) was at its highest historic level in this year. The fact that long-term interest-bearing debt peaked on an historic basis in 2008 does not support the market valuation theory of capital structure. However, the low level of operational risk (measured by the consistency of

annual operating income) at this time as well as the higher than average effective tax rate support both the Pecking Order theory (debt issued in preference to informationally-sensitive equity assuming internal funds were insufficient to fund new investment) and the Trade-off theory (the usefulness of the tax shield provided by debt particularly by profitable companies).

Furthermore, real interest rates were at their lowest making debt issues more affordable. Looking at the company's performance in the five years after the event, we see that the level of fixed assets as well as intangible assets peaked at a period-high immediately after leverage was increased. We also see that the company was most profitable three years after the event and that cash generation improved markedly after 2008. Finally, ROI peaked to its highest level for three years after the event from 2009 to 2011.

Table 2: AECI Scorecard

COMPANY: AECI – SECTOR: BASIC MATERIALS

VARIABLE	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
DER	1	2	3	2	3	5	2	2	2	2	3	4	4	1	1	3	1	1	3	3	2	1	1	3
DER CHANGE	1	1	2	1	1	5	2	1	2	1	1	2	5	1	1	4	1	1	2	3	2	2	1	2
TOTAL DEBT	5	5	5	4	4	5	3	3	2	2	2	2	2	1	2	3	1	2	2	2	1	1	1	1
LT DEBT	4	4	5	4	5	5	2	2	2	3	1	4	4	1	1	3	1	1	2	2	3	1	2	1
ST DEBT	5	5	4	4	3	3	3	2	2	1	4	1	1	3	3	3	2	2	3	2	1	2	2	2
EQUITY	5	4	4	3	3	3	3	3	2	2	2	1	1	2	2	2	2	2	2	1	1	1	1	1
LIQUIDITY	4	3	3	2	3	3	3	3	3	5	1	5	5	3	2	1	2	2	1	1	5	2	3	3
ASSET COMPOSITION	3	3	3	3	3	2	2	2	2	2	2	3	3	3	4	5	1	1	1	1	1	1	1	1
THREAT OF BANKRUPTCY	4	3	3	3	2	2	3	5	4	3	2	2	1	3	3	1	2	1	2	2	2	2	1	2
SIZE LOG TA	5	5	5	4	4	5	3	3	3	2	2	2	2	2	2	3	3	3	3	2	2	1	1	1
CASH GENERATION P/EPS	4	4	3	4	5	1	1	3	2	2	2	2	1	1	3	2	1	2	1	1	1	1	1	1
SHARE PRICE RETURN	4	3	2	3	4	3	5	1	2	2	2	1	1	1	1	1	1	2	1	4	3	1	1	1
OPERATIONAL RISK	3	1	1	2	2	1	2	2	2	2	2	2	2	2	3	1	1	2	1	3	5	1	1	1
PROFITABILITY	1	1	2	1	1	1	1	2	1	1	1	5	1	1	5	1	1	1	2	1	1	1	1	1
TAX SHIELD	2	2	3	2	2	2	3	5	3	3	3	3	1	2	5	1	3	2	3	2	2	2	2	3
	4	5	4	4	5	5	5	4	4	5	4	5	1	4	2	1	3	1	4	4	5	4	4	5

UNDERINVESTMENT RISK	2	3	5	5	5	2	2	3	3	2	2	2	1	2	2	1	2	2	2	2	2	2	2	2
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

Looking at the performance of Mediclinic (Table 3 below), the company experienced a significant increase in long-term interest-bearing liabilities in 2008 (coinciding with AECI) which appears to have resulted in a sustained increase in fixed assets. This was pre-empted by low profitability and ability to service existing debt. These facts would seem to support the Pecking Order theory. After the leverage-increase event, total assets remained high for at least the following five years, while cash generation improved significantly in the post-event period. Interestingly, just prior to the event in 2007, new equity was issued apparently unrelated to an improvement in the share price which increased from 2009 onwards. The share price return was at its lowest just after the equity issue and operational risk in terms of volatility of earnings was most volatile at this point. While profitability was low prior to the event, the subsequent increase in total assets after the event rendered the profitability measurement relatively high before the event (OI/TA). The company managed to sustain a stable and high ROI.

Table 3: Mediclinic Scorecard

COMPANY: MEDICLINIC – SECTOR: HEALTHCARE

VARIABLE	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
DER	2	4	4	5	5	4	2	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2
DER CHANGE	1	2	1	1	2	4	2	5	1	2	2	2	1	1	2	1	1	1	3	1	2	1	2	2
TOTAL DEBT	5	5	5	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LT DEBT	5	5	5	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ST DEBT	3	5	5	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUITY	5	3	3	2	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LIQUIDITY	3	2	2	3	4	4	1	2	5	4	4	4	4	3	2	2	1	1	1	1	2	3	4	5
ASSET COMPOSITION	1	1	1	1	1	1	1	2	2	2	2	3	4	5	5	3	1	1	1	4	2	3	2	2
THREAT OF BANKRUPTCY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1
SIZE LOG TA	5	5	5	5	5	5	3	3	3	3	3	3	3	3	3	2	2	1	1	1	1	1	1	1

CASH GENERATION	5	4	4	4	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
P/EPS	1	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	5	5	4	4	5	5	4
SHARE PRICE RETURN	3	4	2	2	3	1	1	3	3	2	4	2	3	3	3	1	1	3	5	2	1	2	5	2
OPERATIONAL RISK	3	2	2	2	5	5	2	2	3	3	2	2	2	3	2	4	5	5	4	1	3	4	4	1
PROFITABILITY	2	1	2	2	1	1	4	5	5	4	4	5	4	4	3	4	3	4	3	4	4	4	3	2
TAX SHIELD	1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	4
UNDERINVESTMENT RISK	1	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

Compagnie Finansiere Richemonte (Richemonte) (Table 4 below) shows a noticeable reduction in long-term interest-bearing debt from 2000 onwards. The DER remains at its period low until the end of the sample period in 2013. This is exacerbated by an equally remarkable increase in the value of equity through a share issue in 2001, preceded by favourable market sentiment and despite a period-low tax rate and a drop in real interest rates. The share price remained fairly stable for many years afterwards but increased sharply in 2012/2013. Immediately prior to the leverage-decrease event, profitability increased sharply albeit intermittently. Cash generation was at its lowest point from 2001 onwards but investment picked up from 2003 and was maintained until 2008.

Table 4: Richemonte Scorecard

COMPANY: RICHEMONTE – SECTOR: CONSUMER GOODS

VARIABLE	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
DER	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	4	3	4	3	5	4	4	4	5
DER CHANGE	3	2	3	1	5	3	2	2	2	2	3	3	2	1	2	3	2	3	2	3	2	2	2	2
TOTAL DEBT	5	3	2	1	2	1	1	1	1	1	2	2	2	2	4	5	4	4	2	3	3	2	2	2
LT DEBT	2	1	1	1	1	1	1	1	1	1	2	1	2	3	5	5	4	4	1	1	3	3	3	3
ST DEBT	5	3	2	2	4	2	2	2	2	3	3	5	2	2	2	2	1	2	2	4	2	2	1	1
EQUITY	5	5	4	3	3	4	4	4	3	3	3	4	4	4	1	1	1	1	1	1	1	1	1	1
LIQUIDITY	4	5	5	5	3	4	4	4	4	2	1	1	1	1	1	1	1	1	1	1	1	1	2	3
ASSET COMPOSITION	1	1	1	1	1	1	2	3	3	3	3	1	1	1	1	1	1	1	3	5	1	1	1	1

THREAT OF BANKRUPTCY	2	1	1	1	2	3	2	3	3	1	1	1	3	5	1	1	1	1	1	1	1	1	1	1
SIZE LOG TA	5	5	4	3	3	4	4	4	3	3	3	2	1	1	1	1	2	2	2	2	2	1	1	1
CASH GENERATION	5	5	5	4	3	3	3	2	1	1	1	1	1	2	3	2	3	2	2	2	2	2	1	1
P/EPS	4	4	4	5	2	1	3	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1
SHARE PRICE RETURN	5	5	3	5	4	1	3	4	4	3	3	2	3	4	5	5	2	3	4	3	3	3	5	3
OPERATIONAL RISK	2	3	3	2	1	2	2	2	4	1	2	1	1	5	2	2	2	2	3	1	2	2	2	2
PROFITABILITY	1	2	1	1	1	1	1	1	1	1	1	1	3	5	2	2	2	2	1	1	1	1	1	1
TAX SHIELD	2	2	2	2	2	2	2	2	2	3	1	3	2	1	4	4	4	4	4	5	5	5	5	5
UNDERINVESTMENT RISK	5	4	3	3	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

Further examples of the scorecard are included in the appendix to this study.

3.5. MULTIPLE DISCRIMINANT ANALYSIS

We run a multiple discriminant analysis (MDA) to establish whether our model generated on 80% of the original sample is an effective predictor of whether a firm should increase or decrease leverage based on lead performance. MDA enables the classification of data into *a priori* groups generating a discriminant equation that is able to distinguish between classes using multiple independent variables (Martin & Scott, 1974). The discriminant function is of the order:

$$z_i = v_1 x_{1i} + v_2 x_{2i} + v_3 x_{3i} + \cdots + v_j x_{ji}$$

Where z_i is the discriminant score for the i^{th} object, x_i is the value of the i^{th} observation's j^{th} independent variable and v_j is the discriminant coefficient for the j^{th} independent variable.

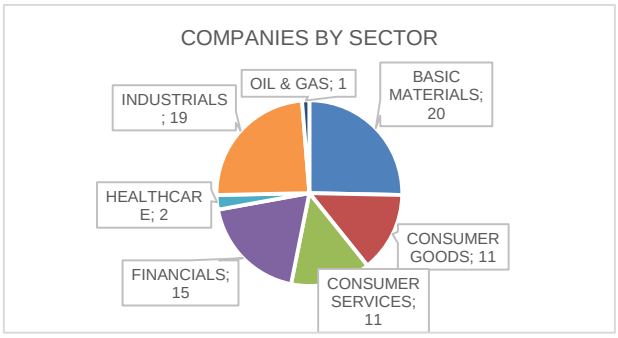
3.6. SAMPLE DATA

The sample is based on all JSE-listed companies with available data to calculate the DER for each year of the sample period - 1990 to 2013. All data was taken from I-Net Bfa. The specific DER used includes long-term and short-term interest-bearing debt including trade debtors and trade creditors.

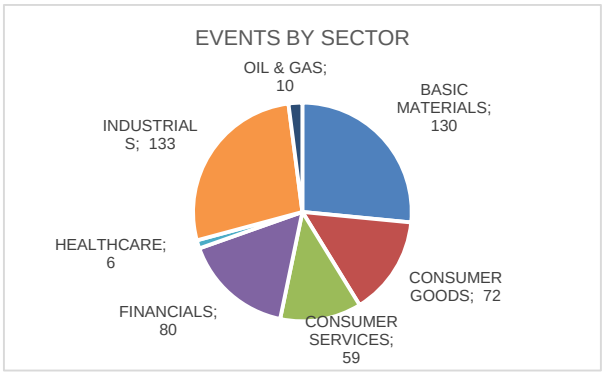
We reasoned that including shorter-term financing requirements such as those related to working capital is relevant to the study as we can assess the catalysts of both short-term liquidity needs as well as longer-term capital requirements.

The sample includes 79 companies over a period of 24 years from 1990 to 2013. Companies are drawn from a wide range of sectors including gold and platinum mining, food processors, food- and clothing- retailers, consumer goods and services, banks, real estate, pharmaceuticals, construction, packaging, transport and oil.

Graph 1: Sector breakdown



Graph 2: Number of events



We find that the coefficient of variation (C_V) for the DER was considerably lower compared to that for the percentage annual change. This indicates far less relative volatility in the actual leverage ratio relative to the percentage changes experienced each year. This is naturally within the constraints of the data adhering to a normal distribution where the mean would represent a

reliable measure of central tendency so it is with some caution that we use the C_V as an indication of relative volatility.

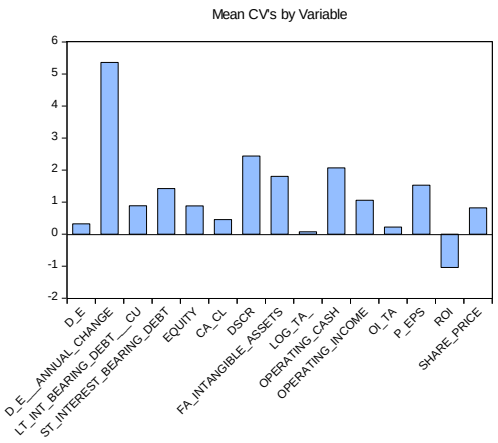
General share price fluctuations and market volatility or short-term financing needs could result in considerable variations in DER's that are unrelated to deliberate capital structure management. We aimed to isolate only the intentional adjustments to capital structure that management makes consciously in response to specific conditions that arise, rather than gradual and inevitable shifts that occur solely due to market movements. Thus, we separately analysed the evolution of debt (short-term and long-term) and equity (shares in issue and share price movements) over the sample period, holding constant share price fluctuations that affect the market value of equity capital, to isolate developments in each composite measurement which may not be identifiable if analysed in combination within the DER.

The table below details the overall statistics for the C_V per variable employed over the complete sample period to give us an indication of the relative risk and dispersion of each variable's probability distribution around its respective mean, particularly effective given that the means are very different and the probability distributions non-normal. The lower the standard deviation relative to the mean, the better the risk-return trade-off according to the C_V measure. The DER had one of the narrowest dispersions around its mean with a C_V of 0.322 while that for the mean annual change in DER across all companies was considerably higher at 5.359. Net profit had a relatively high dispersion with a C_V of 2.464. Short-term interest-bearing debt was approximately as varied as long-term interest-bearing debt with a C_V of 1.424 compared to 1.543. The DSCR had the one of the highest C_V ratios of all the variables included in the study with a C_V of 2.436; while Operating Cash was also very highly varied around its mean with a C_V of 2.066.

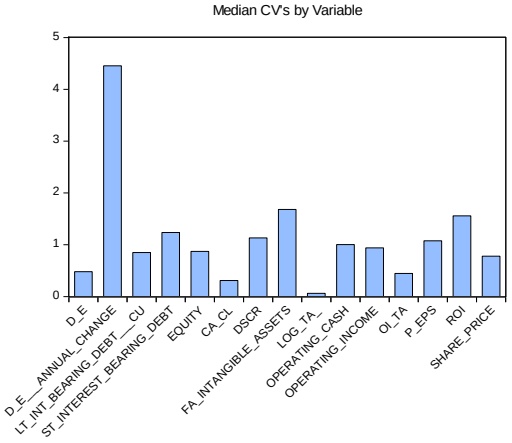
Table 5: Coefficient of Variation (Cv) table

	D_E	D_E___ANNUAL_CHANGE	LT_INTEREST_BEARING_DEBT	ST_INTEREST_BEARING_DEBT	EQUITY	CA_CL	DSCR	FA_INTANG_	LOG_TA_	NET_PROFIT	OI_TA	OPERATING_INCOME	OPERATING_CASH	P_EPS	SHARE_PRICE	ROI	TA
Mean	0.322	5.359	1.543	1.424	0.881	0.453	2.436	1.805	0.073	2.464	0.221	1.057	2.066	1.528	0.820	-1.041	0.826
Median	0.480	4.454	1.325	1.236	0.872	0.310	1.133	1.683	0.063	1.160	0.447	0.940	1.004	1.075	0.779	1.559	0.799
Maximum	2.643	194.7	4.695	3.383	2.649	3.050	75.56	4.899	0.276	29.57	2.135	4.849	37.92	19.91	1.726	67.94	2.670
Minimum	-16.59	-109.7	0.000	0.453	0.308	0.067	-2.582	-5.719	0.020	-4.289	-18.73	-5.080	-1.573	-9.925	0.356	-187.4	0.259
Std. Dev.	2.143	33.95	0.862	0.682	0.405	0.513	8.475	1.350	0.048	4.538	2.473	1.006	4.678	2.990	0.271	27.07	0.384
Skewness	-6.736	3.080	1.574	0.933	1.633	3.333	8.295	-1.853	1.774	4.150	-6.427	-1.727	6.267	2.177	1.107	-5.319	1.537
Kurtosis	51.87	21.64	6.062	3.261	7.502	15.21	71.99	13.82	6.951	22.07	47.16	21.87	46.16	22.80	4.534	36.04	8.267
Jarque-Bera	8457.	1269.	63.49	11.68	101.8	637.4	16575	430.4	92.82	1424.	6962.	1212.	6647.	1352.	23.89	3966.	122.4
Probability	0.000	0.000	2E-14	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6E-06	0.000	0.000
Sum	25.44	423.4	121.9	112.5	69.60	35.76	192.4	142.6	5.772	194.6	17.48	83.48	163.2	120.7	64.80	-82.20	65.25
Sum Sq. Dev.	358.1	89926	57.99	36.24	12.79	20.51	5602.	142.2	0.178	1606.	477.0	78.99	1707.	697.4	5.714	57155	11.48
Observations	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00	79.00

Graph 3: Mean Cv



Graph 4: Median Cv



In order to fully assess each event, we first identify an event as being a 30% annual change in the DER. We found that measuring the annual change by number of standard deviations is flawed due to the non-parametric distribution of this and many other operational ratios. However, using as a general benchmark a 1 standard deviation change about the sample period mean we identified 490 events across the sample of 79 companies. Applying a rule of a 30% annual increase or decrease we identified 517 events across 79 companies. At this point, the two measurements approximately converged and it is for this reason that we settled on a 30% cut-off point in defining significance. A 1.5 (two) standard deviation change about the mean resulted in 192 (81) events and is approximately equal to 185 (88) events generated by a rule of a 65% (100%) annual change to the DER.

Upon isolating each event and its associated variables in the five-year period leading up to the event, we eliminated certain events from the study due to lack of sufficient pre-event data. Thus, any events before 1995 which had less than five years of data prior to an event were eliminated from the study. This involved Barclays Africa, Firstrand and Shoprite who all had significant leverage events in between 1991 and 1993. This reduced the number of events from 517 to 431.

Table 6: Number of Companies/Events identified under different criteria

ID METHOD	BASIC MATERIALS	CONSUMER GOODS	CONSUMER SERVICES	FINANCIALS	HEALTHCARE	INDUSTRIALS	OIL & GAS	TOTAL
COMPANIES	20	11	11	15	2	19	1	**79**
EVENTS – 1 S.D.	130	72	59	80	6	133	10	**490**
EVENTS - 30% CHANGE	160	62	50	111	20	111	3	**517**
EVENTS – 1.5 S.D.	49	28	28	37	3	45	2	**192**
EVENTS - 65% CHANGE	56	12	11	64	7	34	1	**185**
EVENTS – 2 S.D.	17	8	12	24	3	17	0	**81**
EVENTS - 100% CHANGE	23	6	5	34	5	14	1	**88**

According to Scott and Martin (1975), capital structures are significantly different for different industry classes. We sort the sample by industry to separately analyse sector-specific variables. Elsas and Florysiak (2008) suggest that the high level of significance of industry median debt ratios as explanatory variables for leverage ratios might be due to the fact that variables not included in the study are proxied for by industry medians. They mention as examples, product market interactions or market competition.

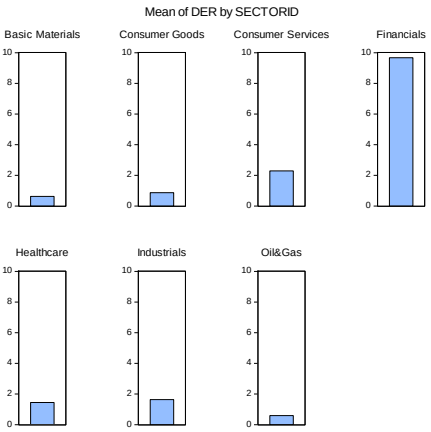
We found some variation between leverage ratios across sectors when using a median measurement. Median DER's ranged from 0.46 in the Healthcare sector to 1.86 for Industrials. This trend was more pronounced for mean DER's – 0.59 for the Oil & Gas sector to 9.67 in the Financial sector. Particularly in the case of the Financials sector, we found vast departures from the aggregate – possibly due to the inclusion of property development companies alongside both big- and small market capitalisation banks and insurance companies. We did not find any evidence of sector mean reversion.

Table 7: DER Summary Statistics

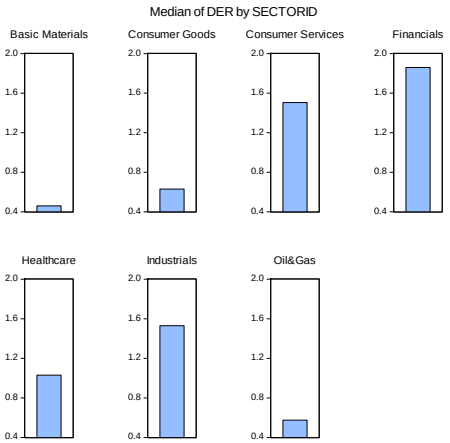
DER Summary Statistics by Sector									
SECTORID	Mean	Median	Max	Min.	Quant.*	Std. Dev.	Skew.	Kurt.	Obs.
Basic Materials	0.626375	0.460000	3.480000	-0.250000	0.460000	0.532333	1.621478	6.745852	480
Consumer Goods	0.867576	0.630000	9.170000	0.050000	0.630000	0.796673	4.973814	47.68461	264
Consumer Services	2.288750	1.505000	61.72000	0.120000	1.505000	4.695961	9.664693	112.8746	264
Financials	9.671694	1.860000	552.1000	-92.59000	1.860000	50.18508	10.34936	111.6721	360
Healthcare	1.445417	1.030000	8.190000	0.250000	1.030000	1.368445	2.832587	13.61735	48
Industrials	1.637654	1.530000	46.95000	-293.0000	1.530000	14.41088	-18.61842	385.3862	456
Oil&Gas	0.590417	0.575000	0.940000	0.290000	0.575000	0.199488	-0.011397	1.714704	24
All	2.872395	0.960000	552.1000	-293.0000	0.960000	23.26823	19.36100	494.0387	1896

*Quantiles computed for p=0.5, using the Rankit (Cleveland) definition.

Graph 5: Mean DER by Sector



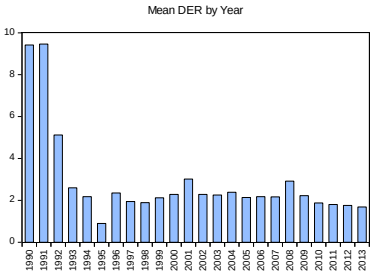
Graph 6: Median DER by Sector



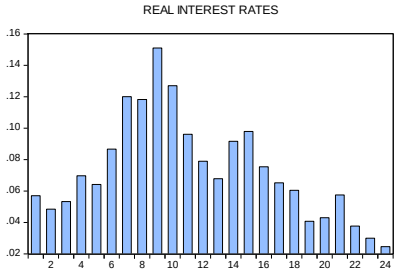
Within-sector leverage ratios generally highlighted a few sector-anomalies (AECI, Sappi and Spanjaard in the Basic Materials sector; Seardel CP and Tigerbrands in the Consumer Goods sector; Culinan, Nictus Beperk, PicknPay and Sun International in the Consumer Services sector; Barclays Africa, Firstrand, Hyprop, Investec, Standard Bank and Nedbank in the Financials sector; and Basil Read, ELB Group, Grindrod, Group 5 and Trencor in the Industrials sector). The Financials sector showed the most significant variation between companies, but more consistency amongst the big banks – namely, Barclays Africa, Firstrand, Investec Limited, Nedbank and Standard Bank. The inclusion of Hyprop more than doubled the sector mean. HCI and Winhold had considerably lower levels of leverage on average over the period relative to their respective sector means (Financials and Industrials).

The mean DER for all sample companies shows a decline since the beginning of the period with the overall level of leverage looking more or less stable in the final years of the sample.

Graph 7: Mean DER by Year

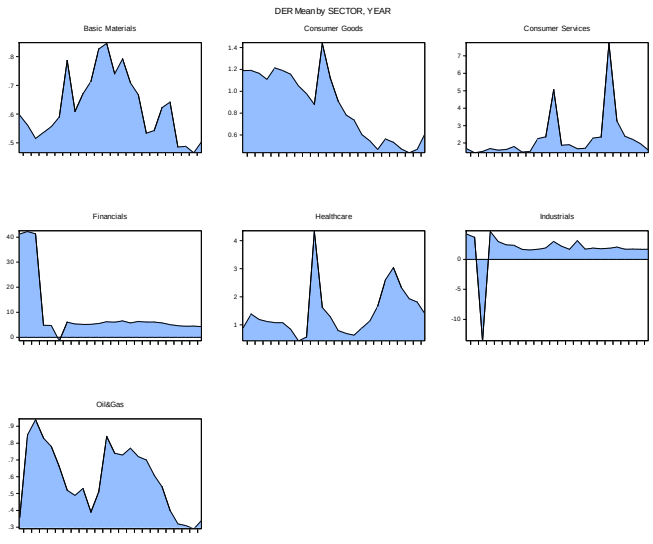


Graph 8: Real Interest rates



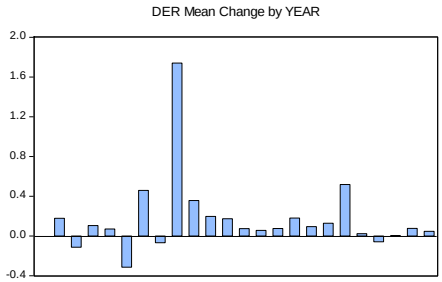
Upon further analysis we find that the Financials sector dominates the overall mean. Within sectors we see more variation over time – namely, a peak for Basic Materials and Healthcare around 2004/2005 with a subsequent decline. Consumer Services peaks just shortly before in 2001 while Financials and Industrials are relatively stable following a more volatile period at the beginning of the period. Consumer Goods shows a clear decline following its peak in 2000. Overall the data indicates a definite decline in the use of leverage across all sectors and even for most companies. We contrast this trend with real interest rates (above) where it is clear that interest rates have declined markedly since their peak in 1998 at 15.1% to a far more affordable level of 2.46% in 2013.

