TOWARDS A LISTED REAL-ESTATE INVESTMENT VALUATION MODEL

by

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2 Chronicles 1:10 “*Give me now wisdom and knowledge…*”

To my parents for their education that enabled my studies.

To my wife for her loving support.

To my children for missed time.

ABSTRACT

When considering the valuation techniques of income-producing property, various types of information should be obtained from the market in order to apply them to the valuation of the property under consideration. This includes the comparison with other properties sold in the market. However, due to the illiquid nature of property, especially those typically owned by institutional investors, such transactions do not take place every day. Therefore the necessary information is not always readily available, and also not of the required quality. In order to try and eliminate this problem, the study considers the possibility of using alternative information to indicate market activities.

Various studies have considered the similarities of direct real estate and indirect real estate. Most of these studies compare the investment returns of the two markets. This study extends the research by specifically looking at the unique property loan stock structure of South Africa, and comparing the value of shares to the value of assets. It therefore offers a more comprehensive explanation of the factors over and above the return received on the investment. It furthermore considers the composition of the property portfolio and the possibility to measure individual property values within such a portfolio.

The outcome of the study is a model that allows property valuation and market interpretation from fundamental principles, with supporting evidence from the listed-property investment market.

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LIST OF ABBREVIATIONS AND ACRONYMS

APT	arbitrage pricing theory
AVM	automated valuation modeling
CAPM	capital asset pricing model
CF	coverage factor
CGT	capital gains tax
DCF	discounted cash flow
D/E	debt-to-equity
EBIT	earnings before interest and taxes
EPRA	European Public Real-Estate Association
EPS	earnings per share
EREIT	equity real-estate investment trust (USA)
EVA	economic value added
FBI	fiscale beleggingsinstelling (Holland)
FDW	(in: FDW model) Fisher DiPasquale Wheaton
FIFO	first in, first out
FSB	Financial Services Board (SA)
GDP	gross domestic product
GEPF	Government Employees Pension Fund
IPF	Investec Property Fund
IPO	initial public offering
IVSC	International Valuation Standards Council
J-REIT	real estate investment trust (Japan)
JSE	Johannesburg Stock Exchange

LIFO	last in, first out
LPT	listed property trust (Australia)
LREIV	Listed Real Estate Investment Valuation
MREIT	Mortgage real-estate investment trust
MVA	market value added
NAREIT	National Association of Real Estate Investment Trusts (USA)
NPV	net present value (also: NPW - net present worth)
PIC	Public Investment Corporation
PIF	property investment fund (UK)
PLS	property loan stock (SA)
PUT	property unit trust (SA)
PV	present value
REEFM	Real Estate Econometric Forecast Model
REIT	real-estate investment trust (USA)
ROE	return on equity
RR	retention rate
SACPVP	South African Council for the Property Valuers Profession
SIIC	Société d'Investissement Immobilier Côtée (France)
SVA	shareholder value added
TRS	taxable REIT subsidiary (USA)
USA	United States of America
WACC	weighted average cost of capital

CHAPTER 1
ORIENTATION

1.1. INTRODUCTION

Property investment, with specific reference to income-producing property, is an investment medium which is based on investment principles similar to those of other investment and asset classes. Valuation forms an integral part of property investment, both for decision-making and for reporting purposes. Property valuation forms part of the discipline of asset valuation in general and can therefore be viewed from the same perspective as any other financial asset. The theory surrounding asset valuation is based on the expected return of future income streams. In order to assess the expected return, the value that an investor would put on the return is based on two categories of techniques; relative and fundamental techniques. Property valuation is based on relative techniques; the expected performance is compared to similar investments, and it is assessed how the investment under consideration would compare to such an alternative investment. This fictitious transaction, similar to the comparable actual transactions, places a current value on the investment.

Stock-market-listed property investment funds bring the two different investment classes, i.e. the stocks and bond market and the property market, together as comparable entities. This offers the opportunity to assess fundamental valuation techniques that are relevant to the property fund as financial asset, but also to compare it to the underlying value and intrinsic variables of property performance of the real assets in such a fund. The study considers the various factors used in valuing commercial properties, and considers methods and information to obtain more timely and accurate information from the listed sector, that can be used to perform valuations, or benchmark a specific property, or the property market, against other investment classes. The listed-property market thus offers information on the financial asset investment, but also offers a good case study for properties, with generally good measurable underlying variables.

Asset valuation, with specific reference to property, considers the required financial return for the space provided. Ideally the return could be seen in transactions of similar properties sold, by comparing the purchase price to the income that could be derived from such sold property. These transactions, however, do not take place often enough to do an accurate assessment, and furthermore the information on such transactions is not publicly available and difficult for valuers to obtain when assessing a specific property.

As an alternative, the share price movements of listed property funds are publicly available information, and through consideration of the various factors influencing the share price, its relationship with the value of the portfolio of properties could be determined. By further considering the composition of the portfolio, given the associated attributes of each underlying property, the influence could be determined of each individual property on the aggregate value of the portfolio.

This study investigates the correlation between direct and indirect real-estate markets, with a view to obtaining more timely and accurate information from the indirect real-estate investment market; this could be used to understand the behavior of the direct real estate investment market.

The outcome of the study is the development of a “Listed Real-Estate Investment Valuation Model”.

In order to develop such a model, the stock-exchange-listed real-estate market in South Africa is taken as case study, with specific reference to property loan stock companies. The principles of real-estate space and capital markets will be compared to the financial investment market of such listed funds, in order to understand the behaviour of a typical investor, i.e. of the fund itself as a direct real-estate investor, or of the shareholder, i.e. an indirect investor, in order to formalize the Listed Real Estate Investment Valuation Model (LREIV Model).

1.2. CLARIFICATION OF CONCEPTS

While section 1.1 gave an overall background to the essence of this study, this section explains concepts that have a bearing on the study.

Market Value as by Hornby (1995:718):

> "*The price at which [something] would be sold if offered publicly*"

Market value with specific reference to the real estate market is defined as:

> "*The amount which a property would have realized if sold on the date of valuation in the open market between a willing buyer and a willing seller*" (Zybrands, Nel and Le Roux, 2004:23).

The International Valuation Standards Council (IVSC) has a more detailed definition, as follows:

> "*Market value is the estimated amount for which an asset should exchange on the date of valuation between a willing buyer and a willing seller in an arm's length transaction after proper marketing wherein the parties had each acted knowledgably, prudently, and without compulsion.*" (IVSC, 2010:20)

From these definitions it is clear that market value refers to the estimate of an imaginary or fictitious sale, and not an actual sale. It is therefore upon the valuer to take into consideration all aspects that might have an influence on the value, and to determine the likely result of a negotiation between a notional buyer and seller, who are both fully informed as to the advantages and disadvantages of the property, and who both negotiate on an equal footing (South African Institute of valuers, 2007:3-56(3)). This is different from price and cost in that price is the amount asked, offered or paid for a good or service (IVSC, 2010:9), and price might include specific factors applicable only to the person selling, offering, or paying, and not to all possible buyers and sellers.

Valuation could thus be the process of arriving at the value, or the act of valuing (valuation process), or the amount that was calculated and arrived at (valuation conclusion), (IVSC, 2010:10). It is however evident that the valuer should identify the different factors or drivers that would influence such an imaginary sale.

In this regard, Wilson and Zurbruegg (2003:217) explains a driver as a factor that influences, but is not influenced by, other components of a system.

In some literature there could be reference to “appraiser”, “appraisal” or “appraising”, which might be quoted as such in this study. This refers to the determination of the specific estimation of individual worth, opposed to terms used in relation to market value which would be “valuer”, “valuation” and “valuing”.

A distinction should however be made between the functions of a professional valuer and the functions of any other person evaluating the subjective value of a property. The services provided by a professional valuer are regulated in South Africa by the South African Council for the Property Valuers Profession (SACPVP), and would in a similar way also be regulated by various bodies in different countries around the globe. The process of evaluating property for one’s own purposes and decisions can hardly be regulated and could involve anything that is deemed appropriate by the person so doing. A professional valuer would however have to perform his work within generally accepted valuations practice and must be able to defend it in court proceedings if necessary. This distinction is important for the purposes of this study and will be further explained within the scope of the study.

Investment as defined by Reilly and Brown (2003:5) is:

> “*the current commitment of (Rands) for a period of time in order to derive future payments that will compensate the investor for the time the funds are*

committed, the expected rate of inflation, and the uncertainty of future payments".

For the purposes of this study, investment will include both direct and indirect investment in real estate, i.e. the commitment of money to purchase real estate in order to derive a financial return (direct investment), or the commitment of money to purchase a special-purpose vehicle or part of a special-purpose vehicle that uses such funds to invest in real estate to derive a financial return for the benefit of the owner(s) of such a special-purpose vehicle.

Property is defined by Hornby (1995:929) as:

"*being owned*", or *"possession"*,

which is a general term for anything being possessed, whether it be corporeal things or incorporeal interests and rights (Van der Walt and Pienaar, 2009:8).

A **property right** as defined by Van der Walt and Pienaar (2009:9) is:

"any legally recognized claim to or interest in property".

Real estate generally refers more specifically to a specific kind of property, namely immovable property. This is a specific demarcated piece of land, with improvements permanently attached to it being considered separately as a second dimension (Cloete, 2005:10). Cloete adds a third dimension to this by indicating that the bricks and mortar that form part of the improvements are actually creating space, forming the utility attributes of the real estate, and that this space is then utilized over time, which forms the fourth dimension of real estate.

From the above it should be noted that in the context of this study, when reference is made to property, the meaning would be real estate. If the meaning should be property in the wider sense, i.e. indicating the attributes of ownership,

these alternative terms will be used to avoid any confusion, or they will be clearly defined.

Listed. The study makes use of the term “listed” frequently. For the purpose of this study the term “listed” will specifically refer to the listing of a company or trust on the stock exchange of the relevant market.

Concluding remarks

In this section various concepts and definitions were explained, especially in the context of this study.

Valuation forms an integral part of property investment, not only for decision-making, but also for reporting purposes. Different role players are involved in the listed property investment sector, and each relies on valuations for different purposes. These include fund managers who need to take decisions regarding acquisitions or disposals, financiers who should take a view on financing structures, financial advisors who need to report on the performance of the listed entity, and many other role players.

Valuation reporting also gives shareholders of the listed entities guidance on the condition of the entity’s investments, enabling them to take decisions as part owners of the entity.

Listed vehicles form the basis for investment in property for many investors. The principles underlying the value of these properties are however the same as for any income-producing property. The listed sector could therefore provide useful information also about property not included in such a listed vehicle. The listed market, being both an investment company that could provide information on general investment principles, and a property investment vehicle, could bridge the

gap between principles of general investment behaviour and its influence on property investment behaviour and values.

1.3. OBJECTIVES

Property investment has become a very specialized science, with many variables that can influence the ultimate return. In order to understand property investment, it is necessary to understand the value of the investment medium. The property valuation profession is a fairly young profession, especially in South Africa, and there is still a lot to be added to the body of knowledge in this profession.

When considering the valuation techniques of income-producing property, various types of information should be obtained from the market in order to apply them to the valuation of the property under consideration. This includes the comparison with other properties sold in the market. However, due to the illiquid nature of property, especially those typically owned by institutional investors, such transactions do not take place every day. Therefore the necessary information is not always readily available, and also not of the required quality. In order to try and eliminate this problem, the study considers the possibility of using alternative information to indicate market activities, which will be identified elsewhere in the study, and therefore using this in the valuation process as comparable information.

The concepts of space markets and capital markets are therefore taken to the level where a portfolio of space is rented out in the direct market for a return, which is capitalized in the indirect market by a group of investors. If these relationships could be fully understood, it would be possible to see the influence of an individual investor, as part of a group, on an individual property, as part of a portfolio. The advantage of this is that, because the indirect market reacts much more quickly and shows more transactions than the direct market, the valuations that are performed on direct real estate investment and published in the annual

reports, are either ratified or changed through purchases of shares, whereby the share price would show little change *ceteris paribus*, if the shareholders are in agreement with the valuations, or it would have a positive or negative effect on the share price, depending on their negative or positive perception of the valuations. The portfolio values, and ultimately individual property values, could then be adjusted between annual report dates, by considering the share price movement. Therefore changes in the direct market could be seen much more effectively by considering the indirect market.

The study has three objectives:

- To understand the behaviour of direct property investment and indirect property investment with a view to better explaining the co-movement of values in these two investment mediums;
- To develop a Listed Real Estate Investment Valuation Model that can be used to determine the value of an individual property for investment purposes, or to review the value of properties already included in the portfolio;
- To obtain higher-quality information from the indirect property investment market, for application in property valuation of income-producing properties, in order to explain direct property investment behaviour more timeously.

In discussing the former, consideration will be given to the following aspects:

- The two main steps for valuation of an income producing property are 1. to determine the net rental income, and 2. to capitalize this at a market related capitalisation rate. These two steps relate to the studies on space and capital markets in that the first step of determining the net rental, is actually the price paid for the use of the space, and is therefore influenced by the principles of supply and demand for space. The second step of capitalisation

is all about the capitalisation rate, which corresponds to the theory surrounding the capital markets in the various models.

- The space market, or the price paid for the use of a specific part of a property, is dictated by the demand for and supply of such space. In an economic acceleration period the price for space is supply driven, i.e. by the owners of property, while in a recessionary period it is demand driven, i.e. by tenants.
- The price paid for an income-producing property as an investment, indicates the required return for the given cash flow of the property in question. This information is however not readily available, and proves to be difficult to obtain when valuing similar properties. As an alternative, the price/earnings ratio of the shares in a listed property portfolio is a similar indication of the return required by investors, and could, by a process of reversed engineering, indicate the required return for the underlying property in that portfolio.
- The cash flow of a stand-alone property might fluctuate as leases are signed and expire, the property market fluctuates, or other fluctuations in the market, i.e. operational costs, etc. are experienced. This adds some risk to the cash flow of the property. This risk is reflected in the price that a willing buyer is prepared to pay in order to obtain an acceptable return from the net income of the property, or putting it in another way, the risk is reflected in the rate at which the net income is capitalized or discounted to arrive at the value of the property. The highest risk would be a stand-alone property with a single tenant. By diversifying the income in a portfolio, the cash flow risk is mitigated by fewer fluctuations in the income. An example of this is a property with a number of tenants.
- The risk mentioned is mitigated to some extent by a stand-alone property with many tenants, but still some inherent property characteristics remain in the specific building. The risk can be mitigated more effectively when the specific property is owned within a portfolio; this can, when diversified properly, cancel out the risk influencing the potential income of the property.

With the discount rate, and therefore also the capitalisation rate being an indication of the risk associated with the cash flow, the rate can theoretically be reduced for a property in a portfolio, thereby showing a higher value for the property, or indicating why an institutional investor is willing to pay more for a property than its underlying intrinsic- or market value.

- All of the above is also influenced by the amount of stock that is available. Because property is a fixed asset, it takes time to add stock, and once it is there, it cannot be moved or taken away without serious consequences. This creates a lag effect in the supply and demand equilibrium which is not always in line with economic activity. The factors that create the demand for extra space, and the influence thereof on the equilibrium supply level, should be considered in order to understand the effect on the value of properties in a changing economic market.

It is therefore hypothesized that shareholders are taking the value of the property assets owned by the listed property fund into consideration when they purchase shares. This is due to the property being the driver to the possible returns of the company and therefore the shareholders. As such, shareholders are forming their own opinion of the asset-value of the fund and confirming such value by paying or rejecting the going price for the share of the fund. In so doing, consideration should be given to the expected income of the property company, which is dependent on the direct property investment attributes of the portfolio held by the company.

1.4. LIMITATIONS

The study is performed by investigating the Listed Property sector in South Africa. The listed property market consists of Property Loan Stock (PLS) companies, and Property Unit Trust (PUT) funds. As of end 2011, there were 34 PLSs and PUTs listed on the Johannesburg Securities Exchange.

Due to the differences between PUTs and PLSs, the study is limited to PLS companies. Applicability to PUTs is not investigated, nor is it the aim of this study to test the applicability of the model on other investment vehicles, although it would be recommended to do so as future research.

The model to be developed in this study has inter alia the objective of adding to the body of knowledge of property valuation. As explained in section 1.2, a distinction should be made between professional valuation services and subjective valuation or appraisal for specific investment decisions. It is not the aim of this study to replace, criticize or in any other way suggest replacement methodologies in providing valuation services, but to enhance theoretical knowledge that could complement existing methods, be it in providing professional services or otherwise.

Although the aim of this study is to develop a model that explains the relationship between direct and indirect real estate, specifically as it exist in the South African PLS market, it is not the intention to develop an all-encompassing robust hedonic model. The model to be developed in this study will not explore all possibilities for determining the market value of property and is limited to the investment value of property as it specifically takes place in the PLS sector using only the information that is supplied to the general public by the companies under investigation. It is however not ruled out that possibilities exist for development of a hedonic model from the principles of this study by way of further research.

1.5. IMPORTANCE OF STUDY

According to Hager and Lord (1985:23) *"the success of a valuation relies extensively on personal knowledge and expertise and interpretation of the many variables which exist. A valuation therefore remains an expression of personal opinion."* This was illustrated by Hager and Lord (1985:32-33) in an experiment where ten surveyors (valuers) were requested to value two properties. One of the

valuers normally did valuations for the entity owning the two properties and had extensive experience in the locations where the properties were situated (the control valuation), while the others had experience in the types of property, but not necessarily the location. The results indicated a variance between the lowest and highest valuations of 24% and 37% for property A and B respectively, while the control valuations had a variance from the average of 0,4% and 2,2% respectively. It is arguable if the average has any validity when performing valuations, but the experiment nevertheless shows the importance of information on the quality of valuations.

Miles et al (1993), reported that less than 5% of properties in the Russell-NCREIF appraisal-based index are sold in a given year, indicating that commercial properties transact on average once in every 20 years. This leaves appraisers with very little information to work with in determining market value at specific times. This confirms the need for alternative methods to arrive at accurate market assessment.

Rode (2004) also mentioned that valuers have a serious problem in estimating market values, the reason being that the market data were outdated by the time they became available to market players.

Boyd (2001) discussed the challenges facing valuation practice and commented that the tasks of valuers extended beyond the traditional role of providing a single point estimate. According to him the valuer's primary role is that of a property market analyst and therefore the valuer should be capable of competently commenting on both macro- and microfactors that are influencing the market in which they are specialists. His views on the competency of valuers is supported by the fact that the courts have, on many occasions, criticized valuers for differing markedly from the market figure or other valuations. To illustrate this, the case of "Interchase Corporation Ltd v CAN 010087573 Pty Ltd and others" was discussed. According to Boyd (2001) this case demonstrates the importance of

accurate data. He said that it is not unusual to find that information provided to the valuer is incomplete and occasionally misleading, but it is the responsibility of the valuer to exercise reasonable care in the acceptance and use of valuation data. He also stated that the valuer must demonstrate expertise in attempting to obtain the most accurate information available and that the valuer's responsibility extends to an evaluation of the reliability and accuracy of the data within a risk analysis, and the subsequent quantification of the degree of uncertainty in the valuation figure. Boyd also mentions that the accuracy that is achievable in a valuation figure largely depends on the quality of the comparable data, as well as the competence of the valuer.

Boyd introduces the idea that a lot can be learnt from financial management techniques, the basic measurement of risk being the standard deviation, and another usual, not essential, measure of risk when cash flow models are used is sensitivity or scenario studies. He mentions that the most sophisticated method of risk analysis is the simulation exercise. Boyd states that a few of the major fund managers regularly undertake simulation exercises and they request valuers to provide the estimates for the probability curves of the crucial variables. He said that although simulation exercises have been available for two decades, their use in property valuations has not grown substantially; probably because of the subjectivity required in determining the probabilities for the main variables. Despite this fact, valuers providing services to institutional clients should be competent with this approach and see simulation exercises as an extension of detailed market analysis.

According to Boyd, Australia is experiencing a continual movement of funds from direct to indirect property investment, and those valuers wishing to undertake valuations of major property investments within asset portfolios need to appreciate the effect of an individual asset on the portfolio. He also raises the level of the minimum qualifications which in his opinion a valuer should possess in order to provide the knowledge base for this type of valuation work on property portfolios.

A further requirement is the availability, and ability to operate electronic technology frequently used by Australian property fund managers.

It is therefore the view of the researcher that this study should address the use of data, and the approaches to obtaining more accurate and timely data, which can be used in the industry in order to provide more accurate views of the market and of the values of individual properties, whether stand-alone or in a portfolio. It develops the idea of using the financial market to assist in the property market, and, as far as skills and competency of valuers should be increased, it assists in the knowledge enhancement process. The model developed could also assist fund managers and other stakeholders in performing their own simulation exercises, and in doing so, creating an understanding between corporate financial managers and valuers for each other's work. The model could further assist in understanding the values of property over time, and explain changes in value between different dates.

Booth and Marcato (2004:147) also note: "*Despite improvements in certain countries in recent years, the provision of performance information on the direct real estate market still suffers from a lack of timeliness and reliability*".

This study should not only contribute towards enhancing the level of knowledge in the valuation profession, but should also contribute to the understanding of real estate markets in general, as well as of the interaction between direct and indirect real estate investment markets specifically.

1.6. PROBLEM STATEMENT

1.6.1 Setting the problem:

The primary problem statement can be summarized by the following guiding questions:

1. Is it possible to explain the behaviour of listed property shares, and specifically PLS shares, listed on the Johannesburg Stock Exchange in the context of its share characteristics and distinguish that from its property (real estate) characteristics?
2. Is there a correlation between the values of individual properties owned by a listed property fund and the value of the fund?
3. If a correlation exists, can a model be developed that uses this correlation, to determine values of property for direct or indirect investment purposes and also thereby predict share price behaviour for specific property transactions?

In addressing these core elements of the problem statement, the research will deal with the following sub-problems:

1. What are the basic determinants of value for a listed property fund and for the individual properties that it owns?
2. What is the method used for the valuation of a listed property fund and its underlying shares, and how does it differ from the valuation of the underlying properties?
3. What other factors influence the share price behaviour of listed property funds?
4. Do listed property funds provide sufficient information to their shareholders to make informed share price decisions and does this information availability influence the performance of such a fund?
5. Can any information be obtained from the listed property sector which can be applied to individual property valuations, in order to provide more accurate and timeous information for valuation purposes?

Based on the above, the following hypotheses are to be tested:

1. The first proposition is that direct real-estate investment is a financial investment that acts on similar principles to any other financial investment and therefore investment vehicles that possess the

characteristics of a financial investment as well as real-estate, such as listed property funds, could provide useful information for explaining direct real-estate.

2. From this follows the hypothesis that there are types of information obtainable from listed property funds which can be used in property valuations and which would offer more timeous and accurate results than traditional property valuation techniques, thus bridging the gap between property markets and financial markets.
3. Keeping the above in mind, the last hypothesis is that the information derived from listed funds can be applied in the non-listed sector, if appropriate adjustments are made.

1.6.2 Null hypothesis and alternative hypothesis:

In order to investigate the hypotheses as stated above, it is necessary to consider the null hypothesis, which could be stated as follows:

$$SP_i \, x \, NS_i \neq \beta_0 + \beta_1 P_i + \beta_2 TA_i + \beta_3 DT_i + \beta_4 TO_i + \beta_5 OP_i + \beta_6 TC_i + \beta_7 ID_i + \beta_8 LTL_i + \beta_9 E_i + \epsilon_i$$

or

$$SP_i \neq \beta_0 + \beta_1 AS_i + \epsilon_i$$

or

$$PV_t \neq \beta_0 + \sum_{j=1}^{n} \beta_j A_{ij} + \epsilon_i$$

and the alternative hypothesis as:

$$SP_i \, x \, NS_i = \beta_0 + \beta_1 P_i + \beta_2 TA_i + \beta_3 DT_i + \beta_4 TO_i + \beta_5 OP_i + \beta_6 TC_i + \beta_7 ID_i + \beta_8 LTL_i + \beta_9 E_i + \epsilon_i$$

and

$$SP_i = \beta_0 + \beta_1 AS_i + \epsilon_i$$

and

$$PV_t = \beta_0 + \sum_{j=1}^{n} \beta_j A_{ij} + \epsilon_i$$

Where:

β_0 = *Y intercept*
SP_i = *Average Share Price at observation i*
NS_i = *Average No. of Shares issued at observation i*
TA_i = *Total Assets at observation i*
E_i = *Equity at observation i*
DT_i = *Deferred Tax at observation i*
LTL_i = *Leverage due to Long Term Debt at observation i*
TO_i = *Turnover at observation i*
OP_i = *Operating Profit at observation i*
TC_i = *Total Cost Shown at observation i*
P_i = *Prime interest rate at observation i*
ID_i = *Debenture Interest paid at observation i*
AS_i = *Value of the All Share Index at observation i*
PV_t = *Property Value at time t*
A_{ij} = *Property attribute j for observation i*
ϵ_i = *random error in Y for observation in i*

If any of the three stated equations in the null hypothesis fails to be rejected, it is suspected that the share price is not explained by specific company variables, nor by movements in the aggregate stock exchange performance, nor by the fixed

assets of the company that has a measurable value that influence the individual company variables in determining the share price.

By rejecting all three equations in the null hypothesis, it could be said that the share price is explained by specific company variables, as well as movements in the aggregate stock exchange performance which obscures the relationship between the company share price and other company variables, which includes the fixed assets of the company that has a measurable value that influence the individual company variables in determining the share price.

1.7. PLAN OF THE STUDY

This chapter has provided the orientation for the balance of the study. It provides the broad guidelines, culminating in the problem statement, research questions and hypothesis in order to provide a clear understanding of the broad objectives of the study. The research design and analysis will be described in chapter 2. The chapter shows the handling of data, including an introduction to the case study and the use of samples, with an explanation of the research techniques and the methods of validation. Chapter 3 contains the theoretical foundation of the study. It presents a critical review of related literature and the various theories that have a bearing on the problem. Chapters 4 and 5 contain the empirical study. Chapter 6 formalizes the Listed Real Estate Investment Valuation Model, with a validation of the practical application of the model. Chapter 7 will answer the research questions, formally accepting or rejecting the hypothesis, listing the findings, stating the shortcomings of the model and stating the requirements for further research.

CHAPTER 2
RESEARCH DESIGN AND ANALYSIS

2.1. INTRODUCTION TO AND STRUCTURE OF THE RESEARCH

The research design is a theoretical description of the subject matter, followed by an elaboration of the academic literature, leading to a quantitative analysis and statistical regression of historical data and an empirical analysis for hypothesis testing. It is best described by an overview of the chapters of this thesis.

Chapter 1 contained an overview of the objectives of the study, and the problem statement.

This chapter explains the structure of the study, the selection of the case study, and the data collection strategies.

The theoretical analysis performed in Chapter 3 provides the relevant literature, broad principles and concepts that are applied in the present work. This provides theory and literature that form the theoretical foundation and an indication of previous research that guides this study.

The empirical study is presented in chapters 4 and 5. It is divided into an evaluation of PLS companies, which is contained in chapter 4 and an evaluation of the property holdings of these companies contained in chapter 5. Chapter 4 are further divided into an initial comparison of the share price performance against individual factors, and then elaborated onto a combination of various factors in a multiple regression technique. Chapter 4 will also consider the share performance of the different listed funds under review, and of their correlation with other shares and other economic factors. The evaluation of the property holdings in chapter 5 are an analysis of the factors that determine the individual investment value of the properties in these PLS companies.

Chapter 6 will formalize the study by combining the results of chapters 4 and 5 in order to arrive at a validation of the study through examples of the practical use of the model.

Chapter 7 will contain the concluding remarks, answer the research questions, formally accepting or rejecting the hypothesis through referencing to the statistical testing in chapters 4 and 5, listing the findings, stating the shortcomings of the model and stating the requirements for further research.

2.2. SELECTION OF THE RESEARCH POPULATION

The study investigates the Listed Property Sector in South Africa, by considering the valuation of the PLS companies, and comparing it to the values of the underlying fixed assets. An attempt was made to include the portfolios of all listed PLS companies that are reasonably active in the market as case study. Some companies were excluded in some of the correlations, because of a lack of information, and this is noted in the relevant sections. The study considers data from the listed funds for the specific period from 2001 to 2010.

The reasons for this selection were as follows:

- The researcher has a personal interest in the listed property sector, with its dynamics and intricacies. There is a lot of uncertainty about the working of such portfolios, compared to individual or direct property investment, and this can be cleared up through a study such as this.
- As also mentioned in chapter 1, the valuation profession is considered to be relatively young, with a lot of scope for further research, and there appears to be a gap between the financial market and property valuations. Therefore the specific case study considers the property market most closely related to the financial market, which if understood

properly, can help bridge the gap between financial dynamics and property dynamics.

- Due to the liquid nature of the listed sector, changes in the market could be measured more quickly in the listed property sector than changes in the direct real estate sector, therefore the listed sector can provide much more timeous information, which could lead to more accurate market interpretation.
- The study considers data from 2001 to 2010 as data older than 10 years becomes increasingly difficult to obtain, and therefore the starting date for meaningful interpretation was chosen to be 10 years. The 2010 cut-off date was selected as subsequent data was not available at the time of analysis.

2.3. DATA COLLECTION STRATEGIES

The quantitative data are obtained from various sources. The data used are from secondary sources due to the following reasons:

- Obtaining primary data is a very costly endeavour, and if the necessary data of an acceptable standard are already available, funds will be wasted by recapturing such data.
- Similarly it is a very time-consuming endeavour - not only the actual capturing time, but also the intervals at which data becomes available. The data used for this study covers a period of ten years. Had the option been to capture primary data, the study would have had to cover a much smaller sample, making it less accurate, or it would have taken a similar time to complete the study than the time frame of secondary data used. Through to the use of secondary data, more extensive coverage of data of various type and age could be obtained.
- The capturers of the data used are specialists in their own fields, and it is accepted that the data is of a very good quality, rendering the capturing of primary data an unnecessary duplicating effort.

Data on the listed property funds were obtained from McGregor BFA, a company specializing in the capturing of financial information of companies listed on the Johannesburg Stock Exchange in a standard format, and included:

- Share price performance;
- Financial statements;
- Shareholding;
- Financial ratios.

Where there is a lack of information in a specific situation, the fund in question was contacted directly to obtain such information, except where it is the general trend for a specific company not to supply certain data, then it is excluded.

The different listed property funds active in the South African market will be considered and their share prices regressed in order to obtain a trend in share price growth. The financial statements of the given listed funds were analyzed and the individual financial statement items as well as the performance ratios were compared to share price movements.

2.4. TREATMENT OF DATA

The data used in the study comprises of two main categories:

1. Data to evaluate the PLS companies, i.e. their financial statements, with notes thereto, as well as economic data that are used to evaluate the performance of these companies.
2. Data to evaluate the property owned by the PLS companies, including individual properties as well as in portfolio context.

The data for evaluation of the PLS companies comprises panel data which is structured as a short panel with annual data over a period of 10 years (2001 to 2010) for 19 companies. The panel is balanced for most of the observations, but

some of the companies under investigation do not include the whole time frame, causing the panel to be unbalanced. Due to the time series component of the data, the observations were deflated by CPI before testing, in order to ensure that inflationary effects do not distort the findings of the study.

The data for the evaluation of the properties owned by the PLS companies are cross-sectional data only, comprising of the property holdings as at the end of the time period mentioned for the analysis of the companies. Some of the companies under review had to be eliminated in the investigation to their property holdings, due to the limited information provided by them in this regard. This is more fully explained under the relevant section.

Accuracy of the data is assumed not to be problematic as all data is obtained from the published financial statements of the companies under review which, due to the stringent corporate governance for listed companies, are audited by independent auditors and property valuers before publication.

The study consists mainly of regression analysis of the data, with testing for stationarity, homoscedasticity, collinearity between variables, and the effect of outliers, in order to ensure validity of the findings.

CHAPTER 3
THEORETICAL FOUNDATION

3.1. INTRODUCTION

Real estate as an investment class is a financial investment, but applied in a specialized investment medium - real estate. This suggests that financial investment principles should also apply to this investment class. Generally this is the case with various theories that have been applied to real estate investment, valuing of underlying properties, etc. The present study however considers if there are theories and principles in the financial investment market that have not yet been applied to the specialized investment class of real estate.

This chapter considers the various theories that have been developed for investment and valuation purposes.

Section 3.2 contains general literature that is related to the study and forms the basis for the current knowledge base on the topic.

Section 3.3 considers general financial theories and models, not directly applied to real estate, which form the basis for real estate models and are also applied in building new models in this study.

Other property or real estate related principles, or financial models applied to the real-estate market, which provide an understanding of the applied investment class real estate, are discussed in section 3.4. The theory so presented will form the basis of understanding for this study, from where it can be expanded into other models to build new theories.

In section 3.5 another specialized investment medium is considered. Corporate Valuation considers investment in a going concern, or business. The separate entity which forms the going concern or business, transforms any investment type

into a financial investment, where all the various aspects of the underlying investment are considered within this entity, and the value of the shares in the entity is measured as the financial investment. Although real estate can also be seen as a going concern, various technicalities make it very specialized, viz. management of tenants, maintenance, etc. When these properties are owned in a corporate structure, corporate valuation techniques can be applied to the value of the corporate structure. In this way one determines the value of the underlying assets - in the case of this study, real estate - by considering the price paid for the holding entity, given the corporate structure.

For this purpose various other theories are required. Section 3.6 considers portfolio theory, developed by Markowitz (1952), which shows the interaction of various different investments that are lumped together as one, and the influence of the individual investments on the sum of all.

Section 3.7 discusses the principles of Monte Carlo Analysis, a theory that considers the risks inherent in different investments by simulating thousands of scenarios and measuring the outcome of each, thereby calculating the statistical chance for a given scenario to occur.

Section 3.8 discusses Capital Asset Pricing while section 3.9 discusses Arbitrage Pricing Theory - two specialized models developed for the measurement of investment value.

In section 3.10 the valuation of JSE listed companies is discussed, with various techniques that are explained.

Section 3.11 will conclude the chapter with a discussion of the conditions required for the possible integration of the various theories.

3.2. RELATED LITERATURE

Real estate markets are an ever increasing field for investment in various forms. This is evident from the increase in size and number of towns, cities and metropolitans around the globe. But to what extent is this investment field understood? A market is likely to be influenced by general economic principles, micro market behaviour, and even individuals who are involved in this intricate investment type.

“Analyzing the market for real estate presents a formidable challenge because the market is comprised of two inter-related markets – the market for real estate space and the market for real estate assets” (DiPasquale and Wheaton, 1992:181).

“The analysis of real estate requires attention to two markets, the space market and the capital market” (Downs and Güner, 1999:518).

The earliest published work that distinguishes between “use decisions” and “investment decisions” with respect to real estate, was probably Weimer (1966), but the first article that attempted to integrate the real estate space and capital markets was written by Hendershott and Ling (1984). “Hendershott and Ling’s model evaluated investment value responses to tax code alterations in a dynamic programming algorithm that used a traditional discounted cash flow equation with assumed parameters” (Viezer, 1999:504).

Corcoran (1987) graphically illustrated the space market and capital market of real estate separately, but interdependently and explicitly distinguished between short-term and long-term influences on the market for space. A similar model was published by Fisher (1992:167). Fisher shows the equilibrium that exists between the between short-term and long-term interactions of the space market and capital market.

The next set of refinements appeared as "*…an elegant diagrammatic exposition in three similar articles: Fisher (1992), DiPasquale and Wheaton (1992) and Fisher et al (1993)*" (Viezer, 1999:504). Viezer referred to these models as the diagrammatic model.

The model was formalised in a textbook on property economics by DiPasquale and Wheaton (1992), and the most detailed treatment was given in a seminal textbook by DiPasquale and Wheaton (1996) as the FDW-model.

Du Toit (2002) did research on the FDW-model and described the principles of the model with an accompanied practical example on office space in Pretoria. Du Toit and Cloete (2004:342) described it as follows: "The FDW-model conceptualizes the interrelationships between the following four markets:

- Market for space
- Asset valuation
- Construction sector
- Stock adjustment".

Viezer (1998) had developed a completely new model that similarly describes the space and asset markets in the property sector, but his model is of an econometric nature rather than diagrammatic. Viezer refers to this model as the "Real Estate Econometric Forecast Model (REEFM)", and uses statistical principles to explain the property market, in contrast to the diagrammatical FDW-model. In two separate studies, Boshoff (2004 & 2013b) compared the FDW-model with the REEFM with specific reference to the South African office market.

The primary focus of this study is an assessment of a particular part of the real estate investment market, namely the capitalisation of space as it happens in the listed property sector.

Doppegieter and Rode (2002:5) distinguish real estate investment as being direct or indirect. The former refers to properties that are physically held by the investor, such as an institutional investor who actively participates in the control of the operational aspects of the property. Indirect investment, on the other hand, refers to securities that are issued against a portfolio of properties, which are therefore financial rather than physical assets. Such investors have no physical or direct involvement in the operations of the property portfolio, but share indirectly in the income from such properties.

According to Sagalyn (1990:203), the true volatility of real estate is a source of continuing controversy, while Worzala and Sirmans (2003:1130) note that there is still a lot to learn about the real estate asset class. Wilson and Zurbruegg (2003:205) mention perceived shortcomings in the available literature on understanding property markets.

The literature mentioned above, are shedding more light on the relationship between direct and indirect property markets, but indirect property normally involves a portfolio of properties but to determine the behaviour of an individual property and document that by way of a valuation, is also shown by various studies to be problematic.

Hendershott (1994:1) comments that real estate markets are periodically plagued by excess supply, rent concessions and few arms-length transactions. During such periods, valuation is problematic.

According to Lizieri and Satchell (1997:12), property [real estate] shares offer a strong alternative way of understanding the real-estate market. Roulac (1988:35) however is of the opinion that real-estate security analysis is harder than it looks.

Glascock et al (2000:178) mention that the relationship between real-estate investment trusts and unsecuritised real estate is most controversial. On the one

hand, some studies suggest that these types of real estate are unrelated (see Gyourko and Linneman, 1988; Scott, 1990; Ross and Zisler, 1991). Newell and Keng (2005:8) also found that property is only a small contributor to the performance of listed property trusts (LPTs) in Australia. They found that LPTs became less correlating with stocks over the period 1985 to 2004 (p.4) and that LPTs became more correlating with bonds over this period (p.5). The study furthermore noted that unlisted property trusts and property syndicates are more likely to perform like their underlying direct property assets (p.8). This is an indication that the structure of the vehicle in which the assets are held might have an influence on the performance and the predictability of the underlying assets. A number of other studies also document that direct and indirect real estate are linked by the same common factors (see Chan et al, 1990; Giliberto, 1990; Gyourko and Keim, 1992).

Doppegieter and Rode (2002:2) mention that in South Africa, too, property securitization is still in its infancy and has not yet reached a critical mass.

The literature therefore indicates that securitized real estate investment and direct real estate investment are still relatively unexplored in both their application and the available knowledge of application.

Booth and Marcato (2004:147) state that information from the indirect real-estate market could be useful in understanding the direct real-estate market in two ways:

- Direct real estate index measures could be developed from traded investments, which are closer to a transaction-based index, than indices developed from subjective valuations.
- It could enable more timely flow of information.

"Unfortunately, property values cannot be determined by quick reference to the stock market, but have to be determined independently" (Hager & Lord, 1985:23). Although this statement questions the possibilities for this study, a number of

studies do find useful information in the listed property market. It is, however, a cautionary note that there are other influences on listed property that are not evident in direct property, which if not also taken into consideration, can obscure the information on direct property that could be obtained from listed property investment vehicles. It was also mentioned earlier that the different structure of vehicles might also show different results, and therefore special care should be taken when assessing listed property for the purpose of analyzing direct property behavior. Yavas and Yildirim (2011) investigated the price discovery in real estate markets. As most other literature investigated, they concentrate on the returns in REITs against the returns in the net asset values (NAV). It was found that that REITs are leading, causing changes in the NAV returns to follow. This was also found by Barkham and Geltner (1995) in American as well as British Property Markets, using asset value indices for both. This confirms the possibility to utilize information from the listed property market for price discovery purposes in the direct property market.

Various studies were found that consider the relationships between direct and indirect property investment behavior. It was found that listed property shares in their behavior show various similarities to direct property investment, but that the listed property shares also have many similarities to other investments, such as index-linked gilts (Hager & Lord, 1985:23), the general stock market and bond returns (Giliberto, 1990:259), other securities (Sagalyn, 1990:209) or exchange-traded non-real-estate shares (Ling & Naranjo, 1999:483 & 505-506), while Peterson and Hsieh (1997:322) found that most of the evidence regarding REIT performance indicates that REITs tend to either outperform or perform about the same as common shares. It is evident from these studies that, due to their structure, listed real-estate shares have similarities to other types of investments, causing distinct differences to direct real estate. Lizieri and Satchell (1997:12) show that property shares also exhibit a strong "*contemporaneous correlation*" with overall equity performance. Lee and Stevenson (2007:551) found strong linkages between REITs and value shares, but they state that there remain

sufficient differences in their return behaviour and driving forces for the two sectors to retain a level of distinctiveness, providing portfolio optimization opportunities for which the one is not substitutable with the other. Boudry et al (2011:13-14) found that although REITs have characteristics of stocks and bonds, they also share characteristics with the underlying real estate and REITs and real-estate markets adjust to each other in the long term.

There are, therefore, some clear similarities between direct and indirect real-estate behaviour, as well as some distinct differences. It is assumed that Listed Real-Estate Funds are influenced by factors similar to those influencing direct real estate. Yet the correlation between indices of listed funds and direct property investment is questionable (Giliberto, 1990:259). Giliberto (1990:262) showed that stock and bond market movements heavily influence the performance of EREITs, but have a relative minor effect on direct real estate investment. However, if financial market effects are disregarded, a strong positive correlation becomes evident. This suggests the presence of a common factor, or factors, in both sets of returns. Glascock et al (2000:178-179) indicated that REITs and unsecuritized real estate should be co-integrated. However, co-integration between REITs and stock markets may be absent when the key gains in securitized real estate come from management and risk-sharing rather than the underlying asset of real estate per se. This suggests that company structure may influence the level of co-integration between direct and indirect real estate. Of particular importance in this regard is the difference between the PLS structure used in South Africa, and to the REIT structure used in various other markets. Further evidence that the structure of the investment vehicle that owns the direct property rights could influence the perceived real-estate performance is found by Glascock et al (2000:177-178) who indicate that as the REIT market continues to develop, institutional investors are becoming more comfortable in this form of real estate investment, and institutional holdings of REIT IPO's have increased from less than 10% before 1990 to 41,7% after 1990. This increase in institutional investment in the REIT market is partly facilitated by the tax reform act of 1993. The tax reform

allows more institutional investment without jeopardizing the trust's tax-favored status. These structural changes are important to portfolio management because they may allow REITs to behave more like traditional (small-cap) shares than real estate. The evidence of tax structures influencing indirect real estate further supports the presumption that REITs and PLSs might perform differently, as their tax treatment is different.

Institutional as well as individual investors often perceive investment in listed property vehicles or Real Estate Funds such as PLSs or PUTs, as equivalent to investment in direct real estate, while retaining a degree of liquidity that is unavailable from other forms of real estate investment (Giliberto, 1990:259).

The studies mentioned above show that there are certain correlations between the behaviour of listed funds and direct real estate, but also indicate that real estate shares have similarities with the stock market in general.

Chan et al (1990:432) showed that three factors consistently drive both real estate and stock market returns: changes in the risk structures, term structures and unexpected inflation.

According to Gyourko and Keim (1993:39) real-estate shares traded on the New York and American stock exchanges reflect changes in real-estate market fundamentals more timeously than a widely used appraisal-based system. They mention two findings are of particular relevance:

- There is no significant contemporaneous correlation between EREIT and appraisal series returns.
- EREIT returns are significantly positively correlated with broader stock market returns

These findings have led many to conclude that share prices are not reliable guides to real-estate values. They show, however, that the stock market provides

reliable return measures for one of the most important, yet least studied and understood asset categories. They show that decisions based on movements in appraisal-based indexes rely, in large part, on out-dated information. The stock market, however, provides a reliable measure of real estate conditions.

Fisher et al (1994:137-160) consider the history of commercial property values by comparing different methods of constructing commercial property value indices and return series. Three types of indices were examined:

(i) Indices that attempt to reconstruct property market values by "unsmoothing" appraisal-based indices;
(ii) Indices that trace average ex post transaction prices of commercial properties over time; and
(iii) An index based on unlevering REIT share prices.

They found that the REIT index shows more volatility than the other indexes, and lead by up to two years, indicating that market changes could be identified much quicker in the listed property sector. In the long term, however, it shows the same pattern of returns.

Booth and Marcato (2004:147) found that the two main causes of the difference between the performance of direct real estate and real-estate share indices were firstly the smoothing of valuation based indices and, secondly, the gearing ratio of property shares or REITs indices. It was found that there was a close relationship between de-geared indirect market indices and unsmoothed direct market indices and that there was a larger degree of causality running from the indirect to the direct market. Booth and Marcato mentioned that direct real-estate indices do not measure the performance of underlying transaction prices properly because they are based on valuations, and therefore may be subject to valuation smoothing. Indirect real-estate indices do not properly measure the value investors put on the underlying assets of real estate companies, because real estate companies are geared. They furthermore note that the analysis of the relationship between annual returns from direct real estate and annual returns from real-estate shares

suggests that de-geared real-estate share returns have useful information content that could help understand performance in the direct real-estate market. It is shown that when direct real-estate data are unsmoothed, measures of dependency between the direct and the de-geared indirect market strengthen considerably, and if it is assumed that unsmoothed direct real-estate returns better reflect underlying transaction prices than direct real-estate data, the results suggest that data from the market for real-estate shares could be useful for filling the gaps in direct market series.

Doppegieter and Rode (2002:2) explain that the dividend yields and capitalisation rates of PUTs, when used for valuation, are not based on the same variables and differences should be expected. They state that PUT dividend yields provide a better indication of commercial property values in South Africa, than capitalisation rates.

The studies mentioned so far mostly consider the relationship between direct real-estate investment and investment through listed vehicles, by way of the similarities in the return achieved. The factors driving the return are discussed and the effect on share prices is tested and used to construct indexes to predict return behaviour, rather than value. There is also evidence of similarities between real-estate share behaviour and the behaviour of other shares. Again discussion is largely based on returns, rather than actual share prices or value. No evidence of studies conclusively comparing the value of shares directly to the value of the underlying real estate could be found.

Chan et al (1998:357) indicate that ownership structure (as well as the resulting shareholder activism) has a direct impact on the ability of shareholders to monitor management activities. In addition, this monitoring ability provided by institutional investors could affect a firm's value. According to the authors, several studies further show that the investment strategy of institutional investors has an impact on share returns and their autocorrelation.

Chan et al (1998:357-358) continue that fewer institutional investors invest in REIT shares than in the general stock market. In addition, REIT shares with a higher percentage of institutional ownership perform better than other REIT shares with fewer (or no) institutional investors. It therefore appears that the participation of institutional investors increases the control and monitoring ability of shareholders, and hence the value of REIT shares. Furthermore there are some large institutional investors who concentrate their investments in the REIT stock market. Consequently, the monitoring and control aspects of those REITs must be improving, as institutional investors normally have the expertise and are more willing to spend resources to monitor the companies in which they invest (p.372).

Downs and Güner (1999:518) stated that problems associated with observing the value of the underlying asset in real estate securities are frequently cited by practitioners and academics. Brennan (1990:727-728) refers to this as a latent-asset problem, i.e., the information acquisition problem of investors when the value of some assets is not observable.

From the above it appears that securitized real estate is a good alternative to direct real estate, from an investment perspective as well as information supply, but the differences should be understood. This substitution appears to be increasing, indicating the importance of understanding the relationship between securitized and direct real estate, but also that information availability could over time increase. Wilson and Zurbruegg (2003:205-206) indicate that with the emergence of securitized real estate as a viable alternative for institutional investors in the late 1980s and early 1990s, the question whether the direct and indirect property markets are driven by different forces has become an integral part of the research debate. They state that a shortcoming in the literature appears to be a lack of effective identification of those factors that have a lasting

effect on moving property markets (permanent components) and those that have not (transitory components). Identifying these factors is important because:

- Institutional investors have both long- and short-term goals driven by their strategic and tactical asset allocation objectives. Isolating the objectives would provide them with more effective information on how to adjust their portfolios;
- Securitized property markets have their underlying assets in the direct property sector. It is therefore reasonable to suppose that the permanent driving forces should be the same in both, although the transitory components may differ;
- Isolating permanent vs. transitory components will help identify the sort of controls that monetary and fiscal authorities have over domestic real estate, which again have important ramifications for institutional investors.

It is apparent from the above that the behaviour of listed property share prices is influenced by the involvement of institutional investors, and also by the amount of information that is available to them when they are making investment decisions. This was also found by Gillan and Starks in two separate studies (1999 & 2000).

Various studies have considered specific variables that affect real estate. Wilson and Zurbruegg (2003:207) state that surges in employment growth and real interest rates produce equally severe cycles in real office rents, while they also found that real gross domestic product (GDP) is an important underlying component of real estate cycles for offices in Sweden. GDP was found to be an important driver of the Canadian commercial property market (Clayton, 1996:353), while growth in real per capita consumption, real short-term interest rates, the real-term structure of interest rates and unexpected inflation were found to be fundamental drivers that systematically affected returns of both direct and indirect real estate markets in the US (Ling and Naranjo, 1997:283). In periods of expansion, the productivity level was seen as an important driver of both direct and indirect real-estate markets in the US, while capital markets also played a role

during periods of increased volatility (Grissom and DeLisle, 1999:110-113). It was further found in various countries that domestic economic growth could partially explain real-estate behaviour (Quan and Titman, 1999:183) as well as interest rates and general economic fundamentals (Edelstein and Paul, 2000:66-68; Mera, 2000:84). Wilson and Zurbruegg (2003:207-208) further indicated that there is also a growing interest in the globalization of real estate and the identification of global drivers. There is a link between real-estate cycles and growth in deregulated finance, the internationalization of financial and economic relationships, as well as a link to fundamental economic conditions in each country. The development of closer links between real estate and capital markets and the less restricted flow of capital has spread the value cycle of real estate to a global dimension (Renaud, 1997:37). Changes in world GDP are also found to be an important driver of real estate markets (Case et al, 2000:2-3); this idea was extended and it was suggested that international markets were linked to the US real-estate markets through the health of the US economy (Wilson and Zurbruegg 2003:208). With the hypothesis that indirect real-estate behaviour could explain direct real-estate behaviour, it should be possible to find linkages between these two, with similarities in the influence of the mentioned variables. Boshoff (2013a:22-23) found evidence in the Australian listed property market that weighted average lease expiry periods might have a significant influence on the risk associated with investment in property. Boshoff indicates that the value associated with longer leases is not fully taken into consideration when calculating property returns for valuation purposes. This aspect is confirmed in this study, whereby the information available on lease terms in the South African market is very limited, to the extent that it cannot be taken into consideration for modeling purposes in this study.

From the above studies it is clear that similarities between listed property shares and other shares, as well as between property shares and direct property, exist, while property shares are found to be more volatile than direct real-estate investment, but less volatile than other shares. Simon and Ng (2009:217) found in

this regard that REITs provide better protection against severe downturns of the stock market.

Studies of direct and indirect property almost throughout consider the relationships with regard to returns on investment, while no studies were found where the actual values were compared to each other. The present study is unique in that it compares individual property values. It is indicated in the studies that if stock market attributes could be removed from property shares, information could be obtained that could be useful in the direct property market. The latter is indicated to be unpredictable due to a lack of transparency and information, and could therefore be better explained by indirect markets.

Factors that can possibly explain differences in behavior between direct and indirect real estate (or explain one of the two), are identified in the literature as:

- Security market pricing;
- Change in risk structures and term structures;
- Unexpected inflation;
- Ownership structure and investment strategy;
- Lagging information (also indicated by volatility);
- Tax;
- Surges in employment growth;
- Interest rates;
- Gearing or finance structures;
- Gross domestic product;
- Consumer spending;
- Productivity level during times of expansion;
- Capital markets during periods of increased volatility;
- Country selection as a result of increased interest in globalization of real estate, growth in deregulated finance, and changes in world GDP, especially the health of the US economy.

In addition to the above, factors that are more property specific and that differentiate the performance of individual properties or property types are:

- Lease terms
- Physical characteristics of property;
- Retail sales and profits;
- Vacancy rates;
- Location;
- Employment;
- Production levels.

3.3. FINANCIAL VALUATION MODELS

Reilly and Brown (2003) point out that investment involves the commitment of money in order to derive future returns, or future cash flow, which compensates for the commitment, including the risks involved with such a commitment. A financial asset is the present value of the mentioned future cash flow, discounted at the rate of return or compensation, as required by the investor. The value of any such financial asset is given by the equation:

$$\text{Value} = \sum_{t=1}^{n} \frac{CF_t}{(1+i)^t}$$

This represents the present value of the expected future cash flows. CF_t is the expected cash flow for each period t, i is the discount rate, or the rate of return that the investor would require in order to convince him to invest, and n is the life of the investment (Brigham and Daves, 2004:4).

The investment decision is based on the expected future cash flows that could be derived from the investment. The problem consists in the uncertainty that cash

flow will actually take place, or the risk involved for the cash flow to materialize. The risk is measured by the variance in the expected rate of return, or by the standard deviation. The variance is given by the equation:

$$\text{Variance } \sigma^2 = \sum_{i=1}^{n} (\text{Probability}) \times (\text{possible return-expected return})^2$$

$$= \sum_{i=1}^{n} (P_i) \times [R_i - E(R_i)]^2$$

and the standard deviation by:

$$\text{SD } \sigma = \sqrt{\sum_{i=1}^{n} (P_i) \times [R_i - E(R_i)]^2}$$

The standard deviation is the square root of the variance. Both indicate how much the actual return deviates from the expected cash flow, which is an indication of the risk involved based on the principles of the Black Scholes Merton Model, where σ is a critical factor in the pricing of options, which is a derivative instrument to create a risk free investment (Black and Scholes, 1973; Merton , 1973; Boshoff, 2012).

The expected return for any investment can therefore consist of a risk-free rate, plus a risk premium. The risk-free rate is the return that the investor can obtain on an investment that is risk-free. The risk premium is the extra return that an investor would require to compensate him for the risk involved with the investment. The sources of risk can be categorized under:

- Business risk
- Financial risk
- Liquidity risk

- Exchange rate risk
- Country (political) risk
- Inflation risk

Business risk is the uncertainty caused by the specific nature or industry of the investment (property), i.e. by fluctuations in the property market or the property value itself.

Financial risk is caused by the level of gearing or financing used for the investment.

Liquidity risk is the uncertainty that the investment can be turned into cash again, i.e. in the secondary market for the investment.

Exchange rate risk is the level that the investment is influenced by the exchange rate of the country in which the investment takes place, when the investment is in another denomination than the investor's own.

Country or political risk is caused by the possibility of changes in the political environment in the country.

Inflation risk is the risk that unexpected inflation causes the future cash flows to be deflated quicker over time, with a resultant lower net present value.

The sum of all the different sources of risk is the total risk for the specific investment and might also include specific risk premiums applicable to that investment, such as property specific factors in the case of property investment, like location-, tenant- and property type risk, etc.

It is accepted that an investor would require at least the same return as from an alternative investment with a similar level of risk. The process can also involve

combining different investment risks to arrive at a figure which is the sum of different risk premiums (Brigham and Daves, 2004:31). This implies that the investor will compare alternative investment options, in order to determine the return expected for the given risk. This assumption is the so called rational investor principle, but Tversky and Kahneman (1974), among others, explain the principles of the irrationality of decision making, which could cause the actual measured performance of investments to be different from the theoretical expected performance.

The above equation forms the basis of any investment, irrespective of the type. However, it can look fairly different due to its various applications. Mostly the difference lies in calculating the cash flow; different types of investments produce different types of cash flows. Then, too, the discount rate includes different risk premiums for different investment types.

3.4. PROPERTY VALUATION MODELS

Various valuation models have been proposed to determine the market value of any property. According to Hager and Lord (1985:23-24) two methods are used for the valuation of investment properties; the investment method and the comparative method. The approach of the investment method is essentially one of income capitalisation, and is also described as the discounted cash flow (DCF) approach. The latter is stated to have the advantage of sophistication, but, due to the possible margins of error in all the variables, might result in inferior results if it is not applied carefully. The comparative approach is a method where information on other properties that have been sold (the comparison property), is compared to the property to be valued (the subject), with adjustments for differences between the comparison property and the subject.

The **Comparable Sales** method is mostly used in the residential market, but as we are trying to achieve “the price at which the property would be sold if offered

publicly", the property needs to be compared to other transactions in the market. When applying the other methods to be discussed later, the individual variables are also compared to the market, while in this approach the value as a whole is compared to the market. This approach is only viable if there are enough direct comparable transactions to be used. If not, one of the other methods should be used. The residential market typically has enough data for this method to be used, but the number of variables in the commercial property market causes direct comparability to be problematic as the different combination of attributes results in incomparable results. For this reason indirect comparison methods are used.

Market Capitalisation is used to determine the value of income-producing property. The principle is to take the first year's sustainable income of a property and to capitalize that at a rate generally accepted in the market. Here the income and the capitalisation rate are compared to the market separately. It is accepted that the value of a specific amount of net income will have a certain value to the investor and the ratio of the income and the amount that an investor is prepared to pay for that expected income is determined by the market and measured by comparing the same ratio of other properties that have been sold.

The capitalisation rate can also be determined by taking the discount rate as discussed in section 3.3, and deducting long-term capital growth.

The **Discounted Cash flow** method for property is based on the equation given in section 3.3. The only difference lies in how the cash flow is determined. In property, the net rental is the cash flow, together with the reversionary value, or selling price of the property at the end of the investment period. The rental is determined by comparing the rate obtained by other similar properties, with similar characteristics. The net rental is calculated from the gross rental minus expenses and allowance for possible vacancies and bad debt. In the rental, allowance can be made for some expenses to be paid by the tenant, called recoveries. The vacancy rate is the average vacant space at any given period of time in the

building (structural vacancy), as well as the period that space is empty between different leases (frictional vacancy). Therefore a property might be fully occupied for a period of 10 years, but when the lease expires, it might stand vacant for a period of 6 months before a new tenant can be obtained. This results in a vacancy of 5% (6/120 months). The structural vacancy plus the frictional vacancy of any property forms its total vacancy to be used in calculating the value of the property, and are called the perpetual vacancy, or vacancy into perpetuity.

3.5. CORPORATE VALUATION

Corporate valuation models are split between two types:

- discounted cash-flow techniques;
- relative-valuation techniques.

