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**AN INVESTIGATION OF THE CHARACTERISTICS OF
COMPANIES LISTED ON THE JSE SECURITIRS EXCHANGE
THAT EXHIBIT HIGH LEVELS OF DISCLOSURE**

A DISSERTATION PRESENTED TO
THE DEPARTMENT OF ACCOUNTING
UNIVERSITY OF CAPE TOWN

IN FULFILMENT
OF THE REQUIREMENTS FOR THE
MASTERS OF COMMERCE
DEGREE IN
FINANCIAL ACCOUNTING

by

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MAY 2003

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Mark Graham, for his invaluable support and encouragement to me both during the research and writing of this report.

I would also like to thank others who have assisted me in various ways:

Professor Geoff Everingham for “planting the seed” during my Honours year and helping me with the finishing touches.

Professor Tessa Minter for being mom at work.

My family for helping me dot the i’s and cross the t’s.

I certify that, except as noted above, this report is my own work and has not been submitted as a dissertation for a degree at any other university.

Martin Crosoer

May, 2003

ABSTRACT

Extensive research has been conducted in a variety of countries investigating the characteristics of companies that display high quality reporting in their annual financial statements. This study seeks to remedy the omission of South Africa from the list of countries.

This study follows the methodology highlighted by Cooke (1998) and investigates the relationship between level of disclosure and the variables highlighted below. This relationship was tested statistically using forward stepwise regression techniques.

Size variables tested were total assets, market capitalisation, net profit before tax, turnover, number of employees and number of shareholders.

Performance variables included in the analysis were the price earnings ratio, return on assets and return on equity.

The other variables used were liquidity of the share, the debt equity ratio, age of the company since listing, multiple listing status, size of the audit firm and industry type.

The findings of the study showed that there is a positive relationship between the size of a company and the level of disclosure. This is consistent with the prior research in this field. However, contrary to the previous findings, not all variables used as a proxy for size were equally significant. In this study, total assets and number of employees were the most significant size variables.

Age of the company since listing, not used extensively in previous studies, was also highly correlated with the level of disclosure. Furthermore, the mining industry, which encompasses both large and old companies, was found to disclose significantly better than the other sectors.

The strength of the relationship between the independent variables and the level of disclosure was not as strong as that found in developed countries but was found to be consistent with developing countries.

University of Cape Town

TABLE OF CONTENTS

CHAPTER ONE: INTRODUCTION

1.1	RELEVANCE OF THE STUDY	1
1.2	MEASURING THE LEVEL OF DISCLOSURE	3
1.3	PRIOR RESEARCH IN THIS FIELD	4
1.4	THE COMPANY CHARACTERISTICS INVESTIGATED	5
1.5	THE ACCOUNTING DISCLOSURE ENVIRONMENT IN SOUTH AFRICA	6
1.6	THE REPORT STRUCTURE	7

CHAPTER TWO: LITERATURE REVIEW

2.1	INTRODUCTION	9
2.1.1	COUNTRIES THAT HAVE BEEN INVESTIGATED	9
2.2	THE DISCLOSURE INDEX	10
2.2.1	ADJUSTMENTS TO THE DISCLOSURE INDEX	13
2.2.2	WEIGHTING THE DISCLOSURE INDEX	13
2.2.3	CONCLUSION	15
2.3	COMPANY CHARACTERISTICS	15
2.3.1	COMPANY SIZE	16
2.3.2	LISTING STATUS	20
2.3.3	AUDIT COMPANY SIZE	22
2.3.4	PERFORMANCE	24
2.3.5	AGE SINCE LISTING	26

2.3.6	NUMBER OF SHAREHOLDERS	27
2.3.7	SHARE LIQUIDITY	28
2.3.8	DEBT EQUITY RATIO	29
2.3.9	INDUSTRY TYPE	29
2.3.10	OTHER FACTORS	30
2.5	REGRESSION FIT	31
2.6	CONCLUSION	31

CHAPTER THREE: METHODOLOGY

3.1	THE SAMPLE	33
3.2	DATA COLLECTION	34
3.2.1	THE DISCLOSURE INDEX	34
3.2.1.1	PERFORMANCE REVIEW	36
3.2.1.2	FINANCIAL DISCLOSURE	36
3.2.1.3	FORWARD-LOOKING INFORMATION	36
3.2.1.4	PRESENTATION	37
3.2.2	THE INDEPENDENT VARIABLES	38
3.3	DATA EXAMINATION AND TRANSFORMATION	40
3.3.1	CREATION OF REGRESSION MODELS	42
3.3.1.1	TRANSFORMATION 1	42
3.3.1.2	TRANSFORMATION 2	43
3.3.1.3	TRANSFORMATION 3	44
3.3.1.4	TRANSFORMATION 4	44
3.3.1.5	TRANSFORMATION OF INDEPENDENT VARIABLES	45
3.3.2	REGRESSION TECHNIQUE	47

3.3.2.1	SIGNIFICANT VARIABLES	47
3.3.2.2	MITIGATING THE EFFECTS OF OUTLIERS	49
3.4	CONCLUSION	50
3.5	LIMITATIONS OF THE STUDY	50

CHAPTER FOUR: RESULTS

4.1	DESCRIPTIVE STATISTICS	51
4.2	REGRESSION RESULTS	53
4.2.1	MODEL 1	54
4.2.2	MODEL 1 AFTER APPLYING COOK'S DISTANCE TEST	57
4.2.3	MODEL 2	58
4.2.4	MODEL 2 AFTER APPLYING COOK'S DISTANCE TEST	59
4.2.5	MODEL 3	59
4.2.6	MODEL 4	60
4.2.7	MODEL 5	61
4.3	INTERPRETATION OF RESULTS	62
4.3.1	SIZE VARIABLES	62
4.3.2	AGE SINCE LISTING	66
4.3.3	INDUSTRY TYPE	67
4.3.4	PRICE EARNINGS RATIO	70
4.3.5	SIZE OF AUDIT FIRM	71
4.3.6	LISTING STATUS	71
4.3.7	REGRESSION FIT	72
4.4	CONCLUSION	75

CHAPTER FIVE: CONCLUSION

5.1	THE RESEARCH STUDY	77
5.2	FUTURE RESEARCH	79
5.3	SUMMARY	80
	BIBLIOGRAPHY	81
	APPENDIX A	89
	APPENDIX B	93

LIST OF TABLES

RESULTS

MODEL 1	54
MODEL 1 AFTER APPLYING COOK'S DISTANCE TEST	57
MODEL 2	58
MODEL 2 AFTER APPLYING COOK'S DISTANCE TEST	59
MODEL 3	59
MODEL 4	60
MODEL 5	61
ADJUSTED R^2 DEVELOPED AND DEVELOPING COUNTRIES	73

LIST OF FIGURES

FIGURE 1	BOX AND WHISKER PLOT	51
FIGURE 2	SHAPIRO-WILK TEST	52

CHAPTER 1

INTRODUCTION

1.1 RELEVANCE OF THE STUDY

This study attempts to identify the characteristics of South African listed companies that exhibit high levels of disclosure in their annual reports. Although the relationship between the level of disclosure and company characteristics has been extensively researched in developed and developing countries, it has not been explored in a South African context.

Despite the consistency in the characteristics of companies that exhibit high levels of disclosure in developed and developing countries in prior studies, the strength of that relationship is stronger in developed countries.

The reason for investigating South Africa in this study lies in the unique accounting and business environment in South Africa. In terms of the accounting environment, South Africa is attempting to raise its standards to international levels. It has, in recent years, harmonised its accounting standards with International Accounting Standards (IAS). The issue of more than 15 new and amended statements during 1999 alone illustrates this.

Furthermore, Act 51, of the Public Accountants and Auditors Act, was promulgated in 1951 (repealed by Act 80 in 1991) governing all registered accountants and auditors.

This has resulted in regulatory control over the industry in South Africa for over 50 years.

In addition, South African Chartered Accountants are highly rated internationally. Ignatius Schoole, Executive President of the South African Institute of Chartered Accountants commented recently on the appointment of a South African to the International Accounting Standards Board, saying that, 'Considerable effort has been invested in harmonising local and international standards. This appointment attested to the extremely high regard in which South Africa was held in worldwide accounting circles' (SAICA, 2002).

This illustrates that South Africa has a developed accounting profession on a par with the rest of the world. However, contrary to the accounting environment, South Africa is a developing country in terms of the economic environment (MSCI, 2001a).

Consequently, this study is relevant for two reasons. The first is to examine whether the characteristics of South African companies that show a significant relationship with the level of disclosure are consistent with the findings of prior studies. The importance of theorising and testing the effects of company characteristics on the level of disclosure of listed companies in South Africa is to identify characteristics of companies which are likely to be poor disclosers in their annual report and which types of companies should be identified as candidates for improvement.

Corporate disclosure is critical for the functioning of an efficient capital market (Healy and Palepu, 2001). Thus, improved corporate disclosure would enhance the efficiency of such markets.

The second aspect is to examine whether the strength of the relationship between level of disclosure and company characteristics in South Africa is consistent with developed or developing countries given its unique accounting and economic environment.

1.2 MEASURING THE LEVEL OF DISCLOSURE

Disclosure, for the purposes of this study, is defined as the communication of financial, non-financial, qualitative and quantitative information pertaining to a company's financial position and performance published in the annual report (Owusu-Ansah, 1998).

The level of disclosure is measured using the Accounting Department at The University of Cape Town and Ernst & Young's annual survey (UCT survey) of the level of disclosure of the largest 100 companies, measured by market capitalisation, listed on the main board of the JSE Securities Exchange (JSE) at 30 October 2000 (Excellence in Financial Reporting, 2001). The survey evaluates the most recent Annual Report published by the company before the aforementioned date.

Consequently, a company's level of disclosure is based on one year only. This period coincided with the loss in market value of the Information Technology sector, a

domestic currency losing value and a general downturn in the economy. This downturn was illustrated by a fall in the price index in South Africa by 55% compared with a fall of 20% in the United States of America (MSCI, 2001b).

These economic conditions particular to the period of this study could result in the findings of this study being different from previous studies conducted internationally due to the unusual fluctuation in size indicators. This has been explained further under section 4.3 'Interpretation of Results'.

1.3 PRIOR RESEARCH IN THIS FIELD

The pioneering techniques of Cerf (1961) and Singvi and Desai (1971) have been further developed by numerous researchers. The most prominent of modern day researchers in this field has been Cooke who has researched the relationship between company characteristics and the level of disclosure in various countries (Japan, 1991 and Sweden, 1989); as well as the most appropriate statistical techniques to evaluate the relationship between the level of disclosure and company characteristics (1998).

The findings across the world have consistently shown that large companies (by any measure) are more likely to disclose more information in their annual report than small companies. This has been true for both developed and developing countries and will be further discussed in the literature review.

The research has also shown that developed countries exhibit a stronger relationship between the dependent variable (the level of disclosure) and the independent variables (the company characteristics) than developing countries.

1.4 THE COMPANY CHARACTERISTICS INVESTIGATED

The characteristics of companies used to explain the level of disclosure in prior studies formed the basis of the company characteristics used in this study. If a specific company characteristic was only used in one previous study, it was still included in this study.

The company characteristics used in this study can be categorised into three categories: size variables, performance variables and others. These variables are defined in Appendix B and explained in more detail in Chapter 4.

The size variables used include total assets; turnover; market capitalisation; net profit before tax; number of employees and number of shareholders.

The performance variables analysed in this study include price earnings ratio, return on assets and return on equity.

The other variables used were age since listing; debt equity ratio; liquidity of the share; audit firm size; multiple listing status and industry type.

1.5 THE ACCOUNTING DISCLOSURE ENVIRONMENT IN SOUTH AFRICA

Corporate and financial accounting and reporting by public companies in South Africa is legislated by the Companies Act (1973), South African Generally Accepted Accounting Practice (GAAP, 2000) (SAICA), local JSE Securities Exchange (JSE) listing requirements and the King report (1994)¹.