Graph 9: Mean DER by Sector and Year



An analysis of the mean DER annual change by sector shows that overall, the sample companies experienced higher annual volatility around 1998, which returned to some extent in 2008 but stabilised considerably towards the end of the sample. However, this coincides with the interest rate peak experienced in 1998 and it is interesting that leverage annual volatility (specifically annual increases to DER's) occurred at a point when real interest rates were at their highest.

Graph 10: Mean DER Change by Sample Year



Within-sector analysis shows considerable fluctuations in the extent to which DER's changed for Basic Materials (BM) and Consumer Goods (CG), with once-off volatility more prevalent for Consumer Services (CS), Financials (FI), Healthcare (HE), Industrials (IN) and Oil & Gas (OI).

Graph 11: Mean DER Change by Sector and Year

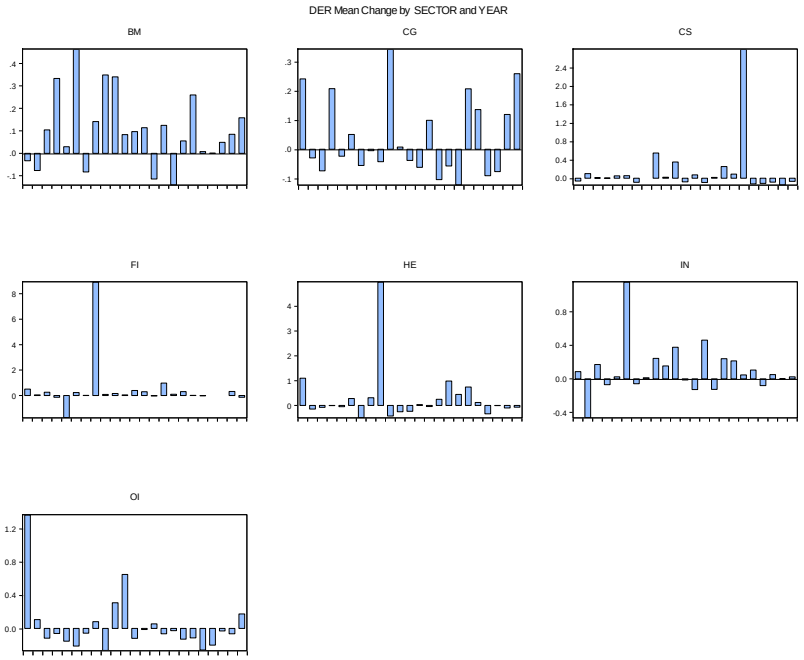


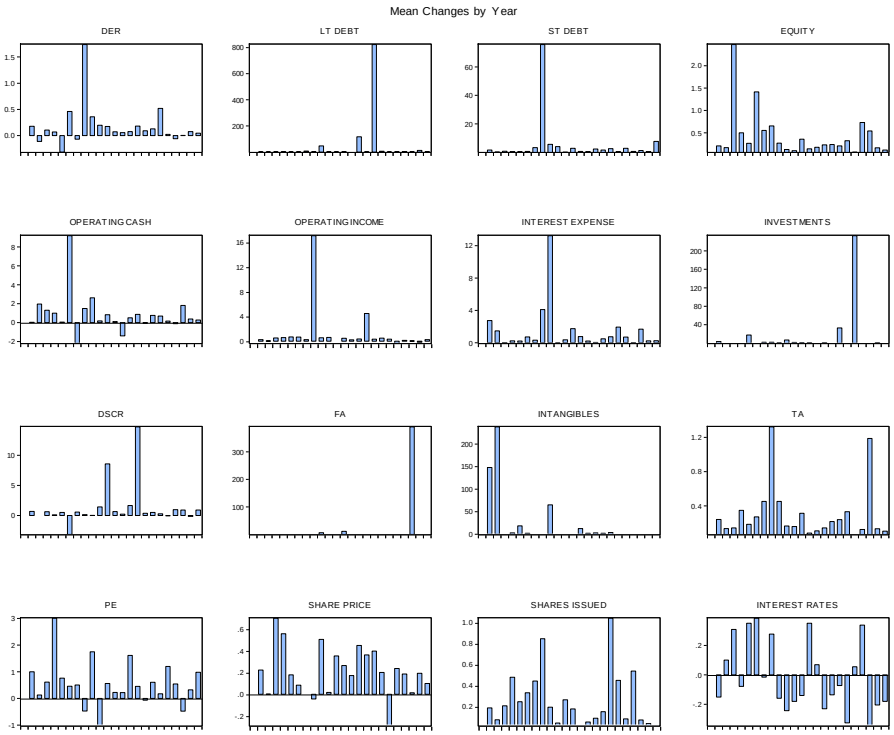
Table 8: DER Change Summary Statistics

DER CHANGE Summary Statistics by Sector									
SECTORID	Mean	Median	Max	Min.	Quant.*	Std. Dev.	Skew.	Kurt.	Obs.
BM	0.101662	0.000000	8.896552	-6.000000	0.000000	0.786203	4.155983	55.92985	459
CG	0.038389	-0.036364	4.625767	-0.758065	-0.036364	0.469915	5.582851	49.43877	253
CS	0.151423	-0.035088	30.48980	-0.877702	-0.035088	1.978227	14.43117	220.5928	253
FI	0.463856	-0.016717	134.5000	-27.57716	-0.016717	7.472617	16.70554	303.2639	344
HE	0.306890	-0.067357	9.636364	-0.650794	-0.067357	1.529618	5.141728	31.55121	46
IN	0.106245	0.000000	22.50000	-9.049451	0.000000	1.337505	11.07947	192.4288	437
OI	0.036604	-0.060241	1.361111	-0.264151	-0.060241	0.350730	2.655822	10.20400	23
All	0.173906	-0.014706	134.5000	-27.57716	-0.014706	3.435124	33.26660	1296.549	1815

*Quantiles computed for p=0.5, using the Rankit (Cleveland) definition.

An analysis of mean changes in some of the other key variables aggregated across all sample companies for each year of the sample period reveals that average annual changes were considerably distinct in different years. This may warrant further investigation in terms of discovering the cause of this, perhaps an annual market factor that exerts a strong influence on specific variables or company-specific events large enough to exert a material influence on the aggregate. We find that the spike in long-term debt in 1996 is related to a few specific companies and not confined to one sector – Arcelor Mittal, HCI, Jasco, Mediclinic, Merafe and PicknPay. Interest rates had been reduced in the prior year by 2.25% and were brought down again in 2006 by a further 1%. This may be a relevant factor in the increased use of long-term debt at this time. The spike in short-term debt in 1998 is purely related to the new listing of Brait S.A. as is that for operating income. The dramatic increase in the ratio of fixed assets/total assets is related to Village Main Reef in 2011 and for equity, a new equity issuance by Hyprop and Firstrand in 1993. The increase in operating cash relates to Af and Ovr in 1996. So we are able to drill down to company-level and isolate outlying data points that affect the averages and help us to understand company operations on a year-by-year basis.

Graph12: Mean Variable Changes by Year



A simple OLS regression shows that a significant relationship (at 5% significance) exists between the DER change and certain concurrent changes in operating variables; namely, short-term interest-bearing debt, book value of equity, liquidity (CA/CL), DSCR, size (Log TA), profitability (OI/TA) and operating cash (at 10% significance). The regression R-squared measure (indicating goodness of fit) shows that only a very small proportion of the variance of the data is properly explained by the model. Similarly, the adjusted R-squared (considering the number of predictors) is low. The Durbin-Watson statistic is close to 2 which indicates no autocorrelation amongst the model residual terms and a more accurate model.

Table 9: DER Change regressed against Performance Variables Change

DEPENDENT VARIABLE: DER CHANGE	INDEPENDENT VARIABLE	CO-EFFICIENT	T-STATISTIC
R-squared: 0.079947 Adj. R-squared: 0.065325 Durbin-Watson: 2.1625 F-statistic: 5.467640 Prob(F-statistic): 0.0000	ST DEBT	0.011500	2.685146
	EQUITY	-0.241661	-4.151783
	CA/CL	-0.250339	-2.530231
	DSCR	0.010948	2.911642
	LOG TA	10.78001	4.660034
	OI/TA	-0.062964	-3.324077
	OPERATING CASH	0.008542	1.793428

The Hausman test reveals a significant result at 5% testing implying that the coefficients estimated by a fixed and random effects model are materially different. So we proceed with a fixed effects model which gives a better account of heterogeneity and time invariant effects. We find that the following variables are significant at 5%: short-term debt, equity, liquidity, size, cash; and profitability at 10%.

Table 10: Hausman test: Fixed or Random Effects Panel Regression

Correlated Random Effects - Hausman Test	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
	28.821906	13	0.0069

Table 11: DER Change regression: Fixed Effects

DEPENDENT VARIABLE: DER CHANGE	INDEPENDENT VARIABLE	CO-EFFICIENT	T-STATISTIC
R-squared: 0.157043 Adj. R-squared: 0.06247 Durbin-Watson: 2.245684 F-statistic: 1.748891 Prob(F-statistic): 0.000124	ST DEBT	0.014237	3.142190
	EQUITY	-0.588699	-5.394833
	CA/CL	-0.234820	-2.327815
	LOG TA	15.46816	5.756162
	OI/TA	-0.035706	-1.755752
	OPERATING CASH	0.010198	2.052985

All the significant coefficients are small except for the size indicator. The significance of DSCR is lost. It is surprising that neither long-term interest-bearing debt nor real interest rates have any significant impact on same-year DER changes. The significance of short-term interest-bearing debt indicates that short-term borrowing plays an important role in defining capital structure, more so than long-term debt in this study. Liquidity also appears to have a material effect on DER changes. Furthermore, the relationship between real interest rates and long-term debt has not been established but with further

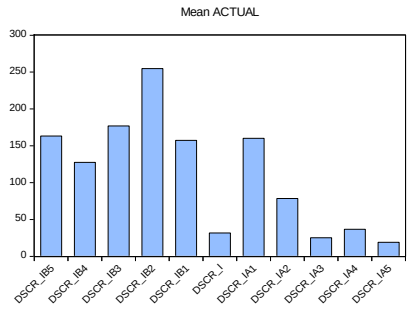
investigation, may prove to be of interest. The coefficients for equity, liquidity and profitability are negative. This is interesting as it suggests that the impact of these variables is asymmetrical – a decrease is related to a DER change to a greater extent than an increase.

Further points of interest are that firstly, net profit is subsumed by operating income, losing its significance with the inclusion of the latter variable; and secondly, none of the market valuation indicators prove significant.

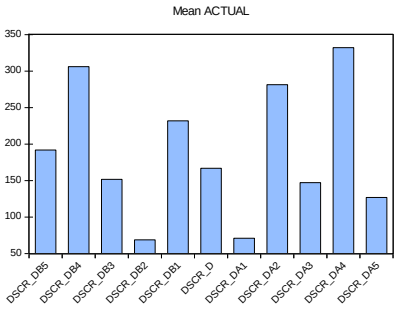
Trend analysis around a leverage event has a dual aspect to it – before and after the event. Both aspects are relevant to this study. The analysis shows consistent evidence across all sectors that total assets is unrelated to leverage changes. This pattern also emerges for the share price, cashflow generation, operating income and equity variables.

We find a clear trend of declining DSCR following an increase event, and increasing DSCR following a decrease event (a logical outcome considering the impact on debt repayments under either scenario). From the graph below, one can see that DSCR for the D group appears to be more erratic. Leading up to the event, the DSCR for the I group appears to be higher and more stable before the increase, while that for the D group falls off dramatically two years before leverage is reduced.

Graph 13: Mean DSCR at leads/lags for I group

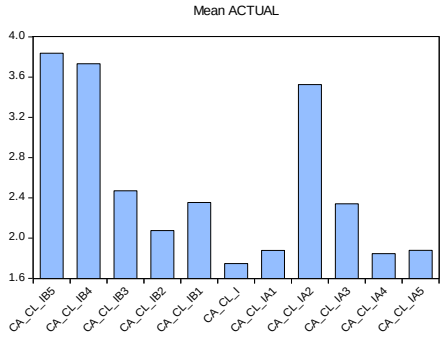


Graph 14: Mean DSCR at leads/lags for D group

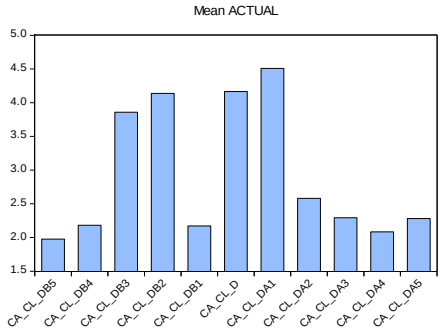


The I group is defined by declining liquidity prior to the increase with short-term improvements immediately following the event, while the D group shows the opposite pattern. This pattern would most certainly allude to the role of debt as a response to short-term liquidity requirements.

Graph 15: Mean CA/CL at leads/lags for I group

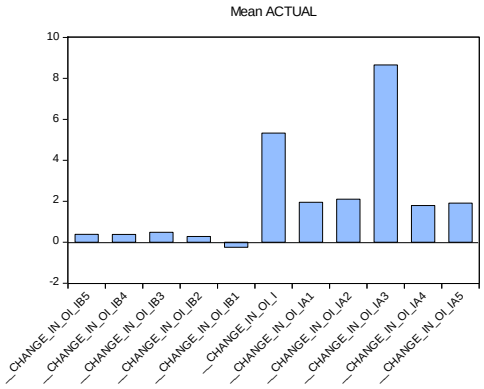


Graph 16: Mean CA/CL at leads/lags for D group

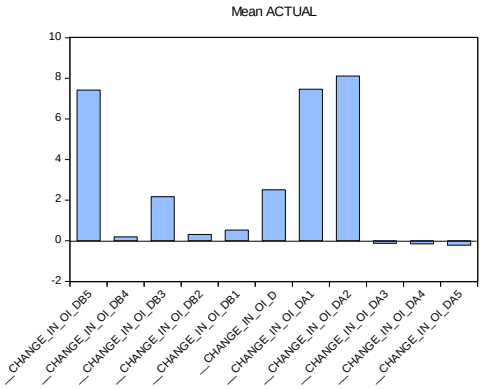


Volatility appears to increase following either an increase or decrease, but appears to be more persistent following an increase. The pattern for the I group appears to confirm that debt introduces operational risk (Hamada, 1972 and Myers, 1977) and in the case of the D group, volatility appears to fall off by year three following the event.

Graph 17: Mean Volatility at leads/lags for I group

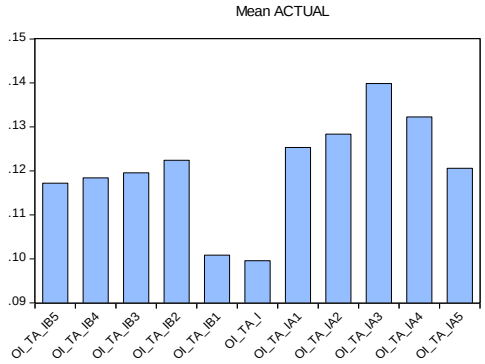


Graph 18: Mean Volatility at leads/lags for D group

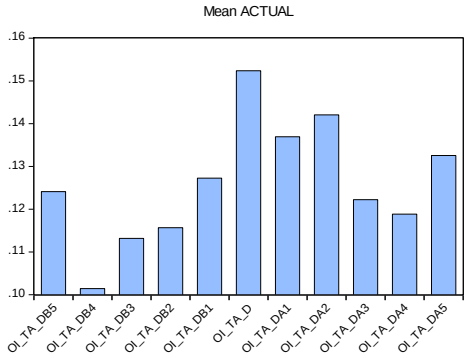


Profitability increases on average following an increase, and decreases following a decrease. In terms of prior conditions, we can say that the pattern below offers moderate support for the Pecking Order theory in that improvements in past profitability result in lower leverage (Titman & Wessels, 1988, Baskin, 1989, Fama & French, 2002).

Graph 19: Mean Profitability at leads/lags for I group

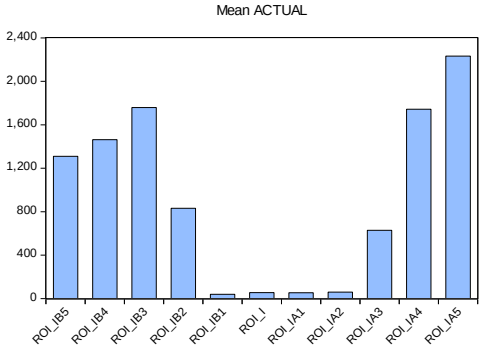


Graph 20: Mean Profitability at leads/lags for D

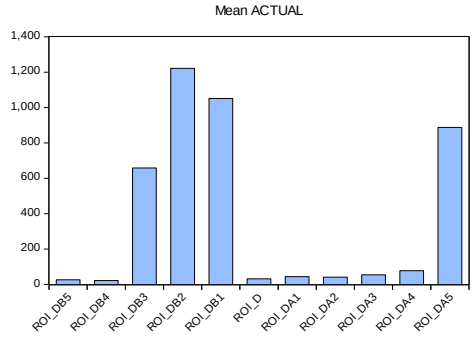


The I group showed more pronounced growth in ROI following the event relative to the D group. The increase group was faced with declining ROI before increasing leverage, while the opposite is true for the decrease group. This lends support to the Underinvestment theory in that debt may serve as a vehicle to alleviate the risk of agency conflict including low ROI's. Interestingly, following the decrease, the ROI in the short-term falls close to zero and investment returns are not replaced until five years later.

Graph 21: Mean ROI at leads/lags for I group

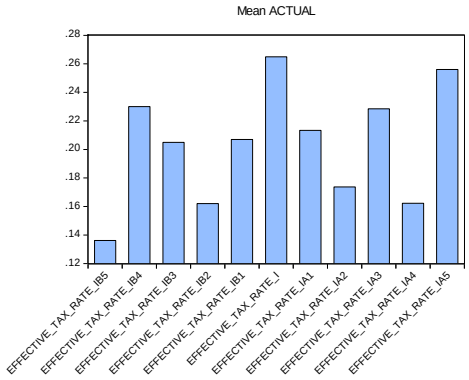


Graph 22: Mean ROI at leads/lags for D

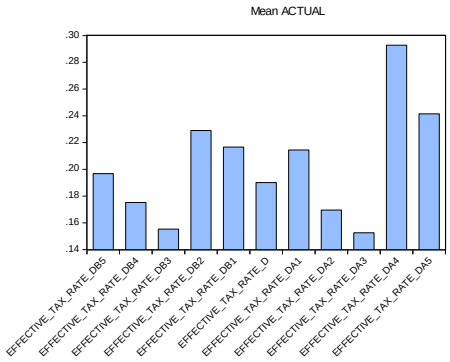


Interestingly, the I group had a higher potential tax shield leading up to the event, while the D group experienced a temporary decline in the effective tax rate paid (up to t+3) in support of the Trade-off theory (DeAngelo & Masulis, 1980 and Myers, 1984).

Graph 23: Mean Effective Tax rate at leads/lags for I group

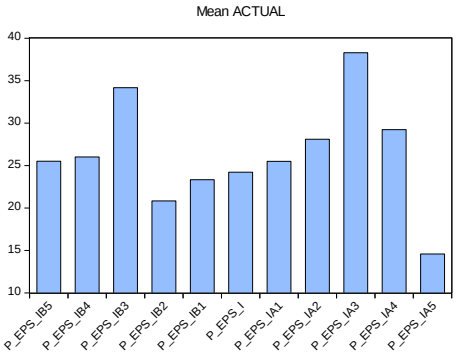


Graph 24: Mean Effective Tax rate at leads/lags for D group

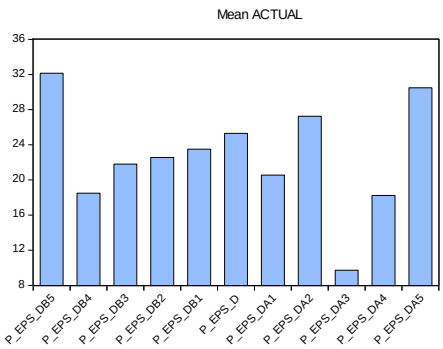


Finally, a leverage increase results in a gradual improvement in the PE ratio not matched by the decrease group. The direction of the results provides some support for the notion that the market responds unfavourably to equity issues due to the concerns over earnings dilution and possible overvaluation (Myers & Majluf, 1984) or that positive market sentiment initiates more equity issues (Lucas & McDonald, 1990 and Loughran & Ritter, 1995).

Graph 25: Mean P/E at leads/lags for I group



Graph 26: Mean P/E at leads/lags for D group



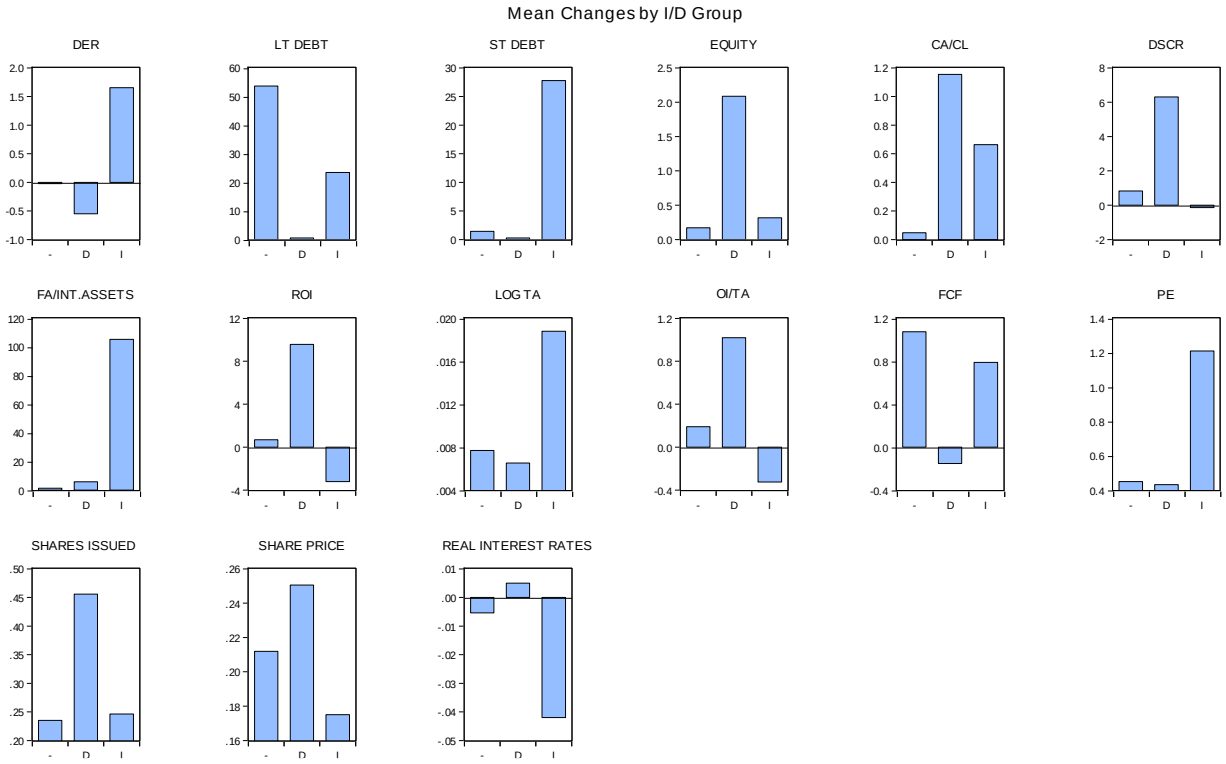
Although not proven to be statistically significant, these trends suggest a certain degree of relevance regarding operating performance around leverage changes.

An analysis of the relative differences between the I and D groups shows that for the former, the DER change was accompanied by a concurrent increase in short-term debt and total assets. Again this lends support to the fact that the DER changes are a response to short-term capital requirements. It suggests

a positive relationship between size and leverage (Berger & Udell, 1988, Harris & Raviv, 1991 and Rajan & Zingales, 1995). The PE for this group increased by considerably more than that for the decrease group confirming the positive relationship between leverage and share returns identified by the occurrence of negative returns following announcements of equity issues (Masulis & Korwar, 1986). This ties in with the Market Valuation theory that equity issues are timed to take advantage of positive market sentiment (Marsh, 1982, Barclay & Smith, 1999, Baker & Wurgler, 2002) and corroborates Myers and Majluf (1984) that under conditions of asymmetric information, the market assumes that equity issues are synonymous with overvalued equity. The change in real interest rates was negative suggesting that the decision to increase leverage was partly motivated by borrowing costs.

On the other hand, for the D group the change was accompanied by an increase in book value of equity rather than any change in interest-bearing debt. Liquidity increased by more than that for the I group (lending support to the role of debt as a response to short-term liquidity requirements) as did the DSCR (suggesting that it was partly a practical matter of the affordability of debt that played a role in the decision to de-lever and possibly an effort to maintain financial flexibility according to Fama and French, 1992). ROI increased for the D group relative to a negative change for the I group. Again this suggests that leverage decreases may have been a response to higher ROI's and little risk of underinvestment or other type of agency conflict. Higher profitability (OI/TA), shares issued and share price increases were associated with the D group. This confirms the negative relationship found by numerous prior studies between profitability and leverage (Titman & Wessels, 1988, Harris & Raviv, 1991, Rajan & Zingales, 1995 and Fama & French, 2002). This suggests that the DER reductions were founded in increased shares issued (and higher issue prices) rather than leverage reductions. These findings support evidence that positive market valuations present ripe opportunities to issue equity (Lucas & McDonald, 1990 and Loughran & Ritter, 1995).

Graph 27: Mean Variable Change by I/D Group



4. RESULTS

The regression results at event-level reveal significance at 5% for various leads and lags around the event. For example, in the case of Italtile's first event in 2013 (Italtile1D), a decrease of 52%, we find significance at t-1, t-2, t-3 and t-4. For the second event, a similar size increase in 2007 (Italtile2I), we find significance for the series of performance variables at t+1, t+2, t+3, t+4, and t-3 and t-5. For the third event (Italtile3D) in 2003, we find significance for the series of performance variables at t+3, t-2, and t-4.