Discounted cash-flow techniques are based on the basic method for valuation of any other financial asset, as introduced in section 3.3, where the expected future cash flow or income stream is discounted to the present value of such cash flow.

There are four relative-valuation techniques which determine the value of an economic entity by comparing it to similar entities on the basis of different ratios that will be described later in this section.

3.5.1 Discounted cash flow techniques:

Dividend discount model:

$$V_j = \sum_{t=1}^{n} \frac{D_t}{(1 + k)^t}$$

Where:

V_j = Value of common stock j

D_t = dividend during period t

k = required rate of return on stock j

or, for perpetual cashflows:

$$V_j = \frac{D_1}{k - g}$$

Where:

V_j = Value of common stock j

D_1 = dividend during period 1

k = required rate of return on stock j

g = long-term constant growth rate of dividend

The first choice of valuation technique is the *dividend discount model*, as this assumes the cash flow that goes directly to the investor. However, the technique is difficult to apply to firms that do not pay dividends during periods of high growth, or that currently pay very limited dividends because they have high-rate-of-return investment alternatives available. On the other hand, an advantage is that the reduced form of the dividend discount model is very useful when discussing valuation for a stable, mature entity where the assumption of relatively constant growth for the long term is appropriate.

Present value of operating free cash flows:

$$V_j = \sum_{t=1}^{n} \frac{OFCF_t}{(1 + WACC_j)^t}$$

Where:

V_j = Value of firm j

n = number of periods assumed infinite

$OFCF_t$ = operating free cash flow during period t

$WACC_j$ = weighted average cost of capital for firm j

Or, if operating free cash flows are perpetual:

$$V_j = \frac{OFCF_1}{WACC_j - g_{OFCF}}$$

Where:

V_j = Value of firm j

$OFCF_1$ = operating free cash flow during period 1

g_{OFCF} = long-term constant growth rate of OFCF

The *operating free cash flow* consist of the cash flows after direct costs, before any payments to capital suppliers. The discount rate employed is the WACC, and it is very useful when comparing firms with diverse capital structures, because the total value of the firm is determined, then the debt is deducted to arrive at the value of equity.

Present value of free cash flows to equity:

$$V_j = \sum_{t=1}^{n} \frac{FCFE_t}{(1 + k_j)^t}$$

Where:

V_j = Value of the stock of firm j

n = number of periods assumed infinite

$FCFE_t$ = free cash flow to equity during period t

k_j = required rate of return on stock j

The *free cash flow to equity* is the third measure of cash flow; it is a measure of cash flows available to the equity holder after payment to debt holders, and after

allowing for expenditures to maintain the firm's asset base. The appropriate discount rate is the firm's cost of equity.

3.5.2 Relative valuation techniques:

Relative valuation techniques compare the stock price to relevant variables that affect a stock's value. The different techniques are:

Earnings multiplier model: = Price/Earnings ratio

$$= \frac{\text{Current market price}}{\text{Expected 12-month earnings}}$$

Price/Cash flow ratio: $= P_t / CF_{t+1}$

Price/Book value ratio: $= P_t / BV_{t+1}$

Price/Sales ratio: $= P_t / S_{t+1}$

A potential problem in using the discounted-cash-flow measures is that they calculate intrinsic values, which might be substantially above or below prevailing prices, depending on how you adjust your estimated inputs to the prevailing environment. The *relative valuation techniques* provides information on how the market is currently valuing stock at different levels.

3.6. DISCOUNTED NET ASSET VALUE

The discounted net asset value method is used in a number of countries to compare the net asset values of REITs or other listed property vehicles to the share price of the REIT or property vehicle. With the discounted net asset value approach, the purpose is to understand the discount, or premium at which share prices of publicly traded real estate are transacting (Clayton and MacKinnon,

2002:2). Clayton and MacKinnon (2001) found that there is a strong sector component in the REIT pricing to net asset value. (Clayton and MacKinnon, 2002:6) investigates the difference between the return of public and private real estate returns with the focus to explain the difference in risk premiums. They categorize the risk elements as:

- Business or real estate market risk
- Financial or leverage risk
- Private versus public market trading mechanisms and the inherent differences in:
    - organizational structure: G&A expenses and agency costs arising from separation of management and ownership in public companies
    - relative liquidity and frequency of public versus private market pricing
    - ownership structure.

Morri and Benedetto (2009:33) state that two approaches are used to explain the discount at which closed-end funds are trading to their net asset values, rational approach, which hypothesize that the discount to net asset values are based on company specific factors, while the noise trader approach assumes the operation of irrational investors. They found on a market study of Italian real estate investment funds that the two approaches reached different conclusions which are even contradictory, and that the question still remains unsolved. Pierpaolo, Petracci and Spisni (2013) investigated if the discount to net asset values could be caused by the overvaluations of valuers. This was found not to be the case and found that certain properties and regions are more discount-prone than others.

3.7. PORTFOLIO THEORY

Basic Portfolio theory was developed by Harry Markowitz. It indicates the importance of diversification on investments in order to limit risk, and shows how

to diversify effectively. The Markowitz model is based on several assumptions regarding investor behaviour (Reilly & Brown, 2003:211):

1. Investors consider each investment alternative as being represented by a probability distribution of expected returns over some holding period.
2. Investors maximize one-period expected utility, and their utility curves demonstrate diminishing marginal utility of wealth.
3. Investors estimate the risk of the portfolio on the basis of the variability of expected returns.
4. Investors base decisions solely on expected return and risk, so their utility curves are a function of expected return and the expected variance (or standard deviation) of returns only.
5. For a given risk level, investors prefer higher returns to lower returns. Similarly, for a given level of expected return, investors prefer less to more risk.

The expected portfolio return is given by the equation:

$$E(R_{port}) = \sum_{i=1}^{n} W_i E(R_i)$$

(Reilly & Brown, 2003:212)

where:

W_i = the weight of asset i in the portfolio

$E(R_i)$ = the expected return of asset i

In order to determine the portfolio risk, it is necessary to calculate the covariance of the individual assets to the portfolio. The covariance is a measure of the degree to which two variables “move together” relative to their individual mean values over time. The covariance of two assets, i and j, is given by the equation:

$$Cov_{ij} = E\{[R_i - E(R_i)][R_j - E(R_j)]\}$$

(Reilly & Brown, 2003:214)

The portfolio standard deviation can then be calculated to indicate the portfolio risk, and is given by:

$$\sigma_{port} = \sqrt{\sum_{i=1}^{N} w_i^2\sigma_i^2 + \sum_{j=1}^{n} w_j^2\sigma_j^2 + \sum_{\substack{i=1 \\ i\neq j}}^{n}\sum_{j=1}^{n} w_i w_j Cov_{ij}}$$

where:

σ_{port} = the standard deviation of the portfolio
w_i = the weight of asset i in the portfolio
w_j = the weight of asset j in the portfolio
σ_i^2 = the variance of rates of return for asset i
σ_j^2 = the variance of rates of return for asset j
Cov_{ij} = the covariance between the rates of return for assets i and j

(Reilly & Brown, 2003:219)

With listed property investment vehicles the portfolios are very property market specific. This would reduce the ability to fully diversify the portfolio to remove unsystematic risk. This implies that property market risk would not be able to be diversified, but specific property risks such as location, type, use, etc. could be diversified. A well-diversified listed property fund would therefore be considered to be a company that succeeds in diversifying all property specific risks, but property market risk is considered for this purpose as systematic risk. It is however still possible to reduce systematic risk through hedging.

3.8. CAPITAL-ASSET PRICING MODEL

According to the Capital-Asset Pricing Model (CAPM), the expected return for any individual asset is equal to the risk-free rate plus a premium for the asset's systematic risk if the asset is to be added to an already well diversified portfolio.

Therefore the expected rate of return would increase as the systematic risk of the asset increases. According to Sharpe (1964), the expected return $E(R_i)$ on any investment is a linear function of the risk-free rate (R_f) and the sensitivity of the investment's systematic risk to the overall market systematic risk:

$$E(R_i) = R_f + [E(R_m) - R_f] \times \beta_i$$

where:

$E(R_m)$ = expected return on the market portfolio

$\beta_i = \sigma_{i,m} / \sigma_m^2$

As mentioned in section 3.7, the limitation that listed property investment funds are restricted to the property market, the application of the CAPM is limited to determining the rate of return for a specific property asset by adding it to a well-diversified property portfolio, in which case the beta of specific property risks could be determined. It does not necessarily quantify the property market risk. In this regard, the risk free rate is considered the rate of return of a well-diversified property fund, opposed to the more general understanding of a risk-free rate. The property market risk could theoretically be determined by including a well-diversified property portfolio as part of a well-diversified portfolio of other assets, in which case the property beta could be determined.

3.9. ARBITRAGE PRICING THEORY

Where the CAPM only considers one risk factor, viz. the covariance of the asset with the market portfolio, arbitrage pricing theory (APT) developed by Stephen Ross, considers a multifactor risk model. This implies that the expected return on any asset i can be expressed as:

$$E(R_i) = \lambda_0 + \lambda_1 bi_1 + \lambda_2 bi_2 + \ldots\ldots + \lambda_k bi_k$$

where:

λ_0 = the expected return on an asset with zero systematic risk

λ_j = the risk premium related to the jth common risk factor

bi_j = the pricing relationship between the risk premium and the asset; that is, how responsive asset i is to the jth common factor. (Called factor betas or factor loadings)

Again it is necessary to take into consideration the difference between the general understanding of a well-diversified portfolio of assets in general and a well-diversified property portfolio.

3.10. MONTE CARLO SIMULATION

The Monte Carlo simulation ties together sensitivities and probability distributions. In a simulation analysis, a random value is chosen for each variable, i.e. vacancies or market rent, etc. From these values the NPV of the specific investment is calculated. The values of the variables are then changed, and the NPV is calculated again. This is done for thousands of times, calculating the average of all the preceding results to indicate the sensitivity of the variables. (Brigham & Daves, 2004:432 - 435)

3.11. INTEGRATION OF THEORY

The valuations done for real estate and for other financial assets are based on the same principles, due to the fact that the basic characteristics of these assets or investments are the same, viz. to use money in such a way that a return on the money invested could be realised.

When property is considered as a pure financial investment medium, it therefore makes sense that the valuation models used for such property should be similar to the valuation models for other investment mediums. Commercial real estate, which includes industrial, office, and retail properties, are generally owned for the purpose of deriving a long-term financial return, unless it is corporate real estate where the property is owned to operate a business from, in which case the use of

the property is an opportunity cost for not being able to rent it out for a return, or on the other hand a saving in terms of rent that should have been paid for the use of an alternative similar building. In each case the valuation method is the capitalization of the rent or imputed (owner equivalent) rent. Therefore the valuation method is very similar to other financial valuation methods.

When considering the valuation of shares of a company, the two categories of methods available are relative techniques and fundamental techniques, whereby the share price is compared to the attributes of another similar company or specific return of the company is used to evaluate the share price. In property valuation, the two methods for valuing investment, or income-producing, property could also be considered under the two headings of the stock valuation methods. The income-capitalisation method of valuation is similar to the relative techniques, as it compares the income of the property to that of the income of some other similar property sold previously in the open market. The same ratio between income and selling price is then applied to the property in question in order to determine its value. The discounted cash flow method is a fundamental technique, as it considers the long-term return that can be expected from the property, discounting that cashflow at a rate which is an acceptable return, and can be compared to other investments that can be much wider than just a similar property. The risk is, however, that the result could be far out, due to the number of assumptions which could be made incorrectly.

In this study, it will be attempted to bridge the gap between real-estate valuation methods and other investment types. Various investment mediums exist within the real estate market, explained previously as direct or indirect real estate investment. It is expected that these different mediums could be aligned in order to obtain accurate information in the one that can be used to explain the other.

Whether one considers an investment in real estate, as a direct investment, or an investment in a share of a property fund, the investment can be analysed by way

of financial valuation models. Property valuation techniques are specifically adapted to direct real estate investment, and could be considered as applied financial techniques. Valuation models are however regarded as specialized and different from the basic financial models in their application, although they are based on the same theory.

When considering investment in the shares of a property fund, which is still considered part of the real-estate market, corporate real-estate techniques are used to determine the value of the fund as a going concern. These techniques are also based on the basic financial models, but adapted to be specifically applicable to the going concern, with its applicable variables. The valuation of property funds is considered to be relatively easier and more accurate to perform than of real estate directly. The reason for this is that shares in a well-managed property fund are more liquid than a property itself. This is due to the fact that a lot more shares exist that could be sold, at prices that are much lower than those of a direct real-estate investment. Therefore the number of participants that can afford such an investment is much higher. These transactions therefore take place much more often, resulting in more readily available information to adjudicate the investment.

In order to align the corporate valuation method of a property fund with that of direct real estate, it should be kept in mind that the investment medium of a shareholder of the property fund is that of property shares, while the investment medium of the fund itself is direct property. The performance of the direct real-estate investment of the fund will directly influence the performance of its share prices, and therefore the return for the share investors. One can therefore say that the share investors are investing due to the results achieved in the direct real-estate market. The reaction of the share investors can also be used in determining the value of the underlying properties in the direct real-estate market.

The difference between a share investment and the direct real estate market is that a share is only part of the property fund. The sum of all its shares would

however result in the total value of the fund. The fund consists of a portfolio of direct real-estate investments, which is also subject to various financial structures, such as structured financing. The financial structure of the fund should be analyzed and all factors that have an influence on the fund as a going concern should be removed, in order to obtain a value for the portfolio of properties underlying the fund. The value of this portfolio of properties is essentially the sum of all the individual properties underlying the portfolio. By applying Markowitz's portfolio theory to this portfolio of properties, it should be possible to derive the influence of each property on the value of the portfolio as a whole. In order to achieve this it would also be necessary to apply the principles of a Monte Carlo analysis, identify the different variables of each property underlying the portfolio, and determine the influence that a change in each variable has on the value of the portfolio as a whole. By doing this it is possible to determine the risk attached to each property.

By calculating the risk involved in each property, it should be possible to build a risk profile for the portfolio as well as the underlying properties. By application of the risk profile as per the capital asset pricing model of Sharpe (1964) and the arbitrage pricing theory of Ross and Zisler (1991), it should be possible to determine the value of each individual property as part of the portfolio.

These individual values, determined by the model described, would be a valuable input as base for valuation of other properties based on the relative-income capitalisation technique, as well as the fundamental discounted-cash-flow technique. By applying the principles described, the value of other properties could be determined much more accurately, and changes to the value of such properties be predicted more closely and timeously in accordance with changes in general market behaviour.

In section 3.11, the various theories that have been developed on the specific subject matter are considered. Different applications of theoretical principles and

their influence on this study are considered, in order to build this research to the required level of confidence.

3.12. VALUATION OF JSE LISTED COMPANIES

Based on the theory as discussed so far in this chapter, De Wet (2004:14) distinguishes between two models for valuing companies:

- the accounting model, and
- the economic model.

The accounting model involves the comparison of the different accounting ratios as performance indicators, with the same ratios of other, similar companies, in order to evaluate the share price performance of the companies. Various critiques of the accounting model are discussed as there are too many differences in individual companies' accounting policies, resulting in different outcomes when the variables are used in a valuation process. The result is an unreliable indication of wealth in a company under investigation, and could provide a distorted picture when different companies are compared to each other. De Wet (2004:16-24) discusses the main variables that cause these unreliable results under the following headings:

- Last in first out (LIFO) versus first in first out (FIFO);
- Amortisation of goodwill;
- Research and development expenditure;
- Deferred taxation;
- EPS;
- Earnings growth;
- Dividends;
- ROE.

De Wet then discusses the economic methods of valuation as being the NPV, SVA and economic profit model (2004:25). These models consider the cash flow

that is generated in a company, with the associated risk in that cash flow, opposed to the published earnings. His study evolves to discussion of the Economic Value Added (EVA) concept, and how this is used to determine the Market Value Added (MVA).

When considering the valuation of companies listed on the JSE, it should be noted that the different companies and sectors operate in different ways, and care should be taken to understand the operations of such a company correctly in order to apply the correct valuation strategy. A company with a large number of assets, and which relies on these assets for a return, would differ substantially from a company in manufacturing, or a technology company with large research and development costs with nothing to show other than intellectual property.

This study only considers PLS companies on the JSE, which are companies investing in corporate real estate, and earning an income by way of rental paid for space occupied in these buildings. The company therefore has a stable balance sheet with a large component of fixed assets, and as the income relies directly on these assets, the income is expected to be directly related to the level of assets held in the balance sheet.

3.12.1 Criticism of accounting methods

De Wet (2004:16) quotes various studies which indicate the unreliability of the accounting method of valuation.

“Last in first out” (LIFO) and “first in first out” (FIFO) are the concepts whereby manufacturing material is purchased and kept in stock until manufacturing takes place. The stock shows as assets on the balance sheet till used, from when on it is accounted for in the income statement as manufacturing costs. The amount that is used in manufacturing is the difference between the value of stock before manufacturing and after manufacturing, respectively. A problem however arises

with price increases during the time of manufacturing, so that the same item could have been purchased at different prices. This creates difficulties in the pricing of such stock items for balance sheet and income statement purposes. To solve this, stock is accounted for on the cost of each item, and when it is taken for manufacturing, (i) either the prices paid for the oldest stock are used until such time as all stock purchased at that price is depleted, whereafter the items purchased later are used (FIFO) or (ii) the items that were purchased last are accounted for first in manufacturing cost and as they are depleted, the older items are used, creating a situation whereby the oldest products might never be used and stay on the balance sheet, but at the original purchase price (LIFO). This has the effect that an increase in cost is shown on the income statement due to the change in accounting policy, without a real actual change in cost, but with the effect of a lower net profit, and subsequent lower taxes. Companies that have changed from FIFO to LIFO, experienced a 5% increase in share price on the day the change was first announced (Stewart, 1991:24). He further mentions that the share price gain was in direct proportion to the present value of the taxes to be saved by making the switch. This strongly supports the contention that cash generation dictates share prices, not book earnings. PLS companies are however not manufacturing concerns and therefore there is no significant amount of stock that has to be purchased, used in a manufacturing process and sold again. As such, the LIFO and FIFO concern would not be applicable to PLS companies, unless there is a significant portion of development in the company, so that construction materials are shown as stock.

Stewart (1991:26) showed that studies done in the USA indicated that companies that amortized goodwill showed no significant difference in the performance of their share prices compared to companies that did not, providing further evidence that share prices are determined by expected cash generation rather than reported earnings.

Ehrbar (1998:74) quoted studies that showed that companies that announced an increase in R&D expenditure saw an immediate increase in share prices of more than 1,4%, even though this results in a reduction in accounting earnings, indicating that investors act on the expected cash flow increase as a result of this expenditure. R&D expenditure is however not common in property companies, but rather in high-tech manufacturing and pharmaceutical companies. As such it would also not be applicable to PLS companies.

De Wet (2004:18) states that deferred taxation is classified neither as a reserve, nor as a liability. He notes that it could be considered as a liability if a pessimistic view is taken, which is typically the perspective of lenders, or if an optimistic view is taken, such as by the shareholders, the assets giving rise to the deferred tax are replaced continuously and would therefore never become payable. Deferred tax is a very common balance sheet item for PLS companies, as it arises from the income that is shown in the income statement of the companies due to the revaluation of assets. This forms a large part of the income statement of PLS companies and is therefore quite significant. The income is however not taxed, as it is not realized until such time as the property is sold and the tax is therefore deferred until the income is realised. However, if the property is held long enough, there would be a capital gains tax liability rather than an income tax liability on the sale of such a property. The tax is thereby reduced substantially. Furthermore, very few properties are sold in a year, while the revaluation of the portfolio amounts to much more income from revaluation than from sold properties. This results in a continuous growth in deferred tax, but with very little of this ever becoming payable. As such deferred tax will be considered as an equity item for the purposes of this study, rather than a liability.

EPS is indicated by De Wet (2004:19) as a variable that could lead to a very misguided decision. He shows that the effect of EPS could be to indicate a growth in EPS, while this is due to the retention rate of the company's earnings and therefore to a higher asset base rather than to better performance. He further

describes a scenario where two companies are merging that have a different EPS, resulting in a different EPS for one of the merged companies which could lead to a misinterpretation of the real value of that company. He argues that EPS should be considered carefully before using it as a value indicator. This is equally true for PLS companies, especially with the unique structuring of the PLS companies' shares, which are combined with a debenture. The payment of debenture interest forms part of the actual return of shareholders, but is shown in the income statement of the companies as part of the interest expense. Therefore earnings that are shown as the net profit after interest and tax, already exclude some distributions made to shareholders. Depending on the structure of the unit - made up by a share plus a debenture - the amount of debenture interest would differ from company to company, and furthermore the tax liability arising after this interest distribution would also be different. Therefore the structure of the PLS company is of even more concern when considering earnings and EPS, than in the case of manufacturing companies. The earnings for PLS companies should therefore be calculated after interest on liabilities and tax, but before debenture interest. In contrast to other types of companies, this figure should provide a more stable indicator of performance.

Earnings growth is similarly considered to be a weak indicator of performance (De Wet, 2004:21) as it depends on the origin of the growth. Growth attained by spending large amounts on assets and boosting sales by means of aggressive marketing could be unwise, because such policies could result in high levels of inventory and debtors. Such an approach would indeed lead to growth in sales and earnings, but only for a limited time. The build-up of inventory and debtors eventually causes the rate of return on assets to drop. De Wet indicates that only growth that is accomplished by more efficient use of capital investments would be sustainable, and would lead to an increase in share price. Therefore earnings growth on its own is not considered to be a reliable indicator of performance. Again it is equally important for PLS companies that the effective use of capital should be considered. If the growth is not in line with sustainable expansion, and

more effective diversification of the portfolio of assets held by the company, the earnings might suffer from higher vacancies, and volatility in rental income. This leads to higher risk and subsequent poorer performance.

Another concern for PLS companies is the large portion of income that is derived from the revaluation of assets. Most of the assets in PLS companies are fixed assets, which are revalued annually and the increase in value is stated as income in the financial statements. This revaluation process is not always objective due to reasons ranging from heuristics, lack of information and undue influence by various parties (refer section 3.2). This causes a big concern if earnings growth due to revaluation of assets is of any value as an indicator of performance.

The payment of dividends is thoroughly discussed by De Wet (2004:22). He comments that dividends are irrelevant to share price movement in the long term. He quotes studies that indicated that companies paying dividends are doing so because they cannot find sufficient profitable projects in which to invest their available funds. This implies that companies that do not pay out dividends will create growth for their shareholders to such an extent that shareholders could sell off some of their shares if they do need a cash return.

With the unique structure of PLS companies, dividends are largely irrelevant as very low, if any, dividends are paid. This is because distributions are made as a debenture interest payment, which is a tax deductible item, whilst dividends are an after-tax item, on which a secondary tax is also levied. Therefore a PLS company paying out dividends could be considered to be a company that is poorly structured with regard to its share units, and similar to De Wet's findings, to be a company that cannot find sufficient profitable investments.

The use of ROE as a performance measurement is indicated to be equally unreliable, as the same inherent flaws in earnings also affect ROE (De Wet, 2004:24). He shows that companies can destroy wealth even though their ROE is

increasing. Copeland et al (1994:105) argue that ROE is a short-term performance measure and too much focus on it can lead a company to overlook long-term growth opportunities that increase shareholder value. With PLS companies, this criticism could be perceived not to apply, due to the stable nature of investments in real estate. But with the revaluation of assets forming a large part of the income and subsequent earnings reported in the financial statements, an optimistic view of asset values could result in an over optimistic reporting of ROE. This can also reflect the negative way if a pessimistic view is taken on the values and can cause substantially incorrect results if there is a shift from an optimistic to a pessimistic view, or vice versa. This especially could be a problem where valuations are performed in changing market conditions, caused by heuristics and bias (Hardin, 1999:336 and Born and Pyhrr, 1994:455), anchoring and adjustment (Northcraft and Neale, 1987:85) and the “behavioural paradigm” (Diaz, 1999:326). An incorrect assessment of the returns to be included in the calculation of ROE could further skew the picture. It should again be noted that the ROE ought to reflect the earnings after debt interest payments and taxes but before debenture interest distribution. The equity portion should also include equity in the traditional sense, plus debentures.

3.12.2 Economic methods of valuation

De Wet (2004:35) summarizes the economic methods of valuation, indicating that the NPV method of valuation is still regarded as a superior technique to all other capital investment techniques, but fails as a tool for an organization as a whole, or as a performance measure.

The SVA model as developed by Rappaport (1986) is considered to be a very reliable tool, but has been criticized as having too many uncertain variables on which future cash flows are based and that it does not provide an adequate performance measure on which executive remuneration can be based.

Copeland et al (1994) defined the Economic Profit Model that calculates the economic profit, after taking into account the full cost of all sources of capital used. It uses the WACC to determine a capital charge which is subtracted from the profit before interest, but after tax, incorporating an important correction of the accounting profit, which does not take into account the opportunity cost of own capital used.

De Wet (2004:37) explains the Economic Value Added (EVA) and Market Value Added (MVA) methods, with detailed discussion of the process, and judges them to be superior measures of performance as they are based on cash flow assessment rather than accounting profits.

3.12.3 Influence of dividends on share price

As mentioned in section 3.11.1, dividend payments have no influence on share prices. It has been shown by Miller and Modigliani (1961) that under perfect market conditions, where there are rational investors, no taxes and no transaction costs, the value of a company is unaffected by the payment of dividends.

Let us consider a hypothetical company with a long-term market share price of R10/share assumed not to have any share price growth, and let us assume that a dividend of R1 will be paid for the year. It is expected that the market will discount the dividend return in the share price until the dividend is paid out, and then return to a market equilibrium level, due to the loss of the dividend (the share transactions after the dividend payment will not benefit from the dividend, and will have to wait for the next year's dividend to be paid). The closer the time to the next dividend, the shorter time a purchaser of the share will have to wait for the dividend, and the more the investor will therefore be willing to pay for the share in order to have the same return. The seller of the share would however not want to lose out on his potential dividend, and would therefore only be willing to sell at an increased price, as time draws closer to the next dividend payment. The decrease

in share price after the dividend payment is therefore expected to be in the same ratio as the dividend:share price ratio.

This means that the seller would be prepared to sell the share any time during the year for an amount that should be equal to the long-term market price of the share, plus the dividend, but discounted for the period remaining to the payout of the dividend. The discount rate would be the rate that discounts the market price plus the dividend, i.e. R10,00 + R1,00 = R11,00, to the market price only, i.e. R10,00, if discounted for a full year. This works out as an annual discount rate of 9,569%.

Let us consider this from the viewpoint of both the seller of the share and the purchaser. It would mean that the seller loses out on the dividend, and the closer to the payment of the dividend, the higher the selling price he would accept in order to compensate him for the loss of the dividend. He would in total require the market price of R10,00 per share, plus a proportionate amount of the dividend for the period that the share is held after the previous dividend. The price that he is willing to accept, if it is appreciated by 9,569% per annum or 0,7974% per month, for the remaining number of months until the next dividend is paid out, should equal the market price plus the annual dividend of R1,00, i.e. R11,00. The expected selling prices for the 12 months are indicated in table 3.1 below.

On the other hand, the purchaser will receive the R1,00 annual dividend, and therefore he will be willing to pay a higher amount for the share, equal to an amount that if discounted for a period equal to the period that has passed since the previous dividend, at a rate of 9,569% per annum or 0,7974% per month, equals market price of R10,00. The results for each month are indicated in tables 3.1 and 3.2.

From tables 3.1 and 3.2 it is evident that seller and purchaser are in agreement on the price that they are willing to accept / pay in each month. This could be further

discounted for any day in between. If tables 3.1 and 3.2 are therefore considered it could be seen that they show 13 months, as there is also a month 0. That would be the first month, i.e. the day after the previous dividend is paid. The month numbered 1 is one month after the previous dividend is paid. Similarly, month 12 is 12 months after the previous dividend is paid, but would be the last day before the dividend is paid. The equilibrium price will therefore revert back to the long-term market price on the next day, i.e. the beginning of month 0 in the next year.

It should again be noted that with PLS companies the dividend payment is to a large extent replaced by a debenture interest distribution, which depends largely on the structure of the company. The principle as discussed above should however be the same, since the effects of tax are not considered here.

Table 3.1: Seller calculations for determining share price

Month	Selling price	Appreciation factor	
0	R 10,00	x $(1+0{,}007974)^{12-0}$	= R 11,00
1	R 10,08	x $(1+0{,}007974)^{12-1}$	= R 11,00
2	R 10,16	x $(1+0{,}007974)^{12-2}$	= R 11,00
3	R 10,24	x $(1+0{,}007974)^{12-3}$	= R 11,00
4	R 10,32	x $(1+0{,}007974)^{12-4}$	= R 11,00
5	R 10,41	x $(1+0{,}007974)^{12-5}$	= R 11,00
6	R 10,49	x $(1+0{,}007974)^{12-6}$	= R 11,00
7	R 10,57	x $(1+0{,}007974)^{12-7}$	= R 11,00
8	R 10,66	x $(1+0{,}007974)^{12-8}$	= R 11,00
9	R 10,74	x $(1+0{,}007974)^{12-9}$	= R 11,00
10	R 10,83	x $(1+0{,}007974)^{12-10}$	= R 11,00
11	R 10,91	x $(1+0{,}007974)^{12-11}$	= R 11,00
12	R 11,00	x $(1+0{,}007974)^{12-12}$	= R 11,00
12 + 1 day			= R 10,00

Table 3.2: Purchaser calculations for determining share price

Month	Selling price	Discount factor	
0	R 10,00	$\div (1+0{,}007974)^{0}$	= R 10,00
1	R 10,08	$\div (1+0{,}007974)^{1}$	= R 10,00
2	R 10,16	$\div (1+0{,}007974)^{2}$	= R 10,00
3	R 10,24	$\div (1+0{,}007974)^{3}$	= R 10,00
4	R 10,32	$\div (1+0{,}007974)^{4}$	= R 10,00
5	R 10,41	$\div (1+0{,}007974)^{5}$	= R 10,00
6	R 10,49	$\div (1+0{,}007974)^{6}$	= R 10,00
7	R 10,57	$\div (1+0{,}007974)^{7}$	= R 10,00
8	R 10,66	$\div (1+0{,}007974)^{8}$	= R 10,00
9	R 10,74	$\div (1+0{,}007974)^{9}$	= R 10,00
10	R 10,83	$\div (1+0{,}007974)^{10}$	= R 10,00
11	R 10,91	$\div (1+0{,}007974)^{11}$	= R 10,00
12	R 11,00	$\div (1+0{,}007974)^{12}$	= R 10,00
12 + 1 day			= R 10,00

3.12.4 Influence of long-term share price growth on short-term share prices

In section 3.11.3 it was shown that dividend payments or debenture interest distribution has no effect on the long-term equilibrium market price for a share. A share would increase in the short term due to the expectation of a distribution, but revert back to the long-term market level after the distribution.

It is however true that share prices do have a long-term increase or decrease in value. In a stable market where the economy is steadily growing, it is expected that the share price will increase with the growth in the economy. For example, if it is assumed that a share price is steadily increasing at 6% per annum, this needs

to be taken into consideration in the “between distribution” agreed prices. The effect is that the long-term growth percentage is added to the discount rate.

If the share price therefore increased by 6% from R10,00 to R10,60, the purchaser and seller would both want to share proportionately in the share price growth for the period that it is held by each, as well as the expected R1,00 dividend to be paid. The resultant agreed prices are shown in table 3.3, with the discount rate changed to 1,2445% per month. The reason for the change in discount rate is that the seller is also losing out on the increase in long-term equilibrium share price, and would want to be compensated for that by way of a higher discount rate.

Table 3.3: Purchaser calculations for determining share price including growth

Month	Selling price	Discount factor	
0	R 10,00	x $(1+0,012445)^{12-0}$	R 11,60
1	R 10,12	x $(1+0,012445)^{12-1}$	R 11,60
2	R 10,25	x $(1+0,012445)^{12-2}$	R 11,60
3	R 10,38	x $(1+0,012445)^{12-3}$	R 11,60
4	R 10,51	x $(1+0,012445)^{12-4}$	R 11,60
5	R 10,64	x $(1+0,012445)^{12-5}$	R 11,60
6	R 10,77	x $(1+0,012445)^{12-6}$	R 11,60
7	R 10,90	x $(1+0,012445)^{12-7}$	R 11,60
8	R 11,04	x $(1+0,012445)^{12-8}$	R 11,60
9	R 11,18	x $(1+0,012445)^{12-9}$	R 11,60
10	R 11,32	x $(1+0,012445)^{12-0}$	R 11,60
11	R 11,46	x $(1+0,012445)^{12-1}$	R 11,60
12	R 11,60	x $(1+0,012445)^{12-2}$	R 11,60
12 + 1 day			R 10,60

3.12.5 Influence of debt on share prices

According to Miller and Modigliani (1961:411), the value of a company is not determined by the way it is financed. They assert that despite the possibility of higher profits under higher debt financing, if a situation of no taxes and financial distress costs is assumed, the component cost of equity adjusts upward for the risk associated with the higher debt financing, and consequently the WACC remains the same. The result is shown in figure 3.1.

If it is however accepted that the cost of debt financing is a tax-deductible expense, the WACC will indeed reduce with higher debt financing, as shown in figure 3.2. It could therefore be argued that 100% debt financing is optimal, but De Wet (2004:126-129) shows that companies with higher debt financing suffer from distress costs, which increases WACC at high levels of debt, and therefore there is an optimum D/E point as shown in figure 3.3.

The structure of PLS companies includes a debenture portion to the share unit, so that the company has a tax-deductible for debenture interest distribution, without increasing its risky debt. This would cause PLS companies to have a different behaviour towards debt than other stock-exchange listed companies. The effects of this should however still be analyzed. It differs from REITs which are more widely researched since REITs are tax-exempt if they meet certain criteria (Peterson & Hsieh, 1997:321 and Horng and Wei, 1999:562), whereas the PLS company should ensure minimization of tax and risk by way of its own optimal structuring.

Figure 3.1: Influence of debt on WACC

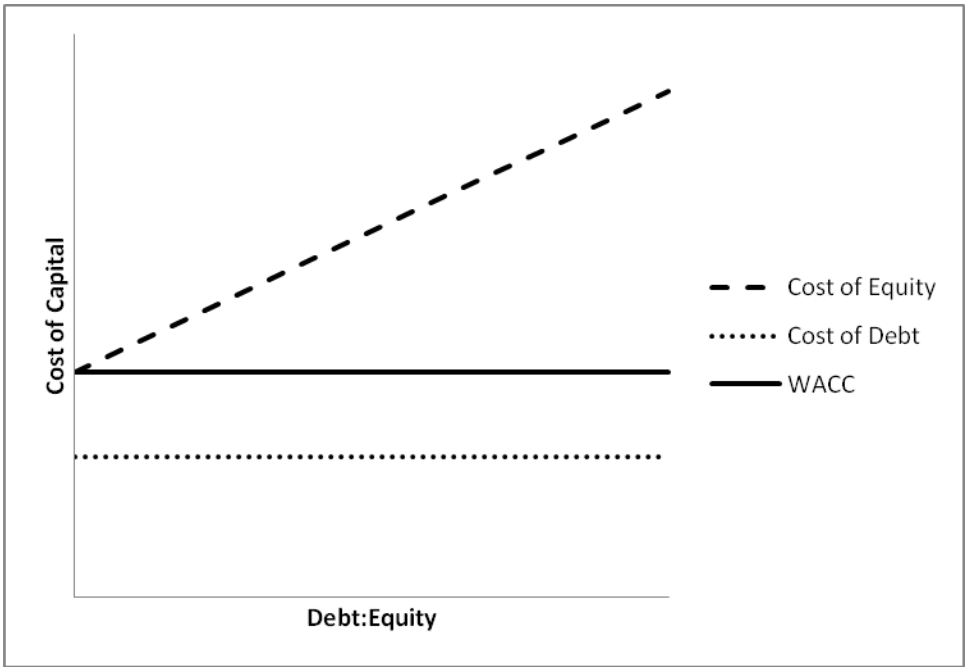


Figure 3.2: Influence of debt on WACC – debt as tax deductible

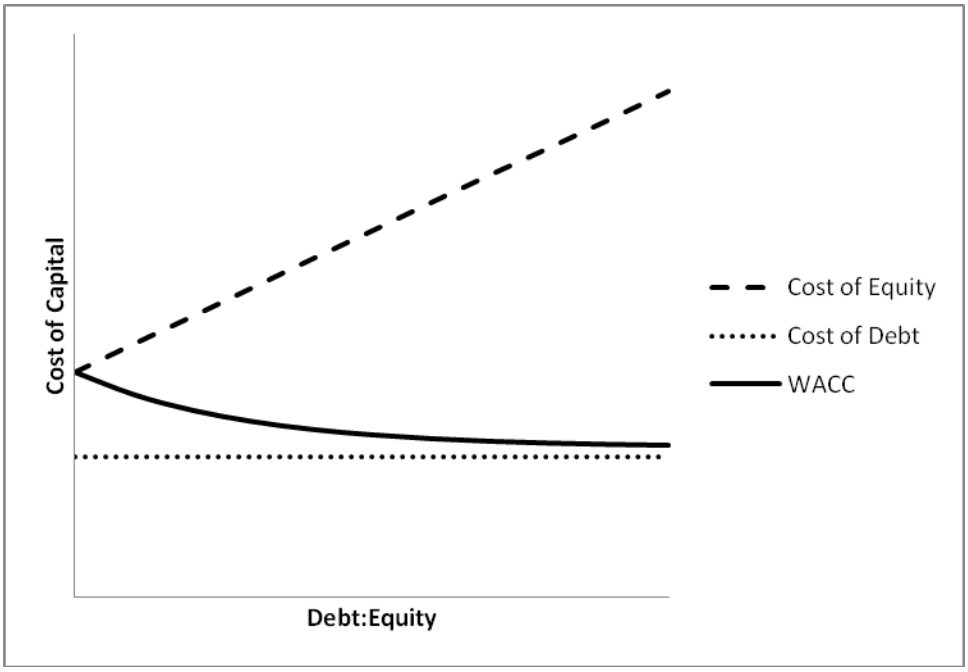
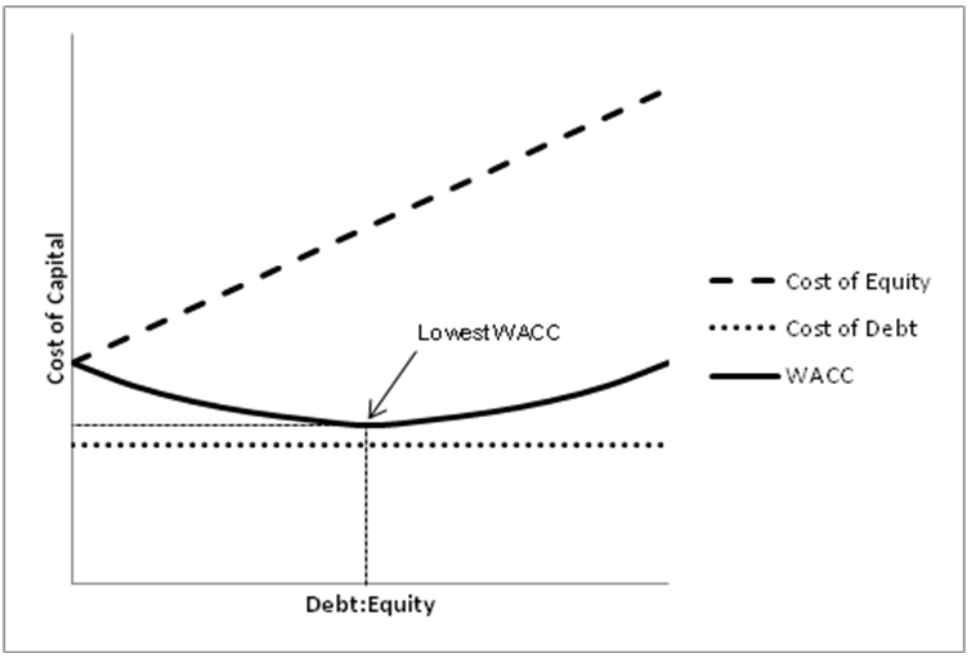


Figure 3.3: Influence of distress cost on WACC



3.12.6 Influence of new share issues on share prices

According to Shelor and Anderson (1998:385) there is a substantial decline in both the average returns and the cumulative average returns during the 20 to 25 trading days following the IPO. Within 180 days of the offering, the returns of the REITs that enacted an IPO have recovered from the initial slump and are significantly positive.

Although it could be argued that new share issues should not have a direct effect on existing share prices, they do have an effect on the total market capitalisation, i.e. the current share price multiplied by the total number of shares issued.

If we consider the influence of debt on share prices as discussed in section 3.11.5, the issue of new shares would change the Debt:Equity ratio, and therefore change the WACC, which would influence the total value of the firm. If the issue of shares is however accompanied by debt restructuring in order to keep the same debt-to-equity ratio, this will not affect the share price, provided the identified

projects to be carried out with the new raised capital bear the same amount of risk and profitability as the existing projects in the firm. Should shareholders perceive the new projects to be higher risks, this might have a negative effect on share prices, and vice versa.

3.13. SUMMARY

Chapter 3 has discussed various general principles of the valuation of Stock Exchange Listed Companies. The difference between accounting and economic methods of valuation was explained, with a discussion of various influences on the share price and total value of a company. These influences included dividends, long-term growth, debt and the issue of new shares.

It was also found that there are various items that influence the view of shareholders and therefore the ultimate value of the company. When analyzing a company all these variables should be carefully considered in order to get a clear picture of the risk and operations of the company.

In chapter 4 the emphasis shifts to the actual performance of PLS as a unique JSE sector. The chapter contains the empirical study whereby the theory as summarized in this chapter is tested in practice, with certain deductions and conclusions.

CHAPTER 4
JSE LISTED PROPERTY FUNDS

4.1. INTRODUCTION

This chapter explains why PLS companies are considered to be a unique JSE sector, from where the listed-property environment is explained. The principles and theory as discussed in preceding chapters are then applied in order to understand the drivers of the share prices of PLS companies. This will provide insight into the total value of these companies and should evolve into an understanding of shareholders' views of the assets of the companies.

A brief preview of the next chapters will be helpful at this stage: In Chapter 5, an analysis will be given of the portfolio in each of the funds represented in the case study. It will be investigated how property variables that affect each individual property influence the portfolio and ultimately the PLS company. These influences of the property portfolio will be correlated with the PLS company's value.

In chapter 6, the LREIV Model will be formalized and tested against three significant market transactions. Chapter 7 will provide the conclusion to the study, answering the research questions and hypothesis, and recommendations for further research.

4.2. LISTED FUND ENVIRONMENT

Indirect real estate investment takes many forms around the globe. Probably the most familiar and most researched form is the Real Estate Investment Trust (REIT).

The first REITs were introduced in the early 60s in the United States, but the modern REIT era only began in the early 90s.

According to Peterson and Hsieh (1997:321-322), a REIT is a closed-end investment company which offers investors the opportunity to invest in real estate related assets, which include income-producing real-estate properties and mortgages. The REIT became a popular investment mechanism in the USA when the Real Estate Investment Trust Act of 1960 was passed. REITs pay no federal tax if they comply with sections 856 through 860 of the internal revenue code. The primary provisions of the internal revenue code are that a REIT:

- Must be a corporation, business trust or association managed by a board of trustees or directors;
- Must invest at least 75% of its total assets in real estate assets, cash items and government securities;
- Must derive at least 75% of its gross income from real estate; and
- Must distribute at least 95% of taxable income, excluding capital gains.

Two different categories of REITs are distinguished. Equity REITs (EREITs) invest at least 75% of their total assets in income-producing real estate properties, while mortgage REITs (MREITs) invest at least 75% of their total assets in residential mortgages, short- and long-term construction loans and mortgages on commercial properties.

According to Edwards and Bernstein (2005:1-23), companies qualifying for REIT status are governed by the REIT Improvement Act of May 2003 and need to comply with the following provisions of the Internal Revenue Code:

- A REIT must invest at least 75% of its total assets in real estate assets, government securities and cash items (p. 2 & 14).
- No more than 25% of the REIT's assets may be represented by securities (p. 14).
- 75% of the REIT's gross income must be from real estate related sources, and 95% of its gross income must be from a combination of real estate-related and passive income.

- A REIT should distribute at least 90% of its taxable income, failing which the REIT could distribute a deficiency dividend (p. 16).
- A REIT may not hold more than 10% of the outstanding voting securities of an issuer.
- No more than 5% of a REIT's assets may be represented by securities of a single issuer.
- A REIT may not hold more than 10% of the value of the securities of any other entity other than Taxable REIT Subsidiaries (TRSs) or another REIT.

REITs were created by the United States Congress in order to give all investors the opportunity to invest in large-scale, diversified portfolios of income-producing real estate in the same way they typically invest in other asset classes, through the purchase and sale of liquid securities.

Since then, more than 20 countries around the world have established REIT type structures and more countries in the process of investigation or implementation. According to the National Association of Real Estate Investment Trusts (NAREIT), the spread of the REIT approach to real estate investment around the world has also increased awareness and acceptance of investing in global real estate securities.

The FTSE EPRA/NAREIT Global Real Estate Index Series, which is a comprehensive index for the REIT and global listed property market, was created jointly in October 2001 by the FTSE Group, NAREIT and the European Public Real Estate Association (EPRA). According to the FTSE EPRA/NAREIT Global Real Estate Index Series, there are 414 public real estate companies from 37 countries representing an equity market capitalization of about $1 trillion, with approximately 68% of that total from REITs. According to NAREIT, the chronology of countries around the world adopting REIT structures is as follows:

- United States – 1960
- Malaysia – 2005

- New Zealand – 1969
- Netherlands – 1969
- Australia – 1971
- Canada – 1993
- Belgium – 1995
- Turkey – 1995
- Singapore – 1999
- Japan – 2000
- South Korea – 2001
- France – 2003
- Hong Kong – 2003
- Taiwan – 2003
- Bulgaria – 2005
- Thailand – 2005
- Israel – 2006
- Dubai – 2006
- United Kingdom – 2007
- Germany – 2007
- Italy – 2007
- Pakistan – 2008
- Finland – 2009
- Spain – 2009
- Mexico – 2010
- Philippines – 2010
- Hungary – 2011
- South Africa – 2012*

*South Africa is still shown by NAREIT as a country considering REIT status, but legislation is passed during 2012, with implementation currently in process.

The following countries are also considering REIT-like structures:

- China
- India
- Kenya
- Indonesia
- Nigeria
- Vietnam

The specific implementation of REITs and other listed property structures in different countries might differ in application, with the main differences in terms of the regulation of:

- The source of income
- Type of assets
- Distribution of income
- Tax treatment
- Financing of assets

Due to these very important differences the South African listed property market might perform somewhat differently from the more commonly known REIT structures as discussed in most literature. The South African REIT structure is still in its infancy and not taken into consideration for purposes of this study, due to data unavailability.

In South Africa, the listed property sector comprised two types of vehicles prior to implementation of REITs, namely Property Unit Trusts (PUT's) and Property Loan Stocks (PLS's).

According to the Association of Property Unit Trusts, a PUT is a portfolio of investment-grade properties that is held for its rental income and capital appreciation under a trust listed on the Johannesburg Stock Exchange (JSE). A PUT is subject to a stringent regulatory framework under the auspices of the Registrar of Collective Investment Schemes – a Financial Services Board (FSB) function – and are governed by the Collective Investment Schemes Control Act (Act 45 of 2002). In addition, the affairs of the management companies which administer the PUTs, are regulated by a Trust Deed between the management company and a trustee, and furthermore by the JSE.

PUTs are permitted to:

- Invest a portion of assets in foreign fixed property and property shares;
- Gear up to 30% of the value of the underlying assets.
- PUTs can now invest directly in property, as opposed to investing in shares of property-holding companies as was the practice prior to amending the Act.

Owing to their structure, PUTs do not pay tax on the income they distribute. Distributions are treated as interest and are taxed in the hands of the unitholder. PUTs are also exempt from capital gains tax (CGT).

A PLS is a company that is registered as a company, subject to the Companies Act, JSE regulations and governed by their own memorandum and articles of association, and invests solely in property.

The main difference between PLS companies and other companies is the method whereby the owners fund the company. When you purchase a linked unit in a PLS it consists of part share and part debenture (or loan). The debenture (or loan) portion of the linked unit earns interest at a variable rate. The interest comes from profits, which the PLS achieves from rental streams from its property investments. Usually PLSs distribute all their profits as interest, thereby avoiding income tax within the company, leaving the tax obligation on the holder of the linked unit. The conditions and terms of the debentures, including the rate of interest payable and repayment dates, are governed by the debenture trust deed, and independent trustees are appointed to look after the interests of debenture holders.

Although the structure of PLSs differs substantially from PUTs, in the end they operate very similarly. Due to the income distribution which is mostly done as interest payments in PLSs and taxed in the hands of unit holders for PUTs, the effect for both is very similar. PUTs are, however, more strictly regulated while PLSs have more flexibility. This caused the South African listed property market to shift from predominantly PUTs to PLSs, with a PUT/PLS split of 66/34 percent in 1998 to 26/74 percent in 2007 (Department of National Treasury, Republic of South Africa, 2007:4)

As at March 2011 there were 19 PLS companies, with their then market capitalisation shown in brackets (McGregor BFA):

- Acucap (R5 927 688 000)
- Bonatla (R35 567 000)
- Colliers (R28 516 000)
- Fairvest (R102 955 000)

- Fortress (R1 897 098 000)
- Growthpoint (R28 915 920 000)
- Hospitality (R1 171 650 000)
- Hyprop (R9 468 451 000)
- Ingenuity (R316 104 000)
- Merchant (R52 291 000)
- Octodec (R1 535 917 000)
- Orion (R132 447 000)
- Pangbourne (R8 614 044 000)
- Premium (R2 029 660 000)
- Putprop (R152 603 000)
- Redefine (R21 440 672 000)
- Resilient (R8 358 372 000)
- Sable (R139 544 000)
- Vukile (R5 159 924 000)

From these companies, Fortress was fairly new at the mentioned date and therefore limited information on the company is available. Therefore Fortress was excluded from any calculations. This gave a total market capitalisation of R93 582 324 000 in March 2011 for the PLS sector (which is a combination of different property types, locations, and classes). As much as 94% of this value is held by 7 companies:

- Acucap (R5 927 688 000)
- Growthpoint (R28 915 920 000)
- Hyprop (R9 468 451 000)
- Pangbourne (R8 614 044 000)
- Redefine (R21 440 672 000)
- Resilient (R8 358 372 000)
- Vukile (R5 159 924 000)

The PLS sector made up approximately 9,22% of the market capitalisation of shares in the financial sector of which it forms part, and 1,74% of the JSE.

The fixed capital stock of the financial intermediation, insurance, real-estate and business services sector amounts to R774 099 000 000 as at the end of 2009 (SARB, 2009:S-121), while the total value of fixed assets in the PLS sector amount to R102 033 282 000, with total assets at R122 432 991 000, as per the latest published financials on PLS companies (McGregor BFA). This indicates that the assets held by the PLS sector make up 15,8% of the total fixed capital stock (assets, excluding inventory) of the holding sector. The gross fixed capital formation for the country was R543 392 000 000, while for non-residential buildings it was R55 389 000 000 during 2009. This gives an indication of the level of economic activity in the non-residential real estate sector, which during the past 7 years remained between 10,07% and 10,54% of total fixed capital formation. If it is assumed that the gross fixed capital stock in the non-residential real estate sector is in a similar ratio to the total fixed capital stock, then the capital stock in the non-residential real estate sector should have been approximately R350 000 million at the end of 2009, up from R290 000 million in 2002.

The fixed assets of the PLS companies listed on the JSE increased from R8 billion in 2002 to R100 billion in 2009. This indicates an increase from less than 5% of capital stock in the non-residential sector to almost 30%. Therefore the PLS market can be considered a very good representation of non-residential real estate in general, and it can be expected that movements in this market are a good indication of movements in the non-residential real-estate market in general.

Various indexes on the JSE reflect the performance of the listed shares. These indices are constructed using different combinations of shares, which could be general or sector specific. The indexes that are considered important for this study are as follows:

- J203 **All Share Index** comprising **all listed companies on a weighting equivalent to their market capitalisation**;
- J580 **Financials Index** comprising **all listed companies forming part of the financials segment (including real estate) of the JSE on a weighting equivalent to their market capitalisation**;
- J873 (previously J086) or **Real Estate Index**, comprising **23 funds including certain large cap PUT's and Liberty International**;
- The J253 referred to as the **SA Property Index** and comprising a mix of **21 (local) listed property companies** excluding Liberty International;
- The J256 or **Property Loan Stock Index**, comprising the **24 (local) PLS stocks**;
- and the J255 **Property Unit Trust Index**, comprising the **6 (local) PUT funds** (now REITs).

4.3. VALUATION OF LISTED FUNDS

The valuation of the property fund as an entity was developed beginning with a discussion of principle concepts in chapter 3, followed by the general valuation methods used in valuing financial assets, corporates and property. This was followed by a discussion of the concepts of accounting methods of valuation, of economic methods of valuation, and of the different influences on the value of companies.

In this section consideration will be given to the valuation methods discussed, as applied to the companies included in the case study, with correlation of the values as provided by McGregor BFA, to the share prices of the companies, thereby testing if investors that are determining the share prices by daily trading also consider the value of the firms in this way.

As indicated in chapter 3 (Chan et al, 1998:357), ownership structure and the resulting shareholder activism have a direct impact on monitoring a

management's activities, so that this monitoring ability of institutional investors could affect a firm's value. Chan et al (1998) further indicated that the investment strategy of institutional investors has an impact on the stock returns of these firms (see also Sias and Starks, 1997a, b). Prowse (1990:43) showed that the agency problem, where a conflict of interest arises between creditors, shareholders and management because of differing goals, is mitigated to a greater degree in Japan than in the US, due to the different ownership structures of Japanese and US firms. Japanese financial institutions take large equity positions in firms to which they lend, particularly in firms more susceptible to the agency problem, whereas US institutional investors are restricted from doing so. They reported that debt ratios of US firms are negatively related to the firm's potential to engage in risky, suboptimal investments, whereas Japanese debt ratios show no such relation. Smith (1996:251) indicates that there is strong evidence for the level of institutional ownership and firm size affecting shareholder activism, which is influencing stock price performance; however, changes in operating performance do not reflect statistically significant improvement. He indicates that shareholder activism results in a statistically significant increase in shareholder wealth. A similar finding is reported by Gillan and Starks (2000:303). Strickland et al (1996:336) showed that there is a positive influence on shareholder wealth by the shareholder activism sponsored by the United Shareholders Association; however, the results of a study by Wahal (1996:20) cast doubt on the efficacy of pension fund activism in improving the firm's performance. Denis et al (1997:193) showed that ownership structure has an important influence on internal monitoring efforts and that this influence stems in part from the effect of ownership structure on external control threats. Karpoff et al (1996:392) indicated that shareholder activism had a larger effect on poorly performing companies, and that corporate governance proposals by shareholders were targeted more in these companies. According to Kahn and Winton (1998:99) intervention by institutional investors increases the value of the institution's existing shareholdings, but intervention only increases the institution's trading profits if it enhances the precision of the institution's information relative to that of uninformed traders. Although a higher

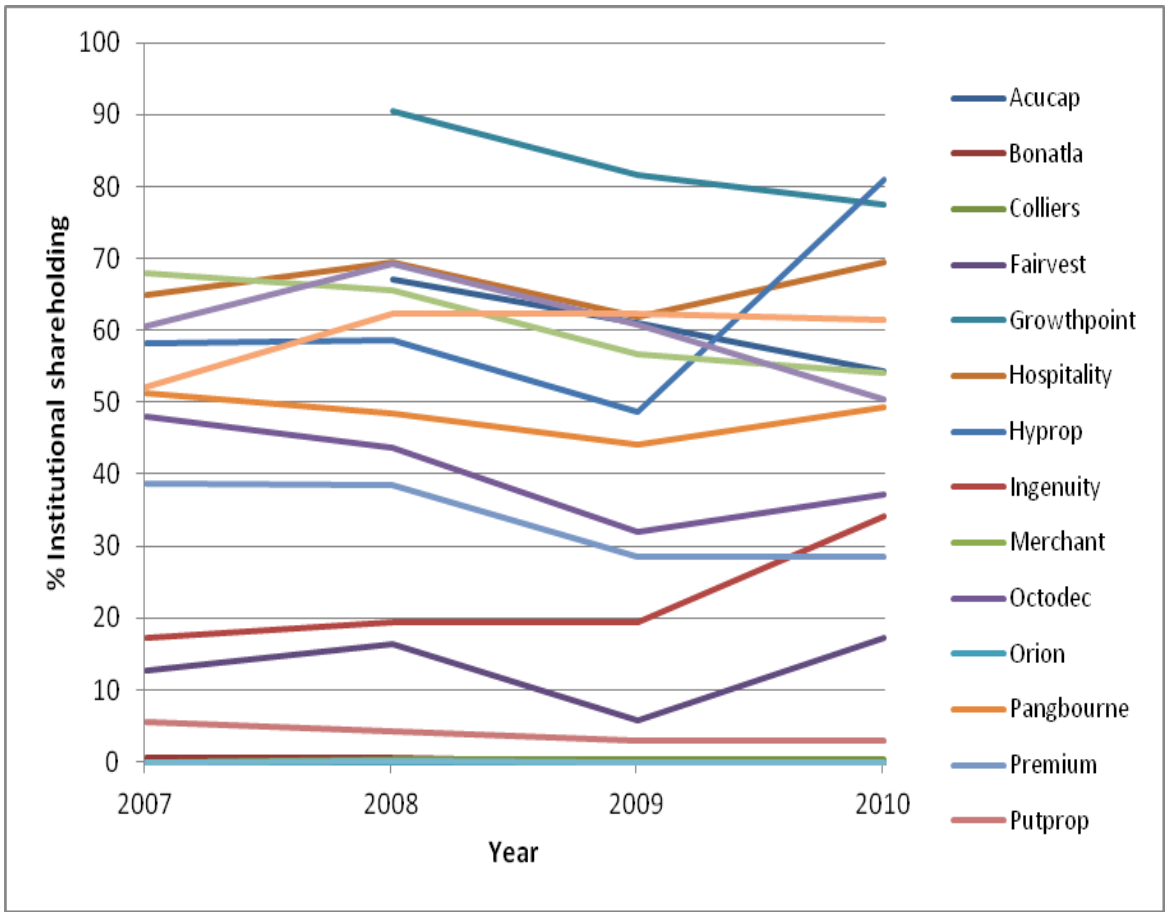
ownership stake always increases an investor's desire to intervene, the threshold at which intervention becomes attractive will vary with the sign and size of the trading impact of intervention. Maug (1998:65) investigated the hypothesis that a liquid stock market reduces large shareholders' incentives to monitor because it allows them to sell their stocks more easily. He found that even though this is true, a liquid market also makes it less costly to hold larger stakes and easier to purchase additional shares. He showed that this fact is important if monitoring is costly: market liquidity mitigates the problem that small shareholders free-ride on the effort of the large shareholder, and he found that liquid stock markets are beneficial because they make corporate governance more effective. According to Wang et al (1995:445) there are relatively fewer institutional investors investing in REIT stocks than in the general stock market, while REIT stocks with a higher percentage of institutional ownership perform better than other REIT stocks with fewer (or no) institutional investors. This might indicate that the participation of institutional investors increases the control and monitoring ability of shareholders, and hence increases the value of REIT stocks.