South African GAAP has undergone numerous changes recently. International Accounting Standards (IAS) have been adopted in an attempt to harmonize South African accounting standards with international best practice. During 1999 alone, 15 new and amended statements and 15 interpretations were issued in South Africa. Consequently, in 2000, the year of this study, companies were required to adhere to many new standards.

According to the JSE Securities Exchange listing requirements, statements of GAAP must be complied with in full by all listed companies (JSE Listing Requirements, 2000). Any deviation from GAAP must be disclosed as well as the financial effect of the departure. Consequently, regulations and guidelines are in place in order to improve the levels of disclosure among South African companies.

Furthermore, the King report (1994) offers extensive guidance in corporate governance. This ranges from the duties of the board of directors to environmental issues and all listed companies are encouraged to comply with King (1994).

¹ The King report was revised in March 2002.

Companies are merely required to state whether or not they have complied with King (1994).

SAICA have also issued a document titled 'Stakeholder Communication'. Although not governed by statute, this document offers guidelines to directors on how to communicate more effectively with stakeholders via disclosure in the annual report.

However, despite the regulations and guidelines in place in order to improve the level of disclosure in South African companies there is still a large discrepancy between companies in terms of the extent of their disclosure in the annual report. This was highlighted by the UCT survey (Excellence in Financial Reporting, 2001) that showed results ranging from excellent to unsatisfactory.

1.6 THE REPORT STRUCTURE

The report is contained in the next four chapters. In Chapter 2 level of disclosure has been defined and the construction of the disclosure index explained. Previous literature in this field has then been summarised.

Chapter 3 reviews the methodologies detailed by Cooke (1998) and discusses the specific methodology to be followed in this study. The method of data collection is also discussed in this chapter.

Chapter 4 reports on the results of this study, compares them with the findings from international studies and explains them in a South African context.

Finally, in Chapter 5, conclusions are drawn and areas for possible further research are suggested.

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CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Extensive research has been conducted, in both developed and developing countries, to determine the characteristics of companies that exhibit high levels of disclosure in their annual report. This study will examine, in a South African context, the characteristics of companies that are associated with high levels of disclosure.

This chapter describes what disclosure is and how it could be evaluated. It then briefly reviews the relevant literature of studies that have examined the characteristics of companies that exhibit high levels of disclosure.

2.1.1 COUNTRIES THAT HAVE BEEN INVESTIGATED

Disclosure studies have been conducted in the following developed countries; the USA (Cerf, 1961; Singhvi and Desai, 1971; Buzby, 1975 and Lang and Lundholm, 1993); the UK (Firth 1979); Japan (Cooke, 1991); Sweden (Cooke, 1989); Spain (Olusegan Wallace, Naser and Mura, 1994; Inchausti, 1997) and Hong Kong (Olusegan Wallace and Mura, 1995).

Zimbabwe (Owusu-Ansah, 1998); Bangladesh (Ahmed and Nicholls, 1994); Mexico (Chow and Wong-Boren, 1987), Nigeria (Wallace, 1988) and the Czech Republic (Patton and Zelenka, 1997) are developing countries where characteristics of

companies that exhibit high levels of disclosure have been investigated. Firer and Meth (1986) and Graham (2001) have conducted minor studies in a South African context.

2.2 THE DISCLOSURE INDEX

Disclosure is the communication of financial, non-financial, qualitative and quantitative information pertaining to a company's financial position and performance (Owusu-Ansah, 1998). However, the quality of disclosure is not readily measurable. Researchers have attempted to measure disclosure by the extent to which one or more user group's information needs are satisfied.

Prior research indicates that the extent of disclosure has been measured on two levels. One is compliance with mandatory disclosure. An item is mandatory if a company is obliged to disclose the information under some form of statute. The Companies Act (1974), statements of GAAP and the JSE listing requirements are the forms of statute applicable to companies investigated in this study.

The other is the degree of voluntary disclosure, which is the extent to which a company discloses information over and above the mandatory items. This would include items suggested in the guidelines outlined by the King Report (1994) and the 'Stakeholder Communication' document published by SAICA.

Companies can be evaluated in terms of their disclosure by the extent to which they disclose items, which appear on a checklist. This checklist will be referred to as a

disclosure index. Owusu-Ansah (1998), Firer and Meth, (1986) and Olusegan, Wallace, Naser and Mora (1994) compiled their disclosure indexes by examining mandatory items only. Owusu-Ansah (1998) and Olusegan Wallace et al (1994) went further than this and extracted the relevant items for their disclosure indexes from the adopted International Accounting Standards (IAS) statements, company law and stock exchange requirements relevant to the country under study.

In contrast to the above researchers, Chow and Wong-Boren (1987) and Firth (1979) created their disclosure indexes by looking at voluntary disclosure only. The latter suggested that companies would almost certainly disclose mandatory items.

However, Cerf (1961); Buzby, (1975); Cooke, (1989); Wallace, (1988); Ahmed and Nicholls, (1994) and Olsegan Wallace and Naser, (1995) used both mandatory and voluntary items in their disclosure indexes.

For the purposes of this study, the disclosure index was constructed using both voluntary and mandatory disclosure.

Cerf (1961) developed a disclosure index comprising 34 items. The following authors modified this and subsequent indexes to fit the needs of their specific research objectives (Singhvi and Desai, 1971; Buzby, 1974, 1975; Firth, 1979; Wallace, 1988; Cooke, 1989, 1991; Chow and Wong-Boren, 1987; Olsegan Wallace and Naser, 1995 and Firth, 1979).

Buzby (1975); Firth (1979); Chow and Wong-Boren (1987) and Ahmed and Nicholls (1994) distributed questionnaires to financial analysts, financial institutions and practicing chartered accountants who ranked the importance of various disclosure items. The most important items were then included in the disclosure index.

The majority of the researchers in this field have evaluated one year's annual report for each company included in the sample. They are Owusu-Ansah (1998); Patton and Zelenka (1997); Wallace and Naser (1995); Wallace et al (1994); Ahmed and Nicholls (1994); Cooke (1992, 1989); Chow and Wong-Boren (1987); Firth (1979); Buzby (1975) and Singhvi and Desai (1971).

Only Inchausti (1997), who evaluated three years of annual reports, and Lang and Lundholm (1993), who evaluated four years of annual reports, differed from the majority who evaluated one annual report for each company. The focus of their studies was to examine a change in disclosure over a period of time, which coincided with major disclosure regulatory changes.

For the purposes of this study, only one year's annual report will be evaluated for each company, as the focus of this study is merely to examine the characteristics of companies that display high levels of disclosure and not to examine a change in disclosure levels over a period.

Cooke (1989) suggests that the annual report should be read twice by the individual evaluating the level of disclosure. The first reading should ascertain what disclosure is applicable to that particular company. Once that is decided, the report is then reread

and appropriate scores allocated. This approach has been followed by Owusu-Ansah (1998) and Ahmed and Nicholls (1994) and was followed in this study.

2.2.1 ADJUSTMENTS TO THE DISCLOSURE INDEX

In order not to discriminate against companies to which a particular disclosure item was not relevant, prior researchers have used a relative disclosure index. This relative index was calculated by dividing the points scored by a company by the total number of points available to that company. Consequently, companies were not penalised for not disclosing an item that was not applicable as they were ranked on their relative, not absolute, score. For example, more extensive disclosure regarding environmental issues would be expected for a mining company than for a bank.

This method was used by Buzby (1975); Firth (1979); Wallace (1988); Cooke (1989); Wallace et al (1994); Inchausti (1997) and Owusu-Ansah (1998) and was also used for the purposes of this study.

2.2.2 WEIGHTING THE DISCLOSURE INDEX

Prior research has shown contrasting findings as how to weight the relative importance of the items on the disclosure list.

Cerf (1961), Buzby (1975), Choi (1973), Firth (1979), Firer and Meth (1986), Chow and Wong-Boren (1987) and Wallace (1988) did not weight the items on their disclosure index equally. The weightings of items on the index were assigned

according to responses they received from various user groups. Consequently, what was thought to be more relevant disclosure would earn higher marks on the disclosure index as it was weighted for importance. Thus, by an unequal weighting of the disclosure index, companies that disclosed useful information would score higher than companies that disclosed more information that was less useful.

However, there are also strong arguments against an unequal weighting of the disclosure index. Cooke (1989) argues that such unequal weighting will create a bias towards that particular user group who assigned the weights. He feels that by not weighting the index, all user groups are equally catered for in the disclosure index.

Adding weight to the argument not to weight the items on the disclosure index unequally, Slovic (1996) showed that individuals, including experts, have poor insight into their own judgement of what is important. Owusu-Ansah (1998) states that not weighting the items obviates the need to make the difficult judgement as to the relative importance of a specific item.

Ahmed and Nicholls (1994) and Olsegan Wallace and Naser (1995) agreed with the sentiments expressed by both Cooke (1989) and Owusu-Ansah (1998) and consequently weighted each item on their disclosure indexes equally.

As mentioned previously, the prior research does not indicate whether the preferred approach is an equal or unequal weighting of items in the disclosure index. For the purposes of this study, the items were weighted unequally insofar as some disclosures were considered by the adjudicators to be more important than others.

2.2.3 CONCLUSION

In summary, there are two elements involved in developing a disclosure index. They are, firstly, which items to include in the index and, secondly, how to weight the items comprising the index.

The prior research does not indicate which items to include – different researchers have tailored their index to suit their needs. Similarly, previous studies favour neither a weighted index, nor an unweighted index as both methods have been extensively used.

For the purposes of this study, the disclosure index checklist includes over 280 items. Greater weight was placed on items, which were considered to be more important than others.

2.3 COMPANY CHARACTERISTICS

The company characteristics investigated in developed and developing countries in prior studies are discussed below.

2.3.1 COMPANY SIZE

Corporate size has been found to be the most common variable to exhibit a strong relationship with the level of disclosure. A positive relationship was found in the following countries; the USA (Cerf, 1961; Singhvi and Desai, 1971; Buzby, 1975; Lang and Lundholm, 1993), the UK (Firth, 1979); Sweden (Cooke, 1989); Spain (Olusegan Wallace et al, 1994; Inchausti, 1997); Hong Kong (Olusegan Wallace and Mora, 1995); Japan (Cooke, 1991), Zimbabwe (Owusu-Ansah, 1998); Bangladesh (Ahmed and Nicholls, 1994); Mexico (Chow and Wong-Boren, 1987), South Africa (Graham, 2001) and the Czech Republic (Patton and Zelenka, 1997).

Although there is overwhelming evidence that suggests a positive relationship between company size and quality of disclosure, the reason for the relationship remains unclear (Olusegun Wallace and Naser, 1995).

Several suggestions have been put forward. These include:

Larger companies are more visible to the public and government and may therefore disclose more in an attempt to deflect negative attention (Firth, 1979). Inchausti (1997) supports this, stating furthermore, that increased disclosure may reduce such political costs associated with being a large dominant player in an industry.

Graham (2001, p4) suggests that in South Africa this political attention may arise 'as a result of concentration of economic power, absolute profitability, disparity between directors' and workers' remuneration and environmental concerns.'

Expanding on the above factors, a concentration of economic power has developed in South Africa due to exchange controls that prevented wealth from leaving the country. This concentration of power resulted in large monopolies developing which dominated the market.

These companies were also seen by the public to be exploiting their workers as illustrated by the disparity in remuneration between workers and directors.

These factors, which arose out of companies becoming large, drew public attention to the companies. One way to deflect the attention was for companies to disclose more voluntary information in their annual report.

In addition, potential conflicts exist between owners, creditors, managers and other stakeholders in larger companies; therefore increased information disclosures may reduce agency costs and reduce information asymmetries between the company and outsiders (Inchausti, 1997).

Agency theory, extensively researched by Jensen and Meckling (1976), highlights the conflict of interest that exists between managers of a company and owners of that company. This conflict exists as a result of the separation between ownership and management, and agency costs are those costs incurred as a result of this separation.

The larger the company, the greater the potential cost. Consequently, more extensive disclosure in the annual report would minimise those costs.