Table 12: ITALTILE: Event-level regression of I/D event year performance against lead/lag performance

ITALTILE	SIGNIFICANT LEAD/LAG	CO-EFFICIENT	T-STATISTIC
EVENT 1 – Decrease R-squared 0.7996 F-statistic 19.9483 Prob. F-stat. 0.0000	B1	-12.1017	-3.9760
	B2	8.2099	9.8702
	B3	-3.0137	-3.8950
	B4	-1.4791	-2.6186
EVENT 2 – Increase R-squared 0.7327 F-statistic 5.7873 Prob. F-stat. 0.0006	A1	-1.2782	-5.4104
	A2	3.0731	3.0938
	A3	-5.7223	-2.7455
	A4	-0.4093	-2.5166
	B3	1.0209	2.7091
EVENT 3 – Decrease R-squared 0.9532 F-statistic 26.4485 Prob. F-stat. 0.0000	A1	0.3470	2.9146
	A3	3.4182	8.6550
	B2	-1.0776	-4.2481

The results for the sample are again random – we find significance at varied leads and lags. For Hudaco, the first event in 1996, an increase in DER of 64%, we find significance at t+1, t+2, t+3, t+4 and t-5. For the second event, an increase in 2007, we find significance only at t-1. For the third event, a decrease of 70% in 2013, we find significance at t-2. A table of results at event-level is included in the appendix. For AECI, the first event was an increase of 62% in 2008, we find significance for the series at t-3 and t-4. For the second event, an increase of 78% in 2001, we find significance at t+3, t+4, t-3 and t-4. And the final event, an increase of 51% in 1998, we find significance at t+1, t+3, t-2 and t-3.

Table 13: HUDACO: Event-level regression of I/D year performance against lead/lag performance

HUDACO	SIGNIFICANT LEAD/LAG	CO-EFFICIENT	T-STATISTIC
EVENT 1 – Decrease R-squared 0.9047 F-statistic 47.4843 Prob. F-stat. 0.0000	B2	-0.7918	-12.3381
EVENT 2 – Increase R-squared 0.5273 F-statistic 2.0081 Prob. F-stat. 0.0951	B1	-144.9941	-3.4358
EVENT 3 – Increase R-squared 0.9219 F-statistic 17.7183 Prob. F-stat. 0.0000	A1	-0.1460	-4.3227
	A2	-0.4881	-2.1809
	A3	-0.4333	-2.3289
	A4	-0.5248	-2.3704
	B5	-1.0717	-4.5356

Table 14: AECI: Event-level regression of I/D year performance against lead/lag performance

AECI	SIGNIFICANT LEAD/LAG	CO-EFFICIENT	T-STATISTIC
EVENT 1 – Increase R-squared 0.9281 F-statistic 27.1021 Prob. F-stat. 0.0000	B3	0.3024	2.7780
	B4	0.5368	6.4183
EVENT 2 – Increase R-squared 0.9745 F-statistic 72.6229 Prob. F-stat. 0.0000	A3	6.5020	12.9582
	A4	2.0055	3.5092
	B3	2.3569	7.1269
	B4	-2.2819	-2.9202
EVENT 3 – Increase R-squared 0.9964 F-statistic 529.7747 Prob. F-stat. 0.0000	A1	-0.1406	-5.9505
	A3	0.1179	14.9005
	B2	-0.1439	-2.2384
	B3	-0.0614	-3.0460

A summary of results is shown at the top of the following page detailing the frequency with which each independent series occurs as being significant (where I or D denotes the group to which the event belongs – increase or decrease, A indicates that it falls after the event, and B that it falls before the event). So we read IA2 as t+2 after an increase and DB2 as t-2 before a decrease.

Table 15: Frequency of significance for specific leads/lags

	IA1	IA2	IA3	IA4	IA5	IB1	IB2	IB3	IB4	IB5	DA1	DA2	DA3	DA4	DA5	DB1	DB2	DB3	DB4	DB5
EVENT	52	52	51	54	42	56	67	59	53	56	33	51	36	29	34	39	50	47	45	43
%	5%	5%	5%	6%	4%	6%	7%	6%	6%	6%	3%	5%	4%	3%	4%	4%	5%	5%	5%	5%
COMPANY	18	21	28	18	18	20	24	20	22	19	16	19	19	15	16	13	14	12	15	19
%	5%	6%	8%	5%	5%	5%	7%	5%	6%	5%	4%	5%	5%	4%	4%	4%	4%	3%	4%	5%
SECTOR	2	2	2	1	1	0	0	1	1	0	1	1	0	1	0	0	0	0	1	1
%	13%	13%	13%	7%	7%	0%	0%	7%	7%	0%	7%	7%	0%	7%	0%	0%	0%	0%	7%	7%

A more detailed table of results at company-level is included in the Appendix. For the sake of conciseness, the results at event-level are not included as they are not materially different from those at company-level – individual events aggregated at company level - but involve significantly more data points.

At a sector-level, we find significance at A1, A3 and A4 for Consumer Services (I group), B4 for Healthcare and Industrials (D group), at A1 and A2 for Industrials (I group), and A2, A5 and B3 for Oil & Gas (I group). Again these results do not suggest the existence of any particular trend.

Table 16: Sector-level regression of I/D group against lead/lag performance

SECTOR, EVENT	SIGNIFICANT LEAD/LAG	CO-EFFICIENT	T-STATISTIC
Consumer Services - Increase	A1	0.6775	7.3570
	A3	0.4730	2.1565
R-squared 0.0918 F-statistic 5.8707 Prob. F-stat. 0.0000	A4	-0.6695	-6.1685
Healthcare - Increase R-squared 0.2615 F-statistic 9.8089 Prob. F-stat. 0.0000	B4	24.0082	9.6828
Industrials - Decrease R-squared 0.1277 F-statistic 13.3126 Prob. F-stat. 0.0000	B4	-0.1744	-10.4197
Industrials - Increase	A1	0.0229	3.0353
R-squared 0.0885 F-statistic 13.0813 Prob. F-stat. 0.0000	A2	0.6427	10.8910
Oil & Gas - Increase	A2	-1.1122	-5.7618
R-squared 0.8722	A5	1.2228	2.7826
F-statistic 36.1593 Prob. F-stat. 0.0000	B3	0.9947	2.7755

At overall sample-level, we find no significant variables at either lead or lag.

Perhaps it is not surprising that upon aggregating the events at sector-level, we lose a certain amount of model relevance. However, this would imply that the changes being made to DER are less related to sectoral factors than company-specific conditions. If we assess the significance of the results at event-level then it appears that there is a link between operating performance in the years leading up to the event and to a lesser extent, in the subsequent years following after the event.

In isolating specific variables at each time lead or lag we find, at sample-level, a significant relationship (at 5% significance) between the leverage change and for the D group, the PE ratio (DA1), issued share capital (DA4), book value of equity, long-term debt, real interest rates and issued share capital (DB5); and a single variable for the I group, the effective tax rate (IA1).

Table 17: Sample-level regression of I/D group against variables at leads/lags

REGRESSION	SIGNIFICANT LEAD/LAG	VARIABLE	CO-EFFICIENT	T-STATISTIC
Decrease R-squared 0.3811 F-statistic 2.4634 Prob. F-stat. 0.0057	A1	PE	0.0160	5.8111
Decrease R-squared 0.6236 F-statistic 7.1442 Prob. F-stat. 0.0000	A4	SHARES ISSUED	0.0960	6.4677
Decrease R-squared 0.3692 F-statistic 2.0853 Prob. F-stat. 0.0220	B5	EQUITY	-0.0954	-2.7724
		LT DEBT	0.0505	2.6381
		INTEREST RATES	0.2034	2.5183
		SHARES ISSUED	-0.0239	-2.5805
Increase R-squared 0.4028 F-statistic 3.5406 Prob. F-stat. 0.0001	A1	TAX RATE	0.0427	2.3985

The PE ratio is most immediately affected by a decrease while for an increase, it is the effective tax rate that is directly and immediately changed. This evidence supports the notion that the market responds directly and positively (although the coefficient is very small) to leverage increases (Myers & Majluf, 1984 and Masulis & Korwar, 1986). Higher debt levels lead to more taxation after the event. Results showing an increase in shares issued four years after a decrease and a decrease five years before suggest that the motivation is not rebalancing but this would require more investigation to validate. The significance of long-term debt and real interest rates five years prior to a decrease seems somewhat spurious if we are to assume that capital structure management is a dynamic response to current business conditions - especially considering that these variables do not show any significance at shorter lead times.

At sector-level and starting with Basic Materials (Table 18 below), we find significance for asset composition and share price (DA4), debt service cover, profitability, cash generation, PE ratio and short-term debt (DB2), asset composition and short-term debt (DB4), and finally, volatility, tax rate and long-term debt (IA1).

Table 18: Sector-level regression of I/D group against variables at leads/lags: Basic Materials

REGRESSION	SIGNIFICANT LEAD/LAG	VARIABLE	CO-EFFICIENT	T-STATISTIC
Decrease R-squared 0.9353 F-statistic 5.4180 Prob. F-stat. 0.0231	A4	FA/TA	0.1537	3.6402
		SHARE PRICE	0.2404	3.6593
Decrease R-squared 0.8271 F-statistic 3.5877 Prob. F-stat. 0.0151	B2	DSCR	-0.0561	-3.2209
		OI/TA	0.0667	2.8204
		OPERATING CASH	-0.0482	-2.4200
		PE	-0.0277	-2.2178
		ST DEBT	-0.0636	-4.2106
Decrease R-squared 0.8383 F-statistic 2.9172 Prob. F-stat. 0.0537	B4	FA/TA	-0.0069	-2.9648
		ST DEBT	-0.0023	-2.8205
Increase R-squared 0.9577 F-statistic 19.7864 Prob. F-stat. 0.0000	A1	CHANGE IN OI	-0.0415	-6.9904
		TAX RATE	0.0370	9.3134
		LT DEBT	0.9152	2.1481

The results reveal that a leverage decrease is related to a subsequent increase in the proportion of fixed assets held some four years later (albeit a very small increase). This evidence is contrary to the theory that asset composition is positively related to leverage (Martin & Scott, 1974, Myers, 1977, Long & Malitz, 1985). However, a possible explanation for this is that equity issues are favoured when intangible assets are high and this ultimately leads to subsequent additional investment in fixed assets as growth opportunities are realised. The positive share price change is also found to follow a leverage decrease which again confirms that the market reacts positively to less leverage (Marsh, 1982, Barclay & Smith, 1999, Baker & Wurgler, 2002). Although the coefficients are small, we find a negative relationship two years prior to a decrease for debt service, operating cash and PE ratio.

This is as expected – reduce debt following a reduction in ability to service repayments and a reduction in cash generated and a lower market valuation. The positive relationship for prior profitability is, however, surprising and contrary to the theory that more profitable companies have less leverage (Baskin, 1989, Harris & Raviv, 1991, Fama & French, 2000). These findings suggest that profitability is subsumed by debt service ability, cash generated and market valuation. The fact that asset composition appears significant again at four years before a decrease (this time with a slightly negative coefficient) is contrary to our previous findings but corroborates the positive relationship found in prior evidence that a higher proportion of intangible assets is associated with subsequent leverage decreases (Martin & Scott, 1974, Myers, 1977, Long & Malitz, 1985).

Finally, we find that leverage increases are followed immediately by reduced earnings volatility suggesting that additional leverage enables the company to stabilise earnings by means of the continuation of operations (contrary to Marsh, 1982 and Friend & Hasbrouck, 1986). Debt may be risky in that it carries with it the burden of debt service, but it is also an immediate source of capital that enables operational functions to persist. Once again we find that an increase is followed immediately by a higher effective tax rate.

For the Industrials sector (Table 19 below) we find that it is volatility, profitability, PE, real interest rates and share price that show significance (DA5), volatility, liquidity, DSCR, equity, tax rate, asset composition, size, profitability, long-term debt, cashflow generation, PE, real interest rates, ROI, share price, shares issued and short-term debt (DB4), tax rate (IA3), and liquidity, short-term debt and the share price (IB3).

Table 19: Sector-level regression of I/D group against variables at leads/lags: Industrials

REGRESSION	SIGNIFICANT LEAD/LAG	VARIABLE	CO-EFFICIENT	T-STATISTIC
Decrease R-squared 0.9955 F-statistic 27.5062 Prob. F-stat. 0.0356	A5	CHANGE IN OI	0.0660	5.5530
		OI/TA	-0.7355	-7.7892
		PE	-0.2979	-6.7004
		INTEREST RATES	-0.3323	-4.1974
		SHARE PRICE	0.3656	6.6709
Decrease R-squared 1.0000 F-statistic 598541.477 Prob. F-stat. 0.001	B4	CHANGE IN OI	0.0068	399.0482
		CA/CL	-0.2551	-464.6125
		DSCR	1.0259	1341.6793
		EQUITY	-0.3887	-1177.8072
		TAX RATE	-0.3068	-1193.3356

		FA/TA	0.1785	1430.4981
		LOG TA	1.7786	309.5292
		LT DEBT	-0.0147	-212.8788
		OI/TA	-1.0040	-1075.1878
		CASH	-0.1114	-1497.2467
		PE	-0.0304	-104.1461
		INTEREST RATES	0.6201	1062.8963
		ROI	-0.0628	-1099.4261
		SHARE PRICE	0.3500	884.6975
		SHARES ISSUED	-0.3551	-298.6740
		ST DEBT	0.1456	658.3210
Increase R-squared 0.8201 F-statistic 3.7039 Prob. F-stat. 0.0109	A3	TAX RATE	0.8385	2.3911
Increase R-squared 0.8840 F-statistic 4.7619 Prob. F-stat. 0.0082	B3	CA/CL	3.2455	2.8498
		SHARE PRICE	0.6310	2.5137
		ST DEBT	0.3791	4.0959

A leverage decrease appears to result, five years later, in an eventual increase in volatility, reduction in profitability (the highest coefficient) and market valuation, and a higher share price. Real interest rates also appear significant but it is hard to imagine that this result is anything but spurious. Higher volatility in earnings following a leverage decrease supports our previous finding for the Basic Materials sector that debt has a stabilising effect on earnings (contrary to Marsh, 1982 and Friend & Hasbrouck, 1986). This is the only instance we find of reduced subsequent profitability following a decrease. It suggests to some extent that debt may stimulate profit-generation but this cannot be substantiated on this evidence alone particularly because the impact occurs five years after the event. Reduced market valuation as evidenced by a lower PE ratio refutes prior evidence that the market prefers less debt. However, we also find a concurrent increase in the share price variable which supports this theory (Marsh, 1982, Barclay & Smith, 1999, Baker & Wurgler, 2002) and calls into question the most accurate measure of market sentiment.

We find multiple significant variables appear to be catalysts for a decrease four years later – increased volatility, reduced liquidity, improved debt service ability, a lower effective tax rate, a higher proportion of fixed assets, an increase in size, reduced profitability, operating cash and market valuation, ROI and shares issued, and finally, an increase in the share price. The result for our volatility measure is

inconsistent with prior results but supports the work of Marsh (1982) and Friend and Hasbrouck (1986) that firms with a high degree of earnings volatility are less likely to fund with debt. Better debt service capability would not result in a subsequent decrease so this result does not tie in with previous studies. However, lower liquidity, lower profitability, operating cash and market valuation would necessitate a reduction in leverage (Martin & Scott 1974, Titman & Wessels, 1988, Baskin, 1989, Harris & Raviv, 1991, Rajan & Zingales, 1995, Fama & French, 2002). The increase in the share price variable opens up the 'window of opportunity' to issue equity (Lucas & McDonald, 1990 and Loughran & Ritter, 1995) and a lower tax rate should result in the use of less leverage (support for the Trade-off theory). However, higher fixed assets should enable the company to borrow more not less (contrary to Harris & Raviv, 1991) contradicting our findings for the Basic Materials sector.

The reduction in shares issued suggests that a subsequent decrease in leverage may be an effort to rebalance capital structure to a target or reference point but our initial selection criteria do not suggest that any of these companies were operating in a predetermined range. An increase in size measured by total assets is generally equated with lower informational asymmetry making equity capital more accessible. This could feasibly result in lower leverage if the company is able to raise equity more readily but contradicts the positive size relationship found by Berger and Udell (1988) and Rajan and Zingales (1995). Higher volatility in earnings suggests that a subsequent reduction in leverage is an attempt to limit operational risk (Myers, 1977). Lower ROI data suggests the potential for underinvestment. If existing debt levels were also found to be onerous (however, *not* suggested by the improvement in debt cover), then reducing leverage at this point is likely to be an effort to avoid underinvestment. The coefficient of 1 for DSCR does not corroborate the multi-faceted proof of Underinvestment risk we were aiming for.

Increases are preceded by improved short-term liquidity - support for Martin and Scott (1974) - and higher share prices - contrary to Lucas and McDonald (1990) and Loughran and Ritter (1995) - and followed once again by an immediately higher effective tax rate.

The other sectors proved to be too small to test given the large number of independent variables. The test was not possible at company- or event-level due to the large size of the data.

Finally, we performed a multiple discriminant analysis on the data. Due to the different measurement units between the variables, the discriminant coefficient was adjusted by the respective standard deviation resulting in an adjusted coefficient measurement used to rank each variable in terms of its contribution to the overall z-score (following Martin & Scott, 1974). Long-term debt made the highest contribution to the z-score in years t-5 to t-2, at t-1 it was asset composition, and for the current year performance it was liquidity.

Table 20: Standard deviation-adjusted variable ranking

Variable	RANKING					
	CURRENT	Lead 1	Lead 2	Lead 3	Lead 4	Lead 5
% CHANGE IN OI	8	10	10	10	7	2
CA/CL	1	3	3	16	16	15
DSCR	10	16	4	14	15	3
EFFECTIVE TAX RATE	13	7	15	9	10	11
EQUITY	2	11	16	3	3	4
FA/INT.A	3	1	2	7	4	9
LOG TA	14	13	5	12	13	14
LT DEBT	16	2	1	1	1	1
MARKET CAPITALISATION	4	14	12	15	2	13
OI/TA	9	5	8	13	14	10
OPERATING CASH	11	9	7	2	11	7
PE	7	12	13	6	9	12
ROI	12	8	6	8	6	6
SHARE PRICE	6	6	9	5	8	8
SHARES ISSUED	5	4	14	4	12	5
ST DEBT	15	15	11	11	5	16

An analysis of group means (included in the Appendix) indicated that the means of 7 out of 16 variables were significantly different and thus, able to reliably discriminate between the two groups. These were the size variable, share price, shares issued, market capitalisation, profitability, effective tax rate and ROI.

The results of the multiple discriminant analysis, on which we achieved a correct classification percentage of between 43% and 55%, when applied to a 20% hold-out sample showed a correct classification of between 43% and 57% depending on the lead period. Model predictions above (below) the relevant cut-off point indicate that the company should decrease (increase) leverage.

Table 21: Results - multiple discriminant analysis

Classification	Current			Lead 1			Lead 2			Lead 3			Lead 4			Lead 5		
Original sample	D	I	Totals	D	I	Totals	D	I	Totals	D	I	Totals	D	I	Totals	D	I	Totals
D	1	152	153	149	4	153	137	16	153	142	11	153	141	12	153	151	2	153
I	4	188	192	187	5	192	172	20	192	179	13	192	183	9	192	189	3	192
Percentage	55%			45%			46%			45%			43%			45%		
z-score	3.23498			-1.25461			0.34074			0.03899			0.21360			-0.30609		
20% holdout sample	D	I	Totals	D	I	Totals	D	I	Totals	D	I	Totals	D	I	Totals	D	I	Totals
D	0	38	38	34	4	38	25	13	38	34	4	38	33	4	38	16	22	38
I	5	43	48	45	3	48	28	20	48	44	4	48	44	4	48	15	33	48
Percentage	50%			43%			52%			44%			43%			57%		
z-score	1.16560			0.22752			0.50293			-0.04019			0.37583			0.54785		

5. CONCLUSION

In this study we have set out to investigate the causes and effects of significant performance in the five years preceding the change and following on from the change. It is a broad-based study incorporating many independent factors at multiple time periods. The objective of establishing a thread that tells the story of operating conditions around a leverage event and the way in which aspects of operating performance develop before and after a leverage event is challenging given the wide scope of the task at hand and furthermore, the analysis needed to be thorough enough to convincingly suggest the prevalence of one or more capital structure theories in the leverage decisions taken by company management.

We used a fixed effects regression for unbalanced panel data with current, lead and lag financial indicators used to assess the debt/equity change on a company, event, sector and overall sample-level. This allowed us to examine the relationship between the debt/equity change and concurrent as well as past and future performance.

We have ascertained that the use of leverage as measured by sample mean DER's differs across sectors with the most highly leveraged sectors being Consumer Services, Financials and Industrials. We have also established that different sectors have experienced varied peaks and troughs in their use of leverage over the sample period. The cause of these cycles has not been established but appears to be unrelated to South African interest rate cycles. However, in terms of the annual changes made to DER's amongst sample companies, we find a particularly volatile year occurred in 1998 which coincides with the highest real interest rates experienced during the sample period. We have also ascertained that DER's declined on average towards the end of the sample period.

The annual DER change was shown to be statistically dependent, at 5% significance, for the variables short-term debt, equity, liquidity, size, cash and profitability (at 10%). We find confirmation that short-term debt plays a key role in DER changes, specifically in supplementing liquidity requirements. The coefficient for profitability was negative although close to zero – confirming the evidence of Titman and Wessels (1988), Harris and Raviv (1991), Rajan and Zingales (1995) and Fama and French (2002). The positive coefficients for the size and operating

cash variables also confirm prior evidence (Harris & Raviv, 1991 and Rajan & Zingales, 1995) and remove the ambiguity of the size effect introduced by the information asymmetry considerations that suggest the size effect may be negative.

Looking at the path along which key influential operational variables developed around the leverage event, we find that increase events are followed by lower DSCR's while decrease events are followed by improved DSCR's. DSCR's appear to be more volatile around decreases. Increases are preceded by poorer liquidity and appear to result in improved liquidity after the event. This points to the fact that leverage adjustments appear to supplement short-term liquidity requirements. Increases introduce more operational risk thereby confirming Myers (1977) and Hamada (1972) and also result in more persistent volatility after the event. Increases are pre-empted by drops in profitability and decreases by rises. This confirms the negative relationship identified previously between leverage and profitability lending support to the Pecking Order theory (Titman & Wessels, 1988, Baskin, 1989, Harris & Raviv, 1991, Rajan & Zingales, 1995, Fama & French, 2002).

Increases also resulted in superior subsequent profitability as well as better growth in ROI. The decrease group was defined by better ROI leading up to the event. This suggests that debt may be an effective means of controlling agency conflict associated with underinvestment risk (Myers & Majluf, 1984). This indicates that invested capital is earning satisfactory profits meaning that there is less opportunity for agency conflict between shareholders and debtholders following increases. This offers some confirmation of the more rigid nature of debt as a result of fixed repayments and the concomitant higher security of debt as a suitable external source of capital relative to equity (due to its lower informational cost). Companies that levered up were less volatile before the event and more volatile after the event, more profitable following the event, and experienced better short- to medium-term growth in ROI.

We find some support for the Trade-off theory (DeAngelo & Masulis, 1980 and Myers, 1984) in that increases are preceded by higher potential tax shields. We find that both increases and decreases were preceded by rising PE ratios.

Leverage increases resulted in subsequent short-term increases in PE ratios in support of Masulis and Korwar (1986) who find a positive relationship between share price returns and leverage changes. This offers some support for the Market Valuation theory which suggests that equity issues are discounted by the market (Myers & Majluf, 1984) as they tend to occur during periods of inflated market valuations (Loughran & Ritter, 1995).

Companies that increased their leverage also experienced an increase in short-term debt, total assets and PE ratio all against the backdrop of a real interest rate decrease. This is evidence of the key role that short-term debt plays in influencing DER's. It also confirms the existence of a positive size effect (Harris & Raviv, 1991) and a direct relationship between share returns and leverage changes (Masulis & Korwar, 1986). Those companies that decreased their leverage did so in conjunction with increases in equity and not increased long-term debt. This group experienced higher liquidity, DSCR's, ROI's and profitability. The two latter findings lend support to the negative relationship between leverage and profitability found by Titman and Wessels (1988), Rajan and Zingales (1995) and Fama and French (2002) and the suggestion associated with the Underinvestment theory that debt may reduce potential agency conflict including low ROI's due to its fixed repayment structure and higher concomitant certainty relative to equity (Myers & Majluf, 1984).

The decrease group also experienced a higher concurrent share price increase and more shares in issue (assumedly related to the equity increase). This supports the evidence found by Masulis and Korwar (1986) suggesting that leverage increases are accompanied by positive share price returns as well as Lucas and McDonald (1990) and Loughran and Ritter (1995) that equity issues are timed to coincide with positive market sentiment which ties in with Myers and Majluf (1984) that these equity issues are presumed to take place under conditions of inflated market valuations. It suggests to some extent that equity issues are timed to coincide with higher share prices in support of the Market Valuation theory.

The results show that the most frequently significant leads or lags on an event-basis are t+2, t+3, t+4 and t-1, t-2, t-3, t-5 both around increase events. On a sectoral-basis, significance shifts towards lag factors t+1, t+2 and t+3. On a

company-basis, the results are somewhere in between – a combination of t+2, t+3 and t-1, t-2 and t-4.

Table 22: Summary of significant variables at lead/lag times

DECREASE GROUP	A1	A3	A4	A5	B2	B3	B4	B5
PE	+			-	-		-	
SHARES ISSUED*			+				-	-
FA/TA			+				-,+	
SHARE PRICE			+	+			+	
EQUITY*							-	-
LT DEBT							-	+
INTEREST RATES*				-			+	+
DSCR					-		+	
OI/TA				-	+		-	
OPERATING CASH*					-		-	
ST DEBT					-		-,+	
VOLATILITY				+			+	
CA/CL*							-	
TAX RATE*							-	
SIZE*							+	
ROI*							-	
INCREASE GROUP	A1	A3	A4	A5	B2	B3	B4	B5
TAX RATE*	+,+	+						
VOLATILITY	-							
LT DEBT	+							
CA/CL*						+		
SHARE PRICE						+		
ST DEBT						+		

* Consistent result

Significant catalytic variables are equity, long-term debt, real interest rate and issued share capital at t-5 (D group) while significant resultant variables are PE at t+1 (D group), shares issued at t+4 (D group), and the tax rate at t+1 (I group). Unfortunately our results have not revealed a continuous thread for any of the key variables but rather isolated points of influence. Looking at the sector breakdown we find that for the Basic Materials sector only, it is asset composition and share price at t+4 (D group), DSCR, profitability, cash generation, PE ratio and short-term debt at t-2 (D group), asset composition and short-term debt at t-4 (D group), and finally, volatility, tax rate and long-term debt at t+1 (I group). For the Industrials sector, we find that it is volatility, profitability, PE, real interest rates and share price that show significance at t+5 (D group); volatility, liquidity, DSCR, equity, tax rate, asset composition, size, profitability, long-term debt, cashflow generation, PE, real interest rates, ROI, share price, shares issued and short-term debt at t-4 (D group); tax rate at t+3 (I group); and liquidity, short-term debt and the share price at t-3 (I group).