From the above it is evident that the ownership structure of a company could have a direct impact on its share price behaviour as well as on its general performance. Therefore it is considered a necessity to investigate the ownership structure of the different PLS companies in order to understand not only the share price behavior, but also to understand the implications of the shareholder structure for the comparability of the different companies to each other and to other indicators.

Figure 4.1 shows the institutional shareholding for the different firms for the past four years as well as the average for the four years. It can be seen that the level of institutional shareholding is fairly constant through the years, indicating that specific attributes of a company will attract institutional investors, or cause them to avoid a specific company.

The influences of certain factors on institutional investor involvement in these companies have been tested and will be reported throughout this chapter in the various sections dealing with the risks and influences on the companies.

Figure 4.1: Institutional shareholding, in %, of 15 PLS companies.



Source: McGreggor BFA

4.3.1 Accounting methods of valuation

The accounting methods of valuation were introduced in chapter 3, and essentially represent the relative techniques discussed in section 3.5.2. This would imply that there should be a high correlation between a company's accounting ratios and its share price performance. The financial ratios were divided into five categories:

1. Common size statement
2. Internal liquidity (solvency)
3. Operating performance
   a. Operating efficiency
   b. Operating profitability
4. Risk analysis
   a. Business risk
   b. Financial risk
   c. Liquidity risk
5. Growth analysis

The structure of this section will be to only provide the information on each company for each of the five categories stated above. A discussion follows in section 4.3.2.

4.3.1.1 Common size statements

Common size statements normalize the balance sheet and income statement by providing each figure as a percentage. Balance sheet items are shown as a percentage of capital employed or a percentage of employment of capital, and income statement items are shown as a percentage of turnover.

This enables a vertical analysis of the different financial statement items, the change of different figures from year to year, as well as a comparison of different companies.

The common size statements for the PLS companies under review are shown in Annexure 1.

The effects of the individual items in the common size statements, as well as the different ratios to follow on the share price performance will be considered in section 4.3.2.

4.3.1.2 Internal liquidity (solvency)

The internal liquidity ratios indicate the firm's ability to meet short-term financial obligations. The current ratio (Annexure 2) examines the firm's relationship between current assets and current liabilities as follows:

$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

The quick ratio (Annexure 3) is similar to the current ratio, but excludes stock.

$$\text{Quick ratio} = \frac{\text{Cash + Marketable securities + Receivables}}{\text{Current liabilities}}$$

PLS companies do not hold manufacturing stock as current assets. Therefore the quick ratio would be the same as the current ratio, and is not considered further.

Inventory turnover and payable turnover are considered not applicable to PLS Companies; these ratios are considered to be more applicable to manufacturing firms.

4.3.1.3 Operating performance

Operating performance is measured by calculating a firm's operating efficiency ratios and operating profitability ratios.

Operating efficiency ratios include:

Total asset turnover (Annexure 4), which indicates the effectiveness of the firm's use of its total asset base.

$$\text{Total asset turnover ratio} = \frac{\text{Net sales}}{\text{Average total net assets}}$$

Operating profitability ratios includes:

Gross profit margin (Annexure 5):

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Net sales}}$$

Operating profit margin (Annexure 6):

$$\text{Operating profit margin} = \frac{\text{Operating profit}}{\text{Net sales}}$$

Return on total capital (Annexure 7):

$$\text{Return on total capital} = \frac{\text{Net income + gross interest expense}}{\text{Average total capital}}$$

Return on total equity (ROE) (Annexure 8):

$$\text{Return on total equity} = \frac{\text{Net income}}{\text{Average equity}}$$

The DuPont system (Financial Leverage, shown in Annexure 12):

$$\text{ROE} = \text{Profit margin} \times \text{Total asset turnover} \times \text{Financial leverage}$$

$$= \frac{\text{Net Income}}{\text{Net sales}} \times \frac{\text{Net sales}}{\text{Total assets}} \times \frac{\text{Total assets}}{\text{Common equity}}$$

4.3.1.4 Risk analysis

Risk analysis examines the uncertainty of income flows for the total firm and for the individual sources of capital.

Business risk is measured by the variability of the firm's operating income over time. In turn, the earnings variability is measured by the standard deviation of the historical operating earnings series. In order to standardize this measure it is divided by the mean operating earnings to result in the coefficient of variation for the operating earnings. As the income of PLS companies is received from contractual rental, there is fairly little fluctuation in these figures, other than the growth of the companies due to expansion, or revaluation of assets. As such, business risk is not considered to be directly measurable, as it would be for manufacturing firms, and will therefore not be further considered.

Financial risk measures the uncertainty of returns to equity holders due to the firm's use of fixed obligation debt securities.
Debt-Equity ratio (Annexure 9):

$$\text{Debt-Equity ratio} = \frac{\text{Total long-term debt}}{\text{Total equity}}$$

$$= \frac{\text{Noncurrent liabilities + deferred taxes + PV of lease obligations}}{\text{Total equity}}$$

Earnings flow ratios indicate the ability of the firm to meet its required financial obligations by its earnings.

The interest coverage ratio (Annexure 10) calculates the firm's ability to pay its interest charges. For property-holding companies the earnings before interest and taxes is taken before fair value adjustments:

$$\text{Interest coverage ratio} = \frac{\text{Earnings before interest and taxes (EBIT)}}{\text{Debt interest charges}}$$

The growth potential of the firm depends on the amount of earnings that the firm retains in order to reinvest, and the level of return that the firm is expecting on it. The earnings that the firm retains forms part of the equity of the firm, and therefore the expected return on it will be the return on equity.

The retention rate (Annexure 11) is the reciprocal of the dividends as percentage of net income.

$$\text{Retention rate (RR)} = 1 - \frac{\text{Dividends declared}}{\text{Net income}}$$

Therefore the potential growth is:

$$\text{Potential growth (g)} = \text{Retention Rate x Return on equity}$$

4.3.2 Comments on accounting ratios as driver of share price

In this section, attention is paid to the different ratios given above, and the extent to which they are indicators of the value of the different companies. To achieve this, the ratios are regressed with the share prices of the companies, from which it should be possible to make certain deductions.

One of the most obvious shortcomings of the financial statements and subsequent common size statements that are presented above, and from which accurate accounting ratios might be calculated, is the lack of some of the information. Although it is accepted that newer funds cannot have information prior to the date of incorporation, there is some information that is essential, such as turnover, debenture loan levels and debenture interest distribution, to name a few, which are not shown. Although this causes difficulties in doing certain assessments in

this study, Downs and Güner (1999:517) found that information deficiency has a direct impact on price formation decisions by investors. Therefore the lack of information could have a direct impact on the performance of the companies listed here. For purposes of this study it will therefore be accepted that information that is not available for this study, is also not available to possible public investors, and that specific information will be treated as such.

When considering the details of the statements, they should be compared taking into account the individual items, by comparison between the different companies (cross sectional analysis) as well as from year to year (time-series analysis).

The different companies' statements vary in volatility from year to year. Although it is not always accurate to use past data to predict future performance, one of the primary reasons for reviewing past performance is to make estimates of future returns (Pagliari, 1995:209). The fact that higher volatility exists in the figures causes the risk of accurate prediction to be higher. It could therefore be assumed that companies with high volatility in their year-to-year figures would also suffer from poor share price performance.

In testing the influence of availability of information about the various companies on the institutional shareholding, it was found that there is a clear indication that companies providing up-to-date accurate information have a substantially higher percentage of institutional shareholding than companies that provide no information, or where there are gaps in information.

From the common size statements it was ascertained that there is a high correlation (0,717) between institutional (corporate) shareholding and the size of the companies' property portfolios (figure 4.2), measured as the percentage shareholding regressed against the value of the portfolio in Rands. This could be an indication that institutional investors are more inclined to invest in the larger funds, due to the benefits of the effort of becoming involved, or that companies do

not have the ability to grow without institutional investment, which could confirm the study by Wang et al (1995).

It was also found that the amount of debenture payment has a significant influence on the institutional shareholding, with a correlation of 0,736, based on the average figures for the last 4 years (figure 4.3), and a correlation of 0,871 for the debenture payment as a percentage of turnover to institutional shareholding (figure 4.4). This indicates that the type of investor that is interested in a company is greatly influenced by the company's ability to derive cash flow profits for its investors and also confirms the study by Chan et al (1998) as mentioned in the introduction to section 4.3. Both these correlated figures, however, consider a debenture payment as 0 if there is no information about the real amount paid. If companies that did not report any payments are excluded, the correlations change to 0,685 (figure 4.5) and 0,507 (figure 4.6) respectively, which is still considered to be of high significance.

No significant influence of the debt-equity ratio could be found on the institutional shareholding of the companies. Combining the debt-equity ratio with the debenture payment reduced the correlation with institutional investment, further indicating that debt-equity does not necessarily motivate or demotivate institutional investors to invest in a specific company (see comments on the study by Miller and Modigliani, 1961, section 3.11.5), but rather that cash return would be considered to be important. This is in line with the findings by De Wet (2004) as noted in section 3.11.2.

Figure 4.2: Correlation of institutional shareholding with portfolio value

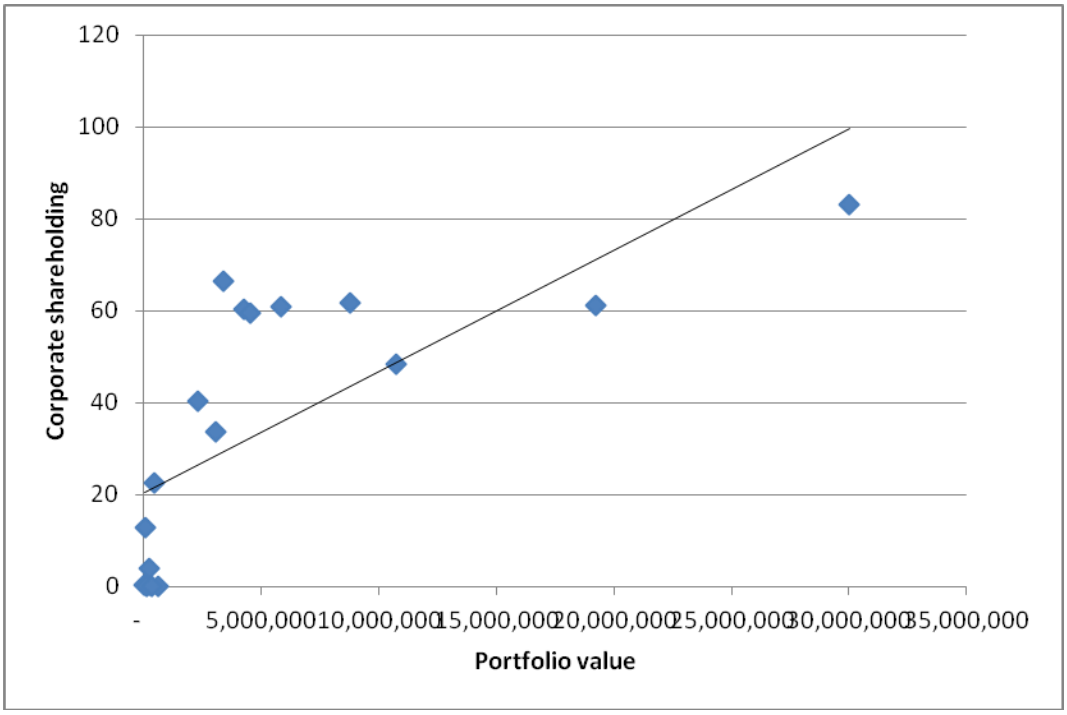


Figure 4.3: Correlation of institutional shareholding to debenture payment

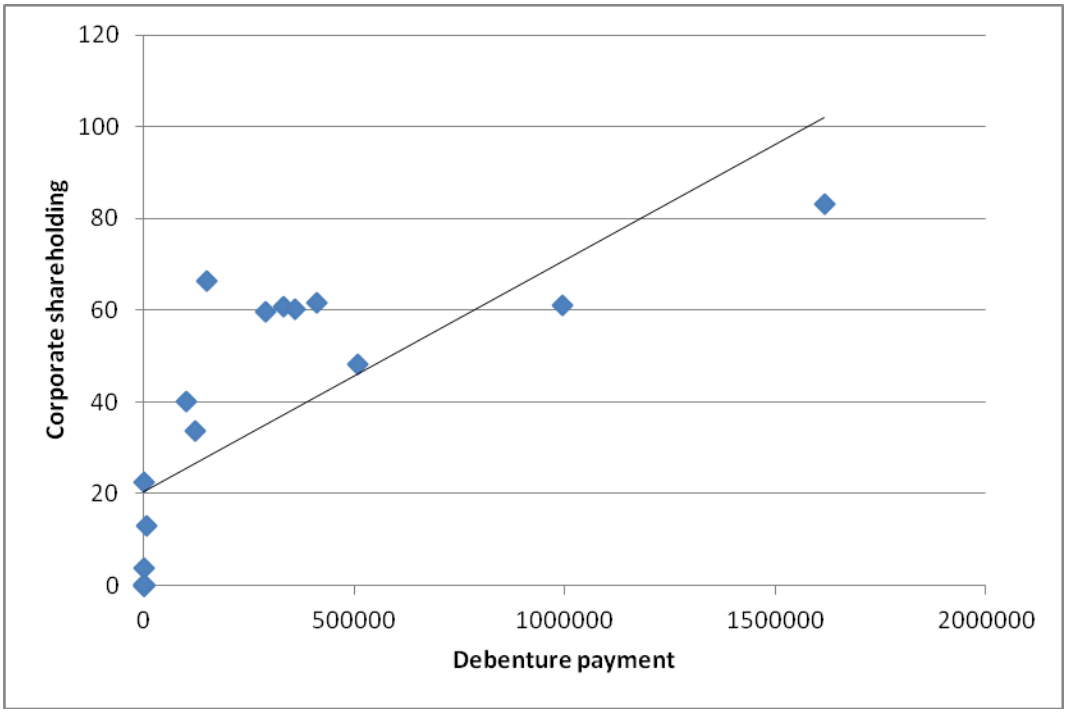


Figure 4.4: Correlation of institutional shareholding to debenture payment as % of turnover

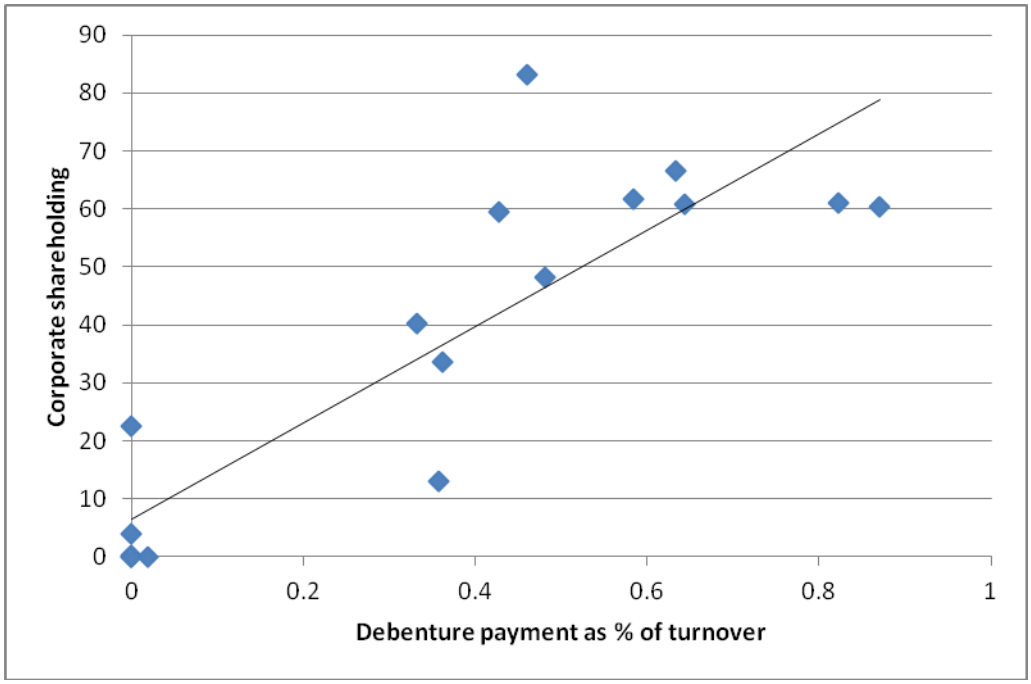


Figure 4.5: Correlation of institutional shareholding to debenture payment – excluding nil info on debenture payment

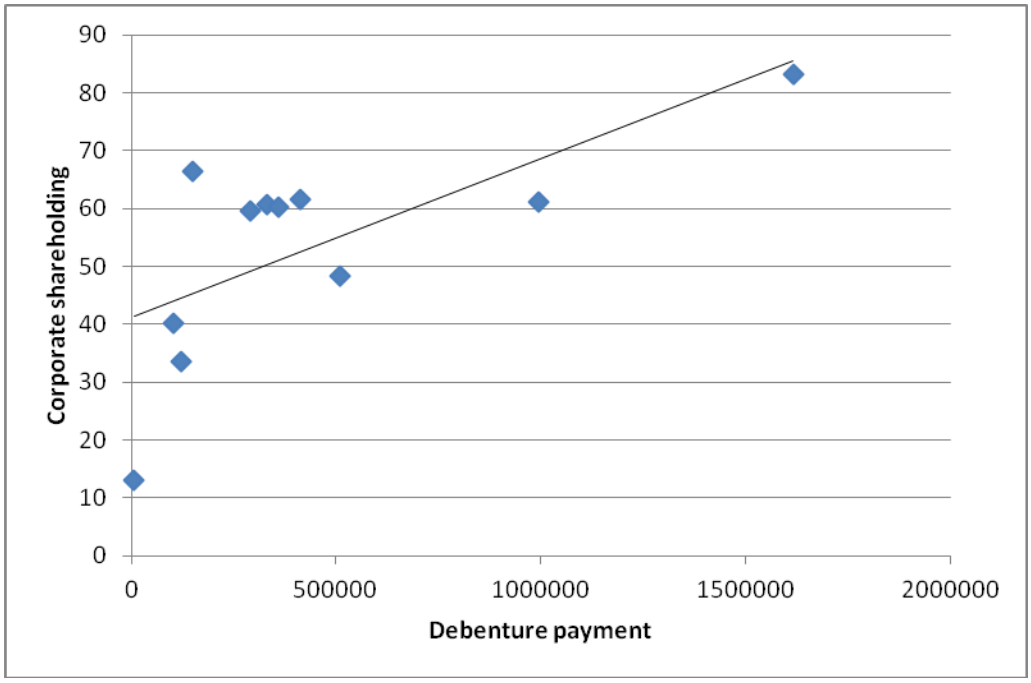
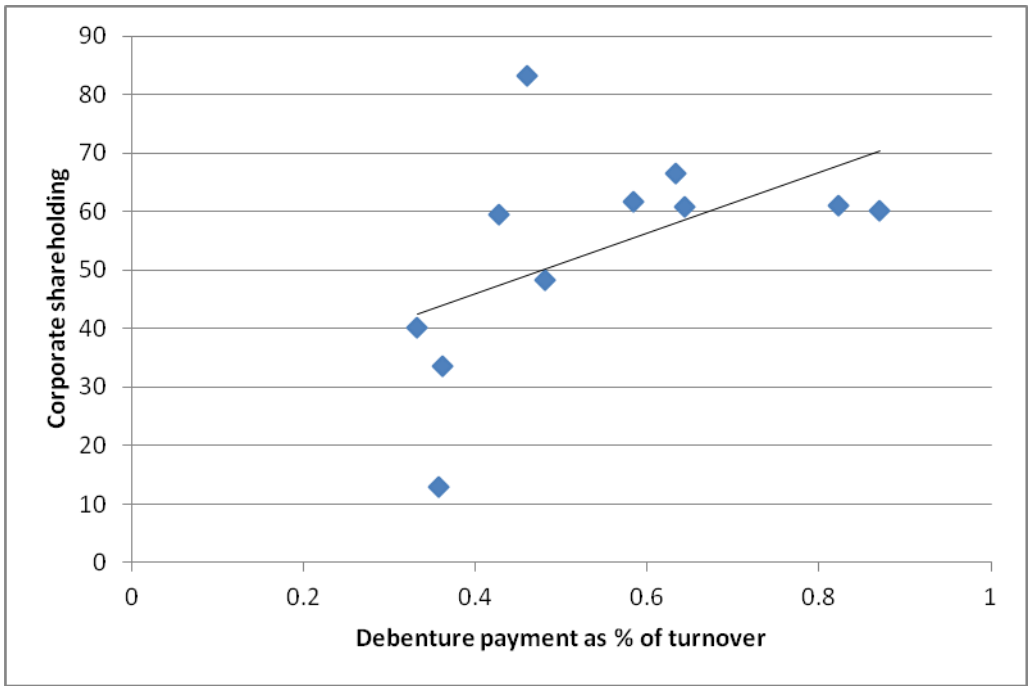


Figure 4.6: Correlation of institutional shareholding to debenture payment as % of turnover – excluding nil info on debenture payment

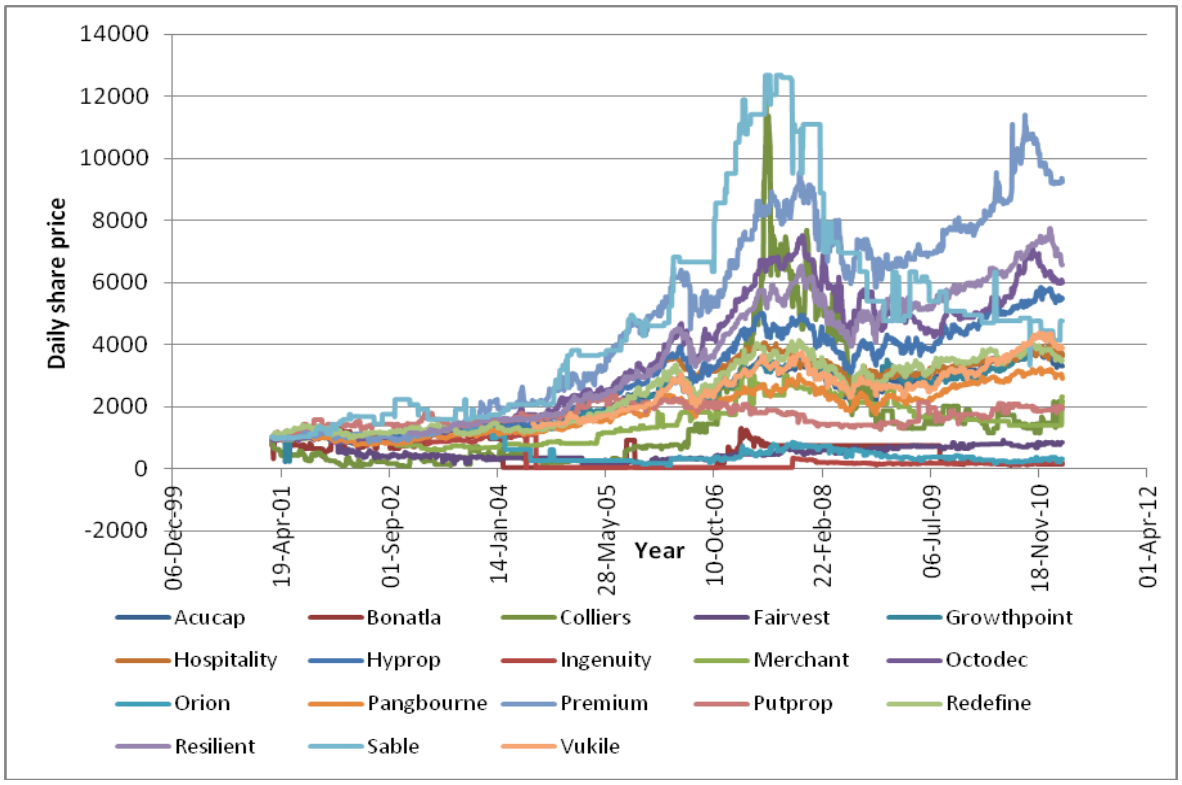


The daily share prices of the different PLS companies are shown in figure 4.7, the similar movement for some of the funds is obvious and might be an indication of external factors that drives the volatility of those shares, i.e. general economic conditions, or stock market confidence, rather than specific company variables, but there is also evidence of dissimilar movement by some of the companies. The movement of these share prices will be tested against the different company variables in order to explain the volatility.

The significance of the accounting ratios is tested by regression of each ratio against the share price performance. A high positive correlation would indicate that the specific ratio is a good indicator of a value driver with a positive relationship, i.e. when the ratio increases it will motivate investors to purchase the share at a higher price. A high negative correlation indicates that an increase in the ratio would de-motivate investors to purchase the share and subsequently the price of the share would fall. A low correlation would indicate that an investor is

indifferent to the movement of the ratio when deciding to buy or sell shares. The correlation is determined of the individual companies' share prices to their respective ratios as a time-series data set on each company, but also combined in a panel data set containing time series data on each company as well as cross-sectional between all the companies, to obtain the correlation of share prices to accounting ratios in general. In order to avoid spurious correlations, the data is deflated by CPI. The accounting ratios, including the common size financial statements, does not possess time-series characteristics and were not considered to need further transformation, but the share prices were transformed by taking the first difference.

Figure 4.7: Daily share prices of PLS companies



Source: McGreggor BFA

Table 4.1 provides the correlation coefficients for the asset side of the common size balance sheet to the weighted average closing price of each company. Table 4.2 shows the equity and liability side of the common size balance sheet as

correlated to the weighted average closing price of the different companies. Table 4.3 indicates the correlation coefficients of the common size income statement to the weighted average closing prices and Table 4.4 shows the correlation of the weighted average closing prices to the accounting ratios.

Table 4.1: Correlation of common size balance sheet (assets) to weighted average share prices of PLS companies

	Total Assets	Fixed Assets	Current Assets	Non Current Assets	Intangible Assets	Investments & Loans	Total Assets (Incl Intangible Assets)
Acucap	-.300	.219	-.032	-.515	-.777*	-.402	-.377
Bonatla	.505	.574	.115	.394	.230	.660	.518
Colliers	.521	.559	.456	.219	-.649	-.064	.056
Fairvest	-.393	-.579	.266	.441	.a	.367	-.393
Growthpoint	.573	.592	-.713*	-.078	-.713*	-.014	.160
Hospitality	.724	.551	-.305	.080	-.094	.a	.501
Hyprop	-.567	-.072	.378	.056	.a	-.036	.189
Ingenuity	-.136	.643	-.511	.735	.a	-.640	-.136
Merchant	-.082	-.475	.202	-.149	.a	.682	-.082
Octodec	-.611	.278	-.659	.a	.a	-.453	-.611
Orion	.346	-.141	.445	.563	.a	-.871*	.346
Pangbourne	-.688	-.615	-.101	.070	.222	.581	.054
Premium	-.579	-.528	-.174	.a	.a	-.250	.761*
Putprop	-.394	-.192	.170	.a	.a	-.301	-.394
Redefine	.442	-.618	-.295	-.425	-.391	.617	.024
Resilient	-.570	-.488	-.416	.a	-.836*	.322	.848*
Sable	.246	.483	.388	-.247	.187	-.726*	.257
Vukile	.281	.262	.245	-.628	.016	.a	.129
Panel	.003	.076	-.044	-.046	-.080	.003	.089
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							
a. Cannot be computed because at least one of the variables is constant.							

Table 4.2: Correlation of common size balance sheet (equity and liabilities) to weighted average share prices of PLS companies

	Current liabilities	Total shareholders' Interest	Debenture loan	Other long term	Deferred tax	Total liabilities
Acucap	.377	-.090	.269	-.391	.592	.090
Bonatla	-.506	-.533	.a	.538	-.101	.551
Colliers	-.519	.412	.a	-.346	-.545	-.412
Fairvest	.393	.288	.a	-.045	.042	-.288
Growthpoint	-.160	-.703	-.125	.305	-.709*	.703
Hospitality	-.835	-.339	.707	-.332	-.005	.339
Hyprop	.567	-.062	-.204	.019	.116	.062
Ingenuity	.136	-.363	.a	.392	-.647	.384
Merchant	.082	.438	.a	.151	-.429	-.441
Octodec	.611	-.113	-.137	.070	.182	-.113
Orion	-.346	.310	.a	-.460	.453	.072
Pangbourne	.670	-.133	.126	.200	-.666	.133
Premium	.579	-.026	-.232	-.048	.104	.026
Putprop	.394	-.100	.a	.a	.100	.100
Redefine	.128	-.088	-.162	.188	.050	.078
Resilient	.466	-.109	.240	-.357	.660	.109
Sable	-.249	-.305	.a	.356	.008	.282
Vukile	-.129	-.668	.769	.456	-.543	.668
Panel	.001	-.087	.143	-.039	.156	.062
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						
a. Cannot be computed because at least one of the variables is constant.						

Table 4.3: Correlation of common size income statement to weighted average share prices of PLS companies

	Operating profit	Interest received	Total income	Total cost shown	Earnings before interest & tax (EBIT)	Interest paid - debentures	Interest & finance charges
Acucap	.671	-.604	.656	.045	.665	-.293	-.782*
Bonatla	.215	-.378	.211	.005	.162	.a	-.042
Colliers	.122	-.282	.083	-.268	.434	.a	-.239
Fairvest	-.316	.370	-.221	-.438	-.190	.306	-.667
Growthpoint	-.237	.037	-.160	-.636	-.100	-.435	-.091
Hospitality	.406	-.602	.374	-.029	.372	.067	-.512
Hyprop	.843*	-.051	.835*	-.160	.835*	-.461	-.403
Ingenuity	.980	.923	.979	.999*	.978	.a	-.976
Merchant	.895**	.168	.891**	-.686	.891**	.a	.439
Octodec	.773*	.271	.775*	.260	.775*	-.321	.376
Orion	.112	.383	.115	-.131	.120	.a	-.046
Pangbourne	.156	-.277	.114	-.482	.109	.200	-.125
Premium	.680	-.607	.677	-.889**	.678	.069	.006
Putprop	-.415	-.721*	-.525	-.372	-.528	.a	.111
Redefine	.925**	-.592	.928**	-.209	.926**	-.329	.082
Resilient	.838*	-.836*	.824*	.062	.824*	-.336	.197
Sable	.585	-.697	.569	-.016	.531	.a	-.636
Vukile	.897*	-.023	.895*	.135	.891*	-.743	.757
Panel	.221*	-.153	.220*	-.040	.187*	.108	-.052

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

a. Cannot be computed because at least one of the variables is constant.

Table 4.3: Correlation of common size income statement to weighted average share prices of PLS companies (continued)

	Profit before Tax	Taxation	Current	Deferred	Other	Profit After Interest and Tax	Earnings Before Interest Tax Depreciation And Amortisation (EBITDA)
Acucap	.684	.658	-.904**	.697	-.597	.693	.659
Bonatla	.134	.051	-.485	.109	.362	.133	.163
Colliers	.400	-.066	.227	-.142	.211	.417	.408
Fairvest	-.079	-.126	.157	-.213	.584	.407	-.191
Growthpoint	.310	.674	-.688	.119	.657	.080	-.155
Hospitality	.410	.384	.a	.384	.a	.416	.371
Hyprop	.877**	.943**	.018	.942**	.022	.820*	.836*
Ingenuity	.977	.991	.844	.995	.970	.953	.978
Merchant	.882**	.658	-.192	.689	.640	.860**	.891**
Octodec	.768*	.746*	.705	.467	.686	.772*	.775*
Orion	.125	.077	.473	.041	-.496	.125	.119
Pangbourne	.284	.319	.499	.130	.539	.267	.150
Premium	.672	.596	.415	.596	.189	.696	.678
Putprop	-.527	-.441	-.112	-.306	.212	-.448	-.528
Redefine	.871**	.758*	.308	.766*	.492	.774*	.867**
Resilient	.847*	.830*	.330	.776	.712	.838*	.826*
Sable	.657	.582	.120	.542	.207	.634	.567
Vukile	.896*	.884*	.390	.311	.581	.897*	.891*
Panel	.155	.513**	-.063	.520**	.145	.123	.188*
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							
a. Cannot be computed because at least one of the variables is constant.							

Table 4.4: Correlation of accounting ratios to weighted average share prices of PLS companies

	Current ratio	Quick ratio	Receivables turnover	Total asset turnover ratio	Operating profit margin	Net profit margin	Return on total capital
Acucap	.091	.117	.331	-.018	.671	.665	.634
Bonatla	.115	.617	-.382	-.623	.215	.162	-.538
Colliers	-.826*	-.670	-.154	.128	.122	.434	.554
Fairvest	.322	.343	.728	-.238	-.316	-.190	-.273
Growthpoint	-.804*	-.773*	-.094	-.252	-.237	-.100	-.159
Hospitality	-.356	-.393	-.379	.909	.406	.372	.434
Hyprop	.402	.084	-.855*	.098	.843*	.835*	.722
Ingenuity	-.854	-.685	-.324	.504	.980	.978	.747
Merchant	.239	.016	-.676	-.317	.895**	.891**	.926**
Octodec	.213	.740*	-.293	-.465	.773*	.775*	.767*
Orion	.433	.132	-.849*	-.855*	.112	.120	-.647
Pangbourne	.547	.699	-.229	.017	.156	.109	.344
Premium	.575	.621	-.520	-.283	.680	.678	.609
Putprop	.504	.170	.049	.306	-.415	-.528	-.283
Redefine	-.147	-.349	.748*	.049	.925**	.926**	.787*
Resilient	-.100	.018	-.110	.115	.838*	.824*	.700
Sable	.384	.193	-.076	.162	.585	.531	.719*
Vukile	.198	.255	-.439	.008	.897*	.891*	.883*
Panel	.196*	.166	.119	-.037	.671	-.100	-.106
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							
a. Cannot be computed because at least one of the variables is constant.							

Table 4.4: Correlation of accounting ratios with weighted average share prices of PLS companies (continued)

	Return on total equity	Debt-equity ratio	Interest coverage ratio	Retention rate	Potential growth	Financial leverage
Acucap	.562	-.344	.705	.747	.615	-.461
Bonatla	-.487	.430	-.431	.a	-.487	.623
Colliers	.480	-.275	.494	.a	.480	.272
Fairvest	-.220	.409	.214	-.297	-.526	.388
Growthpoint	-.015	.144	.041	.042	-.032	.228
Hospitality	.396	-.333	.575	-.092	.122	-.283
Hyprop	.665	-.022	.870*	.832*	.663	-.028
Ingenuity	.913*	.281	.071	.a	.913*	.281
Merchant	.922**	.127	.837**	.a	.922**	.083
Octodec	.276	.007	.731*	.719*	.283	-.007
Orion	-.851*	-.850*	.048	.a	-.851*	-.850*
Pangbourne	.399	.207	.268	.221	.284	-.174
Premium	.284	-.069	.521	.330	.253	.032
Putprop	-.283	.a	-.072	.a	-.283	-.394
Redefine	.659	.066	-.135	.798*	.697	.121
Resilient	.684	-.320	.749	.929**	.728	-.499
Sable	.754*	.411	.754*	.a	.754*	.395
Vukile	.819	.487	.937*	.910*	.833	.491
Panel	.562	-.044	-.015	.000	-.036	-.044
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						
a. Cannot be computed because at least one of the variables is constant.						

From the above tables it is evident that some of the ratios do provide some correlations with the weighted average share prices that might seem to be significant, but only in individual cases based on some of the companies' time-series analysis. Generally the correlations are erratic between different companies, i.e. there are no consistent high level correlations between different companies for a specific variable. For the panel data, show as the last line of correlations in each table, the common size Taxation and –Deferred Tax seem to have a fair level of correlation, with above 0.5 coefficients, significant to the 0.01 level.

From the various tables above, it is concluded that the lack of common size statements or accounting ratios to provide good correlation with share price movement, or acting as indicators for institutional investment, that the valuation of listed property funds does not entirely rely on accounting returns. This confirms criticism of various authors on the method (De Wet, 2004; Stewart, 1991; Ehrbar, 1998; Copeland et al, 1994), and that other variables may have to be relied upon for value in this sector.

4.4. CORRELATION OF SHARE PRICE TO FINANCIAL STATEMENTS:

In order to test the reliance of the share price of the PLS companies on variables other than the accounting ratios, the share prices of the PLS companies under consideration were correlated with their financial statements, i.e. the balance sheet and income statements. The normal financial statements, unlike the common size statements, do possess time-series characteristics, and it is therefore necessary to transform the data before analysis. The financial statement items as well as the average share price were deflated by CPI in order to remove the inflationary effect, and then the first difference of these is taken for analysis. The results are shown in tables 4.5 to 4.7.

Table 4.5: Correlation of balance sheet (Employment of capital) with average share prices of PLS companies

	Total Assets	Fixed Assets	Current Assets	Non Current Assets	Intangible Assets	Investments and Loans	Total Assets Incl. Intangible	Current Liabilities	Employment Of Capital
Acucap	.401	.463	-.569	.054	.a	.300	.374	-.376	.350
Bonatla	.584	.583	-.195	-.095	-.338	.950*	.567	.084	.581
Colliers	.549	.761*	.302	.233	.367	-.417	-.864*	-.312	.209
Fairvest	.794*	.651	.383	.226	.a	.348	.794*	-.415	.743*
Growthpoint	.712*	.766*	-.486	.430	.757	-.302	.673	.294	.624
Hospitality	-.107	-.144	.063	.405	.a	.a	.249	-.670	-.218
Hyprop	.923**	.814*	.730	.978*	.a	.564	.517	-.778*	.924**
Ingenuity	.618	.936	-.062	.a	.a	-.888*	.618	-.323	.624
Merchant	.800*	.777*	-.038	.288	.a	.695	.800*	.131	.869**
Octodec	.814*	.833*	-.417	.a	.a	.424	.814*	.591	.857**
Orion	.159	.134	-.226	.562	.a	-.928*	.159	.143	.206
Pangbourne	.222	.160	.186	.162	.008	.259	.a	-.178	.277
Premium	.767*	.779*	.254	.a	.a	.418	.511	.600	.888**
Putprop	.401	-.375	.463	.a	.a	.629	.401	-.163	.305
Redefine	-.228	-.425	.095	.226	.a	.652	-.062	.099	-.295
Resilient	-.777	-.403	-.504	.a	.a	-.152	.408	.653	-.654
Sable	.616	.596	.210	-.188	.a	.256	.616	-.807*	.554
Vukile	.664	.691	.120	.906	.096	.a	.523	-.061	.814
Panel	**.194***	**.139**	**.124**	**.242***	**-.051**	**.166**	**.191***	**-.036**	**.171**

**Correlation is significant at the .01 level.

*Correlation is significant at the .05 level.

a. Cannot be computed because at least one of the variables is constant.

Table 4.6: Correlation of balance sheet (Capital employed) with average share prices of PLS companies

	Total Shareholders Interest	Debenture loan	Other long term	Long Term Liabilities	Deferred Tax	Total Liabilities	Capital Employed
Acucap	.771*	.186	-.480	-.330	.744	-.184	.350
Bonatla	.436	.a	.728	.728	.195	.604	.581
Colliers	.615	.a	-.060	-.060	-.384	-.098	.209
Fairvest	.381	.a	.785*	.785*	.117	.740*	.743*
Growthpoint	-.168	.621	.477	.675	.845	.669	.624
Hospitality	.199	.388	-.568	-.594	.271	-.509	-.218
Hyprop	.965**	.736	-.149	.408	.965**	.721	.924**
Ingenuity	.722	.a	.138	.138	.696	.263	.624
Merchant	.668	.a	.269	.269	.584	.740*	.869**
Octodec	.871**	.885*	-.401	.752*	.829*	.718*	.857**
Orion	-.136	.a	.291	.291	-.033	.401	.206
Pangbourne	.348	-.177	.331	.249	.036	.216	.277
Premium	.558	.491	.554	.869**	.634	.920**	.888**
Putprop	.295	.a	.a	.a	.276	.276	.305
Redefine	-.312	-.428	-.029	-.274	-.068	-.213	-.295
Resilient	-.524	-.869*	-.515	-.663	.754	-.503	-.654
Sable	.617	.a	.477	.477	.583	.604	.554
Vukile	.874	.063	-.304	-.312	.811	.396	.814
Panel	**.174**	**.106**	**.016**	**.075**	**.439****	**.123**	**.171**

**Correlation is significant at the .01 level.

*Correlation is significant at the .05 level.

a. Cannot be computed because at least one of the variables is constant.

Table 4.7: Correlation of income statement with average share prices of PLS companies

	Turnover	Operating profit	Interest received	Total income	Total cost shown	Earnings before interest & tax (EBIT)	Interest paid - debentures	Interest & finance charges - Other
Acucap	-.262	.286	-.904**	.232	-.428	.246	-.505	-.732
Bonatla	.694	.238	-.355	.231	.080	.231	.a	.696
Colliers	.210	.648	.023	.606	-.135	.635	.a	.041
Fairvest	.549	.330	.477	.341	.299	.318	-.943	.399
Growthpoint	-.054	-.367	-.236	-.435	.044	-.398	-.104	-.322
Hospitality	.687	.577	-.063	.543	-.083	.539	.594	-.539
Hyprop	.238	.682	.713	.706	.431	.706	.508	-.141
Ingenuity	.606	.807	.935	.833	.847	.831	.a	.329
Merchant	-.590	.360	.098	.373	.117	.286	.a	-.103
Octodec	.329	.383	.610	.396	-.274	.398	.905	-.400
Orion	-.135	-.351	.716	-.337	-.055	-.337	.a	-.156
Pangbourne	-.616	.443	.234	.436	-.350	.436	-.549	-.234
Premium	-.109	.292	-.193	.308	-.428	.310	.417	-.393
Putprop	-.544	-.350	-.358	-.484	.175	-.475	.a	-.090
Redefine	-.082	.247	-.146	.230	-.102	.240	-.067	.316
Resilient	-.653	.592	-.841*	.582	-.186	.586	-.915*	-.443
Sable	.123	.468	-.189	.464	.068	.453	.a	.424
Vukile	.345	.451	.399	.456	.639	.450	.492	.238
Panel	**.006**	**.277****	**.060**	**.273****	**-.050**	**.278****	**.028**	**-.062**

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

a. Cannot be computed because at least one of the variables is constant.

Table 4.7: Correlation of Income statement with average share prices of PLS companies (continued)

	Interest & finance charges -tTotal	Profit before tax	Taxation	Current	Deferred	Other	Profit after interest and tax	Earnings before interest tax depr. & amort.
Acucap	-.684	.370	.280	-.656	.337	-.315	.401	.234
Bonatla	.696	-.462	.339	.533	.356	.200	-.507	.240
Colliers	.041	.683	.411	-.100	.386	-.609	.573	.596
Fairvest	.440	.075	-.010	.283	-.051	.479	.280	.350
Growthpoint	-.335	-.252	-.091	-.035	.a	-.061	-.279	-.429
Hospitality	.514	.544	.352	.a	.352	.a	.590	.539
Hyprop	.347	.713	.748	.a	.749	-.647	.657	.706
Ingenuity	.329	.719	.715	.907*	.396	.743	.700	.831
Merchant	-.103	.238	.541	.091	.573	.093	.145	.285
Octodec	.665	.331	.287	.702	.178	.238	.347	.395
Orion	-.156	-.333	-.767	.508	-.728	-.442	-.273	-.330
Pangbourne	-.376	.544	.610	.676	.557	.216	.511	.448
Premium	-.063	.302	.204	.862	.203	-.535	.347	.309
Putprop	-.090	-.472	-.749*	.187	-.617	-.361	-.241	-.475
Redefine	.073	.297	.686	1.000**	.700	.122	.136	.325
Resilient	-.868*	.679	.641	.244	.644	.342	.681	.591
Sable	.424	.428	.371	-.020	.375	-.115	.452	.457
Vukile	.381	.445	.505	.322	.358	.078	.399	.449
Panel	**-.013**	**.339****	**.388****	**.095**	**.393****	**.040**	**.299****	**.264****

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

a. Cannot be computed because at least one of the variables is constant.

When considering tables 4.5 to 4.7, the share prices show a number of correlations that are significant at the 0.05 and 0.01 level. It appears as if the balance sheet items' correlations with average share price as analyzed for the individual companies, i.e. time-series analysis per company, have higher correlations than the same items when analyzed as common size statements. For the income statement the correlations however appear slightly better when the common size analysis was performed, than with the normal financial statements. For the panel analysis it remains however throughout that the correlations, similar to the previous tests, are not indicating good results, with no items having a correlation above 0.5, even though some indicate a high level of significance.

Figure 4.8 shows the correlation of Total Assets, which is a balance sheet item, with 12 of the 18 companies having correlation coefficients above 0.5 for the time-series analysis, of which five are significant at the 0.05 level and one significant at the 0,01 level. The panel data correlation coefficient is, however, only 0.194. Figure 4.9 shows Turnover, an income statement item for which 8 companies have correlations above 0.5, although none of them indicated at an acceptable level of significance, and the panel data correlation coefficient is 0,006.

Figure 4.8: Correlation of Total Assets to Average Share Price

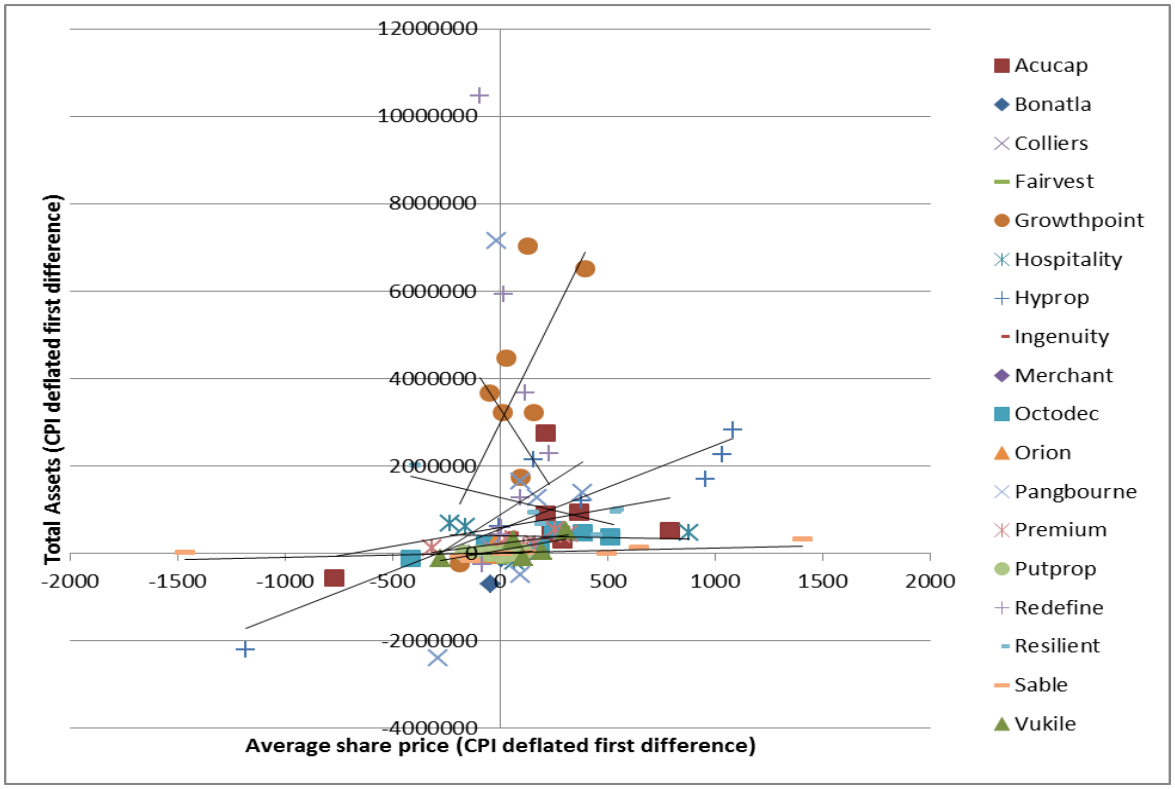
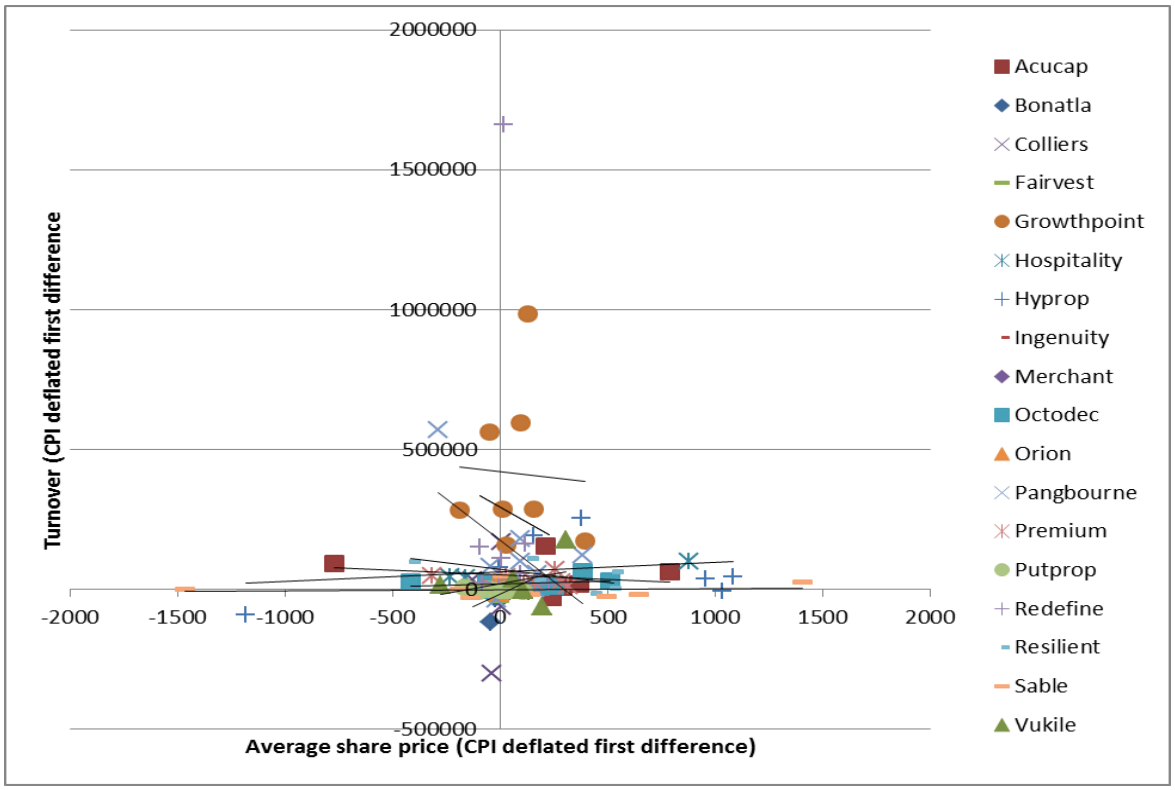


Figure 4.9: Correlation of Turnover to Average Share Price



If the graph is changed not to discriminate between different companies, but shows the panel data, the results will be as shown in figures 4.10 and 4.11.

From these figures it could be seen there are some fair correlations for the individual items, as is also visible in tables 4.5 to 4.7, if regressed to the share price of each individual company. The panel data however show less accurate correlations, and it is evident from the figures above that this is due to the different behaviour of the individual companies, causing the slope of the regression line between the individual companies to be very different.

This indicates that individual items might provide good information on the specific situation of a company, but care should be taken not to generalize and not to apply market information in general. It is also evident that different items can have different levels of importance for individual companies, due to the individual structure of each company.

The correlations however seem to provide a slightly stronger explanation on share prices than did the accounting ratios. This statement is however not always valid.

Figure 4.10: Correlation of Total Assets to Average Share Price (panel)

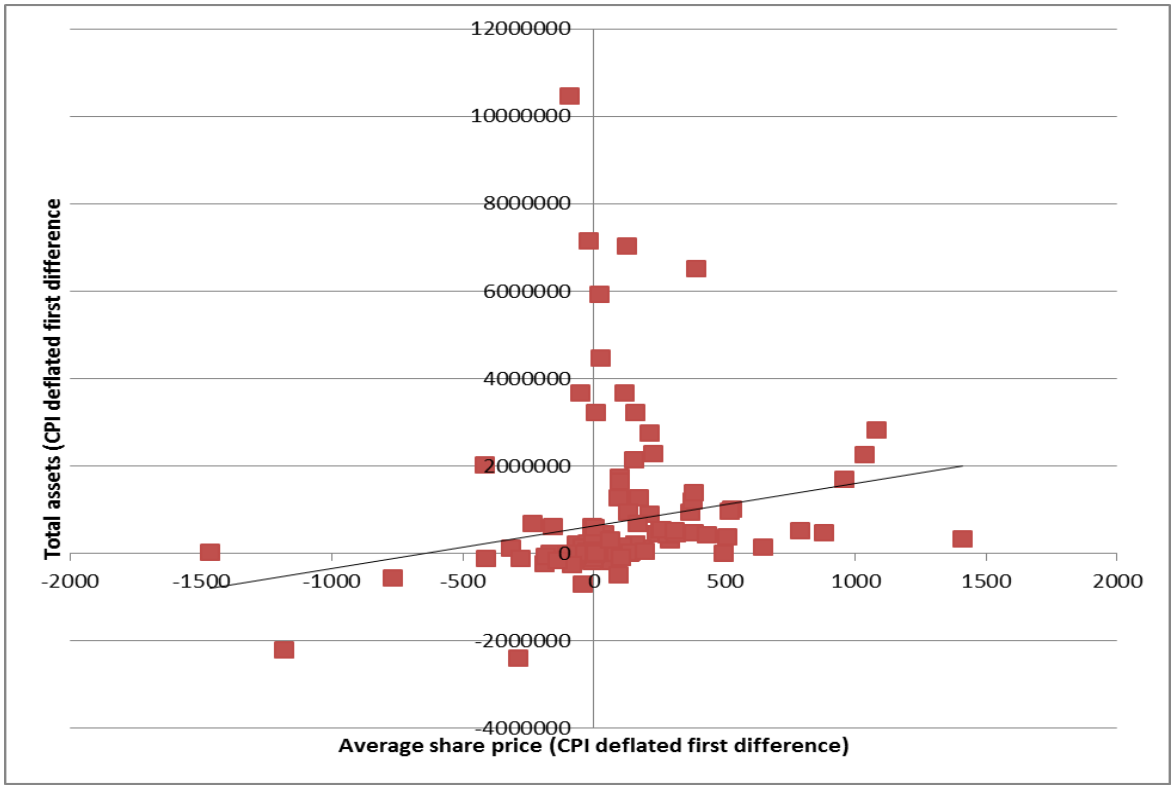
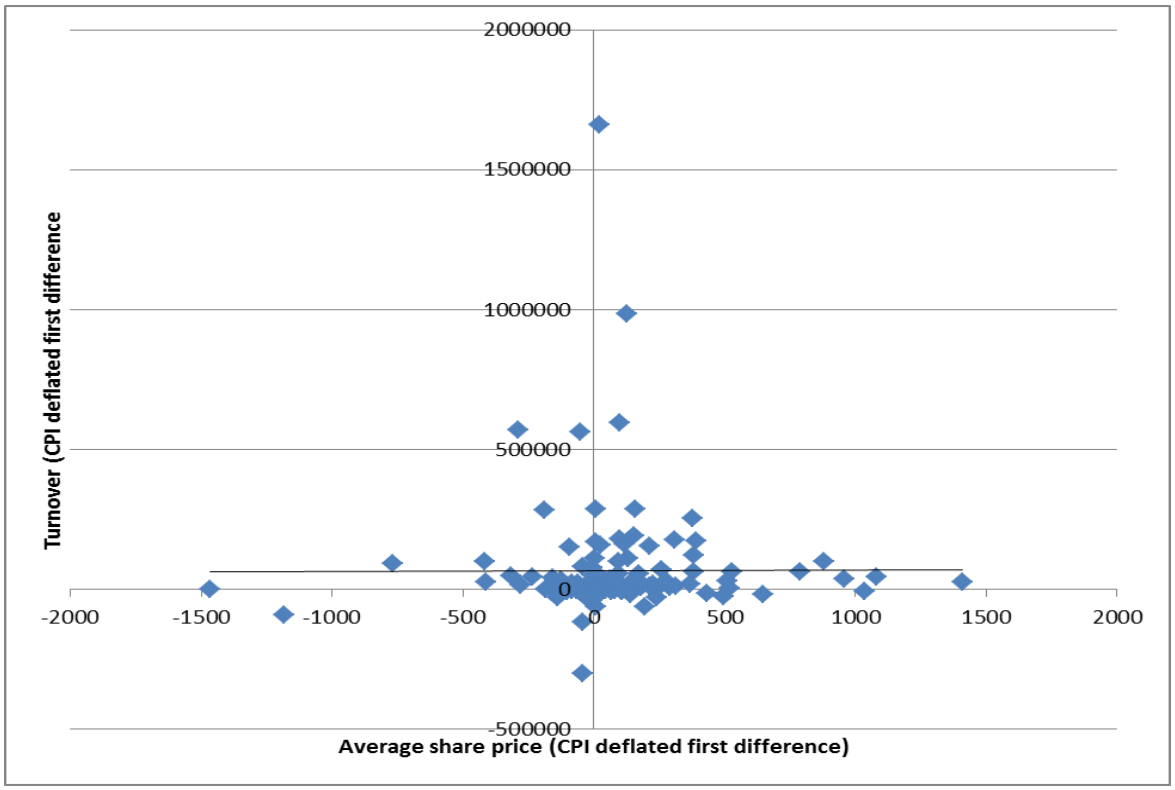


Figure 4.11: Correlation of Turnover to Average Share Price (panel)



In order to have a more comparable situation, the data should be further transformed, by either transforming the financial statement items to reflect “per share” figures, or to transform the share price to include all shares. The last mentioned is readily available as the market capitalization of each company. Consider the 2009 average share price of Hyprop (4120 cent), Pangbourne (1362 cent), Redefine (646 cent) and Resilient (2144 cent). It is clear that they differ substantially, and are not comparable in price whatsoever.