However, Olusegun Wallace et al, (1994) explain that there may be a negative correlation between company size and level of disclosure. They suggest that disclosing less detail in their reports may reduce political attention. By reporting less detail, less attention will be drawn to the company.

Another reason to expect a positive relationship between size and the level of disclosure is the competition for financing between companies. Singhvi and Desai (1971) state that larger companies make more extensive use of the stock market for financing their operations, hence larger companies tend to have better disclosure so as to improve investor confidence.

Graham (2001, p4) states, “Locally (in South Africa) larger companies may be trying to attract international investor attention and may see good disclosure as a vehicle for doing this. In addition, many of the larger South African companies are seeking listings on foreign stock exchanges where the disclosure requirements are more comprehensive and where investors may be more sophisticated and therefore expect greater disclosure”. Consequently, one would expect a positive relationship between size and level of disclosure in South Africa.

Larger companies are also more likely to have extensive internal reporting functions to aid management in their control over the companies' operations. Consequently, the information for external reporting is already available; hence the marginal cost of

making it available to the public is reduced. The disparity of internal information collection between large and small companies is exacerbated by the fact that smaller companies may not possess the resources for collecting and presenting extensive information (Buzby, 1975).

In addition to the fact that small companies may not have the resources to assemble information, Graham (2001) suggests that smaller companies may feel that extensive disclosure may put them at a disadvantage with respect to their competitors. This disadvantage arises from the disclosure of information which may reduce barriers to entry and benefit a competitor who was previously unaware of the information.

This suggested positive relationship between size and levels of disclosure is supported by Lang and Lundholm (1993), who state that disclosure costs may decrease with company size, as there may be a fixed component to disclosure costs, so the cost per unit of size decreases in larger companies. Graham (2001) goes on to suggest that larger companies may have additional resources available to collect and present financial information in the annual report.

Consequently, the majority of the research, with respect to levels of disclosure and size, points towards the existence of a positive relationship between size and level of disclosure. Where researchers have used more than one proxy for size, this positive relationship exists irrespective of the different measures of size being used.

Cooke (1989) used three measures for size; total assets, turnover and number of shareholders and ran three independent regressions. He found a significant positive

relationship between the extent of disclosure and each of the three measures for size. The strength of the relationship, as highlighted by the R^2 , which varied between 0.58 and 0.6, did not differ significantly between the independent variables. He concluded that it does not seem to matter which proxy for size is used.

This is supported by Firth (1979) who found a marginal difference in the relationship between two proxies for size; namely capital employed and turnover; and the level of disclosure. Olusegan Wallace et al (1994), Inchausti (1997) and Cooke (1991) found that assets and turnover exhibited an equally strong positive relationship with the extent of disclosure. Buzby (1975) used assets as a proxy for size but recognised that net turnover may have been a better measure.

In conclusion, the research has shown that size is the most significantly correlated company characteristic with the level of disclosure. This finding holds irrespective of the specific company characteristic used as a proxy for firm size. However, total assets, turnover and market capitalisation have been the most commonly used proxies for size.

2.3.2 LISTING STATUS

Listing status is another variable that has been shown to have a significant positive relationship with levels of disclosure. Comparing the level of disclosure between unlisted and listed companies as well as comparing the level of disclosure between multiple listed companies with companies listed on a single exchange has been investigated.

Studies conducted in the USA (Singhvi and Desai, 1971); the UK (Firth, 1979) and Spain (Olusegan Wallace et al, 1994) showed that companies listed on a stock exchange showed significantly higher levels of disclosure than unlisted companies.

In addition, one would expect more extensive disclosure associated with multiple listed companies compared to companies listed on one exchange, as they are required to comply with multiple stock exchange regulations. This was shown by studies in the following countries; Sweden (Cooke, 1989); Spain (Inchausti, 1997) and Japan (Cooke, 1991).

However, no relationship was found between listed and unlisted companies and level of disclosure in two USA studies, Cerf (1961) and Buzby (1975).

Thus, aside from the studies by Cerf (1961) and Buzby (1975), a statistically significant difference was found between listed and unlisted companies and the level of disclosure. A positive relationship was also found between the number of stock exchanges on which a company was listed and the level of disclosure.

The sample of companies on which this study was based includes listed companies only. Consequently, this study attempts only to investigate whether there is a difference in the level of disclosure between companies with a foreign primary listing and those companies whose primary listing is in South Africa.

2.3.3 AUDIT FIRM SIZE

Research has been conducted investigating whether the influence of a 'big 5'² auditing firm (previously 'big 8' and 'big 6') on a company results in higher levels of disclosure when compared to the influence of a smaller auditing firm.

External audit firm size has been used as a proxy for quality of auditor for research conducted in the following countries; the UK (Firth, 1979); Hong Kong (Olusegen Wallace et al, 1994); Japan (Cooke, 1991); Spain (Inchausti, 1997); Zimbabwe (Owusu-Ansah, 1998) and Bangladesh (Ahmed and Nicholls, 1994).

In each of the above studies no significant relationship was found between the size of the audit firm and the level of disclosure. Nonetheless theories have been presented to explain that a relationship should exist. These include the suggestion that the larger audit firms may have additional resources to help clients achieve better disclosure. Furthermore larger firms employ in-house technical analysts who would assist in the preparation of the financial statements and together these factors should result in enhanced disclosure.

DeAngelo (1981) indicates that the quality of the external audit is influenced by the size of the external audit firm. He argues that the value of the external audit is a function of the external users' perception of the auditor's report. This perception is based on the ability of the auditor to detect errors and the willingness of the auditor to act independently and report on the error.

² Andersen, Deloitte & Touche, Ernst & Young, KPMG and PriceWaterhouseCoopers (Note now that, in South Africa, Andersen has been incorporated into KPMG).

A large audit firm has many clients reducing the economic dependency on one particular client. Thus, as DeAngelo (1981) continues, larger audit firms are more likely to report on misstatement and to comply with all statutory disclosures.

Furthermore, failure to report on material errors is potentially more damaging to larger audit firms. Should the public be aware of the auditor's failure to report on such a misstatement, the auditor's reputation will be damaged (as illustrated by Andersen failing to comment on the misstatements prevalent in Enron's accounts).

This will impact negatively on the perception of the firm by existing clients. As large audit firms have more clients, the losses from a loss of reputation are enhanced.

Consequently, large audit firms are more likely to resist substandard reporting from clients.

In addition, larger audit firms may have expertise in developing a good quality annual report with all the relevant voluntary disclosure users would expect.

As a result of these factors, one could expect the companies audited by larger audit firms to exhibit higher levels of disclosure. Note however, that there is a problem with causality as larger companies can afford and may require larger audit firms to complete their audit.

2.3.4 PERFORMANCE

Profitability has been identified in prior studies as a variable capable of influencing the standard of reporting of a company. A positive relationship between performance and level of disclosure was found in the USA (Cerf, 1961); Spain (Wallace et al, 1994); Hong-Kong (Wallace et al, 1995) and Spain (Inchausti, 1997) and Zimbabwe (Owusu-Ansah, 1998).

Inchausti (1997) suggested that profitability is a measure of management performance and consequently the management of a profitable company are more likely to disclose additional voluntary information to support the continuance of their positions and the performance related remuneration that may be due to them.

Inchausti (1997) further explained that management was more likely to provide extensive disclosure relating to “good news” about performance than “bad news” to avoid under valuation of their shares.

The measures of performance used in prior research have varied. Liquidity (current assets / current liabilities) was found to have a positive relationship with levels of disclosure by Wallace et al (1994), while no relationship was found by Owusu-Ansah (1998) and Wallace and Mora (1995). The relevance of a current ratio being a measure of performance is however not clear as it is not a performance measure.

Wallace and Mora (1995), when using net profit margin as a proxy for performance, did find a positive relationship with the level of disclosure. Owusu-Ansah (1998) also

found a positive relationship using return on turnover and return on capital employed. However, Inchausti (1997) could not find a relationship using operating income / assets and operating income / equity.

The performance measures used in the studies discussed in this section have all been accounting measures. Consequently, performance is measured based on past performance. However, in a South African study conducted by Crosoer (2000), a significant negative correlation was found between share price performance and levels of disclosure. In contrast to the accounting measures, share price performance is a forward-looking performance measure.

It was therefore suggested that companies that performed well did not explain their good performance and did not disclose extensively. Conversely, companies that performed poorly felt the need to explain their results as well as their future prospects. This resulted in more extensive disclosure by those companies, which performed poorly.

Lang and Lundholm (1993) noted that company performance could have a positive, neutral or negative effect on the level of disclosure. This can be explained by the contrasting views presented by Inchausti (1997) and Crosoer (2000) in the preceding paragraphs.

In conclusion, the prior research does not show any consistency in both the relationship between level of disclosure and performance, or the performance variable

used. Consequently, in this study, three performance variables will be used. They are explained in more detail in Chapter 4.

2.3.5 AGE SINCE LISTING

The levels of disclosure of a company may be influenced by the age of the company. Various reasons for this are cited by Owusu-Ansah (1998), the only researcher to investigate this variable, who, firstly, argues that younger companies are likely to disclose less in certain areas as disclosure may compromise their competitive advantage, especially if information on research and development is revealed.

Secondly, the cost and ease of collecting information may be more onerous on newly established companies. In new companies, management are more likely to concentrate on profitability than quality reporting.

Thirdly, young companies do not have a track record on which to rely and hence public disclosures of past trends are limited.

On the other hand, older companies, in the mature stage of their life cycle, are more likely to have established reporting policies within the organisation. Consequently, the reporting by older companies could be expected to be more extensive.

Owusu-Ansah's (1998) results are consistent with the above theory. A significant positive relationship was found to exist between company age and level of disclosure.

2.3.6 NUMBER OF SHAREHOLDERS

Few studies have been conducted using number of shareholders as a variable in explaining the level of disclosure.

Watts (1977) stated that the demand for information by shareholders increases with an increase in the number of shareholders. This is consistent with agency theory. As owners (shareholders) wish to monitor managers to reduce the cost of agency, the demand for information increases as the number of owners (shareholders) increases.

This is supported by Cooke (1989) who suggests that the greater the number of shareholders needing information, the greater the level of disclosure provided. This could alleviate the monitoring problems that arise with numerous owners.

Consequently, one expects a positive relationship between number of shareholders and level of disclosure in the annual report.

On the other hand, a company with few shareholders who each hold significant investments in the company may pay less attention to the annual report as the information is passed to the existing shareholders through other mediums such as the company annual general meeting (AGM). A shareholder is more likely to attend the AGM if he or she holds a significant stake in the company.

Cooke (1989) used number of shareholders as a surrogate for company size. His findings found a positive relationship between company size and levels of disclosure

in Swedish companies. In a further study conducted by Cooke (1991) on Japanese companies, a similar positive relationship was found. However, it was not found to be as significant as other size variables assets and turnover.

For the purposes of this study, number of shareholders has been included as a size variable due to the high correlation between number of shareholders and the other size variables.

2.3.7 SHARE LIQUIDITY

Despite the fact that the relationship between share liquidity and level of disclosure has not been investigated in previous studies, there may be reason to expect a positive relationship between the two variables. Liquidity is the frequency with which a company's shares are traded. Consequently, a company that has frequently traded securities may be more likely to improve the level and quality of information it distributes to its shareholders.

Although Cooke (1989) did not use liquidity as a variable in his study, he did propose that it would be in the interests of a company to improve disclosure to increase the marketability of its shares.

2.3.8 DEBT EQUITY RATIO

Choi (1973) explained that corporations are motivated by the need to obtain scarce financing capital as cheaply as possible. Hence, increased disclosure will lower the perceived risk of the corporation, thus lowering the cost of financing capital.

This is supported by Olsegan Wallace and Mora (1995) and Ahmed and Nicholls (1994) who stated that a highly geared company has a greater obligation to disclose information to their long-term creditors. This information is disclosed through their annual report. Consequently, one would expect a positive relationship between the debt equity ratio and the level of disclosure.