The results are largely mixed. We find market sentiment improvements following leverage decreases - contrary to Masulis and Korwar (1986) and Myers and Majluf (1984) - via a higher PE ratio as well as increases in the share price variable. However, results for the Industrial sector show a reduction in the PE ratio along with a higher share price following a decrease revealing a divergence between these two variables both used as measurements of market sentiment. We find one instance of higher share prices following leverage increases disputing our previous finding. This supports the findings of Masulis and Korwar (1986) that share price returns are positively related to leverage changes.

Our findings on profitability are also mixed - we find a direct positive relationship between leverage and profitability in reduced profitability following deleveraging (refuting Titman & Wessels, 1988, Harris & Raviv, 1991, Rajan & Zingales, 1995, Fama & French, 2002) but this is contradicted in our later results for prior relationships.

Again the results are mixed regarding the relationship between leverage and asset composition. We find mixed evidence regarding volatility – higher volatility following leverage decreases which disputes both Hamada (1972) and Myers (1977) that debt introduces additional operational risk, and the reverse result in a subsequent finding of higher volatility following increases. We find support for higher effective taxes following increases. The results also suggest a direct positive relationship between liquidity and leverage supporting the notion that greater liquidity enables greater debt capacity (Martin & Scott, 1974).

The results leading up to events are also mixed in our findings that profitability both increases and decreases before a leverage decrease. We find the same contradiction for DSCR's and asset composition. We find that the effective tax rate is lower leading up to a decrease (in support of the Trade-off theory), as is cash generation, liquidity (corroborating the positive relationship established by Martin and Scott, 1974) and ROI (this is contrary to the Underinvestment theory that debt reduces agency conflict in the form of low ROI's according to Myers, 1977). The size variable is higher before a decrease which also runs contrary to the positive size effect of Harris and Raviv (1991) but supports the notion of the ambiguous

size effect which is negative under conditions of asymmetric information (Rajan & Zingales, 1995).

The contradictions on many variables are interesting and raise the question of whether sectoral idiosyncrasies have a material influence on the relevance of operational variables in leverage decisions. However, we also find numerous contradictions between what we observed from the observed trends and the statistical tests. This may suggest that a more narrowly-focused test may be more informative.

In summary, the event-level regressions have produced interesting specific details of operating performance before and after leverage events. We have found some significance in terms of identifying key periods both before and after an event. The evidence implies that before- and after- performance has a material bearing on operations in an event-year. Much of this significance falls away when we aggregate at sector-level, and all of it disappears at sample-level. This suggests that the capital structure mystery may be embedded within whatever factors govern individual leverage event decisions.

The data suggests that capital structure theories are not followed strictly. This implies that leverage decisions are taken with regard to financing requirements as they arise based on the availability of internal funds or cashflow or consideration of borrowing costs and tax savings. The underlying rationale of using debt appears to relate to the practical considerations of managing capital. Event analysis seems to indicate that the majority of leverage decisions are event-specific rather than justified by any generic theoretical framework.

Nonetheless, the observed trend results show some support for the Pecking Order theory – levering up occurs on average after drops in profitability, the Trade-off theory - in a higher potential tax shield for the increase group, the notion that existing debt determines future borrowing capacity (higher and more stable DSCR's for the increase group), and some evidence supporting the Underinvestment theory that debt may reduce the occurrence of low ROI's and other agency conflict (Myers, 1977). It would appear that short-term debt is frequently employed to satisfy liquidity requirements including working capital funding. There is some evidence that equity issues (associated with leverage

decreases) occur alongside concurrent higher share prices supporting the Market Valuation theory. This supports the “window of opportunity” theory associated with equity issues (Lucas & McDonald, 1990 and Loughran & Ritter, 1995). Higher concurrent PE ratios associated with those companies that levered up supports the positive relationship found between announcement share price returns and leverage changes (Masulis & Korwar, 1986) and the notion that equity issues under scenarios of asymmetric information are perceived as being associated with overvalued equity and therefore, discounted by investors (Myers & Majluf, 1984). Finally, there is no evidence to suggest that bigger companies prefer less leverage (contradicting the positive size effect suggested by Harris and Raviv (1991).

We have not achieved conclusive proof of any particular capital structure theory in practice on the JSE apart from hints (based on the observed patterns not corroborated by test results) of the Pecking Order-, Trade-off- and Market Valuation theories and one observed instance of support for the Underinvestment theory. However, these observed trends around events contradict the results of our regression tests calling into question the research design. We have not successfully established a continuous development path for performance indicators but we have shed light on the rationale behind the use of debt to some extent and identified relevant time periods around individual events. We have found some evidence of key influential operator variables - namely effective tax rate, operating cash, liquidity, size and ROI but the signs of the latter two variables are contrary to the findings of previous studies. The multiple discriminant analysis achieved a correct prediction rate of only approximately 50% on a hold-out sample suggesting that the model could be improved upon.

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7. APPENDIX

7.1. Contents

List of Companies by Sector

Sector		Company (Financial Y/E)
Basic Materials	1	A E C I (December)
	2	AFROX (December)
	3	ANGGOLD (December)
	4	ANGLO (December)
	5	ANGLOPLAT (December)
	6	ARCMITTAL (December)
	7	ARM (June)
	8	ASSORE (June)
	9	DELTA (December)
	10	EHSV (December)
	11	GFIELDS (December)
	12	HARMONY (June)
	13	IMPLATS (June)
	14	LONMIN (September)
	15	MERAFE (December)
	16	NORTHAM (June)
	17	SAPPI (September)
	18	SPANJAARD (February)
	19	TRNSHEX (March)
	20	VILLAGE (June)
Consumer Goods	21	A V I (June)
	22	CROOKES (March)
	23	DISTELL (June)
	24	METAIR (December)
	25	NUWORLD (August)
	26	OCEANA (September)
	27	RCL (June)
	28	RICHEMONT (March)
	29	SAB (March)
	30	SEARDEL CP (March)
	31	TIGBRANDS (September)
Consumer Services	32	AF & OVR (June)
	33	CASHBIL (June)
	34	CAXTON (June)
	35	CMH (February)
	36	CULINAN (September)
	37	ITLTILE (June)
	38	NICTUS (March)
	39	PICKNPAY (February)
	40	REX TRUE -A- (June)
	41	SHOPRIT (June)
	42	SUNINT (June)
Financials	43	B-AFRICA (December)
	44	BRAIT (March)
	45	FIRSTRAND (June)
	46	FPT (August)
	47	HCI (March)
	48	HYPROP (December)
	49	INVLTD (March)
	50	LIB HOLD (December)
	51	LONFIN (June)
	52	NEDBANK (December)
	53	PUTPROP (June)
	54	SANTAM (December)
	55	SASFIN (June)
	56	STANBANK (December)
	57	ZURICH SA (December)
Healthcare	58	ASPEN (June)
	59	MEDCLIN (March)
Industrials	60	ALTRON A (February)
	61	BARWORLD (September)
	62	BASREAD (December)
	63	BIDVEST (June)
	64	CARGO (February)
	65	ELBGROUP (June)
	66	GRINDROD (December)
	67	GROUP 5 (June)
	68	HUDACO (November)
	69	IMPERIAL (June)
	70	JASCO (June)
	71	M&R HLD (June)
	72	MASNITE (December)
	73	NAMPAK (September)
	74	PPC (September)
	75	REUNERT (September)
	76	SUPRGRP (June)
	77	TRENCOR (December)
	78	WINHOLD (September)
Oil & Gas	79	SASOL (June)

DER Summary Statistics by Company

COMPANYID	Mean	Median	Max	Min.	Quant.*	Std. Dev.	Skew.	Kurt.	Obs.
A E C I (December)	1.115000	1.075000	1.650000	0.810000	1.075000	0.206734	0.765392	3.202606	24
A V I (June)	0.825000	0.715000	1.650000	0.410000	0.715000	0.307147	1.037331	3.492366	24
AF & OVR (June)	0.381250	0.370000	0.700000	0.210000	0.370000	0.097771	1.589860	6.328142	24
AFROX (December)	0.895833	0.820000	1.480000	0.660000	0.820000	0.213886	1.436775	4.566950	24
ALTRON A (February)	1.459167	1.430000	2.160000	0.980000	1.430000	0.332290	0.481874	2.265409	24
ANGGOLD (December)	0.827917	0.775000	2.370000	0.130000	0.775000	0.682113	0.535473	2.165459	24
ANGLO (December)	0.414583	0.320000	0.780000	0.180000	0.320000	0.215850	0.561799	1.658418	24
ANGLOPLAT (December)	0.519167	0.470000	0.970000	0.210000	0.470000	0.242360	0.668765	2.098151	24
ARCMITTAL (December)	0.408750	0.450000	0.910000	0.150000	0.450000	0.188549	0.508771	3.040358	24
ARM (June)	0.778333	0.735000	1.520000	0.270000	0.735000	0.410574	0.217533	1.574432	24
ASPEN (June)	1.500833	1.000000	8.190000	0.360000	1.000000	1.564444	3.437253	15.24341	24
ASSORE (June)	0.336667	0.255000	1.150000	0.130000	0.255000	0.241421	1.924622	6.618660	24
B-AFRICA (December)	13.88583	14.54500	17.10000	9.640000	14.54500	1.894814	-0.710650	2.856679	24
BARWORLD (September)	1.605000	1.470000	2.640000	0.970000	1.470000	0.462348	1.164959	3.362024	24
BASREAD (December)	6.114583	3.840000	30.80000	1.470000	3.840000	6.710797	2.450704	8.959071	24
BIDVEST (June)	1.511250	1.600000	2.060000	0.450000	1.600000	0.401024	-1.330897	4.605962	24
BRAIT (March)	0.553333	0.200000	2.710000	0.010000	0.200000	0.773050	1.635883	4.411104	24
CARGO (February)	0.856250	0.840000	1.260000	0.530000	0.840000	0.197590	0.092867	2.094063	24
CASHBIL (June)	2.362500	2.560000	3.350000	0.780000	2.560000	0.713474	-0.729893	2.688619	24
CAXTON (June)	0.392083	0.285000	0.820000	0.130000	0.285000	0.219940	0.471200	1.796440	24
CMH (February)	2.238750	2.070000	4.300000	1.150000	2.070000	0.786469	0.898585	3.291066	24
CROOKES (March)	0.133333	0.095000	0.340000	0.050000	0.095000	0.083336	1.065418	3.043014	24
CULINAN (September)	4.332083	2.390000	39.33000	1.260000	2.390000	7.670196	4.200045	19.67908	24
DELTA (December)	0.546250	0.560000	1.040000	0.120000	0.560000	0.313144	-0.047110	1.547143	24
DISTELL (June)	0.610417	0.520000	1.040000	0.230000	0.520000	0.252199	0.387329	1.726271	24
EHSV (December)	0.834167	0.820000	1.680000	0.220000	0.820000	0.352555	0.454338	2.980165	24
ELBGROUP (June)	2.538333	2.460000	4.870000	1.330000	2.460000	0.929393	0.699117	2.837752	24
FIRSTRAND (June)	10.05125	11.01000	14.88000	0.450000	11.01000	4.005338	-1.471116	4.178750	24
FPT (August)	0.135417	0.090000	0.410000	0.050000	0.090000	0.095961	1.901945	5.838056	24
GFIELDS (December)	0.248750	0.230000	0.670000	0.070000	0.230000	0.135689	1.287609	5.135396	24
GRINDROD (December)	2.065000	2.045000	4.300000	0.920000	2.045000	0.826943	0.632484	3.246655	24
GROUP 5 (June)	4.039583	3.415000	6.710000	2.230000	3.415000	1.481261	0.591126	1.813109	24
HARMONY (June)	0.227500	0.225000	0.530000	0.060000	0.225000	0.139010	0.775627	2.474411	24
HCI (March)	-2.890833	0.575000	3.820000	-92.59000	0.575000	19.16042	-4.544880	21.79486	24
HUDACO (November)	1.374583	1.135000	3.420000	0.550000	1.135000	0.721556	1.198063	3.970503	24
HYPROP (December)	71.43542	4.205000	552.1000	0.820000	4.205000	184.3216	2.267281	6.141959	24
IMPERIAL (June)	1.495417	1.485000	2.450000	0.450000	1.485000	0.556659	-0.223466	2.408732	24
IMPLATS (June)	0.394167	0.360000	1.130000	0.170000	0.360000	0.213275	1.753598	6.900556	24
INVLTD (March)	16.59917	15.13000	31.50000	7.590000	15.13000	6.411647	0.822819	2.702929	24
ITLTILE (June)	0.568750	0.480000	1.390000	0.150000	0.480000	0.273087	1.560649	5.506583	24
JASCO (June)	1.773333	1.275000	7.870000	0.460000	1.275000	1.522977	2.896907	11.95342	24
LIB HOLD (December)	2.135417	1.885000	6.260000	0.470000	1.885000	1.477586	1.527180	4.800509	24
LONFIN (June)	0.176667	0.180000	0.430000	0.050000	0.180000	0.086057	0.873342	4.343805	24
LONMIN (September)	0.718333	0.685000	1.690000	0.090000	0.685000	0.511848	0.439783	1.915391	24
M&R HLD (June)	1.742083	1.575000	3.140000	0.780000	1.575000	0.641601	0.629264	2.432569	24
MASNITE (December)	0.355833	0.370000	0.620000	0.150000	0.370000	0.132301	0.015113	1.817839	24
MEDCLIN (March)	1.390000	1.190000	4.170000	0.250000	1.190000	1.171669	1.025809	3.031441	24
MERAFE (December)	0.595000	0.300000	3.480000	0.130000	0.300000	0.780992	2.737091	9.816418	24

METAIR (December)	0.545417	0.520000	0.820000	0.330000	0.520000	0.131148	0.412425	2.344815	24
NAMPAK (September)	1.023333	0.965000	1.640000	0.520000	0.965000	0.321797	0.321741	2.155913	24
NEDBANK (December)	14.17875	14.22500	22.44000	9.070000	14.22500	2.814451	0.849370	4.323974	24
NICTUS (March)	3.384583	2.845000	7.270000	1.240000	2.845000	2.061673	0.595867	1.933122	24
NORTHAM (June)	0.110833	0.080000	0.270000	0.030000	0.080000	0.077343	0.647405	2.169536	24
NUWORLD (August)	0.818750	0.565000	1.970000	0.260000	0.565000	0.574330	0.905579	2.276133	24
OCEANA (September)	0.908333	0.800000	1.830000	0.390000	0.800000	0.424885	0.696074	2.340130	24
PICKNPAY (February)	3.652500	3.425000	6.700000	2.080000	3.425000	1.272551	1.027933	3.546141	24
PPC (September)	1.322083	0.490000	5.020000	0.320000	0.490000	1.576755	1.470438	3.415791	24
PUTPROP (June)	0.247083	0.090000	0.950000	0.010000	0.090000	0.305222	1.104418	2.918355	24
RCL (June)	0.630417	0.550000	1.350000	0.240000	0.550000	0.272388	1.409204	4.368953	24
REUNERT (September)	1.710417	1.840000	2.820000	0.440000	1.840000	0.760597	-0.277289	1.834627	24
REX TRUE -A- (June)	0.210833	0.200000	0.390000	0.120000	0.200000	0.057174	1.548482	5.590328	24
RICHEMONT (March)	0.897083	0.390000	2.360000	0.200000	0.390000	0.747177	0.574985	1.680629	24
SAB (March)	1.086250	0.940000	2.240000	0.320000	0.940000	0.652672	0.383264	1.771456	24
SANTAM (December)	1.121250	0.765000	2.660000	0.150000	0.765000	0.803321	0.546179	1.976888	24
SAPPI (September)	1.278750	1.350000	1.970000	0.450000	1.350000	0.391966	-0.633602	2.557187	24
SASFIN (June)	3.249583	3.050000	6.310000	1.130000	3.050000	1.457074	0.514955	2.529986	24
SASOL (June)	0.590417	0.575000	0.940000	0.290000	0.575000	0.199488	-0.011397	1.714704	24
SEARDEL CP (March)	1.377083	1.255000	2.460000	0.620000	1.255000	0.605514	0.185778	1.534503	24
SHOPRIT (June)	2.930833	2.900000	5.080000	1.130000	2.900000	1.042826	0.253134	2.415284	24
SPANJAARD (February)	1.381667	1.155000	3.230000	0.470000	1.155000	0.739498	0.888054	2.822013	24
STANBANK (December)	13.71000	13.29500	19.55000	8.390000	13.29500	2.796321	0.264985	2.292068	24
SUNINT (June)	4.722083	1.015000	61.72000	0.530000	1.015000	12.48188	4.223582	19.74597	24
SUPRGRP (June)	1.841667	1.455000	7.230000	0.040000	1.455000	1.438673	2.351737	9.369493	24
TIGBRANDS (September)	1.711250	1.285000	9.170000	0.470000	1.285000	1.808555	3.237286	13.49436	24
TRENCOR (December)	2.093333	1.865000	3.960000	0.700000	1.865000	1.154239	0.151058	1.518361	24
TRNSHEX (March)	0.558333	0.315000	2.870000	0.190000	0.315000	0.610201	2.660213	9.887065	24
VILLAGE (June)	0.337500	0.200000	2.540000	-0.250000	0.200000	0.543453	3.075379	12.66126	24
WINHOLD (September)	-3.805833	2.145000	46.95000	-293.0000	2.145000	63.14025	-4.209446	20.00819	24
ZURICH SA (December)	0.487083	0.375000	1.680000	0.140000	0.375000	0.366564	2.296490	7.640551	24
All	2.872395	0.960000	552.1000	-293.0000	0.960000	23.26823	19.36100	494.0387	1896

*Quantiles computed for p=0.5, using the Rankit (Cleveland) definition.

COMPANY AVI – SECTOR: CONSUMER GOODS

VARIABLE	2 013	2 012	2 011	2 010	2 009	2 008	2 007	2 006	2 005	2 004	2 003	2 002	2 001	2 000	1 999	1 998	1 997	1 996	1 995	1 994	1 993	1 992	1 991	1 990
DER	1	1	2	2	3	3	1	2	1	1	1	1	1	1	1	2	2	3	3	3	3	4	5	5
DER CHANGE	5	1	2	2	3	5	2	5	2	3	3	2	3	2	2	2	2	3	3	3	2	2	2	3
TOTAL DEBT	3	1	2	3	3	3	2	2	1	2	2	1	1	1	3	4	5	5	5	4	3	3	2	2
LT DEBT	1	1	1	1	5	4	2	2	2	2	1	1	1	1	2	3	3	5	5	3	2	1	3	3
ST DEBT	5	1	4	5	4	3	2	1	1	1	1	1	1	1	1	2	4	3	2	2	1	2	1	2
EQUITY	4	4	3	3	3	3	3	2	2	3	3	3	2	2	5	5	5	4	3	3	2	2	1	1
LIQUIDITY	1	3	1	1	2	1	1	1	3	3	4	4	3	5	4	4	4	3	3	3	4	4	3	2
ASSET COMPOSITION	1	1	1	1	1	1	1	1	1	1	2	2	5	1	1	1	1	1	1	1	1	1	1	1
BANKRUPTCY THREAT	3	5	2	1	1	1	2	1	2	5	5	5	2	1	1	1	1	1	1	1	1	1	1	1
SIZE LOG TA	3	2	2	2	2	2	1	1	1	3	3	3	2	2	5	5	5	5	4	3	2	2	1	1
CASH GENERATION	5	5	5	4	3	1	1	1	5	4	4	2	2	1	1	1	1	3	2	1	2	1	2	1
P/EPS	5	5	5	5	4	4	4	5	3	4	3	3	4	3	2	2	2	4	5	1	1	1	1	1
SHARE PRICE RETURN	2	4	4	4	3	3	3	4	1	4	3	4	4	4	2	2	1	2	3	4	4	4	5	3
OPERATIONAL RISK	3	4	4	3	3	3	5	1	2	2	4	5	4	2	1	1	2	4	4	3	3	3	3	3
PROFITABILITY	5	5	4	4	4	3	4	3	5	3	3	3	2	1	1	1	2	2	2	2	3	3	4	4
TAX SHIELD	4	4	4	4	4	4	4	3	3	4	3	3	1	1	2	3	1	2	3	3	4	5	5	5
UNDERINVESTMENT	5	5	4	4	4	4	4	4	1	4	4	4	4	4	3	3	3	3	3	4	3	3	4	4
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

COMPANY: SUN INTERNATIONAL – SECTOR: CONSUMER SERVICES

VARIABLE	2 013	2 012	2 011	2 010	2 009	2 008	2 007	2 006	2 005	2 004	2 003	2 002	2 001	2 000	1 999	1 998	1 997	1 996	1 995	1 994	1 993	1 992	1 991	1 990
DER	1	1	1	1	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DER CHANGE	1	1	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOTAL DEBT	5	5	5	5	5	5	3	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
LT DEBT	4	5	4	5	5	5	3	2	2	2	2	3	2	2	1	1	1	1	1	1	1	1	1	1
ST DEBT	5	4	5	4	4	4	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUITY	4	3	3	2	1	1	4	5	5	5	4	5	5	5	4	5	3	3	2	2	2	2	2	1
LIQUIDITY	1	1	1	1	1	1	2	2	2	3	4	3	1	4	5	5	2	3	3	4	1	1	2	3
ASSET COMPOSITION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
BANKRUPTCY THREAT	2	1	1	1	1	2	2	2	2	1	1	1	1	1	2	5	3	2	3	2	2	4	5	3
SIZE LOG TA	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4	3	3	2	2	2	2	1	1
CASH GENERATION	5	5	5	4	5	5	5	4	3	2	2	2	2	1	1	2	1	1	1	1	1	1	1	1
P/EPS	4	4	4	4	4	4	4	5	4	4	1	5	4	4	4	4	4	4	4	4	4	4	4	4
SHARE PRICE RETURN	3	3	2	3	3	1	4	5	5	5	5	3	1	4	5	1	1	2	3	4	3	3	5	3
OPERATIONAL RISK	2	2	1	1	2	2	2	2	2	3	5	1	2	1	1	3	2	2	2	2	1	2	2	2
PROFITABILITY	3	3	3	3	4	5	5	5	4	5	2	1	1	1	2	5	3	3	3	3	3	3	5	5
TAX SHIELD	5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5	5	5	5	5	5	5	5
UNDERINVESTMENT	5	4	3	3	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

COMPANY: BRAIT S.A – SECTOR: FINANCIALS

VARIABLE	2 013	2 012	2 011	2 010	2 009	2 008	2 007	2 006	2 005	2 004	2 003	2 002	2 001	2 000	1 999	1 998	1 997	1 996	1 995	1 994	1 993	1 992	1 991	1 990
DER	1	1	1	1	1	1	1	1	2	1	1	3	4	3	5	5	1	1	1	1	1	1	1	1
DER CHANGE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1
TOTAL DEBT	1	4	1	1	1	1	1	1	1	1	1	4	5	5	5	4	1	1	1	1	1	1	1	1
LT DEBT	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ST DEBT	1	1	1	1	1	1	1	1	1	1	1	3	5	4	5	4	1	1	1	1	1	1	1	1
EQUITY	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LIQUIDITY	5	4	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	4	1	5	2	5
ASSET COMPOSITION	1	1	1	1	1	1	2	2	1	1	1	4	3	5	5	2	1	1	1	1	1	1	1	1
BANKRUPTCY THREAT	3	3	2	3	3	5	1	2	2	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1
SIZE LOG TA	5	5	4	4	4	4	3	3	2	2	2	4	4	4	4	4	1	1	1	1	1	1	1	1
CASH GENERATION	1	1	2	2	3	2	3	2	2	2	2	1	3	5	1	2	2	2	2	2	2	2	2	2
P/EPS	2	2	2	2	2	2	3	3	3	5	1	2	2	2	2	3	3	4	5	1	3	5	3	3
SHARE PRICE RETURN	4	5	2	3	5	1	2	3	5	3	2	1	2	1	1	4	2	2	1	3	2	5	2	2
OPERATIONAL RISK	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1
PROFITABILITY	2	2	1	1	1	2	2	2	2	1	1	1	1	2	5	5	1	1	1	1	1	1	1	1
TAX SHIELD	1	1	3	3	3	2	3	2	1	5	2	1	1	2	2	4	1	2	2	1	2	2	1	2
NET PROFIT	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
INVESTMENT	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UNDERINVESTMENT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

