

DISCLOSURE AND THE COST OF CAPITAL

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I certify that, except that as noted above, the report is my own work and all references used are accurately reported.

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ABSTRACT

In both academic literature and business practice there appears to be contradictory views concerning the existence, and nature, of the relationship between the quality of corporate disclosure and associated company cost of equity capital. Theory suggests that an informed investor would scale down the required rate of return as the level of uncertainty and risks associated with the firm's present and future performance is reduced. This study has attempted to empirically determine whether or not South African companies manage the level of information disparity between investors and themselves so as to influence the company's cost of capital.

A literature study was undertaken to ascertain what data and empirical findings have been produced by previous studies on disclosure and the cost of capital. The literature review also highlighted the impact that information asymmetry, intra-industry information transfers, estimation risk and information filtering by management has on disclosure and the effect that this has on cost of capital. The firms beta coefficient, based on the last quarter of 1997, were used as a measurement of risk and as a surrogate for the cost of capital. The disclosure metric was based on the financial and non-financial information contained in the 1997 annual financial reports of the sample companies. The research method that was adopted builds on both local and international empirical research in this field, using a statistical correlation analysis to test the null hypothesis of no relationship between disclosure and beta for companies listed on the Johannesburg Stock exchange.

The research results provided evidence of a positive, yet very weak correlation between disclosure and the cost of capital. As the variation in the sample data improved, a slightly stronger positive correlation between the research variables was observed.

KEYWORDS: Disclosure, Risk

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This study investigates the existence and nature of the relationship between the quality of a firm's disclosure policies and the perceived associated business risk as reflected by the firm's cost of equity capital. Theory suggests that financial managers have the potential to positively influence the value of a firm's shares, and consequently the firm's valuation, by revealing additional information to capital markets. This is based on the premise that the enhanced disclosure of company relevant information should reduce investor uncertainty about the firm's future performance.

However, firm competitive behaviour may inhibit the free exchange of information and management may sometimes have private information about the firm's future investment opportunities that cannot be made public. Informational problems typically arise between management and investors when investor relevant information is withheld from the capital market. Disclosure of information on a selective basis further complicates matters. By making some private information public, management can reduce the level of information disparity between the firm and the investor community. An informed investor would in theory scale down the required rate of return as the level of uncertainty and the risk associated with the firm's present and future performance is reduced.

Reducing the level of information asymmetry between market participants enhances stock market liquidity thereby reducing the cost of equity capital either through reduced transactions costs or a greater demand for the firm's stock. However, enhanced disclosure could compromise the firm's competitive position when proprietary information is volunteered and this could offset the benefits of providing the additional information.

It follows that the benefits of enhanced disclosure may not be readily realized or translate into a reduced cost of equity capital in the short term. Accordingly both the costs and benefits are difficult to observe and quantify. The cost of enhanced disclosure is more widely accepted as being real and the benefits are less quantifiable and perhaps less accepted whether in terms of its size or its existence (Botosan [2000:60], Botosan [1997:323]).

Equity markets provide firms with access to financing while investors seek access to capital markets to efficiently diversify portfolio risk. While the uncertainty associated with future firm performance cannot be separated from investor risk, management may be in possession of information that may assist investors in reducing the uncertainty of the investment decision. It is this disparity in information between market participants that place investors at an informational disadvantage. The theory suggests that this would result in an increased cost of equity capital, negatively affecting firm valuation.

1.2 THE RESEARCH PROBLEM

1.2.1 Definition of the problem

The purpose of this study is thus to investigate the association between the cost of equity capital and the level of disclosure. The study seeks to clarify whether or not shareholder value is enhanced as a result of management voluntarily disclosing information. If the relationship between cost of capital and the level of disclosure does exist it would then be possible to ascertain whether or not management should voluntarily disclose information to the capital market to reduce the firm's cost of equity capital. The following section will be used to provide background information on the key parameters of the research, namely disclosure and the cost of capital, and will further define the problem being addressed in this research.

Disclosure

The literature dealing with disclosure provides a useful contextual framework of disclosure within which this study is undertaken. Disclosure is considered as the deliberate release of financial and non-financial information whether numerical or qualitative, required or voluntary, using formal or informal channels of communication. It may be said that insufficient or inadequate disclosure leads to increased levels of information asymmetry and the consequent informational gap increases the level of investor estimation risk. The disclosure related literature is generally supportive of the notion that investor return expectations is linked one way or another to the level of uncertainty of the firms future performance.

In terms of accounting reporting procedure management may choose to comply strictly with the disclosure requirements according to Generally Accepted Accounting Practice (GAAP) or may decide to go a step further by reporting on company specific financial and non-financial information beyond the statutory requirement. As such, while management's decision to enhance information disclosure to the capital markets could be seen to be strategically motivated from the company's point of view, investors are invariably placed in a better-informed position of the company's activities which in turn shapes investor perception of the associated business risk.

The King Report on Corporate Governance, first published in South Africa in 1994 and revised in 2002 (King II Report), is considered a key development in enhancing the reporting framework within which South African businesses are expected to communicate with their stakeholders. In considering the relationship between the firm and its stakeholders the King Committee identified the annual report as a vital link in the communication between the enterprise and its stakeholders, in particular its shareholders. In its Code of Corporate Practices and Conduct, the King Committee recommended that the annual report should be as clear as possible and detailed enough to give a meaningful overview of the firm's activities.

The King Report further recommended that management should present a balanced and understandable assessment of the firm's overall position, both financially and operationally. It follows that audited financial statements should be meaningful, relevant and reliable for investors. Although compliance with the King Code is voluntary, paragraph 8.52 of section 8 of the JSE Listing Requirements compels listed companies to disclose the extent of their compliance or non compliance with the Code in their annual report for financial years commencing on or after 1 July 1995 ("Stakeholder communication in the annual report" [The Institute of Chartered Accountants.1997]).

The King II Report was based on the following guidelines:

- To review the applicability and relevance of its 1994 recommendations,
- To recognise and acknowledge the increasing importance of non-financial issues and to revisit the social, economic and ethical framework within which business operates, and,
- To recommend a framework of how the success of corporate reporting could be measured for adherence to the Code.

Further recommendations included the establishment of a Financial Reporting Standards Council with the appropriate legal backing for standards approved by this body. It is recommended that provision be made for the supervision of compliance and that penalties be imposed for non-compliance with the reporting standards.

The King II Report (2002:289-295) strives to place its recommendations within a universal context by referring to principles contained in the Global Reporting Initiative, Draft 2002 Sustainability Reporting Guidelines. Briefly these principles are that:

- Management should ensure that information is complete in terms of detail, complete within the scope of issues being addressed and the

boundaries of the report and that the information is relevant to the period in which such events are communicated.

- The interaction between the company and its stakeholders should be on an all-inclusive basis.
- Information should be disclosed on a consistent basis, aimed at placing the users of such information in a position to fairly compare present with past performance and use such information to support informed decision making.
- The accurate disclosure of information supports users in making decisions with a high degree of confidence.
- Information should be provided with a high level of clarity ensuring that such information is understandable and user friendly.
- Information is presented in an unbiased and neutral manner.
- Information is presented timely and is time appropriate in terms of the frequency of its disclosure.
- The information disclosed is reliable providing users with a high degree of assurance as to its accuracy.
- The reporting process is a transparent and open communication exercise providing all stakeholders with a clear and concise framework of disclosure.
- The disclosed information should not focus on the company's performance in isolation, but place its performance within the broader context of social, economic and ethical issues.

It is clear that the King Reports' recommendations are aimed at enhancing the level of transparency and quality of corporate reporting, improving the information content of disclosure and ultimately serving the needs of the broader investment community by reducing investor uncertainty of the firm's future performance.

Cost of Capital

The Capital Asset Pricing Model (CAPM) is useful for estimating a company's cost of equity capital or the expected rate of return. According to Brigham and

Gapenski (1996) the CAPM is a widely accepted theory for pricing assets and seeks to establish the level of return required to compensate an investor for a given degree of risk.

Copeland et al (1996) regard the CAPM as being risk-adjusted and theoretically correct. The CAPM therefore serves to determine the risk/return trade-off of a single share in a multiple share portfolio and assumes that market risk is a primary consideration of common stockholders. The CAPM relates the risk of a share, as measured by its beta, to its expected returns and assumes that the cost of equity capital is equal to the return of a risk-free security plus the company's risk premium (based on its beta coefficient) multiplied by the market risk premium.

According to the CAPM the following equation is used to calculate the cost of equity capital;

$$K_s = K_{rf} + (\text{Beta}) [E(K_m) - K_{rf}]$$

Where:

K_{rf}	=	the risk-free rate of return
$E(K_m)$	=	the expected rate of return on the overall market portfolio
$E(K_m) - K_{rf}$	=	the market risk premium
Beta	=	the company's systematic risk

While Fama & French (1997) do not question the validity of the CAPM their study criticizes the model's accuracy as a means of determining expected returns. They assert that this is as a result of the uncertain and imprecise manner in which the variables identifying the price of risk and the risk loadings are derived.

According to Botosan (1997) a firm's beta is probably the most well accepted measurement of market risk. In terms of the CAPM model beta is the only variable that deals with the company's risk profile. Beta therefore measures the volatility of a share's return relative to the volatility of returns on the market portfolio. By deduction therefore beta is the only company specific variable in calculating the expected rate of return and consequently reflects the

systematic risk of a company. It is envisaged that through beta, the company's risk profile will be captured and that the firm's beta will reflect what the likely move for a particular stock would be for a given move in the market.

1.2.2 The problem statement

Although the benefits of enhanced disclosure or reduced information asymmetry are well documented in academic literature and its potential impact on the cost of capital well accepted, it is unclear whether or not managers in practice balance these aspects in order to manage investor perception of its corporate risk profile. An interesting research question therefore arises; is greater disclosure associated with a lower cost of equity capital or conversely do firms that disregard enhanced disclosure increase their cost of capital? Alternatively, do companies forego the benefit of a lower cost of equity capital by volunteering investor relevant information on a selective basis?

The Research Hypothesis

The basis of this research suggests that there is some relationship between a company's disclosure policies and its cost of equity capital. It is expected that industry specific disclosure policies as well as variations in firm size would be irrelevant to the effect that enhanced disclosure would have on the cost of equity capital. As such, the hypothesis that will be tested through the research is:

Ho: There is no relationship between a firm's level of disclosure and its beta

1.2.3 Significance of results

It is anticipated that the findings of this research will support the theory that enhanced disclosure reduces the cost of capital and further that financial

managers could positively affect the value of the firm by volunteering expanded disclosure. It is also envisaged that the observed reduced information asymmetry and its positive impact on cost of capital in turn reduces the estimation risk associated with investor uncertainty and that the resultant beta adequately reflects the attendant lower corporate risk.

If this study supports the above hypothesis for South African corporations, then it is conceivable that the findings may help in the prediction of corporate behavior. That is, it may be possible to determine whether or not company management are able to influence cost of capital by improving disclosure practices and how management would perceive the benefits of enhanced voluntary disclosure.

1.2.4 Sequence of the study

The remainder of the study is organised as follows:

Chapter 2 focuses on the theoretical framework and perspectives that have informed the study. The chapter serves to establish whether or not there is a theoretical basis for any relationship between disclosure and the cost of capital and attempts to determine what metrics and surrogates may be used to measure a company's cost of capital.

Chapter 3 documents the research design and methodology and defines the research hypothesis. The results of the empirical study will be presented and discussed in chapter 4. Chapter 5 presents the conclusions drawn from the empirical study and provide recommendations and suggestions for further research.

CHAPTER 2

HISTORICAL PERSPECTIVE OF THE RELATIONSHIP BETWEEN DISCLOSURE AND THE COST OF CAPITAL

2.1 INTRODUCTION

This chapter identifies the variables of the research study. A review of the existing literature is undertaken to ascertain what data and empirical findings have been produced by previous studies that have investigated the relationship between disclosure and cost of capital. These studies all endeavour to capture investor behaviour in response to company announcements. The key reference and review material was mainly comprised of articles published in finance related academic journals. This has provided a background understanding to the effect that more informative disclosure has on stock valuation and consequently the cost of capital. It is in this context that this research is being undertaken and it has been found that the investigation as to what affects firm valuation has been the subject of rigorous academic investigation over the years.

The disclosure related literature is generally supportive of the notion that investor return expectations is linked in some way to the level of uncertainty of the firms future performance. Accordingly, it would be reasonable to assume that an investor seeking to enhance returns on a well-diversified market portfolio of securities would be taking on some elements of systematic company risk.