2.3.9 INDUSTRY TYPE

It may be expected that levels of disclosure differ among different industries. Watts and Zimmerman (1986) explained that the presence of a company in a particular industry affects its political vulnerability.

A highly regulated industry would require compliance with certain specific rules and regulations. Non-compliance would attract negative attention to the detriment of the company. Consequently, more disclosure would be provided in the annual report to avoid negative attention.

Furthermore companies that produce products where consumers are the end users are probably more likely to comply with rules governing their activities, including those

relating to disclosure. Once again, this is to avoid the potential negative attention that would harm their profits. Consequently, compliance with such rules could be disclosed in the annual report. This argument is presented by Fekrat (1996).

While there appear reasonable grounds for assuming that industry type is important in driving disclosure levels, both Inchausti (1997) and Wallace et al (1994) found that the quality of reporting could not be explained by industry type.

2.3.10 OTHER FACTORS

Various researchers have investigated the relationship between the level of disclosure and other economic based factors. Although the scope of this research does not include an investigation into the relationship between the level of disclosure and these economic based factors, acknowledgement of their research is presented below.

Botosan (1997) investigated the relationship between disclosure level and the cost of equity capital by regressing firm-specific estimates of cost of equity capital on market beta, firm size and a self-constructed measure of disclosure. Negash (2001), however, researched the relationship between corporate disclosure and the adverse selection component of the bid-ask spread of stock prices.

Core (2001) provided a narrower focus of the broad overview of the empirical disclosure literature researched by Healy and Palepu (2001) by discussing certain economic consequences of voluntary disclosure. The researcher comments on the

relationship between voluntary disclosure and institutional investors and financial analysts.

2.4 REGRESSION FIT

The extent to which the independent variables of a regression can explain the dependent variable is measured by the adjusted R^2 . The higher the adjusted R^2 , the stronger the relationship between the independent variables. The findings in previous studies have shown that developed countries consistently produce higher adjusted R^2 figures compared to developing countries. Specific developed and developing countries that have been investigated in this context are given at the beginning of this chapter.

2.5 CONCLUSION

The prior research does not indicate which items to include on the disclosure index – different researchers have tailored their index to suit their needs. Similarly, the previous studies favour neither an equally weighted index, nor an unequally weighted index. Both methods have been extensively used.

Prior research has shown that the size of a company is the most significantly correlated variable with the level of disclosure. Other variables, which have shown a significant positive relationship with the extent of disclosure, are; listing status, age since listing and number of shareholders.

However, when the company specific characteristics debt equity ratio and audit firm size were tested in previous studies, no significant relationship was found with the extent of disclosure.

Furthermore, when performance was used as a variable, both positive and negative relationships were found depending on which performance variable was used as the independent variable.

Share liquidity, although not previously used in prior studies, has been suggested to have a positive relationship with the level of disclosure in the annual report. Although there are reasons to expect a variation in the level of disclosure between industries, this has not been shown in previous studies.

The relationship between the independent variables and the level of disclosure, measured by the adjusted R^2 , has been found to be stronger in developed countries compared to developing countries.

CHAPTER 3

METHODOLOGY

3.1 THE SAMPLE

Each year a panel from the Department of Accounting at the University of Cape Town evaluate the top 100 companies in terms of the quality of their annual report. The top 100 companies are selected by market capitalisation at 30 October each year. This is known as the 'Excellence in Financial Reporting' survey, the results of which are published in the Business Day, a prominent national newspaper. The survey completed in 2000 forms the basis of this study.

The sample constitutes R 681 billion out of R 1 524 billion³ (45 %) of the market capitalization of the JSE Securities Exchange. Further, breaking the sample into quartiles, the first quartile constitutes 75% of the market capitalization in the sample, the second 14%, the third 7% and the fourth 4%. This indicates that there is a range within the sample thus limiting size and survivorship bias.

As the statistical analysis used in this study was multiple regression; data for each independent variable to be used in this study for each company had to be available. If a certain variable was not obtainable for a specific company that company was eliminated from the sample.

³ From JSE Securities Exchange Monthly bulletin October 2000

All banks and insurance companies in the initial sample were eliminated from the sample due to the meaninglessness of the turnover figure in those companies. Number of shareholders and a liquidity measure were not available for a number of companies and these were also eliminated from the sample.

This resulted in a final sample size of 64 companies as listed in Appendix A.

3.2 DATA COLLECTION

Data was collected for the dependent variable (the disclosure index) as well as the independent variables from a variety of sources. These sources will be disclosed under the relevant subheading within this chapter.

3.2.1 THE DISCLOSURE INDEX

South African companies are evaluated in terms of their disclosure, annually, in two separate independent studies. They are the Financial Mail (FM survey) and The University of Cape Town/Ernst&Young's 'Excellence in Financial Reporting' survey (UCT survey). The FM survey evaluates the industrial sector only – thus excluding mines, banks and insurers – and awards marks for disclosure in terms of South African Generally Accepted Accounting Practice (GAAP) only.

In the UCT survey, companies are also rewarded for an early adoption of GAAP statements. The companies are not only evaluated on mere compliance with GAAP but are given credit for voluntary disclosures. Consequently, the UCT survey was

used for the purposes of this study. Evaluating the level of disclosure in the annual report in terms of both mandatory and voluntary disclosure is consistent with Nicholls and Ahmed (1995), Buzby (1976), Wallace and Naser (1995), Cooke (1991) and Wallace (1988).

The preparers of the UCT survey do not wish to publicly disclose the detail of their mark plan to the public. Two reasons are cited for this. Firstly, the sample represents the entire spectrum of large business in South Africa. Consequently, flexibility is built into the mark plan to allow for different circumstances for different companies. This flexibility introduces an element of professional judgment.

The second reason not to disclose the details of the mark plan is to avoid any gamesmanship on the part of the companies. The adjudicators believe that the purpose of the survey is not merely to present an award but to encourage high quality reporting.

Despite the details of the disclosure index being withheld, the development of the index as well as broad categories of the index have been made public. They are discussed below.

Three accounting professors in the Department of Accounting at the University of Cape Town, as well as the technical department at Ernst & Young have developed the UCT 'checklist'. It has been updated to include developments in The King Report (1994) and the SAICA document entitled 'Stakeholder Communication', as well as

implemented and proposed changes to GAAP. The mark plan in 2000 provides for 280 potential marks and is divided into four categories, which are discussed below.

3.2.1.1 PERFORMANCE REVIEW

This section is essentially non-statutory and deals with issues such as an overall review of the nature of the business and its performance (linked to accounting figures) and commentary on the business environment. Companies are also rewarded for prior year comparisons as well as for the calculation of key ratios.

3.2.1.2 FINANCIAL DISCLOSURE

This is the largest single section in terms of marks. The emphasis is on acceptable accounting and clear reporting. The mark plan includes specific marks for the compliance with statements of GAAP issued in that year. Due to a tendency for companies not to comply with some statements of GAAP, the adjudicators have awarded some marks for simple compliance with GAAP.

3.2.1.3 FORWARD-LOOKING INFORMATION

Marks are awarded for expanding on historic information exhibited in the financial statements. Consequently, companies are rewarded for estimates of future returns and long-term targets. These disclosures are considered to be more meaningful, and thus attract more marks, if the attendant risks are considered and disclosed. Disclosure of market-related information is also rewarded.

3.2.1.4 PRESENTATION

This is the smallest section and is also the most subjective. Marks are awarded for readability, use of graphics and the overall extent to which the reader was enticed to read the entire report.

The specific disclosure items on the mark plan were weighted insofar as some disclosures were considered by the adjudicators to be more important than others. This is consistent with the approaches followed by Cerf (1961), Buzby (1975), Choi (1973), Firth (1979), Firer and Meth (1986), Chow and Wong-Boren (1987) and Wallace (1988).

Each company was evaluated independently by each of the three adjudicators using the mark plan as a rough guide. After the adjudication, the marks were compared. Any material differences between markers' scores were investigated to ensure no information had been missed. If no information had been missed, the marks were not adjusted. The companies were then categorised as follows; top 10, excellent, good, adequate and unsatisfactory.

For the purposes of this study, the average of the percentage score awarded by each of the three adjudicators was used. Companies were not penalised for not disclosing information, which was not relevant to them. This was achieved by dividing the score achieved by the total possible marks available. Consequently, companies were evaluated based on a percentage score and not an absolute score. This technique is

consistent with Buzby (1975); Firth (1979); Wallace (1988); Cooke (1989); Wallace et al (1994); Inchausti (1997) and Owusu-Ansah (1998).

3.2.2 THE INDEPENDENT VARIABLES

The data for the independent variables was collected from a variety of sources. They are discussed below.

The size variables used in this study were; turnover, net profit before tax, total assets (data all obtained from BFA net⁴), number of shareholders (data from company annual financial statements), market capitalization and number of employees (data from 'The JSE Digest', 2000).

The size variables turnover, total assets, number of shareholders, number of employees and market capitalisation have all been used in prior studies. This selection of variables includes both an income statement measure (turnover) and a balance sheet measure (total assets) as measures of size. It also includes market capitalisation and number of shareholders, which are external measures of size, with number of employees as an internal measure of size. The sixth size variable, net profit before tax, was selected as a raw income statement measure of size.

The performance variables used were price earnings ratio (PE), return on assets (RoA) and return on equity (RoE) and were all obtained from BFA net.

⁴ An online information base linked to McGregor's.

The reason for selecting these variables was to blend internal and external measures of performance. The price earnings ratio is an external measure of performance as it incorporates market sentiment through the price of the share, which is determined by an external market.

The remaining two variables return on assets and return on equity, are internal measures of performance. Return on assets focuses on how efficiently resources are being used and return on equity indicates the extent to which shareholders are generating a return on their investment.

The remaining variables used in the regression were; company age since listing, share liquidity (both from 'The JSE Digest', 2000), auditor whether 'big 5' or not (from the company annual financial statements), debt equity ratio (from BFA net) and multiple listing status (from McGregors, 2000). Each of these variables, with the exception of share liquidity, has been used in prior studies.

Company age since listing was included to investigate whether a company develops an improved culture of reporting over time. The size of the audit firm was used to determine whether there was a difference in the quality of the annual report between small and large audit firms.

Share liquidity, not used in prior studies, formed part of the independent variables in this study to investigate whether companies were influenced by external factors (such as share liquidity) when deciding on the extent of their disclosure. The rationale

behind this was that a company that had a highly traded share may disclose more information in its annual report to aid investors in their decision making process.

The variable debt equity ratio, like share liquidity, was included to ascertain whether or not the extent of disclosure of a company was influenced by the needs of external stakeholders. The risk of a company increases as the debt equity ratio of a company increases. Consequently, this variable was included to investigate whether a company would disclose more information in order to decrease that perceived risk.

The variable listing status was included to investigate whether companies with primary listings on foreign stock exchanges disclosed more information in their annual reports than companies with their primary listing in South Africa.

Finally, industry type was included to investigate, in a South African context, whether some industries disclose better information than others. Banks and insurers were excluded due to turnover not being a meaningful indicator in those sectors. The companies were divided into four industry categories as follows: mining, manufacturing, non-manufacturing and retail. The classifications were performed by the author based on the underlying characteristics of the companies' concern. The industry classifications are shown in Appendix A.

3.3 DATA EXAMINATION AND TRANSFORMATIONS

The majority of the prior research in this field has used multiple regressions to statistically evaluate the findings. Cooke (1998) published a seminal paper titled

'Regression Analysis in Accounting Disclosure Studies' in which he identifies the problems encountered in regression analysis in accounting disclosure studies and highlights the preferred approach in dealing with these issues.

It is common cause that the normality assumptions must be exhibited in a data set in order to conduct a regression analysis. Cooke (1998) states that transformation of data is useful in regression analysis when the relationship between the dependent and independent variables is inherently non-linear, when the distribution of errors is not approximately normal and where there are problems of heteroscedasticity or non-independence of error terms.