COMPANY: BARLOWORLD – SECTOR: INDUSTRIALS

VARIABLE	2 013	2 012	2 011	2 010	2 009	2 008	2 007	2 006	2 005	2 004	2 003	2 002	2 001	2 000	1 999	1 998	1 997	1 996	1 995	1 994	1 993	1 992	1 991	1 990
DER	2	3	2	2	2	2	3	2	1	2	2	1	2	1	1	3	3	2	2	1	5	5	5	5
DER CHANGE	3	5	4	3	3	3	4	5	3	4	4	3	5	3	1	4	4	4	4	1	4	4	4	3
TOTAL DEBT	5	4	3	4	5	5	5	3	4	3	3	3	2	1	2	1	1	1	1	3	3	2	2	2
LT DEBT	5	4	3	4	4	3	4	4	4	3	3	2	2	1	1	1	1	1	1	2	2	2	2	2
ST DEBT	3	2	3	4	5	5	5	3	3	3	5	4	2	1	3	3	1	1	1	2	2	2	1	1
EQUITY	5	5	4	5	5	4	5	5	4	4	4	3	3	2	1	1	1	1	1	1	1	1	1	1
LIQUIDITY	5	5	4	4	2	3	4	5	4	2	2	2	4	5	1	1	2	3	4	2	2	2	2	2
ASSET COMPOSITION	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	5	1	1	1
BANKRUPTCY THREAT	2	1	1	1	1	2	5	5	4	2	4	3	5	5	1	2	3	3	2	3	3	2	3	4
SIZE LOG TA	5	5	4	5	5	5	5	5	5	4	5	4	3	3	3	2	2	1	1	4	4	4	3	3
CASH GENERATION	2	4	4	4	3	5	5	4	4	3	3	2	2	1	2	1	1	1	1	3	3	3	3	2
P/EPS	2	2	5	3	1	1	1	2	2	2	1	2	2	2	2	1	2	2	4	1	2	1	1	1
SHARE PRICE RETURN	3	3	3	4	3	1	1	4	3	4	3	3	3	3	5	1	2	2	4	1	3	2	4	2
OPERATIONAL RISK	4	5	1	2	2	2	4	3	4	2	5	2	3	3	3	3	3	4	1	3	3	3	2	3
PROFITABILITY	2	2	1	1	2	3	4	4	3	3	3	1	3	4	3	4	3	3	2	3	4	4	4	5
TAX SHIELD	4	4	5	2	4	4	4	4	4	4	3	4	1	1	2	3	3	4	4	4	4	3	3	4
UNDERINVESTMENT	5	4	1	1	2	1	3	2	2	1	2	2	3	5	2	2	3	4	3	2	2	2	2	3
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

COMPANY: GROUP 5 – SECTOR: INDUSTRIALS

VARIABLE	2013	2012	2011	2010	2009	200	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1996	1995	1994	1993	1992	1991	1990
DER	1	1	1	1	2	2	2	5	2	2	2	4	2	1	1	1	1	5	5	4	5	5	3	4
DER CHANGE	3	3	2	2	3	3	1	5	3	3	2	4	4	3	2	3	1	3	3	2	3	5	2	3
TOTAL DEBT	5	4	4	5	5	5	4	3	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
LT DEBT	4	3	2	4	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ST DEBT	1	1	5	2	4	3	3	3	2	2	2	2	1	2	1	1	1	1	1	1	1	1	1	1
EQUITY	5	4	5	5	5	5	4	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LIQUIDITY	5	5	4	4	3	3	3	1	2	1	1	1	1	2	2	2	2	3	4	3	2	2	3	1
ASSET COMPOSITION	1	1	1	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BANKRUPTCY THREAT	2	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	1
SIZE LOG TA	5	5	5	5	5	5	5	4	3	3	3	3	3	2	2	2	2	2	2	2	2	2	1	1
CASH GENERATION	4	3	1	4	5	5	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
P/EPS	3	5	2	2	2	2	4	5	3	3	2	2	2	1	1	1	2	2	4	4	1	1	1	1
SHARE PRICE RETURN	2	2	1	2	2	1	2	3	2	2	2	3	3	1	3	1	1	2	2	5	3	1	2	2
OPERATIONAL RISK	2	5	1	1	2	2	2	2	2	2	2	2	2	1	1	3	2	1	2	2	1	2	2	2
PROFITABILITY	4	3	1	4	5	5	4	3	4	4	4	3	4	2	5	5	3	3	4	4	2	2	5	5
TAX SHIELD	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UNDERINVESTMENT	2	1	1	2	4	5	5	5	3	3	3	3	2	2	2	2	2	3	3	2	2	2	3	3
BUSINESS CYCLE	1	1	1	2	1	1	2	2	3	3	3	2	3	3	5	5	4	4	3	2	2	2	1	2

Covariance Analysis: Kendall's tau
Pairwise samples (pairwise missing deletion)
tau-b

	D_E	LT_DEBT	ST_EBT	EQUITY	CA/CL	DSCR	FA/INTANGIBLE_A.	ROI	LOG_TA	OI/TA	OPERATING_CASH	P/EPS	SHARE_PRICE	SHARES_ISSUED	REAL_INTEREST_RATES
tau-a															
D_E	1.000000														
	0.998404														
LT_INTEREST_BEARING_DEBT	0.203614	1.000000													
	0.203377	0.998370													
ST_INTEREST_BEARING_DEBT	0.193576	0.057634	1.000000												
	0.193354	0.057589	0.998536												
EQUITY	-0.233409	0.043737	0.046148	1.000000											
	-0.233222	0.043702	0.046115	0.999999											
CA_CL	-0.238853	0.054688	-0.305689	0.103352	1.000000										
	-0.238662	0.054644	-0.305465	0.103351	1.000000										
DSCR	-0.140954	-0.101204	-0.117874	0.159087	0.077208	1.000000									
	-0.140861	-0.101126	-0.117800	0.159077	0.077203	0.999872									
FA_INTANGIBLE_ASSETS	0.026862	-0.024378	-0.023540	-0.015992	0.012741	0.042460	1.000000								
	0.026798	-0.024318	-0.023479	-0.015959	0.012714	0.042377	0.995890								
ROI	-0.115767	-0.051152	-0.064921	0.194646	0.128934	0.330044	0.020473	1.000000							
	-0.115677	-0.051110	-0.064875	0.194632	0.128925	0.330006	0.020430	0.999859							
LOG_TA_	0.137953	0.214493	0.211221	0.460362	-0.037146	0.068872	0.053745	0.095803	1.000000						
	0.137842	0.214318	0.211066	0.460362	-0.037146	0.068868	0.053635	0.095796	1.000000						
OI_TA	-0.106740	-0.072215	-0.112875	0.153306	0.069356	0.452714	0.005015	0.430230	0.035125	1.000000					
	-0.106654	-0.072156	-0.112792	0.153306	0.069356	0.452686	0.005005	0.430199	0.035125	1.000000					
OPERATING_CASH	0.002995	0.015366	-0.061939	0.103987	0.006388	0.092825	0.029367	0.127775	0.123160	0.183224	1.000000				
	0.002993	0.015354	-0.061898	0.103987	0.006388	0.092821	0.029310	0.127766	0.123160	0.183224	1.000000				
P_EPS	-0.000502	0.010468	-0.001138	-0.027811	0.033455	-0.042028	0.023767	-0.076898	-0.043484	-0.139288	-0.018614	1.000000			
	-0.000502	0.010460	-0.001137	-0.027811	0.033455	-0.042026	0.023719	-0.076892	-0.043484	-0.139288	-0.018614	1.000000			
SHARE_PRICE	-0.022106	-0.021645	-0.024301	0.116584	0.031326	0.141313	-0.006581	0.096498	0.065475	0.140833	0.094854	0.310034	1.000000		
	-0.022086	-0.021626	-0.024282	0.116570	0.031322	0.141291	-0.006567	0.096481	0.065468	0.140818	0.094844	0.310000	0.999777		
SHARES_ISSUED	-0.025940	0.036428	0.034498	0.171066	-0.007524	0.005296	-0.024809	-0.003300	0.150549	0.007052	0.030139	-0.002962	0.021714	1.000000	
	-0.023241	0.033400	0.031608	0.153380	-0.006746	0.004790	-0.022760	-0.002980	0.134984	0.006323	0.027191	-0.002655	0.019467	0.803912	
REAL_INTEREST_RATES	-0.038218	-0.023322	-0.035245	0.008219	0.017505	-0.019212	-0.000391	-0.006497	-0.005789	0.012834	-0.003920	0.034401	0.026995	0.037912	1.000000
	-0.037359	-0.022797	-0.034456	0.008041	0.017125	-0.018793	-0.000381	-0.006355	-0.005663	0.012556	-0.003835	0.033654	0.026406	0.033254	0.957048

EQAECII	Dep. Var:	AECII					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
AECIIA1	-0.2518	0.2571	-0.9792	0.3302	0.2924	3.5943	0.0005
AECIIA2	-1.0168	0.6171	-1.6477	0.1030			
AECIIA3	0.1577	0.1011	1.5596	0.1225			
AECIIA4	0.1027	0.2679	0.3834	0.7024			
AECIIA5	-0.1287	0.3510	-0.3667	0.7147			
AECIIB1	-1.7476	0.6471	-2.7008	0.0083			
AECIIB2	-0.3002	0.2368	-1.2676	0.2083			
AECIIB3	0.0947	0.0623	1.5214	0.1318			
AECIIB4	-0.7012	0.4883	-1.4359	0.1546			
AECIIB5	-1.2357	0.3740	-3.3044	0.0014			
C	1.0116	0.3940	2.5676	0.0119			
EQAFOVRI	Dep. Var:	AF_OVRI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
AF_OVRIB1	-1.2569	0.5885	-2.1355	0.0436	0.5805	6.3666	0.0008
AF_OVRIB2	0.0931	0.1053	0.8844	0.3856			
AF_OVRIB3	-2.5609	0.7780	-3.2916	0.0032			
AF_OVRIB4	0.8774	0.6222	1.4102	0.1718			
AF_OVRIB5	-0.0101	0.0169	-0.5998	0.5545			
C	-0.3192	0.1557	-2.0500	0.0519			
EQAFROXD	Dep. Var:	AFROXD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
AFROXDA1	0.4929	0.4058	1.2146	0.2380	0.8505	11.9442	0.0000
AFROXDA2	0.6600	0.2989	2.2078	0.0385			
AFROXDA3	-0.0603	0.1032	-0.5846	0.5650			
AFROXDA4	-0.0351	0.0332	-1.0574	0.3023			
AFROXDA5	0.0250	0.0162	1.5447	0.1373			
AFROXDB1	0.1919	0.3752	0.5114	0.6144			
AFROXDB2	-0.0571	0.0639	-0.8936	0.3817			
AFROXDB3	-0.0008	0.2144	-0.0039	0.9970			
AFROXDB4	-0.3237	0.1914	-1.6912	0.1056			
AFROXDB5	0.0038	0.0153	0.2509	0.8043			
C	0.0011	0.0726	0.0150	0.9882			
EQAFROXI	Dep. Var:	AFROXI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
AFROXIA1	0.8102	0.9581	0.8457	0.4073	0.6821	4.5054	0.0018
AFROXIA2	-0.0640	0.6324	-0.1012	0.9203			
AFROXIA3	-2.2741	1.1369	-2.0004	0.0586			
AFROXIA4	0.3357	0.8723	0.3848	0.7042			
AFROXIA5	0.1588	0.2299	0.6906	0.4974			
AFROXIB1	-1.8237	0.7181	-2.5396	0.0191			
AFROXIB2	-0.3054	0.3029	-1.0083	0.3248			
AFROXIB3	-0.0525	0.0526	-0.9976	0.3298			
AFROXIB4	-0.1612	0.0772	-2.0876	0.0492			
AFROXIB5	0.3178	0.2668	1.1912	0.2469			

C	0.5404	0.2039	2.6501	0.0150			
EQALTROND	Dep. Var:	ALTRON_AD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ALTRON_ADA1	-0.7711	1.3550	-0.5691	0.5717	0.2840	2.0627	0.0450
ALTRON_ADA2	0.7715	1.0768	0.7165	0.4769			
ALTRON_ADA3	0.4339	0.9961	0.4356	0.6649			
ALTRON_ADA4	0.8413	0.3514	2.3939	0.0203			
ALTRON_ADA5	0.2007	0.7876	0.2548	0.7999			
ALTRON_ADB1	-1.6927	1.1749	-1.4407	0.1557			
ALTRON_ADB2	-0.0264	0.0566	-0.4675	0.6421			
ALTRON_ADB3	-1.3600	2.0955	-0.6490	0.5192			
ALTRON_ADB4	-2.1632	0.6781	-3.1902	0.0024			
ALTRON_ADB5	-0.6142	0.8612	-0.7132	0.4789			
C	1.5082	0.9668	1.5600	0.1248			
EQANGLOGOLDD	Dep. Var:	ANGGOLDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ANGGOLDDA1	-0.4560	0.1487	-3.0662	0.0033	0.7649	18.5417	0.0000
ANGGOLDDA2	1.4281	0.1612	8.8620	0.0000			
ANGGOLDDA3	1.0744	0.2761	3.8915	0.0003			
ANGGOLDDA4	0.8331	0.2179	3.8233	0.0003			
ANGGOLDDA5	0.7740	0.4112	1.8823	0.0649			
ANGGOLDDB1	-0.5229	0.1213	-4.3113	0.0001			
ANGGOLDDB2	-0.6720	0.1035	-6.4955	0.0000			
ANGGOLDDB3	-1.2333	0.4190	-2.9431	0.0047			
ANGGOLDDB4	-1.4986	0.1986	-7.5478	0.0000			
ANGGOLDDB5	-1.1510	0.1748	-6.5859	0.0000			
C	0.8689	0.2011	4.3196	0.0001			
EQANGLOGOLDI	Dep. Var:	ANGGOLDI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ANGGOLDIA1	0.0139	0.0159	0.8716	0.3849	0.4983	14.3014	0.0000
ANGGOLDIA2	0.2097	0.0685	3.0634	0.0026			
ANGGOLDIA3	-0.0403	0.0158	-2.5460	0.0119			
ANGGOLDIA4	-0.4362	0.0548	-7.9652	0.0000			
ANGGOLDIA5	-0.0790	0.0464	-1.7028	0.0908			
ANGGOLDIB1	-0.0341	0.0113	-3.0081	0.0031			
ANGGOLDIB2	0.2608	0.0953	2.7366	0.0070			
ANGGOLDIB3	0.0353	0.0256	1.3819	0.1691			
ANGGOLDIB4	0.0164	0.0918	0.1788	0.8584			
ANGGOLDIB5	-0.0015	0.0119	-0.1252	0.9006			
C	0.1163	0.0938	1.2396	0.2171			
EQANGLOI	Dep. Var:	ANGLOI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ANGLOIA1	-0.0559	0.0425	-1.3174	0.1902	0.1902	2.8648	0.0031
ANGLOIA2	0.0288	0.2144	0.1344	0.8933			
ANGLOIA3	0.0002	0.0644	0.0028	0.9978			
ANGLOIA4	0.0465	0.0648	0.7177	0.4743			

ANGLOIA5	-0.0380	0.0340	-1.1152	0.2670			
ANGLOIB1	-0.0516	0.0485	-1.0630	0.2899			
ANGLOIB2	-0.0940	0.0766	-1.2261	0.2225			
ANGLOIB3	-0.5611	0.1257	-4.4648	0.0000			
ANGLOIB4	-0.0364	0.1474	-0.2472	0.8052			
ANGLOIB5	-0.1568	0.1791	-0.8754	0.3831			
C	0.6409	0.1525	4.2019	0.0001			
EQANGLOPLATD	Dep. Var:	ANGLOPLATD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ANGLOPLATDA1	0.0380	0.0959	0.3966	0.6927	0.3116	3.6666	0.0005
ANGLOPLATDA2	-0.1290	0.1291	-0.9991	0.3207			
ANGLOPLATDA3	0.2220	0.0651	3.4112	0.0010			
ANGLOPLATDA4	-0.0801	0.0999	-0.8023	0.4247			
ANGLOPLATDA5	-0.0961	0.0773	-1.2430	0.2175			
ANGLOPLATDB1	0.0852	0.0773	1.1023	0.2736			
ANGLOPLATDB2	0.0966	0.0773	1.2506	0.2147			
ANGLOPLATDB3	-0.0343	0.0664	-0.5163	0.6070			
ANGLOPLATDB4	0.0002	0.0023	0.1019	0.9191			
ANGLOPLATDB5	0.0683	0.0452	1.5106	0.1348			
C	0.0550	0.1247	0.4409	0.6604			
EQANGLOPLATI	Dep. Var:	ANGLOPLATI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ANGLOPLATIA1	-1.0423	0.1681	-6.2004	0.0000	0.4460	9.0170	0.0000
ANGLOPLATIA2	1.0390	0.1671	6.2180	0.0000			
ANGLOPLATIA3	0.7829	0.1731	4.5234	0.0000			
ANGLOPLATIA4	0.9985	0.2173	4.5951	0.0000			
ANGLOPLATIA5	1.0752	0.1420	7.5718	0.0000			
ANGLOPLATIB1	-0.6346	0.1704	-3.7231	0.0003			
ANGLOPLATIB2	-0.8967	0.1995	-4.4940	0.0000			
ANGLOPLATIB3	-0.0005	0.0032	-0.1424	0.8870			
ANGLOPLATIB4	-0.0138	0.0991	-0.1397	0.8892			
ANGLOPLATIB5	-0.0991	0.0527	-1.8795	0.0628			
C	0.2092	0.1911	1.0949	0.2759			
EQARCMITTALD	Dep. Var:	ARCMITTALD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ARCMITTALDA1	0.2058	0.1316	1.5639	0.1215	0.3070	3.8537	0.0002
ARCMITTALDA2	1.5060	0.7312	2.0595	0.0424			
ARCMITTALDA3	-0.0728	0.1058	-0.6883	0.4931			
ARCMITTALDA4	-0.1434	0.0664	-2.1587	0.0336			
ARCMITTALDA5	0.0925	0.2082	0.4440	0.6581			
ARCMITTALDB1	-0.0451	0.0791	-0.5701	0.5701			
ARCMITTALDB2	0.1015	0.1221	0.8314	0.4080			
ARCMITTALDB3	-0.0696	0.0716	-0.9716	0.3340			
ARCMITTALDB4	0.0233	0.0725	0.3217	0.7484			
ARCMITTALDB5	-0.3426	0.0941	-3.6396	0.0005			
C	0.6359	0.3556	1.7885	0.0772			

EQARCMITTALI	Dep. Var:	ARCMITTALI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ARCMITTALIA1	0.0634	0.0461	1.3747	0.1825	0.8954	19.6858	0.0000
ARCMITTALIA2	-0.2795	0.2954	-0.9461	0.3539			
ARCMITTALIA3	-0.7656	0.2669	-2.8686	0.0087			
ARCMITTALIA4	-1.0935	0.5175	-2.1132	0.0456			
ARCMITTALIA5	0.0557	0.0380	1.4664	0.1561			
ARCMITTALIB1	0.0142	0.0087	1.6282	0.1171			
ARCMITTALIB2	0.7042	0.2100	3.3538	0.0027			
ARCMITTALIB3	-0.5569	0.0883	-6.3079	0.0000			
ARCMITTALIB4	-0.5930	0.1957	-3.0296	0.0060			
ARCMITTALIB5	0.4819	0.3753	1.2838	0.2120			
C	0.4166	0.1887	2.2081	0.0375			
EQASPENI	Dep. Var:	ASPENI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ASPENIA1	-0.0801	0.1019	-0.7868	0.4327	0.1036	1.6981	0.0862
ASPENIA2	-0.6075	4.9789	-0.1220	0.9031			
ASPENIA3	0.0015	0.0910	0.0160	0.9873			
ASPENIA4	3.4067	5.8163	0.5857	0.5590			
ASPENIA5	-0.0446	15.5915	-0.0029	0.9977			
ASPENIB1	-1.1133	4.3981	-0.2531	0.8005			
ASPENIB2	4.9974	14.1367	0.3535	0.7242			
ASPENIB3	6.2219	5.3831	1.1558	0.2496			
ASPENIB4	8.7472	2.2555	3.8781	0.0002			
ASPENIB5	-0.1004	4.5926	-0.0219	0.9826			
C	15.0003	23.0703	0.6502	0.5166			
EQAVID	Dep. Var:	AVID					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
AVIDA1	-0.4162	0.0856	-4.8602	0.0000	0.7439	13.0729	0.0000
AVIDB1	-0.0063	0.0146	-0.4299	0.6707			
AVIDB2	0.0090	0.0083	1.0931	0.2840			
AVIDB3	-0.7556	0.3446	-2.1930	0.0371			
AVIDB4	-0.7220	0.2017	-3.5794	0.0013			
AVIDB5	1.0354	0.2326	4.4512	0.0001			
C	0.1572	0.0635	2.4770	0.0198			
EQAVII	Dep. Var:	AVII					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
AVIIA1	0.8892	0.6201	1.4338	0.1571	0.2454	1.8535	0.0716
AVIIA2	-0.3682	0.3973	-0.9266	0.3580			
AVIIA3	-1.0641	0.4184	-2.5431	0.0137			
AVIIA4	-0.0154	0.0290	-0.5316	0.5970			
AVIIA5	0.1346	0.0507	2.6565	0.0102			
AVIIB1	-0.7798	0.5127	-1.5210	0.1338			
AVIIB2	1.0325	0.4268	2.4191	0.0188			
AVIIB3	0.3692	0.3924	0.9410	0.3507			
AVIIB4	-0.0600	0.7313	-0.0820	0.9349			

AVIIB5	0.5250	0.8126	0.6461	0.5208			
C	0.1625	0.2149	0.7562	0.4526			
EQBARLOWORLDD	Dep. Var:	BARLOWORLDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BARLOWORLDDA1	0.1868	0.0601	3.1096	0.0053	0.9251	25.9346	0.0000
BARLOWORLDDA2	0.8133	0.5176	1.5712	0.1311			
BARLOWORLDDA3	-0.0323	0.1763	-0.1833	0.8563			
BARLOWORLDDA4	0.2257	0.0889	2.5386	0.0191			
BARLOWORLDDA5	1.3890	0.2563	5.4196	0.0000			
BARLOWORLDDB1	0.0140	0.0103	1.3603	0.1882			
BARLOWORLDDB2	0.9215	0.3310	2.7837	0.0111			
BARLOWORLDDB3	-0.0973	0.1768	-0.5502	0.5880			
BARLOWORLDDB4	0.3062	0.1330	2.3027	0.0316			
BARLOWORLDDB5	1.1246	0.3653	3.0784	0.0057			
C	0.0330	0.0750	0.4403	0.6642			
EQBARLOWORLDI	Dep. Var:	BARLOWORLDI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BARLOWORLDIA1	0.3170	0.0976	3.2474	0.0039	0.9174	23.3256	0.0000
BARLOWORLDIA2	-0.0225	0.0618	-0.3633	0.7200			
BARLOWORLDIA3	0.6285	0.2342	2.6833	0.0139			
BARLOWORLDIA4	0.2068	0.2641	0.7829	0.4424			
BARLOWORLDIA5	0.2848	0.2948	0.9659	0.3451			
BARLOWORLDIB1	0.0627	0.0351	1.7855	0.0886			
BARLOWORLDIB2	-0.2940	0.1292	-2.2764	0.0334			
BARLOWORLDIB3	0.0202	0.0336	0.6014	0.5540			
BARLOWORLDIB4	0.5668	0.1843	3.0761	0.0057			
BARLOWORLDIB5	-0.1686	0.1285	-1.3120	0.2037			
C	0.0245	0.0527	0.4654	0.6464			
EQBASILREADI	Dep. Var:	BASILREADI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BASILREADIA1	-0.0291	0.0264	-1.1014	0.2739	0.2880	3.3983	0.0009
BASILREADIA2	-0.0836	0.0268	-3.1162	0.0025			
BASILREADIA3	-0.0403	0.0320	-1.2577	0.2120			
BASILREADIA4	-0.0832	0.0540	-1.5404	0.1272			
BASILREADIA5	-0.1212	0.0573	-2.1146	0.0374			
BASILREADIB1	-0.4028	0.1096	-3.6769	0.0004			
BASILREADIB2	-0.0804	0.0263	-3.0629	0.0029			
BASILREADIB3	-0.0411	0.0835	-0.4917	0.6242			
BASILREADIB4	0.0291	0.0381	0.7642	0.4469			
BASILREADIB5	-0.0815	0.0956	-0.8526	0.3963			
C	0.2371	0.2089	1.1350	0.2596			
EQBIDVESTD	Dep. Var:	BIDVESTD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BIDVESTDA1	-0.5668	0.2664	-2.1280	0.0382	0.6125	8.0616	0.0000
BIDVESTDA2	1.6393	0.7762	2.1121	0.0396			
BIDVESTDA3	-6.4044	1.3379	-4.7869	0.0000			

BIDVESTDA4	3.0415	1.1452	2.6558	0.0105			
BIDVESTDA5	8.9246	3.0218	2.9534	0.0047			
BIDVESTDB1	-0.6402	0.2536	-2.5243	0.0147			
BIDVESTDB2	-0.2648	0.3233	-0.8188	0.4167			
BIDVESTDB3	-0.0770	0.0583	-1.3210	0.1924			
BIDVESTDB4	-0.2573	0.0869	-2.9610	0.0046			
BIDVESTDB5	3.5367	0.8667	4.0808	0.0002			
C	-0.5287	1.0257	-0.5155	0.6085			
EQBIDVESTI	Dep. Var:	BIDVESTI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BIDVESTIA1	-1.2089	1.6038	-0.7538	0.4598	0.6735	4.1259	0.0034
BIDVESTIA2	-0.2878	0.5174	-0.5563	0.5842			
BIDVESTIA3	3.9135	1.3960	2.8033	0.0110			
BIDVESTIA4	1.5161	1.3703	1.1064	0.2817			
BIDVESTIA5	0.4247	1.8420	0.2306	0.8200			
BIDVESTIB1	-0.0429	0.0814	-0.5268	0.6041			
BIDVESTIB2	-0.1593	0.1695	-0.9397	0.3586			
BIDVESTIB3	0.0971	1.5880	0.0611	0.9519			
BIDVESTIB4	0.2417	0.0764	3.1645	0.0049			
BIDVESTIB5	-0.0758	0.0413	-1.8348	0.0815			
C	-0.2538	0.5115	-0.4962	0.6252			
EQBRAITD	Dep. Var:	BRAITD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BRAITDA1	-0.0001	0.0001	-1.0131	0.3136	0.9513	183.5633	0.0000
BRAITDA2	0.0000	0.0001	0.1677	0.8672			
BRAITDA3	0.0346	0.0660	0.5237	0.6017			
BRAITDA4	-0.0079	0.0196	-0.4007	0.6895			
BRAITDA5	0.9558	0.0318	30.0237	0.0000			
BRAITDB1	-0.0160	0.0048	-3.3229	0.0013			
BRAITDB2	-0.1138	0.0467	-2.4344	0.0168			
BRAITDB3	-0.0146	0.0122	-1.1980	0.2339			
BRAITDB4	-0.0128	0.0187	-0.6857	0.4946			
BRAITDB5	-0.0104	0.0107	-0.9734	0.3329			
C	0.1750	0.0590	2.9665	0.0038			
EQBRAITI	Dep. Var:	BRAITI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
BRAITIA1	-0.0653	0.0394	-1.6577	0.1017	0.9996	16603.8805	0.0000
BRAITIA2	0.9829	0.0057	173.2841	0.0000			
BRAITIA3	0.0008	0.0001	7.0274	0.0000			
BRAITIA4	-0.0190	0.0065	-2.9255	0.0046			
BRAITIA5	-0.0646	0.0356	-1.8135	0.0739			
BRAITIB1	-0.1979	0.0522	-3.7930	0.0003			
BRAITIB2	-0.0086	0.0149	-0.5746	0.5673			
BRAITIB3	0.1616	0.0848	1.9054	0.0607			
BRAITIB4	0.0100	0.0131	0.7647	0.4469			
BRAITIB5	0.0022	0.0064	0.3440	0.7318			