The discussion that follows investigates the informational impacts and effect that information asymmetry, intra-industry information transfers, estimation risk and information filtering by management have on disclosure and the effect that this has on the required rate of return. This section also refers to the empirical findings of previous research studies and ends off with reference to research that draws the link between disclosure and the cost of capital.

determining share prices. They analyze the effects of changes in information asymmetry on security pricing while predicting the differences in sensitivity of security prices to information asymmetry and examine the effects of corporate disclosures that reduce information asymmetry.

These authors assert that, in perfectly competitive and fully liquid markets, shareholder value can be enhanced through management disclosing data that reduce information asymmetry among investors. They note that if the initial information asymmetry were large, reducing it would result in an increase in the current price of the security and that this improves the future liquidity of a firm's securities.

Barry & Brown (1985) investigated the relationship between the availability of information and security returns with Clarkson, Guedes and Thompson (1996:69) extending previous investigation in this area by examining the differential information setting in which there is more information about some securities than others. The study by Barry & Brown (1985) is based on the argument that securities for which there is less information available may be perceived as being riskier than securities for which there is more information available. Their research is based on a regression of the security returns, the period of listing as a measure of differential information and beta of the sample stocks. They contend that the holders of riskier securities may therefore demand a premium for holding such securities.

The study is based on the notion that there should be more information available on a company the longer the security has been listed. They refer to this as the "small firm" effect, on the basis that there is less information available on lower value securities than on high value securities. However, their model refers to the quantity rather than the quality and relevance of the information disclosed.

Their findings are consistent with the broader disclosure literature that supports a correlation between enhanced disclosure and the observed increased security returns and that limited information can have an effect on

2.2 INFORMATION ASYMMETRY

Information asymmetry refers to the information imbalance between market participants about the firm's future prospects. In cases where management have access to private information about the firm, investors are considered to be at an informational disadvantage. Information asymmetry can also occur among investors and it often happens that some investors have access to more and better quality information than other investors. Theory suggests that those investors who consider themselves to be at an informational disadvantage would expect a higher required rate of return. It follows therefore that the firm would be acting in a manner that would serve to reduce its cost of capital by improving the quantity and quality of information disclosed, thereby also placing investors in a better-informed position.

2.2.1 Information quantity

Generally, the academic literature presents that enhanced disclosure or reduced information asymmetry assist both management and investors to determine firm mis-valuations as well as increase institutional interest and liquidity for a company's shares (Botosan [1997:2000], Diamond & Verrecchia [1991], Healy & Palepu [1995], Healy, Hutton & Palepu [1999]).

While research supporting the association between enhanced disclosure and the positive effect on stock price, stock market liquidity and firm valuation abound, there appears to be a paucity of empirical research dealing with the direct relationship between disclosure level and the cost of equity capital.

In considering the effect of revealing more information to the capital markets Diamond & Verrecchia (1991) infer that a firm can reduce its cost of capital by attracting increased demand from large investors due to the increased liquidity of its shares. This study considers the relevance of enhanced disclosure of privately held information within the context of market making activities. They assume that market makers have limited risk bearing capacity and show how this interacts with the effects of private information in

systematic risk and therefore on required returns. They suggest that smaller, low information firms seem to have returns that on average are higher per unit of estimated beta than larger, established, high information firms.

2.2.2 Information quality

In addition to the amount of information available, investors also look for credible information on which to shape their expectations of the firm's future trading fortunes. Healy and Palepu (1995) reflect on the importance of the quality of the information exchanged between the firm and investors by means of a case study that relates the experiences of an American company, CUC International. They note that audited financial reports are not always an effective means of communication even though the auditing process and management's legal liability should provide investors with sufficient comfort as to the reliability of the information on which to assess the firm's future performance.

They observe that it took CUC a while to convince analysts of management's integrity notwithstanding the company's creditable trading results that provided the platform for management to make a number of financial policy changes aimed at demonstrating that the company was undervalued. The authors concluded that the reason for the mismatch between CUC's stock price behaviour and its earnings performance was as a result of problems management faced in communicating their assessment of the firm's product investment activities and the associated future cash flow benefits. These findings highlight the difficulties management face in striking a balance between information quality and content, whether or not management should disclose or withhold investor relevant information and that moreover information problems are not always mitigated by audited financial statements.

In the research conducted by Healy, Hutton & Palepu (1999) the authors provide evidence that a sustained improvement in disclosure leads to improved stock performance and capital market intermediation. They did this by analyzing the time series changes in the disclosure ratings of 97 firms that

had shown a significant and sustained improvement in disclosure over the period 1980 to 1990. Their findings reveal that the sample firms showed a significant increase in their share price performance in the year and the following year of the disclosure increase. Whilst they point out that it is difficult to draw unambiguous causal conclusions, the results of their study is consistent with the disclosure model predictions that enhanced disclosure supports an upward valuation of the firm's share price, increases stock liquidity and consequently impacts favourably on the firm's cost of capital.

2.2.3 Selective information disclosure

There appears to be very little basis to refute the theoretical notion that enhanced disclosure reduces the cost of capital and that management may not be optimising the investment opportunity of existing shareholders by disclosing information on a selective basis. Accordingly, the practical implication is that management should be encouraged to subscribe to a policy that promotes timeous and transparent release of company related information to all relevant company stakeholders. By withholding information management may therefore not realise the harmful impact and effect that this may have on the future value of the firm.

While a study by Majluf & Myers (1984) does not have a direct bearing on disclosure and the cost of capital, it presents some interesting insights as to how a firm foregoes valuable investment opportunities as a result of information asymmetry between management and investors. These authors consider a firm that must issue common stock to finance a valuable investment opportunity under conditions where management know more about the value of the firm than potential investors. They develop an equilibrium model of the issue-invest decision and illustrate that with management perceiving the information to be so favourable acts solely in the interests of existing shareholders and withhold the issue of new shares. These authors contend that as investors are at an informational disadvantage, management passes up a good investment opportunity resulting in real capital investment being misallocated and firm value reduced due to the existence of the information asymmetry. Besides illustrating the detrimental effect of

asymmetric information on firm value and the resultant impact on cost of capital, their model is based on assumptions that are considered unrealistic. These include, stockholders do not adjust their portfolios in response to the firm's issue-invest decision, the firm's investment decision relies on the extent of its financial slack, capital markets are perfect and efficient with regard to publicly available information, there are no transactions cost in issuing stock, that discounting for risk is not considered and management's attitude to the project is all or nothing.

It appears from the literature that the informational effects in the capital markets is concerned with the association between the firm releasing firm specific information and its own share price. Maguire (1997), for example, investigates the impact on share price when firms voluntarily report financial targets for the first time.

2.3 INTRA-INDUSTRY INFORMATION TRANSFERS

The intra-industry information transfer provides a wider framework within which stock price behaviour is observed and examines the stock price reaction of firms in the same industry upon the announcement of information on another firm in that industry. The knock-on effect of information disclosed by a firm and the effect that this has on the cost of capital of firm's in a similar industry is considered in a study by Clinch & Sinclair (1987). They were of the first authors to extend the effect of information releases on firm value by investigating the effect that information released by one firm in an industry has on the share price, and its cost of capital, of another firm in the same industry. Although this study only investigates the effect of an announcement of a firm's earnings release, and does not relate the release of information in terms of the broader disclosure definition, it succeeds in highlighting the importance of the reaction of the market to information releases.

The findings of this research are therefore considered to be consistent with the findings of general disclosure prediction models. The results show the authors correlating an earnings announcement with a change in the

announcing firm's share price and that the information disclosed results in a change in the share price of other firms in the same industry. They establish that the information transfers appear to be directional in that a positive change in the announcing firm's share price is associated with a positive change in the share price of other firms in the same industry.

The academic literature supports the view that if investors perceive informational value in a firm's disclosure a share price reaction could be expected. It is argued that a positive share price response is associated with reduced investor estimates of the uncertainty of investment return parameters due to the attendant lower estimation risk.

2.4 ESTIMATION RISK

Estimation risk is the associated investor risk that arises when the level of information asymmetry places some investors in a better informed position than others, meaning that those who are at an informational disadvantage have to rely on the firm's historical financial information and their own best estimate of the firm's future performance in gauging their expected rate of return. Investor estimates of the firm's prospects, based on having less information on the company's prospects, introduces an element of risk and it is expected that these investors would seek to be compensated for the accompanying uncertainty by demanding a higher required rate of return.

In investigating how investor uncertainty affects the risk return relationship Clarkson, Guedes and Thompson (1996) examine the role of estimation risk, specifically the impact of exogenous factors and low information on estimation risk. In this regard the authors test whether or not the impact of estimation risk could be nullified through diversification and whether or not investors consider this over and above other observable risk measures. They conclude that estimation risk is diversifiable and not priced when it is related to the market environment or alternatively if low information plays a role in asset pricing then estimation risk has a systematic component. This is an interesting assertion within the context of this research paper. What is of

relevance is that the authors acknowledge that in a CAPM framework, differential estimation risk generally has a systematic component and should be priced to some degree suggesting that the firm's beta reflects in some way the level of information asymmetry between the firm and investors.

While the theory that expanded disclosure positively affects firm value may appear intuitively appealing, management is faced with a conflicting incentive to disclose or to withhold information due to the potentially damaging effect that the disclosure of proprietary information may have on shareholder value.

2.5 PROPRIETARY COSTS

Firms may reach a point where they question the benefits of expanded disclosure. It is expected that this could conceivably affect the timing and extent of management's decision to disclose information. Verrucchia (1983) postulates that management filters the release of information by observing a degree of information quality, above which, information is disclosed and below which information is withheld.

Darrough and Stoughton (1990), Verrecchia (1983), Verrecchia (1990) and Wagenhofer (1990) develop the notion of proprietary costs by investigating the association between the quality of the information offered, disclosure and the impact of intra-industry competitive forces. They consider the likely disclosure policies that management will adopt under varying circumstances. These studies suggest that there is an association between firm ranking, both in terms of size and market position, and management's incentives to enhance disclosure of both favourable and unfavourable information. They observe that firms withhold private information to avoid proprietary costs.

2.6 THE LINK BETWEEN DISCLOSURE AND THE COST OF CAPITAL

Within the voluntary disclosure literature the first research that is most closely related to drawing a correlation between disclosure and the cost of capital is Botosan's (1997) investigation of the association between disclosure and the

cost of equity capital. She observes and examines the disclosure practices of firms in the American machinery industry in 1990 and provides empirical observations supporting a negative correlation between disclosure and the cost of equity capital. Her observations note a negative correlation between the level of disclosure and the cost of capital for firms with a low analyst following while no evidence of an association between these variables are found for firms with a high analyst following.

Botosan (1997:324) states that earlier research did not cover the direct relationship between cost of capital and disclosure levels due to the difficulty in obtaining an appropriate cost of capital measure. Instead, these studies dealt with the variables that are expected to have a positive effect on the cost of capital. While this may be so, reference to the literature mentioned earlier in this chapter presents sufficient evidence to show that limited voluntary firm disclosure has a noteworthy impact on the cost of capital. Botosan developed her own disclosure measure and estimated the cost of equity capital using an accounting based valuation formula derived from the well-known Edwards-Bell-Ohlson (EBO) dividend discount model.

Besides research by Scott and Everingham (2001), very little academic material investigating the relationship between disclosure and the cost of capital has been published in South Africa to date. Their study uses a simple linear regression to establish whether or not a relationship exists between the two variables. Their findings are not suggestive of a significant relationship between the variables for two out of the three years of testing.

The key reference and review material was mainly comprised of articles published in finance related academic journals. This has provided a background understanding to the effect that more informative disclosure has on stock valuation and consequently the cost of capital. It has been found that the investigation as to what affects firm valuation has been the subject of rigorous academic investigation over the years with academicians endeavouring to capture investor behaviour in response to company announcements. While research supporting the association between

enhanced disclosure and the positive effect on stock price, stock market liquidity and firm valuation abound, there appears to be a paucity of empirical research dealing with the direct relationship between disclosure level and the cost of equity capital.

A further focus of the review was to determine whether or not there is a theoretical basis for any relationship between disclosure and the cost of capital. This review was aimed at determining what metrics and surrogates may be used to measure a company's cost of capital and finally it provided a theoretical and empirical background on which to build this research topic.

CHAPTER 3

RESEARCH METHOD

3.1 INTRODUCTION

In this chapter the research hypothesis is defined and the research design and methodology followed is described. This chapter therefore scopes the study, describes the sources of the relevant data and outlines the basis on which the data was prepared, processed and analysed. To test for a correlation between disclosure and the reporting firm's cost of capital, the following approach was adopted:

- The scope as well as the boundaries of the research study are identified and discussed,
- A discussion around the relevant data sources were undertaken and the basis on which the data sample was decided upon is presented,
- A discussion on how the data was prepared and analysed.

3.2 STAGES OF RESEARCH

To test the disclosure and the cost of capital trade-off hypothesis the following stages of research were undertaken.