This means that data should be transformed where the relationship between the dependent and independent variables is not linear and where the data is not normally distributed. Accounting data sets frequently display non-normal characteristics. Cooke (1998) goes on to explain that data should be screened for distribution problems of kurtosis and skewness, as well as for the existence of outliers.

Due to these potential problems, Cooke (1998) highlights various transformations that can be performed on accounting data sets to ensure that the normality assumptions are met and to ensure that distribution problems are alleviated.

3.3.1 CREATION OF REGRESSION MODELS

As many of the problems identified by Cooke (1998) in the previous section were inherent in the data used in this study, the approach of this study will follow the various transformations highlighted by Cooke (1998).

Cooke suggests running a regression using the actual figures and then recommends four separate transformations to be performed on the data. These transformations are discussed below. Consequently, five separate regression models will be run in this study.

3.3.1.1 TRANSFORMATION 1

The first transformation suggested by Cooke (1998) was to transform the dependent variable. The reporting score, as a percentage, produces scores between 0 and 100. The fact that the dependent variable is bound between 0 and 100 is problematic in terms of the normality assumptions. The dependent variable should be without boundaries and should range between negative infinity and infinity. This problem was overcome by taking the log of the odds ratio of the dependent variable.

The log of the odds ratio was calculated as: $\ln \left[\frac{\text{disclosure index}}{1 - \text{disclosure index}} \right]$.

This transformation ensures that the range of the dependent variable represents that of a normal distribution from negative infinity to infinity. This overcomes the biased

prediction problems highlighted by Ahmed and Nichols (1994) and is also consistent with the method used by Inchausti (1997).

3.3.1.2 TRANSFORMATION 2

The second transformation suggested by Cooke (1998) was to convert both the dependent and independent variables into ranks. Sorting each variable from largest to smallest and replacing the raw data with the relevant ranking achieved this. The advantage of ranking data is that data concentrations of non-linear functions are dispersed.

Transforming the data into ranks also makes the data distribution free and linear. The fact that the data is distribution free means that the normality assumptions were not required (McCabe, 1989). Thus, transformation in this context is useful when using data sets that reveal non-linear monotonic relationships. This approach has been used previously in disclosure studies by Wallace et al (1994), Wallace and Naser (1995), Lang and Lundholm (1993, 1996) and Owusu-Ansah (1998).

A regression based on data transformed into ranks does have limitations, as it is difficult to interpret the meaning of the beta term as the effect on y as a result in a change in x^5 .

⁵ For example, if beta is 0,4, how does one interpret this in terms of a change in x when absolute ranks are being used?

Cooke (1998) states that 'Since ranks are distribution free, the significance of the f - and t - stats are not appropriate'. One thus has difficulty in interpreting the significance of the coefficient. Furthermore, the use of ranks, where the data is transformed into ordinal data, results in less powerful non-parametric tests being used.

3.3.1.3 TRANSFORMATION 3

The third transformation was to transform the ranked dependent variable into normal scores. The raw untransformed data were used for the independent variables. The dependent variable is transformed into normal scores using normal scores tables. The normal scores table transforms the ranked distribution into a normal distribution.

Consequently, the ranks previously used were replaced by a value on the normal distribution. The effect of this is that the regression is no longer distribution free as the data now exhibits the distribution characteristics of a normal distribution. Thus, the advantages of ranking data are maintained. However, the disadvantage that the data is distribution free is eliminated.

3.3.1.4 TRANSFORMATION 4

The final transformation recommended by Cooke (1998) was to transform both the dependent and independent variables into normal scores. Consequently, the dependent variable is the same as the previous transformation; however, the independent variable is also transformed into normal scores.

Cooke (1998) explained that the main advantage of this transformation into normal scores over ranked data is that f - and t - stats can be interpreted. Consequently, the significance of the beta coefficient can be interpreted as a result of the final transformation.

Cooke (1998, p223) concludes ‘...that there is no overwhelming case for one particular approach.’ He recommends that data is collected and transformed using all of the above techniques. Once the regression analysis is run, the results should be assessed to reveal which transformation produced results that are most consistent with a normal distribution.

3.3.1.5 TRANSFORMATION OF INDEPENDENT VARIABLES

Each independent variable was checked for distribution problems. Should an independent variable show excessive distribution, the natural log of the number would be used in the regression model.

The variables size of auditor, multiple listing status and industry type were tested using dummy variables. Consequently, their form in each of the five models remained unchanged.

The dummy variable used with auditor and multiple listing status is a simple yes/no relationship. For instance, if the company uses a big 5 audit firm, that company was assigned a 1. If it did not use a big 5 audit firm, that company was assigned a 0. With

multiple listing status, the company is either listed on more than one exchange (a score of 1) or it is only listed on one exchange (a score of 0).

The treatment for industry type was different as the companies were divided into four industries (mining, manufacturing, non-manufacturing and retail). A base industry was arbitrarily selected (in this case manufacturing) and was not included in the model. The companies were thus allocated a 1 in the column relevant to their industry and a zero in the other two columns (there were three columns: one for mining, one for non-manufacturing and one for retail).

Manufacturing companies were not allocated a number as the base variable is eliminated from the variables. Consequently, the results for industry type were relative to the base variable manufacturing.

Consequently, five independent models were tested. This approach is consistent with Cooke (1998).

Model 1 used the actual data for both the dependent and independent variables (with the necessary independent variables logged to avoid distribution problems).

Model 2 used the log of the odds ratio on the dependent variable with the independent variable unchanged from Model 1.

Model 3 used ranked data for the dependent and independent variable.

Model 4 transformed the dependent variable into normal scores, with the independent variables the same as Model 1.

Model 5 transformed both the dependent and independent variables into normal scores.

3.3.2 REGRESSION TECHNIQUE

3.3.2.1 SIGNIFICANT VARIABLES

A forward stepwise regression was run for each model using the Statistica computer package. This regression technique is consistent with Inchausti (1997). According to this method, the independent variable that was most highly correlated with the dependent variable was introduced into the model first.

Subsequently, the most correlated of the remaining variables was added to the model. However, a new variable was only added to the model if it was significantly correlated to the dependent variable. A variable previously included in the model was discarded by the model if it became insufficiently correlated as a result of the addition of a new variable to the model. Thus, the variables remaining in the model were all significant at the five percent level.

Before the regression was run, correlations between the variables were calculated. Variables that show significant correlation were not included in the same regression model. This avoided the problem of multicollinearity that is where two independent

variables that are correlated with each other are included in the same regression model. Multicollinearity hampered Singhvi and Desai's (1971) work.

In this study, there were three performance variables (PE ratio, RoA and RoE) and six size variables (turnover, market capitalization, assets, net profit before tax, number of employees and number of shareholders). Thus only one of the performance variables and one of the size variables were included in each regression model. If any of the remaining variables were correlated with each other, separate regressions were run.

The independent variable number of shareholders was initially thought to be a separate variable. However, it showed significant correlation with other size variables and consequently was included as a proxy for size.

The variables included in the model were inspected to see if the anticipated relationship between the dependent and independent variable held. Should the relationship not be what is anticipated, that variable was removed from the model. This overcomes the problem of a stepwise regression not making practical sense.

The mathematical relationship is thus:

$$Y(\text{Disclosure score}) = B_0 + B_1(\text{independent variable 1}) + B_2(\text{independent variable 2}) + B_i(\text{independent variable } i) + U$$

Where B_0 is the unknown constant and U the error term.

3.3.2.2 MITIGATING THE EFFECT OF OUTLIERS

Bollen and Jackman (1990) suggest that there are two ways to mitigate the effect of outliers on a sample. One is to remove them and the other is to rank the data.

A Cook's distance⁶ test was run for each model. This test calculates the difference between the predicted regression score and the actual score. Consequently, it identifies those companies that have a large difference between the actual score and the predicted score. These companies exert a disproportionate influence on the regression and those companies, which were considered outliers, were removed and the regression re-run.

However, one of the disadvantages of removing outliers is that the original sample is being altered which may lead to a predetermined result being obtained. Consequently, regressions were run and interpreted from samples that included outliers and from samples that excluded outliers.

Consequently, for the purposes of this study, Cook's distance test was applied to models 1 and 2. Models 3, 4 and 5 already incorporate various forms of ranked data and consequently the need to apply a test that eliminates the effect of outliers was not necessary.

The standard residuals of each model were examined for normality to ensure that the normality assumptions were met and the results could be interpreted.

⁶ Test obtained from the electronic version of Statistica (2000)

3.4 CONCLUSION

In summary, a stepwise regression was run in order to ascertain which independent variables are significantly correlated with the level of disclosure. Due to the problems mentioned previously with accounting data sets, the data will undergo various transformations. This transformation approach is consistent with Cooke (1998) and 5 independent models were used for this study.

3.5 LIMITATIONS OF THE STUDY

The companies were evaluated based on the content of the annual financial statements only. Therefore, no reward was given for separate employee reporting, interim reporting or disclosures made during the year to the financial press.

Only one year's data was used to evaluate the companies. This could detract from the meaning of the results if a certain company's figures and disclosures were skewed by once off events such as poor economic conditions in the period under study.

The sample size was reduced to 64 as certain items of data were not available for certain companies. As the data set is reduced, the significance of the statistical results diminishes.

CHAPTER 4

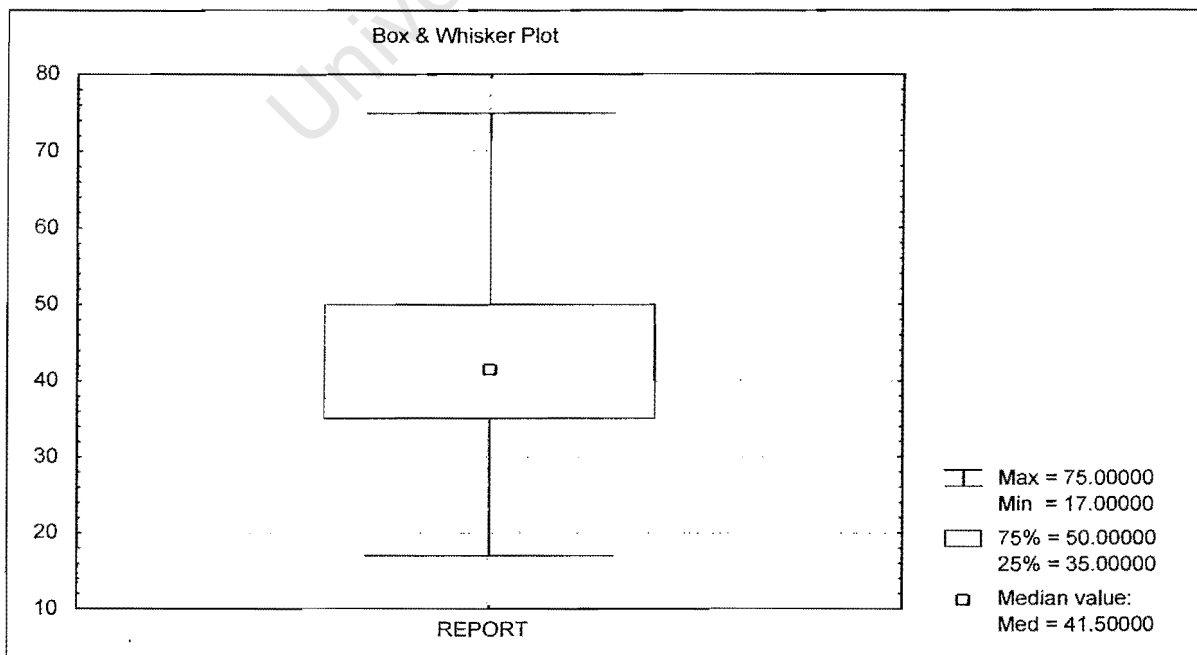
RESULTS

4.1 DESCRIPTIVE STATISTICS

Cooke (1998) suggests that the dependent variable should be inspected for normality prior to the regression being run. Consequently, descriptive statistics were run on each transformation of the dependent variable.