C	0.0135	0.0825	0.1636	0.8705			
EQCARGOI	Dep. Var:	CARGOI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CARGOIA1	-0.2232	0.4344	-0.5139	0.6120	0.8483	19.1712	0.0000
CARGOIA2	-0.1906	0.1088	-1.7520	0.0925			
CARGOIB1	-0.0208	0.2457	-0.0846	0.9333			
CARGOIB2	-0.3102	0.1063	-2.9186	0.0075			
CARGOIB3	-0.1524	0.1388	-1.0981	0.2831			
CARGOIB4	1.1896	0.1815	6.5541	0.0000			
CARGOIB5	0.0012	0.0777	0.0151	0.9881			
C	-0.0913	0.0774	-1.1791	0.2499			
EQCASHBUILDD	Dep. Var:	CASHBUILDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CASHBUILDDA1	-2.5615	1.7328	-1.4782	0.1549	0.9804	100.2491	0.0000
CASHBUILDDA2	-1.6350	0.4238	-3.8576	0.0010			
CASHBUILDDA3	-0.1147	0.0525	-2.1844	0.0410			
CASHBUILDDA4	-0.2567	0.0734	-3.4962	0.0023			
CASHBUILDDA5	0.0523	0.0731	0.7148	0.4830			
CASHBUILDDB1	0.1695	0.1030	1.6447	0.1157			
CASHBUILDDB2	-1.1000	0.7487	-1.4691	0.1574			
CASHBUILDDB3	-0.1048	0.0980	-1.0688	0.2979			
CASHBUILDDB4	0.2341	0.4923	0.4755	0.6396			
CASHBUILDDB5	5.1748	0.4043	12.8009	0.0000			
C	-0.1547	0.2341	-0.6608	0.5163			
EQCASHBUILDI	Dep. Var:	CASHBUILDI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CASHBUILDIA1	-2.1252	0.0864	-24.6102	0.0000	0.9852	139.5097	0.0000
CASHBUILDIA2	-0.0411	0.2246	-0.1831	0.8564			
CASHBUILDIA3	6.2723	0.1831	34.2488	0.0000			
CASHBUILDIA4	-0.2273	0.1949	-1.1666	0.2564			
CASHBUILDIA5	-0.1962	0.1272	-1.5422	0.1380			
CASHBUILDIB1	0.0071	0.0039	1.8381	0.0802			
CASHBUILDIB2	1.3316	0.5375	2.4774	0.0218			
CASHBUILDIB3	0.1493	0.1581	0.9445	0.3557			
CASHBUILDIB4	3.2624	3.4440	0.9473	0.3543			
CASHBUILDIB5	-0.9234	1.3357	-0.6913	0.4969			
C	0.6426	0.6032	1.0653	0.2988			
EQCAXTONI	Dep. Var:	CAXTONI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CAXTONIA1	-0.8872	0.2159	-4.1083	0.0005	0.7555	8.1095	0.0001
CAXTONIA2	-0.3214	0.2813	-1.1423	0.2662			
CAXTONIA3	2.2770	0.9023	2.5235	0.0197			
CAXTONIB1	-0.5020	0.1577	-3.1835	0.0045			
CAXTONIB2	0.0548	0.0423	1.2947	0.2095			
CAXTONIB3	0.0573	0.0407	1.4086	0.1736			
CAXTONIB4	-1.1703	0.4735	-2.4718	0.0221			

CAXTONIB5	0.1217	0.0500	2.4335	0.0240			
C	0.1793	0.0617	2.9041	0.0085			
EQCMHD	Dep. Var:	CMHD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CMHDA1	-0.5221	0.1685	-3.0981	0.0033	0.5137	5.0712	0.0001
CMHDA2	0.1103	0.1217	0.9057	0.3696			
CMHDA3	0.0636	0.1000	0.6359	0.5279			
CMHDA4	-0.0542	0.1087	-0.4992	0.6199			
CMHDA5	-0.1115	0.1324	-0.8420	0.4040			
CMHDB1	0.0812	0.0797	1.0199	0.3129			
CMHDB2	-0.2151	0.0785	-2.7421	0.0086			
CMHDB3	-0.0639	0.0966	-0.6618	0.5113			
CMHDB4	-0.0463	0.0985	-0.4700	0.6405			
CMHDB5	-0.0554	0.1399	-0.3960	0.6938			
C	0.0692	0.0652	1.0620	0.2935			
EQCROOKESD	Dep. Var:	CROOKESD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CROOKESDA1	0.1239	0.0899	1.3782	0.1722	0.8800	55.7084	0.0000
CROOKESDA2	0.1894	0.0490	3.8636	0.0002			
CROOKESDA3	0.2096	0.0763	2.7479	0.0075			
CROOKESDA4	0.8804	0.0600	14.6688	0.0000			
CROOKESDA5	1.0249	0.0725	14.1267	0.0000			
CROOKESDB1	-0.2325	0.0497	-4.6764	0.0000			
CROOKESDB2	-0.0215	0.0292	-0.7382	0.4627			
CROOKESDB3	0.0281	0.0351	0.8011	0.4255			
CROOKESDB4	-0.4091	0.0800	-5.1160	0.0000			
CROOKESDB5	-0.0175	0.0660	-0.2650	0.7917			
C	-0.0312	0.0788	-0.3961	0.6932			
EQCROOKESI	Dep. Var:	CROOKESI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CROOKESIA1	-0.2143	0.1348	-1.5905	0.1145	0.7365	31.5891	0.0000
CROOKESIA2	-0.0183	0.1057	-0.1734	0.8627			
CROOKESIA3	0.8535	0.0536	15.9261	0.0000			
CROOKESIA4	0.0902	0.0590	1.5301	0.1288			
CROOKESIA5	0.0272	0.1169	0.2328	0.8163			
CROOKESIB1	-0.0102	0.0393	-0.2589	0.7962			
CROOKESIB2	-0.0035	0.0740	-0.0479	0.9619			
CROOKESIB3	-0.4174	0.0712	-5.8655	0.0000			
CROOKESIB4	0.0940	0.0373	2.5187	0.0132			
CROOKESIB5	0.0824	0.0396	2.0832	0.0395			
C	0.2784	0.0922	3.0214	0.0031			
EQCULINAND	Dep. Var:	CULINAND					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CULINANDA1	-0.7063	0.3553	-1.9877	0.0532	0.8874	33.8793	0.0000
CULINANDA2	-0.0381	0.0377	-1.0088	0.3187			
CULINANDA3	0.0102	0.5981	0.0171	0.9864			

CULINANDA4	0.2522	0.3492	0.7223	0.4740			
CULINANDA5	0.8920	0.0723	12.3365	0.0000			
CULINANDB1	0.1532	0.1813	0.8453	0.4026			
CULINANDB2	-0.6309	0.1379	-4.5746	0.0000			
CULINANDB3	0.2828	0.1286	2.1987	0.0333			
CULINANDB4	0.0001	0.0354	0.0024	0.9981			
CULINANDB5	-0.0675	0.1112	-0.6070	0.5471			
C	0.0825	0.2631	0.3134	0.7555			
EQCULINANI	Dep. Var:	CULINANI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
CULINANIA1	-0.0009	0.0106	-0.0860	0.9317	0.5080	6.8149	0.0000
CULINANIA2	0.0243	0.0497	0.4886	0.6267			
CULINANIA3	-0.3606	0.0954	-3.7779	0.0003			
CULINANIA4	-0.0060	0.0107	-0.5601	0.5773			
CULINANIA5	0.4697	0.2283	2.0576	0.0436			
CULINANIB1	0.0125	0.0521	0.2401	0.8110			
CULINANIB2	0.0366	0.0106	3.4538	0.0010			
CULINANIB3	-0.0610	0.0120	-5.0771	0.0000			
CULINANIB4	-0.0916	0.1655	-0.5536	0.5817			
CULINANIB5	0.0304	0.0088	3.4447	0.0010			
C	0.4014	0.2912	1.3781	0.1728			
EQDELTAD	Dep. Var:	DELTAD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
DELTADA1	-0.1040	0.1696	-0.6132	0.5430	0.5463	5.1771	0.0001
DELTADA2	-1.3828	0.4040	-3.4225	0.0014			
DELTADA3	0.0547	0.1484	0.3685	0.7143			
DELTADA4	2.3293	1.0876	2.1417	0.0379			
DELTADA5	0.0733	0.7497	0.0977	0.9226			
DELTADB1	-4.1967	1.2208	-3.4376	0.0013			
DELTADB2	0.1256	0.1779	0.7060	0.4840			
DELTADB3	-0.4116	0.5943	-0.6926	0.4923			
DELTADB4	-0.2501	0.1772	-1.4117	0.1652			
DELTADB5	-0.1397	0.1724	-0.8106	0.4221			
C	0.2221	0.3946	0.5629	0.5764			
EQDELTAI	Dep. Var:	DELTAI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
DELTAIA1	0.1493	0.1517	0.9846	0.3281	0.8335	36.0400	0.0000
DELTAIA2	-0.7352	0.6251	-1.1761	0.2434			
DELTAIA3	-1.3022	0.5473	-2.3794	0.0200			
DELTAIA4	1.6002	0.5039	3.1756	0.0022			
DELTAIA5	-0.5220	0.4501	-1.1598	0.2500			
DELTAIB1	-0.2364	0.1331	-1.7758	0.0800			
DELTAIB2	0.0226	0.1179	0.1913	0.8488			
DELTAIB3	0.0836	0.3262	0.2563	0.7984			
DELTAIB4	0.8967	0.4337	2.0678	0.0423			
DELTAIB5	4.0495	0.2333	17.3562	0.0000			

C	0.2993	0.2702	1.1076	0.2717			
EQDISTELLI	Dep. Var:	DISTELLI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
DISTELLIA1	-5.0673	4.2142	-1.2024	0.2350	0.3045	2.1448	0.0381
DISTELLIA2	22.0501	5.7752	3.8181	0.0004			
DISTELLIA3	-21.9262	7.8743	-2.7845	0.0076			
DISTELLIA4	5.0558	7.4286	0.6806	0.4993			
DISTELLIA5	15.7867	8.1779	1.9304	0.0594			
DISTELLIB1	4.2371	1.4888	2.8460	0.0064			
DISTELLIB2	13.7373	11.9473	1.1498	0.2558			
DISTELLIB3	4.0689	11.1394	0.3653	0.7165			
DISTELLIB4	-17.4711	14.0957	-1.2395	0.2211			
DISTELLIB5	-2.7102	4.0723	-0.6655	0.5088			
C	0.0819	5.0454	0.0162	0.9871			
EQEHSVI	Dep. Var:	EHSVI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
EHSVIA1	0.2898	0.5429	0.5339	0.5949	0.1807	1.7423	0.0857
EHSVIA2	-0.0113	0.1233	-0.0914	0.9274			
EHSVIA3	-0.3343	0.4377	-0.7638	0.4473			
EHSVIA4	0.0432	0.1100	0.3927	0.6956			
EHSVIA5	0.0254	0.0861	0.2946	0.7691			
EHSVIB1	-0.2096	0.1757	-1.1925	0.2366			
EHSVIB2	0.8333	0.2800	2.9759	0.0039			
EHSVIB3	0.2947	0.3097	0.9517	0.3442			
EHSVIB4	0.5809	0.4835	1.2015	0.2331			
EHSVIB5	-1.1400	0.6331	-1.8008	0.0756			
C	-3.1281	1.1524	-2.7143	0.0082			
EQELBI	Dep. Var:	ELBI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ELBIA1	0.0094	0.0203	0.4603	0.6465	0.4715	7.5845	0.0000
ELBIA2	-0.1119	0.1083	-1.0332	0.3044			
ELBIA3	-0.0051	0.0385	-0.1319	0.8954			
ELBIA4	0.7508	0.0982	7.6486	0.0000			
ELBIA5	0.0433	0.0842	0.5144	0.6083			
ELBIB1	-0.0591	0.1187	-0.4981	0.6197			
ELBIB2	0.0437	0.0371	1.1781	0.2420			
ELBIB3	-0.0922	0.1012	-0.9112	0.3648			
ELBIB4	0.5134	0.1246	4.1221	0.0001			
ELBIB5	-0.0742	0.0863	-0.8596	0.3924			
C	0.9974	0.3310	3.0133	0.0034			
EQFPTD	Dep. Var:	FPTD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
FPTDA1	0.0881	0.1337	0.6591	0.5223	0.9459	20.9730	0.0000
FPTDA2	-0.1598	0.1266	-1.2617	0.2310			
FPTDA3	0.1399	0.0837	1.6718	0.1204			
FPTDA4	0.4968	0.2949	1.6847	0.1179			

FPTDA5	-0.5929	0.2675	-2.2165	0.0467			
FPTDB1	0.3229	0.3287	0.9822	0.3454			
FPTDB2	0.0230	0.0563	0.4090	0.6897			
FPTDB3	0.4691	0.0972	4.8250	0.0004			
FPTDB4	0.1998	0.3491	0.5724	0.5776			
FPTDB5	-0.3849	0.1483	-2.5953	0.0234			
C	0.0204	0.0632	0.3237	0.7517			
EQFPTI	Dep. Var:	FPTI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
FPTIA1	-0.4832	0.0892	-5.4188	0.0000	0.9725	226.6681	0.0000
FPTIA2	0.3775	0.0949	3.9766	0.0002			
FPTIA3	-1.0056	0.2198	-4.5752	0.0000			
FPTIA4	0.8898	0.0281	31.6292	0.0000			
FPTIA5	0.5299	0.0841	6.2982	0.0000			
FPTIB1	0.0075	0.1521	0.0496	0.9606			
FPTIB2	0.2745	0.2579	1.0645	0.2911			
FPTIB3	-0.0055	0.0488	-0.1135	0.9100			
FPTIB4	-0.0135	0.0318	-0.4258	0.6717			
FPTIB5	-0.3746	0.0632	-5.9311	0.0000			
C	0.1210	0.0460	2.6283	0.0107			
EQGOLDFIELDSD	Dep. Var:	GOLDFIELDSD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
GOLDFIELDSDA1	0.0004	0.0009	0.4770	0.6355	0.3697	2.8159	0.0079
GOLDFIELDSDA2	-0.5833	0.2280	-2.5581	0.0137			
GOLDFIELDSDA3	-0.0554	0.0484	-1.1444	0.2581			
GOLDFIELDSDA4	0.2446	0.1625	1.5051	0.1389			
GOLDFIELDSDA5	-0.3607	0.3549	-1.0163	0.3146			
GOLDFIELDSDB1	0.0046	0.1278	0.0363	0.9712			
GOLDFIELDSDB2	0.2817	0.3429	0.8215	0.4154			
GOLDFIELDSDB3	-0.3188	0.2086	-1.5281	0.1331			
GOLDFIELDSDB4	0.0282	0.0139	2.0289	0.0480			
GOLDFIELDSDB5	0.5857	0.2271	2.5791	0.0130			
C	-0.3608	0.2321	-1.5542	0.1267			
EQGOLDFIELDSI	Dep. Var:	GOLDFIELDSI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
GOLDFIELDSIA1	-0.0195	0.1073	-0.1814	0.8567	0.3433	2.7702	0.0079
GOLDFIELDSIA2	0.0689	0.0623	1.1058	0.2738			
GOLDFIELDSIA3	-0.4152	0.1784	-2.3269	0.0238			
GOLDFIELDSIA4	-0.0675	0.0623	-1.0842	0.2832			
GOLDFIELDSIA5	-0.0092	0.1115	-0.0826	0.9345			
GOLDFIELDSIB1	-0.1214	0.1450	-0.8375	0.4061			
GOLDFIELDSIB2	0.0087	0.0080	1.0921	0.2797			
GOLDFIELDSIB3	-0.0073	0.0085	-0.8530	0.3975			
GOLDFIELDSIB4	-0.0568	0.1290	-0.4399	0.6618			
GOLDFIELDSIB5	0.2292	0.0742	3.0905	0.0032			
C	0.0014	0.1687	0.0082	0.9935			

EQGRINDRODD	Dep. Var:	GRINDRODD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
GRINDRODDA1	-0.6329	0.1205	-5.2527	0.0000	0.7462	16.7606	0.0000
GRINDRODDA2	-0.3570	0.2365	-1.5092	0.1368			
GRINDRODDA3	-0.1308	0.0135	-9.7151	0.0000			
GRINDRODDA4	0.2812	0.1362	2.0645	0.0435			
GRINDRODDA5	-0.0841	0.2313	-0.3638	0.7174			
GRINDRODDB1	0.1912	0.2030	0.9418	0.3503			
GRINDRODDB2	-0.0484	0.1116	-0.4334	0.6664			
GRINDRODDB3	0.0769	0.0568	1.3551	0.1807			
GRINDRODDB4	-0.1809	0.0990	-1.8265	0.0730			
GRINDRODDB5	0.4662	0.1614	2.8879	0.0055			
C	0.1657	0.1185	1.3981	0.1675			
EQGRINDRODI	Dep. Var:	GRINDRODI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
GRINDRODIA1	-0.2374	0.2377	-0.9984	0.3209	0.3976	5.6094	0.0000
GRINDRODIA2	0.1230	0.1878	0.6547	0.5144			
GRINDRODIA3	0.0334	0.0834	0.4003	0.6900			
GRINDRODIA4	-0.1987	0.0511	-3.8878	0.0002			
GRINDRODIA5	-0.0743	0.2153	-0.3450	0.7309			
GRINDRODIB1	-0.0929	0.0382	-2.4292	0.0172			
GRINDRODIB2	0.0591	0.0774	0.7641	0.4469			
GRINDRODIB3	0.0882	0.1192	0.7400	0.4613			
GRINDRODIB4	1.3924	0.1987	7.0082	0.0000			
GRINDRODIB5	-0.0220	0.0853	-0.2575	0.7974			
C	-0.0318	0.2816	-0.1129	0.9104			
EQGROUP5I	Dep. Var:	GROUP5I					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
GROUP5IA1	-0.3517	0.1936	-1.8165	0.0728	0.4229	6.2290	0.0000
GROUP5IA2	-0.7339	0.1294	-5.6711	0.0000			
GROUP5IA3	0.0158	0.5120	0.0309	0.9754			
GROUP5IA4	0.5677	0.2992	1.8975	0.0612			
GROUP5IA5	0.0390	0.0546	0.7142	0.4771			
GROUP5IB1	-0.1065	0.1010	-1.0549	0.2945			
GROUP5IB2	0.2750	0.3566	0.7710	0.4428			
GROUP5IB3	0.0879	0.0335	2.6203	0.0104			
GROUP5IB4	-0.1128	0.0497	-2.2680	0.0259			
GROUP5IB5	1.0320	0.1558	6.6253	0.0000			
C	0.4891	0.1744	2.8038	0.0063			
EQHARMONYD	Dep. Var:	HARMONYD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
HARMONYDA1	-0.0989	0.0342	-2.8906	0.0056	0.8672	33.9495	0.0000
HARMONYDA2	-0.0062	0.2867	-0.0217	0.9828			
HARMONYDA3	-0.1364	0.0768	-1.7758	0.0816			
HARMONYDA4	-0.0236	0.1656	-0.1427	0.8871			
HARMONYDA5	0.8511	0.1116	7.6241	0.0000			

HARMONYDB1	-0.2661	0.1652	-1.6104	0.1134			
HARMONYDB2	-0.8899	0.1146	-7.7679	0.0000			
HARMONYDB3	-0.1421	0.1154	-1.2313	0.2238			
HARMONYDB4	-0.7654	0.0761	-10.0595	0.0000			
HARMONYDB5	-0.0189	0.0123	-1.5370	0.1304			
C	0.6674	0.2632	2.5355	0.0143			
EQHARMONYI	Dep. Var:	HARMONYI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
HARMONYIA1	-0.6703	0.4349	-1.5414	0.1274	0.2912	3.0806	0.0025
HARMONYIA2	0.2704	0.2765	0.9777	0.3314			
HARMONYIA3	-0.4334	0.3126	-1.3867	0.1696			
HARMONYIA4	2.5145	0.7317	3.4364	0.0010			
HARMONYIA5	-0.6610	0.3412	-1.9375	0.0565			
HARMONYIB1	0.0251	0.2651	0.0945	0.9250			
HARMONYIB2	-0.2685	0.3843	-0.6987	0.4869			
HARMONYIB3	-0.0493	0.0770	-0.6397	0.5243			
HARMONYIB4	0.0522	0.0648	0.8055	0.4231			
HARMONYIB5	0.7278	0.2834	2.5678	0.0122			
C	0.1280	0.8974	0.1426	0.8870			
EQHCII	Dep. Var:	HCII					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
HCIIA1	0.6673	0.0802	8.3225	0.0000	0.2507	7.1272	0.0000
HCIIA2	-0.0014	0.0154	-0.0936	0.9255			
HCIIA3	-0.0213	0.1474	-0.1444	0.8853			
HCIIA4	0.0329	0.3773	0.0872	0.9306			
HCIIA5	-0.0018	0.1682	-0.0107	0.9915			
HCIIB1	-0.0346	0.1321	-0.2620	0.7936			
HCIIB2	0.0054	0.0110	0.4917	0.6234			
HCIIB3	-0.0259	0.0595	-0.4351	0.6639			
HCIIB4	-0.0042	0.0110	-0.3798	0.7044			
HCIIB5	-0.0018	0.0110	-0.1652	0.8690			
C	0.9683	1.0780	0.8982	0.3701			
EQHUDACOD	Dep. Var:	HUDACOD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
HUDACODB1	-0.0485	0.0293	-1.6563	0.1092	0.9036	50.6235	0.0000
HUDACODB2	-0.7981	0.0616	-12.9651	0.0000			
HUDACODB3	0.2298	0.3429	0.6701	0.5085			
HUDACODB4	-0.4835	0.3869	-1.2495	0.2222			
HUDACODB5	-0.3101	0.2083	-1.4887	0.1481			
C	0.0293	0.1237	0.2371	0.8144			
EQHUDACOI	Dep. Var:	HUDACOI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
HUDACOIA1	0.6529	6.3788	0.1024	0.9189	0.3029	2.0855	0.0444
HUDACOIA2	0.2379	25.0196	0.0095	0.9925			
HUDACOIA3	16.0893	22.4419	0.7169	0.4769			
HUDACOIA4	2.9306	7.7625	0.3775	0.7074			

HUDACOIA5	-1.2373	1.9348	-0.6395	0.5255			
HUDACOIB1	-94.3699	22.1955	-4.2518	0.0001			
HUDACOIB2	-21.5291	24.0921	-0.8936	0.3760			
HUDACOIB3	-2.2573	13.7905	-0.1637	0.8707			
HUDACOIB4	-13.7379	25.0842	-0.5477	0.5865			
HUDACOIB5	-32.6858	26.9731	-1.2118	0.2315			
C	26.4990	8.1279	3.2602	0.0021			
EQHYPROPD	Dep. Var:	HYPROPD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
HYPROPDA1	-0.4019	0.1902	-2.1124	0.0379	0.5407	8.9479	0.0000
HYPROPDA2	1.0099	0.2966	3.4052	0.0011			
HYPROPDA3	-0.0443	0.2966	-0.1495	0.8816			
HYPROPDA4	-0.2976	0.3536	-0.8416	0.4026			
HYPROPDA5	-0.2231	0.1827	-1.2207	0.2260			
HYPROPDB1	0.7883	0.1059	7.4433	0.0000			
HYPROPDB2	0.0004	0.0950	0.0045	0.9964			
HYPROPDB3	-0.0421	0.1628	-0.2584	0.7968			
HYPROPDB4	-0.0104	0.0629	-0.1655	0.8690			
HYPROPDB5	-0.1071	0.2879	-0.3721	0.7108			
C	-0.0607	0.2959	-0.2052	0.8379			
EQIMPERIALD	Dep. Var:	IMPERIALD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
IMPERIALDA1	-0.0491	0.0166	-2.9643	0.0083	0.8591	10.9789	0.0000
IMPERIALDA2	0.1005	0.1192	0.8431	0.4102			
IMPERIALDA3	-0.7753	0.2582	-3.0024	0.0076			
IMPERIALDA4	-0.0070	0.3859	-0.0181	0.9858			
IMPERIALDA5	0.6165	0.1199	5.1402	0.0001			
IMPERIALDB1	0.0008	0.2135	0.0038	0.9970			
IMPERIALDB2	0.1055	0.1209	0.8727	0.3943			
IMPERIALDB3	0.2230	0.1662	1.3417	0.1964			
IMPERIALDB4	1.3729	0.4125	3.3279	0.0037			
IMPERIALDB5	-0.2403	0.2617	-0.9183	0.3706			
C	0.0639	0.1166	0.5480	0.5904			
EQIMPERIALI	Dep. Var:	IMPERIALI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
IMPERIALIA1	-3.5227	0.7263	-4.8503	0.0000	0.5685	10.9341	0.0000
IMPERIALIA2	0.4541	0.4798	0.9465	0.3467			
IMPERIALIA3	-1.7374	0.4094	-4.2442	0.0001			
IMPERIALIA4	-0.5482	0.2995	-1.8303	0.0708			
IMPERIALIA5	2.1249	0.2822	7.5289	0.0000			
IMPERIALIB1	-0.0284	0.0737	-0.3850	0.7012			
IMPERIALIB2	0.0014	0.0619	0.0218	0.9826			
IMPERIALIB3	0.8519	0.4943	1.7235	0.0885			
IMPERIALIB4	1.1005	0.3137	3.5079	0.0007			
IMPERIALIB5	0.2157	0.3311	0.6515	0.5165			
C	-0.1294	0.4510	-0.2868	0.7750			