If the numbers of shares are considered – Hyprop (166 113 169 000 shares), Pangbourne (432 694 594 000 shares), Redefine (899 037 507 000 shares) and Resilient (220 780 539 000 shares) – it is clear that these numbers are equally different.

On closer observation it is seen that the order of share prices is exactly the opposite to the order of the numbers of shares issued. By multiplying the share price by the number of shares issued, the market capitalisation of each company is calculated, and is as follows:

Hyprop	R 6 881 653 308 000
Pangbourne	R 5 991 856 259 000
Redefine	R 5 726 868 919 000
Resilient	R 4 647 858 102 000

It is clear that the market capitalisation values are substantially closer to each other and much more comparable than share prices or the numbers of shares alone. While the market capitalisation reflects the company’s total equity, the share price merely reflects the price for a percentage share in the company; the problem is that the percentage shares differ from company to company, as no share is the same size. This taken into consideration, the share prices could be explained by ratio analysis, including common size statements, where the size of the company does not affect the analysis, but for the analysis with normal

financial statements a different approach should be adopted. For this purpose consideration is also given to the market capitalisation of the companies, i.e. the latest share price multiplied by the number of shares in issue, in order to obtain comparable values, in contrast to the common size statements and accounting ratios which change the financial statements to relative terms that refer to individual shares. Although this is not strictly speaking a correlation of the share price with the financial statements, it represents the total value of all the shares of the company as per the daily share price movement which is then compared to the totals of the financial statements. This means that the different financial statement components are compared to the companies' shares in total, while the ratios provide a relative medium so that the different company structures could skew the results.

The market capitalization of the different companies also possesses time-series characteristics and are transformed similar to the share prices by deflating it with CPI and then taking the first difference. The market capitalization is annualized by calculating the arithmetic mean of the daily market capitalization, referred to as the average market capitalization. This is then correlated to the transformed financial statement data as time-series analysis' for the individual companies, and then also as a panel by pooling the time-series and cross sectional data in a separate correlation analysis. The results of market capitalisation correlation are shown in tables 4.8 to 4.10.

Table 4.8: Correlation of balance sheet (Employment of capital) with market capitalisation of PLS companies

	Total Assets	Fixed Assets	Current Assets	Non Current Assets	Intangible Assets	Investments and Loans	Total Assets Incl. Intangible	Current Liabilities	Employment Of Capital
Acucap	.800*	.804*	-.490	.513	.a	.541	.786*	-.760*	.765*
Bonatla	.732*	.723*	.197	.131	-.287	.602	.716*	-.060	.719*
Colliers	.574	.768*	.339	.262	.434	-.466	-.875*	-.324	.224
Fairvest	.458	.311	.413	.221	.a	.425	.458	-.064	.473
Growthpoint	.761*	.794*	-.311	.449	.826	-.314	.767*	.739*	.818*
Hospitality	-.051	-.412	.876	.993	.a	.a	.539	-.130	-.091
Hyprop	.893**	.779*	.640	.952*	.a	.633	.584	-.758*	.895**
Ingenuity	.844	.979*	.002	.a	.a	-.991**	.844	-.362	.855
Merchant	.809*	.713*	.175	.437	.a	.634	.809*	.128	.878**
Octodec	.713*	.745*	-.533	.a	.a	.323	.713*	.743*	.780*
Orion	-.174	-.347	.117	.745	.a	-.775	-.174	.061	-.141
Pangbourne	-.148	-.097	-.131	-.031	-.324	-.233	.a	.129	-.149
Premium	.787*	.790*	.188	.a	.a	.537	.475	.559	.891**
Putprop	.584	-.273	.539	.a	.a	.266	.584	-.128	.499
Redefine	.240	-.098	.891**	.221	.a	.824*	-.028	-.941**	.058
Resilient	-.404	-.439	.164	.a	.a	.235	.711	.024	-.401
Sable	.650	.637	.302	-.057	.a	.076	.651	-.773*	.597
Vukile	.688	.723	.072	.860	.266	.a	.605	-.216	.797
Panel	**.595****	**.445****	**.343****	**.302****	**.302****	**.575****	**.511****	**-.418****	**.532****

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

a. Cannot be computed because at least one of the variables is constant.

Table 4.9: Correlation of balance sheet (Capital employed) with market capitalisation of PLS companies

	Total Shareholders Interest	Debenture loan	Other long term	Long Term Liabilities	Deferred Tax	Total Liabilities	Capital Employed
Acucap	.971**	.445	.067	.188	.302	.290	.765*
Bonatla	.539	.a	.819*	.819*	.128	.769*	.719*
Colliers	.635	.a	-.052	-.052	-.385	-.092	.224
Fairvest	.586	.a	.526	.526	-.208	.458	.473
Growthpoint	.054	.983**	.301	.825*	.900	.827*	.818*
Hospitality	.643	.940	-.977*	-.881	.284	-.783	-.091
Hyprop	.948**	.727	-.202	.357	.973**	.686	.895**
Ingenuity	.981**	.a	.281	.281	.702	.384	.855
Merchant	.641	.a	.480	.480	.547	.749*	.878**
Octodec	.749*	.728	-.245	.777*	.744*	.649	.780*
Orion	-.699	.a	.233	.233	-.062	.528	-.141
Pangbourne	.063	-.025	-.365	-.362	-.065	-.297	-.149
Premium	.544	.574	.556	.896**	.595	.930**	.891**
Putprop	.481	.a	.a	.a	.460	.460	.499
Redefine	-.172	-.355	.857**	.421	.025	.571	.058
Resilient	-.028	-.899*	-.339	-.526	.126	-.479	-.401
Sable	.621	.a	.536	.536	.628	.647	.597
Vukile	.808	.142	-.294	-.172	.723	.430	.797
Panel	**.181***	**.492****	**.573****	**.632****	**.420****	**.712****	**.532****

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

a. Cannot be computed because at least one of the variables is constant.

Table 4.10: Correlation of Income statement with market capitalisation of PLS companies

	Turnover	Operating Profit	Interest Received	Total Income	Total Cost Shown	Earnings Before Interest & Tax (EBIT)	Interest Paid - Debentures	Interest & Finance Charges - Other
Acucap	.198	.092	-.736	.042	-.414	.057	.131	-.374
Bonatla	.739*	.407	-.445	.398	.031	.405	.a	.743*
Colliers	.259	.670	.034	.628	-.152	.665	.a	.032
Fairvest	.106	.013	.374	.027	-.098	.047	-.457	-.080
Growthpoint	.644	.220	-.261	.120	.154	.094	.620	-.145
Hospitality	.347	.652	.463	.649	-.161	.645	.707	-.948
Hyprop	.200	.649	.653	.671	.530	.670	.607	-.199
Ingenuity	.716	.995**	.977	.998**	.951*	.997**	.a	.144
Merchant	-.587	.309	.211	.327	.077	.274	.a	.021
Octodec	.366	.206	.777*	.223	-.329	.225	.758	-.349
Orion	-.569	-.665	.308	-.663	-.148	-.663	.a	-.650
Pangbourne	.320	-.040	-.258	-.060	-.577	-.053	.153	.091
Premium	-.095	.175	-.114	.194	-.352	.196	.442	-.405
Putprop	-.561	-.085	-.553	-.259	-.052	-.247	.a	-.329
Redefine	.959**	.865**	.938**	.879**	.944**	.873**	.952**	.835**
Resilient	.012	.434	-.689	.414	-.270	.424	-.524	.043
Sable	.160	.574	-.216	.570	.062	.556	.a	.328
Vukile	.361	.477	.297	.479	.774	.472	.523	.227
Panel	**.848****	**.649****	**.418****	**.656****	**.159**	**.649****	**.874****	**.560****

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

a. Cannot be computed because at least one of the variables is constant.

Table 4.10: Correlation of Income statement with market capitalisation of PLS companies (continued)

	Interest & Finance Charges - Total	Profit before Tax	Taxation	Current	Deferred	Other	Profit After Interest and Tax	Earnings Before Interest Tax Depr. & Amort.
Acucap	-.202	.094	-.018	-.597	.022	-.103	.135	.047
Bonatla	.743*	-.273	.607	.790	.761	.461	-.445	.411
Colliers	.032	.713	.436	-.061	.391	-.587	.596	.623
Fairvest	-.050	.104	-.149	.093	-.190	.594	1.000**	.102
Growthpoint	.250	-.276	-.302	.231	1.000**	-.602	-.251	.116
Hospitality	.533	.667	.308	.a	.308	.a	.769	.644
Hyprop	.392	.673	.699	.a	.701	-.616	.625	.670
Ingenuity	.144	.938*	.842	.670	.707	.808	.942*	.997**
Merchant	.021	.213	.497	.086	.506	.160	.128	.274
Octodec	.630	.166	.112	.653	.142	.050	.188	.222
Orion	-.650	-.637	-.769	.880	-.745	-.660	-.607	-.660
Pangbourne	.188	.036	.101	.158	.060	.157	.015	-.057
Premium	.001	.186	.102	.865	.100	-.557	.228	.194
Putprop	-.329	-.244	-.744*	.136	-.701	-.012	-.007	-.247
Redefine	.960**	.720*	.652	.248	.709	-.057	.678	.811*
Resilient	-.371	.446	.315	.476	.103	.373	.483	.426
Sable	.328	.543	.477	-.030	.484	-.176	.570	.562
Vukile	.390	.469	.504	.249	.290	.151	.440	.471
Panel	**.832****	**.417****	**.370****	**.139**	**.450****	**-.022**	**.408****	**.642****

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

a. Cannot be computed because at least one of the variables is constant.

The correlation of the weighted average market capitalisation with the balance sheet and income statement of each respective company shows levels of correlation that are not substantially different from the values of correlation with the weighted average share prices. It is however evident that the correlations for panel data analysis do have substantially higher correlations than when correlated to share prices.

The two items from the balance sheet and income statement, Total Assets and Turnover, have increased to 0.595 and 0.848 respectively, both significant at the 0,01 level. These correlations are shown graphically for the individual companies in figures 4.12 and 4.13, and the panel data in figures 5.14 and 5.15. Although the correlations for the panel data are substantially higher than previously, there are some evidence from figures 4.14 and 4.15 of outliers that might distort the correlations. For this reason the outliers for the highest correlating items have been removed and the panel analysis for those items have been repeated. Table 4.11 shows the results, indicating the original result of the listed item, and then with removing the results of all outliers falling outside 3 standard deviations are removed, when those outside 2 standard deviations are removed and when those outside 1 standard deviation are removed. The results in table 4.11 show that the correlations have reduced substantially for some of the items, with only Total Assets remaining above 0.5.

A negative point about the figures is that the outliers are generally from the larger funds. In section 4.3.2 there was reference to the influence of institutional shareholding on share price performance. If the funds with very little or no institution shareholding are viewed separately, as shown in figure 4.16, the picture looks a bit different. The movement of the market capitalisation in relation to the total assets seems to be more erratic than with the larger funds included. This might be due to various reasons, but might support previous literature that institutional shareholding provides shareholder activism and better control over the company in terms of its share price movement.

Figure 4.12: Correlation of Total Assets to Market Capitalisation

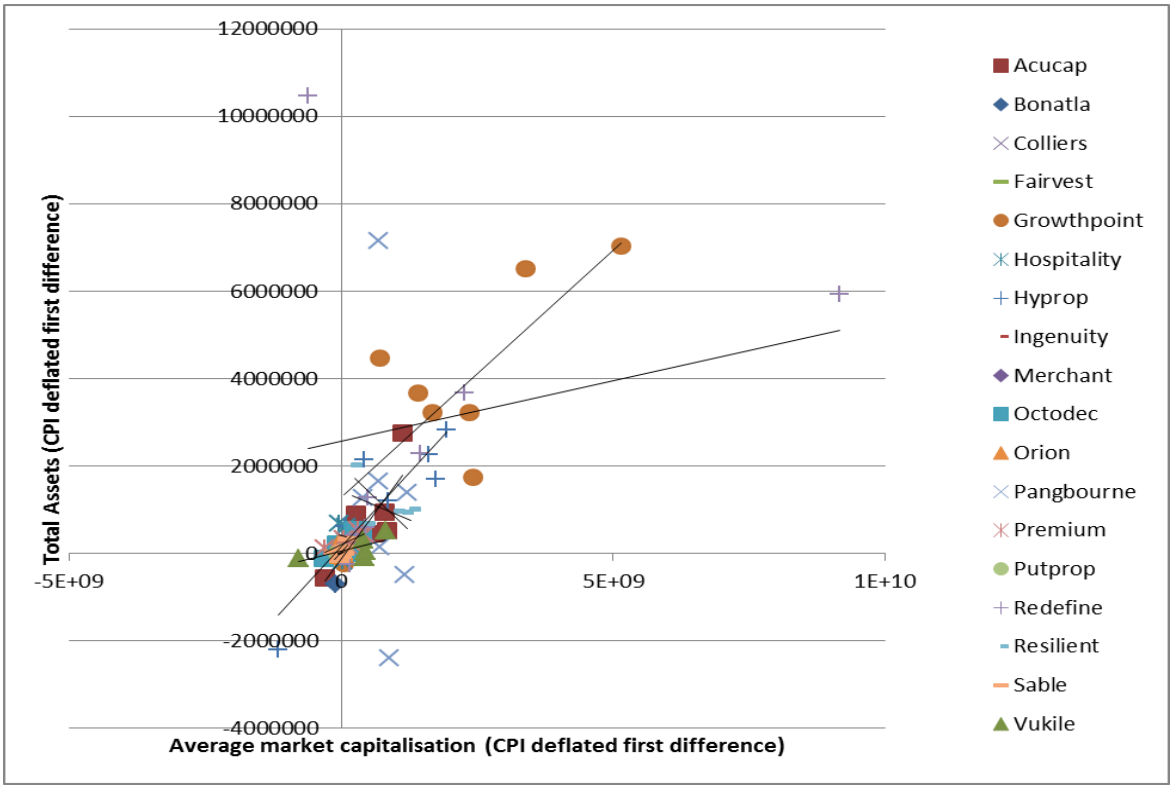


Figure 4.13: Correlation of Turnover to Market Capitalisation

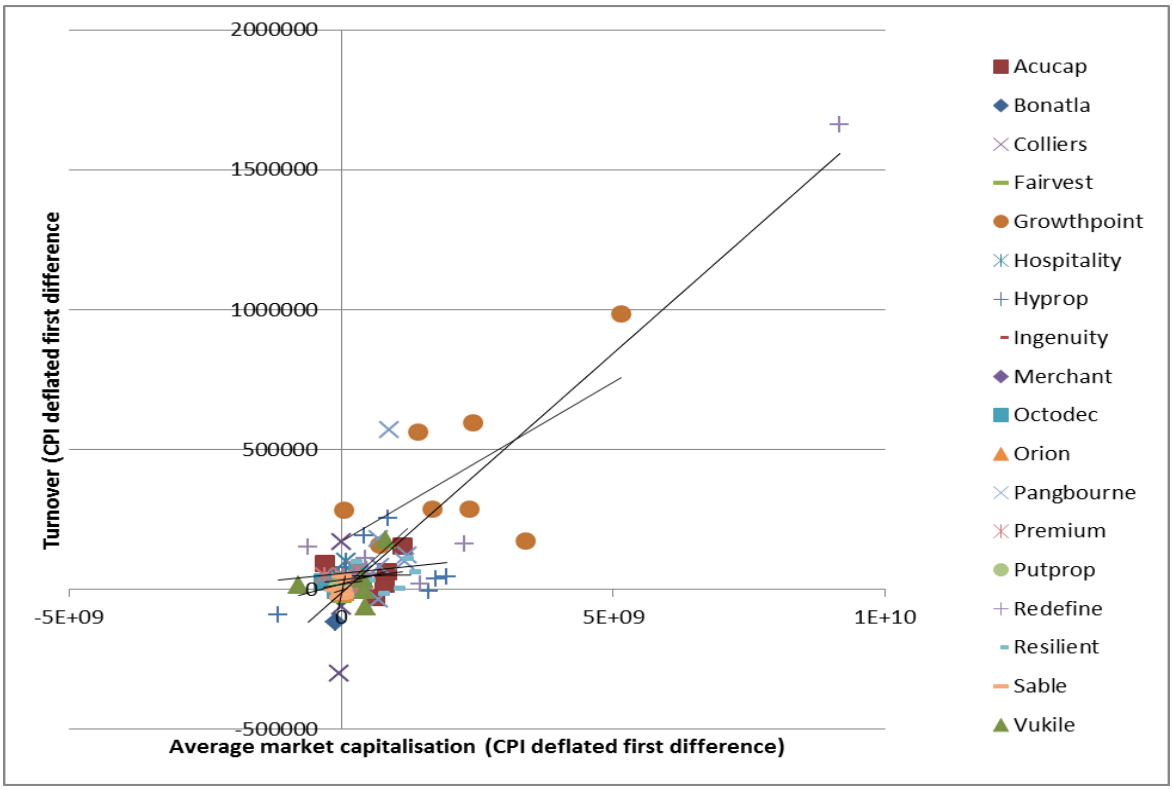


Figure 4.14: Correlation of Total Assets to Market Capitalisation (panel)

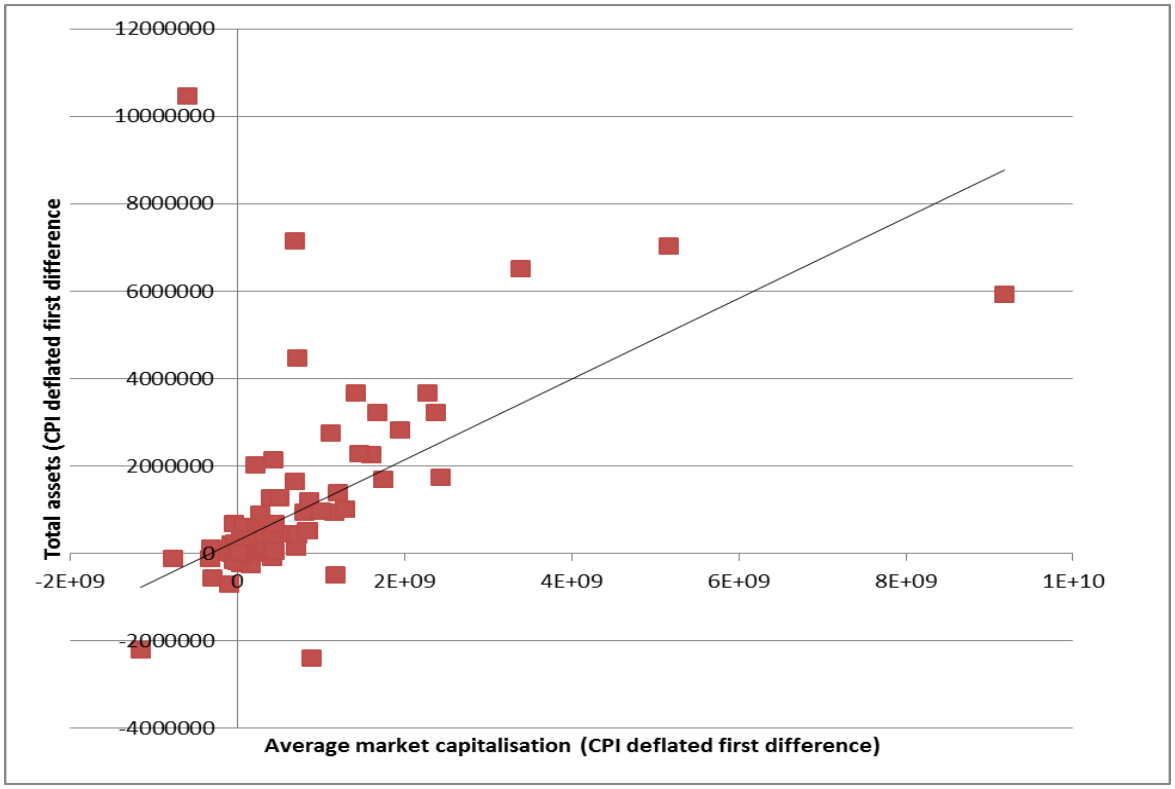


Figure 4.15: Correlation of Turnover to Market Capitalisation (panel)

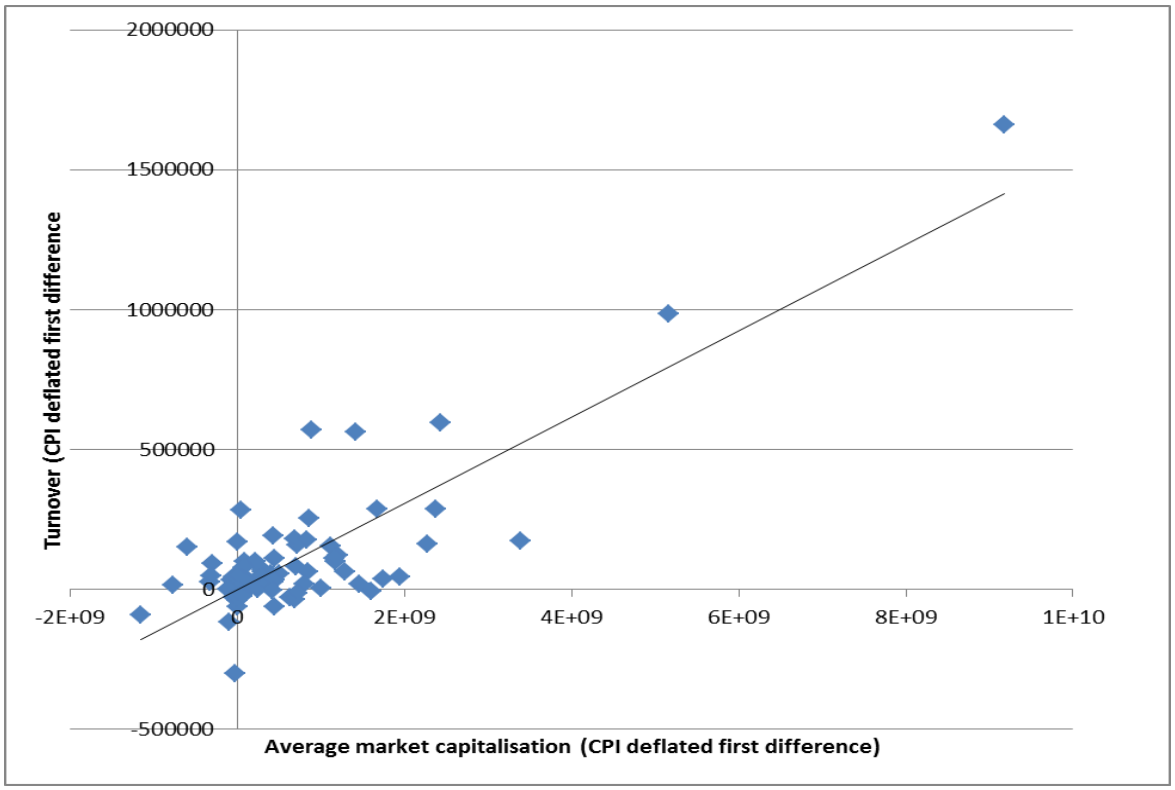
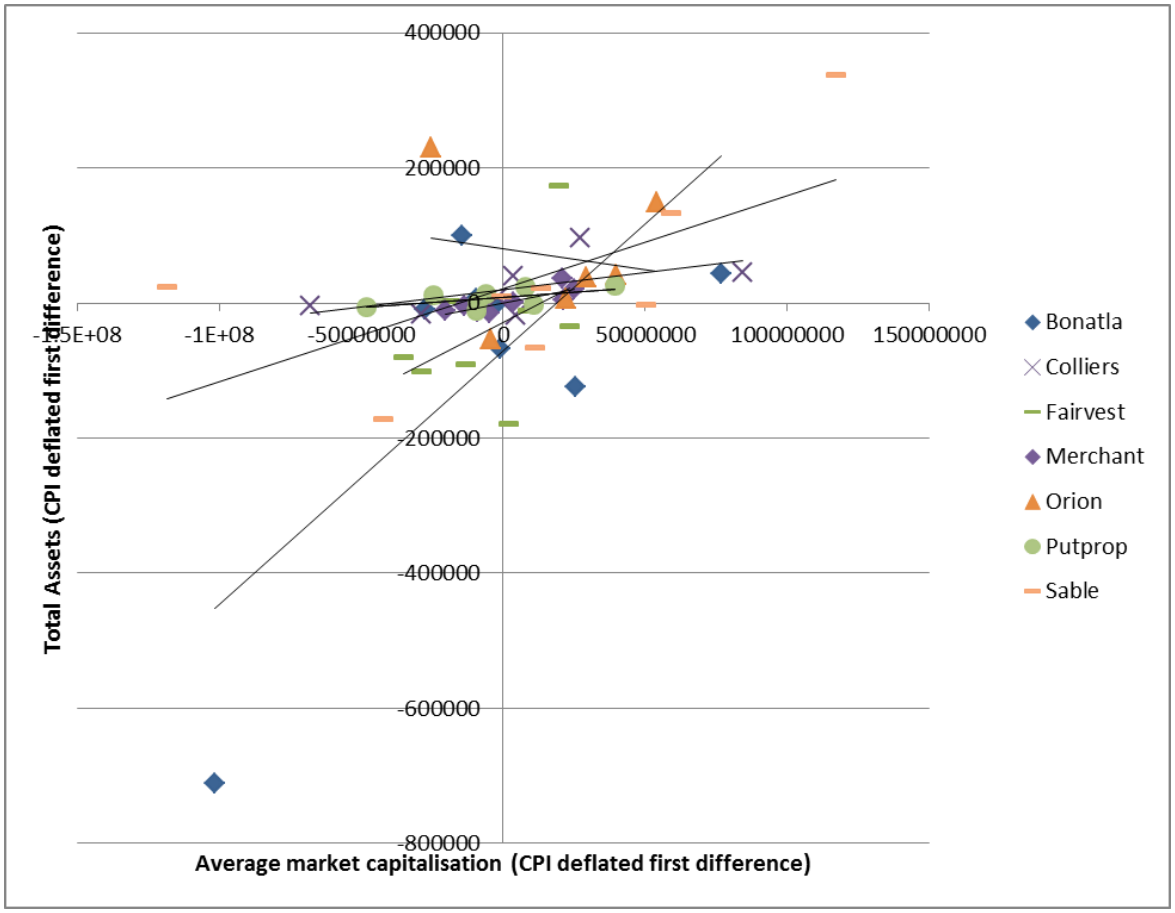


Table 4.11: Correlation of Items with outliers removed

	Total Assets	Total Liabilities	Turnover	Interest Paid - Debentures	Interest & Finance Charges - Total
All data	**.595****	**.712****	**.848****	**.874****	**.832****
Data outside 3SD removed	.739**	.597**	.536**	.532**	.497**
Data outside 2SD removed	.773**	.595**	.470**	.360**	.536**
Data outside 1SD removed	.645**	.414**	.410**	.336*	.293**
**Correlation is significant at the .01 level					
*Correlation is significant at the .05 level					

Figure 4.16: Correlation of total assets to market capitalisation of companies with little or no institutional investment



This section provided evidence of shareholder reactions to PLS companies in the long term. The correlation of the various items over time and between companies indicates that shareholders do have a long-term view, and where there are

deviations from the long-term trend, institutional shareholders will force it back to the trend, unless there are specific underlying reasons to deviate. These underlying reasons are believed, in terms of shareholder activism theory, to be considered by institutional shareholders in their decision-making when purchasing shares, as they have the capacity and the motivation due to their involvement to do the detailed investigation determining such details.

The correlations do provide some insight into the actions of such investors, but the information provided by these correlations is overwhelming and a daunting task to analyze. Furthermore it is not necessarily so that all companies will perform in the same way in all situations. Certain situations might cause a specific company to change and could also cause different companies to perform differently. These issues are difficult to determine in these ratios and it is not necessarily so that all factors influencing share prices have to be taken into consideration. Another shortcoming of the abovementioned correlations is that the share price movement and subsequent market capitalisation is most certainly not caused by the change in a single variable, and that such various variables should be combined in order to see the joint influence of different variables on the share price movement. For these reasons, the data used in the correlations above, are analyzed using RapAnalyst artificial intelligence (AI) software, as explained in section 4.5.

4.5. USE OF AI IN INVESTIGATION OF LISTED FUNDS

Artificial Intelligence is the name given to any attempt to have computers acquire attributes of the human mind. Weak AI philosophers believe that computers, as advanced as they may get, will only be able to *seem* intelligent. According to Russel & Norvig (1995:29), strong AI theory claims that computers can be conscious, meaning that computers someday can evolve to be as intelligent as humans, while weak AI theory makes no such claims and holds that computers are just mindlessly manipulating data to produce "intelligent" actions. Tu

(1996:1225) states the advantages and disadvantages of using neural networks as a form of AI to be the following:

Advantages

- Neural network models require less formal statistical training to develop.
- Neural network models can implicitly detect complex nonlinear relationships between independent and dependent variables.
- Neural network models have the ability to detect all possible interactions between predictor variables.
- Neural networks can be developed using various different training algorithms.

Disadvantages

- Neural networks are a “black box” and have limited ability to explicitly identify possible causal relationships.
- Neural networks models may be more difficult to use in the field.
- Neural network modelling requires greater computational resources.
- Neural network models are prone to over-fitting.
- Neural network model development is empirical, and many methodological issues remain to be resolved.

This section will demonstrate the use of one AI program, namely RapAnalyst, which is based on neural network technology and distributed by Raptor International software.

By displaying the interrelationships between data points in an easily interpreted visual format, RapAnalyst allows the user to identify opportunities and make decisions with confidence. The application delivers thorough and accurate data understanding and, unlike traditional statistical analysis, it is not restricted by inherent assumptions.

In contrast to traditional analysis techniques, RapAnalyst approaches data understanding holistically and shows the relationships between all attributes in a data set (single tier segmentation), as opposed to targeting specific attributes that are assumed to be relevant (linear segmentation). This allows RapAnalyst to deliver high levels of predictive accuracy, including dealing with data that have values missing or have been poorly measured. This sophisticated approach greatly simplifies and shortens the data collection, preparation and interpretation process.

RapAnalyst allows one to work with high-dimensional data within a two-dimensional visualization called a "Knowledge Filter". A Knowledge Filter is an optimized representation of the input data set that is constructed during the RapAnalyst training process. This training process, which uses unsupervised neural networks, arranges a representation of the data in the Knowledge Filter based on similarity (Cloete and Spies, 2009:141).

The Knowledge Filter consists of a large number of connected hexagons called nodes. All relevant attributes considered, two nodes close together are more similar than two nodes farther apart.

The Knowledge Filter can be investigated from the viewpoint of every attribute in the data set using the resulting attribute windows. It is when several different attribute windows are compared that the investigative power of RapAnalyst emerges.

The attribute window views are a colour depiction of complex multi-dimensional data in two dimensions – a bird’s eye view of the data. As each attribute is displayed in its own window, the dynamics and interrelationships within the data are easily identifiable. This depiction can also quickly provide insight into how and why certain events occur.

Clusters divide the Knowledge Filter into groupings of similar nodes. The groupings are organized in such a way that the nodes within the same cluster are as similar as they possibly can be, while the difference between the clusters is as great as it can be (optimum clustering is such that intra-cluster variance is minimized while inter-cluster variance is maximized).

Any number of clusters can be chosen to display, but RapAnalyst automatically ranks the number of clusters and chooses an optimal cluster number.

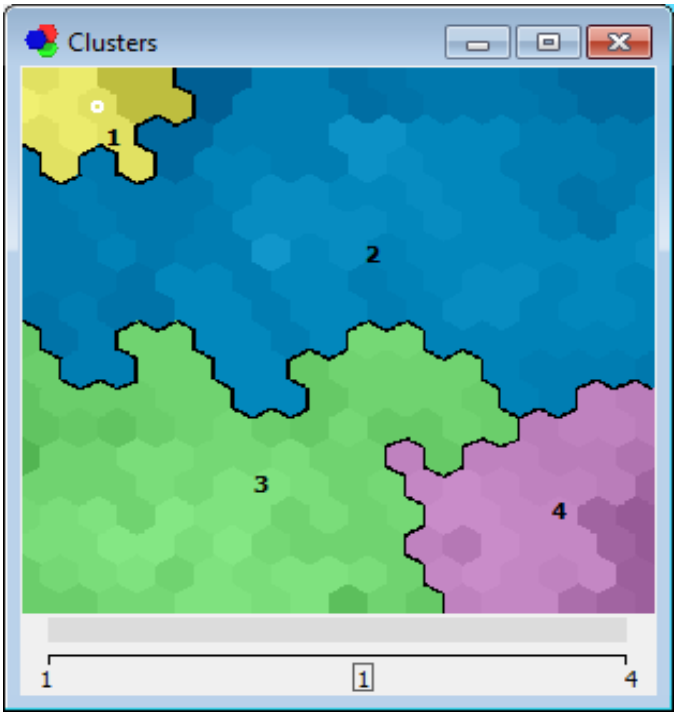
The data used for testing by RapAnalyst was taken as raw data, with individual variables, but a time variable to consider the influence of time on the other variables. In testing the data with RapAnalyst, the optimum cluster number was found to be 4 clusters, followed by 8. This indicates that with 4 clusters, the data show optimal differences between the different clusters that separate them from each other, and although less optimal, if the clusters are increased to 8, this will still provide significant information on the attributes that make the specific cluster unique. Thereby it is possible to determine why specific attributes cause a company to react in a specific way.

Figure 4.17 provides the cluster separator view, where the different clusters and numbering are visible.

Each of these clusters is indicated on all the attribute windows, thereby it is possible to compare the attributes in each cluster to each other. The data that was analysed included all the variables that were used previously in this study, viz.:

- the accounting ratios;
- common size statements;
- normal financial statements;
- share price information.

Figure 4.17: Cluster separator view[1]



The data was extended to include:

- a company variable that associates the data for each attribute with a specific company;
- the date of the specific data point;
- the prime interest rate at the specific date;
- the level of institutional shareholding of each company;
- equity (shareholder interest + debenture loan + deferred tax[2]);

and some portfolio information of each company:

- Geographical profile;
- Property type;
- Size in terms of the Gross Lettable Area of properties;
- Latest valuation of the portfolio;
- Value per square meter of the portfolio.

[1] For more information on the working of RapAnalyst, refer to www.raptorinternational.com
[2] Refer chapter 3

Due to the difference among share structures that causes different companies' shares to be compared with difficulty, as explained in the previous section, an attribute was added by dividing market capitalisation by equity. This provides relative figures that are more comparable.

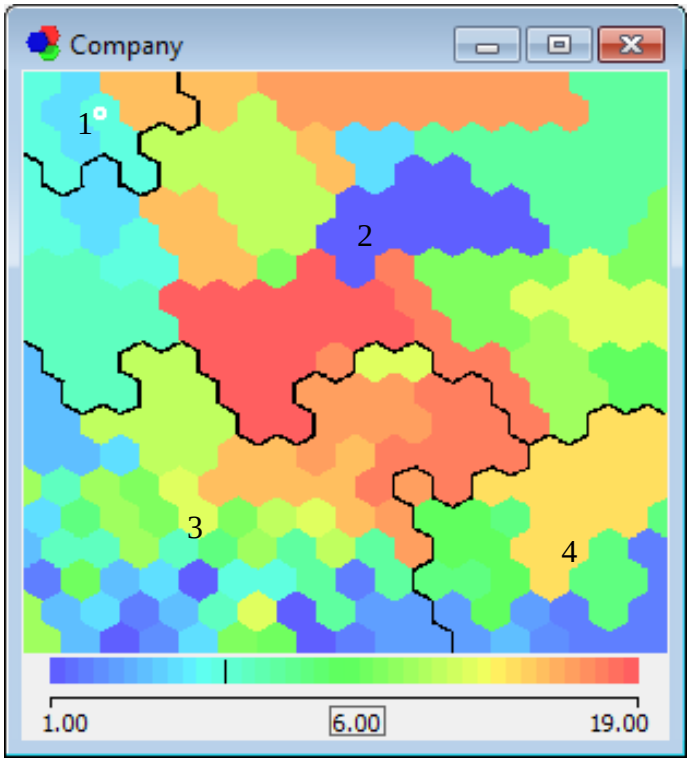
Figure 4.18 shows the data distribution for the different companies that are analysed in this study. Each different colour represents a different company, from Acucap (numbered 1) to Vukile (numbered 19). It is evident that the companies are grouped together in some areas, while in others they are scattered. All the other attribute windows look similar to the company window, with the different values for each attribute also shown in the different colours, while the position of each datapoint is the same for each different attribute window. This means that variables that are linked in the data set are represented by a single position in the different attribute windows. The benefit of RapAnalyst lies in the fact that the position is chosen by RapAnyalyst so that those data points that are most similar, will be positioned closest to each other. This creates the opportunity to investigate different attributes and the influence of different attributes on each other.

From figure 4.18 it is evident that in clusters 1, 2 and 4 the different data points are grouped together for each company. It is therefore clear that each specific company reacts in a very similar way over time. Clusters 1 and 4 are substantially smaller, while 3 contains most of the companies, with a few exceptions. Cluster 3 however seems very erratic, with company data not grouped together as in the other clusters. However, it includes the largest number of companies, although the frequency of each company is lower.

In order to analyze the different clusters in the light of all the attributes, the CF scoring for each cluster was considered. The Coverage Factor (CF) scoring function displays the range of all attribute values within a selection of nodes in a Knowledge Filter. For each attribute, the function calculates the sum of

frequencies contained in the selection for that attribute range in the whole Knowledge Filter. These calculated values are termed the CF scores. The CF scoring ranks the different attributes in terms of the number of occurrences for the values covered by that cluster as a factor of the total number of occurrences of the specific range in the population data. Thereby it is possible to determine which attributes are most affecting the behaviour of the specific cluster.

Figure 4.18: Company attribute in RapAnalyst



The attributes with the highest CF scoring in cluster 1 are mainly normal financial statement items, as well as the m^2 attribute of the portfolio (as proxy for the size of the portfolio) and the total value of the portfolio. This cluster is distinguished by the sheer size of the balance sheet and of the portfolio. It includes mainly Growthpoint data with approximately 50% of the Growthpoint data points in this cluster, as well as one Redefine event. The Redefine event could be determined from the date attribute to be the data from the 2010 financial statements of

Redefine, while the Growthpoint data is also in the latter half of the timeframe under consideration. During 2009, Redefine merged with two other funds to result in a substantial increase in its balance sheet. Subsequently its size is close to Growthpoint, which is substantially larger than all the other funds. We therefore have an indication from the above that the two companies behave differently from the other companies due to their size. The situation with Redefine is also evident in figure 4.12 and 4.14 where the outlier point on the graphs is indicative of the rapid increase in the size of the company, but without the market capitalisation following suit immediately. Situations like this cause normal statistics to present difficulties in providing accurate predictions.

Cluster 2 includes most of the companies, with Bonatla, Colliers, Fairvest, Ingenuity, and Putprop excluded. The largest common attribute is deferred tax and includes 71% of the deferred tax values between R18 389 000 and R1 753 172 000, which is just about the range of the population as well. Deferred tax is an item that is created due to the structure of these companies, whereby the companies' assets are revalued every year and included as an income statement item. This income from the higher value of assets is taxable only when the properties are sold, and is therefore not realizable immediately; it is deferred. Due to the revaluation figure which is shown as income, the deferred tax thereon is also calculated as if it were normal income; but in the case of property that is sold by a long-term investor and not for speculative reasons, capital gains tax is payable, not income tax; this has a substantially lower impact. Given the background of deferred tax, high levels of deferred tax could be an indication of high capital growth in the property portfolio. Other important attributes are "intangible assets", "equity", and financial leverage at the lower end of the scale, as well as "fixed assets" which is well spread and contains most of the events with higher levels of fixed assets and total assets other than those listed in cluster 1. It is evident that this cluster contains most of the larger companies, except for two: Growthpoint which is substantially larger than all the others, and Redefine after it merged with other funds, whence it was also more comparable to Growthpoint.

Following “fixed assets” is “Market cap / equity”, which occurs in approximately 50% of cases, with values between 290,39 and 1205,98. Considering that the total spread for this item is from -15 887,01 to 61 063,20, it is evident that this cluster contains the companies that are more stable, with “market cap / equity” values that are very close to each other and quite comparable. There is also strong evidence that these companies’ long-term debt is at fairly low levels, with consequent higher levels of equity, which reduces risk.

In cluster 3 the first item to stand out is again deferred tax, but this cluster contains 62% of the data points with values between 0 and R130 688 000, which is at the bottom of the scale. If the same comment as in the previous paragraph applies, this cluster contains companies or time periods with low levels of asset growth. For the same balance-sheet items as mentioned previously, it covers largely the lower end of the scale, and it is evident that the smaller companies are represented in this cluster. This cluster also includes 17 of the 19 data points where the prime interest rate was at its highest level of 17%. In this area the data points for prime are located very close to each other and the company data points are scattered, in contrast to the close grouping of the latter in the other clusters. “Equity %” is evidently substantially lower than for the previously mentioned clusters, while leverage is substantially higher.

In cluster 4 the balance-sheet items also contain the smaller companies, but the ratios for leverage and equity are substantially better than in cluster 3. There are high levels of shareholders’ interest and equity, with fair levels of debenture interest paid and lower levels of debt and leverage. The risk associated with these companies therefore appears to be substantially lower than those in cluster 3 and is in fact in line with the companies in cluster 2. The big difference, however, seems to be the fact that the balance-sheet items are substantially smaller and result in higher operating cost percentage and resulting lower profits. It may also be that these companies are less effective and subsequently have higher operating costs, given the level of income. The cluster contains approximately

50% of the data of Bonatla, Colliers, most of the data of Ingenuity and Merchant, all the data of Putprop and one datapoint of Resilient in its early days. Some of these companies were also seen as specifically being excluded from cluster 2. This cluster is therefore considered to be differentiated from the others due to its ineffectiveness in producing high levels of profits given the assets in the portfolio. The lease-expiry profiles of these companies are also substantially worse than the other companies, causing a risk to a constant flow of income. These attributes highlight that there is a risk in terms of the companies' ability to produce profit and constant income flow, which might be the reason for the lower level of leverage, as these companies are considered to be a high loan risk.

In addition to the above, it is observed that institutional shareholding for the four clusters is highest in cluster 1 (mostly more than 75% institutional shareholding), followed by cluster 2 (mostly 30% to 80% institutional shareholding), cluster 3 (below 30% institutional shareholding, but also some high levels), and lastly cluster 4 (mostly below 10% institutional shareholding).

In conclusion, artificial intelligence software made it possible to differentiate between the different companies by grouping them together in clusters, and identifying the different attributes that differentiate them from each other and that provide each group of companies, or specific timeframes in the data of companies, its unique behaviour. Thus it was identified that the following items have significant influence on the behaviour of PLS companies:

- The difference in size of the companies, as per financial statements (capital employed) or portfolio of assets;
- Deferred tax, which could be seen as a proxy for capital growth;
- Intangible assets;
- Equity;
- Level of financial leverage and debt;
- Market capitalisation / equity, which is a normalized measure for evaluating the company's share performance;

- Interest rate levels;
- Debenture interest paid;
- Operating cost percentage;
- Profit levels;
- Lease expiry profiles;
- Institutional shareholding.

In section 4.6, the influence of the above on the valuation of the share price performance will be evaluated, using multiple regression analysis.

4.6. MULTIPLE REGRESSION OF IDENTIFIED DATA

In the previous sections of chapter 4 it was found that the accounting ratios of companies do not provide a very clear indication of share price performance. Various items, which are mainly from common-size statements, however, do provide some indication of the share price movement (refer section 4.3.1.1 and tables 4.1 to 4.3). If the data of the various companies are combined in a panel data set, these data provide significantly lower accuracy in predicting the share price movement. If the share price is multiplied by the number of shares issued (to give the market capitalisation), correlation with the individual variables strengthens significantly in the panel data analysis. There is however a number of variables that yields poor correlations, while the panel data set varies in level of correlation for the different variables. A number of variables were then identified that appear to have an influence on the behaviour of individual companies. These variables will be tested in this section, using multiple regression, to evaluate the influence of the panel data set for the different companies and different variables in combination with the share price, on the predictability of the value of the assets held by the company.

Levine et al (1998:601) provide the multiple linear regression model as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \ldots. + \beta_P X_{Pi} + \epsilon_i$$

where:

β_0 = *Y intercept*

β_1 = *slope of Y with variable* X_1 *holding variables* $X_2, X_3, \ldots, X_P$ *constant*

β_2 = *slope of Y with variable* X_2 *holding variables* $X_1, X_3, \ldots, X_P$ *constant*

β_3 = *slope of Y with variable* X_3 *holding variables* $X_1, X_2, X_4, \ldots, X_P$ *constant*

β_P = *slope of Y with variable* X_P *holding variables* $X_1, X_2, X_3, \ldots, X_{P-1}$ *constant*

ϵ_i = *random error in Y for observation in i*

The variables identified in section 4.5 were used in the multiple linear regression process. Lease expiry profiles and institutional shareholding were not found in the process to provide any significant improvement to the accuracy of the data set. The size of the companies as indicated by the financial statements was taken into consideration using the total assets and turnover. Equity and long-term leverage was used to identify the use of equity and debt in the financing of the company, while operating profit and total cost shown were used to identify the company's ability to provide income as well as profits from the assets. Interest paid to debentures provides an indication of the cash that is received by investors, while the prime interest rate is used to evaluate a difference in performance given the level of debt.

The results of the multiple regression, where the above variables were used as explanatory variables and the average market capitalisation was used as dependent variable, is shown in Table 4.12. The data used for the regression is the first difference of the CPI deflated panel data. From the model summary, the adjusted R square value is indicated as 0.815. It is however necessary to test the influence of outliers on the model. By excluding all outliers outside two standard deviations, the adjusted R square change to 0.814, with the F-value reducing from 30.862 to 26.353.

From the descriptive statistics the number of observations in the pooled data could be seen to vary between different variables. This is due to information

availability and in line with literature on information deficiency which might have an influence on the results. The missing values could be due to the fact that they are indeed zero, or it is excluded from the financial statement item due to a different accounting policy in that specific year, or omission for whatever other reason. The regressions done thus far was done by excluding missing variables on a case-by-case basis, i.e. by accepting the other variables in that observation will sufficiently explain the dependent variable. It is however necessary to test the effect if the regression is done by excluding an entire observation if it has any missing observations for any of the variables in it. Of most concern in doing so, is the number of observations in the variable Interest Paid – Debentures which has substantially lower observations. By excluding all observations where this variable is missing, the number of observations is significantly affected. For this reason the effect is tested by excluding Interest Paid – Debentures from the model, thereby having all observations of the balance of the variables available, and alternatively including it, which thereby reduces the number of observations as mentioned. By excluding Interest Paid – Debentures first from the model where missing values are excluded case-by-case, and outliers outside two standard deviations are excluded, the R square reduces from 0.814 to 0.804, but the F-value increases from 26.353 to 49.666. The critical F-value in this case is 5.01 at the 0.01 level of significance. By including Interest Paid – Debentures, but excluding all observations with missing observations in any variable, reduces the number of observations to 43, and results in a R square of 0.618 with a F-value of 7.788. The critical F-value for this is 4.25 at the 0.01 level of significance. By excluding the Interest Paid – Debentures, the remaining observations for the balance of the variables are 84. In this case the R square is 0.539 with a F-value of 13.143. The critical F-value in this case is 4.99 at the 0.01 level of significance. By excluding Interest Paid – Debentures, it could therefore be accepted that with the information available on debenture loans, although the coefficient of determination reduces slightly, the level of significance increases substantially, the Null hypothesis could be accepted that Interest Paid – Debentures does not belong in the model. The model is also best described by excluding missing values on a

case-by-case basis, rather than excluding the entire observation. The results of this are shown in table 4.13.

A simple linear regression between the Average Market Capitalisation and Total Assets as well as Average Market Capitalisation and Turnover, which were graphically illustrated in figures 4.14 and 4.15 respectively, would result in coefficients of determination of 0.598 and 0.214. This already excludes all outliers outside two standard deviations. Another variable, equity has a R square value of 0.720 when regressed against Average Market Capitalisation. None of these appear to be better than the individual items, but needs to be empirically tested. For this purpose, the Null hypothesis is stated that the individual items are better explaining the Average Market Capitalisation than the items combined in the multiple regression. The individual items are regressed against Average Market Capitalisation and the hypothesis is tested based on the F-values of these individual regressions. The results are shown in table 4.14.

One of the variables could be accepted at the 0.05 level of significance and one accepted at the 0.01 level. The R square as well as the F-value in relation to the critical F-value for the multiple regression is substantially higher than that of the individual items. Therefore the Null hypotheses could be rejected that any of the individual simple regressions could equally or better explain the movement in the Average Market Capitalisation. The alternative hypothesis is therefore accepted that the multiple regression better explains the movement in the Average Market Capitalisation than any of the individual regressions.

In order to confirm that the alternative hypothesis is not incorrectly accepted, the variables are also tested for multicollinearity, heteroscedasticity and serial- or autocorrelation.

Table 4.12: Multiple regression of company data

Descriptive Statistics

	Mean	Std. Deviation	N
Average market cap	432980815.019	1101497612.517	126
Prime	11.948	2.009	126
Total Assets	710665.473	1705619.146	126
Deferred Tax	53026.684	163529.957	117
Turnover	66922.280	201819.192	124
Operating Profit	70615.576	417515.550	126
Total Cost Shown	1520.867	41244.040	126
Interest Paid - Debentures	69675.607	129470.593	68
Leverage - long term%	.515	.237	112
Equity	539431.671	1426996.169	122

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.918[a]	.842	.815	473752574.775	1.998

a. Predictors: (Constant), Equity, Prime, Total Cost Shown, Leverage - long term%, Turnover, Operating Profit, Deferred Tax, Interest Paid - Debentures, Total Assets
b. Dependent Variable: Average market cap

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	62340158303708600000.000	9	6926684255967620000.000	30.862	.000[b]
Residual	11670958109519100000.000	52	224441502106136000.000		
Total	74011116413227700000.000	61			

a. Dependent Variable: Average market cap
b. Predictors: (Constant), Equity, Prime, Total Cost Shown, Leverage - long term%, Turnover, Operating Profit, Deferred Tax, Interest Paid - Debentures, Total Assets

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	-754633141.199	425313750.940		-1.774	.082	
Prime	45981466.196	32107910.050	.084	1.432	.158	1.131
Total Assets	63.686	95.330	.099	.668	.507	7.185
Deferred Tax	2520.437	972.115	.374	2.593	.012	6.868
Turnover	2621.867	805.903	.480	3.253	.002	7.190
Operating Profit	117.726	248.572	.045	.474	.638	2.927
Total Cost Shown	-1582.077	1556.735	-.059	-1.016	.314	1.120
Interest Paid - Debentures	3080.487	1193.162	.362	2.582	.013	6.486
Leverage - long term%	377216472.089	288827916.559	.081	1.306	.197	1.274
Equity	-243.110	112.149	-.315	-2.168	.035	6.961

a. Dependent Variable: Average market cap

Table 4.13: Multiple regression of company data – Debenture Interest paid and outliers removed

Descriptive Statistics

	Mean	Std. Deviation	N
Average market capSD2	299416850.250	586145230.963	123
Prime	11.948	2.009	126
Total AssetsSD2	399876.080	919188.909	120
Deferred TaxSD2	24446.293	68211.754	109
TurnoverSD2	32997.394	77840.666	119
Operating ProfitSD2	68394.276	197656.980	120
Total Cost ShownSD2	-197.419	11472.996	121
Leverage - long term%SD2	0.520	0.234	111
Equity SD2	312054.026	678474.277	117

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.906[a]	.820	.804	259595336.664	2.121

a. Predictors: (Constant), EquitySD2, Prime, Leverage - long term%SD2, Total Cost ShownSD2, TurnoverSD2, Operating ProfitSD2, Deferred TaxSD2, Total AssetsSD2
b. Dependent Variable: Average market capSD2

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	26775884742060500000.000	8	3346985592757560000.000	49.666	.000[b]
Residual	5862907277136060000.000	87	67389738817655800.000		
Total	32638792019196600000.000	95			

a. Dependent Variable: Average market capSD2
b. Predictors: (Constant), EquitySD2 , Prime, Leverage - long term%SD2, Total Cost ShownSD2, TurnoverSD2, Operating ProfitSD2, Deferred TaxSD2, Total AssetsSD2

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	-427453520.992	187806016.175		-2.276	.025	
Prime	30947161.307	14075496.979	.106	2.199	.031	1.127
Total AssetsSD2	-160.427	73.192	-.252	-2.192	.031	6.381
Deferred TaxSD2	-2896.922	611.889	-.337	-4.734	.000	2.456
TurnoverSD2	1149.176	462.045	.153	2.487	.015	1.824
Operating ProfitSD2	689.365	174.508	.232	3.950	.000	1.677
Total Cost ShownSD2	2638.330	2548.489	.052	1.035	.303	1.205
Leverage - long term	201149167.230	122614791.361	.080	1.640	.105	1.156
EquitySD2	970.870	103.879	1.124	9.346	.000	7.002

a. Dependent Variable: Average market cap

Table 4.14: Comparison of simple regression to multiple regression

Variable	R Square	F	Critical F 0.05	Critical F 0.01	Reject / Accept H_0
Multiple regression	.804	49.666	1.57	2.62	Accept @ .01
Total Assets	.598	175.384	63.1	253	Accept @ .05
Deferred Tax	.192	26.403	63.0	253	Reject
Leverage - long term %	.036	5.029	63.0	253	Reject
Equity	.720	296.268	63.1	253	Accept @ .01
Turnover	.214	32.887	63.1	253	Reject
Operating Profit	.240	37.927	63.1	253	Reject
Total Cost Shown	.002	1.283	63.1	253	Reject
Interest Paid - Debentures	.277	25.565	62.8	252	Reject

a. Dependent Variable: Average market cap

Multicollinearity is tested by firstly considering the correlation between the independent variables. Total Assets and Equity do stand out to be quite highly correlated, with a correlation of 0.84. The variance-inflating factors (VIF) shown in table 4.13, is indicated at 6.381 and 7.002 for these two variables respectively, which although starts to be on the high side, it is considered not to be severe. The eigenvalues of the model has minimum and maximum figures of 0.011 and 4.578, indicating a *k*-value of 416 and a resultant CI-value of 20.274. All these tests indicates that there are moderate to high multicollinearity present, but it is still substantially below a severe level, where it is considered to affect the model to the extent that the results become questionable. As such the levels of multicollinearity are accepted to be acceptable without the necessity to do any transformation.

Testing for heteroscedasticity was done by way of a Goldfeld-Quandt test, where it is tested if λ is greater than the critical F-value, in which case heteroscedasticity is present. For this purpose, two datasets were established, each with $(n - c)/2$ number of observations, with c chosen as 30 for the total of 126 observations (n), leaving each dataset for the test with 48 observations. λ is then determined by the equation: $\lambda = (RSS_H / DF_H) / (RSS_L / DF_L)$

This resulted in the value of λ to be 2.502. The critical values of F are 1.91 at the 0.05 level of significance and 2.52 at the 0.01 level of significance. This indicates that the hypothesis of homoscedasticity is rejected at the 0.05 level of significance, but the test failed to reject the hypothesis at the 0.01 level. It is

however an indication that there is some level of heteroscedasticity that is suspected. Because it is not confirmed at the 0.01 level, it is sufficed with a note of possible remedial measures, which are left for further research. The data transformation was done by way of taking the first difference for the time-series data, but growth is an exponential pattern, not a straight line. It is therefore expected that the higher difference figures in bigger companies as well as later growth periods, are causing some level of heteroscedasticity. In order to resolve this it should be considered to take the percentage growth for analysis, rather than the first difference. The level of heteroscedasticity is however not considered to be so severe that the findings of the study are jeopardized.

Serial correlation is tested by way of a Durbin-Watson test. As indicated in Table 4.13, the Durbin-Watson value for the model is 2.121. The significance points of the Durbin-Watson *d* statistic is d_L = 1.552 and d_U = 1.849 at the 0.05 of significance and d_L = 1.433 and d_U = 1.725 at the 0.01 level. This indicates the range for rejecting H_0 of positive or negative autocorrelation to be between 1.849 and 2.151 at the 0.05 level and 1.725 and 2.275 at the 0.01 level. This indicates that the hypothesis of negative or positive autocorrelation to be present could be rejected at the 0.01 level and it is therefore accepted that autocorrelation is not present. In order to ensure the test is accurate it is worth mentioning that the data is ordered for the variables in time-series order, i.e. all observations per company grouped together in date order. This is important to test the effect of autocorrelation over time, otherwise the Durbin-Watson *d* statistic could provide a false output. The data was also tested for stationarity by way of Ljung-Box statistics, for which the results are shown in annexure 13.

As mentioned in section 3.2, price discovery was found in the listed sector, which could provide information on the non-listed property sector. The regression done thus far proved that there are price discovery possibilities, but it needs to be determined in which direction the price discovery takes place. For this purpose a Granger causality test was performed between Total Assets and Average Market

Capitalisation for 1, 2, 3, 4 and 5 time lags of one year each. The F-values for this is shown in table 4.15.

Table 4.15: Granger causality between Total Assets and Average Market Capitalisation

Dependent	Number of Lags	F-value	Critical values			
			0.25	0.1	0.05	0.01
Total Assets	1	6.409		9.80	63.10	253.00
	2	3.739	3.47	9.48	19.50	99.50
	3	3.314	2.47	5.14	8.55	26.20
	4	6.189	2.08	3.79	5.69	13.70
	5	3.791	1.88	3.15	4.44	9.24
Average Market Capitalisation	1	137.648		9.80	63.10	253.00
	2	69.043	3.47	9.48	19.50	99.50
	3	32.441	2.47	5.14	8.55	26.20
	4	34.640	2.08	3.79	5.69	13.70
	5	20.873	1.88	3.15	4.44	9.24

The green shaded areas in table 4.15 are where the F-value exceeds the critical F-value for the different time lags and at the different levels of significance. The F-values indicate that there is better evidence for Total Assets to granger cause Average Market Capitalisation than there is for Average Market Capitalisation to cause Total assets, suggesting that price discovery might take place in the direct property market rather than in the listed property market. This is in contrast to the findings of both Yavas and Yildirim (2011) as well as Barkham and Geltner (1995) as discussed in section 3.2. The reason for this might be in the data frequency used for the estimate, and keeping in mind that share price change on a daily basis, while the data used is only the annual weighted average. Because the total assets of the PLS companies are not revalued more frequently, the test cannot be performed on the actual valuations as performed here, but it should be considered to perform the test on index data, similar to the mentioned literature, taking into consideration more frequently observed direct property data. If the findings of Yavas and Yildirim (2011) and Barkham and Geltner (1995) are also applicable here, it would suggest that price discovery takes place in the short term in the

listed sector, but in the longer periods, prices are corrected by direct property behaviour.