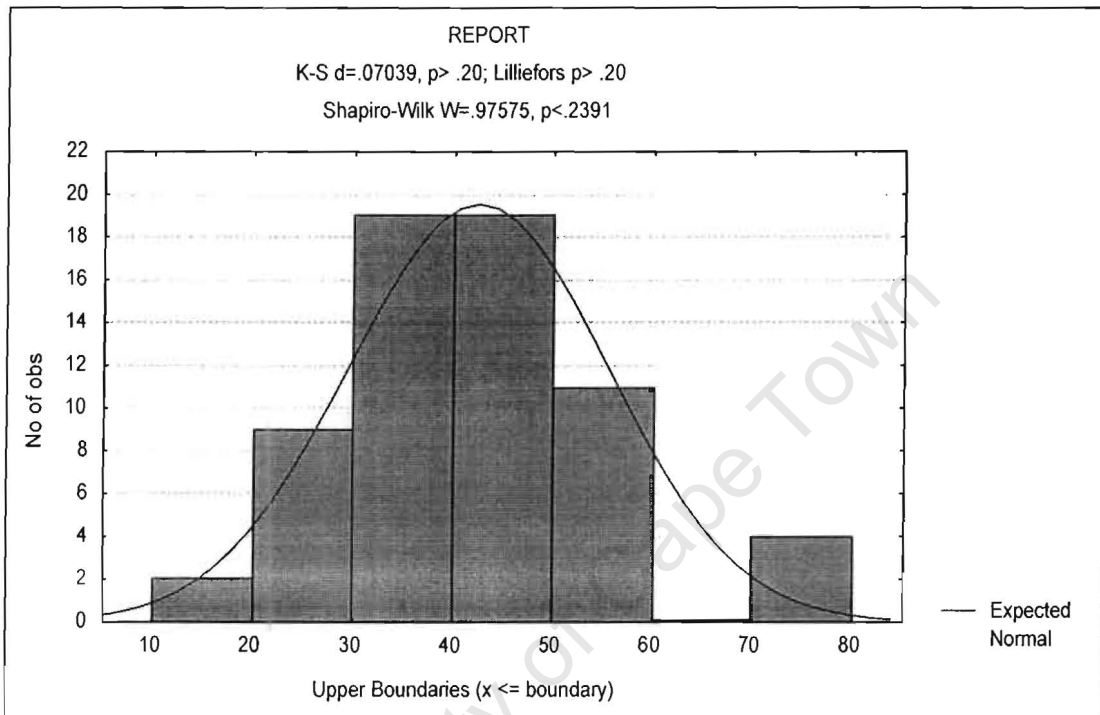
The Box and Whisker plot of the dependent variable, quality of disclosure, for Model 1, shown below, indicates a range from 17% to 75%. The median is 41,5%; the 25th percentile is 35% and the 75th percentile 50%. This is the complete range and no outliers are reported. Consequently, the dependent variable, in this form, is suitable for regression analysis.

Figure 1.



The distribution of the dependent variable was assessed using visual inspection and statistical techniques. Visual inspection suggests that the dependent variable is normally distributed. This is shown in the figure below:

Figure 2.



The visual inspection that the data is normally distributed was confirmed by the Shapiro-Wilk test on normality. The test produced a 'p' statistic of 0.239. From this one can conclude that the data is normally distributed. Note that no companies are present in the 60-70 range. This indicates that the top four companies were significantly better than the remainder of the sample.

Cooke (1998) suggests that tests for skewness and kurtosis be performed on the dependent variable. However a specific test on skewness and kurtosis was not necessary as the effect of skewness and kurtosis are incorporated into the Shapiro-Wilk tests on normality.

The dependent variable for Model 2 (log of the odds) as well as Models 4 and 5 (normalised scores) displayed characteristics of a normal distribution. However, as expected, the dependent variable for Model 3 (ranked data) was not normally distributed.

Consequently, descriptive statistics show that the dependent variable in Models 1,2,4 and 5 display appropriate characteristics in order to conduct meaningful regression analysis. Despite the fact that the form of the independent variable in Model 3 is not normally distributed, this does not preclude meaningful regression analysis being run as the normality assumptions are not necessary to conduct regression analysis when the data is ranked (McCabe, 1989).

Before the stepwise regression was run for each of the five models, the independent variables were examined for distribution problems. Three size variables; assets, market capitalisation and number of employees showed non-normal distribution. Consequently, the natural log of those variables was used in the regression.

4.2 REGRESSION RESULTS

A discussion of the results for each of the five models (as explained in section 3.3.1) is presented below and the interpretation of the results is discussed under section 4.3.

The six size variables as well as the variable industry type were significantly correlated with each other. Further, the three performance variables exhibited

significant correlation. Consequently, for each model, 21 regressions were run. This was to avoid problems of multicollinearity between the independent variables.

For example, a regression would be run using assets as the size variable with PE ratio as the performance variable as well as the remaining independent variables. Another regression would then be run using assets as the size variable and return on equity as the performance variable as well as the remaining independent variables.

This process continued until each of the six size variables and the industry type variable were run with each of the performance variables and the remaining independent variables.

4.2.1 MODEL 1

The results for Model 1 are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Assets; 0.136
Number of employees	Employees, PE; 0.216 Employees; 0.167
Turnover	Age, PE; 0.125 Age; 0.062
Market Capitalisation	Age, PE; 0.125 Age; 0.062
Number of Shareholders	Age, PE; 0.125 Age; 0.062
Net Profit	Net Profit; 0.081
None	Mining Industry; 0.218

This table can be interpreted as follows:

The column 'Size Variable' indicates which of the six size variables was included in the regression analysis. Where 'none' is displayed in the 'size column' it indicates that industry type was included in the regression.

Thus, when assets were used as the size variable, it was found to be the only significant variable in the regression (none of the three performance measures nor any of the other independent variables were significant).

Each asset variable was regressed with each of the three performance variables separately. Thus, when number of employees was included as the size variable and PE ratio as the performance measure, both variables were significant (none of the remaining independent variables were significant). When number of employees was included with return on assets and return on equity, only number of employees was found to be significant.

The fourth row of the table illustrates that, when turnover was used as the size variable, age since listing (one of the other independent variables) was found to be significant in conjunction with the performance measure PE ratio. When the other performance measures were used, the only significant variable was the age since listing.

The results of model 1 (dependent and independent variables in raw data form) shows that three size variables – assets, employees and net profit - explain changes in level of disclosure and are thus shown as significant variables in the table.

The remaining three size variables – turnover, market capitalisation and number of shareholders – were not significant at the 5 percent level. However, in the regressions that were run using them as size variables, the age since listing was significant. This shows that older companies were more likely to disclose more information than younger companies.

The only performance variable to show any significance was the PE ratio. It was significant in combination with both number of employees and company age.

None of liquidity, debt equity ratio, auditor or listing status variable was significant in this model.

Sectors were also analysed in the model. Due to the correlation between the mining and manufacturing sectors and the size variables and company age, regressions were run including the remaining variables with the sectors.

The manufacturing variable was used as the base variable in the regression equation. Consequently, as explained in the methodology, that variable was left out of the regression. The remaining three industries were included in the regression and the results were interpreted relative to the base (manufacturing) variable.

The results showed that the mining industry disclosed significantly more than base industry, which, in this study, was the manufacturing industry. However, no significant difference was found between retail and non-manufacturing and the base variable in terms of the level of disclosure.

The finding that the mining industry disclosed significantly more than the other sectors was consistent in each of the five regression models.

4.2.2 MODEL 1 AFTER APPLYING COOK'S DISTANCE TEST

The results for Model 1 after applying Cook's distance test are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Assets, Age; 0.282
Number of employees	Employees; 0.129
Turnover	Age; 0.105
Market Capitalisation	Age, Market Capitalisation; 0.316
Number of Shareholders	Age; 0.105
Net Profit	Net Profit; 0.191

The regression run using assets as the size variable included the age variable as a significant variable. The PE ratio was no longer significant in conjunction with number of employees and age since listing however, market capitalisation was significant along with age when it was used as the size variable. The result for net profit remained unchanged.

4.2.3 MODEL 2

The results for Model 2 are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Age, PE; 0.126 Age; 0,06
Number of employees	Employees; 0.066
Turnover	Age, PE; 0.126 Age; 0.06
Market Capitalisation	Age, PE; 0.126 Age; 0.06
Number of Shareholders	Age, PE; 0.126 Age; 0.06
Net Profit	Net Profit; 0.075
None	Mining Industry; 0.2088

The results of model 2 (dependent variable transformed into log of the odds ratio and independent variable in raw data form) were similar to model 1 except that the size variable assets was no longer significant at the five percent level. Similar to the regressions run with size variables turnover, market capitalisation and number of shareholders, age since listing was significant when assets was the size variable in this model.

Furthermore, the PE ratio was no longer significant in conjunction with the size variable number of employees. However, the PE ratio was still significant in

conjunction with the age since listing variable and was the only significant performance measure.

4.2.4 MODEL 2 AFTER APPLYING COOK'S DISTANCE TEST

The results for Model 2 after applying Cook's distance test are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Assets, Age; 0.31
Number of employees	Employees; 0.136
Turnover	Age; 0.104
Market Capitalisation	Age, Market Capitalisation; 0.309
Number of Shareholders	Age; 0.104
Net Profit	Net Profit; 0.189

As with model 1, the PE ratio was no longer found to be significant in any of the regression models after removing the outliers. The results were exactly the same in terms of significant variables as the results of the Cook's distance test in model 1. However, there were some differences between the results for model 2 where all the data was used and the results where the outliers were removed. After applying Cook's distance test, both assets and market capitalisation were now significant in conjunction with company age.

4.2.5 MODEL 3

The results for Model 3 are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Assets; 0.103
Number of employees	Employees; 0.091
Turnover	Age; 0.06
Market Capitalisation	Age; 0.06
Number of Shareholders	Number of shareholders, Age; 0.116

The results of model 3 (both dependent and independent variables ranked) are different from the previous two models. For the first time, number of shareholders was found to be significant at the 5 percent level. Also, for the first time, net profit was no longer significant, with company age replacing it as the only significant variable. Both assets and number of employees were significant, with number of employees being significant in conjunction with the dummy variable auditor.

4.2.6 MODEL 4

The results for Model 4 are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Assets; 0.129
Number of employees	Employees; 0.125
Turnover	Age; 0.063
Market Capitalisation	Age; 0.063
Number of Shareholders	Number of shareholders, Age; 0.132
Net Profit	Age; 0.063

None	Mining Industry; 0.2167
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Model 4 (dependent variable transformed into normal scores and the independent variable in raw data form) produces exactly the same significant variables as model 3 at the five percent level.

4.2.7 MODEL 5

The results for Model 5 are summarized in the table below:

Size Variable	Significant Variables, adjusted R²
Assets	Assets; 0.14
Number of employees	Employees; 0.14
Turnover	Turnover; 0.10
Market Capitalisation	Age; 0.058
Number of Shareholders	Number of shareholders, Age; 0.129
Net Profit	Age; 0.058
None	Mining Industry; 0.2167

Model 5 (both dependent and independent variables transformed into normal scores) produced the same results as model 4 except that turnover was significant when it was included as the size variable.

Cooke (1998) suggests that the distribution of the error term should be inspected for each regression model to ascertain which transformation offers the best fit for a particular data set. Aside from Model 3 (ranked data), where normality was not

expected, the error terms of the other models were inspected graphically for normality and did not show any abnormalities. Consequently, the results were valid and can be interpreted.

4.3 INTERPRETATION OF RESULTS

The five different models all produce different results in terms of which independent variables are significant as well as the strength of the relationship between the dependent and independent variables. However, the purpose of this study was not to identify which transformation was the most appropriate but was merely to determine the characteristics of companies that exhibit high levels of disclosure. Consequently, it is the trend of the results that will be interpreted.

4.3.1 SIZE VARIABLES

The overall finding that the size of the company is significantly positively related to the level of disclosure is consistent with the prior research.