EQIMPLATSI	Dep. Var:	IMPLATSI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
IMPLATSIA1	-0.4200	0.7869	-0.5337	0.5949	0.4462	6.7683	0.0000
IMPLATSIA2	1.2921	1.5029	0.8597	0.3924			
IMPLATSIA3	-8.4007	2.6657	-3.1514	0.0023			
IMPLATSIA4	-2.3848	2.4462	-0.9749	0.3324			
IMPLATSIA5	0.9267	0.5002	1.8527	0.0674			
IMPLATSIB1	4.9108	2.2196	2.2125	0.0296			
IMPLATSIB2	11.6051	2.1946	5.2880	0.0000			
IMPLATSIB3	-0.1752	0.0889	-1.9706	0.0521			
IMPLATSIB4	4.9186	3.1837	1.5449	0.1261			
IMPLATSIB5	4.1725	1.8834	2.2154	0.0294			
C	-4.1270	1.3518	-3.0529	0.0030			
EQINVESTECD	Dep. Var:	INVESTECD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
INVESTECDA1	0.8348	0.2095	3.9840	0.0010	0.8842	12.9865	0.0000
INVESTECDA2	0.7563	0.2192	3.4501	0.0031			
INVESTECDA3	0.7665	0.1720	4.4556	0.0003			
INVESTECDA4	0.0843	0.1786	0.4723	0.6427			
INVESTECDA5	-0.3489	0.1847	-1.8885	0.0761			
INVESTECDB1	-0.2957	0.0424	-6.9746	0.0000			
INVESTECDB2	-0.0880	0.1808	-0.4870	0.6325			
INVESTECDB3	-0.1855	0.1863	-0.9959	0.3332			
INVESTECDB4	0.0016	0.0174	0.0928	0.9271			
INVESTECDB5	0.5898	0.2153	2.7401	0.0140			
C	0.2011	0.1228	1.6376	0.1199			
EQINVESTECI	Dep. Var:	INVESTECI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
INVESTECIA1	-0.5785	0.1699	-3.4051	0.0014	0.6392	8.1499	0.0000
INVESTECIA2	0.2601	0.2793	0.9316	0.3564			
INVESTECIA3	0.2437	0.1925	1.2658	0.2120			
INVESTECIA4	-0.0751	0.0359	-2.0930	0.0419			
INVESTECIA5	2.4597	0.6968	3.5299	0.0010			
INVESTECIB1	-0.9485	0.3078	-3.0817	0.0035			
INVESTECIB2	1.0607	0.3306	3.2088	0.0024			
INVESTECIB3	0.0422	0.0170	2.4842	0.0167			
INVESTECIB4	-0.0692	0.1300	-0.5322	0.5971			
INVESTECIB5	-0.0114	0.0080	-1.4271	0.1603			
C	0.5194	0.2695	1.9271	0.0602			
EQITALTILEI	Dep. Var:	ITALTILEI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ITALTILEIA1	-1.1545	0.2357	-4.8990	0.0001	0.6864	5.1080	0.0010
ITALTILEIA2	2.1488	0.8730	2.4614	0.0226			
ITALTILEIA3	-3.7100	1.7937	-2.0684	0.0511			
ITALTILEIA4	-0.2456	0.1394	-1.7620	0.0926			
ITALTILEIB1	0.0184	0.0174	1.0573	0.3024			

ITALTILEIB2	0.0043	0.0097	0.4437	0.6618			
ITALTILEIB3	0.8304	0.3719	2.2327	0.0366			
ITALTILEIB4	0.3281	0.7012	0.4679	0.6447			
ITALTILEIB5	0.0311	0.0308	1.0085	0.3247			
C	0.2862	0.1613	1.7748	0.0904			
EQJASCOD	Dep. Var:	JASCOD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
JASCODA1	0.0014	0.0185	0.0766	0.9391	0.6337	24.2191	0.0000
JASCODA2	-0.0005	0.0019	-0.2404	0.8104			
JASCODA3	0.0003	0.0019	0.1754	0.8610			
JASCODA4	0.0002	0.0019	0.0902	0.9282			
JASCODA5	-0.0003	0.0019	-0.1706	0.8648			
JASCODB1	-0.0051	0.0183	-0.2771	0.7821			
JASCODB2	0.0018	0.0183	0.0988	0.9215			
JASCODB3	0.0086	0.0190	0.4532	0.6511			
JASCODB4	-0.2845	0.0222	-12.7985	0.0000			
JASCODB5	-0.1844	0.1509	-1.2219	0.2238			
C	0.6251	0.3190	1.9595	0.0520			
EQJASCOI	Dep. Var:	JASCOI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
JASCOIA1	0.0168	0.0209	0.8003	0.4258	0.3380	4.3393	0.0001
JASCOIA2	-1.2075	1.0764	-1.1218	0.2651			
JASCOIA3	-0.3442	1.2018	-0.2864	0.7752			
JASCOIA4	1.0398	2.3148	0.4492	0.6544			
JASCOIA5	0.5669	0.1623	3.4934	0.0008			
JASCOIB1	0.5077	1.5649	0.3244	0.7464			
JASCOIB2	0.1858	2.9169	0.0637	0.9494			
JASCOIB3	5.2994	3.1449	1.6851	0.0956			
JASCOIB4	0.1840	0.8563	0.2149	0.8304			
JASCOIB5	0.1687	0.7351	0.2295	0.8191			
C	-5.0218	3.5870	-1.4000	0.1651			
EQLIBHOLDD	Dep. Var:	LIBHOLDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
LIBHOLDDA1	0.0038	0.0172	0.2224	0.8244	0.5151	11.0495	0.0000
LIBHOLDDA2	-0.2557	0.0525	-4.8713	0.0000			
LIBHOLDDA3	-0.1533	0.0530	-2.8919	0.0047			
LIBHOLDDA4	-0.1696	0.0245	-6.9326	0.0000			
LIBHOLDDA5	-0.0143	0.0174	-0.8243	0.4116			
LIBHOLDDB1	-0.1324	0.0311	-4.2610	0.0000			
LIBHOLDDB2	0.5977	0.2184	2.7364	0.0073			
LIBHOLDDB3	-0.0797	0.0538	-1.4805	0.1418			
LIBHOLDDB4	0.0191	0.0393	0.4847	0.6289			
LIBHOLDDB5	0.3215	0.3249	0.9896	0.3247			
C	0.3878	0.1373	2.8253	0.0057			
EQLONFIND	Dep. Var:	LONFIND					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):

LONFINDA1	0.1510	0.3717	0.4063	0.6864	0.9315	63.9101	0.0000
LONFINDA2	0.6635	0.0814	8.1479	0.0000			
LONFINDA3	-0.5066	0.5334	-0.9496	0.3472			
LONFINDA4	0.0834	0.1302	0.6404	0.5250			
LONFINDA5	0.8739	0.1978	4.4175	0.0001			
LONFINDB1	-0.0496	0.0932	-0.5321	0.5971			
LONFINDB2	-0.6057	0.1748	-3.4641	0.0011			
LONFINDB3	-0.6265	0.1030	-6.0847	0.0000			
LONFINDB4	-0.6314	0.4103	-1.5388	0.1305			
LONFINDB5	-0.3897	0.1296	-3.0073	0.0042			
C	0.1414	0.1338	1.0569	0.2960			
EQLONFINI	Dep. Var:	LONFINI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
LONFINIA1	-0.0759	0.0611	-1.2412	0.2173	0.4173	7.5198	0.0000
LONFINIA2	-0.2462	0.0640	-3.8499	0.0002			
LONFINIA3	-0.0583	0.0508	-1.1483	0.2535			
LONFINIA4	-0.1529	0.0840	-1.8212	0.0714			
LONFINIA5	0.0301	0.0829	0.3637	0.7168			
LONFINIB1	-0.0852	0.0351	-2.4297	0.0168			
LONFINIB2	-0.1389	0.0343	-4.0478	0.0001			
LONFINIB3	-0.0001	0.0004	-0.2404	0.8105			
LONFINIB4	0.2783	0.1184	2.3506	0.0206			
LONFINIB5	-0.0078	0.0592	-0.1318	0.8954			
C	0.0367	0.0922	0.3983	0.6913			
EQLONMIND	Dep. Var:	LONMIND					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
LONMINDA1	-0.4029	0.2929	-1.3755	0.1725	0.2279	2.5384	0.0099
LONMINDA2	0.1998	0.1511	1.3224	0.1895			
LONMINDA3	0.3009	0.1749	1.7208	0.0889			
LONMINDA4	0.0773	0.2028	0.3812	0.7040			
LONMINDA5	-0.0329	0.0409	-0.8045	0.4234			
LONMINDB1	-0.2175	0.1322	-1.6447	0.1037			
LONMINDB2	0.5828	0.2444	2.3848	0.0193			
LONMINDB3	-0.0112	0.2097	-0.0532	0.9577			
LONMINDB4	-0.2396	0.1498	-1.5990	0.1135			
LONMINDB5	-0.2010	0.1512	-1.3291	0.1873			
C	0.5190	0.2349	2.2096	0.0298			
EQMEDICLINICD	Dep. Var:	MEDICLINICD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
MEDICLINICDA1	-4.0292	1.4555	-2.7683	0.0069	0.1773	1.8965	0.0561
MEDICLINICDA2	0.7493	0.7674	0.9765	0.3315			
MEDICLINICDA3	1.0957	1.6387	0.6687	0.5055			
MEDICLINICDA4	-3.7651	3.5936	-1.0477	0.2976			
MEDICLINICDA5	0.5315	1.3808	0.3849	0.7012			
MEDICLINICDB1	1.1634	1.3875	0.8385	0.4040			
MEDICLINICDB2	-0.2100	0.3513	-0.5978	0.5515			

MEDICLINICDB3	1.2660	1.5297	0.8276	0.4101			
MEDICLINICDB4	1.9604	1.5037	1.3037	0.1958			
MEDICLINICDB5	-0.1758	0.3436	-0.5116	0.6102			
C	-0.5830	1.2241	-0.4763	0.6351			
EQMERAFEI	Dep. Var:	MERAFEI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
MERAFEIA1	0.2174	0.1780	1.2216	0.2238	0.2297	4.3825	0.0000
MERAFEIA2	-0.2166	0.1780	-1.2166	0.2257			
MERAFEIA3	-0.0083	0.0039	-2.1001	0.0374			
MERAFEIA4	0.0017	0.0075	0.2228	0.8240			
MERAFEIA5	-0.0243	0.0073	-3.3498	0.0010			
MERAFEIB1	0.0181	0.0817	0.2218	0.8248			
MERAFEIB2	0.2788	0.0635	4.3890	0.0000			
MERAFEIB3	-0.0463	0.0794	-0.5830	0.5608			
MERAFEIB4	-0.0067	0.0240	-0.2778	0.7816			
MERAFEIB5	-0.0157	0.0239	-0.6558	0.5130			
C	0.1883	0.4181	0.4503	0.6532			
EQMETAIRD	Dep. Var:	METAIRD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
METAIRDA1	-0.3459	0.2363	-1.4637	0.1568	0.8936	19.3190	0.0000
METAIRDA2	0.0151	0.1072	0.1404	0.8896			
METAIRDA3	0.1056	0.1028	1.0271	0.3151			
METAIRDA4	-0.0014	0.0049	-0.2869	0.7767			
METAIRDA5	-0.0289	0.0481	-0.6011	0.5537			
METAIRDB1	-0.3480	0.1468	-2.3706	0.0265			
METAIRDB2	-0.0187	0.0576	-0.3244	0.7486			
METAIRDB3	0.4290	0.0810	5.2976	0.0000			
METAIRDB4	0.5576	0.1310	4.2554	0.0003			
METAIRDB5	0.1407	0.0277	5.0733	0.0000			
C	0.1045	0.0667	1.5671	0.1308			
EQMETAIRI	Dep. Var:	METAIRI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
METAIRIA1	1.0664	0.1652	6.4562	0.0000	0.8189	25.7714	0.0000
METAIRIA2	1.0663	0.2152	4.9545	0.0000			
METAIRIA3	0.2355	0.3060	0.7697	0.4447			
METAIRIA4	0.1050	0.1160	0.9056	0.3690			
METAIRIA5	-0.0543	0.1420	-0.3824	0.7036			
METAIRIB1	-0.2759	0.1972	-1.3992	0.1672			
METAIRIB2	-0.0681	0.0573	-1.1883	0.2396			
METAIRIB3	-1.1143	0.1792	-6.2169	0.0000			
METAIRIB4	0.1358	0.0710	1.9147	0.0606			
METAIRIB5	0.0635	0.1413	0.4492	0.6550			
C	0.2881	0.1491	1.9329	0.0582			
EQMRI	Dep. Var:	M_RHLDI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
M_RHLDIA1	0.0374	0.0645	0.5806	0.5639	0.8968	47.8173	0.0000

M_RHLDIA2	-0.0041	0.0054	-0.7597	0.4506			
M_RHLDIA3	0.0690	0.0462	1.4929	0.1412			
M_RHLDIA4	-0.0554	0.0640	-0.8663	0.3901			
M_RHLDIA5	0.9777	0.0713	13.7195	0.0000			
M_RHLDIB1	0.0175	0.0038	4.5754	0.0000			
M_RHLDIB2	-0.1477	0.0851	-1.7355	0.0883			
M_RHLDIB3	-0.0304	0.0533	-0.5712	0.5702			
M_RHLDIB4	-0.2669	0.0930	-2.8701	0.0058			
M_RHLDIB5	-0.0523	0.0602	-0.8690	0.3886			
C	0.2153	0.0543	3.9634	0.0002			
EQNAMPAKI	Dep. Var:	NAMPAKI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
NAMPAKIA1	0.2434	0.0659	3.6909	0.0004	0.9527	175.4258	0.0000
NAMPAKIA2	0.0775	0.0530	1.4627	0.1472			
NAMPAKIA3	0.0538	0.0615	0.8754	0.3838			
NAMPAKIA4	-1.0720	0.0324	-33.1032	0.0000			
NAMPAKIA5	-0.1513	0.1493	-1.0139	0.3134			
NAMPAKIB1	-0.2810	0.1620	-1.7349	0.0863			
NAMPAKIB2	-0.7473	0.2026	-3.6879	0.0004			
NAMPAKIB3	0.3371	0.1340	2.5153	0.0137			
NAMPAKIB4	-0.0248	0.0731	-0.3399	0.7347			
NAMPAKIB5	-0.0078	0.0324	-0.2414	0.8098			
C	0.2989	0.1109	2.6942	0.0085			
EQNEDBANKI	Dep. Var:	NEDBANKI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
NEDBANKIA1	-2.2416	0.5584	-4.0143	0.0002	0.9557	114.4574	0.0000
NEDBANKIA2	0.0867	0.0750	1.1556	0.2530			
NEDBANKIA3	5.7598	0.3497	16.4691	0.0000			
NEDBANKIA4	4.3839	2.4888	1.7615	0.0839			
NEDBANKIA5	0.9512	0.3559	2.6727	0.0100			
NEDBANKIB1	-0.0477	0.8590	-0.0556	0.9559			
NEDBANKIB2	-0.6073	0.5418	-1.1210	0.2674			
NEDBANKIB3	1.2211	2.7855	0.4384	0.6629			
NEDBANKIB4	-0.6396	0.1477	-4.3289	0.0001			
NEDBANKIB5	-18.9041	3.1798	-5.9450	0.0000			
C	2.9548	0.7862	3.7582	0.0004			
EQNICTUSD	Dep. Var:	NICTUSD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
NICTUSDA1	1.0941	0.1658	6.6006	0.0000	0.4384	6.9471	0.0000
NICTUSDA2	0.6182	0.2017	3.0647	0.0029			
NICTUSDA3	-0.6456	0.2053	-3.1440	0.0023			
NICTUSDA4	-0.0429	0.4296	-0.0999	0.9207			
NICTUSDA5	-0.7430	0.2813	-2.6409	0.0098			
NICTUSDB1	-0.0728	0.2529	-0.2880	0.7740			
NICTUSDB2	0.0355	0.0416	0.8533	0.3958			
NICTUSDB3	-0.1542	0.1628	-0.9474	0.3460			

NICTUSDB4	-0.0105	0.0268	-0.3937	0.6947			
NICTUSDB5	1.0044	0.5923	1.6958	0.0934			
C	-0.4711	0.5263	-0.8952	0.3731			
EQNICTUSI	Dep. Var:	NICTUSI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
NICTUSIA1	0.0249	0.1681	0.1483	0.8823	0.3174	7.1146	0.0000
NICTUSIA2	-0.0853	0.1638	-0.5207	0.6033			
NICTUSIA3	-3.8440	0.4706	-8.1682	0.0000			
NICTUSIA4	0.7621	0.6862	1.1106	0.2685			
NICTUSIA5	0.2415	0.8096	0.2983	0.7659			
NICTUSIB1	0.0265	0.0746	0.3554	0.7228			
NICTUSIB2	-0.0027	0.0749	-0.0356	0.9717			
NICTUSIB3	0.0051	0.1683	0.0304	0.9758			
NICTUSIB4	0.2287	0.6329	0.3614	0.7183			
NICTUSIB5	0.0073	0.0727	0.1005	0.9200			
C	0.6504	1.5022	0.4329	0.6657			
EQNORTHAMI	Dep. Var:	NORTHAMI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
NORTHAMIA1	0.8405	0.0473	17.7649	0.0000	0.8551	74.3641	0.0000
NORTHAMIA2	-0.0084	0.0053	-1.5908	0.1142			
NORTHAMIA3	-0.2324	0.0849	-2.7377	0.0071			
NORTHAMIA4	0.0816	0.0940	0.8682	0.3870			
NORTHAMIA5	0.0714	0.1065	0.6710	0.5034			
NORTHAMIB1	0.0000	0.0001	0.2239	0.8232			
NORTHAMIB2	0.0000	0.0001	0.7157	0.4755			
NORTHAMIB3	0.1850	0.0696	2.6590	0.0089			
NORTHAMIB4	0.0000	0.0001	0.6244	0.5335			
NORTHAMIB5	0.1205	0.0647	1.8638	0.0647			
C	-0.2037	0.0782	-2.6054	0.0103			
EQNUWORLDD	Dep. Var:	NUWORLDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
NUWORLDDA1	0.5096	0.1842	2.7672	0.0071	0.5522	9.3700	0.0000
NUWORLDDA2	0.6003	0.1237	4.8531	0.0000			
NUWORLDDA3	0.0738	0.1318	0.5602	0.5770			
NUWORLDDA4	-0.0529	0.0694	-0.7629	0.4479			
NUWORLDDA5	0.3099	0.1443	2.1479	0.0349			
NUWORLDDB1	-0.8606	0.2000	-4.3022	0.0000			
NUWORLDDB2	0.5457	0.1298	4.2055	0.0001			
NUWORLDDB3	0.3282	0.1945	1.6875	0.0956			
NUWORLDDB4	-0.2030	0.1227	-1.6538	0.1023			
NUWORLDDB5	-0.0776	0.0374	-2.0755	0.0413			
C	-0.0587	0.1084	-0.5410	0.5901			
EQOCEANAD	Dep. Var:	OCEANAD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
OCEANADA1	0.0511	0.1178	0.4339	0.6693	0.9043	17.9615	0.0000
OCEANADA2	-0.0613	0.0276	-2.2245	0.0384			

OCEANADA3	0.9892	0.3914	2.5274	0.0205			
OCEANADA4	0.2632	0.0487	5.4087	0.0000			
OCEANADA5	-0.4252	0.3969	-1.0713	0.2975			
OCEANADB1	-0.0708	0.2951	-0.2399	0.8130			
OCEANADB2	-0.0381	0.0202	-1.8818	0.0753			
OCEANADB3	-0.0579	0.0298	-1.9432	0.0670			
OCEANADB4	-0.0202	0.0118	-1.7151	0.1026			
OCEANADB5	-0.6644	0.2605	-2.5508	0.0195			
C	0.1283	0.0674	1.9045	0.0721			
EQPNPI	Dep. Var:	PNPI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
PNPIA1	-0.0486	0.0532	-0.9143	0.3649	0.7404	14.5476	0.0000
PNPIA2	0.4637	0.1511	3.0686	0.0034			
PNPIA3	0.1242	0.0580	2.1395	0.0372			
PNPIA4	-0.0417	0.0345	-1.2095	0.2321			
PNPIA5	0.0932	0.0685	1.3600	0.1798			
PNPIB1	0.1657	0.1364	1.2145	0.2301			
PNPIB2	-0.3087	0.0778	-3.9666	0.0002			
PNPIB3	0.0527	0.1686	0.3125	0.7559			
PNPIB4	0.0582	0.0490	1.1865	0.2409			
PNPIB5	0.3890	0.1515	2.5684	0.0132			
C	0.0373	0.0498	0.7495	0.4570			
EQPPCD	Dep. Var:	PPCD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
PPCDA1	-0.9029	0.5683	-1.5887	0.1286	0.6286	3.2153	0.0137
PPCDA2	0.0334	0.1544	0.2160	0.8313			
PPCDA3	0.1447	0.1321	1.0949	0.2872			
PPCDA4	-0.0891	0.2537	-0.3511	0.7294			
PPCDA5	-0.4460	0.2182	-2.0438	0.0551			
PPCDB1	0.2184	0.3861	0.5658	0.5782			
PPCDB2	-0.0229	0.0891	-0.2569	0.8000			
PPCDB3	-0.6015	0.2335	-2.5764	0.0185			
PPCDB4	-1.3111	0.7550	-1.7366	0.0986			
PPCDB5	-0.0933	0.0809	-1.1534	0.2631			
C	0.2434	0.1014	2.4007	0.0268			
EQPPCI	Dep. Var:	PPCI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
PPCIA1	-0.0071	0.0162	-0.4390	0.6623	0.3497	3.0117	0.0041
PPCIA2	-0.0068	0.0140	-0.4838	0.6304			
PPCIA3	0.6339	0.2204	2.8759	0.0057			
PPCIA4	1.0918	0.4644	2.3509	0.0223			
PPCIA5	-0.4772	0.2039	-2.3402	0.0229			
PPCIB1	-0.0461	0.0514	-0.8960	0.3741			
PPCIB2	-0.0423	0.0535	-0.7903	0.4327			
PPCIB3	0.1379	0.0839	1.6429	0.1060			
PPCIB4	-0.0019	0.0082	-0.2319	0.8175			

PPCIB5	-0.0067	0.0079	-0.8493	0.3993			
C	0.2117	0.1039	2.0384	0.0462			
EQPUTPROPD	Dep. Var:	PUTPROPD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
PUTPROPDA1	-0.0338	0.0275	-1.2289	0.2214	0.3204	5.7995	0.0000
PUTPROPDA2	-0.1688	0.0948	-1.7811	0.0774			
PUTPROPDA3	0.0009	0.0016	0.5367	0.5925			
PUTPROPDA4	-0.4215	0.0935	-4.5077	0.0000			
PUTPROPDA5	-0.0015	0.0266	-0.0551	0.9561			
PUTPROPDB1	0.0228	0.0130	1.7514	0.0824			
PUTPROPDB2	0.0343	0.0639	0.5365	0.5926			
PUTPROPDB3	0.0991	0.0821	1.2072	0.2297			
PUTPROPDB4	0.3633	0.1183	3.0699	0.0026			
PUTPROPDB5	-0.2041	0.0559	-3.6540	0.0004			
C	0.1105	0.0832	1.3274	0.1868			
EQPUTPROPI	Dep. Var:	PUTPROPI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
PUTPROPIA1	-0.4712	0.1923	-2.4501	0.0169	0.6450	12.1752	0.0000
PUTPROPIA2	-0.6261	0.1009	-6.2028	0.0000			
PUTPROPIA3	0.3060	0.1453	2.1061	0.0389			
PUTPROPIA4	0.6804	0.1767	3.8511	0.0003			
PUTPROPIA5	1.0828	0.1566	6.9145	0.0000			
PUTPROPIB1	-0.1240	0.1648	-0.7525	0.4544			
PUTPROPIB2	-0.2244	0.0837	-2.6795	0.0093			
PUTPROPIB3	0.3918	0.0972	4.0299	0.0001			
PUTPROPIB4	0.0230	0.1058	0.2177	0.8283			
PUTPROPIB5	-0.3184	0.1494	-2.1308	0.0368			
C	0.1523	0.1007	1.5135	0.1348			
EQREUNERTD	Dep. Var:	REUNERTD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
REUNERTDA1	-0.0816	0.1229	-0.6640	0.5096	0.9712	178.8961	0.0000
REUNERTDA2	0.5210	0.1312	3.9702	0.0002			
REUNERTDA3	-0.4854	0.1706	-2.8462	0.0063			
REUNERTDA4	1.0203	0.0245	41.6342	0.0000			
REUNERTDA5	-0.0423	0.0941	-0.4497	0.6547			
REUNERTDB1	0.1662	0.1707	0.9737	0.3347			
REUNERTDB2	-0.1782	0.0636	-2.8012	0.0071			
REUNERTDB3	-0.9381	0.0886	-10.5836	0.0000			
REUNERTDB4	-0.2560	0.1090	-2.3488	0.0226			
REUNERTDB5	-0.0143	0.0053	-2.7009	0.0093			
C	0.0967	0.0579	1.6682	0.1012			
EQREUNERTI	Dep. Var:	REUNERTI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
REUNERTIA1	-0.0109	0.0097	-1.1196	0.2662	0.1991	2.0390	0.0394
REUNERTIA2	-0.3890	0.3103	-1.2535	0.2136			
REUNERTIA3	-0.0179	0.0102	-1.7506	0.0838			