Stage 1: Literature Study

The literature survey was aimed at determining what academic research has been undertaken on the research subject. The existing literature dealing with disclosure, beta and the cost of capital was reviewed to obtain an understanding of the definitions, interpretation and usage of these corporate risk measures.

This study follows a similar approach to the previous investigation by Botosan (1997) of the effect of disclosure on the cost of capital but more so the research of Scott & Everingham (2001). Much along the lines of the Scott & Everingham (2001) study, this research also uses a simple linear regression

analysis to test for the degree of correlation between the quality of disclosure and the company's systematic risk. Their findings are not suggestive of a significant relationship between the variables for two out of the three years of testing.

In comparing the study in this paper with Botosan's (1997) research the following key differences are apparent. Botosan develops her own disclosure measure while this research relies on the disclosure scores drawn from an existing database. She estimates the cost of capital using an accounting based valuation formula derived from the well known Edwards-Bell-Ohlson (EBO) dividend discount model while the research in this paper proposes to use beta as a surrogate for the cost of capital. Firm size as well as the extent of analyst following is important in the Botosan (1997) findings but is not relevant to the outcome of this study.

The Scott and Everingham (2001) study is perhaps the closest to the research topic and is characterised by a number of similarities. Their study extends over multiple periods, from 1998 to 2000, while the study in this paper is confined to a single period and proposes to test a one-year sample. The single most important difference between their research and this paper is that the disclosure measures are drawn from two independent sources. The overlaps between the compilation and derivation of the measures of disclosure have not been determined and are therefore considered mutually exclusive. On comparing the two studies, the following similarities are apparent. The firm's beta coefficient is used in both studies as the measurement of risk against which the predetermined disclosure index is regressed to test the significance of the relationship between the variables. The betas for the quarter following the year-end of each company are used and the beta coefficients are drawn from the same source. It is therefore anticipated that the findings of this study that investigates the hypothesis of no relationship between disclosure and beta over a single period, will corroborate the 3-year time series findings of Scott and Everingham (2001) as the methodology employed is not dissimilar.

stage 2: Data Gathering

As the relationship and effect of corporate disclosure practices on the cost of capital is central to the theme of the research, the aim was to identify and source relevant South African designed disclosure measurement models. This information could only be obtained from two credible sources. Academics in the Accounting Department at the University of Cape Town undertake an annual survey, on behalf of Ernst & Young a firm of Chartered Accountants, of the top 100 companies by market capitalisation on the JSE allocating a score to each annual report based on its disclosure quality. The Ernst and Young competition has been conducted since 1997.

The Financial Mail, a South African based financial publication has conducted the other independent study since 1964 suggesting that an acceptable level of consistency had been obtained over the years. The last available survey results were based on the 1997 financial year-end results of the participant companies.. This survey is based along much the same lines as the Ernst & Young Excellence in Financial Reporting Competition. The Financial Mail Annual Accounts Awards is not run as a competition in that the financial information of all eligible companies is automatically included for evaluation by the judges. The Bureau of Financial Analysis of the University of Pretoria does the adjudication and scoring of the results.

The two surveys treat the results very differently. The Ernst & Young results are largely confidential with the specific competition rankings restricted to the top 10 companies while the other participants are classified as "excellent", "good", "average" or "unsatisfactory". The Financial Mail on the other hand publishes all survey results and the information is publicly available.

It was for this reason that the Financial Mail disclosure scores were chosen and from which the list of sample companies for this research was selected. The actual scores given to each company will be used to rank the firms in order of quality of disclosure for comparison to their betas.

The disclosure measure intended for use in this study is therefore largely determined and is derived from an assessment of firm specific information against a checklist of criteria determined by the adjudication panel. It is therefore important to understand the basis on which the disclosure score is devised, the criteria against which each participant's disclosure is assessed and the computation of the disclosure measure used for the eventual firm ranking.

- **The Financial Mail Annual Awards Database**

The Financial Mail Annual Awards database is based on the annual reports for the 1997 financial year. The evaluation is done through a points scoring system as per the criteria included in Appendix 1. The scoring for the Financial Mail Annual Awards focuses on information that goes beyond the statutory information requirements and seeks to reward the disclosure of information that may not be publicly known. The disclosure rankings are based on information that is largely of a financial nature and may be regarded as important to the investment community. It seeks to give credit to the disclosure of information pertaining to management and directors, long term planning, environmental reporting and corporate governance. The scoring rewards participants for communicating in a transparent and informative manner. Appendix 1 includes the marking system used by the Bureau for Financial Analysis at the University of Pretoria.

- **The Financial Risk Service betas**

In satisfying the proposition that beta be used as the surrogate for the cost of capital, the most up-to-date and authoritative South African literature on the subject was consulted. The statistical beta relevant information was obtained from The Financial Risk Service at the University of Cape Town published in their December 1997 quarterly review. They calculate betas using a statistical technique known as the Trade-to-Trade method that according to Scott & Everingham (2002:89) ... "avoids the problems that the relative illiquidity of the JSE creates for the reliability of equity betas calculated using the ordinary least squares regression".

The Financial Mail sees the Annual Awards competition serving a dual purpose; firstly as a way of exposing the reporting standards of listed companies and also as a means of enhancing the reporting standards of South African companies. It remains debatable whether or not management sees this as a sufficiently compelling reason to change their attitudes on disclosure.

Stage 3: Sample Selection

The next stage of the research was the selection of a representative sample of companies on which to test the research hypothesis. The Financial Mail Annual survey is extensive with its summary of results covering the final points allocated to 326 respondents. The data is presented in tabular form with the scores ranked from the highest to the lowest. The companies comprising the upper quartile of the total population represented a concentration of very good scores ranging from the top score of 190 to 134. The total population size of 326 respondents is representative of a cross-sectoral range of companies listed in the chemical, building & construction, engineering, furniture, clothing, retail and food sectors but exclude companies listed in the financial and mining sectors. In line with this the relevant company disclosure scores with the corresponding company betas were identified for the data-samples mentioned below.

A preliminary screening resulted in the selection of the base sample ranked by disclosure score. Three subsets of data were identified according to disclosure score ranking. The first sample was chosen to comprise the top 50 companies.

The analysis was extended to the next 50 companies in order of ranking. The extended sample of 100 companies represented the second grouping of data.

To improve the variation in the data, the analysis was then further extended to identifying a third grouping comprised of disclosure score ranking of the top 25 companies, the middle 25 ranked companies and the last 25 companies in the total population of 326 companies. It is the intention to subject all three

data groupings to separate regression and correlation testing and to review the findings on a separate and comparative basis.

Although all the companies in the respective data sets qualified for inclusion in the testing stage, some were excluded and the sample sizes reduced as follows. The first sample size of 50 companies was reduced to 47, as the beta coefficients for 3 of the selected companies were unavailable from the Financial Risk Services beta book. The exact reason for the exclusion of the respective company betas could not be established but as no specific reason for its exclusion was stated it was ascribed to the fact that the Financial Risk Service report usually only calculates betas for companies with at least a 2 year trading history or that these companies had subsequently been delisted. Also, the Financial Risk Service reports selects only those companies that comprise the respective market and other sector indices.

The second and third data samples were taken through a similar procedure resulting in the second sample reducing from 100 to 81 with the third sample data set reducing from 75 to 55 companies. Appendices 2, 3 and 4 list the names of the companies comprising the final groupings with the respective company scores and their associated beta coefficients.

Stage 4: Data Preparation & Analysis

The focus of the data analysis was to test the proposed hypothesis, covering the following detailed analysis steps:

- I. The disclosure scores of the top 100 as well as the last 25 companies were selected from the 1997 Financial Mail Annual Awards published report. The total sample size therefore comprised 125 companies.
- II. As stated earlier the respective data sub-sets were reduced to 47 for the first sample set, 81 for the second sample set and 55 for the third sample set. The disclosure score results were chosen as it was ranked in the survey, from highest to lowest, covering a range of scores out of a maximum of 190 to 35, with the lower rated last 25 disclosure scores ranging from 70 to 35. The associated beta coefficients for the

respective companies were obtained from the Financial Risk Services beta book.

- III. Botosan (1997) investigated the relationship between disclosure and cost of capital using the 1990 annual reports of a sample of 122 manufacturing companies. She derived her own disclosure score and her own estimate of the cost of equity capital for the sample firms using a model based on an earnings-to-price ratio adjusted for growth and dividend payout. By using a multiple regression test and correlation analysis she determined the value of the intercept and slope coefficients. Scott and Everingham (2001) used the Spearman simple linear regression test to estimate the coefficients of the 2 variables using the Statistica computer software package.

- IV. The research in this study is concerned with a single period (the 1997 financial year) test whereas Scott and Everingham (2001) investigated the relationship between the quality of accounting disclosure and beta over the 3-year period 1998 to 2000 on a cross-sectional sample of companies. The study presented in this paper uses the EXCEL computer software package to perform a simple linear regression analysis on the 2 variables, at a 95% confidence level, using the least squares method to estimate the coefficients (Keller & Warrack [1997], Underhill & Bradfield [1998]). This statistical technique is useful in examining the relationship among quantitative variables and is used to predict the value of one variable (the dependent variable – y) based on the value of another variable (the independent variable – x). The company disclosure score was identified as the independent or explanatory variable (x) with the associated company beta identified as the dependent variable (y). To consider the effect that changes in the confidence level would have on the research data for the respective groupings further regression and correlation testing at the 90% and 99% confidence levels were run. The summary outputs of the regression analysis test of the 3 data sets are presented in appendices 2, 3 and 4.

- V. In order to confirm the validity of the regression test, the coefficient of determination (R^2) and coefficient of correlation (R) was recorded and a plot of the regression fit as well as the plot of the residuals was generated. These statistical estimates were then used to determine the measure of the strength of the linear relationship between disclosure quality and beta and to test whether the correlation was positive or negative and to assess how well the linear model fits the data. The correlation (R) is a statistic that lies between -1 and $+1$. The closer the statistic is to 1 , the stronger the relationship between disclosure and beta, while the sign of the (R) statistic provides an indication of the direction of the relationship.
- VI. The coefficient of determination (R^2) measures the proportion of the variation in beta "y" that is explained by the variation in disclosure quality "x". The coefficient of determination statistic lies between zero and one. When R^2 is equal to 1 then there is a perfect match between the linear function and the data points represented by x and y and when R^2 is equal to zero then there is no linear relationship between the variables. Accordingly, the coefficient of determination statistic as determined by the linear regression model states that the variation in beta is partly explained by the disclosure score and that part of the difference in beta is unexplained by the variation in the disclosure score.
- VII. Further validation as to how well the linear function fits the data was tested through observations of the Standard Deviation / Standard Error of Estimate (S_E) and the T-test of the slope. The S_E statistic cannot drop below zero. At zero it suggests that all the data points fall on the regression line and therefore the smaller the S_E statistic the better the fit.
- VIII. Using the above-generated measures of disclosure quality and beta, the next step in the data analysis was to look for relationships between the measures. In this regard the summary output statistics and line fit

plots were used to look for an intuitive relationship between the data variables.

3.3 SCOPE AND LIMITATIONS

The empirical investigation envisaged in this study is limited to a simple linear regression and correlation test between disclosure and the cost of capital to determine whether or not there is a correlation between these 2 variables. The firm's beta coefficient is used as the measurement of risk against which a predetermined disclosure index is regressed to test the significance of the relationship between the variables. Beta is therefore used as a surrogate for the cost of capital and no other variables that might affect the cost of capital are taken into account. The disclosure index is derived from an evaluation of the audited annual accounts and interim reports for the 1997 financial year of companies listed in the industrial sector of the JSE.

The research is restricted to a single period and hence the relationship between disclosure and cost of capital is tested over a specific year. It is therefore not the intention of this report to track the movements in disclosure quality over time.

The respective company betas relate to the last quarter of the 1997 financial year. The disclosure scores as well as the betas for the respective companies are drawn from existing databases. This report does not propose to present a critique or interpretation as to the derivation of the disclosure index or the disclosure scoresheet and measurement criteria. The results are accepted as published.

The disclosure metric does not in any way reflect on the financial strength of the participants and this report does not draw any inference between the disclosure result, the relative company ranking and the financial profile as reflected by the audited annual report. Accordingly the relative company ranking is based solely on the disclosure quality as measured by the disclosure scoresheet. This research report therefore does not attempt to

rank participants on the basis of financial strength, market capitalisation, stock liquidity and so on.