The two most significant size variables were total assets (significant in models 1,3,4 and 5) and number of employees (significant in models 1,2 3,4 and 5). Net profit was significant in models 1 and 2 but was no longer significant when the data was ranked. Number of shareholders behaved contrary to net profit in that it was only significant in the ranked and transformed rank models (models 3,4 and 5). Market capitalisation was only significant after applying Cook's distance test to models 1 and 2 and turnover was only significant in model 5.

This variability of significance of size variables is different from findings in previous studies. Prior research by Cooke (1989) found no significant difference in the significance of the relationship between level of disclosure and assets, turnover and number of shareholders. In addition, Olusegan Wallace et al (1994), Inchausti (1997) and Cooke (1991) found no significant difference in the significance of the relationship between assets and turnover and the level of disclosure.

The findings that there was a positive relationship between the level of disclosure and the size variable total assets were consistent with the prior research. The reasons for the possible relationship have been covered extensively in the literature review.

Another size variable, number of employees, not used extensively in prior studies, was significant in this South African study. One of the reasons for large (by any measure) companies exhibiting high levels of disclosure is that large companies will have advanced internal reporting structures to communicate information.

Consequently, the marginal cost of reproducing this information externally is reduced in this context.

Furthermore, where number of employees was used as the measure for size, the absolute number of people to whom the company must communicate with in an internal reporting context is isolated. Companies communicate internally in order to streamline the objectives of their organisation.

Therefore, the greater the need to communicate internally, the greater the need to employ people specifically for that function. Consequently, the marginal cost of employing an individual specifically for internal reporting is reduced the greater the total number of employees in the organisation.

Consequently, it can be expected that the chances of an employee being employed specifically for the reporting function will increase as the total number of employees' increases. One can thus expect higher levels of disclosure to exist in a company if an individual was employed specifically for the reporting function.

The findings that number of shareholders is positively related to the extent of disclosure, although only significant in three of the five models, is also consistent with the prior research.

The variables net profit before tax and turnover were only significant in models 1 and 2 and model 5 respectively. The former variable has not been used in prior studies; consequently, there was no expectation that it should be as significant as the other proxies for size. However, the finding that the size variable turnover was not consistently significant in all of the models was not consistent with prior research where all proxies for size were equally significant.

The income statement size measure turnover as well as market capitalisation did not produce results consistent with prior research. Possible explanations for this difference could be the economic conditions prevalent during the period under review.

The period coincided with poor economic conditions that were emphasised by a drop in the price index in South Africa of 55% compared to a similar drop of only 25% in the United States of America (MCSI, 2000b). Furthermore, the Rand lost 23% of its value from the period 1 November 1999 to 31 October 2000 (Inet Bridge).

Furthermore, the devaluation of the Rand would benefit those companies that generate income from foreign sources. This would distort the meaningfulness of comparing the size of a company by using turnover as the measure.

The retail sector experienced difficult trading conditions as consumer spending changed course with an injection of spending into cell phones and gambling. Furthermore, rising fuel costs, increased costs of health care and costs of technology increased the already difficult conditions of the sector. (Joubert, 2001).

The conditions in the economy affected the stock market (which had resultant effects on the size variable market capitalisation). The correction that was anticipated after the market gains in 1999 were more severe than expected with the resource sector falling 15% in the first quarter of 2000 (Eedes, 2001).

The second quarter of 2000 saw the bursting of the Nasdaq IT bubble which had its effect on the JSE with the IT sector losing 37,5% of its value from February to April 2000 (Stafford, 2000) with DiData starting its dramatic decline in September 2000 (Stafford, 2001).

During this period investor confidence in Southern Africa diminished further with the land reform policies in Zimbabwe affecting the South African markets.

These factors resulted in variability in the market capitalisation of JSE listed companies. This not only had an effect on the sample of companies selected but also on the relative market capitalisation of companies within the sample. The former can be illustrated by the change in companies making up the sample compared with the previous year. Nine companies dropped out of the sample due to relative shifts in market value (not through new entrants) and the bulk of those companies were from the information technology and retail sectors (Excellence in Financial Reporting, 2000).

Therefore, the economic conditions prevalent during the period under review perhaps resulted in turnover and market capitalisation being unstable size indicators.

Consequently, the relationship between the level of disclosure and the two variables listed was not consistent with the prior research for the reasons mentioned above.

In conclusion, the positive relationship between the level of disclosure and the size variables of assets, number of employees and number of shareholders was consistent with the prior research. However, the size variables net profit before tax, turnover and market capitalisation did not show a positive relationship with the level of disclosure and were not consistent with prior research.

4.3.2 AGE SINCE LISTING

The variable, company age, was also positively related to the level of disclosure in a South African context. This variable was previously only used in Owusu-Ansah's Zimbabwean study (1998) and the results were consistent with his study. The theory behind why old companies should disclose more information is explained by the learning curve inherent in companies.

The quality of the annual report is perhaps not the initial priority of a newly listed company. It takes time for a newly listed company to become attuned to the demands of being listed. This finding indicates that perhaps only once the primary concerns of profitability and maintaining a competitive advantage (through secrecy of information) are overcome, does enhanced external reporting become an issue.

Thus high quality reporting develops over time with companies building on their disclosure from the previous year. Consequently, older companies are more likely to disclose more information. This is consistent with Owusu-Ansah's (1998) findings in Zimbabwe.

4.3.3 INDUSTRY TYPE

The finding that the mining industry was significantly different from the other three sectors (retail, manufacturing and non manufacturing) is particularly interesting in a South African context.

The mining sector was significantly positively correlated with five of the six size variables (it was not correlated to turnover) and was also positively correlated with

the age variable. Consequently, as size and age, on their own, significantly explain the quality of reporting, it was not surprising that the mining sector was also significantly related to the extent of disclosure as companies within that sector are often both large and mature.

Apart from the reasons cited previously why large (by any measure) and old companies would disclose more information than smaller young companies, there are perhaps other reasons specific to the environment of South Africa why mining companies may disclose more voluntary information than other sectors.

Pallister, Stewart and Lepper (1987) researched the Oppenheimer empire and the mining industry in South Africa. Their research showed that, from the early 1960's, United States investors were investing money in South African mines. Charles Engelhard, founder of Endelhard Metals and Minerals, a giant amongst United States companies, raised US\$ 30 million in 1963 (including contributions from The International Monetary Fund and The World Bank). A further US\$ 150 million was raised in subsequent years.

Due to the political situation in South Africa during this period, the Republic was not a fashionable target for foreign investment⁷. Consequently, South African mining companies had to create the impression internationally that they were attempting to develop local communities and were not linked to the apartheid regime. This was achieved through a variety of mediums, one of which was disclosure in the annual report.

⁷ The Sharpeville massacre occurred in 1960 which left a lasting impression of life in apartheid South Africa

Consequently, a culture of reporting developed. Anglo American created such a favourable impression internationally that, in 1964, United States President Johnson personally received Harry Oppenheimer after being briefed by his officials on Oppenheimer's 'humane policies towards his African workers' Pallister et al (1987).

This impression was created despite the mining industry being linked to the migrant worker policies. Such policies resulted in the splitting up of many black families, atrocious living conditions and extremely unsafe working conditions for the workers. This association between the mining industry and the migrant worker policy was highlighted by the extensive attention and criticism of Anglo American's submission to the Truth and Reconciliation Commission⁸ (Griffiths, 1998).

A South African study by Griffiths (1998) investigated the existence of legitimacy theory with regard to Anglo American since its inception. He found that the extent of corporate social reporting varied with the level of political, social and economic events. The economic conditions under which Anglo American operated were similar of those prevalent in the mining industry as a whole.

Thus, the research shows that, in an attempt to maintain foreign investment during the Apartheid era, the mining industry, and Anglo American in particular, used the annual report to legitimise their actions. Currently, the industry is extensively monitored by the trade unions in this country. As South Africa redresses the issues of its past, the current business environment is extremely sensitive to the exploitation of workers.

⁸ A commission set up to bring atrocities committed under the apartheid era into the open.

Consequently, the mining companies use their annual reports to deflect any negative attention that the mining companies may receive from stakeholders and, in particular, the trade unions. The fact that these policies are formally documented in the annual report increases the bargaining power of mining companies with the trade unions.

Thus, the mining industry, very much in the public eye in South Africa, does still appear to use the annual report to communicate extensively with its stakeholders.

4.3.4 PRICE EARNINGS RATIO

The performance variable PE ratio was found to be significant in conjunction with age in Models 1 and 2.

The nature of the ratio means that a company trading on a higher PE is trading at a premium to current earnings compared to a company trading on a lower PE. This introduces the value growth phenomenon into this study that distinguishes between value companies (those trading on a low price earnings ratio) and growth companies (those trading on a high price earnings ratio).

Haugen (1996) explains that growth stocks have high prices in relation to current earnings as the market expects growth at a faster rate than average in the future. The expectation of the market is likely to be based on the fact that growth has been faster than the average in the prior period.

Consequently, those companies trading with a high price earnings ratio have to maintain a market sentiment that is expecting growth at a rate faster than in the past. That market sentiment can be fulfilled through disclosure in the annual report. Therefore, it would appear that directors might use the voluntary disclosure of information in the annual report to explain why and how future performance of the company will be better than the current performance.

An explanation of possible future earnings will score highly on the disclosure index used in this study. As a result, the positive relationship between the level of disclosure and the PE ratio could be anticipated.

However, it should be noted that, after applying Cook's distance test to the data and the resultant outliers removed, performance – as measured by the PE ratio – was no longer a significant independent variable.

4.3.5 SIZE OF AUDIT FIRM

Of the final sample of 64 firms, 61 firms were audited by the then 'big 5' auditors. Consequently, the sample is insufficient to draw a meaningful conclusion.

4.3.6 LISTING STATUS

The initial sample of 100 included five companies with primary listings offshore. However, only three remained in the final sample. Each of the three was listed on the

London Stock Exchange, which would require compliance with UK Generally Accepted Accounting Practice.

The sample is thus insufficient in quantity to draw a meaningful conclusion. The three companies were ranked 14th, 28th and 41st (out of the final sample of 64) in terms of their disclosure. This raw test indicates that companies with foreign primary listings do not seem to disclose more information in their annual reports.

The discussion of why particular variables are significant in the South African context has been explained above. However, there is another difference between the results of this South African study and the previous studies conducted in this field. This will be discussed in the following section.

4.3.7 REGRESSION FIT

The adjusted R^2 generated by the regression gives insight into the extent of the variation in the dependent variable that is explained by changes in the independent variable. Consequently, it depicts how accurately one would be able to predict the disclosure score of a company given a particular company's characteristics.

The adjusted R^2 calculated in the prior research for developed and developing countries are summarised in the table below. Where the researcher used multiple models and thus calculated multiple R^2 , the range is shown.

Developed countries⁹

Researcher	Country, year	Minimum R ²	Maximum R ²
Singhvi & Desai	USA, 1971	0.1123	0.4434
Cooke	Japan, 1991	0.3799	0.6461
Cooke	Sweden, 1989	0.4434	0.6107
Olsegan Wallace et al	Spain, 1994	0.6453	0.6528
Inchausti	Spain, 1997	0.3519	0.7419
Olsegan Wallace et al	Hong Kong, 1995	0.5833	0.5960

Developing countries¹⁰

Researcher	Country, year	Minimum R ²	Maximum R ²
Owusu-Ansah	Zimbabwe, 1998	0.0345	0.052
Ahmed & Nicholls	Bangladesh, 1994	0.5070	0.5070
Chow and Wong-Boren	Mexico, 1987	0.14	0.15
Patton and Zalenka	Czech Republic, 1997	0.226	0.244

The prior research indicates that the adjusted R² calculated in research conducted in developed countries exceed those calculated in developing countries. The adjusted R² calculated in this study range from 0,058 to 0.316 (as illustrated in the results tables earlier in this chapter) which places South Africa with the other developing countries.