From the above it can be seen that the share price could be predicted by the changes in different company variables, given the company structure. The value of the market capitalisation, which is the product of the share price and the number of shares, can be written as:

$$SP_i \, x \, NS_i = \beta_0 + \beta_1 P_i + \beta_2 TA_i + \beta_3 DT_i + \beta_4 TO_i + \beta_5 OP_i + \beta_6 TC_i + \beta_7 LTL_i + \beta_8 E_i + \epsilon_i$$

Where:

β_0 = *Y intercept*
SP_i = *Average Share Price at observation i*
NS_i = *Average No. of Shares issued at observation i*
TA_i = *Total Assets at observation i*
E_i = *Equity at observation i*
DT_i = *Deferred Tax at observation i*
LTL_i = *Leverage due to Long Term Debt at observation i*
TO_i = *Turnover at observation i*
OP_i = *Operating Profit at observation i*
TC_i = *Total Cost Shown at observation i*
P_i = *Prime interest rate at observation i*
ϵ_i = *random error in Y for observation in i*

Source: Author

In conclusion, the artificial intelligence software programming allowed the identification of attributes that in combination offer a higher level of predictive abilities, as determined by multiple linear regression, than was determined by simple linear regression. It was also established that certain companies, due to their specific unique attributes, could not be modelled using the same parameters as the other companies. It is however possible, by way of the model described in

this section, to predict the share price behaviour, or to use the share price information in order to ratify the behaviour of the portfolio of assets.

4.7. CORRELATION OF SHARE PRICE WITH THE JSE

In the previous sections it was shown that a high correlation exists between the financial statements of a specific company and the market capitalisation of the shares of that company. By selecting certain attributes identified through the artificial intelligence software, it was possible to combine these attributes in a multiple-regression procedure that could explain part of the movement in the market capitalisation of PLS companies.

If we however again consider figure 4.7, there are big fluctuations in the share price, and subsequently in the market capitalisation of the shares between year-end dates, when information on company performance becomes available to shareholders and prospective investors. It is presumed this is due to the fact that shareholders do not have sufficient information on the individual companies that enables them to make buy-and-sell decisions on a daily basis. In this section the fluctuations in the share prices will be considered in order to resolve this question.

When the share prices of the different companies are viewed as in figure 4.7 it can be seen that the prices are moving in a very similar way. It is therefore presumed that the cause of the fluctuations is affecting the companies similarly, and should therefore be external, such as irrational behaviour of investors, economic factors, or other factors that might be observable in the general stock market, rather than originating from variables within the company itself.

Niskanen and Falkenbach (2010: 237) found that a significant positive correlation between REITs and equities, especially small cap and value stocks, was observable. The share prices of the companies under investigation in this study form part of the PLS sector, which in turn forms part of the financial sector and the

overall JSE. Therefore the share prices are compared to various indices in these sectors in order to explain the fluctuations. The indices under consideration are the following:

- the J253 **SA Property Index**;
- the J256 **Property Loan Stock Index**;
- the J203 **All Share Index**;
- and the J580 **Financials Index**.

The correlation of these indexes to the individual share prices are shown below in Table 4.16, with the first difference of the daily share prices compared to the first difference of the daily index.

Table 4.16: Correlation of JSE indices with share price movement of PLS companies on the JSE

	J203	J580	J256	J253
Acucap	.134**	.202**	.447**	.462**
Bonatla	.009	.010	.028	.033
Colliers	.051	.024	.033	.020
Fairvest	-.002	.009	.013	.017
Growthpoint	.344**	.393**	.822**	.775**
Hospitality	.030	.046	.085**	.097**
Hyprop	.230**	.273**	.534**	.538**
Ingenuity	.020	.007	.004	.004
Merchant	.011	.036	.022	.023
Octodec	.156**	.136**	.239**	.237**
Orion	-.041	-.029	.025	.004
Pangbourne	.277**	.305**	.596**	.612**
Premium	.068*	.060*	.204**	.202**
Putprop	-.015	-.016	-.014	-.017
Redefine	.264**	.320**	.662**	.646**
Resilient	.191**	.248**	.527**	.532**
Sable	-.009	-.007	.037	.042
Vukile	.209**	.239**	.446**	.446**

**. Correlation is significant at the 0,01 level (2-tailed).
*. Correlation is significant at the 0,05 level (2-tailed).

The high correlation of some of the companies with the J253 and J256 is expected, as the companies being considered form a major part of these indexes. The companies under consideration make up the PLS sector, and therefore the index is just a reflection of the sum of these companies. The causality of these indexes by the individual companies could be confirmed by a Granger test, but at this stage of much significance to the study. Of more significance is the number of companies that have fair levels of correlations and at the 0.01 level of significance with the J580 Financials and J203 All Share indexes. Another observation, but not shown in table 4.16 is the correlation of the J256 Property Loan Stock index and the J203 at 0.386 at the 0.01 level of significance. The causality between these two indexes is tested by way of a Granger test, with the results shown in table 4.17. The results of tests for stationarity by way of Ljung-Box statistics are included in annexure 13.

Table 4.17: Granger causality between J256 PLS and J203 All Share

Dependent	Number of Lags	F-value	Critical values			
			0.25	0.10	0.05	0.01
J203	2	1.049	3.48	9.49	19.5	99.5
J203	5	1.054	1.87	3.10	4.36	9.02
J203	9	1.193	1.53	2.16	2.71	4.31
J256	2	6.530	3.48	9.49	19.5	99.5
J256	5	4.338	1.87	3.10	4.36	9.02
J256	9	3.620	1.53	2.16	2.71	4.31

From Table 4.17 it is evident that the Granger test fails to reject the hypothesis that the J256 is not causing the J203 in all lag periods, even at the 0.25 level of significance. The Granger test however rejects the hypothesis that the J203 is not causing the J256 at all lag periods, but with different levels of significance. It was found that the level of significance increased with an increase in lag periods. It could therefore be accepted that changes in the J203 is indeed the cause of changes in the J256. It is therefore contended that fluctuations in the share price

of individual PLS companies could also be influenced by general JSE sentiment. This is in line with the findings of Morawski *et al* (2008:32) that for short-term holding periods a middle-sized relationship between property stocks and the general stock market exist, but for long-term holding periods, real estate stocks more strongly resemble direct real estate investments, yet lead them significantly. This also confirms that irrational behaviour of investors is equally applicable to property shares as to other listed shares, and provides the opportunity to further investigate behavioural finance theory on property investment (see Shiller, 2003). Yunus *et al* (2010:16) also found a long-run relationship between public (listed) and private (direct) real estate markets and that price discovery is possible in the public real-estate market which leads the private real estate market. If the principles of behavioural finance could be applied to property shares, a lot could be learnt from the listed property sector which, due to the correlations that were established earlier in this paper between property shares and the underlying assets, could be applied to direct property investment as well.

What is more important from the above is the observation that some of the companies have very strong correlations, while others have weak or even negative correlations. In section 4.3.2 and 4.4 it was noted that shareholder activism has a direct influence on the price performance of shares, while institutional investment strengthens shareholder activism. The share price performance is therefore considered in the light of institutional investment and the correlation coefficients compared to the level of institutional investment, as shown in Table 4.18.

From Table 4.18 it can be seen that those companies with the lower correlations are also the companies with lower levels of institutional investment, except Hospitality which has a relatively high level of institutional investment, but lower correlation to the J203, and slightly better correlation to the J580. If it is however considered that Hospitality has a portfolio of properties that only consists of Hotels, its different behaviour becomes plausible. Of interest is that the correlation

between the level of correlation (between share price and index) and level of institutional shareholding is 0.830 and 0.844 for the J203 and J580 respectively. This further confirms literature on shareholder activism.

The correlation coefficient of 0.386 between the J203 and J256 indicates that approximately 15% of the variance in the J256 is caused by changes in the J203. The data used for this section is the daily tradings, which indicates that the mentioned correlation measured short term fluctuations opposed to the longer term fluctuations discussed in the previous section.

Table 4.18: Correlation of JSE indices compared to institutional shareholding

	J203	J580	Institutional shareholding
Acucap	.134**	.202**	60.79
Bonatla	.009	.010	0.27
Colliers	.051	.024	0.22
Fairvest	-.002	.009	12.96
Growthpoint	.344**	.393**	83.16
Hospitality	.030	.046	66.50
Hyprop	.230**	.273**	61.59
Ingenuity	.020	.007	22.58
Merchant	.011	.036	-
Octodec	.156**	.136**	40.23
Orion	-.041	-.029	-
Pangbourne	.277**	.305**	48.27
Premium	.068*	.060*	33.55
Putprop	-.015	-.016	3.90
Redefine	.264**	.320**	61.05
Resilient	.191**	.248**	60.26
Sable	-.009	-.007	0.02
Vukile	.209**	.239**	59.57

In conclusion the following relationship is determined between the share price of the PLS companies and the aggregate stock market:

$$SP_i = \beta_0 + \beta_1 AS_i + \epsilon_i$$

Where:

β_0 = *Y intercept*

SP_i = *Average Share Price at observation i*

AS_i = *Value of the All Share Index at observation i*

ϵ_i = *random error in Y for observation in i*

Source: Author

4.8. CORRELATION OF SHARE PRICE WITH ECONOMY

In the previous sections it was shown that the fluctuations in the share prices of PLS companies are partly explained by JSE movements, as well as company specific movements, especially in the longer term. Both the JSE as well as the property sector are influenced by activities in the general economy, which provides opportunities for individual companies to operate.

Ling and Naranjo (1999:483, 505 & 506) found that the growth rate in real per capita consumption was consistently priced in both commercial real-estate markets and stock markets.

Glascock *et al* (2000:178) state that inflation affects investors' real returns and is a major risk concern. In the literature, a positive relationship between unsecuritized real estate and inflation is documented (Gyourko and Linneman, 1988); nonetheless, negative association is observed for REITs and inflation (Liu et al, 1997). The documented perverse inflation hedges of REITs have been cited as evidence of the deviation of REITs' performance from real estate performance. This phenomenon, however, could be illusive and could be induced by

fundamental relationships between real activities or monetary policies and REIT returns (see also Fama, 1981; Geske and Roll, 1983; Glascock et al, 2000).

DiPasquale and Wheaton, (1992) explains the relationship between the property market and construction activity. Construction activity then influences property stock, which adjusts the equilibrium property demand level.

The mentioned literature explains that general economic indicators could also be used to explain share price movement. This could, in addition to the mentioned influences, further explain individual company share price movement, or general price movements of the sector. As the study is limited to information from the listed sector, the influence thereof is however not tested and should be considered as possible further research. This could include the testing of the influence of different economic variables on specific sectors listed on the stock exchange, which could explain co-movement between different sectors, or the stock exchange in general, or explain differences.

4.9. CONCLUSION

In chapter 4 the valuation of listed property funds was introduced. An overview of the extent of the PLS sector as part of the relevant JSE sectors and the JSE itself was provided, and the general principles of accounting ratios and their correlation with the relevant PLS companies were investigated.

It was found that there are no significant correlations between the accounting ratio’s of the PLS companies and their share prices.

The correlation of share prices and then of the market capitalisation of the PLS shares with the financial statements of the companies revealed that the assets of the companies, being property, provide the motivation for shareholders to invest in the PLS. A PLS grows by finding property investment opportunities in the market,

thereby creating the boundaries of a new investment medium, the share trading market. The investors in the shares of the PLSs stay within these boundaries as is evidenced by the modeling of various attributes and the combination of share price and number of shares issued. The various levels of correlation of the share prices with the different stock exchange indexes also confirm previous research by Chan et al (1998) on the influence of institutional investors on share price.

Chapter 5 will consider the various property variables that could influence the value of the individual property in the portfolio. By identifying the attributes that makes each property unique, the different values that add up to form the portfolio could be identified. In doing that, the influence of the portfolio on the value of the individual property should be able to be determined.

In chapter 6, the Listed Real-Estate Investment Valuation Model (LREIV Model) will be formalized.

Chapter 7 provides conclusions and recommendations.

CHAPTER 5
VALUATION OF THE PROPERTY PORTFOLIO

5.1. INTRODUCTION

In previous chapters the study evolved from the primary problem statement, hypothesis, and general explanation of the need for the study in chapter 1, after which the research design was provided in chapter 2. A general theoretical foundation which included related literature and the basic concepts that form the foundation for the theories applied is provided in chapter 3, explaining how the theoretical foundation would evolve into the applied theories presented in chapter 4, and their application in practice as shown in chapter 5, in order to understand the movement of share prices, given the company structure and assets owned.

In this chapter, consideration will be given to the portfolio of assets that is owned by each company, in order to understand the influence of the composition of the portfolio on the value of the individual assets.

Sections 5.2 to 5.4 present some theoretical principles and explanations, while section 5.5 moves on to practical application, whereby the assets are considered for individual property attributes, as well as portfolio composition.

The chapter is then concluded with section 5.6.

5.2. CHANGES IN THE SIZE AND COMPOSITION OF THE PORTFOLIO

In section 3.2 it was noted that the property-specific factors that differentiate the performance of individual properties, or property types, are:

- Physical characteristics of property;
- Retail sales and profits;

- Vacancy rates;
- Location;
- Employment;
- Production levels.

It was shown in chapter 4 that long-term investors indicate their opinion of the value of the portfolio of assets owned by the company by way of the price they are prepared to pay for the shares of the company, given the company's number of shares issued, and a number of other company-specific attributes. A change in the size and composition of the portfolio would therefore have an influence on the total value of the portfolio of assets, and would ultimately influence shareholders' opinion of that value and hence the share price of the company.

To explain the above, consider a fictitious portfolio of properties held by a property investment company. The portfolio consists of a combination of property types *a* and *b*, held in areas 1 and 2. The portfolio is constructed as follows, given by the number of properties held:

Portfolio 1	Area 1	Area 2
Property type *a*	2	4
Property type *b*	3	1

If it is assumed that properties of type *a* have values of R100 million and R110 million in area 1 and 2 respectively, and properties of type *b* have values of R180 million and R200 million in areas 1 and 2 respectively, the total value of the portfolio can be determined by multiplying the number of properties in the different areas by the total value of each different property, and adding it all together. The value would then be as follows:

Properties *a*, area 1	2 of @ R100 million	=	R200 million
Properties *b*, area 1	3 of @ R180 million	=	R540 million
Properties *a*, area 2	4 of @ R110 million	=	R440 million

Property *b*, area 2	1 of @ R200 million	=	R200 million
Total portfolio value		=	R1 380 million

If the company holding these properties decides to sell one of the properties of type *a* in area 2, and to purchase another type *b* property in area 2, the total number of properties will remain the same, but the total value of the portfolio will change as follows:

Property *a*, area 1	2 of @ R100 million	=	R200 million
Property *b*, area 1	3 of @ R180 million	=	R540 million
Property *a*, area 2	3 of @ R110 million	=	R330 million
Property *b*, area 2	2 of @ R200 million	=	R400 million
Total portfolio value		=	R1 470 million

An increase of R90 000 in the total portfolio value is evident, due to a change in the composition of the portfolio, although the total number of properties held remains the same.

Another option would be for the company to increase the number of properties held, and purchase another property of type *b* in area 1, to end with 11 properties held, as follows:

Property *a*, area 1	2 of @ R100 million	=	R200 million
Property *b*, area 1	4 of @ R180 million	=	R720 million
Property *a*, area 2	4 of @ R110 million	=	R440 million
Property *b*, area 2	1 of @ R200 million	=	R200 million
Total portfolio value		=	R1 560 million

The change in portfolio size might have been financed in various ways. The company could borrow more money from a financial institution, or it could issue more shares, or it could have financed the transaction by retained earnings from previous years. With the change in the value of the portfolio, it is expected that the value of the market capitalisation would follow suit, based on the findings in

chapter 4. Depending on the financing option chosen, the market capitalisation could react as follows:

Finance by retained earnings: The company does not issue new shares, nor commit itself to more debt. Therefore the retained earnings would show as an increase in the balance sheet under equity, and as per the double-entry principle of the balance sheet, it would have shown as cash available or liquid assets before the purchase of the extra property, and move to fixed assets after the purchase of the extra property. Considering the findings in chapter 4, the retained earnings and subsequent higher cash position on the asset side, would have a positive influence on the share price. If the purchase of extra property with the available cash results in a higher profit, viz. to higher rent from the property than previous interest on the cash that will have a further positive influence on the share price.

Finance by more debt: If the company is borrowing more money to finance the change in the portfolio, the increase in the total assets on the balance sheet is financed by an increase in the debt portion of the balance sheet. This would at face value not influence the equity, and therefore the share price and market capitalisation should remain the same. If however no more shares are issued, it will result in a change in the optimal debt:equity ratio (see section 3.11.5), and financial leverage, which would have an influence on the share price (see section 4.5).

Finance by issuing more shares: Due to the purchase of more properties, the total assets on the balance sheet are increasing. They are financed on the other side of the balance sheet by selling more shares, thereby increasing the equity portion. If the number of new shares issued multiplied by the going share price is the same as the amount of investment made in property, the share price should remain the same, given that the shareholders perceive the risk in the new portfolio to be the same. Again, due to the change in the optimal debt:equity ratio, and a

reduction in the level of leverage, it might however be that the share price does change (see sections 3.11.5 and 4.5).

From the above it can be seen that a change in the size of the portfolio, or the composition of the portfolio would influence the ultimate value of the portfolio, and consequently the share price and market capitalisation, depending on the company's dealing with share issues and commitment to more debt. The extent of this could be measured by the equation developed in chapter 4, thus providing the advantage that listed property investors could accurately determine their financing decisions so as to maximize the company value.

5.3. CHANGES IN THE PROPERTY VARIABLES OF THE PORTFOLIO

If the fictitious portfolio of section 5.2 is considered again, it might also be that the property variables of the properties in the portfolio change. If for example the net rental levels in area 1 increase by 10%, assuming a stable capitalisation rate, the total value of properties in area 1 will accordingly increase by 10%. That will change the portfolio value as follows:

Property *a*, area 1	2 of @ R110 million	=	R220 million
Property *b*, area 1	3 of @ R198 million	=	R594 million
Property *a*, area 2	4 of @ R110 million	=	R440 million
Property *b*, area 2	1 of @ R200 million	=	R200 million
Total portfolio value		=	R1 454 million

In this case the value of the portfolio has changed, without any dealings or changes to the portfolio. There was therefore no requirement to finance the change, as the change in the portfolio resulted from a change in the inherent value of the properties.

The result is an increase in the value of the total assets on the balance sheet. It will then reflect as an increase in the equity on the balance sheet, as the amount of debt remains the same. As the equity increases, but no new shares were issued, the share price will increase as a result of the market capitalisation that follows the equity. Due to the change in the optimum debt:equity ratio and financial leverage, the share price might be further influenced, depending on profitability due to the changes.

5.4. FROM PORTFOLIO TO INDIVIDUAL PROPERTY

Sections 5.2 and 5.3 demonstrated the theoretical principles of changes in the value of the portfolio of properties owned by PLSs and how this can influence the share price. In section 4.6 it was shown that a high correlation exists between the movement in market capitalisation, in combination with various other company variables, and the property portfolio. This indicates that shareholders purchasing shares in the PLS company are in agreement with the value of the investment portfolio, and essentially ratifying the value by way of their share transactions. This provides an opportunity to accept the value as ratified by shareholders, as a good indication of the market value of the underlying assets, and therefore to use data from these portfolios as indication of value in the direct real estate market.

It should be borne in mind that the portfolios are seen by investors as a whole, but in order to obtain useful information, the portfolios should be broken down into their components, or individual properties.

A property portfolio is made up of various individual properties. A change in any of the variables of the individual properties would therefore result in a change in the total for the portfolio. There would therefore be an average for the portfolio for any of these variables, and for each property there is a deviation from the average. Various authors described the main attributes of property that create value, or are drivers of value (see section 3.2). Hager and Lord (1985:20) state that there are

three general categories of property included in a typical institutional portfolio: warehouse/industrial, shops (retail) and the largest sector, offices. They further note that properties are distributed between three main categories of market tiers:

- Prime – a modern or recently refurbished building finished to a high specification, well situated in a commercially strong geographical location, let to a good tenant.
- Secondary – a property which is defective in one or possibly two of the four basic elements referred above.
- Tertiary – a very general band including the older, poorly constructed building in a poor geographical location, let to a weak tenant, old multi-let premises with mixed users, local shopping parades, etc.

The tiers as described by Hager and Lord (1985:20) are essentially the same attributes, but are differentiated by the level or quality of the combination of attributes that are the drivers of value. Essentially we could summarize the attributes mentioned as: the type of property, the market tier in which the property would be categorized (grading), the level of finishes of construction (which could be a factor of the age of the building), the location, and the type of tenant.

A deviation from the average might be due to a number of reasons, such as location, condition of the property, age, quality of the property, type of use, etc. Within each of these attributes there exists a level of certainty to which a deviation could be determined, and as it is more uncertain to determine a deviation, or there are a large number of fluctuations within each of these attributes, this is an indication that a high level of uncertainty exists, which could be classified as “risk factors”. To illustrate this, consider a fictitious portfolio with 20 properties. These properties have various attributes that make them unique: 5 different locations, conditions that vary on a scale of 1 to 10, age that varies between 1 and 15 years, quality that varies on a scale of 1 to 3, and type of use that varies between uses 1 and 2. Each of the different combination of attributes will result in a different

income that could be derived from the properties. The attributes for each of the 20 properties are given in table 5.1.

Each of the attributes listed in table 5.1 has an influence on the expected value as listed in the last column (Value/m^2). The value is therefore not influenced by a single attribute alone, but depends on all the variables together.

Table 5.1: Attributes of fictitious portfolio of properties

Property	Location	Condition	Age	Quality	Use	Fictitious Value/m^2
1	3	2	6	1	2	R 5 400.00
2	2	2	7	2	2	R 7 100.00
3	5	7	12	2	2	R 14 000.00
4	1	4	2	2	1	R 3 200.00
5	4	5	12	3	2	R 14 300.00
6	2	8	3	1	1	R 4 400.00
7	5	9	9	2	2	R 13 600.00
8	4	9	7	1	1	R 8 200.00
9	4	3	4	2	2	R 7 500.00
10	2	8	9	1	1	R 7 300.00
11	3	2	2	2	1	R 3 600.00
12	4	8	2	2	2	R 9 000.00
13	2	6	9	1	1	R 6 300.00
14	4	3	11	1	1	R 7 100.00
15	3	9	8	3	1	R 11 800.00
16	4	9	7	2	1	R 10 100.00
17	2	6	10	1	2	R 8 600.00
18	2	3	11	3	2	R 11 400.00
19	3	2	3	1	2	R 3 900.00
20	4	8	6	1	1	R 7 200.00

This could be resolved by way of multiple regression (Levine *et al*, 1998:601), similar to the process used in section 4.6. and is here restated as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \ldots. + \beta_P X_{Pi} + \epsilon_i$$

Where:

β_0 = *Y intercept*

β_1 = *slope of Y with variable* X_1 *holding variables* $X_2, X_3, \ldots, X_P$ *constant*

β_2 = *slope of Y with variable* X_2 *holding variables* $X_1, X_3, \ldots, X_P$ *constant*

β_3 = *slope of Y with variable* X_3 *holding variables* $X_1, X_2, X_4, \ldots, X_P$ *constant*

β_P = *slope of Y with variable* X_P *holding variables* $X_1, X_2, X_3, \ldots, X_{P-1}$ *constant*

ϵ_i = *random error in Y for observation in i*

For a multiple linear regression performed on the data in table 5.1, the results are shown in table 5.2.

Table 5.2: Multiple regression of fictitious portfolio

Model	B
(Constant)	-6092.092
Location	681.052
Condition	495.003
Age	480.076
Quality	1921.494
Use	1815.292

By replacing the Betas into the multiple linear regression equation, the equation could be rewritten as:

$$Y_i = -6092.092 + 681.052X_{location\,i} + 495.003X_{condition\,i} + 480.076X_{age\,i} + 1921.494X_{quality\,i} + 1815.292X_{use\,i}$$

By solving the above for each of the fictitious properties, the calculated values are determined and shown in table 5.3, and compared to the actual figures.

Table 5.3: Multiple regression of fictitious portfolio – calculated values vs actual values

	Calculated Value/m²	Actual Value/m²
Property 1	R 5 372.36	R 5 400.00
Property 2	R 7 104.07	R 7 100.00
Property 3	R 14 014.74	R 14 000.00
Property 4	R 3 199.20	R 3 200.00
Property 5	R 14 280.22	R 14 300.00
Property 6	R 4 399.95	R 4 400.00
Property 7	R 13 570.70	R 13 600.00
Property 8	R 8 172.00	R 8 200.00
Property 9	R 7 533.17	R 7 500.00
Property 10	R 7 265.34	R 7 300.00
Property 11	R 3 578.01	R 3 600.00
Property 12	R 9 049.68	R 9 000.00
Property 13	R 6 276.68	R 6 300.00
Property 14	R 7 116.29	R 7 100.00
Property 15	R 11 841.58	R 11 800.00
Property 16	R 10 109.88	R 10 100.00
Property 17	R 8 576.21	R 8 600.00
Property 18	R 11 446.53	R 11 400.00
Property 19	R 3 939.67	R 3 900.00
Property 20	R 7 200.11	R 7 200.00

As can be seen, the calculated values and the actual values are very similar. This is however an exercise with fictitious data, within a strictly controlled environment. It does explain the principles of the process to be followed when using actual data. In section 5.5 actual property details will be used from the companies as

mentioned previously in the study, and the process as described in section 5.4 be applied to test the results on the actual data.

5.5. REGRESSION OF THE PROPERTY PORTFOLIO

Sections 5.3 and 5.4 showed the theoretical principles of changes in the value of the portfolio of properties owned by PLSs, and in the share price. In practice it is possible to observe these changes. It was shown in section 5.4 how the individual attributes of a property influence the value of the property, and how this could be measured through a multiple linear regression technique. In this section the actual data of PLS companies with regard to their property portfolios will be used to apply these principles to, thereby attempting to develop a model that can explain the value of an individual property by considering the information provided by the PLS companies.

Actual data on the location, use, size and value variables were available for only six of the companies; other companies did not publish the information. Different companies also provided different levels of information, with Growthpoint being the only company that provided in depth information which includes sub-categories for each type of property. The data used is cross-sectional data only, consisting of the published portfolio information as per the last financial report. 730 observations was obtained and tested for this purpose. The data was transformed using the logs of the raw data and then tested in two ways. The first was allowing for a dummy variable for each different type of property use, as well as for each different location (dummy analysis), and the other by using the average value per square meter of each type as well as the average value per square meter for each location as proxies for these two variables (proxy analysis). The second option has the difference that the number of variables reduced substantially, as the three different dummy variables for *Type* is replaced by one *Type* variable and the same for the location dummies, which are in excess of 100

total variables that could be replaced by one *Location* variable. The results of the regression using proxies instead of dummies are shown in table 5.4.

Table 5.4: Multiple regression of actual property data

Descriptive Statistics

	Mean	Std. Deviation	N
Logvalue	7.602617	.5564042	730
Logsize	3.867066	.5122158	730
Loglocation	3.8327	.23684	730
Logtype	3.7874	.24526	730

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.764[a]	.583	.581	.3599817	1.380

a. Predictors: (Constant), Logtype, Logsize, LogLocation

b. Dependent Variable: Logvalue

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	131.608	3	43.869	338.532	.000[b]
	Residual	94.080	726	.130		
	Total	225.688	729			

a. Dependent Variable: Logvalue

b. Predictors: (Constant), Logtype, Logsize, LogLocation

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	1.030	.265		3.887	.000	
Logsize	.702	.026	.647	26.627	.000	1.027
LogLocation	.348	.066	.148	5.268	.000	1.376
Logtype	.666	.064	.294	10.455	.000	1.374

a. Dependent Variable: Logvalue

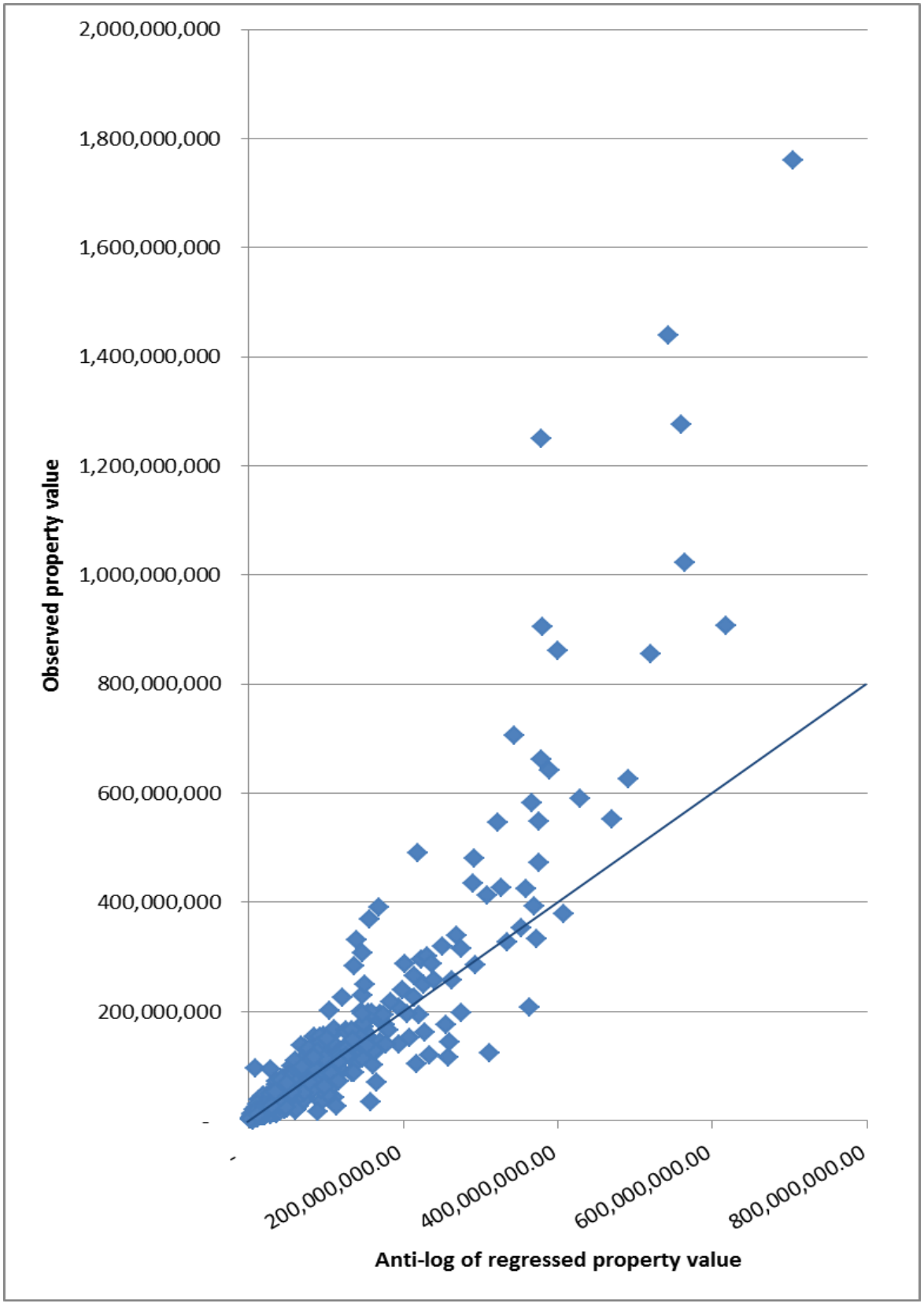
From the analysis using dummy variables to the analysis using proxies, although the adjusted R square reduced slightly from 0.590 to 0.581, the F-value increased from 10.357 to 338.532. In order to compare these two figures it is considered in relation to the critical F-values at the 0.01 level of significance, which is 1.447 and 26.100 respectively. This indicates that the F-value using dummies exceeded the critical F-value 7.16 times, while the F-value using proxies exceed the critical F-value 12.97 times.

Testing for multicollinearity also posed a problem with the dummy variable analysis, with the VIF values for the three type variables being 48.41, 40.17 and 32.21. With proxy analysis this also reduced to well within acceptable levels, as can be seen in table 5.4.

A Goldfeld-Quandt test was performed to test for Heteroscedasticity in both regressions. For both the dummy analysis and the proxy analysis, the hypothesis of homoscedasticity was only rejected at the 0.25 level of significance, with the F-values being 1.144 and 1.123 respectively and the critical F-values 1.089 and 1.086 respectively. This indicated that heteroscedasticity could be proven with a marginally higher probability in the dummy analysis.

The above tests confirmed the proxy analysis to be slightly more credible. Replacing the Betas into the multiple linear regression equation, and solving for each of the data points in the data set that contained the actual properties for the six companies, the observed values regressed against the anti-logs of the calculated values could be plotted as seen in figure 5.1. The blue line represents the 1:1 relationship. It is evident that, although the regression of the log transformed data did not have much evidence of heteroscedasticity, the anti-logs of the regressed data still have strong graphical evidence of heteroscedasticity. It is furthermore evident that the larger the properties' values, the more under estimated it becomes in the regression.

Figure 5.1: Multiple regression of actual property data



Growthpoint, which is the largest of the companies, and contains 419 of the 730 properties, as mentioned, publishes its portfolio information in more detail, including sub-type use. Each of the three main categories (industrial, offices and retail) is further divided into specific types. By changing the type variable to include subtypes, the correlation of the calculated values regressed against the actual values, strengthened significantly. By having the subtypes available, it was also possible to estimate a depreciation variable, by taking the construction cost as published by Davis Langdon (2011:34-35) for each subtype, multiplied by the size of the property, and multiplied by 1,5 to allow for land, professional fees, escalation, etc. The actual value is then divided by the replacement cost to determine the amount of depreciation of each property.

The Growthpoint data is also tested by transforming the data by taking the logs of each variable. The type and location data was also tested by using both dummy variables and proxies.

The R square for the regression of the Growthpoint data strengthened significantly to 0.965 and 0.963 for the dummy analysis and the proxy analysis respectively. In the case of the dummy analysis, the F-value is 130.146, with the critical F-value at 1.568. This indicates that the F-value exceeds the critical F-value 83.01 times. With the proxy analysis the F-value is 2,679.902 and the critical F-value 13.5, indicating the F-value exceeding the critical F-value 198.51 times. This indicates that the addition of the specification information for the Growthpoint data allowed for substantially closer and more significant regression than the general portfolio regression shown in table 5.5. It furthermore also confirms the use of proxies rather than dummies in the analysis.

As with the general portfolio regression, multicollinearity posed to be problematic for the dummy analysis, with the VIF values for a number of type dummies indicating severe multicollinearity at values up to 114.4. It can be seen from the regression details in table 5.5 that it is not the case for the proxy analysis.

Table 5.5: Multiple regression of actual property data – Growthpoint portfolio

Descriptive Statistics

	Mean	Std. Deviation	N
LogValue	7.502001	.4717502	410
LogSize	3.840095	.3941955	410
Logdepreciation	-.337096	.2033475	410
Logtype	3.6687	.29457	410
Loglocation	3.8179	.25607	410

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.982[a]	.964	.963	.0904547	1.932

a. Predictors: (Constant), Loglocation, Logsize, Logdepreciation, Logtype

b. Dependent Variable: LogValue

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.708	4	21.927	2679.902	.000[b]
	Residual	3.314	405	.008		
	Total	91.022	409			

a. Dependent Variable: LogValue

b. Predictors: (Constant), Loglocation, Logsize, Logdepreciation, Logtype

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	.545	.085		6.376	.000	
LogSize	.943	.011	.788	82.074	.000	1.025
Logdepreciation	-.502	.023	-.216	-22.192	.000	1.057
Logtype	.785	.019	.490	41.255	.000	1.571
Loglocation	.075	.022	.041	3.390	.001	1.610

a. Dependent Variable: LogValue

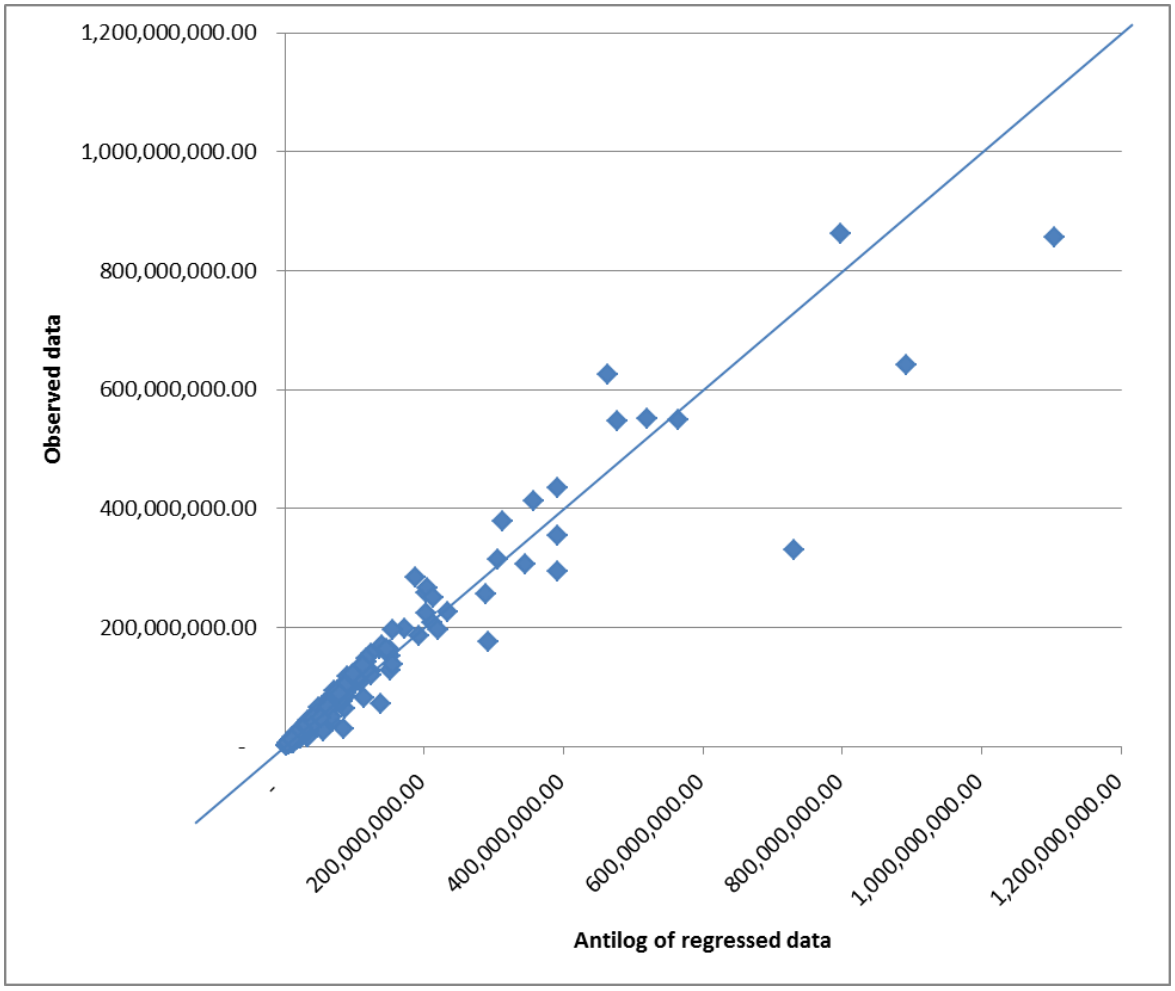
A Goldfeld-Quandt test was also performed on the Growthpoint data in order to test for heteroscedasticity, which indicated that homoscedasticity could be rejected at the 0.25 level for the dummy analysis, with the F-value being 1.240 and the critical F-value at 0.25 being 1.168. For the proxy analysis homoscedasticity could not be rejected at any level, where the F-value was calculated at 1.018 and the 0.25 level critical F-value 1.120. This indicates not only that it is less probable for heteroscedasticity to be present in the proxy analysis than the dummy analysis, but also that it is less likely for heteroscedasticity to be present in the regression of the Growthpoint data than in the general portfolio data.

The tests performed on the property data indicated that there is a significant smaller probability of specification errors in the analysis of the Growthpoint data then in the general property data. The graphical presentation of the observed Growthpoint data to the anti-logs of the regressed data is shown in figure 5.2.

The closer regression is evident from figure 5.2, but the larger discrepancies in the higher valued properties is still evident, especially in the case of a few outliers. This might be an indication that there is still some specification errors evident, preventing this regression to be a correctly specified hedonic model. Factors not taken into consideration which might be responsible for this, and should be tested by way of further research, are lease terms, vacancy levels, redevelopment potential, and closer information on actual depreciation and specification levels. The model also did not allow for mixed use properties, such as industrial and office components to individual properties, which should be further investigated.

The above could be an indication that listed property funds should provide more information on their property portfolios in order for shareholders to make an informed decision on the value of the portfolio and ultimately the value of the shares. From what is shown, the information generally supplied by listed funds are not sufficient to make such informed decisions.

Figure 5.2: Multiple regression of actual property data – Growthpoint portfolio



Given the above, the value of the property could be stated as:

$$PV_t = \beta_0 + \sum_{j=1}^{n} \beta_j A_{ij} + \epsilon_i$$

Where:

β_0 = *Y intercept*

A_{ij} = *Property attribute j for observation i*

ϵ_i = *random error in Y for observation in i*

The advantage of this is that it becomes possible to extrapolate to other properties for which the values are not known, using the property's attributes to predict the individual value. This would however just hold for the value of the property at the same date as the values of the portfolio when it was published, i.e. at year-end, and does not take into consideration the value at any other date in between, or after year-end, for which no published data are yet available.

By adding the value of the individual properties it is possible to determine the portfolio value, which constitutes the fixed assets of the company. By including the individual property's forecasted value in the LREIV model, it is possible to predict shareholders' reaction on planned property investment strategies.

5.6. CONCLUSION

In this chapter the different principles that attribute to each property in the portfolio its unique value were discussed. The individual property forms part of a portfolio of properties and the sum of the individual properties constitute the portfolio of fixed assets of the PLS company. By calculating the value of a property using multiple regression, it is possible to predict the influence of such a property on the portfolio of assets, and ultimately the share price behaviour of the company.

In chapter 6, the above will be combined with the results of chapter 4 - in which the value of the shares of a PLS company is determined by consideration of various company variables - in order to formalize a Listed Real Estate Investment Valuation Model (LREIV Model).

CHAPTER 6
FORMALIZING THE LREIV MODEL

6.1. INTRODUCTION

In chapter 4 and 5, three aspects were discussed to explain the share price behaviour of a PLS company:

- the specific company structure and assets held;
- the influence of other share indices; and
- the value of an individual property based on published portfolio information at year-end, which if all individual properties are added together, constitutes the total fixed assets of the PLS company.

In this chapter, the interrelationship between these components will be explained, in order to formalize the LREIV model and test its practical application.

6.2. LISTED REAL ESTATE INVESTMENT VALUATION MODEL FORMALIZED

In chapters 4 and 5, the different factors that influence the value of shares of PLS companies were identified and tested for the significance with which these can be used to predict the share prices or the values of the assets held by these companies. In this section the LREIV model will be formalized and then the practical application tested with reference to three transactions that took place in the PLS sector.

In its present form, the model can provide a static view which provides extrapolation possibilities to external property value, or a dynamic view which adjusts the value of a property over time, i.e. post-reporting.

The interaction of the different components to the model, can be stated in the formal model as follows:

$$SP_i \times NS_i = \beta_0 + \beta_1 P_i + \beta_2 TA_i + \beta_3 DT_i + \beta_4 TO_i + \beta_5 OP_i + \beta_6 TC_i + \beta_7 ID_i + \beta_8 LTL_i + \beta_9 E_i + \epsilon_i \quad 1$$

and

$$SP_i = \beta_0 + \beta_1 AS_i + \epsilon_i \quad 2$$

and

$$PV_t = \beta_0 + \sum_{j=1}^{n} \beta_j A_{ij} + \epsilon_i \quad 3$$

Where:

- β_0 = *Y intercept*
- SP_i = *Average Share Price at observation i*
- NS_i = *Average No. of Shares issued at observation i*
- E_i = *Equity at observation i*
- DT_i = *Deferred Tax at observation i*
- LTL_i = *Leverage due to Long Term Debt at observation i*
- TO_i = *Turnover at observation i*
- OP_i = *Operating Profit at observation i*
- TC_i = *Total Cost Shown at observation i*
- P_i = *Prime interest rate at observation i*
- ID_i = *Debenture Interest paid at observation i*
- AS_i = *Value of the All Share Index at observation i*
- PV_t = *Property Value at time t*
- A_{ij} = *Property attribute j for observation i*
- ϵ_i = *random error in Y for observation in i*

Source: Author

The above implies that the share price is explained by specific company variables, as well as movements in the aggregate stock exchange performance which obscures the relationship between the company share price and other company variables. These variables include the fixed assets of the company that has a measurable value that influence the individual company variables in determining the share price.

6.3. LISTED REAL-ESTATE INVESTMENT VALUATION MODEL TESTED

In order to test the model, three transactions that took place in the period 2010/2011 will be considered:

- The purchase of 50% of the V&A Waterfront by Growthpoint for R4 858 500 000;
- Takeover of the Attfund portfolio by Hyprop Properties;
- Listing of the Investec Property portfolio on the JSE.

These transactions provide an opportunity to test the LREIV model by comparing the influence of the transactions on the portfolio value, on the individual asset values, and on the share price movements for the period over which the transactions were concluded.

6.3.1 Growthpoint acquisition of 50% interest in V&A Waterfront

On 13 December 2010, Growthpoint published a cautionary announcement for its shareholders trading with its shares, due to negotiations that were under way and might influence their share price. The cautionary announcement was renewed on the 26th January 2011. At that stage the Growthpoint share price started to decline (see figure 6.1), but so did the PLS index. So it is difficult to say to what extent this transaction was responsible for the change in share price. Growthpoint

represents approx. 31% of the PLS index, so a change in Growthpoint could influence the index as a whole, but the movement in the index seemed more severe than that caused by Growthpoint.

On 14 February 2011 Growthpoint announced that it had entered into an agreement to acquire a 50% interest in the V&A Waterfront with the Government Employees Pension Fund (GEPF) represented by the Public Investment Corporation (PIC), subject to certain suspensive conditions to be fulfilled. The information provided to shareholders included some details of the property in terms of its use, size, etc. and its financing which was stated to be done by debt to cover the equity portion of the sellers, and by preference shares to cover the debt portion of the sellers. For the present purpose, everything is considered as debt, as both portions basically consist of debt.

On 9 June 2011 it was published that the transaction was finalized and all suspensive conditions had been met.

If the share price movement of Growthpoint is compared to the All share index (J203), as shown in figure 6.1, it can be seen that there is a very close co-movement between Growthpoint and the J203. This Confirms the findings of section 4.7 that approximately 15% of the movement in the Growthpoint share price is caused by movement in the J203 (equation 2). It is however evident that there are short periods of differences which could be seen more clearly in the 22 day moving averages of Growthpoint's share price and the J203. If the transaction of Growthpoint is considered in terms of the LREIV model equation 1, it might be possible to explain some of the movement. Growthpoint indicated that the transaction will be financed primarily by debt and preference shares, which for the purpose of this is also considered as debt, indicating that there should not be a change in equity. This implies that the market capitalisation, and therefore the share price, has *a priori* expectation to remain constant. According to the LREIV model equation 1, the changed long term leverage ratio however does influence

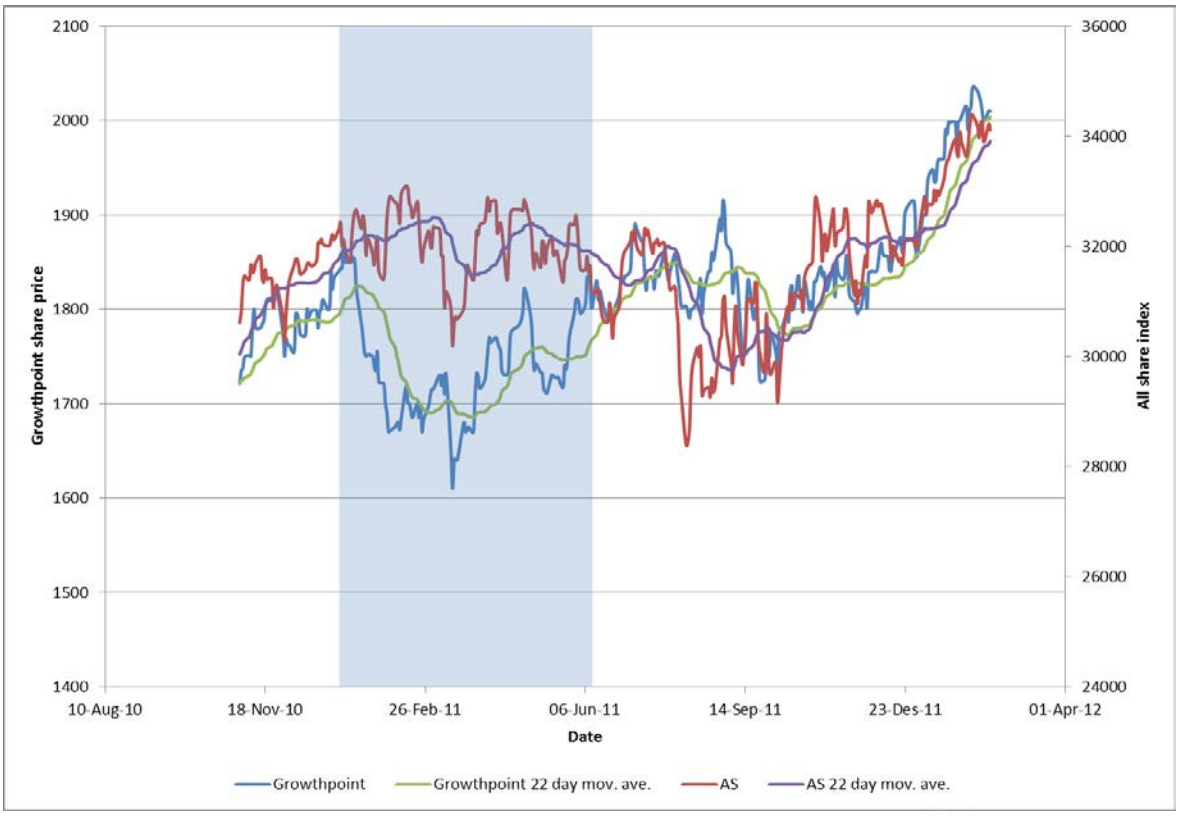
the situation. Taking also into consideration the expectations with regards to the change in Total Assets, Turnover, Operating Profit and Total Cost Shown, the indication is that the market capitalisation should change by approximately R77,6 million, representing approximately 0.27% of the total market capitalisation at the time, based on income and expenses for the property that is similar to the average of the portfolio. This implies a turnover increase of approximately 12% of the value of the property. Given the size and type of property, this is considered to be unlikely, and therefore the sensitivity for lower levels of turnover and profit figures are also considered. The model shows a zero change in the market capitalisation with a yield of 11.06%, while at an 8% yield, the indication is that the market capitalisation would reduce by R252 million, or 0.87%. The last mentioned figure is considered more likely and therefore it could be stated that a reduction in the share price is expected.

By comparing the property attributes of the transaction to LREIV model equation 3, the value of the property is indicated by the model only if the depreciation is assumed to be less than 4%. This is substantially lower than other properties in the portfolio, indicating that purchase price might be higher than the market value if considered in relation to the attributes of other properties in the portfolio. It should however be noted that Growthpoint indicated that the property has substantial redevelopment potential, an attribute that is not currently included in the LREIV model, because this information is not available for other properties that were tested. It however confirms the likelihood of a negative influence on the total portfolio with regards to average future capital growth and subsequently lower total returns due to lower expected share price growth. This might also affect the current share price negatively.

The above could be an explanation for the underperformance of the Growthpoint share price relative to the J203 during the timeframe in which the transaction took place, as indicated by the blue shaded area in figure 6.1. New shares were issued soon after completion of the transaction, changing the market capitalisation due to

the number of shares issued, but also influencing the level of leverage. This and a number of subsequent share issues are also marked by negative changes in the share price, where the share price either became lateral moving or downward moving, of which not all is explained by movement in the J203.

Figure 6.1: Growthpoint share price vs J203



In conclusion, although it appears as if the purchase price of the property was higher than what is seen in the share price movement and in the individual property attributes, the details available are limited; and more accurate details would enhance the results of the model. Generally share prices are determined by the perceptions of investors which may be more or less rational. Therefore some irrationality in the behaviour of investors might cause short term differences also in the results of the model. For this it might be worthwhile to consider the irrational behaviour of investors as studied in behavioral finance (Shiller, 2003).

6.3.2 Hyprop acquisition of Attfund portfolio:

Hyprop announced on 6 December 2010 that it had reached in principle agreement to purchase the property portfolio of Attfund Retail.

On 21 December 2010, it issued a cautionary announcement regarding the trading of Hyprop units, and provided some financial information on the proposed transaction. On 3 February 2011 the cautionary announcement was renewed.

On 8 April 2011 it was announced that the competition tribunal had approved the transaction. An updated proposal for the transaction with financial effects and forecasts was issued on 13 April 2011, and on 21 April 2011 a circular was posted with full details about the updated transaction, the withdrawal of the cautionary announcement, and a notice of a General Meeting for the shareholders of Hyprop to approve of the transaction.

The transaction was approved by shareholders of Hyprop on 13 May 2011. The effective date of the transaction was said to be anticipated for either 1 June 2011, or 1 July 2011, conditional upon an implementation of the Attfund Retail restructure.

The share price movement of Hyprop for the period September 2010 to 1 July 2011, which was the anticipated effective date of the transaction, is shown in figure 6.2. The blue shaded area highlights the period from the first announcement to the announcement that the transaction is finally approved. From this it seems as if the Hyprop share price underperformed relative to the J203, but if it is compared similarly to the PLS index (J256) as shown in figure 6.3, it is visible that Hyprop might have outperformed the sector slightly in this time period. After the transaction the share price however falls back to a very similar pattern to the sector, and is in line with expectations of LREIV model equation 2.

Figure 6.2: Hyprop share price vs All share index

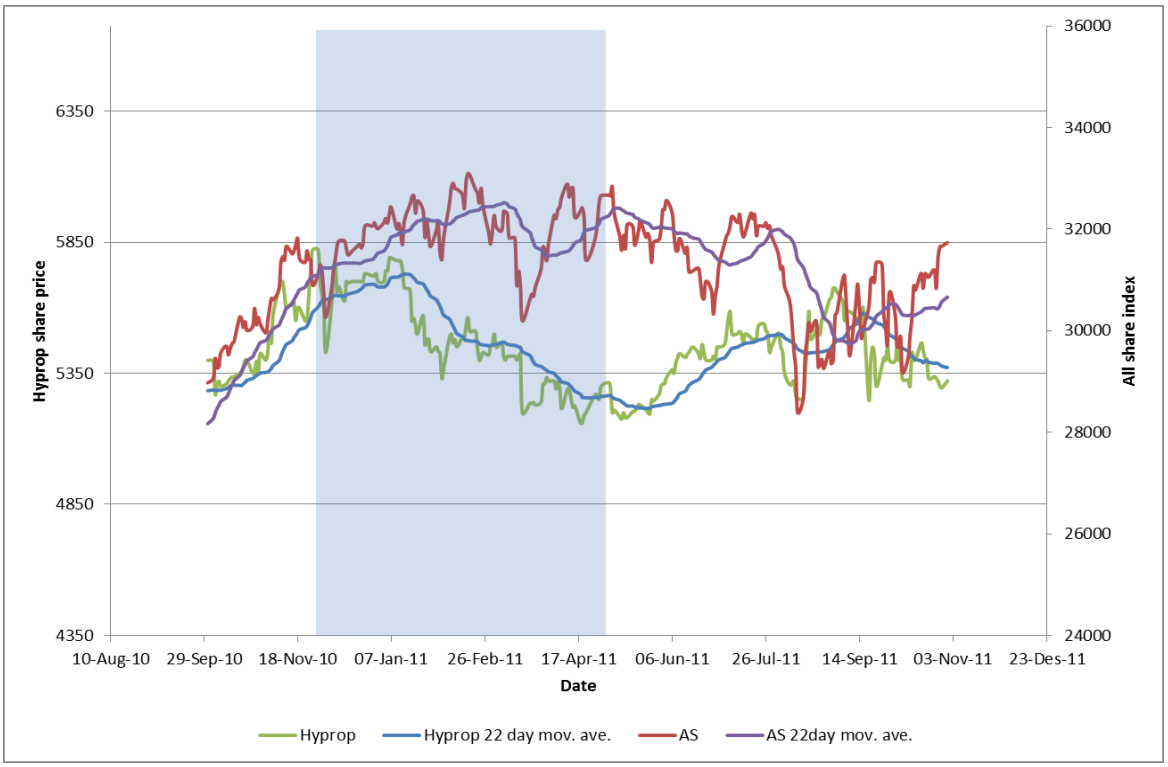


Figure 6.3: Hyprop share price vs PLS index

By testing the effects of the transaction on the share price, using the LREIV model equation 1, the details as provided by Hyprop in the caustionary announcements, the value of the 112 000 000 shares to be issued is calculated at R58-00 per share or combined unit. The transaction, however, takes place at R54-00 per share. This suggests that the share price should increase after the transaction due to the positive effect of these higher valued shares. This is assuming the values given for the assets included in the transaction are accurate.