CHAPTER 4

ANALYSIS, FINDINGS AND PRESENTATION OF THE RESULTS

4.1 DISCUSSION OF THE RESULTS

This chapter presents the results of the empirical study. A summary of the key finding will be presented and discussed here. The statistical method that was adopted to test for a significant relationship between the 2 research variables was simple linear regression and correlation testing performed on the following basis:

- (a) The 1st regression analysis comprised a grouping of 50 companies, which was subsequently reduced to 47. An output summary of the regression and correlation test for this data set is presented in appendix 2.
- (b) The above (original) data set was increased to a 100 companies and this was subsequently reduced to 81. The output results are presented in appendix 3.
- (c) In order to apply statistical rigour to the research, the third data set was comprised of a grouping of companies ranked in the top 25 disclosure rankings, 25 ranked in the middle and companies ranked in the last 25 out of a total population of 326 companies. The result of this test is presented in appendix 4.

The reason for this approach was to test whether or not the composition of the data sets, especially the third grouping with a greater range in both disclosure and beta variables, would have a material impact on the results. The findings suggest that the regression tests were in fact sensitive to the abovementioned changes in the datasets, as different yet similar direction outcomes were observed.

The linear regression analysis that was computed for the respective data sample subsets used the least squares method to estimate the value of the disclosure and beta coefficients. This solves for the value of the dependent and independent variable using the simple linear regression equation stated as:

$$Y = \beta_0 + \beta_1 X + \varepsilon$$

Where:

Y = dependent variable (beta)

X = independent variable (company disclosure score)

β_0 = y-intercept

β_1 = slope coefficient

ε = error variable

The scatter plots generated by the regression tests for the 3 data samples show a weak positive linear relationship between the 2 test variables, as shown in figures 2, 3 and 4 below:

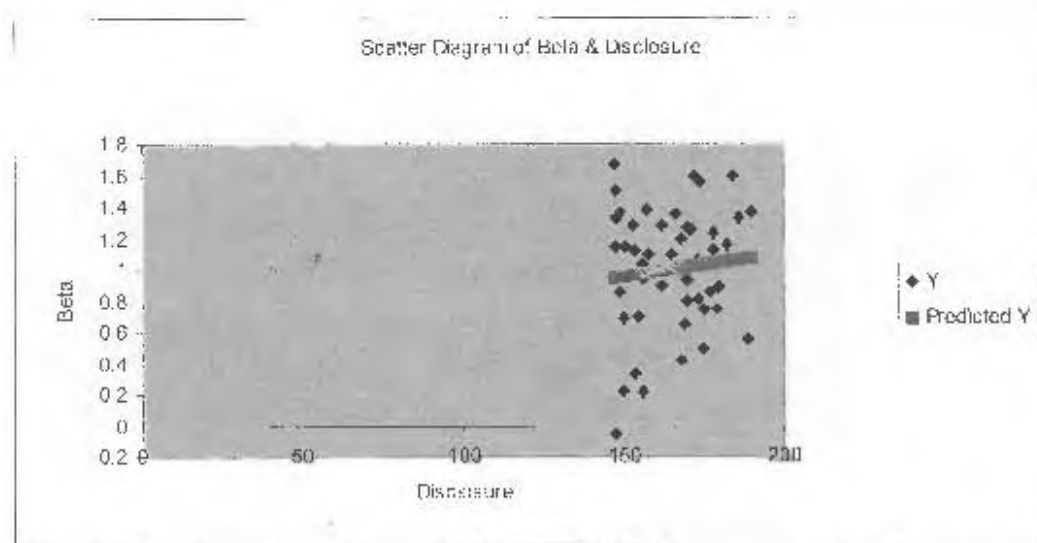


Figure 1: Scatter Plot of Disclosure & Beta for the data set comprising 47 companies

Figure 1 shows the values of beta fairly widely scattered around the mean of (beta) 1 with the mean disclosure score at 165 and a median of 168 generated from disclosure score values ranging between 147 and 190. The following table presents a summary of the statistical determinants of the slope

and direction of the scatter plot depicting the linear relationship between beta and disclosure in the first data set:

Data Set 1 @ 95% Confidence Level	Intercept	Disclosure
Coefficient	.4921	.0031
Standard Deviation	.7595	.0045

Table 2: Coefficient Results Based on Top 50 Companies

In terms of the aforementioned regression equation, the following interpretations of the y-intercept were recorded. The y-intercept is stated as .4921 with the slope coefficient at .0031 at a standard deviation of .7595. This infers that for every additional measure of disclosure beta increases by an average of .0031 points while the y-intercept shows the point where the regression line and the y-axis intercept so that when disclosure is zero, beta is .4921. However, the sample data does not include a disclosure score of zero and therefore there is no basis for interpreting the y-intercept.

Figure 2 below records the scatter plot for the data set comprising a grouping of beta and disclosure scores for the 2nd sample of 81 companies drawn from the first 100 companies ranked by disclosure score.

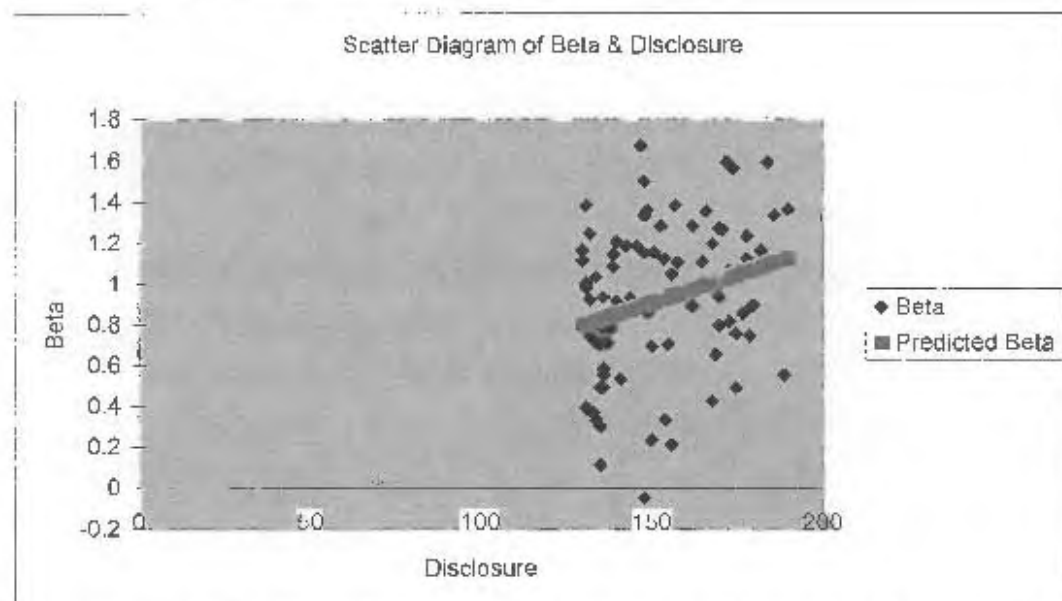


Figure 2: Scatter Plot of Disclosure & Beta for the data set comprising 81 companies

Figure 3 shows that the values of beta are again fairly widely scattered around the mean of (beta) .092 with the disclosure score mean at 152 and a median of 149 generated from disclosure score values ranging between 130 and 190

Data Set 2 @ 95% Confidence Level	Intercept	Disclosure
Coefficient	.0797	.0055
Standard Deviation	.3512	.0029

Table 3: Coefficient Results Based on Top 100 Companies

The y-intercept is stated as .0797 with the slope coefficient at .0055 at a standard deviation of .3512. This infers that for every additional disclosure point beta increases by an average of .0055 points while the y-intercept shows the point where the regression line and the y-axis intercept so that when disclosure is zero, beta is .0797.

Figure 3 shows the scatter plot for the data set comprising a grouping of beta and disclosure scores for the third sample of 55 companies drawn from the top 25, middle 25 and bottom 25 companies comprising the total population of 326 companies.

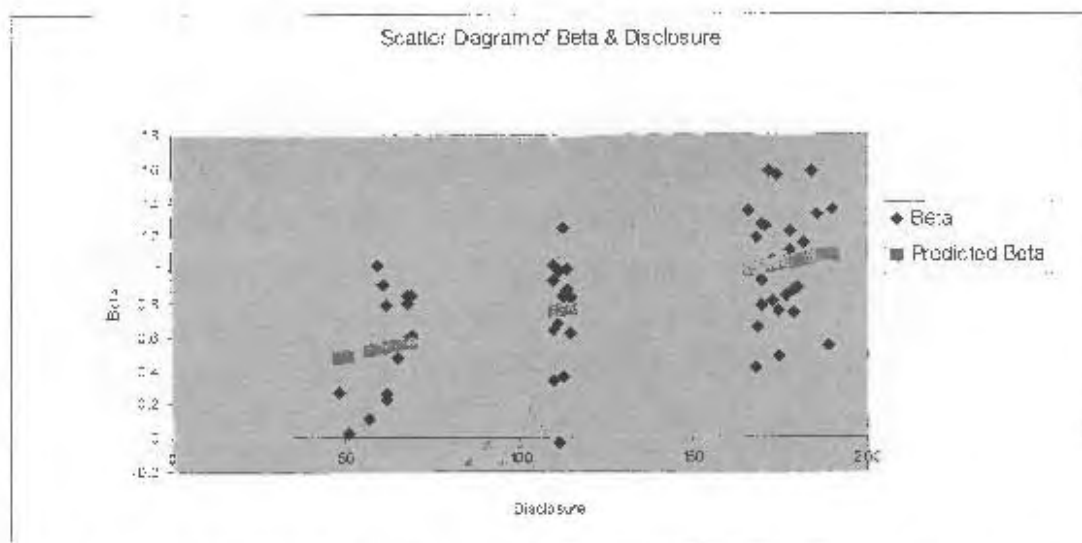


Figure 3: Scatter Plot of Disclosure & Beta for the data set comprising 81 companies

The above data set was computed to look for relationships between disclosure and beta with a greater variation in the disclosure score and the

related company betas. The scatter-plot clearly shows the data clusters at the various breaks. The beta mean for this sample was calculated at .82 with the disclosure score mean at 128 with the disclosure median of 115 generated from disclosure score values ranging between 142 and 190.

Data Set 3 @ 95% Confidence Level	Intercept	Disclosure
Coefficient	.2681	.0043
Standard Deviation	.1255	.0009

Table 4: Coefficient Results Based on Top 25, Middle 25 & Last rated Companies

The y-intercept is stated as .2681 with the slope coefficient at .0043 at a standard deviation of .1255. This infers that for every additional disclosure point beta increases by an average of .0043 points while the y-intercept shows the point where the regression line and the y-axis intercept so that when disclosure is zero, beta is .1255.

A summary of the critical observations from the respective regression and correlation analysis is presented in Table 5 below:

Data tested @ 95% Confidence Level	Data Set 1	Data Set 2	Data Set 3
Number of Observations	47	81	55
Coefficient of Correlation	.0997	.2620	.5466
Standard Error of Estimate	.3963	.3624	.3224
Coefficient of Determination	.99%	6.8%	29.9%

Table 5: Summary Output Results

The regression statistics included outcomes for the coefficient of correlation shown as .0997, .2620 and .5466 for the respective data sets with the corresponding coefficient of determination determined at .99%, 6.8% and 29.9% respectively.

While the least squares method is known to produce the best straight line there may not be a linear relationship between the data points. In terms of the statistical results that were produced the standard error of estimate was

recorded as .3963, .3624 and .3224. These are fairly significant when comparing it to the mean of the dependent variable, beta, of 1.00.

The coefficient of correlation, r , indicates that the least squares line has an upward slope suggesting that small values of beta tend to go with small values of disclosure and that large values of beta tend to go with large values of disclosure. Stated differently, for the first sample the coefficient of correlation suggests that .0997 of the variation in beta is explained by the variation in disclosure ratings. With r stated close to zero, even though the beta points on the scatter plot are not too widely spread from its mean, there appears to be a very weak linear relationship between the variables comprising this data subset.

With the coefficient of correlation, r , calculated as .262 for the second sample, it indicates that .262 of the variation in beta is explained by the variation in disclosure ratings. Even though r is still stated very near to zero, although the beta points on the scatter plot are not too widely spread from its mean, there also appears to be a very weak relationship between the variables yet the relationship is stronger than for the previous data set tested. While the coefficient of correlation, r , is calculated as .546 for the third sample the degree of correlation is still suggestive of a weak positive relationship between the disclosure and beta variables comprising this data subset but stronger than for the regressions run on the previously presented data sets.

The EXCEL software package used to perform the regression and correlation analysis did not provide a functionality to perform a test for autocorrelation of the time-series regression. Accordingly no such tests were performed. However, this problem was overcome by observing whether or not the residuals could be considered to be independent. According to Horingham, Foster, Datar & Uliana (1999:384) the problem of autocorrelation "arises when the residuals are not independent". The scatter plots that were derived from the regression analysis would suggest that the data was free of serial correlations.