⁹ Note that Cerf (1961), Buzby (1975), Lang and Lundholm (1993) and Firth (1979) did not disclose adjusted R² values

¹⁰ Note that Wallace (1988) did not disclose adjusted R² values

An explanation for these differences between developed countries and developing countries (including South Africa) may be as follows. The South African corporate environment consists of many conglomerates resulting in a concentration of economic power. Furthermore, many of these large groups are characterised by common directorships that increases the extent of the concentration of economic power (Savage, 1987).

The extent of concentration of power has diminished since 1987 where five groups held 85 percent of the market capitalisation of the JSE¹¹. Since the demise of apartheid and the relaxation of exchange controls, the concentration of power has dispersed. By the end of 2000, this percentage had reduced to 60 percent (McGregors, 2000). Although this amount has reduced significantly, it is still considered to be high by international standards.

These ownership structures are fundamentally different from, for instance, the economies in the USA and the UK (Barr, Gerson and Kantor, 1995). Consequently, large local firms may not need to disclose as much information as large firms in other countries due to this concentration of power. Therefore, a lower adjusted R^2 is observed in South Africa compared to the rest of the developed world.

Another reason for South Africa having a lower adjusted R^2 compared to the developed world is the extent of the size effect. Prior research, including this study, has shown that the size of a company is the biggest influence on the level of disclosure. Large South African companies are not large in an international context.

¹¹ Anglo American Corporation, Sanlam, S A Mutual, Rembrandt and Liberty

Only nine South African companies would feature in the top 75 American companies when number of employees is used as a proxy for size (Forbes, 2001). When turnover is used as a proxy for size, no South African companies would feature in the top 25 companies in Asia (Forbes, 2001a) or Europe (Forbes, 2001b). Furthermore, no South African companies feature in the top 100 global companies (Fortune, 2001c).

Therefore, although size was positively related to the level of disclosure in South Africa, the extent of that relationship was lower when compared to the developed world. This may be attributed to the fact that South African companies are, on the whole, smaller than the companies in developed countries.

Thus, despite South Africa displaying characteristics of a developed country in terms of its accounting environment (as explained in section 1.1), the strength of the relationship between the dependent and independent variables is consistent with that of a developing country.

4.4 CONCLUSION

In summary, the finding that the size of a company was positively correlated with the level of disclosure was consistent with the previous findings internationally. However, contrary to other findings, not all size variables were correlated with the level of disclosure. Number of employees and assets were the two size variables that show the strongest positive correlation with the level of disclosure.

The relationship between the level of disclosure and the age since listing variable was also highly significant. One cannot draw a comparison with the rest of the world as this variable has only been used in one prior study (Owusu-Ansah, 1998). The findings were, however, consistent with the aforementioned study.

South Africa does appear to have a disparity with respect to the level of disclosure across industries as the mining industry discloses significantly better information in the annual report than the other sectors.

The findings of the second aspect of the research indicate that South Africa should be classified with the developing countries in terms of the strength of the relationship between the independent variables and the level of disclosure.

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CHAPTER 5

CONCLUSION

5.1 THE RESEARCH STUDY

The quality of disclosure in companies' annual financial reports varies extensively amongst companies. This study, firstly, determined the relationship between various characteristics of South African companies and levels of disclosure. The second aspect of the research was to determine whether the strength of that relationship was consistent with previous findings for developed or developing countries.

Prior research shows overwhelming evidence that company size (by whatever measure used) is highly correlated with the level of disclosure.

This study used a variety of size and performance variables. The size variables investigated included: total assets, net profit before tax, market capitalisation, turnover, number of employees and number of shareholders. The performance variables included three performance variables: price earnings ratio, return on assets and return on equity.

Furthermore, the relationship between the level of disclosure and the following variables was tested: company age since listing, liquidity of the share, debt equity ratio, listing status of the company, size of the audit firm and industry type.

The methodology followed in this study attempted to replicate that of Cooke (1998). Cooke suggests that regression analysis using accounting data sets is inherently limited due to problems with the normality of the data. Consequently, he recommends various transformations to be performed on the data. These transformations shape the data so that the data displays qualities of a normal distribution.

This resulted in 5 different models being used with separate forward stepwise regression analysis being conducted for each model. Independent variables that were correlated with each other were not included in the same regression to avoid potential problems such as multicollinearity between the independent variables.

The results, consistent with prior research, showed that company size explains the level of disclosure. This is consistent with the prior research. However, not all proxies for size could explain the level of disclosure. Total assets, number of employees and, to a lesser extent, number of shareholders could explain the level of disclosure.

However, the remaining three variables (turnover, net profit before tax and market capitalisation) were not as consistently significant at the 5 percent level. Reasons for this are that perhaps the income statement variables net profit before tax and turnover were not stable measures in the year under review that coincided with an economic downturn that affected the stock market. The variability in market capitalisation resulted in that proxy for size being an unreliable indicator. Reasons for the variability of these factors have been discussed in section 4.3.1.

Company age since listing was highly significant in a South African context. This finding was consistent with the limited prior findings using this variable. Only one prior study has used this variable.

The mining industry was found to disclose significantly better than the remaining industries. The mining industry showed significant correlation with the size variables as well as company age since listing. Those two independent variables, on their own, explained changes in the level of disclosure. Consequently, it is not surprising that the mining industry, which encompasses those variables, explains changes in the level of disclosure.

The final aspect of the research found that South African companies should be categorised with developing countries in terms of the strength of the observed relationship between the company specific characteristics and the level of disclosure.

5.2 FUTURE RESEARCH

Law requires South African companies, to have an audit committee. The quality of this audit committee, measured, perhaps, by the number of independent members or the number of chartered accountants represented in it, could be evaluated and included as an independent variable. It would be interesting to determine whether the expertise of the audit committee could influence the quality of the annual report.

Additional economic factors, such as the bid-ask spread and the cost of capital could form part of the independent variables. In addition, the research could be extended to include the financial institutions that were excluded from this research paper.

A further study could investigate the variability of particular companies ranking in terms of their disclosure. Companies that do vary greatly from year to year would form interesting bases to investigate the presence of legitimacy theory.

5.3 SUMMARY

In conclusion, South African companies that display high levels of disclosure are large (measured by total assets, number of employees and number of shareholders), old (as measured by age since listing) and are more likely to be in the mining industry than any other industry.

The finding that company size explains changes in the level of disclosure is consistent with prior studies. However, the findings of this study show that not all proxies for size significantly explain the changes in the level of disclosure. This is not consistent with prior studies that show that all proxies for company size equally explain the level of disclosure.

Furthermore, South African companies display the characteristics of developing countries in that the strength of the relationship between the company characteristics and the level of disclosure is weaker than the relationship for developed countries.

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APPENDIX A

The sample of companies for this study is listed in the following pages. Also shown are:

- Auditor Type - Large indicating a 'big 5' audit firm and small a non 'big 5' audit firm
- Listing - Multiple indicating that the primary listing is not in South Africa
- Industry – M indicating manufacturing
 - Re indicating Retail
 - N-M indicating non-manufacturing
 - Mi indicating mining

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Company	Audit Firm	Listing Status	Industry
Amalgamated Beverages Industries	Large	Single	N-M
Advanced Software Technologies	Large	Single	N-M
AECI	Large	Single	M
African Oxygen	Large	Single	M
Allied Technologies	Large	Single	N
Anglo American Platinum	Large	Single	Mi
Anglogold	Large	Single	Mi
Anglovaal Industries	Large	Single	Mi
Anglovaal Mining	Large	Single	Mi
Aspen	Large	Single	N-M
Aveng	Large	Single	N-M
Bidvest	Large	Single	N-M
Billiton	Large	Multiple	N-M
Comparex	Large	Single	N-M
Datatec	Large	Single	N-M
De Beers	Large	Single	Mi
Delta	Large	Single	N-M
Dimension Data	Large	Multiple	N-M
Edcon	Large	Single	Re
Energy Africa	Large	Single	M
Foschini	Large	Single	Re
Goldfields	Large	Single	Mi

Highveld Steel	Large	Single	Mi
Harmony	Large	Single	Mi
Hosken	Small	Single	N-M
Illovo	Large	Single	N-M
Impala Platinum	Large	Single	Mi
Imperial	Large	Single	N-M
Iscor	Large	Single	Mi
JD Group	Large	Single	Re
Johnnic Communications	Large	Single	N-M
Johnnic Holdings	Large	Single	N-M
Kersaf Investments	Large	Single	N-M
Lonmin	Large	Multiple	Mi
M-Cell	Large	Single	N-M
Medi-clinic	Large	Single	N-M
Metro Cash & Carry	Large	Single	Re
MIH Holdings	Large	Single	N-M
M-Net Supersport	Large	Single	N-M
Nampak	Large	Single	M
Naspers	Large	Single	N-M
New Clicks	Large	Single	Re
Northam Platinum	Large	Single	Mi
OTK Holdings	Large	Single	N-M
Pepkor	Large	Single	Re
Pick'n Pay	Large	Single	Re
Pretoria Portland Cement	Large	Single	Re

Profurn	Small	Single	Re
Rebhold	Large	Single	N-M
Remgro	Large	Single	N-M
Reunert	Large	Single	N-M
Sappi	Large	Single	M
Sasol	Large	Single	M
Shoprite Holdings	Large	Single	Re
Steinhoff International	Large	Single	M
Sun International	Large	Single	N-M
Super Group	Large	Single	N-M
Tiger	Large	Single	N-M
Tigon	Small	Single	N-M
Tongaat-Hulett	Large	Single	N-M
Truworths International	Large	Single	Re
Unitrans	Large	Single	N-M
Wooltru Limited	Large	Single	Re
Wooltru Holdings	Large	Single	Re

APPENDIX B

DEFINITION OF INDEPENDENT VARIABLES

Total Assets Fixed as well as current assets are included. Investments are at market price at directors' valuation, at latest balance sheet date. Where revaluations were not taken into the balance sheet, these were ignored.

Where cash balances were netted off against bank overdraft, the cash balances were added back. Tax paid in advance was netted off against tax payable, and only the gross amounts included.

Cost of control and intangible assets, such as goodwill, patents and licences were not included; mining assets were, however, included. Where amounts invoiced on contracts in progress exceeded the value of contracts in progress, the difference was included with retained income; or, if the amount consists of deposits received, the difference was included with creditors. If stock was valued using LIFO, it was adjusted to reflect FIFO or average value if this was disclosed.

Market Capitalisation The market value of all fully paid issued ordinary shares calculated in the closing price of the last trading day on September 2000.

Equity Funds Net assets attributable to ordinary shareholders were adjusted for the same items as total assets. Provisions included with credit balance such as warranty provisions, provisions for self-insurance and provisions for maintenance were included with distributable reserves. Deferred tax was regarded as retained profit.

Return on assets *Profit before interest but after tax, divided by total assets as defined above.*

Return on Equity *Earnings per share divided by the net worth per share after the above adjustments. Extraordinary items are included in the profit figure.*

Net Profit *Taxed profit attributable to ordinary shareholders, after excluding extraordinary items where appropriate. Deferred tax and amounts transferred to provisions and reserves were regarded as retained profit, thus increasing taxed profit disclosed.*

Also excluded are items such as cost of control written off, prospecting expenditure, and provisions against investments and adjustments for prior year tax. The pre-tax difference in profit between LIFO and FIFO or average stock values was added to net profit. Share of associated companies' retained profits was also included.

Liquidity of share *This figure indicates the marketability of the share. It has been calculated by dividing the value of the shares traded over the past year by the average of the market capitalisation over the same period.*

Turnover *This is simply the figure disclosed as turnover in the audited annual financial statements*

Number of Employees *This is simply the figure disclosed as number of employees disclosed in the audited annual financial statements*

Price Earnings Ratio *This is the price of the share at balance sheet date divided by the earnings per share at that date*

Debt Equity Ratio *This is calculated by dividing the interest bearing debt by the shareholders equity*

The remaining variables, listed below, are self explanatory;

Number of shareholders, listing status, audit company size, age since listing and industry type.

These variables have been explained under section 3.2.2 and do not require further explanation.

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