REUNERTIA4	0.0917	0.2015	0.4550	0.6503			
REUNERTIA5	0.0345	0.0746	0.4622	0.6451			
REUNERTIB1	-0.0095	0.1054	-0.0901	0.9284			
REUNERTIB2	-0.1630	0.0871	-1.8716	0.0648			
REUNERTIB3	0.2683	0.2369	1.1324	0.2608			
REUNERTIB4	0.0008	0.0094	0.0892	0.9292			
REUNERTIB5	0.3589	0.1386	2.5896	0.0114			
C	0.3508	0.1296	2.7064	0.0083			
EQSANTAMD	Dep. Var:	SANTAMD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SANTAMDA1	-0.0602	0.2083	-0.2890	0.7739	0.8356	22.8640	0.0000
SANTAMDA2	0.0474	0.0531	0.8936	0.3763			
SANTAMDA3	0.3243	0.0391	8.2970	0.0000			
SANTAMDA4	-0.1687	0.1058	-1.5940	0.1179			
SANTAMDA5	0.0492	0.1072	0.4589	0.6485			
SANTAMDB1	-0.4510	0.1325	-3.4045	0.0014			
SANTAMDB2	-0.4438	0.1957	-2.2671	0.0282			
SANTAMDB3	-0.2384	0.2171	-1.0979	0.2781			
SANTAMDB4	0.8328	0.5097	1.6339	0.1092			
SANTAMDB5	-0.4349	0.1942	-2.2390	0.0301			
C	0.3097	0.1508	2.0542	0.0458			
EQSANTAMI	Dep. Var:	SANTAMI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SANTAMIA1	-0.0086	0.0362	-0.2379	0.8124	0.4470	8.0846	0.0000
SANTAMIA2	0.0802	0.1580	0.5076	0.6128			
SANTAMIA3	-0.0846	0.1089	-0.7769	0.4391			
SANTAMIA4	-0.0715	0.0308	-2.3248	0.0221			
SANTAMIA5	-0.0045	0.1846	-0.0245	0.9805			
SANTAMIB1	-0.6123	0.1343	-4.5579	0.0000			
SANTAMIB2	-0.0804	0.0354	-2.2675	0.0255			
SANTAMIB3	0.3275	0.1264	2.5903	0.0110			
SANTAMIB4	-0.1049	0.0296	-3.5373	0.0006			
SANTAMIB5	0.2097	0.0877	2.3917	0.0186			
C	0.2841	0.1098	2.5870	0.0111			
EQSAPPII	Dep. Var:	SAPPII					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SAPPIIA1	0.0079	0.0189	0.4201	0.6789	0.7457	6.5147	0.0002
SAPPIIA2	0.6707	0.1928	3.4784	0.0024			
SAPPIIA3	0.0260	0.0727	0.3580	0.7241			
SAPPIIA4	-0.0752	0.1041	-0.7226	0.4783			
SAPPIIA5	-0.2162	0.1795	-1.2041	0.2426			
SAPPIIB1	-0.0645	0.0977	-0.6602	0.5166			
SAPPIIB2	0.3308	0.2080	1.5904	0.1274			
SAPPIIB3	-0.0125	0.2884	-0.0433	0.9659			
SAPPIIB4	0.0419	0.2999	0.1398	0.8902			
C	0.0635	0.1183	0.5370	0.5972			

EQSASFINI	Dep. Var:	SASFINI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SASFINIA1	-0.3626	0.2898	-1.2514	0.2165	0.3024	2.2106	0.0319
SASFINIA2	-0.0757	0.1358	-0.5575	0.5796			
SASFINIA3	-0.2346	0.2810	-0.8350	0.4076			
SASFINIA4	0.0029	0.1914	0.0152	0.9879			
SASFINIA5	-0.4442	0.6263	-0.7092	0.4814			
SASFINIB1	-0.0035	0.3192	-0.0109	0.9913			
SASFINIB2	0.0782	0.1389	0.5632	0.5758			
SASFINIB3	0.0223	0.0085	2.6181	0.0116			
SASFINIB4	0.0328	0.1236	0.2652	0.7920			
SASFINIB5	0.0188	0.0086	2.1921	0.0330			
C	0.4533	0.2086	2.1727	0.0345			
EQSASOLI	Dep. Var:	SASOLI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SASOLIA1	-0.1098	0.1377	-0.7974	0.4288	0.8722	36.1593	0.0000
SASOLIA2	-1.1122	0.1930	-5.7618	0.0000			
SASOLIA3	-0.0389	0.2619	-0.1486	0.8824			
SASOLIA4	0.8072	0.5677	1.4218	0.1609			
SASOLIA5	1.2228	0.4394	2.7826	0.0075			
SASOLIB1	-1.1180	0.6243	-1.7908	0.0790			
SASOLIB2	0.2284	0.2991	0.7634	0.4486			
SASOLIB3	0.9947	0.3584	2.7755	0.0076			
SASOLIB4	-0.1775	0.7366	-0.2410	0.8105			
SASOLIB5	-0.3794	0.6051	-0.6270	0.5334			
C	0.5080	0.2234	2.2738	0.0271			
EQSEARDELD	Dep. Var:	SEARDELD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SEARDELDA1	0.0054	0.3185	0.0168	0.9867	0.3199	2.4926	0.0156
SEARDELDA2	-0.1910	0.5957	-0.3207	0.7497			
SEARDELDA3	0.3416	0.1630	2.0955	0.0409			
SEARDELDA4	-0.9315	0.4741	-1.9646	0.0547			
SEARDELDA5	-1.8795	0.7275	-2.5833	0.0126			
SEARDELDB1	-3.3033	2.0138	-1.6403	0.1069			
SEARDELDB2	-0.3107	0.7403	-0.4197	0.6764			
SEARDELDB3	2.0676	0.7373	2.8042	0.0070			
SEARDELDB4	0.8282	0.7505	1.1036	0.2748			
SEARDELDB5	-0.2820	0.5322	-0.5298	0.5985			
C	-0.3047	0.9372	-0.3251	0.7464			
EQSEARDELI	Dep. Var:	SEARDELI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SEARDELIA1	-0.3387	0.1876	-1.8052	0.0854	0.7711	7.0730	0.0001
SEARDELIA2	-2.4747	0.6509	-3.8022	0.0010			
SEARDELIA3	-0.7191	0.8951	-0.8034	0.4307			
SEARDELIA4	0.1165	0.0321	3.6290	0.0016			
SEARDELIA5	-0.0378	0.1129	-0.3348	0.7411			

SEARDELIB1	0.0584	0.0692	0.8441	0.4081			
SEARDELIB2	-0.5873	0.2008	-2.9246	0.0081			
SEARDELIB3	-0.0140	0.0768	-0.1824	0.8570			
SEARDELIB4	1.1405	0.4698	2.4275	0.0243			
SEARDELIB5	0.5840	0.1086	5.3788	0.0000			
C	0.1724	0.1546	1.1151	0.2774			
EQSPANJAARDD	Dep. Var:	SPANJAARDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SPANJAARDDA1	-0.7259	0.1320	-5.4996	0.0000	0.7723	34.2561	0.0000
SPANJAARDDA2	-0.0799	0.0876	-0.9120	0.3640			
SPANJAARDDA3	0.5160	0.0667	7.7356	0.0000			
SPANJAARDDA4	-0.0323	0.1044	-0.3091	0.7579			
SPANJAARDDA5	0.1815	0.1237	1.4672	0.1454			
SPANJAARDDB1	-0.1045	0.1226	-0.8521	0.3962			
SPANJAARDDB2	-0.2263	0.1048	-2.1605	0.0331			
SPANJAARDDB3	0.5616	0.0748	7.5113	0.0000			
SPANJAARDDB4	-0.6235	0.1126	-5.5386	0.0000			
SPANJAARDDB5	-0.0391	0.0351	-1.1119	0.2688			
C	0.1217	0.1108	1.0987	0.2745			
EQSPANJAARDI	Dep. Var:	SPANJAARDI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SPANJAARDIA1	0.0498	0.2167	0.2299	0.8193	0.8518	24.1354	0.0000
SPANJAARDIA2	0.5538	0.0827	6.6949	0.0000			
SPANJAARDIA3	0.6145	0.2399	2.5614	0.0141			
SPANJAARDIA4	-0.1751	0.0981	-1.7837	0.0817			
SPANJAARDIA5	-0.0224	0.1234	-0.1818	0.8566			
SPANJAARDIB1	-0.0310	0.1069	-0.2902	0.7731			
SPANJAARDIB2	-0.2925	0.0712	-4.1066	0.0002			
SPANJAARDIB3	-0.6068	0.0970	-6.2570	0.0000			
SPANJAARDIB4	0.0838	0.0369	2.2717	0.0283			
SPANJAARDIB5	0.0417	0.0476	0.8770	0.3855			
C	0.1560	0.0652	2.3920	0.0213			
EQSTANDARDBANKI	Dep. Var:	STANDARD_BANKI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
STANDARD_BANKIA1	-1.9856	0.4301	-4.6171	0.0001	0.8993	18.7567	0.0000
STANDARD_BANKIA2	-2.4167	0.4266	-5.6655	0.0000			
STANDARD_BANKIA3	-0.5746	0.2788	-2.0611	0.0519			
STANDARD_BANKIA4	-3.7238	1.8160	-2.0506	0.0530			
STANDARD_BANKIA5	-0.9461	0.8040	-1.1768	0.2525			
STANDARD_BANKIB1	2.6711	1.3746	1.9431	0.0655			
STANDARD_BANKIB2	2.6125	0.4383	5.9601	0.0000			
STANDARD_BANKIB3	0.6619	0.1858	3.5631	0.0018			
STANDARD_BANKIB4	3.6001	0.5333	6.7504	0.0000			
STANDARD_BANKIB5	-0.0432	0.0667	-0.6477	0.5242			
C	0.3245	0.2197	1.4770	0.1545			
EQSUNINTD	Dep. Var:	SUNINTD					

Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SUNINTDA1	0.7156	0.0676	10.5778	0.0000	0.9607	139.1602	0.0000
SUNINTDA2	-0.4539	0.0891	-5.0931	0.0000			
SUNINTDA3	-0.2193	0.1287	-1.7045	0.0937			
SUNINTDA4	0.0341	0.0215	1.5862	0.1182			
SUNINTDA5	0.0526	0.0216	2.4392	0.0179			
SUNINTDB1	0.2155	0.0527	4.0869	0.0001			
SUNINTDB2	-0.0087	0.0066	-1.3300	0.1888			
SUNINTDB3	0.0331	0.0201	1.6495	0.1046			
SUNINTDB4	0.1536	0.0454	3.3828	0.0013			
SUNINTDB5	-0.0033	0.0066	-0.5011	0.6182			
C	0.0274	0.0275	0.9970	0.3230			
EQSUNINTI	Dep. Var:	SUNINTI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
SUNINTIA1	-0.1289	0.1300	-0.9917	0.3233	0.2716	4.6247	0.0000
SUNINTIA2	-0.5526	0.3282	-1.6839	0.0947			
SUNINTIA3	-1.1669	0.3085	-3.7828	0.0002			
SUNINTIA4	-1.1363	0.5274	-2.1543	0.0332			
SUNINTIA5	0.9029	0.4532	1.9922	0.0485			
SUNINTIB1	-0.0267	0.0090	-2.9717	0.0036			
SUNINTIB2	-0.0017	0.0248	-0.0703	0.9441			
SUNINTIB3	-0.0009	0.0057	-0.1649	0.8693			
SUNINTIB4	0.0015	0.0248	0.0615	0.9510			
SUNINTIB5	-0.2288	0.0584	-3.9156	0.0001			
C	1.0788	0.4128	2.6132	0.0101			
EQTIGERBRANDSD	Dep. Var:	TIGERBRANDSD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
TIGERBRANDSDA1	-0.5198	0.2725	-1.9073	0.0598	0.9053	83.1418	0.0000
TIGERBRANDSDA2	0.0534	0.0897	0.5952	0.5533			
TIGERBRANDSDA3	2.6585	0.5223	5.0897	0.0000			
TIGERBRANDSDA4	-0.0033	0.7465	-0.0044	0.9965			
TIGERBRANDSDA5	0.7899	0.2524	3.1300	0.0024			
TIGERBRANDSDB1	-0.0691	0.1663	-0.4159	0.6785			
TIGERBRANDSDB2	-0.1129	0.1694	-0.6664	0.5069			
TIGERBRANDSDB3	-1.2203	0.4139	-2.9485	0.0041			
TIGERBRANDSDB4	0.0997	0.4102	0.2432	0.8085			
TIGERBRANDSDB5	-0.3519	0.2247	-1.5659	0.1210			
C	0.0835	0.2508	0.3331	0.7399			
EQTIGERBRANDSI	Dep. Var:	TIGERBRANDSI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
TIGERBRANDSIA1	-0.1018	0.0549	-1.8563	0.0688	0.6971	12.6586	0.0000
TIGERBRANDSIA2	-1.0350	0.1689	-6.1286	0.0000			
TIGERBRANDSIA3	-0.9854	0.2184	-4.5127	0.0000			
TIGERBRANDSIA4	-1.0357	0.2058	-5.0318	0.0000			
TIGERBRANDSIA5	-0.9528	0.2707	-3.5200	0.0009			
TIGERBRANDSIB1	0.5682	0.1601	3.5492	0.0008			

TIGERBRANDSIB2	0.4377	0.4155	1.0534	0.2968			
TIGERBRANDSIB3	0.6102	0.2725	2.2393	0.0292			
TIGERBRANDSIB4	0.1310	0.0610	2.1476	0.0362			
TIGERBRANDSIB5	0.3997	0.1205	3.3176	0.0016			
C	0.1557	0.0840	1.8535	0.0692			
EQTRENCORD	Dep. Var:	TRENCORD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
TRENCORDA1	0.0318	0.0429	0.7421	0.4656	0.8856	17.8070	0.0000
TRENCORDA2	-0.6980	0.2726	-2.5610	0.0175			
TRENCORDA3	0.5855	0.4796	1.2210	0.2345			
TRENCORDA4	-0.5507	0.2260	-2.4367	0.0230			
TRENCORDA5	-0.3073	0.3354	-0.9163	0.3690			
TRENCORDB1	0.9061	0.2507	3.6149	0.0015			
TRENCORDB2	-0.0536	0.1109	-0.4835	0.6333			
TRENCORDB3	-0.1916	0.2982	-0.6424	0.5269			
TRENCORDB4	-0.0010	0.0868	-0.0118	0.9907			
TRENCORDB5	-0.7992	0.2767	-2.8890	0.0083			
C	0.0767	0.1804	0.4250	0.6748			
EQTRENCORI	Dep. Var:	TRENCORI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
TRENCORIA1	0.0194	0.0556	0.3479	0.7293	0.8185	24.7949	0.0000
TRENCORIA2	0.5864	0.1184	4.9508	0.0000			
TRENCORIA3	-0.0758	0.0542	-1.3971	0.1680			
TRENCORIA4	-0.0885	0.0773	-1.1441	0.2575			
TRENCORIA5	0.1562	0.0475	3.2908	0.0017			
TRENCORIB1	-0.0275	0.0435	-0.6322	0.5299			
TRENCORIB2	0.0017	0.0432	0.0403	0.9680			
TRENCORIB3	0.1010	0.0211	4.7973	0.0000			
TRENCORIB4	0.0003	0.0087	0.0378	0.9700			
TRENCORIB5	-0.0584	0.0406	-1.4384	0.1560			
C	0.2280	0.0676	3.3720	0.0014			
EQVILLAGEI	Dep. Var:	VILLAGEI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
VILLAGEIA1	0.1876	0.0618	3.0340	0.0037	0.5433	6.4247	0.0000
VILLAGEIA2	-0.2733	0.0504	-5.4170	0.0000			
VILLAGEIA3	0.2672	0.1532	1.7435	0.0869			
VILLAGEIA4	0.0000	0.0643	0.0006	0.9995			
VILLAGEIA5	0.0019	0.0155	0.1236	0.9021			
VILLAGEIB1	-1.0524	0.5201	-2.0232	0.0480			
VILLAGEIB2	0.0166	0.0162	1.0263	0.3093			
VILLAGEIB3	0.0130	0.0177	0.7347	0.4657			
VILLAGEIB4	0.0001	0.0867	0.0011	0.9992			
VILLAGEIB5	-0.0283	0.0396	-0.7144	0.4780			
C	-0.3255	0.3451	-0.9432	0.3498			
EQWINHOLDD	Dep. Var:	WINHOLDD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):

WINHOLDDA1	-0.0100	0.0564	-0.1782	0.8592	0.3808	3.3824	0.0017
WINHOLDDA2	0.0019	0.0020	0.9534	0.3446			
WINHOLDDA3	-0.5237	0.1526	-3.4319	0.0011			
WINHOLDDA4	0.1077	0.0338	3.1866	0.0024			
WINHOLDDA5	0.5507	0.1353	4.0701	0.0002			
WINHOLDDB1	-0.1437	0.1089	-1.3196	0.1924			
WINHOLDDB2	0.1255	0.0939	1.3361	0.1870			
WINHOLDDB3	0.0213	0.0335	0.6364	0.5271			
WINHOLDDB4	-0.0223	0.0161	-1.3841	0.1719			
WINHOLDDB5	0.0002	0.0017	0.1101	0.9127			
C	0.1268	0.0659	1.9224	0.0597			
EQWINHOLDI	Dep. Var:	WINHOLDI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
WINHOLDIA1	-0.0015	0.0030	-0.5132	0.6127	0.8540	13.4503	0.0000
WINHOLDIA2	-0.0074	0.4476	-0.0164	0.9870			
WINHOLDIA3	1.4629	0.9550	1.5320	0.1392			
WINHOLDIA4	0.7910	0.5151	1.5357	0.1383			
WINHOLDIA5	-0.3162	0.6906	-0.4578	0.6514			
WINHOLDIB1	-0.0931	0.4181	-0.2226	0.8258			
WINHOLDIB2	-0.7617	0.3716	-2.0497	0.0520			
WINHOLDIB3	0.2340	0.4063	0.5759	0.5703			
WINHOLDIB4	-0.4488	0.0607	-7.3945	0.0000			
WINHOLDIB5	-0.1422	0.0795	-1.7898	0.0867			
C	0.2570	0.1535	1.6746	0.1076			
EQZURICHD	Dep. Var:	ZURICHD					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ZURICHDA1	-0.4602	0.2024	-2.2738	0.0362	0.9611	41.9513	0.0000
ZURICHDA2	-1.3363	0.9734	-1.3728	0.1876			
ZURICHDA3	2.1398	0.2861	7.4796	0.0000			
ZURICHDA4	-0.1437	0.3369	-0.4267	0.6750			
ZURICHDA5	0.5374	0.2232	2.4072	0.0277			
ZURICHDB1	-0.6198	0.8341	-0.7431	0.4676			
ZURICHDB2	-0.3926	0.2961	-1.3260	0.2024			
ZURICHDB3	1.0592	0.6402	1.6544	0.1164			
ZURICHDB4	0.0147	0.0109	1.3484	0.1952			
ZURICHDB5	-0.4886	0.2143	-2.2800	0.0358			
C	0.0336	0.1408	0.2383	0.8145			
EQZURICHI	Dep. Var:	ZURICHI					
Variable	Coefficient	Std. Error	t-Statistic	Prob.	R-squared:	F-statistic:	Prob(F-stat):
ZURICHIA1	-0.3420	0.0603	-5.6693	0.0000	0.9795	368.5516	0.0000
ZURICHIA2	0.3841	0.0551	6.9686	0.0000			
ZURICHIA3	0.9115	0.0246	37.1280	0.0000			
ZURICHIA4	0.9543	0.0662	14.4210	0.0000			
ZURICHIA5	0.3417	0.0603	5.6705	0.0000			
ZURICHIB1	-1.0434	0.0765	-13.6420	0.0000			
ZURICHIB2	-0.4719	0.0659	-7.1610	0.0000			

ZURICHIB3	0.0102	0.0524	0.1944	0.8464
ZURICHIB4	0.0108	0.0364	0.2956	0.7683
ZURICHIB5	-0.0411	0.0226	-1.8223	0.0723
C	0.0770	0.0708	1.0883	0.2798

Analysis of group means with F-ratio

Variable	D group	I group	ANOVA F-test	Probability
LT DEBT current	0.2423	17.0040	0.9064	0.3417
LT DEBT -1	6.5189	0.7733	1.1904	0.2760
LT DEBT -2	0.2581	5.6318	1.0410	0.3083
LT DEBT -3	6.2400	0.5462	1.1738	0.2794
LT DEBT -4	0.1888	5.0373	0.8523	0.3565
LT DEBT -5	20.7860	5.1761	0.6609	0.4168
EQUITY current	1.5145	0.3553	3.0486	0.0817
EQUITY -1	0.4021	0.6454	0.4258	0.5145
EQUITY -2	0.7437	0.7453	0.00000595	0.9981
EQUITY -3	0.3720	0.9057	0.7158	0.3981
EQUITY-4	0.7674	0.2865	0.7091	0.4003
EQUITY-5	0.3253	0.7507	0.4872	0.4857
ST DEBT current	0.2762	40.1835	1.1660	0.2812
ST DEBT -1	1.0748	3.6024	1.5847	0.2093
ST DEBT -2	3.0455	2.9630	0.0010	0.9748
ST DEBT -3	1.0749	2.1827	0.7863	0.3761
ST DEBT -4	1.8273	1.2631	0.2736	0.6014
ST DEBT -5	44.3060	1.3892	1.1552	0.2836
CA/CL current	1.4571	1.0524	0.0882	0.7666
CA/CL -1	1.4007	0.2641	0.9043	0.3423
CA/CL -2	0.9819	0.2900	1.080	0.2995
CA/CL -3	1.7209	0.6812	0.5852	0.4448
CA/CL -4	0.7791	1.557	0.3261	0.5683
CA/CL -5	1.5160	0.9448	0.1609	0.6886
FA/INT.A current	8.1403	166.6778	0.8454	0.3591
FA/INT.A -1	1.1387	165.4985	0.8461	0.3589
FA/INT.A -2	2.3628	165.1372	0.8915	0.3464
FA/INT.A -3	1.1915	1.4563	0.0468	0.8290
FA/INT.A -4	1.9147	0.5340	1.5957	0.2082
FA/INT.A -5	0.6925	1.9298	1.0507	0.3069
DSCR current	9.555	-0.1290	1.9873	0.1597
DSCR -1	4.8807	-0.9117	2.1832	0.1406
DSCR -2	1.1231	4.4825	0.8465	0.3583
DSCR -3	8.4520	-0.0897	1.3998	0.2377
DSCR-4	4.7729	-0.3920	1.6139	0.2050
DSCR -5	-0.0679	3.9641	0.8954	0.3448
LOG TA current	0.0096	0.0179	2.6780	0.1027
LOG TA -1	0.01190	0.0121	0.0014	0.9702
LOG TA -2	0.00586	0.0156	4.1629	0.0421*
LOG TA -3	0.0079	0.0098	0.2360	0.6275
LOG TA -4	0.0055	0.0117	4.0298	0.0455*
LOG TA-5	0.0081	0.0104	0.2777	0.5986
OPERATING CASH current	-1.0433	0.6023	0.8120	0.3682
OPERATING CASH -1	0.6071	1.2747	0.3595	0.5492
OPERATING CASH -2	0.5321	0.6256	0.0152	0.9020
OPERATING CASH -3	0.4153	-0.9174	1.1488	0.2846

OPERATING CASH -4	0.1144	-0.2061	0.4371	0.5090
OPERATING CASH -5	1.2138	-0.0380	1.5480	0.2144
SHARES ISSUED current	0.5456	0.2635	1.0165	0.3141
SHARES ISSUED -1	0.2729	0.5515	0.8806	0.3487
SHARES ISSUED -2	0.0536	0.8395	4.5432	0.0338*
SHARES ISSUED -3	0.1808	0.3815	0.7012	0.4030
SHARES ISSUED -4	0.3563	0.2110	0.6728	0.4217
SHARES ISSUED -5	0.4003	0.4142	0.0030	0.9566
SHARE PRICE current	0.2292	0.1406	1.5031	0.2210
SHARE PRICE -1	0.24387	0.1698	1.2210	0.2701
SHARE PRICE -2	0.2043	0.2320	0.1486	0.7001
SHARE PRICE -3	0.2368	0.2855	0.3926	0.5313
SHARE PRICE -4	0.3010	0.1424	5.0200	0.0257*
SHARE PRICE -5	0.1747	0.2100	0.1991	0.6558
MARKET CAP. current	1.0211	0.4904	0.9491	0.3306
MARKET CAP. -1	0.5403	1.0234	0.7707	0.3806
MARKET CAP. -2	0.2586	1.2464	3.0655	0.0809**
MARKET CAP. -3	0.4094	0.9637	1.1839	0.2773
MARKET CAP. -4	0.7689	0.2802	5.6070	0.0184*
MARKET CAP. -5	0.5915	0.6970	0.0997	0.7524
PE current	0.5631	0.3774	0.0595	0.8075
PE -1	0.4554	0.6674	0.0811	0.7759
PE -2	-0.0747	1.4251	0.9442	0.3319
PE -3	1.9320	0.3762	0.9890	0.3207
PE -4	0.0744	0.3086	0.1257	0.7231
PE -5	0.5089	1.9463	0.8447	0.3587
% CHANGE IN OI current	11.9500	11.2800	0.0023	0.9619
% CHANGE IN OI -1	13.7682	6.6830	0.2460	0.6203
% CHANGE IN OI -2	1.5750	13.4591	0.9054	0.3420
% CHANGE IN OI -3	4.6432	16.0479	0.6345	0.4263
% CHANGE IN OI -4	0.9857	1.6658	0.1873	0.6655
% CHANGE IN OI -5	16.1107	1.1801	1.2214	0.2699
OI/TA current	1.7750	-0.3775	3.3184	0.0694**
OI/TA -1	0.0441	-0.4010	0.9282	0.3360
OI/TA -2	-0.1445	0.3327	1.6939	0.1940
OI/TA -3	1.3576	0.2536	0.9156	0.3393
OI/TA -4	-0.2065	0.0965	0.5757	0.4485
OI/TA -5	0.0803	0.0809	0.00000207	0.9989
TAX RATE current	-0.0026	2.8167	2.8417	0.0928**
TAX RATE -1	1.3860	0.1316	1.1426	0.2859
TAX RATE -2	0.1410	0.1095	0.0005	0.9830
TAX RATE -3	-1.2235	1.7040	3.2961	0.0704**
TAX RATE -4	1.1799	0.6120	0.1985	0.6563
TAX RATE -5	0.2648	0.6151	0.0437	0.8345
ROI current	14.4931	-3.0652	2.8827	0.0906**
ROI -1	-2.3680	5.1540	0.4670	0.4949
ROI -2	16.3002	-1.4567	2.8775	0.0908**
ROI -3	-3.6721	6.4463	0.8703	0.3516

ROI -4	5.3464	1.8880	0.1079	0.7427
ROI -5	10.9230	-0.1293	1.1377	0.2870

*Significant at 5%

**Significant at 10%