4.2 STATISTICAL CORRELATIONS

The hypothesis that is tested in this study regresses the company beta on the respective company disclosure scores, that is;

Beta = $\beta_0 + \beta_1(\text{Disclosure}) + \epsilon$, with the statistically relevant summary of results presented in table 6 below.

Sample 1 – Top 50 Ranked	Intercept	Disclosure
Coefficient	.4921	.0031
t-statistic	.6478	.6727
p-value	.5203	.5045
Adj. R ²	-1.2%	
Prob.> F	0.4526	
Sample 2 – Top 100 Ranked	Intercept	Disclosure
Coefficient	.0797	.0055
t-statistic	.2270	2.4131
p-value	.8210	.0181
Adj. R ²	5.6%	
Prob.> F	5.823	
Sample 3 – Top 25, Middle 25 & Last 25	Intercept	Disclosure
Coefficient	.2681	.0044
t-statistic	2.1357	4.7548
p-value	.0373	1.5637
Adj. R ²	28.57%	
Prob.> F	22.61	

Table 6: Regression Results @ 95% Confidence Level

CHAPTER 5

RESEARCH FINDINGS

5.1 PRESENTATION AND DISCUSSION OF THE FINDINGS

The previous chapter presents the key findings that were obtained through the research method. The purpose of the research method was to obtain base data and to manipulate it in order to test the null hypothesis that there is no relationship between the level of the company's disclosure and the company associated beta coefficient.

This chapter will present a discussion on:

- The data that was used to test the research hypothesis.
- The findings of the hypothesis testing.
- The research constraints.
- The significance of the findings (from a business and future academic research point of view)

5.1.1 The data needed to test the research hypothesis

The data required to test the research hypothesis consisted of a set of disclosure and beta measures for a number of publicly listed JSE companies. The total sample population was comprised of 326 companies with the research samples split into three groupings. A simple linear regression correlation analysis was performed on each of these groupings to test for statistically significant relationships between the respective company disclosure measures and their betas. It was important to decide on whether or not to develop a disclosure measure specifically for this study or to instead obtain existing disclosure measures that would conform to academically acceptable standards. Also, a decision had to be made around whether or not beta would serve as a suitable and acceptable surrogate for the cost of capital.

Therefore, the issues that were fundamental to the research study in terms of the data sample used were that:

- Information had to be obtained from credible sources,
- The relevant sources of information provided appropriate data for the study,
- The disclosure questionnaire was universal and would apply equally to all the respondents, taking into account sector relevant disclosure practices,
- The disclosure practice of the participating firms extended beyond their normal statutory disclosure obligations,
- The basis of calculating beta was the same for all respondents,
- The respondents were JSE publicly listed companies.

It was apparent from the literature study that the vast majority of those researchers who support the notion of an association between disclosure and cost of capital had referenced data relating to firms listed on the NYSE. Besides Maguire (1997), Scott and Everingham (2001) also deal with the informational effects of JSE listed companies. The total research sample covers a wide and varied spectrum of JSE listed companies and excludes companies listed in the mining and financial sectors. Accordingly, there was no specific distinction made around the choice of sectors in this research review and it was felt that this would not detract from the results of the study.

It is clear that the disclosure questionnaire (annexure 1) was aimed at encouraging respondents to divulge information beyond that which was required in terms of the statutory disclosure requirement. The questionnaire is aligned to promoting disclosure practices along the reporting and disclosure recommendations contained in the King Report. This research therefore did not follow Botosan's (1997) approach to the questionnaire design. She supports her research with a questionnaire that she developed herself.

As the King Reports strives to close the gap between the reporting practices of JSE listed companies and international reporting standards and norms, the questionnaire used in this report is regarded as being valid and acceptable. It

is felt that it compares favourably with the questionnaires compiled by Botosan (1997) and the Ernst & Young questionnaire used in the Scott & Everingham (2001) studies. The questionnaires all cover and measure financial and non-financial information beyond that required by generally accepted accounting reporting standards. It may be argued that the disclosure practices and consequent reporting standards of JSE listed companies are not nearly as comprehensive and transparent as their NYSE listed counterparts. However, it is acknowledged that this may be due to different yet unique characteristics of these two markets and that JSE listed firm behaviour is shaped by a very different incentive to disclose information beyond that which is publicly available. The impact of investor following and influence on market participants in the JSE and the NYSE also differ markedly. Consequently the data suggests that the effect of beta on the fortunes of companies listed on the JSE is less severe than for NYSE listed firms.

The reason for excluding companies from the research sample was largely attributable to the betas of these companies not being available. An observation from this research is that the companies who scored high on disclosure did not necessarily have a lower market beta and that high beta companies did not necessarily record lower disclosure scores. It was further observed that a number of firms that reflected moderate to low risk beta's in 1997, with reasonable disclosure score results, had at the time of the study either delisted or been liquidated.

An important issue in evaluating the research hypothesis and the corresponding test results is the validity of the cost of capital variable used in the regression analysis. Botosan (1997), the only international researcher to have investigated the direct relationship between disclosure and cost of capital, developed her own cost of capital variable. This study and the other South African research by Scott & Everingham (2001) draw the beta variable from the same source and use very similar approaches to processing the data. The result is that the work in this paper is considered to be both comparable and complimentary to both the international and local research

efforts, especially the local studies covering JSE listed companies albeit that this study uses a different sample set.

Clearly the time-series regression approach does have some significant implicit assumptions for the respective studies with both the Botosan (1997) and Scott & Everingham (2001) research having observed the relationship between the research variables over a 3-year period in contrast to the single period, 3-sample approach of this research paper. A review of the regression coefficients of the research sub-sample datasets indicate that as the data became more varied the value of R^2 improved, while the line-fit generally indicated reasonable linear regressions and fair random sample residual errors.

In summary, despite the variations in determining the cost of capital variable and the assumptions implicit in the time series methodology between the respective studies, the results of this research as reflected by the correlation coefficients of the various tests appeared reasonable within the context of this research study. It is therefore suggested that the method adopted to obtain the information required for testing the null hypothesis of no relationship between disclosure and cost of capital has proved successful.

5.1.2 Testing the hypothesis

By using different data subsets of beta and disclosure scores, the tests for determining the linear relationship between these variables were viewed from three perspectives. This was done to try and determine the effect that the different data-groupings would have on the research hypothesis that there is no relationship between disclosure and beta. It further served to illustrate the point that the inherent differences in the respective data-groupings would not materially affect the direction of the relationship between the research variables but that the composition of the various datasets would show up in the differences in the strength of the linear relationship between disclosure and beta despite the groupings being taken from the same data populations.

In the first set of hypothesis tests per appendix 2, referred to as data sub-set 1 and comprising a sample of 47 respondents, the scatter plot of figure 2 intuitively suggests very little correlation. The data points appear to be clustered in the range of around .6 to 1.2 with a few scattered outliers. The coefficient of correlation recorded at .0997 is not significant at the 95% confidence level. The value of the t-stat at 0.6727, the p-value of 0.5045 as well as R^2 at .99% do not support any relationship between disclosure and beta at the 95% confidence level. The coefficient of determination at this level suggests that round about 1% of the variation in beta is explained by the variation in disclosure with the remaining 99% being unexplained. This result was somehow expected as the disclosure scores between the top 50% of this sample sub-set recorded a variation of only some 11% in disclosure score, while the associated company betas were fairly wide spread ranging from a low of .42 to a high of 1.59. It was already evident at this stage that companies that scored well on the disclosure questionnaire did not necessarily have a beta that was significantly different from the market beta. The results of this test therefore clearly provided very little conclusive evidence of a significant relationship between disclosure and beta.

In the second set of hypothesis tests (appendix 3), referred to as data sub-set 2 and comprising a sample of 81 respondents, the scatter plot of figure 3 intuitively suggests a slightly better correlation than the previous test. While the data points also appear to be clustered in the range of around .6 to 1.2 fewer scattered outliers than in the first grouping were observed. The coefficient of correlation recorded at .2620 still suggests a very weak positive relationship between the research variables. but at a slightly stronger level than in the previous test. The value of the t-stat at 2.41 with a p-value of 0.018 as well as R^2 at 6.8% further supports the weak positive linear relationship with the coefficient of determination at this level suggesting that 6.8% of the variation in beta is explained by the variation in disclosure with the remaining 93.2% being unexplained. The results of this test produced evidence of an improving positive linear relationship that is significant at the 95% level of confidence as indicated by a t-stat of 2.41 and a p-value of 0.018.

The testing of the hypothesis on a third grouping of companies, comprising a sample of 55 companies as per appendix 4, produced the scatter plot of figure 3. This intuitively suggests a more definite association in the direction of the correlation between disclosure and beta than what was the case in the previous tests. As anticipated the data points are clustered around the various data breaks with fewer scattered outliers. The positive linear relationship between disclosure and beta seems more apparent and is intuitively confirmed by the scatter plot. The relevant regression statistics reflect this relationship with the coefficient of correlation recorded at .5468, manifesting the strongest positive association of this data sub-set. The coefficient of determination at .2990 further supports this suggesting that some 29% of the variation in beta is explained by the variation in disclosure. This attempt at testing the relationship between the beta and disclosure yielded a more positive statistically significant result at the 95% confidence level as reflected by the t-stat at 4.75 and a p-value of 1.563.

Clearly the results of this statistical testing do not provide conclusive evidence of a causal relationship between disclosure and cost of capital albeit that the results of the regression and correlation analysis point to a positive association between the test variables. However, this result appears to contradict the theoretical notion that enhanced disclosure reduces the cost of capital assuming that the associate estimation risk is reduced through this exchange of information. The test results therefore intuitively suggest that companies who do not trade-off disclosure and beta are not penalised by the market in terms of their equity beta. This result is not to be interpreted as suggesting that a disclosure/beta relationship is consciously managed in the firms that comprised the study sample. What this research however served to highlight is that in a South African context there is little evidence of such a generalised relationship. An informal observation of the research data appears to suggest evidence of a more definite trade-off relationship between companies with a high value market capitalisation, their recorded disclosure scores and their associate market beta. It is suggested that the uniqueness of this relationship would seem to be shaped by market liquidity issues that are

peculiar to the JSE and that such conjecture is considered to be beyond the scope of this research.

The findings of this paper do not correspond with the findings of the Botosan (1997) study that suggests an inverse relationship between disclosure and the cost of capital, although her research indicated this to be so for firms with a low analyst following. It is acknowledged that the results of her research are perhaps theoretically more appealing in the sense that it supports the idea that enhanced disclosure benefits all market participants in assessing the future trading performance of the firm.

The South African research by Scott & Everingham (2001) tends to be generally supportive of the findings that enhanced disclosure reduces the cost of capital. While the research in this paper is indicative of a weak positive correlation, it does not support the null hypothesis of no relationship between a firm's level of disclosure and its cost of capital.

5.1.3 Significance of the research findings

The issue that now needs to be addressed is the importance of the above findings. This section reviews the significance of these findings, firstly in terms of academic importance and then its relevance in terms of business impacts.

Academic Significance

The findings of this research confirm in some respects the findings of earlier international and local research that there is a relationship between disclosure and cost of capital. On comparing the results of this research to earlier empirical findings there appears to be both contradictions and confirmations. As far as the direction of the correlation test results are concerned the findings of this research is suggestive of a positive correlation while the earlier research found a negative relationship between the research variables. This research study was therefore unable to corroborate the evidence of a trade-off relationship between the research variables and instead the results provide evidence of a positive statistically significant, relationship between disclosure

and the cost of capital in respect of the data-subsets for $n = 81$ and $n = 55$ at the 95% confidence level with t-stats of 2.41 and 4.75 respectively.

This research compliments the local research by Scott & Everingham (2001) over a different time period (a single as opposed to a multiple period of assessment), it uses a differently constructed disclosure measure while it also uses beta as a surrogate for the cost of capital variable and uses a similar research method to test the association between the research variables. Although the research questionnaires were both aimed at achieving the same purpose, that is ranking participants on the quality of disclosure, it is clear that questionnaire specific focus areas and other unique characteristics (such as score allocation) resulted in the firm samples taking on very different characteristics. It may well therefore be that a firm could have participated in both studies at the same time and be ranked very differently.

An important contradiction between the empirical findings of this research and those of the international research is that Botosan (1997) found that greater disclosure is associated with a lower cost of capital for firms with a low analyst following. Further, it also found that for firms with a high analyst following there was no evidence to suggest that there is an association between the research disclosure measure and cost of capital. An important, yet unqualified, distinction between this research and the international findings is the influence of analyst following on the results, as this study did not test for analyst following. Further, the test result of this research indicated a positive association between disclosure and cost of capital.