When considering the individual values of the properties included in the transaction, the regressed values in terms of LREIV model equation 3 on most of the properties are substantially lower than the observed values. This is caused by the depreciation factor that is indicated as a negative figure using the variables of the portfolio as tested in section 5.5, and was found to be very sensitive on the results of the model. The effect is that the log of the negative value is indefinite, causing the value to be skewed. This implies that the total replacement cost of the properties, which are mostly higher valued retail, might be underestimated when using the replacement cost given by Davis Langdon (2011), or the values as given by Hyprop might be overvalued. This suggests that for purposes of this study, depreciation cannot be negative, which is in line with the *a priori* expectation that the value of a property cannot be higher than the market related construction cost, plus development potential, plus land value, plus other fees and costs normally associated with development, and a market related risk adjusted developers profit. If this is not the case, then arbitrage opportunities would exist. By including a depreciation factor to the properties that was indicated by the Davis Langdon figures to be negative, results in the highest correlation between regressed and observed values at 3.5% depreciation. This is substantially lower than the average of all properties tested in section 5.5 which was calculated at an average of 46%. The fact that the share price did not really outperform the all share index, or the sector, and not increasing to the value of the shares as indicated by the LREIV model, might suggests that the properties are indeed overvalued and therefore

not ratified by the shareholders in their decision to purchase Hyprop shares. This is especially the case with the higher valued properties.

6.3.3 Listing of the Investec Properties portfolio:

Investec Property Fund Limited (IPF) announced on 6 April 2011 that it would list its portfolio of properties on the JSE, and issued the pre-listing statement containing the financial forecasts for this transaction on the same day.

IPF was listed on 14 April 2011, with no debt other than debenture loans. The 170 000 000 shares were issued at R10,00 for a combined unit, resulting in a total equity position of R1 700 000 000. The well diversified property portfolio was valued at the time of listing at R1 696 500 000 (Investec: 2011).

By testing the pre-listing forecast company structure and financials with the LREIV Model equation 1, the share price was estimated to be R9.60. This is assuming that the property values as given by the prelisting announcement are accurate. By comparing the share price performance to the J203 for the period from listing to 1 year after listing, as shown in figure 6.4, it seems that IPF performed slightly better than the J203 in terms of LREIV model equation 2. Figure 6.5 compares the IPF share price to the J256 where it appears as if IPF slightly under-performed against the PLS sector for approximately 6 months, and then started to outperform the sector from approximately October 2011. The LREIV model calculated share price of R9-60 against the IPO amount of R10-00 for the shares might explain the initial underperformance against the sector, but in order to explain the change to an outperformance trend, the history of the company was investigated. On 18 October 2011 a shareholders' meeting was held, approving the purchase of another two properties. By testing the effect of this in the LREIV model, it was calculated that the share price should increase by approximately 27 cents.

Figure 6.4: Investec Property Fund share price vs All share index

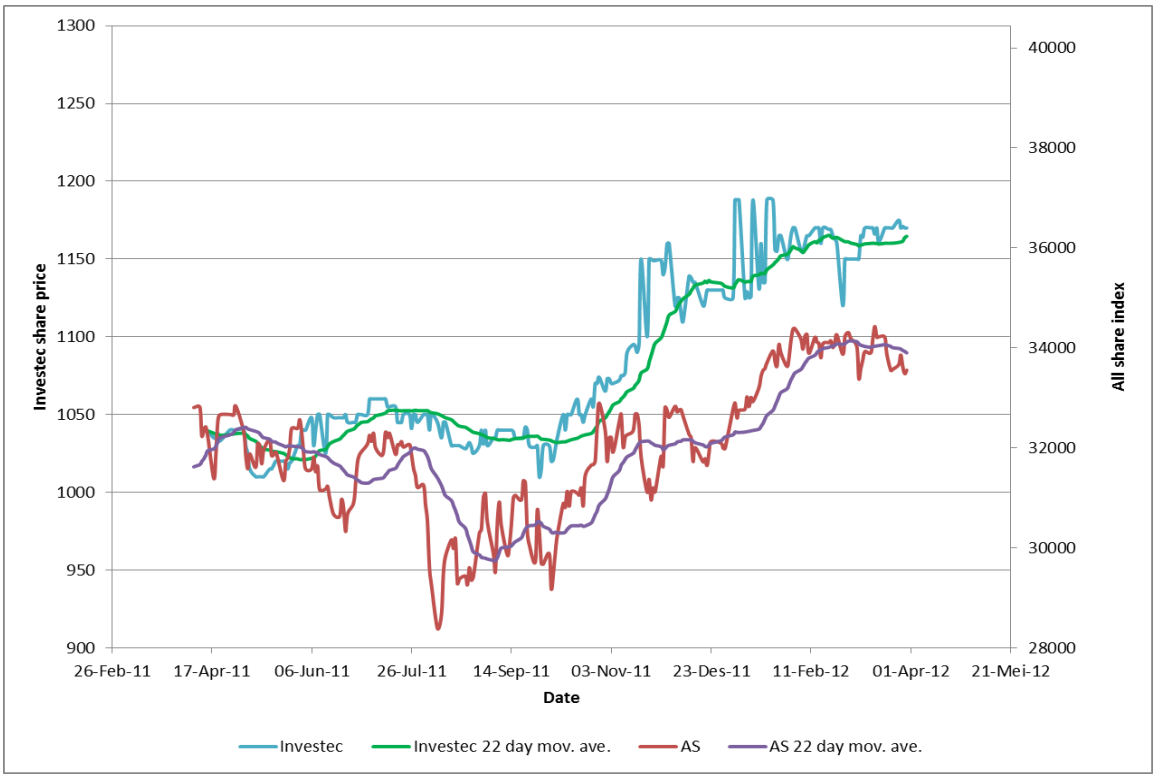
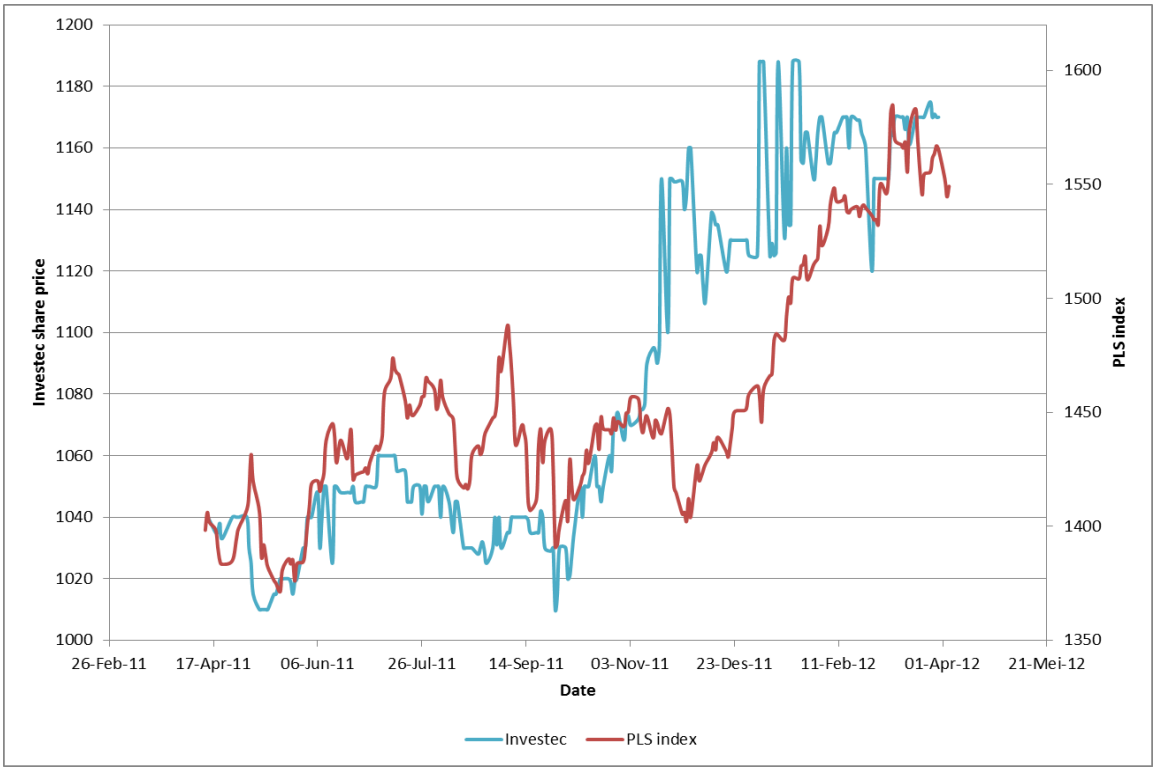


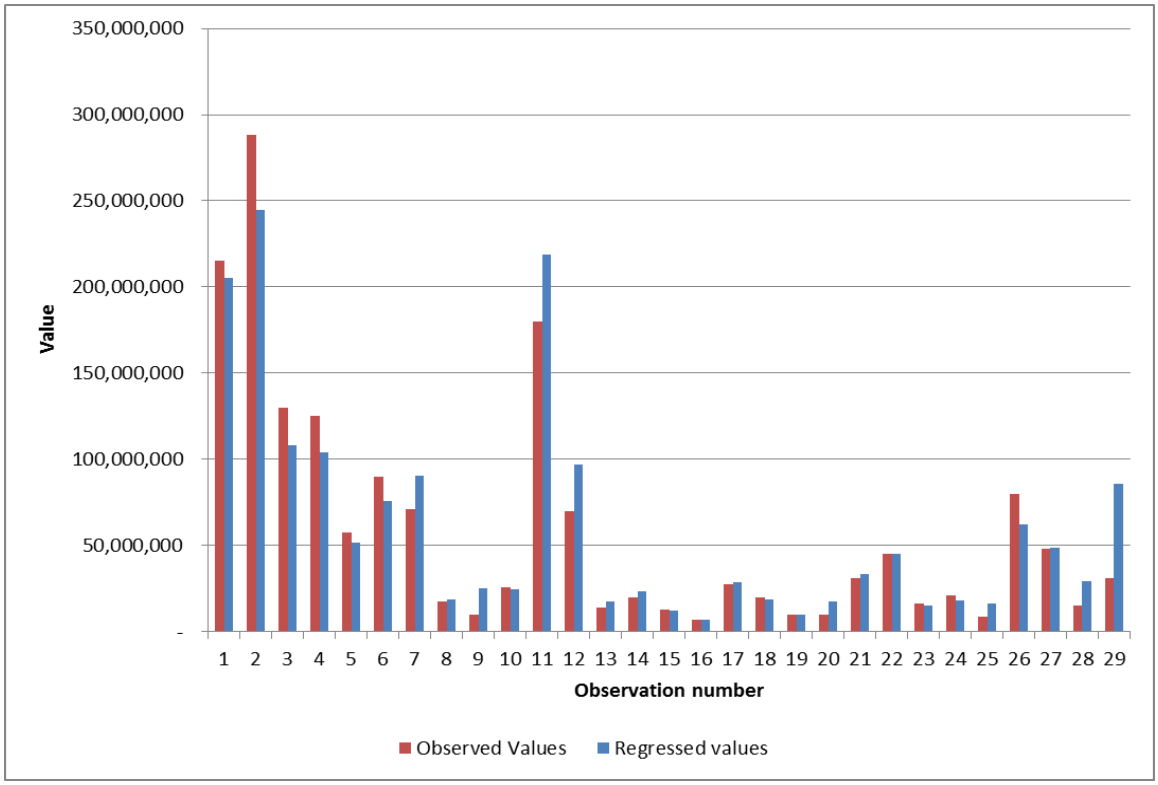
Figure 6.5: Investec Property Fund share price vs PLS index



The trend over the few months after the annual meeting revealed that IPF outperformed the sector (if normalized) by approximately 30 to 40 cents.

Testing the initial property portfolio with the LREIV model equation 3 resulted in regressed values which are shown in comparison to observed values as per figure 6.6. The total portfolio value was calculated at R1,750,079,849 opposed to the observed portfolio value of R1,696,500,000. This represents a difference of 3.2%. The slightly higher regressed value against the observed value might explain the share price trading at R10-40 against the IPO of R10-00.

Figure 6.6: Investec Property Fund LREIV Model regressed vs observed values



6.4. CONCLUSION

In this chapter, the LREIV Model was tested on three different examples of recent market transactions. This not only provided some validity of the study, but showed

the practical application of the study in order to explain the interrelationship between the different components.

Examples were shown of how the model could be used to predict the value of an individual property, whereby the influence of such a property on inclusion in the portfolio is assessed, thereby assessing whether its investment value would be optimal for the portfolio composition. It was also shown how a substantial part of the portfolio, or investment in a substantial other portfolio of properties could be analyzed by the model, and lastly the assessment of the value of the entire portfolio of a newly listed property fund.

By analyzing the value of the assets it is not only possible to analyses the value of the assets, but also to understand the rationale for movement in the share price, or other variables.

In chapter 7 the study will be concluded by answering the research questions, formally accepting the hypothesis, listing the findings, stating the shortcomings of the model and stating the requirements for further research.

CHAPTER 7
CONCLUSION AND RECOMMENDATIONS

7.1. ANSWERING THE RESEARCH QUESTIONS

In section 1.6.1, the primary problem statement was summarized by the following guiding questions:

1. Is it possible to explain the behaviour of listed property shares, and specifically PLS shares, listed on the Johannesburg Stock Exchange in the context of its share characteristics and distinguish that from its property (real estate) characteristics?
2. Is there a correlation between the values of individual properties owned by a listed property fund and the value of the fund?
3. If a correlation exists, can a model be developed that uses this correlation, to determine values of property for direct or indirect investment purposes and also thereby predict share price behaviour for specific property transactions?

Taking into consideration the practical application of the LREIV model as shown in chapter 6, it is now possible to answer these questions as follows:

1. The behaviour of listed property shares was investigated in the short term as well as the long term. It was found that short-term fluctuations are caused by stock exchange fluctuations, but the specific structure of each company also influences the shareholders' behaviour towards specific property attributes and transactions. The property specific events could be recognised in the share price, by either a specific influence on the share price, or by changing a trend in the share price movement.
2. A high correlation was found between the assets of a PLS company and its shares, but this is influenced by other factors within the company, such as institutional shareholding, debt-structures, number of shares issued, etc. Therefore the overall structure of the company plays a large role in the correlation between the assets and the share prices of the company. The

attributes of the model are variables that provide the total assets, the quality of the portfolio as depicted in the turnover that could be obtained, the effectiveness of the company as shown by the operating profit and total cost shown, the influence of debt as per the leverage and the going interest rate, and the equity, which represents the net holdings of the shareholders.

3. It was possible to develop a model that can explain share price movements within a PLS company by considering the assets and the company structure. By evaluating the calculated value of properties to the purchase consideration, and test it to the expected share price movement, it is possible to determine the optimal price to be paid for a property. This has the benefit of assisting with portfolio optimisation; determining property values for investment purposes; and performing timeous adjustment of property values due to market changes.

In order to conclusively accept these answers to the research questions, it is necessary to formally accept the hypothesis.

7.2. ACCEPTING THE HYPOTHESIS

In section 1.6.2 the null hypothesis and the alternative hypothesis were stated and restated here for ease of reference. In order to accept the null hypothesis, it is necessary to formally reject the alternative hypothesis. The formal calculations were performed in the preceding chapters and as such this only summarises the findings in order to ensure that the hypothesis as fully addressed.

The null hypothesis is:

$$SP_i \, x \, NS_i \neq \beta_0 + \beta_1 P_i + \beta_2 TA_i + \beta_3 DT_i + \beta_4 TO_i + \beta_5 OP_i + \beta_6 TC_i + \beta_7 ID_i + \beta_8 LTL_i + \beta_9 E_i + \epsilon_i \quad (4)$$

or

$$SP_i \neq \beta_0 + \beta_1 AS_i + \epsilon_i \quad (5)$$

or

$$PV_t \neq \beta_0 + \sum_{j=1}^{n} \beta_j A_{ij} + \epsilon_i \quad (6)$$

and the alternative hypothesis:

$$SP_i \times NS_i = \beta_0 + \beta_1 P_i + \beta_2 TA_i + \beta_3 DT_i + \beta_4 TO_i + \beta_5 OP_i + \beta_6 TC_i + \beta_7 ID_i + \beta_8 LTL_i + \beta_9 E_i + \epsilon_i \quad (7)$$

and

$$SP_i = \beta_0 + \beta_1 AS_i + \epsilon_i \quad (8)$$

and

$$PV_t = \beta_0 + \sum_{j=1}^{n} \beta_j A_{ij} + \epsilon_i \quad (9)$$

The individual variables were explained elsewhere in the text.

Equations 4 and 7 refer to the ability of the LREIV model to predict the share price of the PLS company through consideration of the company attributes. In section 4.6 the null hypotheses was rejected that any of the individual simple regressions could equally or better explain the movement in the Average Market Capitalisation. The alternative hypothesis was therefore accepted that the multiple regression better explains the movement in the Average Market Capitalisation than any of the individual regressions and that the model as presented falls within the acceptable significance levels. Equation 4 as part of the null hypothesis could therefore be rejected and equation 7 as alternative hypothesis be accepted that

the product of the share price and the number of shares issued can be explained by the stated company information.

Equations 5 and 8 respectively represent the null hypothesis that share price is not influenced by aggregate stock exchange activity and alternative hypothesis that the share price is influenced by the aggregate stock exchange and the All Share Index does not simply reflect the similar movement due to the individual company's inclusion in the index. This null hypothesis as stated by equation 2 was rejected in section 4.7, where it was found that there is a high level of correlation, within acceptable levels of significance. Through Granger Causality testing it was further indicated that the JSE is causing movements in the PLS share prices and not the other way round. Therefore equation 5 as null hypothesis could also be rejected, thereby accepting equation 8 as alternative hypothesis that the aggregate stock market is influencing the share price behaviour of individual PLS companies.

Equations 6 and 9 specifically consider the ability to determine individual property values by only using information that is supplied by the listed property companies. In section 5.5 equation 6 as null hypothesis was partly rejected, as it could only be done for information that was supplied by Growthpoint Properties. This indicates that equation 9 as alternative hypothesis could accepted in principle, but that the information that is supplied by all other PLS companies are not sufficient in order for shareholders to make an informed decision about the assets held by these companies.

In chapter 6 the practical application of the different parts of the model were explained, and reasonable accuracy for such application was shown. As all three equations in the null hypothesis could have been formally rejected, it is then possible to accept the alternative hypothesis that the share price is explained by specific company variables, as well as movements in the aggregate stock exchange performance which obscures the relationship between the company

share price and other company variables, and which includes the fixed assets of the company that has a measurable value that influence the individual company variables in determining the share price.

7.3. OTHER FINDINGS

Apart from the formal hypothesis, there are a number of findings that are worth mentioning.

- As noted in sections 4.3, 4.4 and 4.7, institutional shareholding could be responsible for shareholder activism.
- Section 4.6 contained evidence of information deficiency in some companies with regards to company specific information. This included information on debenture payments and other levels of debt. These companies were found not to perform as well as companies with more elaborate information and the predictability of these companies' share prices are thereby hampered, and are evidenced by lower institutional shareholding.
- Information deficiency was also found to be problematic with regards to property specific variables. Only Growthpoint provides a reasonable accurate level of information that could be used for pricing or valuation purposes and even then it still lacks information on lease terms, depreciation or condition of assets, development potential, etc. These are arguably not provided in order to protect competitive advantage, but are to the disadvantage of shareholders who needs to make purchase and pricing decisions on shares.
- The Granger-causality testing performed on annual data of PLS companies indicated that pricing decisions in the longer term are based on specific company factors, including the assets held, while the Granger-causality test on daily share price data revealed the stock market in general causes short term fluctuations in the PLS share prices. From this it could be stated

that price discovery in the short term takes place in the stock market, but in the long term in company specific variables, including assets held.

- Discrepancies in property specific regression were found to be especially problematic in the top end retail and office properties. The values as provided by the funds substantially exceeded the replacement costs, which were estimated using market analysts' information of replacement cost. This could therefore indicate that either the properties are overvalued, or that the replacement cost for these types of properties are underestimated, indicating that construction cost indexes for these types of properties should be reconsidered.
- The LREIV model also pointed out that the market value of property cannot exceed the total cost of construction, plus land value, plus other fees and costs, plus financing costs and a risk adjusted market related developers' profit, otherwise arbitrage opportunities could exist.

Some of these mentioned findings could be stated merely as observations and were not empirically proven. It however forms the base for recommendations for further research.

7.4. SHORTCOMINGS OF THE LREIV MODEL

The LREIV model is limited mostly by information availability. It was noted in section 7.3 that there are evidence of information deficiency in the listed companies that are limiting the shareholders' share purchase decisions. This is similarly the case with the LREIV model which is based on information available to shareholders only. This is especially the case with information such as lease terms. Although this limitation is evident for shareholders or other third parties, it is not necessarily the case for executives of these companies, who have inside information that could be used in the model. The model is however not tested in such an environment and this could therefore not be said conclusively.

7.5. RECOMMENDATIONS FOR FURTHER RESEARCH

The study investigated the development of a Listed Real Estate Investment Valuation Model. By accepting the null hypothesis the model in principal form was formalised. It was however stated on various occasions that data availability is a limitation to the model, and in order to increase the model's accuracy and therefore credibility it is required to increase the data available for analysis. It is therefore recommended that the model be enlarged upon with more data, to investigate opportunities of increasing its accuracy.

The study was also limited to PLS. It is suggested that further research be performed on the possibilities to apply the model to property unit trust funds as well as real-estate investment trusts, as alternative forms of listed property investment.

Furthermore the study was limited to the South African property market. It is suggested that the applicability of the research be tested on other international markets.

A principle model was developed with one of its primary aims to assist with property valuation. It is believed that the model could also enhance research for automated valuation modelling (AVM), which is an area of increasing debate in valuation circles. It is suggested that the model be tested for application in AVM technology and research.

Apart from the above, the other findings as mentioned in section 7.3 was not empirically proven and could therefore all be further investigated by way of empirical testing.

7.6. PRACTICAL APPLICATION

The study developed a LREIV model which is considered to have the following possible practical applications:

- The relationship between direct and indirect property can be measured. This gives rise to the possibility to determine the investor's perceived value in the company based on the company structure and the underlying assets.
- Due to the possibility to measure the relationship between the company and the assets, it is possible to determine the effect of company structure changes, such as what is expected by the transition from PLS to REITs.
- The model could be used as a portfolio management tool, whereby the effect of a specific property, increased/decreased borrowings, issuing of more shares, etc. would have on the company and hence to assist in decision making.
- The model points out that information deficiency exists in the listed property market. This can assist in the process of policy formation in regulating the listed property market in South Africa, especially amidst the change to REITs.
- The model creates a basic platform from where hedonic models could be developed to accurately predict property market behaviour, up to individual property values, which could assist in the development of AVMs and CAMA models in the commercial property market.

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ANNEXURES

Annexure 1.1: Acucap financial statements

Balance Sheet Published (000)	2010/03/31	2009/03/31	2008/03/31	2007/03/31	2006/03/31	2005/03/31	2004/03/31	2003/03/31
Total Assets	7 295 371.00	6 524 640.00	6 653 635.00	3 504 363.00	2 481 860.00	1 959 211.00	1 199 973.00	945 218.00
Fixed Assets	5 842 523.00	5 361 988.00	5 656 690.00	2 883 949.00	2 370 158.00	1 665 965.00	1 067 900.00	912 650.00
Current Assets	224 220.00	169 288.00	73 839.00	41 440.00	18 059.00	241 784.00	132 073.00	32 568.00
Non Current Assets	49 606.00	34 097.00	30 985.00	-	359.00	-	-	-
Intangible Assets	82 786.00	106 736.00	-	-	-	-	-	-
Investments & Loans	1 179 022.00	959 267.00	892 121.00	578 974.00	93 284.00	51 462.00	-	-
Total Assets (Including Intangible Assets)	7 378 157.00	6 631 376.00	6 653 635.00	3 504 363.00	2 481 860.00	1 959 211.00	1 199 973.00	945 218.00
Current Liabilities	-848 173.00	-756 456.00	-1 281 014.00	-115 314.00	-90 698.00	-141 838.00	-73 230.00	-32 765.00
Employment Of Capital	6 529 984.00	5 874 920.00	5 372 621.00	3 389 049.00	2 391 162.00	1 817 373.00	1 126 743.00	912 453.00
Total Shareholders Interest	2 489 553.00	2 016 960.00	2 110 213.00	1 300 725.00	775 640.00	334 906.00	82 137.00	22 497.00
Debenture loan	1 496 032.47	1 381 107.51	1 289 199.51	934 744.32	685 204.11			
Other long term	2 195 220.53	2 182 291.49	1 652 405.49	855 282.68	651 934.89	1 372 124.00	1 004 706.00	873 953.00
Long Term Liabilities	3 691 253.00	3 563 399.00	2 941 605.00	1 790 027.00	1 337 139.00	1 372 124.00	1 004 706.00	873 953.00
Deferred Tax	349 178.00	294 561.00	320 803.00	298 297.00	278 383.00	110 343.00	39 900.00	16 003.00
Total Liabilities	4 040 431.00	3 857 960.00	3 262 408.00	2 088 324.00	1 615 522.00	1 482 467.00	1 044 606.00	889 956.00
Capital Employed	6 529 984.00	5 874 920.00	5 372 621.00	3 389 049.00	2 391 162.00	1 817 373.00	1 126 743.00	912 453.00
Total Assets	111.72%	111.06%	123.84%	103.40%	103.79%	107.80%	106.50%	103.59%
Fixed Assets	89.47%	91.27%	105.29%	85.10%	99.12%	91.67%	94.78%	100.02%
Current Assets	3.43%	2.88%	1.37%	1.22%	0.76%	13.30%	11.72%	3.57%
Non Current Assets	0.76%	0.58%	0.58%	0.00%	0.02%	0.00%	0.00%	0.00%
Intangible Assets	1.27%	1.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	18.06%	16.33%	16.60%	17.08%	3.90%	2.83%	0.00%	0.00%
Total Assets (Including Intangible Assets)	112.99%	112.88%	123.84%	103.40%	103.79%	107.80%	106.50%	103.59%
Current Liabilities	-12.99%	-12.88%	-23.84%	-3.40%	-3.79%	-7.80%	-6.50%	-3.59%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	38.12%	34.33%	39.28%	38.38%	32.44%	18.43%	7.29%	2.47%
Debenture loan	22.91%	23.51%	24.00%	27.58%	28.66%	0.00%	0.00%	0.00%
Other long term	33.62%	37.15%	30.76%	25.24%	27.26%	75.50%	89.17%	95.78%
Deferred Tax	5.35%	5.01%	5.97%	8.80%	11.64%	6.07%	3.54%	1.75%
Total Liabilities	61.88%	65.67%	60.72%	61.62%	67.56%	81.57%	92.71%	97.53%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/03/31	2009/03/31	2008/03/31	2007/03/31	2006/03/31	2005/03/31	2004/03/31	2003/03/31
Turnover	552 151.00	558 332.00	427 594.00	245 107.00	213 045.00	152 198.00	137 988.00	129 973.00
Operating Profit	666 645.00	452 068.00	506 478.00	329 133.00	771 094.00	405 708.00	204 437.00	169 665.00
Interest Received	107 912.00	97 533.00	33 253.00	28 506.00	7 542.00	12 891.00	3 553.00	558.00
Total Income	774 557.00	549 601.00	539 731.00	357 639.00	778 636.00	418 599.00	207 990.00	170 223.00
Total Cost Shown	9 663.00	8 476.00	4 862.00	4 286.00	3 965.00	18 148.00	2 410.00	2 190.00
Earnings Before Interest & Tax (EBIT)	764 894.00	541 125.00	534 869.00	353 353.00	774 671.00	400 451.00	205 580.00	168 033.00
Interest & Finance Charges	611 591.00	596 426.00	393 894.00	240 355.00	179 484.00	146 027.00	125 047.00	122 314.00
Profit before Tax	153 303.00	-55 301.00	140 975.00	112 998.00	595 187.00	254 424.00	80 533.00	45 719.00
Taxation	48 142.00	4 250.00	31 457.00	35 550.00	170 187.00	72 107.00	23 897.00	16 512.00
Current	1 768.00	9 692.00	344.00	-	2.00	-128.00	-	-
Deferred	45 676.00	-22 164.00	21 457.00	36 378.00	167 681.00	69 363.00	23 897.00	16 512.00
Other	698.00	16 722.00	9 656.00	-828.00	2 504.00	2 872.00	-	-
Profit After Interest and Tax	105 161.00	-59 551.00	109 518.00	77 448.00	425 000.00	182 317.00	56 636.00	29 207.00
Earnings Before Interest Tax Depreciation And Amortisati	790 147.00	542 196.00	535 335.00	353 529.00	774 796.00	415 661.00	205 580.00	168 033.00
Interest Paid - Debentures	388 249.00	346 930.00	259 780.00	159 447.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	120.74%	80.97%	118.45%	134.28%	361.94%	266.57%	148.16%	130.54%
Interest Received	19.54%	17.47%	7.78%	11.63%	3.54%	8.47%	2.57%	0.43%
Total Income	140.28%	98.44%	126.23%	145.91%	365.48%	275.04%	150.73%	130.97%
Total Cost Shown	1.75%	1.52%	1.14%	1.75%	1.86%	11.92%	1.75%	1.68%
Earnings Before Interest & Tax (EBIT)	138.53%	96.92%	125.09%	144.16%	363.62%	263.11%	148.98%	129.28%
Interest & Finance Charges	110.77%	106.82%	92.12%	98.06%	84.25%	95.95%	90.62%	94.11%
Profit before Tax	27.76%	-9.90%	32.97%	46.10%	279.37%	167.17%	58.36%	35.18%
Taxation	8.72%	0.76%	7.36%	14.50%	79.88%	47.38%	17.32%	12.70%
Current	0.32%	1.74%	0.08%	0.00%	0.00%	-0.08%	0.00%	0.00%
Deferred	8.27%	-3.97%	5.02%	14.84%	78.71%	45.57%	17.32%	12.70%
Other	0.13%	2.99%	2.26%	-0.34%	1.18%	1.89%	0.00%	0.00%
Profit After Interest and Tax	19.05%	-10.67%	25.61%	31.60%	199.49%	119.79%	41.04%	22.47%
Earnings Before Interest Tax Depreciation And Amortisati	143.10%	97.11%	125.20%	144.23%	363.68%	273.11%	148.98%	129.28%
Interest Paid - Debentures	70.32%	62.14%	60.75%	65.05%	0.00%	0.00%	0.00%	0.00%

Annexure 1.2: Bonatla financial statements

Balance Sheet Published (000)	2009/12/31	2008/12/31	2007/12/31	2006/09/30	2005/09/30	2004/09/30	2003/09/30	2002/09/30
Total Assets	170 095.00	55 952.00	46 238.00	2 479.00	10 314.00	13 740.00	563 488.00	649 819.00
Fixed Assets	45 654.00	14 903.00	30.00	76.00	77.00	6 000.00	549 519.00	631 343.00
Current Assets	3 296.00	2 837.00	2 402.00	2 403.00	10 237.00	5 245.00	5 441.00	3 077.00
Non Current Assets	121 145.00	38 212.00	43 806.00	-	-	-	-	7 122.00
Intangible Assets	5 697.00	1 155.00	1 118.00	-	-	-	-	-
Investments & Loans	-	-	-	-	-	2 495.00	8 528.00	8 277.00
Total Assets (Including Intangible Assets)	175 792.00	-	47 356.00	2 479.00	10 314.00	13 740.00	563 488.00	649 819.00
Current Liabilities	-5 160.00	-5 784.00	-3 448.00	-1 713.00	-36 027.00	-23 677.00	-18 769.00	-23 182.00
Employment Of Capital	170 632.00	51 323.00	43 908.00	766.00	-25 713.00	-9 937.00	544 719.00	626 637.00
Total Shareholders Interest	150 577.00	31 137.00	35 209.00	766.00	-25 713.00	-9 937.00	118 064.00	161 752.00
Debenture loan	-	-	-	-	-			
Other long term	19 208.00	18 567.00	8 699.00	-	-	-	426 629.00	464 885.00
Long Term Liabilities	19 208.00	18 567.00	8 699.00	-	-	-	426 629.00	464 885.00
Deferred Tax	847.00	1 619.00	-	-	-	-	26.00	-
Total Liabilities	20 055.00	20 186.00	8 699.00	2 000.00	36 027.00	23 677.00	426 655.00	464 885.00
Capital Employed	170 632.00	51 323.00	43 908.00	766.00	-25 713.00	-9 937.00	544 719.00	626 637.00
Total Assets	99.69%	109.02%	105.31%	323.63%	-40.11%	-138.27%	103.45%	103.70%
Fixed Assets	26.76%	29.04%	0.07%	9.92%	-0.30%	-60.38%	100.88%	100.75%
Current Assets	1.93%	5.53%	5.47%	313.71%	-39.81%	-52.78%	1.00%	0.49%
Non Current Assets	71.00%	74.45%	99.77%	0.00%	0.00%	0.00%	0.00%	1.14%
Intangible Assets	3.34%	2.25%	2.55%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	0.00%	0.00%	0.00%	0.00%	0.00%	-25.11%	1.57%	1.32%
Total Assets (Including Intangible Assets)	103.02%	0.00%	107.85%	323.63%	-40.11%	-138.27%	103.45%	103.70%
Current Liabilities	-3.02%	-11.27%	-7.85%	-223.63%	140.11%	238.27%	-3.45%	-3.70%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	88.25%	60.67%	80.19%	100.00%	100.00%	100.00%	21.67%	25.81%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	11.26%	36.18%	19.81%	0.00%	0.00%	0.00%	78.32%	74.19%
Deferred Tax	0.50%	3.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Liabilities	11.75%	39.33%	19.81%	261.10%	-140.11%	-238.27%	78.33%	74.19%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2009/12/31	2008/12/31	2007/12/31	2006/09/30	2005/09/30	2004/09/30	2003/09/30	2002/09/30
Turnover	2 163.00	196.00	-	2 259.00	887.00	27 663.00	117 721.00	116 397.00
Operating Profit	-606.00	-3 137.00	-9 687.00	2 701.00	-13 414.00	-13 336.00	41 576.00	63 854.00
Interest Received	19.00	-	23.00	98.00	237.00	1 480.00	741.00	1 180.00
Total Income	-587.00	-3 137.00	-9 664.00	2 799.00	-13 177.00	-11 856.00	42 317.00	65 034.00
Total Cost Shown	1 580.00	1 590.00	-503.00	1 390.00	432.00	1 335.00	2 703.00	1 639.00
Earnings Before Interest & Tax (EBIT)	-2 167.00	-4 727.00	-9 161.00	1 409.00	-13 609.00	-13 191.00	39 614.00	63 395.00
Interest & Finance Charges	909.00	1 853.00	585.00	1 237.00	2 089.00	21 926.00	69 772.00	67 511.00
Profit before Tax	-3 076.00	-6 580.00	-9 746.00	172.00	-15 698.00	-35 117.00	-30 158.00	-4 116.00
Taxation	-732.00	-8.00	11.00	-	78.00	210.00	10 852.00	-1 749.00
Current	40.00	-	-	-	72.00	932.00	3 704.00	40.00
Deferred	-772.00	-	-	-	-	-26.00	7 148.00	-2 020.00
Other	-	-8.00	11.00	-	6.00	-696.00	-	231.00
Profit After Interest and Tax	-2 344.00	-6 572.00	-9 757.00	172.00	-15 776.00	-35 327.00	-41 010.00	-2 367.00
Earnings Before Interest Tax Depreciation And Amortisati	-2 156.00	-4 690.00	-9 115.00	1 440.00	-13 598.00	-13 191.00	40 409.00	64 426.00
Interest Paid - Debentures	-	-	-	-	-	-	-	-
Turnover	100.00%	100.00%		100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	-28.02%	-1600.51%		119.57%	-1512.29%	-48.21%	35.32%	54.86%
Interest Received	0.88%	0.00%		4.34%	26.72%	5.35%	0.63%	1.01%
Total Income	-27.14%	-1600.51%		123.90%	-1485.57%	-42.86%	35.95%	55.87%
Total Cost Shown	73.05%	811.22%		61.53%	48.70%	4.83%	2.30%	1.41%
Earnings Before Interest & Tax (EBIT)	-100.18%	-2411.73%		62.37%	-1534.27%	-47.68%	33.65%	54.46%
Interest & Finance Charges	42.02%	945.41%		54.76%	235.51%	79.26%	59.27%	58.00%
Profit before Tax	-142.21%	-3357.14%		7.61%	-1769.79%	-126.95%	-25.62%	-3.54%
Taxation	-33.84%	-4.08%		0.00%	8.79%	0.76%	9.22%	-1.50%
Current	1.85%	0.00%		0.00%	8.12%	3.37%	3.15%	0.03%
Deferred	-35.69%	0.00%		0.00%	0.00%	-0.09%	6.07%	-1.74%
Other	0.00%	-4.08%		0.00%	0.68%	-2.52%	0.00%	0.20%
Profit After Interest and Tax	-108.37%	-3353.06%		7.61%	-1778.58%	-127.70%	-34.84%	-2.03%
Earnings Before Interest Tax Depreciation And Amortisati	-99.68%	-2392.86%		63.75%	-1533.03%	-47.68%	34.33%	55.35%
Interest Paid - Debentures	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.3: Colliers financial statements

Balance Sheet Published (000)	2010/02/28	2009/02/28	2008/02/29	2007/02/28	2006/02/28	2005/02/28	2004/02/29	2003/02/28
Total Assets	312 133.00	317 255.00	300 180.00	229 431.00	133 887.00	95 528.00	86 366.00	99 422.00
Fixed Assets	214 781.00	197 140.00	180 391.00	117 866.00	79 009.00	48 507.00	44 972.00	44 595.00
Current Assets	77 833.00	106 265.00	108 021.00	100 701.00	45 862.00	38 140.00	36 899.00	45 809.00
Non Current Assets	12 929.00	13 835.00	11 744.00	9 073.00	4 516.00	3 300.00	35.00	1 552.00
Intangible Assets	-	865.00	-	-	-	-	-48.00	-3 873.00
Investments & Loans	6 590.00	15.00	24.00	1 791.00	4 500.00	5 581.00	4 460.00	7 466.00
Total Assets (Including Intangible Assets)	312 133.00	-	-	229 431.00	133 887.00	95 528.00	86 318.00	95 549.00
Current Liabilities	-47 508.00	-60 267.00	-113 480.00	-127 939.00	-32 823.00	-32 357.00	-27 006.00	-36 046.00
Employment Of Capital	264 625.00	257 853.00	186 700.00	101 492.00	101 064.00	63 171.00	59 312.00	59 584.00
Total Shareholders Interest	137 625.00	133 952.00	117 502.00	76 484.00	46 359.00	28 121.00	23 130.00	29 956.00
Debenture loan								
Other long term	107 504.00	107 695.00	61 556.00	21 938.00	48 729.00	30 856.00	34 455.00	28 516.00
Long Term Liabilities	107 504.00	107 695.00	61 556.00	21 938.00	48 729.00	30 856.00	34 455.00	28 516.00
Deferred Tax	19 496.00	16 206.00	7 642.00	3 070.00	5 976.00	4 148.00	1 626.00	-
Total Liabilities	127 000.00	123 901.00	69 198.00	25 008.00	54 705.00	35 050.00	36 182.00	29 628.00
Capital Employed	264 625.00	257 853.00	186 700.00	101 492.00	101 064.00	63 171.00	59 312.00	59 584.00
Total Assets	117.95%	123.04%	160.78%	226.06%	132.48%	151.22%	145.61%	166.86%
Fixed Assets	81.16%	76.45%	96.62%	116.13%	78.18%	76.79%	75.82%	74.84%
Current Assets	29.41%	41.21%	57.86%	99.22%	45.38%	60.38%	62.21%	76.88%
Non Current Assets	4.89%	5.37%	6.29%	8.94%	4.47%	5.22%	0.06%	2.60%
Intangible Assets	0.00%	0.34%	0.00%	0.00%	0.00%	0.00%	-0.08%	-6.50%
Investments & Loans	2.49%	0.01%	0.01%	1.76%	4.45%	8.83%	7.52%	12.53%
Total Assets (Including Intangible Assets)	117.95%	0.00%	0.00%	226.06%	132.48%	151.22%	145.53%	160.36%
Current Liabilities	-17.95%	-23.37%	-60.78%	-126.06%	-32.48%	-51.22%	-45.53%	-60.50%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	52.01%	51.95%	62.94%	75.36%	45.87%	44.52%	39.00%	50.28%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	40.63%	41.77%	32.97%	21.62%	48.22%	48.85%	58.09%	47.86%
Deferred Tax	7.37%	6.28%	4.09%	3.02%	5.91%	6.57%	2.74%	0.00%
Total Liabilities	47.99%	48.05%	37.06%	24.64%	54.13%	55.48%	61.00%	49.72%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/02/28	2009/02/28	2008/02/29	2007/02/28	2006/02/28	2005/02/28	2004/02/29	2003/02/28
Turnover	66 415.00	386 372.00	325 348.00	263 816.00	217 776.00	73 785.00	83 181.00	130 130.00
Operating Profit	19 412.00	51 554.00	70 300.00	49 618.00	35 611.00	25 879.00	12 134.00	29 046.00
Interest Received	1 505.00	3 594.00	2 281.00	1 381.00	1 539.00	2 115.00	1 248.00	6 188.00
Total Income	20 917.00	55 148.00	72 581.00	50 999.00	37 150.00	27 994.00	13 382.00	35 234.00
Total Cost Shown	19 850.00	15 428.00	12 281.00	10 306.00	9 125.00	12 286.00	9 671.00	17 308.00
Earnings Before Interest & Tax (EBIT)	-4 754.00	39 720.00	60 300.00	40 693.00	28 025.00	15 708.00	3 711.00	17 926.00
Interest & Finance Charges	14 880.00	12 793.00	12 127.00	10 463.00	7 648.00	5 392.00	4 796.00	14 353.00
Profit before Tax	-13 813.00	26 927.00	48 173.00	30 230.00	20 377.00	10 316.00	-1 085.00	3 573.00
Taxation	-384.00	10 180.00	7 089.00	-3 818.00	2 592.00	2 076.00	4 667.00	245.00
Current	263.00	3 156.00	2 799.00	5 342.00	659.00	379.00	1 436.00	1 437.00
Deferred	-647.00	7 024.00	4 290.00	-11 557.00	1 822.00	1 634.00	3 143.00	-1 192.00
Other	-	-	-	2 397.00	111.00	63.00	88.00	-
Profit After Interest and Tax	-13 429.00	16 747.00	41 084.00	34 048.00	17 785.00	8 240.00	-5 752.00	3 328.00
Earnings Before Interest Tax Depreciation And Amortisati	-3 687.00	41 612.00	62 453.00	41 659.00	28 859.00	16 745.00	905.00	21 587.00
Interest Paid - Debentures	-	-	-	-	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	29.23%	13.34%	21.61%	18.81%	16.35%	35.07%	14.59%	22.32%
Interest Received	2.27%	0.93%	0.70%	0.52%	0.71%	2.87%	1.50%	4.76%
Total Income	31.49%	14.27%	22.31%	19.33%	17.06%	37.94%	16.09%	27.08%
Total Cost Shown	29.89%	3.99%	3.77%	3.91%	4.19%	16.65%	11.63%	13.30%
Earnings Before Interest & Tax (EBIT)	-7.16%	10.28%	18.53%	15.42%	12.87%	21.29%	4.46%	13.78%
Interest & Finance Charges	22.40%	3.31%	3.73%	3.97%	3.51%	7.31%	5.77%	11.03%
Profit before Tax	-20.80%	6.97%	14.81%	11.46%	9.36%	13.98%	-1.30%	2.75%
Taxation	-0.58%	2.63%	2.18%	-1.45%	1.19%	2.81%	5.61%	0.19%
Current	0.40%	0.82%	0.86%	2.02%	0.30%	0.51%	1.73%	1.10%
Deferred	-0.97%	1.82%	1.32%	-4.38%	0.84%	2.21%	3.78%	-0.92%
Other	0.00%	0.00%	0.00%	0.91%	0.05%	0.09%	0.11%	0.00%
Profit After Interest and Tax	-20.22%	4.33%	12.63%	12.91%	8.17%	11.17%	-6.92%	2.56%
Earnings Before Interest Tax Depreciation And Amortisati	-5.55%	10.77%	19.20%	15.79%	13.25%	22.69%	1.09%	16.59%
Interest Paid - Debentures	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.4: Fairvest financial statements

Balance Sheet Published (000)	2010/06/30	2009/03/31	2008/03/31	2007/03/31	2006/03/31	2005/09/30	2004/09/30	2003/09/30
Total Assets	144 769.00	136 841.00	138 747.00	155 487.00	-	143 426.00	216 753.00	283 459.00
Fixed Assets	88 786.00	86 430.00	59 038.00	149 216.00	-	132 790.00	196 609.00	277 152.00
Current Assets	53 147.00	47 156.00	11 254.00	3 537.00	-	8 435.00	20 040.00	3 283.00
Non Current Assets	2 836.00	3 255.00	51 567.00	2 734.00	-	2 097.00	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	-	-	16 888.00	-	-	104.00	104.00	3 024.00
Total Assets (Including Intangible Assets)	144 769.00	136 841.00	138 747.00	155 487.00	-	143 426.00	216 753.00	283 459.00
Current Liabilities	-17 357.00	-10 390.00	-6 302.00	-6 825.00	-	-9 281.00	-20 904.00	-66 279.00
Employment Of Capital	127 412.00	126 451.00	132 445.00	148 662.00	-	134 145.00	195 849.00	217 180.00
Total Shareholders Interest	857.00	857.00	857.00	857.00	-	845.00	1 162.00	1 147.00
Debenture loan								
Other long term	124 877.00	124 658.00	130 335.00	128 312.00	-	124 455.00	184 045.00	207 401.00
Long Term Liabilities	124 877.00	124 658.00	130 335.00	128 312.00	-	124 455.00	184 045.00	207 401.00
Deferred Tax	1 678.00	936.00	1 253.00	19 493.00	-	8 845.00	10 642.00	8 632.00
Total Liabilities	126 555.00	125 594.00	131 588.00	147 805.00	-	133 300.00	194 687.00	216 033.00
Capital Employed	127 412.00	126 451.00	132 445.00	148 662.00	-	134 145.00	195 849.00	217 180.00
Total Assets	113.62%	108.22%	104.76%	104.59%		106.92%	110.67%	130.52%
Fixed Assets	69.68%	68.35%	44.58%	100.37%		98.99%	100.39%	127.61%
Current Assets	41.71%	37.29%	8.50%	2.38%		6.29%	10.23%	1.51%
Non Current Assets	2.23%	2.57%	38.93%	1.84%		1.56%	0.00%	0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Investments & Loans	0.00%	0.00%	12.75%	0.00%		0.08%	0.05%	1.39%
Total Assets (Including Intangible Assets)	113.62%	108.22%	104.76%	104.59%		106.92%	110.67%	130.52%
Current Liabilities	-13.62%	-8.22%	-4.76%	-4.59%		-6.92%	-10.67%	-30.52%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%		100.00%	100.00%	100.00%
Total Shareholders Interest	0.67%	0.68%	0.65%	0.58%		0.63%	0.59%	0.53%
Debenture loan	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Other long term	98.01%	98.58%	98.41%	86.31%		92.78%	93.97%	95.50%
Deferred Tax	1.32%	0.74%	0.95%	13.11%		6.59%	5.43%	3.97%
Total Liabilities	99.33%	99.32%	99.35%	99.42%		99.37%	99.41%	99.47%
Capital Employed	100.00%	100.00%	100.00%	100.00%		100.00%	100.00%	100.00%

Income Statement Published (000)	2010/06/30	2009/03/31	2008/03/31	2007/03/31	2006/03/31	2005/09/30	2004/09/30	2003/09/30
Turnover	19 801.00	16 180.00	24 095.00	39 748.00	-	31 956.00	50 528.00	57 009.00
Operating Profit	12 847.00	6 895.00	-13 936.00	21 941.00	-	10 395.00	28 344.00	43 904.00
Interest Received	4 389.00	3 739.00	1 202.00	540.00	-	182.00	266.00	733.00
Total Income	17 236.00	10 634.00	-12 734.00	22 481.00	-	10 577.00	28 610.00	44 637.00
Total Cost Shown	1 752.00	1 272.00	1 276.00	1 625.00	-	2 198.00	3 391.00	9 355.00
Earnings Before Interest & Tax (EBIT)	15 484.00	9 362.00	-14 010.00	20 856.00	-	8 379.00	25 219.00	35 282.00
Interest & Finance Charges	12 642.00	8 075.00	3 902.00	8 995.00	-	11 104.00	21 880.00	33 992.00
Profit before Tax	2 842.00	1 287.00	-17 912.00	11 861.00	-	-2 725.00	3 339.00	1 290.00
Taxation	2 842.00	1 287.00	-17 912.00	11 861.00	-	-2 725.00	3 339.00	8 835.00
Current	217.00	518.00	337.00	740.00	-	146.00	1 329.00	993.00
Deferred	742.00	-317.00	-18 912.00	11 121.00	-	-1 349.00	2 010.00	7 842.00
Other	1 883.00	1 086.00	663.00	-	-	-1 522.00	-	-
Profit After Interest and Tax	2 121.00	-	-	-	-	-	-	-7 545.00
Earnings Before Interest Tax Depreciation And Amortisati	15 485.00	9 363.00	-14 010.00	20 861.00	-	8 384.00	25 302.00	35 340.00
Interest Paid - Debentures	11 832.00	7 715.00	-	181.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	#DIV/0!	100.00%	100.00%	100.00%
Operating Profit	64.88%	42.61%	-57.84%	55.20%	#DIV/0!	32.53%	56.10%	77.01%
Interest Received	22.17%	23.11%	4.99%	1.36%	#DIV/0!	0.57%	0.53%	1.29%
Total Income	87.05%	65.72%	-52.85%	56.56%	#DIV/0!	33.10%	56.62%	78.30%
Total Cost Shown	8.85%	7.86%	5.30%	4.09%	#DIV/0!	6.88%	6.71%	16.41%
Earnings Before Interest & Tax (EBIT)	78.20%	57.86%	-58.14%	52.47%	#DIV/0!	26.22%	49.91%	61.89%
Interest & Finance Charges	63.85%	49.91%	16.19%	22.63%	#DIV/0!	34.75%	43.30%	59.63%
Profit before Tax	14.35%	7.95%	-74.34%	29.84%	#DIV/0!	-8.53%	6.61%	2.26%
Taxation	14.35%	7.95%	-74.34%	29.84%	#DIV/0!	-8.53%	6.61%	15.50%
Current	1.10%	3.20%	1.40%	1.86%	#DIV/0!	0.46%	2.63%	1.74%
Deferred	3.75%	-1.96%	-78.49%	27.98%	#DIV/0!	-4.22%	3.98%	13.76%
Other	9.51%	6.71%	2.75%	0.00%	#DIV/0!	-4.76%	0.00%	0.00%
Profit After Interest and Tax	10.71%	0.00%	0.00%	0.00%	#DIV/0!	0.00%	0.00%	-13.23%
Earnings Before Interest Tax Depreciation And Amortisati	78.20%	57.87%	-58.14%	52.48%	#DIV/0!	26.24%	50.08%	61.99%
Interest Paid - Debentures	59.75%	47.68%	0.00%	0.46%	#DIV/0!	0.00%	0.00%	0.00%

Annexure 1.5: Fortress financial statements

Balance Sheet Published (000)	2010/06/30	2009/09/30	2008/09/30	2007/09/30	2006/09/30	2005/09/30	2004/09/30	2003/09/30
Total Assets	3 042 847.00	-	-	-	-	-	-	-
Fixed Assets	2 492 495.00	-	-	-	-	-	-	-
Current Assets	128 731.00	-	-	-	-	-	-	-
Non Current Assets	-	-	-	-	-	-	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	421 621.00	-	-	-	-	-	-	-
Total Assets (Including Intangible Assets)	3 042 847.00	-	-	-	-	-	-	-
Current Liabilities	-157 625.00	-	-	-	-	-	-	-
Employment Of Capital	2 885 222.00	-	-	-	-	-	-	-
Total Shareholders Interest	351 798.00	-	-	-	-	-	-	-
Debenture loan								
Other long term	2 501 064.00	-	-	-	-	-	-	-
Long Term Liabilities	2 501 064.00	-	-	-	-	-	-	-
Deferred Tax	32 360.00	-	-	-	-	-	-	-
Total Liabilities	2 691 049.00	-	-	-	-	-	-	-
Capital Employed	2 885 222.00	-	-	-	-	-	-	-
Total Assets	105.46%							
Fixed Assets	86.39%							
Current Assets	4.46%							
Non Current Assets	0.00%							
Intangible Assets	0.00%							
Investments & Loans	14.61%							
Total Assets (Including Intangible Assets)	105.46%							
Current Liabilities	-5.46%							
Employment Of Capital	100.00%							
Total Shareholders Interest	12.19%							
Debenture loan	0.00%							
Other long term	86.69%							
Deferred Tax	1.12%							
Total Liabilities	93.27%							
Capital Employed	100.00%							

Income Statement Published (000)	2010/06/30	2009/09/30	2008/09/30	2007/09/30	2006/09/30	2005/09/30	2004/09/30	2003/09/30
Turnover	-	-	-	-	-	-	-	-
Operating Profit	381 596.00	-	-	-	-	-	-	-
Interest Received	12 222.00	-	-	-	-	-	-	-
Total Income	393 818.00	-	-	-	-	-	-	-
Total Cost Shown	4 313.00	-	-	-	-	-	-	-
Earnings Before Interest & Tax (EBIT)	389 505.00	-	-	-	-	-	-	-
Interest & Finance Charges	223 983.00	-	-	-	-	-	-	-
Profit before Tax	165 522.00	-	-	-	-	-	-	-
Taxation	32 684.00	-	-	-	-	-	-	-
Current	324.00	-	-	-	-	-	-	-
Deferred	32 360.00	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Profit After Interest and Tax	132 838.00	-	-	-	-	-	-	-
Earnings Before Interest Tax Depreciation And Amortisati	389 505.00	-	-	-	-	-	-	-
Interest Paid - Debentures	156 775.00	-	-	-	-	-	-	-

Turnover
Operating Profit
Interest Received
Total Income
Total Cost Shown
Earnings Before Interest & Tax (EBIT)
Interest & Finance Charges
Profit before Tax
Taxation
Current
Deferred
Other
Profit After Interest and Tax
Earnings Before Interest Tax Depreciation And Amortisation (EBITDA)
Interest Paid - Debentures

Annexure 1.6: Growthpoint financial statements

Balance Sheet Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Total Assets	36 057 000.00	30 632 000.00	28 825 000.00	22 957 000.00	15 544 132.00	9 642 193.00	6 842 062.00	5 423 651.00
Fixed Assets	34 211 000.00	28 639 000.00	27 247 000.00	22 173 000.00	15 016 516.00	9 119 162.00	6 131 500.00	4 550 893.00
Current Assets	1 293 000.00	1 374 000.00	426 000.00	325 000.00	191 250.00	132 174.00	142 329.00	62 947.00
Non Current Assets	62 000.00	213 000.00	818 000.00	108 000.00	114 865.00	-	-	-
Intangible Assets	1 634 000.00	1 733 000.00	1 832 000.00	-	-	-	-	-
Investments & Loans	491 000.00	406 000.00	334 000.00	351 000.00	221 501.00	390 857.00	568 233.00	809 811.00
Total Assets (Including Intangible Assets)	37 691 000.00	-	-	22 957 000.00	15 544 132.00	9 642 193.00	6 842 062.00	5 423 651.00
Current Liabilities	-4 512 000.00	-3 114 000.00	-1 354 000.00	-964 000.00	-1 813 831.00	-957 709.00	-648 046.00	-336 926.00
Employment Of Capital	33 179 000.00	29 251 000.00	29 303 000.00	21 993 000.00	13 730 301.00	8 684 484.00	6 194 016.00	5 086 725.00
Total Shareholders Interest	2 046 000.00	1 436 000.00	1 501 000.00	54 000.00	38 910.00	33 018.00	30 629.00	17 164.00
Debenture loan	20 795 000.00	18 641 000.00	18 283 000.00	13 646 000.00	7 943 000.00			
Other long term	9 932 000.00	8 815 000.00	9 132 000.00	8 293 000.00	5 748 391.00	8 651 466.00	6 163 387.00	5 069 561.00
Long Term Liabilities	30 727 000.00	27 456 000.00	27 415 000.00	21 939 000.00	13 691 391.00	8 651 466.00	6 163 387.00	5 069 561.00
Deferred Tax	406 000.00	359 000.00	387 000.00	-	-	-	-	-
Total Liabilities	31 133 000.00	27 815 000.00	27 802 000.00	21 939 000.00	13 691 391.00	8 651 466.00	6 163 387.00	5 069 561.00
Capital Employed	33 179 000.00	29 251 000.00	29 303 000.00	21 993 000.00	13 730 301.00	8 684 484.00	6 194 016.00	5 086 725.00
Total Assets	108.67%	104.72%	98.37%	104.38%	113.21%	111.03%	110.46%	106.62%
Fixed Assets	103.11%	97.91%	92.98%	100.82%	109.37%	105.01%	98.99%	89.47%
Current Assets	3.90%	4.70%	1.45%	1.48%	1.39%	1.52%	2.30%	1.24%
Non Current Assets	0.19%	0.73%	2.79%	0.49%	0.84%	0.00%	0.00%	0.00%
Intangible Assets	4.92%	5.92%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	1.48%	1.39%	1.14%	1.60%	1.61%	4.50%	9.17%	15.92%
Total Assets (Including Intangible Assets)	113.60%	0.00%	0.00%	104.38%	113.21%	111.03%	110.46%	106.62%
Current Liabilities	-13.60%	-10.65%	-4.62%	-4.38%	-13.21%	-11.03%	-10.46%	-6.62%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	6.17%	4.91%	5.12%	0.25%	0.28%	0.38%	0.49%	0.34%
Debenture loan	62.68%	63.73%	62.39%	62.05%	57.85%	0.00%	0.00%	0.00%
Other long term	29.93%	30.14%	31.16%	37.71%	41.87%	99.62%	99.51%	99.66%
Deferred Tax	1.22%	1.23%	1.32%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Liabilities	93.83%	95.09%	94.88%	99.75%	99.72%	99.62%	99.51%	99.66%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Turnover	4 206 000.00	3 430 000.00	2 920 000.00	2 362 000.00	1 380 172.00	1 181 714.00	920 457.00	452 719.00
Operating Profit	3 169 000.00	2 398 000.00	1 986 000.00	1 515 000.00	916 298.00	775 150.00	616 501.00	492 744.00
Interest Received	128 000.00	163 000.00	88 000.00	89 000.00	83 117.00	67 902.00	143 755.00	96 922.00
Total Income	3 297 000.00	2 561 000.00	2 074 000.00	1 604 000.00	999 459.00	843 104.00	760 423.00	589 871.00
Total Cost Shown	47 000.00	120 000.00	113 000.00	4 000.00	2 264.00	1 604.00	1 472.00	649.00
Earnings Before Interest & Tax (EBIT)	3 193 000.00	2 441 000.00	1 961 000.00	1 600 000.00	997 195.00	841 500.00	758 951.00	589 222.00
Interest & Finance Charges	3 051 000.00	2 533 000.00	2 060 000.00	1 597 000.00	973 444.00	816 057.00	740 618.00	585 432.00
Profit before Tax	219 000.00	-92 000.00	-99 000.00	3 000.00	23 751.00	25 443.00	18 333.00	3 790.00
Taxation	36 000.00	-23 000.00	-1 000.00	2 000.00	23 148.00	24 961.00	17 890.00	3 563.00
Current	2 000.00	5 000.00	4 000.00	1 000.00	-	338.00	272.00	-
Deferred	47 000.00	-28 000.00	-	-	-	-	-	-
Other	-13 000.00	-	-5 000.00	1 000.00	23 148.00	24 623.00	17 618.00	3 563.00
Profit After Interest and Tax	183 000.00	-69 000.00	-98 000.00	1 000.00	603.00	482.00	443.00	227.00
Earnings Before Interest Tax Depreciation And Amortisati	3 294 000.00	2 541 000.00	2 062 000.00	1 600 000.00	997 195.00	841 500.00	758 951.00	589 222.00
Interest Paid - Debentures	1 874 000.00	1 612 000.00	1 363 000.00	-	-	-	-	-

Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	75.34%	69.91%	68.01%	64.14%	66.39%	65.60%	66.98%	108.84%
Interest Received	3.04%	4.75%	3.01%	3.77%	6.02%	5.75%	15.62%	21.41%
Total Income	78.39%	74.66%	71.03%	67.91%	72.42%	71.35%	82.61%	130.30%
Total Cost Shown	1.12%	3.50%	3.87%	0.17%	0.16%	0.14%	0.16%	0.14%
Earnings Before Interest & Tax (EBIT)	75.92%	71.17%	67.16%	67.74%	72.25%	71.21%	82.45%	130.15%
Interest & Finance Charges	72.54%	73.85%	70.55%	67.61%	70.53%	69.06%	80.46%	129.31%
Profit before Tax	5.21%	-2.68%	-3.39%	0.13%	1.72%	2.15%	1.99%	0.84%
Taxation	0.86%	-0.67%	-0.03%	0.08%	1.68%	2.11%	1.94%	0.79%
Current	0.05%	0.15%	0.14%	0.04%	0.00%	0.03%	0.03%	0.00%
Deferred	1.12%	-0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other	-0.31%	0.00%	-0.17%	0.04%	1.68%	2.08%	1.91%	0.79%
Profit After Interest and Tax	4.35%	-2.01%	-3.36%	0.04%	0.04%	0.04%	0.05%	0.05%
Earnings Before Interest Tax Depreciation And Amortisati	78.32%	74.08%	70.62%	67.74%	72.25%	71.21%	82.45%	130.15%
Interest Paid - Debentures	44.56%	47.00%	46.68%	0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.7: Hospitality financial statements

Balance Sheet Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Total Assets	3 355 741.00	3 416 871.00	2 507 623.00	1 699 833.00	1 182 758.00	-	-	-
Fixed Assets	3 318 457.00	3 404 252.00	2 249 704.00	1 662 747.00	1 161 144.00	-	-	-
Current Assets	37 284.00	12 619.00	207 128.00	20 970.00	21 614.00	-	-	-
Non Current Assets	-	-	50 791.00	16 116.00	-	-	-	-
Intangible Assets	152 822.00	-	-	-	-	-	-	-
Investments & Loans	-	-	-	-	-	-	-	-
Total Assets (Including Intangible Assets)	3 508 563.00	-	2 507 623.00	1 699 833.00	1 182 758.00	-	-	-
Current Liabilities	-218 508.00	-123 962.00	-112 171.00	-114 238.00	-49 092.00	-	-	-
Employment Of Capital	3 290 055.00	3 292 909.00	2 395 452.00	1 585 595.00	1 133 666.00	-	-	-
Total Shareholders Interest	580 276.00	809 265.00	770 990.00	360 289.00	146 303.00	-	-	-
Debenture loan	1 186 505.60	1 157 910.80	1 157 910.80	858 934.40	680 090.00			
Other long term	1 319 386.40	1 084 021.20	279 727.20	250 564.60	259 817.00	-	-	-
Long Term Liabilities	2 505 892.00	2 241 932.00	1 437 638.00	1 109 499.00	939 907.00	-	-	-
Deferred Tax	171 045.00	241 712.00	186 824.00	115 807.00	47 456.00	-	-	-
Total Liabilities	2 709 779.00	2 483 644.00	1 624 462.00	1 225 306.00	987 363.00	-	-	-
Capital Employed	3 290 055.00	3 292 909.00	2 395 452.00	1 585 595.00	1 133 666.00	-	-	-
Total Assets	102.00%	103.76%	104.68%	107.20%	104.33%			
Fixed Assets	100.86%	103.38%	93.92%	104.87%	102.42%			
Current Assets	1.13%	0.38%	8.65%	1.32%	1.91%			
Non Current Assets	0.00%	0.00%	2.12%	1.02%	0.00%			
Intangible Assets	4.64%	0.00%	0.00%	0.00%	0.00%			
Investments & Loans	0.00%	0.00%	0.00%	0.00%	0.00%			
Total Assets (Including Intangible Assets)	106.64%	0.00%	104.68%	107.20%	104.33%			
Current Liabilities	-6.64%	-3.76%	-4.68%	-7.20%	-4.33%			
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%			
Total Shareholders Interest	17.64%	24.58%	32.19%	22.72%	12.91%			
Debenture loan	36.06%	35.16%	48.34%	54.17%	59.99%			
Other long term	40.10%	32.92%	11.68%	15.80%	22.92%			
Deferred Tax	5.20%	7.34%	7.80%	7.30%	4.19%			
Total Liabilities	82.36%	75.42%	67.81%	77.28%	87.09%			
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%			

Income Statement Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Turnover	265 550.00	261 919.00	200 594.00	142 391.00	48 970.00	-	-	-
Operating Profit	-66 186.00	320 232.00	478 106.00	377 551.00	195 076.00	-	-	-
Interest Received	2 023.00	24 139.00	24 022.00	4 240.00	1 586.00	-	-	-
Total Income	-64 163.00	344 371.00	502 128.00	381 791.00	196 662.00	-	-	-
Total Cost Shown	8 183.00	1 473.00	989.00	1 005.00	750.00	-	-	-
Earnings Before Interest & Tax (EBIT)	-72 346.00	342 898.00	501 139.00	380 786.00	195 912.00	-	-	-
Interest & Finance Charges	239 542.00	249 549.00	201 679.00	123 875.00	41 617.00	-	-	-
Profit before Tax	-311 888.00	93 349.00	299 460.00	256 911.00	154 295.00	-	-	-
Taxation	-70 667.00	54 889.00	71 017.00	68 351.00	47 456.00	-	-	-
Current	-	-	-	-	-	-	-	-
Deferred	-70 667.00	54 889.00	71 017.00	68 351.00	47 456.00	-	-	-
Other	-	-	-	-	-	-	-	-
Profit After Interest and Tax	-241 221.00	38 460.00	228 443.00	188 560.00	106 839.00	-	-	-
Earnings Before Interest Tax Depreciation And Amortisati	-72 933.00	342 898.00	501 139.00	380 786.00	195 912.00	-	-	-
Interest Paid - Debentures	128 926.00	162 238.00	159 034.00	-	-	-	-	-

Turnover	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	-24.92%	122.26%	238.35%	265.15%	398.36%
Interest Received	0.76%	9.22%	11.98%	2.98%	3.24%
Total Income	-24.16%	131.48%	250.32%	268.13%	401.60%
Total Cost Shown	3.08%	0.56%	0.49%	0.71%	1.53%
Earnings Before Interest & Tax (EBIT)	-27.24%	130.92%	249.83%	267.42%	400.07%
Interest & Finance Charges	90.21%	95.28%	100.54%	87.00%	84.98%
Profit before Tax	-117.45%	35.64%	149.29%	180.43%	315.08%
Taxation	-26.61%	20.96%	35.40%	48.00%	96.91%
Current	0.00%	0.00%	0.00%	0.00%	0.00%
Deferred	-26.61%	20.96%	35.40%	48.00%	96.91%
Other	0.00%	0.00%	0.00%	0.00%	0.00%
Profit After Interest and Tax	-90.84%	14.68%	113.88%	132.42%	218.17%
Earnings Before Interest Tax Depreciation And Amortisati	-27.46%	130.92%	249.83%	267.42%	400.07%
Interest Paid - Debentures	48.55%	61.94%	79.28%	0.00%	0.00%

Annexure 1.8: Hyprop financial statements

Balance Sheet Published (000)	2009/12/31	2008/12/31	2007/12/31	2006/12/31	2005/12/31	2004/12/31	2003/12/31	2002/12/31
Total Assets	10 808 558.00	9 488 648.00	10 482 221.00	7 890 562.00	6 180 101.00	3 800 319.00	2 820 978.00	1 123 379.00
Fixed Assets	8 710 467.00	7 561 041.00	7 957 873.00	6 406 456.00	5 113 623.00	3 681 868.00	2 715 680.00	1 115 481.00
Current Assets	258 153.00	126 026.00	655 961.00	86 166.00	124 163.00	118 451.00	79 359.00	7 352.00
Non Current Assets	169 237.00	155 919.00	381 262.00	120 301.00	-	-	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	1 670 701.00	1 645 662.00	1 487 125.00	1 277 639.00	942 315.00	-	25 939.00	546.00
Total Assets (Including Intangible Assets)	-	9 488 648.00	10 482 221.00	7 890 562.00	6 180 101.00	3 800 319.00	2 820 978.00	1 123 379.00
Current Liabilities	-415 115.00	-363 350.00	-346 053.00	-266 080.00	-233 593.00	-146 112.00	-112 048.00	-55 382.00
Employment Of Capital	10 393 443.00	9 125 298.00	10 136 168.00	7 624 482.00	5 946 508.00	3 654 207.00	2 708 930.00	1 067 997.00
Total Shareholders Interest	4 799 207.00	4 247 182.00	4 832 041.00	3 504 948.00	2 282 870.00	1 480 608.00	760 518.00	420 165.00
Debenture loan	2 558 705.00	2 656 401.00	2 741 893.00	1 771 757.00				
Other long term	1 562 447.00	900 000.00	900 000.00	1 135 748.00	2 888 502.00	2 016 387.00	1 920 696.00	641 246.00
Long Term Liabilities	4 121 152.00	3 556 401.00	3 641 893.00	2 907 505.00	2 888 502.00	2 016 387.00	1 920 696.00	641 246.00
Deferred Tax	1 472 131.00	1 320 047.00	1 656 429.00	1 204 481.00	775 136.00	157 212.00	27 716.00	6 586.00
Total Liabilities	5 594 236.00	4 878 116.00	5 304 127.00	4 119 534.00	3 663 638.00	2 173 599.00	1 948 412.00	647 832.00
Capital Employed	10 393 443.00	9 125 298.00	10 136 168.00	7 624 482.00	5 946 508.00	3 654 207.00	2 708 930.00	1 067 997.00
Total Assets	103.99%	103.98%	103.41%	103.49%	103.93%	104.00%	104.14%	105.19%
Fixed Assets	83.81%	82.86%	78.51%	84.02%	85.99%	100.76%	100.25%	104.45%
Current Assets	2.48%	1.38%	6.47%	1.13%	2.09%	3.24%	2.93%	0.69%
Non Current Assets	1.63%	1.71%	3.76%	1.58%	0.00%	0.00%	0.00%	0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	16.07%	18.03%	14.67%	16.76%	15.85%	0.00%	0.96%	0.05%
Total Assets (Including Intangible Assets)	0.00%	103.98%	103.41%	103.49%	103.93%	104.00%	104.14%	105.19%
Current Liabilities	-3.99%	-3.98%	-3.41%	-3.49%	-3.93%	-4.00%	-4.14%	-5.19%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	46.18%	46.54%	47.67%	45.97%	38.39%	40.52%	28.07%	39.34%
Debenture loan	24.62%	29.11%	27.05%	23.24%	0.00%	0.00%	0.00%	0.00%
Other long term	15.03%	9.86%	8.88%	14.90%	48.57%	55.18%	70.90%	60.04%
Deferred Tax	14.16%	14.47%	16.34%	15.80%	13.04%	4.30%	1.02%	0.62%
Total Liabilities	53.82%	53.46%	52.33%	54.03%	61.61%	59.48%	71.93%	60.66%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2009/12/31	2008/12/31	2007/12/31	2006/12/31	2005/12/31	2004/12/31	2003/12/31	2002/12/31
Turnover	790 568.00	658 674.00	670 943.00	630 285.00	571 503.00	517 545.00	316 691.00	160 653.00
Operating Profit	1 311 678.00	805 802.00	2 183 283.00	2 109 639.00	1 815 562.00	1 263 988.00	327 776.00	155 409.00
Interest Received	26 931.00	39 408.00	85 573.00	2 143.00	2 104.00	3 141.00	1 767.00	498.00
Total Income	1 338 609.00	845 210.00	2 268 856.00	2 111 782.00	1 817 666.00	1 267 129.00	329 543.00	155 907.00
Total Cost Shown	12 194.00	14 036.00	13 077.00	13 313.00	10 269.00	8 181.00	6 958.00	5 900.00
Earnings Before Interest & Tax (EBIT)	1 326 415.00	831 174.00	2 255 779.00	2 098 469.00	1 807 397.00	1 258 948.00	322 585.00	150 007.00
Interest & Finance Charges	642 611.00	568 117.00	486 716.00	433 473.00	355 251.00	273 622.00	169 653.00	100 883.00
Profit before Tax	683 804.00	263 057.00	1 769 063.00	1 664 996.00	1 452 146.00	985 326.00	152 932.00	49 124.00
Taxation	152 084.00	-100 615.00	451 946.00	429 344.00	378 217.00	133 896.00	21 160.00	6 607.00
Current	-	-	-	-	-	264.00	-	-
Deferred	152 084.00	-100 615.00	451 946.00	429 344.00	378 155.00	129 431.00	21 129.00	6 586.00
Other	-	-	-	-	62.00	4 201.00	31.00	21.00
Profit After Interest and Tax	531 720.00	363 672.00	1 317 117.00	1 235 652.00	1 073 929.00	851 430.00	131 772.00	42 517.00
Earnings Before Interest Tax Depreciation And Amortisati	1 333 278.00	838 876.00	2 263 075.00	2 107 164.00	1 814 020.00	1 264 423.00	327 723.00	154 803.00
Interest Paid - Debentures	447 155.00	426 137.00	361 930.00	324 831.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	165.92%	122.34%	325.41%	334.71%	317.68%	244.23%	103.50%	96.74%
Interest Received	3.41%	5.98%	12.75%	0.34%	0.37%	0.61%	0.56%	0.31%
Total Income	169.32%	128.32%	338.16%	335.05%	318.05%	244.83%	104.06%	97.05%
Total Cost Shown	1.54%	2.13%	1.95%	2.11%	1.80%	1.58%	2.20%	3.67%
Earnings Before Interest & Tax (EBIT)	167.78%	126.19%	336.21%	332.94%	316.25%	243.25%	101.86%	93.37%
Interest & Finance Charges	81.28%	86.25%	72.54%	68.77%	62.16%	52.87%	53.57%	62.80%
Profit before Tax	86.50%	39.94%	263.67%	264.17%	254.09%	190.38%	48.29%	30.58%
Taxation	19.24%	-15.28%	67.36%	68.12%	66.18%	25.87%	6.68%	4.11%
Current	0.00%	0.00%	0.00%	0.00%	0.00%	0.05%	0.00%	0.00%
Deferred	19.24%	-15.28%	67.36%	68.12%	66.17%	25.01%	6.67%	4.10%
Other	0.00%	0.00%	0.00%	0.00%	0.01%	0.81%	0.01%	0.01%
Profit After Interest and Tax	67.26%	55.21%	196.31%	196.05%	187.91%	164.51%	41.61%	26.47%
Earnings Before Interest Tax Depreciation And Amortisati	168.65%	127.36%	337.30%	334.32%	317.41%	244.31%	103.48%	96.36%
Interest Paid - Debentures	56.56%	64.70%	53.94%	51.54%	0.00%	0.00%	0.00%	0.00%

Annexure 1.9: Ingenuity financial statements

Balance Sheet Published (000)	2010/08/31	2009/08/31	2008/08/31	2007/08/31	2006/08/31	2005/04/30	2004/04/30	2003/04/30
Total Assets	612 144.00	710 118.00	489 000.00	34 777.00	26 587.00	24 376.00	-	401 223.00
Fixed Assets	589 537.00	551 680.00	453 955.00	91.00	-	-	-	390 543.00
Current Assets	14 126.00	150 493.00	24 993.00	14 173.00	8 200.00	11 437.00	-	9 221.00
Non Current Assets	-	-	3 243.00	-	-	-	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	8 481.00	7 945.00	6 809.00	20 513.00	18 387.00	12 939.00	-	1 459.00
Total Assets (Including Intangible Assets)	612 144.00	710 118.00	489 000.00	34 777.00	26 587.00	24 376.00	-	401 223.00
Current Liabilities	-3 288.00	-18 745.00	-9 206.00	-3 263.00	-1 011.00	-5 407.00	-	-16 892.00
Employment Of Capital	608 856.00	691 373.00	479 794.00	31 514.00	25 576.00	18 969.00	-	384 331.00
Total Shareholders Interest	372 489.00	356 166.00	345 984.00	29 800.00	24 170.00	18 332.00	-	6 485.00
Debenture loan								
Other long term	218 480.00	322 816.00	125 923.00	-	-	-	-	373 195.00
Long Term Liabilities	218 480.00	322 816.00	125 923.00	-	-	-	-	373 195.00
Deferred Tax	17 887.00	12 391.00	7 887.00	1 714.00	1 406.00	637.00	-	4 651.00
Total Liabilities	239 655.00	353 952.00	143 016.00	4 977.00	2 417.00	637.00	-	377 846.00
Capital Employed	608 856.00	691 373.00	479 794.00	31 514.00	25 576.00	18 969.00	-	384 331.00
Total Assets	100.54%	102.71%	101.92%	110.35%	103.95%	128.50%		104.40%
Fixed Assets	96.83%	79.79%	94.61%	0.29%	0.00%	0.00%		101.62%
Current Assets	2.32%	21.77%	5.21%	44.97%	32.06%	60.29%		2.40%
Non Current Assets	0.00%	0.00%	0.68%	0.00%	0.00%	0.00%		0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
Investments & Loans	1.39%	1.15%	1.42%	65.09%	71.89%	68.21%		0.38%
Total Assets (Including Intangible Assets)	100.54%	102.71%	101.92%	110.35%	103.95%	128.50%		104.40%
Current Liabilities	-0.54%	-2.71%	-1.92%	-10.35%	-3.95%	-28.50%		-4.40%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		100.00%
Total Shareholders Interest	61.18%	51.52%	72.11%	94.56%	94.50%	96.64%		1.69%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		0.00%
Other long term	35.88%	46.69%	26.25%	0.00%	0.00%	0.00%		97.10%
Deferred Tax	2.94%	1.79%	1.64%	5.44%	5.50%	3.36%		1.21%
Total Liabilities	39.36%	51.20%	29.81%	15.79%	9.45%	3.36%		98.31%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		100.00%

Income Statement Published (000)	2010/08/31	2009/08/31	2008/08/31	2007/08/31	2006/08/31	2005/04/30	2004/04/30	2003/04/30
Turnover	56 285.00	55 881.00	31 905.00	-	-	-	-	85 466.00
Operating Profit	62 425.00	60 903.00	63 424.00	2 592.00	-1 355.00	4 913.00	-	67 822.00
Interest Received	2 147.00	2 488.00	2 308.00	-	-	-	-	1 150.00
Total Income	64 572.00	63 391.00	65 732.00	5 125.00	1 717.00	10 739.00	-	68 972.00
Total Cost Shown	4 231.00	3 890.00	2 857.00	411.00	34.00	201.00	-	-106.00
Earnings Before Interest & Tax (EBIT)	60 341.00	59 501.00	62 875.00	4 714.00	1 683.00	10 538.00	-	69 078.00
Interest & Finance Charges	24 032.00	23 859.00	5 143.00	9.00	78.00	4 100.00	-	50 671.00
Profit before Tax	36 309.00	35 642.00	57 732.00	4 705.00	1 605.00	6 438.00	-	18 407.00
Taxation	11 992.00	6 223.00	12 739.00	732.00	446.00	1 889.00	-	4 953.00
Current	4 431.00	1 626.00	3 090.00	398.00	446.00	4 012.00	-	-
Deferred	7 555.00	4 505.00	7 887.00	-	-	-2 859.00	-	5 402.00
Other	6.00	92.00	1 762.00	334.00	-	736.00	-	-449.00
Profit After Interest and Tax	24 317.00	29 419.00	44 993.00	3 973.00	1 159.00	4 549.00	-	13 454.00
Earnings Before Interest Tax Depreciation And Amortisati	60 389.00	59 548.00	62 913.00	4 714.00	1 683.00	10 538.00	-	68 703.00
Interest Paid - Debentures	-	-	-	-	-	-	-	-
Turnover	100.00%	100.00%	100.00%					100.00%
Operating Profit	110.91%	108.99%	198.79%					79.36%
Interest Received	3.81%	4.45%	7.23%					1.35%
Total Income	114.72%	113.44%	206.02%					80.70%
Total Cost Shown	7.52%	6.96%	8.95%					-0.12%
Earnings Before Interest & Tax (EBIT)	107.21%	106.48%	197.07%					80.83%
Interest & Finance Charges	42.70%	42.70%	16.12%					59.29%
Profit before Tax	64.51%	63.78%	180.95%					21.54%
Taxation	21.31%	11.14%	39.93%					5.80%
Current	7.87%	2.91%	9.69%					0.00%
Deferred	13.42%	8.06%	24.72%					6.32%
Other	0.01%	0.16%	5.52%					-0.53%
Profit After Interest and Tax	43.20%	52.65%	141.02%					15.74%
Earnings Before Interest Tax Depreciation And Amortisati	107.29%	106.56%	197.19%					80.39%
Interest Paid - Debentures	0.00%	0.00%	0.00%					0.00%

Annexure 1.10: Merchant financial statements

Balance Sheet Published (000)	2010/09/30	2009/09/30	2008/09/30	2007/09/30	2006/12/31	2005/12/31	2004/12/31	2003/12/31
Total Assets	162 555.00	160 841.00	161 745.00	158 150.00	144 254.00	109 444.00	90 787.00	88 489.00
Fixed Assets	136 212.00	134 021.00	131 396.00	120 881.00	107 199.00	74 909.00	67 504.00	61 204.00
Current Assets	2 746.00	8 858.00	3 124.00	8 772.00	10 894.00	15 879.00	8 109.00	11 615.00
Non Current Assets	974.00	773.00	851.00	570.00	378.00	453.00	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	22 623.00	17 189.00	26 374.00	27 927.00	25 783.00	18 203.00	15 174.00	15 670.00
Total Assets (Including Intangible Assets)	162 555.00	160 841.00	161 745.00	158 150.00	144 254.00	109 444.00	90 787.00	88 489.00
Current Liabilities	-15 168.00	-5 548.00	-4 773.00	-5 758.00	-9 519.00	-6 756.00	-3 941.00	-6 818.00
Employment Of Capital	147 387.00	155 293.00	156 972.00	152 392.00	134 735.00	102 688.00	86 846.00	81 671.00
Total Shareholders Interest	122 501.00	120 062.00	120 945.00	117 839.00	113 608.00	82 684.00	71 218.00	60 340.00
Debenture loan								
Other long term	5 152.00	16 103.00	17 165.00	16 164.00	17 161.00	18 589.00	15 589.00	16 588.00
Long Term Liabilities	5 152.00	16 103.00	17 165.00	16 164.00	17 161.00	18 589.00	15 589.00	16 588.00
Deferred Tax	19 261.00	18 972.00	18 862.00	18 389.00	3 966.00	1 415.00	39.00	4 743.00
Total Liabilities	40 054.00	40 779.00	40 800.00	40 311.00	30 646.00	20 004.00	15 628.00	21 331.00
Capital Employed	147 387.00	155 293.00	156 972.00	152 392.00	134 735.00	102 688.00	86 846.00	81 671.00
Total Assets	110.29%	103.57%	103.04%	103.78%	107.06%	106.58%	104.54%	108.35%
Fixed Assets	92.42%	86.30%	83.71%	79.32%	79.56%	72.95%	77.73%	74.94%
Current Assets	1.86%	5.70%	1.99%	5.76%	8.09%	15.46%	9.34%	14.22%
Non Current Assets	0.66%	0.50%	0.54%	0.37%	0.28%	0.44%	0.00%	0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	15.35%	11.07%	16.80%	18.33%	19.14%	17.73%	17.47%	19.19%
Total Assets (Including Intangible Assets)	110.29%	103.57%	103.04%	103.78%	107.06%	106.58%	104.54%	108.35%
Current Liabilities	-10.29%	-3.57%	-3.04%	-3.78%	-7.06%	-6.58%	-4.54%	-8.35%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	83.12%	77.31%	77.05%	77.33%	84.32%	80.52%	82.00%	73.88%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	3.50%	10.37%	10.94%	10.61%	12.74%	18.10%	17.95%	20.31%
Deferred Tax	13.07%	12.22%	12.02%	12.07%	2.94%	1.38%	0.04%	5.81%
Total Liabilities	27.18%	26.26%	25.99%	26.45%	22.75%	19.48%	18.00%	26.12%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/09/30	2009/09/30	2008/09/30	2007/09/30	2006/12/31	2005/12/31	2004/12/31	2003/12/31
Turnover	21 873.00	20 805.00	18 506.00	12 679.00	16 857.00	17 874.00	18 634.00	18 105.00
Operating Profit	13 280.00	8 857.00	13 809.00	24 233.00	32 613.00	16 748.00	13 983.00	5 596.00
Interest Received	189.00	139.00	437.00	464.00	445.00	289.00	28.00	929.00
Total Income	14 043.00	9 622.00	15 053.00	25 256.00	33 606.00	17 485.00	14 389.00	6 911.00
Total Cost Shown	2 524.00	5 366.00	1 208.00	965.00	-4 753.00	1 369.00	2 242.00	2 168.00
Earnings Before Interest & Tax (EBIT)	11 633.00	7 383.00	13 845.00	24 291.00	32 486.00	16 116.00	12 147.00	4 743.00
Interest & Finance Charges	2 555.00	2 544.00	2 406.00	2 108.00	2 323.00	3 111.00	2 534.00	3 113.00
Profit before Tax	8 964.00	1 712.00	11 439.00	22 183.00	36 036.00	13 005.00	9 613.00	1 630.00
Taxation	2 872.00	1 881.00	2 453.00	7 065.00	3 460.00	2 484.00	1 676.00	1 174.00
Current	2 107.00	1 763.00	1 492.00	1 043.00	1 252.00	1 049.00	798.00	1 011.00
Deferred	412.00	-113.00	1 287.00	5 100.00	1 781.00	893.00	704.00	-54.00
Other	353.00	231.00	-326.00	922.00	427.00	542.00	174.00	217.00
Profit After Interest and Tax	6 092.00	-169.00	8 986.00	15 118.00	32 576.00	10 521.00	7 937.00	456.00
Earnings Before Interest Tax Depreciation And Amortisati	11 918.00	7 643.00	14 094.00	24 474.00	32 732.00	16 397.00	12 388.00	4 996.00
Interest Paid - Debentures	-	-	-	-	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	60.71%	42.57%	74.62%	191.13%	193.47%	93.70%	75.04%	30.91%
Interest Received	0.86%	0.67%	2.36%	3.66%	2.64%	1.62%	0.15%	5.13%
Total Income	64.20%	46.25%	81.34%	199.20%	199.36%	97.82%	77.22%	38.17%
Total Cost Shown	11.54%	25.79%	6.53%	7.61%	-28.20%	7.66%	12.03%	11.97%
Earnings Before Interest & Tax (EBIT)	53.18%	35.49%	74.81%	191.58%	192.72%	90.16%	65.19%	26.20%
Interest & Finance Charges	11.68%	12.23%	13.00%	16.63%	13.78%	17.41%	13.60%	17.19%
Profit before Tax	40.98%	8.23%	61.81%	174.96%	213.77%	72.76%	51.59%	9.00%
Taxation	13.13%	9.04%	13.26%	55.72%	20.53%	13.90%	8.99%	6.48%
Current	9.63%	8.47%	8.06%	8.23%	7.43%	5.87%	4.28%	5.58%
Deferred	1.88%	-0.54%	6.95%	40.22%	10.57%	5.00%	3.78%	-0.30%
Other	1.61%	1.11%	-1.76%	7.27%	2.53%	3.03%	0.93%	1.20%
Profit After Interest and Tax	27.85%	-0.81%	48.56%	119.24%	193.25%	58.86%	42.59%	2.52%
Earnings Before Interest Tax Depreciation And Amortisati	54.49%	36.74%	76.16%	193.03%	194.17%	91.74%	66.48%	27.59%
Interest Paid - Debentures	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.11: Octodec financial statements

Balance Sheet Published (000)	2010/08/31	2009/08/31	2008/08/31	2007/08/31	2006/08/31	2005/08/31	2004/08/31	2003/08/31
Total Assets	2 822 410.00	2 476 612.00	2 417 657.00	2 175 426.00	1 712 413.00	1 257 328.00	797 868.00	694 439.00
Fixed Assets	2 289 952.00	2 055 114.00	2 089 448.00	1 901 727.00	1 533 921.00	1 162 115.00	751 197.00	660 639.00
Current Assets	45 787.00	48 507.00	20 023.00	22 520.00	16 890.00	17 646.00	9 929.00	7 940.00
Non Current Assets	-	-	-	-	-	-	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	486 671.00	372 991.00	308 186.00	251 179.00	161 602.00	77 567.00	36 742.00	25 860.00
Total Assets (Including Intangible Assets)	2 822 410.00	2 476 612.00	2 417 657.00	2 175 426.00	1 712 413.00	1 257 328.00	797 868.00	694 439.00
Current Liabilities	-304 296.00	-203 946.00	-115 861.00	-102 760.00	-77 464.00	-67 027.00	-49 634.00	-39 345.00
Employment Of Capital	2 518 114.00	2 272 666.00	2 301 796.00	2 072 666.00	1 634 949.00	1 190 301.00	748 234.00	655 094.00
Total Shareholders Interest	1 141 086.00	1 006 889.00	994 081.00	906 500.00	669 426.00	404 173.00	185 286.00	112 181.00
Debenture loan	373 693.00	384 362.00	395 031.00	406 105.00	211 899.00			
Other long term	754 635.00	659 632.00	640 105.00	495 543.00	557 253.00	663 649.00	540 735.00	535 227.00
Long Term Liabilities	1 128 328.00	1 043 994.00	1 035 136.00	901 648.00	769 152.00	663 649.00	540 735.00	535 227.00
Deferred Tax	248 700.00	221 783.00	272 579.00	264 518.00	196 371.00	122 479.00	22 213.00	7 686.00
Total Liabilities	1 681 324.00	1 469 723.00	1 423 576.00	1 268 926.00	1 042 987.00	786 128.00	562 948.00	542 913.00
Capital Employed	2 518 114.00	2 272 666.00	2 301 796.00	2 072 666.00	1 634 949.00	1 190 301.00	748 234.00	655 094.00
Total Assets	112.08%	108.97%	105.03%	104.96%	104.74%	105.63%	106.63%	106.01%
Fixed Assets	90.94%	90.43%	90.77%	91.75%	93.82%	97.63%	100.40%	100.85%
Current Assets	1.82%	2.13%	0.87%	1.09%	1.03%	1.48%	1.33%	1.21%
Non Current Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	19.33%	16.41%	13.39%	12.12%	9.88%	6.52%	4.91%	3.95%
Total Assets (Including Intangible Assets)	112.08%	108.97%	105.03%	104.96%	104.74%	105.63%	106.63%	106.01%
Current Liabilities	-12.08%	-8.97%	-5.03%	-4.96%	-4.74%	-5.63%	-6.63%	-6.01%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	45.32%	44.30%	43.19%	43.74%	40.94%	33.96%	24.76%	17.12%
Debenture loan	14.84%	16.91%	17.16%	19.59%	12.96%	0.00%	0.00%	0.00%
Other long term	29.97%	29.02%	27.81%	23.91%	34.08%	55.75%	72.27%	81.70%
Deferred Tax	9.88%	9.76%	11.84%	12.76%	12.01%	10.29%	2.97%	1.17%
Total Liabilities	66.77%	64.67%	61.85%	61.22%	63.79%	66.04%	75.24%	82.88%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/08/31	2009/08/31	2008/08/31	2007/08/31	2006/08/31	2005/08/31	2004/08/31	2003/08/31
Turnover	333 680.00	321 824.00	272 954.00	223 035.00	182 199.00	124 996.00	112 399.00	105 957.00
Operating Profit	264 515.00	98 665.00	253 189.00	385 521.00	372 564.00	369 898.00	160 551.00	127 072.00
Interest Received	8 419.00	10 694.00	22 778.00	13 044.00	8 410.00	5 276.00	8 054.00	4 197.00
Total Income	292 575.00	122 621.00	278 183.00	399 822.00	384 084.00	375 189.00	168 616.00	131 277.00
Total Cost Shown	8 816.00	6 080.00	5 473.00	4 514.00	4 336.00	3 698.00	3 449.00	2 888.00
Earnings Before Interest & Tax (EBIT)	283 759.00	116 541.00	272 710.00	395 308.00	379 748.00	371 491.00	165 167.00	128 389.00
Interest & Finance Charges	200 527.00	194 665.00	175 567.00	150 236.00	116 073.00	87 092.00	83 878.00	75 263.00
Profit before Tax	83 232.00	-78 124.00	97 143.00	245 072.00	263 675.00	284 399.00	81 289.00	53 126.00
Taxation	18 986.00	-29 475.00	13 072.00	63 535.00	72 960.00	78 266.00	14 402.00	4 122.00
Current	512.00	667.00	1 549.00	1 547.00	1 235.00	1 279.00	945.00	378.00
Deferred	18 474.00	-30 142.00	-	8.00	15.00	-14.00	24.00	16.00
Other	-	-	11 523.00	61 980.00	71 710.00	77 001.00	13 433.00	3 728.00
Profit After Interest and Tax	64 246.00	-48 649.00	84 071.00	181 537.00	190 715.00	206 133.00	66 887.00	49 004.00
Earnings Before Interest Tax Depreciation And Amortisati	286 924.00	117 848.00	273 431.00	395 964.00	380 389.00	372 041.00	165 677.00	128 663.00
Interest Paid - Debentures	105 462.00	103 864.00	97 869.00	85 737.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	79.27%	30.66%	92.76%	172.85%	204.48%	295.93%	142.84%	119.93%
Interest Received	2.52%	3.32%	8.34%	5.85%	4.62%	4.22%	7.17%	3.96%
Total Income	87.68%	38.10%	101.92%	179.26%	210.80%	300.16%	150.02%	123.90%
Total Cost Shown	2.64%	1.89%	2.01%	2.02%	2.38%	2.96%	3.07%	2.73%
Earnings Before Interest & Tax (EBIT)	85.04%	36.21%	99.91%	177.24%	208.42%	297.20%	146.95%	121.17%
Interest & Finance Charges	60.10%	60.49%	64.32%	67.36%	63.71%	69.68%	74.63%	71.03%
Profit before Tax	24.94%	-24.28%	35.59%	109.88%	144.72%	227.53%	72.32%	50.14%
Taxation	5.69%	-9.16%	4.79%	28.49%	40.04%	62.61%	12.81%	3.89%
Current	0.15%	0.21%	0.57%	0.69%	0.68%	1.02%	0.84%	0.36%
Deferred	5.54%	-9.37%	0.00%	0.00%	0.01%	-0.01%	0.02%	0.02%
Other	0.00%	0.00%	4.22%	27.79%	39.36%	61.60%	11.95%	3.52%
Profit After Interest and Tax	19.25%	-15.12%	30.80%	81.39%	104.67%	164.91%	59.51%	46.25%
Earnings Before Interest Tax Depreciation And Amortisati	85.99%	36.62%	100.17%	177.53%	208.78%	297.64%	147.40%	121.43%
Interest Paid - Debentures	31.61%	32.27%	35.86%	38.44%	0.00%	0.00%	0.00%	0.00%

Annexure 1.12: Orion financial statements

Balance Sheet Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Total Assets	660 350.00	592 944.00	323 090.00	252 575.00	230 022.00	101 100.00	139 344.00	88 438.00
Fixed Assets	632 508.00	569 106.00	271 260.00	188 782.00	175 596.00	90 836.00	128 114.00	9 315.00
Current Assets	20 603.00	15 088.00	7 665.00	58 558.00	48 925.00	1 748.00	3 881.00	17 836.00
Non Current Assets	7 239.00	4 522.00	44 165.00	5 235.00	809.00	1 138.00	5 692.00	148.00
Intangible Assets	-	-	-	-	-	-	-	16 625.00
Investments & Loans	-	4 228.00	-	-	4 692.00	7 378.00	1 657.00	61 139.00
Total Assets (Including Intangible Assets)	660 350.00	592 944.00	323 090.00	252 575.00	230 022.00	101 100.00	139 344.00	105 063.00
Current Liabilities	-38 859.00	-15 198.00	-10 273.00	-76 294.00	-31 248.00	-8 131.00	-9 266.00	-28 173.00
Employment Of Capital	621 491.00	577 746.00	312 817.00	176 281.00	198 774.00	92 969.00	130 078.00	76 890.00
Total Shareholders Interest	296 478.00	271 124.00	61 627.00	38 316.00	17 737.00	-3 906.00	-10 802.00	2 688.00
Debenture loan								
Other long term	245 291.00	266 147.00	185 810.00	121 175.00	170 628.00	92 845.00	140 880.00	74 202.00
Long Term Liabilities	245 291.00	266 147.00	185 810.00	121 175.00	170 628.00	92 845.00	140 880.00	74 202.00
Deferred Tax	79 722.00	40 475.00	22 643.00	16 790.00	10 409.00	4 030.00	-	-
Total Liabilities	363 872.00	321 820.00	261 463.00	214 259.00	212 285.00	96 875.00	140 880.00	74 202.00
Capital Employed	621 491.00	577 746.00	312 817.00	176 281.00	198 774.00	92 969.00	130 078.00	76 890.00
Total Assets	106.25%	102.63%	103.28%	143.28%	115.72%	108.75%	107.12%	115.02%
Fixed Assets	101.77%	98.50%	86.72%	107.09%	88.34%	97.71%	98.49%	12.11%
Current Assets	3.32%	2.61%	2.45%	33.22%	24.61%	1.88%	2.98%	23.20%
Non Current Assets	1.16%	0.78%	14.12%	2.97%	0.41%	1.22%	4.38%	0.19%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	21.62%
Investments & Loans	0.00%	0.73%	0.00%	0.00%	2.36%	7.94%	1.27%	79.51%
Total Assets (Including Intangible Assets)	106.25%	102.63%	103.28%	143.28%	115.72%	108.75%	107.12%	136.64%
Current Liabilities	-6.25%	-2.63%	-3.28%	-43.28%	-15.72%	-8.75%	-7.12%	-36.64%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	47.70%	46.93%	19.70%	21.74%	8.92%	-4.20%	-8.30%	3.50%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	39.47%	46.07%	59.40%	68.74%	85.84%	99.87%	108.30%	96.50%
Deferred Tax	12.83%	7.01%	7.24%	9.52%	5.24%	4.33%	0.00%	0.00%
Total Liabilities	58.55%	55.70%	83.58%	121.54%	106.80%	104.20%	108.30%	96.50%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Turnover	75 080.00	47 429.00	23 810.00	21 456.00	16 131.00	22 401.00	20 026.00	11 115.00
Operating Profit	90 932.00	198 522.00	56 000.00	41 490.00	41 522.00	30 656.00	-8 050.00	11 304.00
Interest Received	2 559.00	896.00	329.00	408.00	209.00	115.00	2 917.00	142.00
Total Income	93 491.00	199 418.00	56 329.00	41 898.00	41 731.00	30 771.00	-5 133.00	11 446.00
Total Cost Shown	2 196.00	2 004.00	1 538.00	1 813.00	2 423.00	2 334.00	2 807.00	5 528.00
Earnings Before Interest & Tax (EBIT)	91 295.00	197 354.00	54 791.00	40 085.00	39 308.00	28 437.00	-7 940.00	5 918.00
Interest & Finance Charges	27 291.00	23 814.00	17 320.00	11 960.00	11 660.00	15 753.00	13 563.00	10 059.00
Profit before Tax	64 004.00	173 600.00	37 471.00	28 125.00	27 648.00	12 684.00	-21 503.00	-4 141.00
Taxation	11 340.00	18 530.00	6 028.00	7 264.00	6 653.00	5 708.00	-5 400.00	-19.00
Current	2 165.00	-	896.00	-	-	-	144.00	-19.00
Deferred	8 985.00	18 530.00	5 710.00	7 264.00	6 653.00	5 708.00	-5 544.00	-
Other	190.00	-	-578.00	-	-	-	-	-
Profit After Interest and Tax	52 664.00	155 070.00	31 443.00	20 861.00	20 995.00	6 976.00	-16 103.00	-4 122.00
Earnings Before Interest Tax Depreciation And Amortisati	91 535.00	197 428.00	54 812.00	40 102.00	39 636.00	28 600.00	-6 415.00	9 895.00
Interest Paid - Debentures	4 471.00	-	-	-	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	121.11%	418.57%	235.20%	193.37%	257.40%	136.85%	-40.20%	101.70%
Interest Received	3.41%	1.89%	1.38%	1.90%	1.30%	0.51%	14.57%	1.28%
Total Income	124.52%	420.46%	236.58%	195.27%	258.70%	137.36%	-25.63%	102.98%
Total Cost Shown	2.92%	4.23%	6.46%	8.45%	15.02%	10.42%	14.02%	49.73%
Earnings Before Interest & Tax (EBIT)	121.60%	416.10%	230.12%	186.82%	243.68%	126.95%	-39.65%	53.24%
Interest & Finance Charges	36.35%	50.21%	72.74%	55.74%	72.28%	70.32%	67.73%	90.50%
Profit before Tax	85.25%	366.02%	157.38%	131.08%	171.40%	56.62%	-107.38%	-37.26%
Taxation	15.10%	39.07%	25.32%	33.86%	41.24%	25.48%	-26.96%	-0.17%
Current	2.88%	0.00%	3.76%	0.00%	0.00%	0.00%	0.72%	-0.17%
Deferred	11.97%	39.07%	23.98%	33.86%	41.24%	25.48%	-27.68%	0.00%
Other	0.25%	0.00%	-2.43%	0.00%	0.00%	0.00%	0.00%	0.00%
Profit After Interest and Tax	70.14%	326.95%	132.06%	97.23%	130.15%	31.14%	-80.41%	-37.09%
Earnings Before Interest Tax Depreciation And Amortisati	121.92%	416.26%	230.21%	186.90%	245.71%	127.67%	-32.03%	89.02%
Interest Paid - Debentures	5.95%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.13: Pangbourne financial statements

Balance Sheet Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Total Assets	12 211 460.00	12 220 895.00	13 793 338.00	5 969 859.00	4 182 593.00	2 888 676.00	1 802 692.00	1 615 289.00
Fixed Assets	10 996 689.00	9 905 306.00	11 375 759.00	4 204 020.00	2 736 917.00	2 134 751.00	1 108 677.00	1 207 172.00
Current Assets	502 291.00	1 283 618.00	1 634 015.00	455 260.00	613 295.00	205 370.00	199 312.00	253 983.00
Non Current Assets	-	-	-	71 925.00	1 355.00	7 140.00	14 994.00	13 119.00
Intangible Assets	-	-	-	69 617.00	1 628.00	13 072.00	-9 644.00	-37 776.00
Investments & Loans	712 480.00	1 031 971.00	783 564.00	1 238 654.00	831 026.00	541 415.00	479 709.00	141 015.00
Total Assets (Including Intangible Assets)	12 211 460.00	-	-	-	-	-	-	-
Current Liabilities	-1 462 885.00	-1 486 712.00	-2 095 987.00	-494 480.00	-253 068.00	-169 147.00	-151 602.00	-155 031.00
Employment Of Capital	10 748 575.00	10 734 183.00	11 697 351.00	5 797 968.00	4 077 008.00	2 732 601.00	1 641 446.00	1 422 482.00
Total Shareholders Interest	4 737 736.00	4 351 518.00	4 656 024.00	2 098 147.00	1 476 948.00	557 632.00	247 192.00	157 811.00
Debenture loan	1 824 821.00	1 815 011.00	1 733 246.00	937 405.00				
Other long term	3 286 043.00	3 855 544.00	4 450 674.00	2 607 411.00	2 516 246.00	2 120 682.00	1 337 622.00	1 202 788.00
Long Term Liabilities	5 110 864.00	5 670 555.00	6 183 920.00	3 544 816.00	2 516 246.00	2 120 682.00	1 337 622.00	1 202 788.00
Deferred Tax	777 783.00	712 110.00	857 407.00	155 005.00	83 814.00	54 287.00	56 632.00	61 883.00
Total Liabilities	6 010 839.00	6 382 665.00	7 041 327.00	3 699 821.00	2 600 060.00	2 174 969.00	1 394 254.00	1 264 671.00
Capital Employed	10 748 575.00	10 734 183.00	11 697 351.00	5 797 968.00	4 077 008.00	2 732 601.00	1 641 446.00	1 422 482.00
Total Assets	113.61%	113.85%	117.92%	102.96%	102.59%	105.71%	109.82%	113.55%
Fixed Assets	102.31%	92.28%	97.25%	72.51%	67.13%	78.12%	67.54%	84.86%
Current Assets	4.67%	11.96%	13.97%	7.85%	15.04%	7.52%	12.14%	17.85%
Non Current Assets	0.00%	0.00%	0.00%	1.24%	0.03%	0.26%	0.91%	0.92%
Intangible Assets	0.00%	0.00%	0.00%	1.20%	0.04%	0.48%	-0.59%	-2.66%
Investments & Loans	6.63%	9.61%	6.70%	21.36%	20.38%	19.81%	29.22%	9.91%
Total Assets (Including Intangible Assets)	113.61%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Current Liabilities	-13.61%	-13.85%	-17.92%	-8.53%	-6.21%	-6.19%	-9.24%	-10.90%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	44.08%	40.54%	39.80%	36.19%	36.23%	20.41%	15.06%	11.09%
Debenture loan	16.98%	16.91%	14.82%	16.17%	0.00%	0.00%	0.00%	0.00%
Other long term	30.57%	35.92%	38.05%	44.97%	61.72%	77.61%	81.49%	84.56%
Deferred Tax	7.24%	6.63%	7.33%	2.67%	2.06%	1.99%	3.45%	4.35%
Total Liabilities	55.92%	59.46%	60.20%	63.81%	63.77%	79.59%	84.94%	88.91%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Turnover	1 460 303.00	1 293 099.00	639 165.00	605 700.00	412 436.00	296 633.00	242 505.00	238 514.00
Operating Profit	1 404 974.00	590 450.00	1 823 262.00	799 616.00	468 463.00	471 503.00	283 083.00	260 983.00
Interest Received	54 374.00	91 855.00	172 556.00	32 859.00	14 395.00	12 350.00	13 269.00	8 081.00
Total Income	1 459 348.00	682 305.00	1 995 818.00	832 475.00	482 858.00	483 853.00	296 352.00	269 064.00
Total Cost Shown	11 963.00	11 900.00	54 969.00	-24 552.00	-203 165.00	74 746.00	-18 122.00	-16 608.00
Earnings Before Interest & Tax (EBIT)	1 447 385.00	670 405.00	1 940 849.00	811 747.00	467 815.00	467 900.00	284 070.00	260 778.00
Interest & Finance Charges	1 016 101.00	1 018 440.00	634 868.00	465 818.00	329 503.00	180 298.00	225 617.00	136 345.00
Profit before Tax	431 284.00	-348 035.00	1 305 981.00	391 209.00	356 520.00	228 809.00	88 857.00	149 327.00
Taxation	103 996.00	-140 981.00	267 092.00	156 364.00	66 042.00	35 744.00	16 202.00	28 461.00
Current	131.00	-11 478.00	6 290.00	6 769.00	2 162.00	374.00	11.00	187.00
Deferred	65 673.00	-128 310.00	253 576.00	63 095.00	30 478.00	9 685.00	-7 345.00	6 379.00
Other	38 192.00	-1 193.00	7 226.00	86 500.00	33 402.00	25 685.00	23 536.00	21 895.00
Profit After Interest and Tax	327 288.00	-207 054.00	1 038 889.00	234 845.00	290 478.00	193 065.00	72 655.00	120 866.00
Earnings Before Interest Tax Depreciation And Amortisati	1 438 147.00	670 405.00	1 836 861.00	823 557.00	475 304.00	475 642.00	281 204.00	238 310.00
Interest Paid - Debentures	594 902.00	532 394.00	398 342.00	265 591.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	96.21%	45.66%	285.26%	132.02%	113.58%	158.95%	116.73%	109.42%
Interest Received	3.72%	7.10%	27.00%	5.42%	3.49%	4.16%	5.47%	3.39%
Total Income	99.93%	52.77%	312.25%	137.44%	117.07%	163.12%	122.20%	112.81%
Total Cost Shown	0.82%	0.92%	8.60%	-4.05%	-49.26%	25.20%	-7.47%	-6.96%
Earnings Before Interest & Tax (EBIT)	99.12%	51.84%	303.65%	134.02%	113.43%	157.74%	117.14%	109.33%
Interest & Finance Charges	69.58%	78.76%	99.33%	76.91%	79.89%	60.78%	93.04%	57.16%
Profit before Tax	29.53%	-26.91%	204.33%	64.59%	86.44%	77.14%	36.64%	62.61%
Taxation	7.12%	-10.90%	41.79%	25.82%	16.01%	12.05%	6.68%	11.93%
Current	0.01%	-0.89%	0.98%	1.12%	0.52%	0.13%	0.00%	0.08%
Deferred	4.50%	-9.92%	39.67%	10.42%	7.39%	3.26%	-3.03%	2.67%
Other	2.62%	-0.09%	1.13%	14.28%	8.10%	8.66%	9.71%	9.18%
Profit After Interest and Tax	22.41%	-16.01%	162.54%	38.77%	70.43%	65.09%	29.96%	50.67%
Earnings Before Interest Tax Depreciation And Amortisati	98.48%	51.84%	287.38%	135.97%	115.24%	160.35%	115.96%	99.91%
Interest Paid - Debentures	40.74%	41.17%	62.32%	43.85%	0.00%	0.00%	0.00%	0.00%

Annexure 1.14: Premium financial statements

Balance Sheet Published (000)	2010/02/28	2009/02/28	2008/02/29	2007/02/28	2006/02/28	2005/02/28	2004/02/29	2003/02/28
Total Assets	3 332 164.00	2 850 584.00	2 551 812.00	1 904 624.00	1 319 853.00	894 648.00	696 615.00	562 351.00
Fixed Assets	3 066 575.00	2 629 258.00	2 370 029.00	1 793 856.00	1 247 002.00	853 078.00	668 369.00	545 043.00
Current Assets	26 667.00	23 425.00	21 073.00	19 932.00	9 820.00	7 845.00	7 761.00	6 081.00
Non Current Assets	-	-	-	-	-	-	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	238 922.00	197 901.00	160 710.00	90 836.00	63 031.00	33 725.00	20 485.00	11 227.00
Total Assets (Including Intangible Assets)	3 332 164.00	-	2 551 812.00	1 904 624.00	1 319 853.00	894 648.00	696 615.00	562 351.00
Current Liabilities	-522 468.00	-299 429.00	-141 069.00	-95 687.00	-82 785.00	-75 199.00	-48 392.00	-51 197.00
Employment Of Capital	2 809 696.00	2 551 155.00	2 410 743.00	1 808 937.00	1 237 068.00	819 449.00	648 223.00	511 154.00
Total Shareholders Interest	1 310 084.00	1 122 136.00	932 762.00	722 340.00	468 066.00	269 769.00	140 000.00	82 343.00
Debenture loan	398 069.00	407 680.00	417 966.00					
Other long term	728 733.00	697 203.00	765 465.00	844 748.00	616 619.00	513 605.00	493 425.00	424 422.00
Long Term Liabilities	1 126 802.00	1 104 883.00	1 183 431.00	844 748.00	616 619.00	513 605.00	493 425.00	424 422.00
Deferred Tax	372 810.00	324 136.00	294 550.00	241 849.00	152 383.00	36 075.00	14 798.00	4 389.00
Total Liabilities	1 499 612.00	1 429 019.00	1 477 981.00	1 086 597.00	769 002.00	549 680.00	508 223.00	428 811.00
Capital Employed	2 809 696.00	2 551 155.00	2 410 743.00	1 808 937.00	1 237 068.00	819 449.00	648 223.00	511 154.00
Total Assets	118.60%	111.74%	105.85%	105.29%	106.69%	109.18%	107.47%	110.02%
Fixed Assets	109.14%	103.06%	98.31%	99.17%	100.80%	104.10%	103.11%	106.63%
Current Assets	0.95%	0.92%	0.87%	1.10%	0.79%	0.96%	1.20%	1.19%
Non Current Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	8.50%	7.76%	6.67%	5.02%	5.10%	4.12%	3.16%	2.20%
Total Assets (Including Intangible Assets)	118.60%	0.00%	105.85%	105.29%	106.69%	109.18%	107.47%	110.02%
Current Liabilities	-18.60%	-11.74%	-5.85%	-5.29%	-6.69%	-9.18%	-7.47%	-10.02%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	46.63%	43.99%	38.69%	39.93%	37.84%	32.92%	21.60%	16.11%
Debenture loan	14.17%	15.98%	17.34%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	25.94%	27.33%	31.75%	46.70%	49.85%	62.68%	76.12%	83.03%
Deferred Tax	13.27%	12.71%	12.22%	13.37%	12.32%	4.40%	2.28%	0.86%
Total Liabilities	53.37%	56.01%	61.31%	60.07%	62.16%	67.08%	78.40%	83.89%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/02/28	2009/02/28	2008/02/29	2007/02/28	2006/02/28	2005/02/28	2004/02/29	2003/02/28
Turnover	407 720.00	344 743.00	274 249.00	223 058.00	147 586.00	131 432.00	109 844.00	96 799.00
Operating Profit	428 076.00	400 277.00	393 232.00	447 365.00	388 454.00	221 197.00	134 058.00	93 909.00
Interest Received	9 525.00	14 867.00	8 759.00	3 876.00	2 138.00	4 012.00	3 170.00	1 757.00
Total Income	437 601.00	415 144.00	405 615.00	451 241.00	392 564.00	225 209.00	137 228.00	95 666.00
Total Cost Shown	4 151.00	4 487.00	2 727.00	1 943.00	1 079.00	1 103.00	1 033.00	1 131.00
Earnings Before Interest & Tax (EBIT)	433 450.00	410 657.00	402 888.00	449 298.00	391 485.00	224 106.00	136 195.00	94 535.00
Interest & Finance Charges	240 021.00	212 826.00	172 845.00	134 915.00	103 513.00	91 177.00	75 367.00	64 184.00
Profit before Tax	193 429.00	197 831.00	230 043.00	314 383.00	287 972.00	132 929.00	60 828.00	30 351.00
Taxation	48 674.00	50 607.00	52 679.00	89 469.00	84 164.00	21 306.00	10 432.00	4 406.00
Current	-	-	-	-	232.00	-	-	-
Deferred	48 674.00	50 607.00	52 700.00	89 469.00	83 892.00	21 277.00	10 409.00	4 389.00
Other	-	-	-21.00	-	40.00	29.00	23.00	17.00
Profit After Interest and Tax	144 755.00	147 224.00	177 364.00	224 914.00	203 808.00	111 623.00	50 396.00	25 945.00
Earnings Before Interest Tax Depreciation And Amortisati	435 500.00	412 288.00	403 952.00	450 148.00	391 985.00	224 647.00	136 797.00	95 282.00
Interest Paid - Debentures	134 222.00	123 120.00	109 393.00	81 945.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	104.99%	116.11%	143.39%	200.56%	263.21%	168.30%	122.04%	97.01%
Interest Received	2.34%	4.31%	3.19%	1.74%	1.45%	3.05%	2.89%	1.82%
Total Income	107.33%	120.42%	147.90%	202.30%	265.99%	171.35%	124.93%	98.83%
Total Cost Shown	1.02%	1.30%	0.99%	0.87%	0.73%	0.84%	0.94%	1.17%
Earnings Before Interest & Tax (EBIT)	106.31%	119.12%	146.91%	201.43%	265.26%	170.51%	123.99%	97.66%
Interest & Finance Charges	58.87%	61.73%	63.02%	60.48%	70.14%	69.37%	68.61%	66.31%
Profit before Tax	47.44%	57.39%	83.88%	140.94%	195.12%	101.14%	55.38%	31.35%
Taxation	11.94%	14.68%	19.21%	40.11%	57.03%	16.21%	9.50%	4.55%
Current	0.00%	0.00%	0.00%	0.00%	0.16%	0.00%	0.00%	0.00%
Deferred	11.94%	14.68%	19.22%	40.11%	56.84%	16.19%	9.48%	4.53%
Other	0.00%	0.00%	-0.01%	0.00%	0.03%	0.02%	0.02%	0.02%
Profit After Interest and Tax	35.50%	42.71%	64.67%	100.83%	138.09%	84.93%	45.88%	26.80%
Earnings Before Interest Tax Depreciation And Amortisati	106.81%	119.59%	147.29%	201.81%	265.60%	170.92%	124.54%	98.43%
Interest Paid - Debentures	32.92%	35.71%	39.89%	36.74%	0.00%	0.00%	0.00%	0.00%