Much along the lines of the international and local research this study also limited the disclosure measure to an evaluation of the annual report. It is therefore debateable whether or not the construct of the disclosure measure in this manner is a strong enough proxy for disclosure. Clearly the extent of investor interest was material in defining the research parameters and the resultant outcomes of the international research. Accordingly, the role that analysts play in the context of disclosure generally and in shaping the market forces that drive stock prices and the related cost of equity issues of NYSE

listed firms is considered significant. It is submitted that the unique and very different South African market characteristics at the time that the research disclosure measures were determined and that corporate governance issues were receiving closer public and investor scrutiny needs to be acknowledged. The relatively tight share trading conditions of smaller and lesser known JSE listed companies in the research sample at the time that the disclosure scores were compiled are issues that could have affected the results of this research. This intuitively suggests that firms who may have scored high on the disclosure index are those that were more prominent in the minds of investors resulting in those firm's recording the respective associate more market related beta's.

Business Significance

In terms of the data used in this research a number of observations flow that might be of significance to the business community:

- Investor perception of risk is shaped by the extent of information that is available on the firm's future trading performance. Accordingly, the quality and timing of such informational transfers plays an important role in the investment decision.
- A company's incentive to disclose information beyond that which is required by statute becomes almost self-serving. If the aforementioned is true then financial managers may very likely have the ability to shape investor perceptions of the company systematic risk profile. However, it is expected that the market would recognise and reward transparent reporting practices and adjust equity prices accordingly.
- As a general observation, companies do not appear to have yet embraced the recommendations of the King I & II Reports as far as disclosure is concerned. It might however be too soon after the publication of these reports to have seen the impact of these recommendations on the level of voluntary financial and non-financial reporting. It would appear that the disclosure practices of JSE listed companies seem to be rather motivated by the need to comply with JSE listing requirements.

- It is expected that as South African companies continue to expand trade in a global context that this would encourage more informative corporate disclosure practices.

5.1.4 Research constraints

Besides the research hypothesis and the research method, there are other factors that limited the research. The following are some of the issues that were identified as being constraining:

- a) The research sample was restricted to JSE listed companies. This affected the study in the following ways:
 - The number of JSE listed companies is considerably fewer than those listed on the NYSE that had been the basis of the international research.
 - The nature of the JSE and NYSE stock market and the varying influences driving investor decisions on these exchanges are innately very different. This makes comparisons between the results of local research and international research quite onerous.
- b) In terms of the research method used the following constraints were identified:
 - A test for autocorrelation of the time-series regression was not done. An examination of the respective scatter plots indicated that there are no significant serial correlation problems in the residuals.
 - The research analysis is limited to a simple linear and correlation analysis
 - The respective company betas are time specific, recorded up to the fourth quarter of 1997. This disregards the fact that beta changes over time although it is considered unlikely that any changes would have been material. Accordingly, it is debateable

whether or not beta could be regarded as a suitably qualified proxy for the cost of capital variable.

- The disclosure measure is constructed mainly from aspects of disclosure that goes beyond the statutory disclosure requirement. As such the disclosure scores captured reporting issues that were essentially of a voluntary nature. This intuitively suggests that the disclosure index relied heavily on the prominence that respondents gave to corporate governance issues.

c) The research was conducted over a single time period. This restriction hints at a point in time analysis disregarding perhaps the political and socio-economic transition in South Africa at the time. The effect of a growing awareness and ultimate acceptance of corporate governance advocacy, such as the widely acknowledged King Reports and its recommendations, among JSE listed companies could have affected the research results.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The aim of this research was to explore whether or not companies have the potential to positively influence the value of their shares by voluntarily enhancing the disclosure of investor relevant information. To address this view, this research tested the null hypothesis that there is no relationship between a firm's level of disclosure and its cost of capital. It was expected that there would be a semblance of a trade-off relationship between the research variables. This notion was based on the premise that an informed investor would in theory scale down the required rate of return as the level of uncertainty associated with the firm's present and future trading performance reduced. It was further anticipated that management would for strategic reasons, voluntarily adopt transparent disclosure practices and that they would thereby attempt to manage and influence investor perception of the company's overall systematic risk.

The literature review undertaken as part of this study suggested that firms would actively pursue these ideals and that this would result in a negative relationship between disclosure and the cost of capital. Accordingly, it was expected that companies who followed a more liberal and informative disclosure approach would benefit through a lower cost of equity capital.

In order to test this hypothesis, a study of a selected cross-sectoral spread of South African companies listed on the JSE was undertaken. The study method that was adopted complimented that of earlier local and international research. The research in this paper adopted a similar approach to that which was followed by the South African researchers Scott & Everingham (2001) who used the respective company betas as a surrogate for the cost of capital.

The research variables were then grouped into 3 broad data categories and used in a simple linear regression and correlation analysis to test the research hypothesis. The results of the regression analysis were not suggestive of a statistically significant relationship between the research variables but as the datasets became more varied, a positive relationship began to manifest itself. This result was contrary to the expectation that improved disclosure should in theory reduce the cost of capital and that this relationship would reflect a negative sloping regression line as opposed to the upward sloping line that was produced in the analysis section of this report.

6.2 Key findings

The findings of this research reflected that at the 95% confidence level there was no relationship between disclosure and cost of equity in respect of the data sub-set for $n = 47$ yet with $n = 55$ and $n = 81$ respectively a more significant positive relationship was observed. This result is contrary to the theoretical notion of a negative relationship between improved disclosure and cost of capital assuming that the associated investor risk is reduced through this exchange of information. It would seem to follow from this that in a South African context company management are unable to influence the cost of capital by improving disclosure practice. These results suggested that, in general, most JSE listed companies who do not trade-off their disclosure practices against their cost of equity are not penalised by the market in terms of their equity beta. What was evident is that those companies who have chosen to follow enhanced and informative disclosure practices do so on a consistent basis as was illustrated by the ranking of these companies over consecutive reporting periods.

It is anticipated that as the recommendations contained in the King I & II Reports gain in prominence among the business community and the gap between local and international disclosure practices close that the level of information asymmetry between companies and the investor community will diminish. It is not clear whether or not this would lead to a more meaningful relationship being established between disclosure and the cost of equity

systematic risk. As such, this research has identified other interesting future areas of related research.

6.3 Potential future research

This research has raised a number of interesting questions and options for future research.

- Much of this study's relevance hinges on the assumption that beta, within the context of the CAPM model, is being used as a surrogate for the cost of capital. It would therefore be useful to replicate this study using a beta database for companies other than from the JSE, particularly one where the stock market is exposed to greater international capital flows. Accordingly it would be interesting to research the trade-off relationship between disclosure and cost of capital using a high and low beta scenario.
- With the South African economy being more exposed now to internationalisation and global money market issues than during the period covered in this research it would be interesting to reproduce this study in about five years time. Accordingly, it is submitted that the economic reality for corporate South African would have changed over this time.
- It would be interesting to adapt the research methodology to the approach used by Botosan (1997) and to gauge the impact that analyst following has on the relationship between the research variables in a South African context in about five to seven years time.
- It would be interesting to follow-on the approach used by Scott and Everingham (2001) and to extend the time series regression analysis over a period of say five to seven years and to observe the trend over the extended period.

- It may be useful to apply the research methodology in this paper to an investigation of the research variables against sector specific comparisons instead of the cross-sectional approach.

- It may be valuable to test the level and quality of corporate disclosure subsequent to the bedding down of the King Report recommendations in about 3 to 5 years from the 2002 publishing of the King II Report and to regress the associated company disclosure scores against the corresponding period betas.

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APPENDIX 1

FINANCIAL MAIL' ANNUAL ACCOUNTS AWARDS - QUESTIONNAIRE

The Bureau of Financial Analysis of the University of Pretoria scored the reports and used the marking system which follows.

UNIVERSITY OF PRETORIA MAY BE CONTACTED AT:
TEL (012) 420-3371 FAX (012) 362-5299

NOTE : A CODE 9 implies not applicable - maximum marks awarded for each item is shown in brackets

1. BOARD OF DIRECTORS (4 MARKS) *one mark will be awarded per item mentioned below

with a maximum of 4 marks

Only names disclosed: no marks, Companies Act requirement - 0

Date of birth or age - 1

Qualifications or experience - 1

Other major directorships - 1

Position in the company or executive duties - 1

Date of appointment or term of contract - 1

Photographs - 1

2. TOP MANAGEMENT (4 marks)

See rules applicable for board of directors (Item 1) - 4

Name of management consulting firm - 4

Not applicable, statement that directors represent top management - 4

3. SHAREHOLDING OF BOARD OF DIRECTORS AND TOP MANAGEMENT (5 marks)

Combined percentage direct and indirect holdings of directors shown (Companies Act requirement) - 0

Names of directors and individual shareholding shown - 2

Name and shareholding of individual non-director, or top executives shown - 2

Previous year's shareholding of each director also shown - 1

Statement that a register or list of interests of directors and top management in shares of the company is available on request to :

members - 2

the public - 3

Statement that board of directors and top management do not hold shares in the company - not applicable - 9

4. DISTRIBUTION OF SHAREHOLDINGS (5 marks)

No mention made - 0

Distribution according to size of shareholding - 2

Distribution according to type of shareholder - 3

Only major shareholders listed : 2 or 3 largest shareholders or shareholders holding more than 5% - 3

Analysis of size and type of shareholding - 5

5. CONTENTS OF DIRECTORS' AND CHAIRMAN'S REPORT (11 marks)

Activities (4 marks)

Minimum Companies Act requirements - activities stated - 0

General discussion of activities - 1

Detailed information on activities - 4

Reasons for changes in results (5 marks)

Discussed in general - 0

Changes in profits or performance mentioned - 3

Reasons for changes in profits or performance discussed in detail - 5

Statement of Corporate goals or mission statement (2 marks)

No indication - 0

Company profile or mission statement disclosed - 2

6. LONG-TERM CORPORATE PLANNING (6 marks)

Financial objectives, targets or strategic plans :

No mention made - 0

Discussed in general - 2 Fully discussed disclosing quantitative details for :

The budgeted income or expense amount; and - 2

The budgeted capital expenditure amount or budgeted capital expense analysed by period - 2

7. DIVIDEND POLICY (4 marks)

No mention made - 0

Yes : an indication of % increase or decrease or actual targets, % or cents per share - 4

8. PERIOD BETWEEN FINANCIAL YEAR-END AND DATE OF PUBLICATION (4 marks)

Four months or later or undated - 0
Three months - 2
Two months - 4

9. TABLE OF STATISTICS (4 marks)

No table published - 0
Table for less than five years if the company has been in operation for more than four years - 2
Five years, or for total period in operation or reasons given for shorter period - 3
Six years and more - 4
Not applicable, i.e. new company - 9

10. CONTENTS OF TABLE (15 marks)

Turnover (1)

No - 0
Yes - 1
Not applicable, investment company - 9

Number of shares issued (1)

No - 0
Yes - 1

Net asset value per share (2)

No - 0
Yes - 2

Ratios (8)

No ratios - 0

Profitability ratios :

Return on equity - 1

Return on assets - 1

Net asset value / market capitalisation - 1

Operating profit margin - 1

Liquidity ratios e.g. acid-test ratio - 1

Solvability ratios - 1

Productivity ratios :

Turnover per employee - 1

Assets per employee - 1

Definitions of accounting financial ratios (1)

No definitions - 0

Ratios defined - 1

Number of employees (2)

Not disclosed - 0

For present year only - 1

Shown in table or elsewhere in the report for more than one year - 2

11. STOCK EXCHANGE PERFORMANCE (9 marks)

Closing price at year end - 1

The total number of transactions recorded on the JSE - 1

The total number of shares traded - 1

The total value of shares traded - 1

The average price or lowest and highest price per share - 1

The total volume of shares traded expressed as a percentage of the total issued shares - 1

Actuaries Index for industrial sector - 2

PE ratio - 1

Dividend yield - 1

12. COMPOSITION OF AUDIT COMMITTEE (4 marks)

Names not disclosed - 0

Names of members of audit committee disclosed - 4

13. ACTIVITIES OF SUBSIDIARIES (4 marks)

Subsidiaries listed, but no activities shown 0

Activities of only main subsidiaries shown 2

Activities of all subsidiaries shown 4

Not applicable : no subsidiaries 9

14. PROMOTION OF PRODUCTS OR SERVICES (2 marks)

No mention of products or services made - 0

Yes : brand names, photographs of products, etc - 2

Not applicable - 9

15. VALUATION OF FIXED PROPERTY AND IMPROVEMENTS (6 marks)

No valuation mentioned - 0

Valuation mentioned but no indication of when it was revalued - 1

Additional information such as insured value, municipal valuation or directors valuation supplied but no date given - 3

Valuation of a portion of fixed property mentioned plus 2 marks if additional information is provided - 3

Valuation of all property but valuation 6 to 10 years old plus 1 mark for additional information (4+1) - 5

Valuation of all property during last 5 years - 6

Not applicable, no fixed property - 9

16. VALUATION OF OTHER ASSETS EXCLUDING FIXED PROPERTY (4 marks)

Disclosed at cost - 0

Insured value, replacement value or fair value - 4

Not applicable, no other assets - 9

17. LIST OF FIXED PROPERTIES (2 marks)

No list published or only open for inspection by authorised persons or members - 0

A complete list is published in the report or the report states that a copy of the list will be posted on request to any member of the public - 2

Not applicable - 9

18. SEGMENTAL REPORTING ED 122 (7 marks)

Divisional contributions of various activities are matched with :

Profits : operating profit (% or actual figure) - 1

Turnover : ratio form or % contribution or actual figures - 3

Assets : as a ratio or % contribution or actual figures - 2

Geographical contribution or other information on various activities - 1

Not applicable : only one activity - 9

19. ILLUSTRATIONS AND COLOUR (1 mark)

No - 0

Yes - 1

20. PRESENTATION OF RESULTS IN THE FORM OF GRAPHS OR DIAGRAMS (2 marks)

No - 0

Yes : 3 or fewer items covered - 1

Yes : 4 or more items covered - 2

21. HIGHLIGHTS PRESENTED IN THE REPORT (1 mark)

No - 0

Yes - 1

22. SHAREHOLDERS' / LENDERS' DIARY (1 mark)

No - 0

Yes - 1

23. GROUP STRUCTURE - IE PRESENTED DIAGRAMATICALLY (4 marks)

No group structure - 0

Yes : in general i.e. only names of companies - 1
Yes : an additional point for each of the following : management team - 1

Products or activities - 1

Geographical location - 1

Percentage shareholding of controlling companies - 1

Not applicable, no subsidiaries - 9

24. VALUE ADDED STATEMENT OR STATEMENT OF WEALTH CREATED (6 marks)

No statement given - 0

Yes - for present year only :

percentages only - 3

actual figures - 4

Yes - for more than one year :

percentages only - 5

actual figures - 6

Not applicable : finance company - 9

25. INFLATION REPORTING AND CURRENT COST STATEMENT (5 marks)

No mention made - 0

Statement in accounting policy giving reason given why company does not wish to incorporate inflation accounting - 2

Mention made of inflation policy or impact of inflation on financial position (ED 77) - 3

Statement in the form of Guideline AC 201 of SAICA - 5

Statement in any other form such as a current cost statements - 5

Statement in accounting policy giving reason given why company does not wish to incorporate inflation accounting - 2

Mention made of inflation policy or impact of inflation on financial position (ED 77) - 3

Statement in the form of Guideline AC 201 of SAICA - 5

Statement in any other form such as a current cost statements - 5

26. EMPLOYMENT REPORT (6 marks)

No employment report - 0

One mark will be awarded per item mentioned below with a maximum of 6 marks

Employment Report includes :

Number of employees divided into occupational categories - 1

Total wage bill divided into occupational categories - 1

Labour turnover rates, the average number of years the staff have been with the organisation, the number of staff members with say 5 or more years of service, or proposed redundancy provisions - 1
Training facilities provided for training of own employees, such as number of employees trained, cost of training programmes as claimed for taxation purposes and a brief comment about progress made and future developments - 1

Housing facilities provided for employees or the provision of subsidised housing loans to staff members - 1

Any other fringe benefits provided, such as medical aid schemes, feeding schemes, sports and recreation facilities provided, after service benefits, provision or bursaries to children of employees, safety measures etc - 1

27. ENVIRONMENTAL REPORTING (6 marks)

No mention made - 0

Mention made in : - 1

Mission / policy statement

Objective / goals statement

Chairman's / director's report

Elsewhere in the report

Informational disclosure :

Narrative - 2

Quantitative, disclosing operating and capital expenditure - 3

28. STATEMENT ON RESEARCH AND DEVELOPMENT PROJECTS (AC 122) (3 marks)

No Statement - 0

Expense item shown in the Income Statement or capitalised - 1

Detailed discussion of amount spent during the year, budgeted expense and description of projects embarked upon - 2

Not applicable : no mention made in report (assumed to be not applicable) - 9

29. TAXATION (4 marks)

No mention made - 0

Use of tax concessions - 1

Calculation and amount of deferred tax - 1

A taxation reconciliation statement - 4

Not applicable, mention made that no adjustments were necessary or normal company tax paid or loss made - 9

30. MONEY EXCHANGES WITH GOVERNMENT (4 marks)

Statement stipulating :

PAYE - 1

VAT - 1

company tax - 1

rates and similar levies - 1

licences - 1 other : social security, registration fees, UIF and workman's compensation - 1

receipts from Government grants or subsidies - 1

31. CORPORATE GOVERNANCE (9 marks)

No mention made - 0

Comment on compliance with the King report - 2

Detailed disclosure on :

external and internal audit committee - 1

remuneration committee - 1

statement that chairman is not the chief executive - 1

list of code of ethics - 1

disclosure of names of non-executive directors (at least two) - 1

directors emoluments differentiating between executive and non-executive :
in total - 1

details, e.g. salaries and other benefits - 1

internal control policy - 1

affirmative action policy - 1

management reporting - 1

32. OPERATING AND FINANCIAL REVIEW (8 marks)

Discussion of capital structure of the business, in terms of maturity profile of debt, types of capital instruments used and currency and interest rate structure - 2

Discussion of the strengths and resources of the business whose value is not, or is only partially, reflected in the balance sheet, e.g. brands - 2

Discussion of approach to general risk management issues, such as currency and interest rate risks, and pension fund commitments - 2

Discussion of foreign operations, including nature of business and comment on profitability - 2

33. CASH FLOW STATEMENT (2 MARKS)

Additions and disposals of fixed assets : net amount shown - 0

Additions and disposals shown separately - 2

Not applicable - 9

34. CURRENT LIABILITIES (2 MARKS)

No differentiation - 0

Clear differentiation between interest bearing and non-interest bearing current liabilities - 2

Not applicable - 9

35. ANALYSIS OF OPERATING INCOME (4 MARKS)

No analysis - 0

Detailed analysis setting out :

cost of sales

distribution cost

administrative cost

other operating expense - 4

Not applicable, i.e. holding company 9

36. DEPRECIATION ON INTANGIBLE ASSETS (2 MARKS)

Depreciation not provided, no reason given - 0

Depreciation disclosed or reason given for no provision made - 2

Not applicable - 9

37. COMPLIANCE WITH INTERNATIONAL ACCOUNTING STANDARDS (IAS) (2 MARKS)

No statement - 0

Statement of intention to comply with IAS - 1

Statement that company complies with IAS - 2

38. INTERIM REPORT (total of 18 marks)

Presentation (9 marks)

JSE requirements i.e. turnover, income statement and balance sheet - 0

Summary of cash flow statement - 3

Segmental information :

disclosed - 3

not applicable - 9

Ratios - 3

Comments on results (3 marks)

No comment - 0

Briefly - 1

Detailed review of results - 3

Date of publication (2 marks)

Later than 45 days after half year date - 0

Within 45 days after half year date - 2

Future prospects (4 marks)

No mention made - 0

Expected or budgeted profit figures - 3

Expected final dividend in figures or as a percentage - 1

SCORE

Annual Report - 172

Interim Report - 18

TOTAL SCORE - 190

APPENDIX 2 - COMPANY DISCLOSURE & BETA MEASURES (n = 47)

Company	Disclosure	Beta
1 Alpha	190	1.36
2 Amalgamated Beverages Ind	189	0.55
3 Edgars Stores	186	1.33
4 Seardel Investment Corp	184	1.59
5 South African Breweries	182	1.16
6 Lion Match Company	180	0.89
7 CG Smith Foods	179	0.88
8 Kersaf Investments	179	0.74
9 CG Smith	178	1.23
10 Tiger Oats	178	1.12
11 Distillers Corp (SA)	177	0.85
12 Chemical Services	175	0.75
13 York Timbers Org.	175	0.49
14 Fashion Africa (Moregro)	174	1.56
15 AECI	173	1.06
16 Da Gama Textile Co	173	0.81
17 Ellerine Holdings	172	1.59
18 Ilovo Sugar	171	1.26
19 Cadbury schweppes SA	170	0.79
20 Engen	170	0.93
21 ICS Holdings	170	1.27
22 Adcock Ingram	169	0.65
23 Crookes Brothers	168	0.42
24 McCarthy Retail	168	1.19
25 Barlow	166	1.35
26 Frame Group Holdings	165	1.1
27 Conshu Holdings	162	1.28
28 Iscor	162	0.89
29 Nampak	158	1.1
30 Plate Glass & Shutterprufe	157	1.38
31 Hudaco Industries	156	1.04
32 Oceana Fishing Group	156	0.21
33 Premier Group	156	0.94
34 Sappi	155	0.7
35 Anglo American Ind Corp	154	1.12
36 Haggie	154	0.33
37 Kohler	153	1.28
38 T & N Holdings	151	1.15
39 Langeberg Holdings	150	0.23
40 Sasol	150	0.69
41 Del Monte Royal Holdings	149	0.86
42 Reunert	149	1.36
43 Allied Electronics Corp	148	1.15
44 Griffin Shipping Holdings	148	-0.05
45 Murray & Roberts Holdings	148	1.33
46 Pretoria Portland Cement Co	148	1.5
47 Glodina Holdings	147	1.67

SUMMARY OUTPUT - APPENDIX 2 (n = 47)

Regression Statistics	
Multiple R	0.09979378
R Square	0.009958799
Adjusted R Square	-0.012042117
Standard Error	0.396309905
Observations	47

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.071094507	0.071094507	0.452653825	0.504517852
Residual	45	7.067769323	0.157061541		
Total	46	7.13686383			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.492132704	0.759594094	0.64788906	0.520348834	-1.037768269	2.022033677
Disclosure	0.003081544	0.004580209	0.67279553	0.504517852	-0.00614347	0.012306559

RESIDUAL OUTPUT

Observation	Predicted Y	Residuals
1	1.077626136	0.282373864
2	1.074544592	-0.524544592
3	1.065299959	0.264700041
4	1.05913687	0.53086313
5	1.052973781	0.107026219
6	1.046810692	-0.156810692
7	1.043729148	-0.163729148
8	1.043729148	-0.303729148
9	1.040647603	0.189352397
10	1.040647603	0.079352397
11	1.037566059	-0.187566059
12	1.03140297	-0.28140297
13	1.03140297	-0.54140297
14	1.028321426	0.531678574
15	1.025239882	0.034760118
16	1.025239882	-0.215239882
17	1.022158337	0.567641663
18	1.019076793	0.240923207
19	1.015995248	-0.225995248
20	1.015995248	-0.085995248
21	1.015995248	0.254004752
22	1.012913704	-0.362913704
23	1.00983216	-0.58983216
24	1.00983216	0.18016784
25	1.003669071	0.346330929
26	1.000587527	0.099412473
27	0.991342893	0.286657107
28	0.991342893	-0.101342893
29	0.979016716	0.120983284
30	0.975935171	0.404064829
31	0.972853627	0.067148373
32	0.972853627	-0.762853627
33	0.972853627	-0.032853627
34	0.969772083	-0.269772083
35	0.966690538	0.153309462
36	0.966690538	-0.636690538
37	0.963608994	0.316391006
38	0.957445905	0.192554095
39	0.954364361	-0.724364361
40	0.954364361	-0.264364361
41	0.951282816	-0.091282816
42	0.951282816	0.408717184
43	0.948201272	0.201798728
44	0.948201272	-0.998201272
45	0.948201272	0.381798728
46	0.948201272	0.551798728
47	0.945119728	0.724880272

APPENDIX 3 - COMPANY DISCLOSURE AND BETA MEASURES - DECEMBER 1997 (n = 81)

Company	Disclosure	Beta
1 Alpha	190	1.36
2 Amalgamated Beverages Ind	189	0.55
3 Edgars Stores	186	1.33
4 Seardel Investment Corp	184	1.59
5 South African Breweries	182	1.16
6 Lion Match Company	180	0.89
7 CG Smith Foods	179	0.88
8 Kersaf Investments	179	0.74
9 CG Smith	178	1.23
10 Tiger Oats	178	1.12
11 Distillers Corp (SA)	177	0.85
12 Chemical Services	175	0.75
13 York Timbers Org.	175	0.49
14 Fashion Africa (Moregro)	174	1.56
15 AECI	173	1.06
16 Da Gama Textile Co	173	0.81
17 Ellerine Holdings	172	1.59
18 Ilovo Sugar	171	1.26
19 Cadbury schweppes SA	170	0.79
20 Engen	170	0.93
21 ICS Holdings	170	1.27
22 Adcock Ingram	169	0.65
23 Crookes Brothers	168	0.42
24 McCarthy Retail	168	1.19
25 Barlow	166	1.35
26 Frame Group Holdings	165	1.1
27 Conshu Holdings	162	1.28
28 Iscor	162	0.89
29 Nampak	158	1.1
30 Plate Glass & Shutterprufe	157	1.38
31 Hudaco Industries	156	1.04
32 Oceana Fishing Group	156	0.21
33 Premier Group	156	0.94
34 Sappi	155	0.7
35 Anglo American Ind Corp	154	1.12
36 Haggie	154	0.33
37 Kohler	153	1.28
38 T & N Holdings	151	1.15
39 Langeberg Holdings	150	0.23
40 Sasol	150	0.69
41 Del Monte Royal Holdings	149	0.86
42 Reunert	149	1.36
43 Allied Electronics Corp	148	1.15
44 Griffin Shipping Holdings	148	-0.05
45 Murray & Roberts Holdings	148	1.33
46 Pretoria Portland Cement Co	148	1.5
47 Glodina Holdings	147	1.67
48 Group Five	146	1.18
49 Kllipton	144	0.93
50 Stocks & Stocks Holdings	143	1.18
51 African Oxygen	141	0.53
52 Foodcorp	140	0.91
53 Voltex Holdings	140	1.2
54 Profum	139	1.14
55 Sabvest	139	1.08
56 Bell Equipment	138	0.78

57 Safmarine & Rennies Holdings	138	0.83
58 Stellenbosch Farmers Winery	138	0.82
59 NEI Africa Holdings	137	0.71
60 Bonnita Holdings	136	0.58
61 Dorbyl	136	0.78
62 Dimension Data Holdings	136	0.49
63 Ninian & Lester Holdings	136	0.55
64 Power Technologies	136	0.93
65 Consul	135	0.7
66 Italtile	135	0.49
67 Putco	135	0.11
68 Sea Harvest Group	135	0.3
69 Leisurenet	134	0.33
70 Ozz	134	1.03
71 South African Druggists	134	0.71
72 Sondor Industries	133	0.37
73 Lenco Holdings	132	0.92
74 Persetel Q Data Holdings	132	0.74
75 Unispin Holdings	132	1.24
76 Coates Brothers SA	131	0.39
77 Hiveld Steel & Vanadium Corp	131	0.98
78 Midas	131	1
79 Stocks Hotels & Resorts	131	1.38
80 Basil Read Holdings	130	1.16
81 Chubb Holdings	130	1.11

SUMMARY OUTPUT - APPENDIX 3 (n = 81)

Regression Statistics	
Multiple R	0.282013054
R Square	0.06885084
Adjusted R Square	0.056881811
Standard Error	0.362442459
Observations	81

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.784959702	0.78496	5.823183	0.018132283
Residual	79	10.37779832	0.131365		
Total	80	11.14275802			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.079715322	0.351246501	0.22695	0.821049	-0.819423941	0.778854585
Disclosure	0.005504686	0.002281142	2.413127	0.018132	0.000964182	0.01004519

RESIDUAL OUTPUT

Observation	Predicted Beta	Residuals
1	1.125605852	0.234394348
2	1.120100967	-0.570100967
3	1.103588909	0.228413091
4	1.092577537	0.497422483
5	1.081588185	0.078431835
6	1.070558793	-0.180558793
7	1.065054107	-0.185054107
8	1.065054107	-0.325054107
9	1.059549421	0.170450579
10	1.059549421	0.060450579
11	1.054044735	-0.204044735
12	1.043035363	-0.293035363
13	1.043035363	-0.553035363
14	1.037530677	0.522469323
15	1.032025991	0.027974009
16	1.032025991	-0.222025991
17	1.028521305	0.563478995
18	1.021016619	0.238983381
19	1.015511933	-0.225511933
20	1.015511933	-0.085511933
21	1.015511933	0.254488067
22	1.010007248	-0.380007248
23	1.004502562	-0.584502562
24	1.004502562	0.185497438
25	0.99349319	0.35850681
26	0.987988504	0.112011496
27	0.971474448	0.308525554
28	0.971474448	-0.081474448
29	0.949455702	0.150544298
30	0.943951018	0.436048984
31	0.93844633	0.10155367
32	0.93844633	-0.72644633
33	0.93844633	0.00155367
34	0.932941644	-0.232941644
35	0.927436958	0.192563042
36	0.927436958	-0.597436958
37	0.921932272	0.358067728
38	0.9109229	0.2390771
39	0.905418214	-0.875418214
40	0.905418214	-0.215418214
41	0.899913529	-0.039913529
42	0.899913529	0.460088471
43	0.894408843	0.255591157
44	0.894408843	-0.944408843
45	0.894408843	0.435591157
46	0.894408843	0.805591157
47	0.888904157	0.781095843
48	0.883399471	0.296600529
49	0.872390099	0.057809901
50	0.866885413	0.313114587

PROBABILITY OUTPUT

Percentile	Beta
0.817284	-0.05
1.851852	0.11
3.08642	0.21
4.320988	0.23
5.555556	0.3
8.790123	0.33
8.024891	0.33
9.259259	0.37
10.49383	0.39
11.7284	0.42
12.98296	0.49
14.19753	0.49
15.4321	0.49
16.66667	0.53
17.90123	0.55
19.1358	0.55
20.37037	0.58
21.60494	0.65
22.83951	0.69
24.07407	0.7
25.30884	0.7
26.54321	0.71
27.77778	0.71
29.01235	0.74
30.24691	0.74
31.48148	0.75
32.71805	0.78
33.95062	0.78
35.18519	0.79
36.41975	0.81
37.65432	0.82
38.88889	0.83
40.12348	0.85
41.35802	0.88
42.59259	0.88
43.82716	0.89
45.06173	0.89
46.2963	0.91
47.53088	0.92
48.76543	0.93
50	0.93
51.23457	0.93
52.46914	0.94
53.7037	0.98
54.93827	1
56.17284	1.03
57.40741	1.04
58.64198	1.06
59.87854	1.08
61.11111	1.1

51	0.855878041	-0.325878041	82.34588	1.1
52	0.850371355	0.059828845	83.58025	1.11
53	0.850371355	0.349828845	84.81481	1.12
54	0.844886889	0.295133331	88.04938	1.12
55	0.844886889	0.235133331	87.28395	1.14
56	0.839381983	-0.059381983	88.51852	1.15
57	0.839381983	-0.009381983	89.75309	1.15
58	0.839381983	-0.019381983	70.98785	1.18
59	0.833857297	-0.123857297	72.22222	1.18
80	0.828352811	-0.248352811	73.45879	1.18
81	0.828352811	-0.048352811	74.89138	1.18
82	0.828352811	-0.338352811	75.92593	1.19
83	0.828352811	-0.278352811	77.18049	1.2
64	0.828352811	0.101647389	78.39506	1.23
85	0.822847925	-0.122847925	79.82983	1.24
88	0.822847925	-0.332847925	80.8642	1.28
87	0.822847925	-0.712847925	82.09877	1.27
88	0.822847925	-0.522847925	83.33333	1.28
69	0.817343239	-0.487343239	64.5879	1.28
70	0.817343239	0.212856761	85.80247	1.33
71	0.817343239	-0.107343239	87.03704	1.33
72	0.811838553	-0.441838553	88.2716	1.35
73	0.808333887	0.113666133	89.50817	1.38
74	0.808333887	-0.066333887	90.74074	1.38
75	0.808333887	0.433666133	91.97531	1.38
78	0.800829181	-0.410829181	93.20988	1.38
77	0.800829181	0.179170819	94.44444	1.5
78	0.800829181	0.199170819	95.87901	1.58
79	0.800829181	0.579170819	96.91358	1.59
80	0.795324495	0.364675505	98.14815	1.59
81	0.795324495	0.314875505	99.38272	1.87

APPENDIX 4 - COMPANY DISCLOSURE AND BETA MEASURES - DECEMBER 1997 (n = 55)

Company	Disclosure	Beta
1 Alpha	190	1.36
2 Amalgamated Beverages Ind	189	0.55
3 Edgars Stores	186	1.33
4 Seardel Investment Corp	184	1.59
5 South African Breweries	182	1.16
6 Lion Match Company	180	0.89
7 CG Smith Foods	179	0.88
8 Kersaf Investments	179	0.74
9 CG Smith	178	1.23
10 Tiger Oats	178	1.12
11 Distillers Corp (SA)	177	0.85
12 Chemical Services	175	0.75
13 York Timbers Org.	175	0.49
14 Fashion Africa (Moregro)	174	1.56
15 AECI	173	1.06
16 Da Gama Textile Co	173	0.81
17 Ellerine Holdings	172	1.59
18 Ilovo Sugar	171	1.26
19 Cadbury schweppes SA	170	0.79
20 Engen	170	0.93
21 ICS Holdings	170	1.27
22 Adcock Ingram	169	0.65
23 Crookes Brothers	168	0.42
24 McCarthy Retail	168	1.19
25 Barlow	166	1.35
26 Fralex	115	0.83
27 Lonrho PLC	115	0.62
28 Primedia	115	0.77
29 New Africa Investments	114	1
30 Spicer-Mitchell Holdings	114	0.88
31 Ceramic Industries	113	0.36
32 Control Instruments Group	113	0.85
33 Johnnies Industrial Corp	113	1.25
34 Wooltru	113	0.83
35 Times Media	112	-0.03
36 Wilson Bayly Holmes-Ovcon	112	0.99
37 Super Group	111	0.68
38 Combined Motor Holdings	110	0.64
39 Metje & Ziegler	110	0.34
40 PSG Financial Services	110	1.02
41 Spescom Electronics	110	0.93
42 Quick Holdings	69	0.61
43 Spur Steak Ranches	69	0.84
44 Oakfield Thoroughbreds	68	0.84
45 Spur Holdings	68	0.8
46 Venter Leisure & Comm Trier	68	0.59
47 Technihire	65	0.47
48 Burlington Industries	62	0.26
49 Don Group	62	0.79
50 Oceana Investment Corp	62	0.23
51 Toco Holdings	61	0.91
52 Choice Holdings	59	1.03
53 Canadian Overseas Packagin	57	0.11
54 Pals Holdings	51	0.03
55 Fransaf	48	0.27

SUMMARY OUTPUT - APPENDIX 4 (n = 66)

Regression Statistics	
Multiple R	0.54662846
R Square	0.299021365
Adjusted R Square	0.285785353
Standard Error	0.32240541
Observations	55

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	2.350054576	2.350054576	22.60858113	1.56375E-05
Residual	53	5.509098151	0.103945248		
Total	54	7.859152727			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.288185362	0.125575039	2.135737833	0.03733918	0.018323849	0.520066874
Disclosure	0.004360829	0.000917133	4.754848171	1.56375E-05	0.002521294	0.006200364

RESIDUAL OUTPUT

Observation	Predicted Beta	Residuals
1	1.096752824	0.263247176
2	1.092391995	-0.542391995
3	1.079309509	0.250690491
4	1.070587851	0.519412149
5	1.061866194	0.098133806
6	1.053144538	-0.163144538
7	1.048783708	-0.168783708
8	1.048783708	-0.308783708
9	1.044422879	0.185577121
10	1.044422879	0.075577121
11	1.04006205	-0.19006205
12	1.031340393	-0.281340393
13	1.031340393	-0.541340393
14	1.026979564	0.533020436
15	1.022618735	0.037361265
16	1.022618735	-0.212618735
17	1.018257906	0.571742094
18	1.013897078	0.246102922
19	1.009536249	-0.219536249
20	1.009536249	-0.079536249
21	1.009536249	0.260463751
22	1.00517542	-0.35517542
23	1.000814591	-0.580814591
24	1.000814591	0.169185409
25	0.992082934	0.357907068
26	0.789690668	0.060309332
27	0.789690668	-0.149690668
28	0.789690668	0.000309332
29	0.785329639	0.234670161
30	0.785329639	0.114670161
31	0.76096901	-0.40096901
32	0.76096901	0.08903099
33	0.76096901	0.48903099
34	0.76096901	0.06903099
35	0.756608182	-0.786608182
36	0.756608182	0.233391818
37	0.752247353	-0.072247353
38	0.747886524	-0.107886524
39	0.747886524	-0.407886524
40	0.747886524	0.272113476
41	0.747886524	0.162113476
42	0.569092545	0.040907455
43	0.569092545	0.270907455
44	0.564731717	0.275268283
45	0.564731717	0.235268283
46	0.564731717	0.025268283
47	0.55164923	-0.06164923
48	0.538566744	-0.276566744
49	0.538566744	0.251433256
50	0.538566744	-0.308566744
51	0.534205915	0.375794085
52	0.525484256	0.504515742
53	0.5167626	-0.4067626
54	0.490597628	-0.480597628
55	0.477515142	-0.207515142