Annexure 1.15: Putprop financial statements

Balance Sheet Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Total Assets	251 193.00	215 943.00	187 990.00	173 605.00	152 637.00	145 703.00	121 392.00	121 282.00
Fixed Assets	229 127.00	195 432.00	132 674.00	111 522.00	92 721.00	82 109.00	98 086.00	90 900.00
Current Assets	11 969.00	10 808.00	46 789.00	53 985.00	46 716.00	63 594.00	23 306.00	30 382.00
Non Current Assets	-	-	-	-	-	-	-	-
Intangible Assets	-	-	-	-	-	-	-	-
Investments & Loans	10 097.00	9 703.00	8 527.00	8 098.00	13 200.00	-	-	-
Total Assets (Including Intangible Assets)	251 193.00	215 943.00	187 990.00	173 605.00	152 637.00	145 703.00	121 392.00	121 282.00
Current Liabilities	-2 238.00	-1 809.00	-3 227.00	-14 595.00	-2 849.00	-1 493.00	-3 281.00	-4 617.00
Employment Of Capital	248 955.00	214 134.00	184 763.00	159 010.00	149 788.00	144 210.00	118 111.00	116 665.00
Total Shareholders Interest	236 136.00	204 500.00	178 388.00	155 975.00	144 929.00	138 384.00	117 555.00	116 019.00
Debenture loan								
Other long term	-	-	-	-	-	-	-	-
Long Term Liabilities	-	-	-	-	-	-	-	-
Deferred Tax	12 819.00	9 634.00	6 375.00	3 035.00	4 859.00	5 826.00	556.00	646.00
Total Liabilities	12 819.00	9 634.00	6 375.00	3 035.00	4 859.00	5 826.00	556.00	646.00
Capital Employed	248 955.00	214 134.00	184 763.00	159 010.00	149 788.00	144 210.00	118 111.00	116 665.00
Total Assets	100.90%	100.84%	101.75%	109.18%	101.90%	101.04%	102.78%	103.96%
Fixed Assets	92.04%	91.27%	71.81%	70.14%	61.90%	56.94%	83.05%	77.92%
Current Assets	4.81%	5.05%	25.32%	33.95%	31.19%	44.10%	19.73%	26.04%
Non Current Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	4.06%	4.53%	4.62%	5.09%	8.81%	0.00%	0.00%	0.00%
Total Assets (Including Intangible Assets)	100.90%	100.84%	101.75%	109.18%	101.90%	101.04%	102.78%	103.96%
Current Liabilities	-0.90%	-0.84%	-1.75%	-9.18%	-1.90%	-1.04%	-2.78%	-3.96%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	94.85%	95.50%	96.55%	98.09%	96.76%	95.96%	99.53%	99.45%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Deferred Tax	5.15%	4.50%	3.45%	1.91%	3.24%	4.04%	0.47%	0.55%
Total Liabilities	5.15%	4.50%	3.45%	1.91%	3.24%	4.04%	0.47%	0.55%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Turnover	35 462.00	33 141.00	28 902.00	17 249.00	22 826.00	23 911.00	28 404.00	29 084.00
Operating Profit	51 124.00	45 952.00	39 946.00	28 122.00	27 112.00	29 370.00	26 880.00	21 900.00
Interest Received	398.00	1 642.00	4 317.00	3 332.00	1 882.00	1 242.00	2 562.00	2 476.00
Total Income	51 522.00	47 594.00	44 263.00	31 454.00	28 994.00	30 612.00	29 442.00	24 376.00
Total Cost Shown	1 738.00	1 197.00	931.00	904.00	749.00	525.00	588.00	603.00
Earnings Before Interest & Tax (EBIT)	49 784.00	46 397.00	43 332.00	30 550.00	28 245.00	30 087.00	28 854.00	23 773.00
Interest & Finance Charges	-	-	-	-	-	3.00	1.00	61.00
Profit before Tax	49 784.00	46 397.00	43 332.00	30 550.00	28 245.00	30 084.00	28 853.00	23 712.00
Taxation	11 814.00	11 071.00	10 840.00	9 426.00	7 711.00	8 451.00	11 481.00	11 684.00
Current	7 998.00	6 889.00	6 538.00	9 991.00	7 637.00	7 638.00	9 325.00	9 385.00
Deferred	3 185.00	3 259.00	3 340.00	-1 825.00	-545.00	-1 172.00	-90.00	24.00
Other	631.00	923.00	962.00	1 260.00	619.00	1 985.00	2 246.00	2 275.00
Profit After Interest and Tax	37 970.00	35 326.00	32 492.00	21 124.00	20 534.00	21 633.00	17 372.00	12 028.00
Earnings Before Interest Tax Depreciation And Amortisati	49 814.00	46 427.00	43 362.00	30 567.00	28 260.00	30 092.00	28 854.00	23 773.00
Interest Paid - Debentures	-	-	-	-	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	144.17%	138.66%	138.21%	163.04%	118.78%	122.83%	94.63%	75.30%
Interest Received	1.12%	4.95%	14.94%	19.32%	8.24%	5.19%	9.02%	8.51%
Total Income	145.29%	143.61%	153.15%	182.35%	127.02%	128.02%	103.65%	83.81%
Total Cost Shown	4.90%	3.61%	3.22%	5.24%	3.28%	2.20%	2.07%	2.07%
Earnings Before Interest & Tax (EBIT)	140.39%	140.00%	149.93%	177.11%	123.74%	125.83%	101.58%	81.74%
Interest & Finance Charges	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.21%
Profit before Tax	140.39%	140.00%	149.93%	177.11%	123.74%	125.82%	101.58%	81.53%
Taxation	33.31%	33.41%	37.51%	54.65%	33.78%	35.34%	40.42%	40.17%
Current	22.55%	20.79%	22.62%	57.92%	33.46%	31.94%	32.83%	32.27%
Deferred	8.98%	9.83%	11.56%	-10.58%	-2.39%	-4.90%	-0.32%	0.08%
Other	1.78%	2.79%	3.33%	7.30%	2.71%	8.30%	7.91%	7.82%
Profit After Interest and Tax	107.07%	106.59%	112.42%	122.47%	89.96%	90.47%	61.16%	41.36%
Earnings Before Interest Tax Depreciation And Amortisati	140.47%	140.09%	150.03%	177.21%	123.81%	125.85%	101.58%	81.74%
Interest Paid - Debentures	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.16: Redefine financial statements

Balance Sheet Published (000)	2010/08/31	2009/08/31	2008/08/31	2007/08/31	2006/08/31	2005/08/31	2004/08/31	2003/08/31
Total Assets	30 289 312.00	22 684 649.00	10 717 411.00	9 834 488.00	6 102 751.00	4 006 001.00	2 891 450.00	2 525 307.00
Fixed Assets	21 861 787.00	18 265 845.00	6 005 116.00	5 051 512.00	2 513 337.00	2 089 833.00	1 345 043.00	1 139 256.00
Current Assets	1 497 974.00	640 129.00	574 134.00	528 231.00	141 584.00	67 432.00	196 936.00	76 729.00
Non Current Assets	372 708.00	209 240.00	19 865.00	-	-	-	-	-
Intangible Assets	4 682 809.00	3 258 326.00	-	-	-	-	-	-
Investments & Loans	6 556 843.00	3 569 435.00	4 118 296.00	4 254 745.00	3 447 830.00	1 848 736.00	1 349 471.00	1 309 322.00
Total Assets (Including Intangible Assets)	34 972 121.00	25 942 975.00	10 717 411.00	9 834 488.00	6 102 751.00	-	-	-
Current Liabilities	-3 080 022.00	-705 797.00	-340 927.00	-286 285.00	-137 243.00	-102 445.00	-68 465.00	-62 732.00
Employment Of Capital	31 892 099.00	25 237 178.00	10 376 484.00	9 548 203.00	5 965 508.00	3 903 556.00	2 822 985.00	2 462 575.00
Total Shareholders Interest	15 111 062.00	13 200 268.00	4 404 397.00	4 107 996.00	2 151 170.00	1 316 698.00	460 431.00	251 072.00
Debenture loan	4 831 731.00	4 767 589.80	1 607 689.80	1 463 689.80	1 002 106.80			
Other long term	9 761 968.00	5 460 100.20	3 572 249.20	3 172 488.20	2 458 340.20	2 456 170.00	2 328 111.00	2 211 503.00
Long Term Liabilities	14 593 699.00	10 227 690.00	5 179 939.00	4 636 178.00	3 460 447.00	2 456 170.00	2 328 111.00	2 211 503.00
Deferred Tax	2 178 742.00	1 753 172.00	759 551.00	804 029.00	353 891.00	130 688.00	34 443.00	-
Total Liabilities	19 861 059.00	12 742 707.00	6 313 014.00	5 726 492.00	3 951 581.00	2 586 858.00	2 362 554.00	2 211 503.00
Capital Employed	31 892 099.00	25 237 178.00	10 376 484.00	9 548 203.00	5 965 508.00	3 903 556.00	2 822 985.00	2 462 575.00
Total Assets	94.97%	89.89%	103.29%	103.00%	102.30%	102.62%	102.43%	102.55%
Fixed Assets	68.55%	72.38%	57.87%	52.91%	42.13%	53.54%	47.65%	46.26%
Current Assets	4.70%	2.54%	5.53%	5.53%	2.37%	1.73%	6.98%	3.12%
Non Current Assets	1.17%	0.83%	0.19%	0.00%	0.00%	0.00%	0.00%	0.00%
Intangible Assets	14.68%	12.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investments & Loans	20.56%	14.14%	39.69%	44.56%	57.80%	47.36%	47.80%	53.17%
Total Assets (Including Intangible Assets)	109.66%	102.80%	103.29%	103.00%	102.30%	0.00%	0.00%	0.00%
Current Liabilities	-9.66%	-2.80%	-3.29%	-3.00%	-2.30%	-2.62%	-2.43%	-2.55%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	47.38%	52.30%	42.45%	43.02%	36.06%	33.73%	16.31%	10.20%
Debenture loan	15.15%	18.89%	15.49%	15.33%	16.80%	0.00%	0.00%	0.00%
Other long term	30.61%	21.64%	34.43%	33.23%	41.21%	62.92%	82.47%	89.80%
Deferred Tax	6.83%	6.95%	7.32%	8.42%	5.93%	3.35%	1.22%	0.00%
Total Liabilities	62.28%	50.49%	60.84%	59.97%	66.24%	66.27%	83.69%	89.80%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/08/31	2009/08/31	2008/08/31	2007/08/31	2006/08/31	2005/08/31	2004/08/31	2003/08/31
Turnover	2 657 976.00	770 139.00	566 856.00	488 799.00	320 753.00	290 616.00	238 953.00	197 919.00
Operating Profit	3 817 823.00	539 406.00	540 481.00	1 793 707.00	1 236 104.00	1 063 728.00	517 701.00	343 873.00
Interest Received	283 905.00	71 835.00	51 393.00	18 638.00	8 659.00	4 693.00	3 572.00	6 657.00
Total Income	4 101 728.00	611 241.00	591 874.00	1 812 345.00	1 244 763.00	1 068 421.00	521 273.00	350 530.00
Total Cost Shown	138 014.00	13 520.00	3 055.00	1 645.00	1 222.00	984.00	518.00	546.00
Earnings Before Interest & Tax (EBIT)	3 963 714.00	597 721.00	588 819.00	1 810 700.00	1 243 541.00	1 067 437.00	520 755.00	349 984.00
Interest & Finance Charges	2 620 623.00	1 061 483.00	776 953.00	685 583.00	416 568.00	150 197.00	181 983.00	182 447.00
Profit before Tax	1 343 091.00	-463 762.00	-188 134.00	1 125 117.00	826 973.00	917 240.00	338 772.00	167 537.00
Taxation	161 478.00	-176 949.00	-43 282.00	364 090.00	161 832.00	-28 357.00	-	-
Current	2 202.00	-	-	41 027.00	-	-	-	-
Deferred	161 576.00	-176 949.00	-9 076.00	316 526.00	161 832.00	-28 357.00	-	-
Other	-2 300.00	-	-34 206.00	6 537.00	-	-	-	-
Profit After Interest and Tax	1 181 613.00	-286 813.00	-144 852.00	761 027.00	665 141.00	945 597.00	338 772.00	167 537.00
Earnings Before Interest Tax Depreciation And Amortisati	4 076 179.00	600 769.00	588 819.00	2 400 861.00	1 243 541.00	1 067 437.00	520 755.00	349 984.00
Interest Paid - Debentures	1 777 412.00	711 354.00	495 157.00	415 784.00	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	143.64%	70.04%	95.35%	366.96%	385.38%	366.03%	216.65%	173.74%
Interest Received	10.68%	9.33%	9.07%	3.81%	2.70%	1.61%	1.49%	3.36%
Total Income	154.32%	79.37%	104.41%	370.78%	388.08%	367.64%	218.15%	177.11%
Total Cost Shown	5.19%	1.76%	0.54%	0.34%	0.38%	0.34%	0.22%	0.28%
Earnings Before Interest & Tax (EBIT)	149.13%	77.61%	103.87%	370.44%	387.69%	367.30%	217.93%	176.83%
Interest & Finance Charges	98.59%	137.83%	137.06%	140.26%	129.87%	51.68%	76.16%	92.18%
Profit before Tax	50.53%	-60.22%	-33.19%	230.18%	257.82%	315.62%	141.77%	84.65%
Taxation	6.08%	-22.98%	-7.64%	74.49%	50.45%	-9.76%	0.00%	0.00%
Current	0.08%	0.00%	0.00%	8.39%	0.00%	0.00%	0.00%	0.00%
Deferred	6.08%	-22.98%	-1.60%	64.76%	50.45%	-9.76%	0.00%	0.00%
Other	-0.09%	0.00%	-6.03%	1.34%	0.00%	0.00%	0.00%	0.00%
Profit After Interest and Tax	44.46%	-37.24%	-25.55%	155.69%	207.37%	325.38%	141.77%	84.65%
Earnings Before Interest Tax Depreciation And Amortisati	153.36%	78.01%	103.87%	491.18%	387.69%	367.30%	217.93%	176.83%
Interest Paid - Debentures	66.87%	92.37%	87.35%	85.06%	0.00%	0.00%	0.00%	0.00%

Annexure 1.17: Resilient financial statements

Balance Sheet Published (000)	2009/12/31	2008/12/31	2007/12/31	2006/12/31	2005/12/31	2004/12/31	2003/12/31	2002/12/31
Total Assets	8 203 723.00	6 859 442.00	4 368 933.00	3 003 286.00	2 000 920.00	1 569 239.00	983 814.00	-
Fixed Assets	4 704 303.00	4 990 319.00	2 950 533.00	2 110 406.00	1 127 948.00	965 364.00	883 285.00	-
Current Assets	439 521.00	184 506.00	65 698.00	48 992.00	22 322.00	82 611.00	83 520.00	-
Non Current Assets	-	-	-	-	-	-	-	-
Intangible Assets	26 422.00	26 422.00	-	-	-	-	-	-
Investments & Loans	3 059 899.00	1 684 617.00	1 352 702.00	843 888.00	850 650.00	521 264.00	17 009.00	-
Total Assets (Including Intangible Assets)	8 230 145.00	-	4 368 933.00	3 003 286.00	2 000 920.00	1 569 239.00	983 814.00	-
Current Liabilities	-1 231 892.00	-613 757.00	-211 781.00	-135 178.00	-129 730.00	-82 611.00	-54 816.00	-
Employment Of Capital	7 214 879.00	6 251 055.00	4 157 152.00	2 868 108.00	1 871 190.00	1 486 628.00	928 998.00	-
Total Shareholders Interest	4 290 470.00	3 346 731.00	2 201 332.00	1 332 340.00	841 027.00	315 264.00	63 872.00	-
Debenture loan	1 176 355.20	1 105 406.40	771 417.60	681 019.20	638 222.40			
Other long term	1 305 899.80	1 335 375.60	680 785.40	528 930.80	195 030.60	1 096 024.00	854 312.00	-
Long Term Liabilities	2 482 255.00	2 440 782.00	1 452 203.00	1 209 950.00	833 253.00	1 096 024.00	854 312.00	-
Deferred Tax	376 370.00	435 232.00	446 650.00	325 818.00	196 910.00	75 340.00	10 814.00	-
Total Liabilities	2 924 409.00	2 904 324.00	1 955 820.00	1 535 768.00	1 030 163.00	1 171 364.00	865 126.00	-
Capital Employed	7 214 879.00	6 251 055.00	4 157 152.00	2 868 108.00	1 871 190.00	1 486 628.00	928 998.00	-
Total Assets	113.71%	109.73%	105.09%	104.71%	106.93%	105.56%	105.90%	
Fixed Assets	65.20%	79.83%	70.97%	73.58%	60.28%	64.94%	95.08%	
Current Assets	6.09%	2.95%	1.58%	1.71%	1.19%	5.56%	8.99%	
Non Current Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Intangible Assets	0.37%	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	
Investments & Loans	42.41%	26.95%	32.54%	29.42%	45.46%	35.06%	1.83%	
Total Assets (Including Intangible Assets)	114.07%	0.00%	105.09%	104.71%	106.93%	105.56%	105.90%	
Current Liabilities	-17.07%	-9.82%	-5.09%	-4.71%	-6.93%	-5.56%	-5.90%	
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	
Total Shareholders Interest	59.47%	53.54%	52.95%	46.45%	44.95%	21.21%	6.88%	
Debenture loan	16.30%	17.68%	18.56%	23.74%	34.11%	0.00%	0.00%	
Other long term	18.10%	21.36%	16.38%	18.44%	10.42%	73.73%	91.96%	
Deferred Tax	5.22%	6.96%	10.74%	11.36%	10.52%	5.07%	1.16%	
Total Liabilities	40.53%	46.46%	47.05%	53.55%	55.05%	78.79%	93.12%	
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	

Income Statement Published (000)	2009/12/31	2008/12/31	2007/12/31	2006/12/31	2005/12/31	2004/12/31	2003/12/31	2002/12/31
Turnover	548 460.00	407 317.00	278 583.00	192 151.00	174 261.00	178 616.00	147 373.00	-
Operating Profit	749 345.00	417 735.00	871 138.00	628 669.00	725 498.00	351 515.00	158 480.00	-
Interest Received	94 879.00	93 420.00	22 358.00	13 241.00	9 750.00	-	-	-
Total Income	932 880.00	587 655.00	961 415.00	697 592.00	763 877.00	355 858.00	162 214.00	-
Total Cost Shown	10 951.00	11 479.00	9 498.00	5 999.00	5 683.00	12 397.00	673.00	-
Earnings Before Interest & Tax (EBIT)	921 929.00	568 817.00	951 917.00	691 593.00	758 194.00	343 461.00	161 541.00	-
Interest & Finance Charges	584 316.00	445 470.00	261 404.00	195 489.00	179 327.00	136 391.00	111 882.00	-
Profit before Tax	337 613.00	130 706.00	690 513.00	496 104.00	578 867.00	207 070.00	49 659.00	-
Taxation	20 211.00	-10 463.00	145 859.00	137 540.00	149 526.00	71 690.00	13 266.00	-
Current	51 601.00	955.00	26 105.00	-4 911.00	27 956.00	7 164.00	665.00	-
Deferred	-31 390.00	4 217.00	119 754.00	128 845.00	121 570.00	64 526.00	10 814.00	-
Other	-	-15 635.00	-	13 606.00	-	-	1 787.00	-
Profit After Interest and Tax	317 402.00	141 169.00	544 654.00	358 564.00	429 341.00	135 380.00	36 393.00	-
Earnings Before Interest Tax Depreciation And Amortisati	922 723.00	569 589.00	955 301.00	698 999.00	758 497.00	343 461.00	161 541.00	-
Interest Paid - Debentures	472 452.00	385 822.00	223 919.00	-	-	-	-	-

Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	136.63%	102.56%	312.70%	327.17%	416.33%	196.80%	107.54%
Interest Received	17.30%	22.94%	8.03%	6.89%	5.60%	0.00%	0.00%
Total Income	170.09%	144.27%	345.11%	363.04%	438.35%	199.23%	110.07%
Total Cost Shown	2.00%	2.82%	3.41%	3.12%	3.26%	6.94%	0.46%
Earnings Before Interest & Tax (EBIT)	168.09%	139.65%	341.70%	359.92%	435.09%	192.29%	109.61%
Interest & Finance Charges	106.54%	109.37%	93.83%	101.74%	102.91%	76.36%	75.92%
Profit before Tax	61.56%	32.09%	247.87%	258.18%	332.18%	115.93%	33.70%
Taxation	3.69%	-2.57%	52.36%	71.58%	85.81%	40.14%	9.00%
Current	9.41%	0.23%	9.37%	-2.56%	16.04%	4.01%	0.45%
Deferred	-5.72%	1.04%	42.99%	67.05%	69.76%	36.13%	7.34%
Other	0.00%	-3.84%	0.00%	7.08%	0.00%	0.00%	1.21%
Profit After Interest and Tax	57.87%	34.66%	195.51%	186.61%	246.38%	75.79%	24.69%
Earnings Before Interest Tax Depreciation And Amortisati	168.24%	139.84%	342.91%	363.78%	435.26%	192.29%	109.61%
Interest Paid - Debentures	86.14%	94.72%	80.38%	0.00%	0.00%	0.00%	0.00%

Annexure 1.18: Sable financial statements

Balance Sheet Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Total Assets	557 510.00	606 002.00	541 543.00	639 377.00	314 620.00	193 550.00	189 205.00	179 277.00
Fixed Assets	275 994.00	351 542.00	325 939.00	468 272.00	199 083.00	94 950.00	118 312.00	101 356.00
Current Assets	3 841.00	18 947.00	9 969.00	42 472.00	28 524.00	29 532.00	17 780.00	26 964.00
Non Current Assets	44 633.00	6 911.00	5 155.00	1 151.00	1 088.00	962.00	19.00	57.00
Intangible Assets	-	-	-	-	-	1 100.00	-	-
Investments & Loans	233 042.00	228 602.00	200 480.00	127 482.00	85 925.00	68 106.00	53 094.00	50 900.00
Total Assets (Including Intangible Assets)	557 510.00	606 002.00	541 543.00	639 377.00	314 620.00	194 650.00	189 205.00	179 277.00
Current Liabilities	-22 113.00	-33 940.00	-56 922.00	-58 026.00	-25 438.00	-16 046.00	-19 918.00	-29 689.00
Employment Of Capital	535 397.00	572 062.00	484 621.00	581 351.00	289 182.00	178 604.00	170 208.00	150 013.00
Total Shareholders Interest	379 966.00	371 139.00	319 948.00	295 623.00	187 709.00	143 325.00	110 255.00	94 291.00
Debenture loan								
Other long term	123 351.00	161 868.00	130 396.00	225 696.00	96 484.00	33 684.00	58 336.00	54 957.00
Long Term Liabilities	123 351.00	161 868.00	130 396.00	225 696.00	96 484.00	33 684.00	58 336.00	54 957.00
Deferred Tax	32 080.00	39 055.00	34 277.00	60 032.00	4 989.00	1 595.00	1 617.00	765.00
Total Liabilities	177 544.00	234 863.00	221 595.00	343 754.00	126 911.00	35 279.00	59 953.00	55 722.00
Capital Employed	535 397.00	572 062.00	484 621.00	581 351.00	289 182.00	178 604.00	170 208.00	150 013.00
Total Assets	104.13%	105.93%	111.75%	109.98%	108.80%	108.37%	111.16%	119.51%
Fixed Assets	51.55%	61.45%	67.26%	80.55%	68.84%	53.16%	69.51%	67.56%
Current Assets	0.72%	3.31%	2.06%	7.31%	9.86%	16.53%	10.45%	17.97%
Non Current Assets	8.34%	1.21%	1.06%	0.20%	0.38%	0.54%	0.01%	0.04%
Intangible Assets	0.00%	0.00%	0.00%	0.00%	0.00%	0.62%	0.00%	0.00%
Investments & Loans	43.53%	39.96%	41.37%	21.93%	29.71%	38.13%	31.19%	33.93%
Total Assets (Including Intangible Assets)	104.13%	105.93%	111.75%	109.98%	108.80%	108.98%	111.16%	119.51%
Current Liabilities	-4.13%	-5.93%	-11.75%	-9.98%	-8.80%	-8.98%	-11.70%	-19.79%
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Total Shareholders Interest	70.97%	64.88%	66.02%	50.85%	64.91%	80.25%	64.78%	62.86%
Debenture loan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other long term	23.04%	28.30%	26.91%	38.82%	33.36%	18.86%	34.27%	36.63%
Deferred Tax	5.99%	6.83%	7.07%	10.33%	1.73%	0.89%	0.95%	0.51%
Total Liabilities	33.16%	41.06%	45.73%	59.13%	43.89%	19.75%	35.22%	37.14%
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Income Statement Published (000)	2010/06/30	2009/06/30	2008/06/30	2007/06/30	2006/06/30	2005/06/30	2004/06/30	2003/06/30
Turnover	34 557.00	32 563.00	29 596.00	52 260.00	25 436.00	37 192.00	53 996.00	16 832.00
Operating Profit	26 273.00	39 963.00	31 896.00	140 275.00	44 926.00	38 306.00	25 790.00	14 857.00
Interest Received	1 405.00	2 806.00	1 305.00	1 520.00	1 073.00	1 553.00	661.00	676.00
Total Income	27 720.00	42 906.00	33 480.00	144 410.00	47 486.00	40 153.00	26 495.00	15 563.00
Total Cost Shown	2 585.00	2 386.00	3 565.00	2 382.00	2 692.00	2 768.00	3 117.00	9 391.00
Earnings Before Interest & Tax (EBIT)	23 363.00	40 520.00	29 915.00	142 028.00	44 794.00	37 385.00	23 378.00	6 172.00
Interest & Finance Charges	16 197.00	22 492.00	20 284.00	16 811.00	6 538.00	8 801.00	7 701.00	8 617.00
Profit before Tax	7 166.00	18 028.00	9 631.00	125 217.00	38 256.00	28 584.00	15 677.00	-2 445.00
Taxation	-1 268.00	4 922.00	-3 986.00	38 939.00	4 002.00	3 439.00	3 123.00	1 246.00
Current	165.00	914.00	772.00	1 231.00	612.00	2 630.00	1 989.00	1 150.00
Deferred	-1 433.00	4 008.00	-5 390.00	37 708.00	2 892.00	-653.00	54.00	122.00
Other	-	-	632.00	-	498.00	1 462.00	1 080.00	-26.00
Profit After Interest and Tax	8 434.00	13 106.00	13 617.00	86 278.00	34 254.00	25 145.00	12 554.00	-3 691.00
Earnings Before Interest Tax Depreciation And Amortisati	23 898.00	41 589.00	30 645.00	142 737.00	45 444.00	38 172.00	25 186.00	14 322.00
Interest Paid - Debentures	-	-	-	-	-	-	-	-
Turnover	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Operating Profit	76.03%	122.73%	107.77%	268.42%	176.62%	103.00%	47.76%	88.27%
Interest Received	4.07%	8.62%	4.41%	2.91%	4.22%	4.18%	1.22%	4.02%
Total Income	80.22%	131.76%	113.12%	276.33%	186.69%	107.96%	49.07%	92.46%
Total Cost Shown	7.48%	7.33%	12.05%	4.56%	10.58%	7.44%	5.77%	55.79%
Earnings Before Interest & Tax (EBIT)	67.61%	124.44%	101.08%	271.77%	176.10%	100.52%	43.30%	36.67%
Interest & Finance Charges	46.87%	69.07%	68.54%	32.17%	25.70%	23.66%	14.26%	51.19%
Profit before Tax	20.74%	55.36%	32.54%	239.60%	150.40%	76.86%	29.03%	-14.53%
Taxation	-3.67%	15.12%	-13.47%	74.51%	15.73%	9.25%	5.78%	7.40%
Current	0.48%	2.81%	2.61%	2.36%	2.41%	7.07%	3.68%	6.83%
Deferred	-4.15%	12.31%	-18.21%	72.15%	11.37%	-1.76%	0.10%	0.72%
Other	0.00%	0.00%	2.14%	0.00%	1.96%	3.93%	2.00%	-0.15%
Profit After Interest and Tax	24.41%	40.25%	46.01%	165.09%	134.67%	67.61%	23.25%	-21.93%
Earnings Before Interest Tax Depreciation And Amortisati	69.16%	127.72%	103.54%	273.13%	178.66%	102.63%	46.64%	85.09%
Interest Paid - Debentures	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Annexure 1.19: Vukile financial statements

Balance Sheet Published (000)	2010/03/31	2009/03/31	2008/03/31	2007/03/31	2006/03/31	2005/03/31	2004/03/31	2003/03/31
Total Assets	5 186 503.00	4 646 873.00	4 460 385.00	4 085 089.00	3 768 357.00	3 183 113.00	-	-
Fixed Assets	4 818 930.00	4 466 826.00	4 316 543.00	3 861 707.00	3 669 000.00	3 136 388.00	-	-
Current Assets	261 066.00	111 143.00	77 844.00	223 382.00	99 357.00	46 725.00	-	-
Non Current Assets	106 507.00	68 904.00	65 998.00	-	-	-	-	-
Intangible Assets	439 066.00	76 614.00	76 299.00	76 100.00	83 223.00	16 286.00	-	-
Investments & Loans	-	-	-	-	-	-	-	-
Total Assets (Including Intangible Assets)	5 625 569.00	4 723 487.00	4 536 684.00	4 161 189.00	3 851 580.00	3 199 399.00	-	-
Current Liabilities	-780 349.00	-320 226.00	-256 724.00	-245 841.00	-373 312.00	-164 844.00	-	-
Employment Of Capital	4 845 220.00	4 403 261.00	4 279 960.00	3 915 348.00	3 478 268.00	3 034 555.00	-	-
Total Shareholders Interest	1 381 502.00	1 145 101.00	1 095 851.00	836 137.00	482 739.00	272 356.00	-	-
Debenture loan	1 890 753.00	1 534 420.00	1 535 427.00	1 535 971.00	1 351 708.00			
Other long term	1 040 339.00	1 262 320.00	1 190 744.00	1 135 123.00	1 363 140.00	2 712 840.00	-	-
Long Term Liabilities	2 931 092.00	2 796 740.00	2 726 171.00	2 671 094.00	2 714 848.00	2 712 840.00	-	-
Deferred Tax	532 626.00	461 420.00	457 938.00	408 117.00	280 681.00	49 359.00	-	-
Total Liabilities	3 463 718.00	3 258 160.00	3 184 109.00	3 079 211.00	2 995 529.00	2 762 199.00	-	-
Capital Employed	4 845 220.00	4 403 261.00	4 279 960.00	3 915 348.00	3 478 268.00	3 034 555.00	-	-
Total Assets	107.04%	105.53%	104.22%	104.34%	108.34%	104.90%		
Fixed Assets	99.46%	101.44%	100.85%	98.63%	105.48%	103.36%		
Current Assets	5.39%	2.52%	1.82%	5.71%	2.86%	1.54%		
Non Current Assets	2.20%	1.56%	1.54%	0.00%	0.00%	0.00%		
Intangible Assets	9.06%	1.74%	1.78%	1.94%	2.39%	0.54%		
Investments & Loans	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
Total Assets (Including Intangible Assets)	116.11%	107.27%	106.00%	106.28%	110.73%	105.43%		
Current Liabilities	-16.11%	-7.27%	-6.00%	-6.28%	-10.73%	-5.43%		
Employment Of Capital	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		
Total Shareholders Interest	28.51%	26.01%	25.60%	21.36%	13.88%	8.98%		
Debenture loan	39.02%	34.85%	35.87%	39.23%	38.86%	0.00%		
Other long term	21.47%	28.67%	27.82%	28.99%	39.19%	89.40%		
Deferred Tax	10.99%	10.48%	10.70%	10.42%	8.07%	1.63%		
Total Liabilities	71.49%	73.99%	74.40%	78.64%	86.12%	91.02%		
Capital Employed	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		

Income Statement Published (000)	2010/03/31	2009/03/31	2008/03/31	2007/03/31	2006/03/31	2005/03/31	2004/03/31	2003/03/31
Turnover	742 072.00	673 285.00	612 727.00	553 480.00	-	-	-	-
Operating Profit	777 662.00	548 367.00	635 286.00	804 868.00	820 619.00	547 918.00	-	-
Interest Received	12 027.00	8 520.00	9 079.00	12 122.00	4 228.00	2 438.00	-	-
Total Income	789 689.00	556 887.00	644 365.00	816 990.00	824 847.00	550 356.00	-	-
Total Cost Shown	10 440.00	7 913.00	10 599.00	6 465.00	7 121.00	5 037.00	-	-
Earnings Before Interest & Tax (EBIT)	779 249.00	548 974.00	633 766.00	810 525.00	817 726.00	545 319.00	-	-
Interest & Finance Charges	464 571.00	420 113.00	384 351.00	352 110.00	345 610.00	260 447.00	-	-
Profit before Tax	314 678.00	128 861.00	249 415.00	458 415.00	472 116.00	284 872.00	-	-
Taxation	79 081.00	6 297.00	52 165.00	137 273.00	127 659.00	37 416.00	-	-
Current	7 513.00	2 826.00	3 158.00	8 966.00	3 305.00	338.00	-	-
Deferred	71 206.00	1 972.00	47 088.00	127 297.00	-1 471.00	-1 022.00	-	-
Other	362.00	1 499.00	1 919.00	1 010.00	125 825.00	38 100.00	-	-
Profit After Interest and Tax	235 597.00	122 564.00	197 250.00	321 142.00	344 457.00	247 456.00	-	-
Earnings Before Interest Tax Depreciation And Amortisati	779 299.00	549 036.00	633 529.00	810 611.00	817 852.00	545 413.00	-	-
Interest Paid - Debentures	319 231.00	287 748.00	259 748.00	-	-	-	-	-

Turnover	100.00%	100.00%	100.00%	100.00%
Operating Profit	104.80%	81.45%	103.68%	145.42%
Interest Received	1.62%	1.27%	1.48%	2.19%
Total Income	106.42%	82.71%	105.16%	147.61%
Total Cost Shown	1.41%	1.18%	1.73%	1.17%
Earnings Before Interest & Tax (EBIT)	105.01%	81.54%	103.43%	146.44%
Interest & Finance Charges	62.60%	62.40%	62.73%	63.62%
Profit before Tax	42.41%	19.14%	40.71%	82.82%
Taxation	10.66%	0.94%	8.51%	24.80%
Current	1.01%	0.42%	0.52%	1.62%
Deferred	9.60%	0.29%	7.68%	23.00%
Other	0.05%	0.22%	0.31%	0.18%
Profit After Interest and Tax	31.75%	18.20%	32.19%	58.02%
Earnings Before Interest Tax Depreciation And Amortisati	105.02%	81.55%	103.39%	146.46%
Interest Paid - Debentures	43.02%	42.74%	42.39%	0.00%

Annexure 2: Current ratio

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	0.264	0.224	0.058	0.359	0.199	1.705	1.804	0.994	N/A	N/A
Bonatla	0.639	0.490	0.697	1.403	0.284	0.222	0.290	0.133	0.301	0.245
Colliers	1.638	1.763	0.952	0.787	1.397	1.179	1.366	1.271	N/A	1.057
Fairvest	3.062	4.539	1.786	0.518	N/A	0.909	0.959	0.050	0.173	N/A
Fortress	0.817	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	0.287	0.441	0.315	0.337	0.105	0.138	0.220	0.187	0.880	1.133
Hospitality	0.171	0.102	1.847	0.184	0.440	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	0.622	0.347	1.896	0.324	0.532	0.811	0.708	0.133	0.096
Ingenuity	4.296	8.028	2.715	4.344	8.111	2.115	N/A	0.546	0.556	N/A
Merchant	0.181	1.597	0.655	1.523	1.144	2.350	2.058	1.704	1.896	1.859
Octodec	0.150	0.238	0.173	0.219	0.218	0.263	0.200	0.202	0.243	0.336
Orion	0.530	0.993	0.746	0.768	1.566	0.215	0.419	0.633	0.381	N/A
Pangbourne	0.343	0.863	0.780	0.921	2.423	1.214	1.315	1.638	0.409	0.576
Premium	0.051	0.078	0.149	0.208	0.119	0.104	0.160	0.119	0.128	0.087
Putprop	5.348	5.975	14.499	3.699	16.397	42.595	7.103	6.580	6.137	1.247
Redefine	0.486	0.907	1.684	1.845	1.032	0.658	2.876	1.223	0.592	0.891
Resilient	0.357	0.301	0.310	0.362	0.172	1.000	1.524	N/A	N/A	N/A
Sable	0.174	0.558	0.175	0.732	1.121	1.840	0.893	0.908	0.655	1.106
Vukile	0.335	0.347	0.303	0.909	0.266	0.283	N/A	N/A	N/A	N/A

Annexure 3: Quick ratio

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	11.7	12.6	19.5	22.3	14.0	6.9	9.8	23.9	N/A	N/A
Bonatla	108.2	0.7	-	25.4	0.7	67.0	28.4	44.7	80.9	23.0
Colliers	9.2	10.8	9.2	3.7	8.4	3.2	3.1	4.1	N/A	3.6
Fairvest	13.7	17.8	48.7	40.0	N/A	5.5	4.7	19.1	8.2	N/A
Fortress	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	191.2	180.5	146.0	112.5	95.5	130.8	280.6	51.1	8.3	10.5
Hospitality	10.1	100.0	11.5	18.8	7.5	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	29.3	67.6	9.9	10.8	10.2	8.7	4.5	39.1	43.1
Ingenuity	1,372.8	278.0	14.1	-	N/A	N/A	N/A	19.6	19.8	N/A
Merchant	46.0	33.0	38.3	11.3	15.5	7.9	30.3	22.1	26.5	11.2
Octodec	22.8	18.6	116.7	10.0	11.1	8.0	13.4	13.7	12.5	9.4
Orion	4.0	3.4	3.3	3.6	3.4	60.2	91.9	0.6	-	N/A
Pangbourne	18.6	8.5	1.9	3.1	2.4	2.3	3.2	4.0	2.9	3.0
Premium	36.3	27.2	17.4	11.5	18.4	23.7	19.1	27.3	32.2	24.3
Putprop	81.7	269.4	21.2	18.9	140.0	14.4	3.8	28.9	74.9	11.0
Redefine	31.1	30.2	56.5	62.3	1,038.0	71.9	24.1	31.2	27.5	28.4
Resilient	94.2	4.1	5.4	7.4	9.3	25.9	4.1	N/A	N/A	N/A
Sable	18.3	10.3	9.2	6.6	7.2	3.7	6.9	36.6	68.2	14.0
Vukile	64.2	64.1	77.5	42.9	-	-	N/A	N/A	N/A	N/A

Annexure 4: Total asset turnover ratio

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	0.076	0.086	0.064	0.070	0.086	0.078	0.115	0.138	N/A	N/A
Bonatla	0.013	0.004	-	0.911	0.086	2.013	0.209	0.179	0.171	0.137
Colliers	0.213	1.218	1.084	1.150	1.627	0.772	0.963	1.309	N/A	0.497
Fairvest	0.137	0.118	0.174	0.256	N/A	0.223	0.233	0.201	0.141	N/A
Fortress	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	0.117	0.112	0.101	0.103	0.089	0.123	0.135	0.083	0.165	0.149
Hospitality	0.079	0.077	0.080	0.084	0.041	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	0.073	0.069	0.064	0.080	0.092	0.136	0.112	0.143	0.127
Ingenuity	0.092	0.079	0.065	-	-	-	N/A	0.213	0.184	N/A
Merchant	0.135	0.129	0.114	0.080	0.117	0.163	0.205	0.205	0.201	0.168
Octodec	0.118	0.130	0.113	0.103	0.106	0.099	0.141	0.153	0.144	0.157
Orion	0.114	0.080	0.074	0.085	0.070	0.222	0.144	0.126	-	N/A
Pangbourne	0.120	0.106	0.046	0.101	0.099	0.103	0.135	0.148	0.116	0.165
Premium	0.122	0.121	0.107	0.117	0.112	0.147	0.158	0.172	0.182	0.174
Putprop	0.141	0.153	0.154	0.099	0.150	0.164	0.234	0.240	0.231	0.205
Redefine	0.088	0.034	0.053	0.050	0.053	0.073	0.083	0.078	0.055	0.077
Resilient	0.067	0.059	0.064	0.064	0.087	0.114	0.150	N/A	N/A	N/A
Sable	0.062	0.054	0.055	0.082	0.081	0.192	0.285	0.094	0.187	0.207
Vukile	0.143	0.145	0.137	0.135	-	-	N/A	N/A	N/A	N/A

Annexure 5: Gross profit margin

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	1.207	0.810	1.184	1.343	3.619	2.666	1.482	1.305	N/A	N/A
Bonatla	-0.280	-16.01	-	1.196	-15.12	-0.482	0.353	0.549	0.719	0.817
Colliers	0.292	0.133	0.216	0.188	0.164	0.351	0.146	0.223	N/A	0.028
Fairvest	0.649	0.426	-0.578	0.552	N/A	0.325	0.561	0.770	0.742	N/A
Fortress	-	-	-	-	-	-	-	-	-	-
Growthpoint	0.753	0.699	0.680	0.641	0.664	0.656	0.670	1.088	0.633	0.815
Hospitality	-0.249	1.223	2.383	2.652	3.984	-	-	-	N/A	N/A
Hyprop	-	1.659	1.223	3.254	3.347	3.177	2.442	1.035	0.967	0.854
Ingenuity	1.109	1.090	1.988	-	-	-	-	0.794	0.515	N/A
Merchant	0.607	0.426	0.746	1.911	1.935	0.937	0.750	0.309	0.543	0.353
Octodec	0.793	0.307	0.928	1.729	2.045	2.959	1.428	1.199	0.832	0.715
Orion	1.211	4.186	2.352	1.934	2.574	1.369	-0.402	1.017	N/A	N/A
Pangbourne	0.962	0.457	2.853	1.320	1.136	1.590	1.167	1.094	0.663	0.679
Premium	1.050	1.161	1.434	2.006	2.632	1.683	1.220	0.970	0.754	0.635
Putprop	1.442	1.387	1.382	1.630	1.188	1.228	0.946	0.753	0.924	0.958
Redefine	1.436	0.700	0.953	3.670	3.854	3.660	2.167	1.737	1.263	3.249
Resilient	1.366	1.026	3.127	3.272	4.163	1.968	1.075	-	N/A	N/A
Sable	0.760	1.227	1.078	2.684	1.766	1.030	0.478	0.883	0.600	0.818
Vukile	1.048	0.814	1.037	1.454	-	-	-	-	N/A	N/A

Annexure 6: Operating profit margin

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	1.385	0.969	1.251	1.442	3.636	2.631	1.490	1.293	N/A	N/A
Bonatla	-1.002	-24.12	-	0.624	-15.34	-0.477	0.337	0.545	0.726	0.637
Colliers	-0.072	0.103	0.185	0.154	0.129	0.213	0.045	0.138	N/A	-0.066
Fairvest	0.782	0.579	-0.581	0.525	N/A	0.262	0.499	0.619	0.644	N/A
Fortress	-	-	-	-	-	-	-	-	-	-
Growthpoint	0.759	0.712	0.672	0.677	0.723	0.712	0.825	1.302	0.649	0.819
Hospitality	-0.272	1.309	2.498	2.674	4.001	-	-	-	N/A	N/A
Hyprop	-	1.678	1.262	3.362	3.329	3.163	2.433	1.019	0.934	0.856
Ingenuity	1.072	1.065	1.971	-	-	-	-	0.808	0.522	N/A
Merchant	0.532	0.355	0.748	1.916	1.927	0.902	0.652	0.262	0.063	0.319
Octodec	0.850	0.362	0.999	1.772	2.084	2.972	1.469	1.212	0.849	0.722
Orion	1.216	4.161	2.301	1.868	2.437	1.269	-0.396	0.532	N/A	N/A
Pangbourne	0.991	0.518	3.037	1.340	1.134	1.577	1.171	1.093	0.802	0.771
Premium	1.063	1.191	1.469	2.014	2.653	1.705	1.240	0.977	0.772	0.643
Putprop	1.404	1.400	1.499	1.771	1.237	1.258	1.016	0.817	0.974	0.997
Redefine	1.491	0.776	1.039	3.704	3.877	3.673	2.179	1.768	1.249	3.262
Resilient	1.681	1.396	3.417	3.599	4.351	1.923	1.096	-	N/A	N/A
Sable	0.676	1.244	1.011	2.718	1.761	1.005	0.433	0.367	0.562	0.765
Vukile	1.050	0.815	1.034	1.464	-	-	-	-	N/A	N/A

Annexure 7: Return on total capital

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	0.117	0.092	0.100	0.104	0.324	0.220	0.182	0.184	N/A	N/A
Bonatla	-0.013	-0.092	-0.209	1.839	0.529	1.327	0.073	0.101	0.127	0.090
Colliers	-0.018	0.154	0.323	0.401	0.277	0.249	0.063	0.301	N/A	-0.096
Fairvest	0.122	0.074	-0.106	0.140	N/A	0.062	0.129	0.162	0.107	N/A
Fortress	0.135	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	0.096	0.083	0.067	0.073	0.073	0.097	0.123	0.116	0.115	0.128
Hospitality	-0.022	0.104	0.209	0.240	0.173	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	0.128	0.091	0.223	0.275	0.304	0.345	0.119	0.140	0.121
Ingenuity	0.099	0.086	0.131	0.150	0.066	0.556	N/A	0.180	0.104	N/A
Merchant	0.079	0.048	0.088	0.159	0.241	0.157	0.140	0.058	0.014	0.058
Octodec	0.113	0.051	0.118	0.191	0.232	0.312	0.221	0.196	0.128	0.123
Orion	0.147	0.342	0.175	0.227	0.198	0.306	-0.061	0.077	-0.003	N/A
Pangbourne	0.135	0.062	0.166	0.140	0.115	0.171	0.173	0.183	0.110	0.148
Premium	0.154	0.161	0.167	0.248	0.316	0.273	0.210	0.185	0.154	0.123
Putprop	0.200	0.217	0.235	0.192	0.189	0.209	0.244	0.204	0.229	0.223
Redefine	0.124	0.024	0.057	0.190	0.208	0.273	0.184	0.142	0.072	0.260
Resilient	0.128	0.091	0.229	0.241	0.405	0.231	0.174	N/A	N/A	N/A
Sable	0.044	0.071	0.062	0.244	0.155	0.209	0.137	0.041	0.112	0.165
Vukile	0.161	0.125	0.148	0.207	0.235	0.180	N/A	N/A	N/A	N/A

Annexure 8: Return on total equity (ROE)

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	0.176	0.147	0.144	0.139	0.445	0.899	1.685	4.364	N/A	N/A
Bonatla	-0.014	-0.144	-0.260	1.839	0.529	1.327	0.335	0.392	0.481	N/A
Colliers	-0.030	0.265	0.482	0.512	0.535	0.487	0.150	0.598	N/A	N/A
Fairvest	6.108	5.221	-6.640	1.025	N/A	0.865	2.136	3.608	3.189	N/A
Fortress	1.014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	0.137	0.119	0.097	0.117	0.125	N/A	N/A	N/A	N/A	N/A
Hospitality	-0.037	0.155	0.237	0.285	0.224	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	0.150	0.101	0.244	0.324	0.591	0.769	0.409	0.352	N/A
Ingenuity	0.155	0.161	0.178	0.150	0.066	0.556	N/A	6.203	-3.700	N/A
Merchant	0.082	0.053	0.099	0.178	0.276	0.192	0.170	0.073	0.017	N/A
Octodec	0.161	0.072	0.164	0.251	0.352	0.705	0.796	1.071	1.220	N/A
Orion	0.243	0.633	0.650	0.727	1.397	229.331	0.735	2.202	-0.022	N/A
Pangbourne	0.197	0.097	0.268	0.254	0.300	0.765	0.935	1.187	0.899	N/A
Premium	0.208	0.222	0.245	0.466	0.631	0.733	0.880	1.090	1.257	N/A
Putprop	0.200	0.217	0.235	0.192	0.189	0.209	0.244	0.204	0.229	N/A
Redefine	0.179	0.030	0.087	0.284	0.355	N/A	N/A	N/A	N/A	N/A
Resilient	0.158	0.116	0.278	0.296	0.452	0.879	2.163	N/A	N/A	N/A
Sable	0.057	0.099	0.084	0.399	0.232	0.258	0.209	0.065	0.175	N/A
Vukile	0.205	0.175	0.205	0.292	0.387	1.695	N/A	N/A	N/A	N/A

Annexure 9: Debt-equity ratio

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	0.506	0.591	0.444	0.338	0.375	3.082	8.233	22.700	N/A	N/A
Bonatla	0.127	0.567	0.247	-	-	-	3.613	2.874	2.772	N/A
Colliers	0.684	0.717	0.492	0.276	0.931	0.956	1.392	0.952	N/A	N/A
Fairvest	49.261	69.525	61.770	6.305	N/A	12.844	15.592	21.209	28.934	N/A
Fortress	6.511	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	0.427	0.431	0.453	0.605	0.720	N/A	N/A	N/A	N/A	N/A
Hospitality	0.681	0.491	0.132	0.188	0.297	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	0.177	0.109	0.098	0.175	0.945	1.231	2.437	1.503	N/A
Ingenuity	0.560	0.876	0.356	-	-	-	N/A	33.512	-36.638	N/A
Merchant	0.036	0.116	0.123	0.119	0.146	0.221	0.219	0.255	0.248	N/A
Octodec	0.428	0.409	0.385	0.314	0.517	1.260	2.606	4.465	8.516	N/A
Orion	0.652	0.854	2.205	2.199	6.062	748.750	-13.042	27.605	7.506	N/A
Pangbourne	0.448	0.561	0.614	0.817	1.612	3.466	4.403	5.475	7.182	N/A
Premium	0.350	0.376	0.465	0.876	0.994	1.679	3.188	4.893	7.167	N/A
Putprop	-	-	-	-	-	-	-	-	-	N/A
Redefine	0.441	0.277	0.528	0.498	0.701	N/A	N/A	N/A	N/A	N/A
Resilient	0.223	0.273	0.199	0.226	0.116	2.806	11.439	N/A	N/A	N/A
Sable	0.299	0.395	0.368	0.635	0.501	0.232	0.521	0.578	0.554	N/A
Vukile	0.273	0.402	0.385	0.408	0.644	8.432	N/A	N/A	N/A	N/A

Annexure 10: Interest coverage ratio

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	3.425	2.169	3.988	4.367	4.316	2.742	1.644	1.374	N/A	N/A
Bonatla	-2.384	-2.551	-15.66	1.139	-6.515	-0.602	0.568	0.939	1.184	0.902
Colliers	-0.319	3.105	4.972	3.889	3.664	2.913	0.774	1.249	N/A	-0.464
Fairvest	19.116	26.006	-3.590	2.366	N/A	0.755	1.153	1.038	1.565	N/A
Fortress	5.796	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	2.713	2.650	2.813	1.002	1.024	1.031	1.025	1.006	1.001	1.015
Hospitality	-0.654	3.927	11.751	3.074	4.707	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	6.786	5.854	18.077	19.315	5.088	4.601	1.901	1.487	1.010
Ingenuity	2.511	2.494	12.225	523.778	21.577	2.570	N/A	1.363	0.803	N/A
Merchant	4.553	2.902	5.754	11.523	13.985	5.180	4.794	1.524	0.310	1.733
Octodec	2.985	1.283	3.510	6.129	3.272	4.266	1.969	1.706	1.148	1.011
Orion	4.001	8.287	3.163	3.352	3.371	1.805	-0.585	0.588	N/A	N/A
Pangbourne	3.436	1.379	8.206	4.054	1.420	2.595	1.259	1.913	1.008	1.078
Premium	4.097	4.578	6.349	8.482	3.782	2.458	1.807	1.473	1.149	0.942
Putprop	N/A	N/A	N/A	N/A	N/A	10,029	28,854	389	13,815	9,069
Redefine	4.701	1.707	2.090	6.711	2.985	7.107	2.862	1.918	1.217	3.735
Resilient	8.242	9.536	25.395	3.538	4.228	2.518	1.444	N/A	N/A	N/A
Sable	1.442	1.802	1.475	8.449	6.851	4.248	3.036	0.716	5.487	9.181
Vukile	5.362	4.147	5.086	2.302	2.366	2.094	N/A	N/A	N/A	N/A

Annexure 11: Retention rate

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	0.458	0.354	0.484	0.498	1.000	1.000	1.000	1.000	N/A	N/A
Bonatla	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Colliers	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	N/A	1.000
Fairvest	0.064	0.045	1.000	0.980	N/A	1.000	1.000	1.000	1.000	N/A
Fortress	0.561	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	0.406	0.346	0.305	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Hospitality	77.787	0.437	0.630	1.000	1.000	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	0.619	0.543	0.799	0.805	1.000	1.000	1.000	1.000	1.000
Ingenuity	1.000	1.000	1.000	1.000	1.000	1.000	N/A	1.000	1.000	N/A
Merchant	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Octodec	0.602	0.289	0.623	0.742	1.000	1.000	1.000	1.000	1.000	1.000
Orion	0.944	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	N/A
Pangbourne	0.557	0.344	0.762	0.595	1.000	1.000	1.000	1.000	1.000	1.000
Premium	0.651	0.658	0.688	0.772	1.000	1.000	1.000	1.000	1.000	1.000
Putprop	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Redefine	0.533	0.082	0.217	0.713	1.000	1.000	1.000	1.000	1.000	1.000
Resilient	0.476	0.334	0.722	1.000	1.000	1.000	1.000	N/A	N/A	N/A
Sable	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Vukile	0.544	0.470	0.553	1.000	1.000	1.000	N/A	N/A	N/A	N/A

Annexure 12: Financial leverage

Company	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Acucap	1.683	1.767	1.789	1.383	1.427	4.400	9.833	24.551	N/A	N/A
Bonatla	1.123	1.708	1.313	3.236	-0.401	1.383	4.772	4.017	3.883	N/A
Colliers	1.987	2.113	2.399	2.884	2.558	2.960	3.489	3.319	N/A	N/A
Fairvest	57.108	76.320	65.757	7.641	N/A	14.801	18.363	28.987	34.977	N/A
Fortress	7.921	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Growthpoint	1.551	1.499	1.429	1.676	1.947	N/A	N/A	N/A	N/A	N/A
Hospitality	1.732	1.547	1.185	1.273	1.354	N/A	N/A	N/A	N/A	N/A
Hyprop	N/A	1.224	1.154	1.136	1.217	2.021	2.320	3.579	2.632	N/A
Ingenuity	1.568	1.927	1.382	1.104	1.040	1.285	N/A	36.029	38.425	N/A
Merchant	1.147	1.157	1.157	1.161	1.227	1.301	1.274	1.360	1.373	N/A
Octodec	1.600	1.535	1.455	1.379	1.589	2.387	3.845	5.793	10.003	N/A
Orion	1.755	1.903	3.834	4.583	8.172	815.323	12.900	32.901	8.785	N/A
Pangbourne	1.664	1.777	1.903	1.871	2.680	4.721	5.933	7.352	9.631	N/A
Premium	1.601	1.538	1.551	1.975	2.127	2.925	4.500	6.484	8.954	N/A
Putprop	1.009	1.008	1.017	1.092	1.019	1.010	1.028	1.040	1.022	N/A
Redefine	1.369	1.150	1.583	1.542	1.740	N/A	N/A	N/A	N/A	N/A
Resilient	1.404	1.404	1.278	1.284	1.194	4.017	13.173	N/A	N/A	N/A
Sable	1.353	1.477	1.529	1.798	1.633	1.336	1.691	1.886	1.663	N/A
Vukile	1.363	1.479	1.444	1.469	1.782	9.894	N/A	N/A	N/A	N/A

Annexure 13: Tests of Stationarity

Total Assets

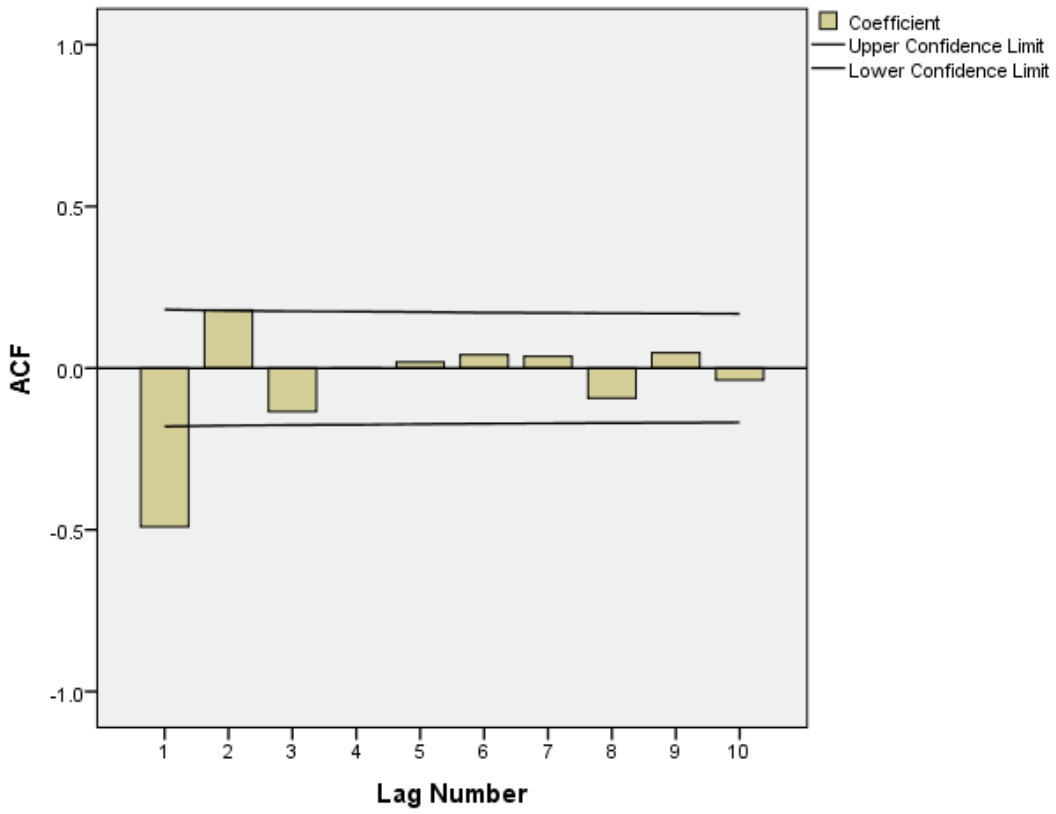
Autocorrelations

Series: Total Assets

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	-.490	.090	29.420	1	.000
2	.180	.089	33.527	2	.000
3	-.135	.088	35.870	3	.000
4	-.002	.087	35.870	4	.000
5	.019	.087	35.917	5	.000
6	.041	.086	36.147	6	.000
7	.037	.085	36.332	7	.000
8	-.093	.085	37.528	8	.000
9	.047	.084	37.840	9	.000
10	-.037	.084	38.032	10	.000

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



Deferred Tax

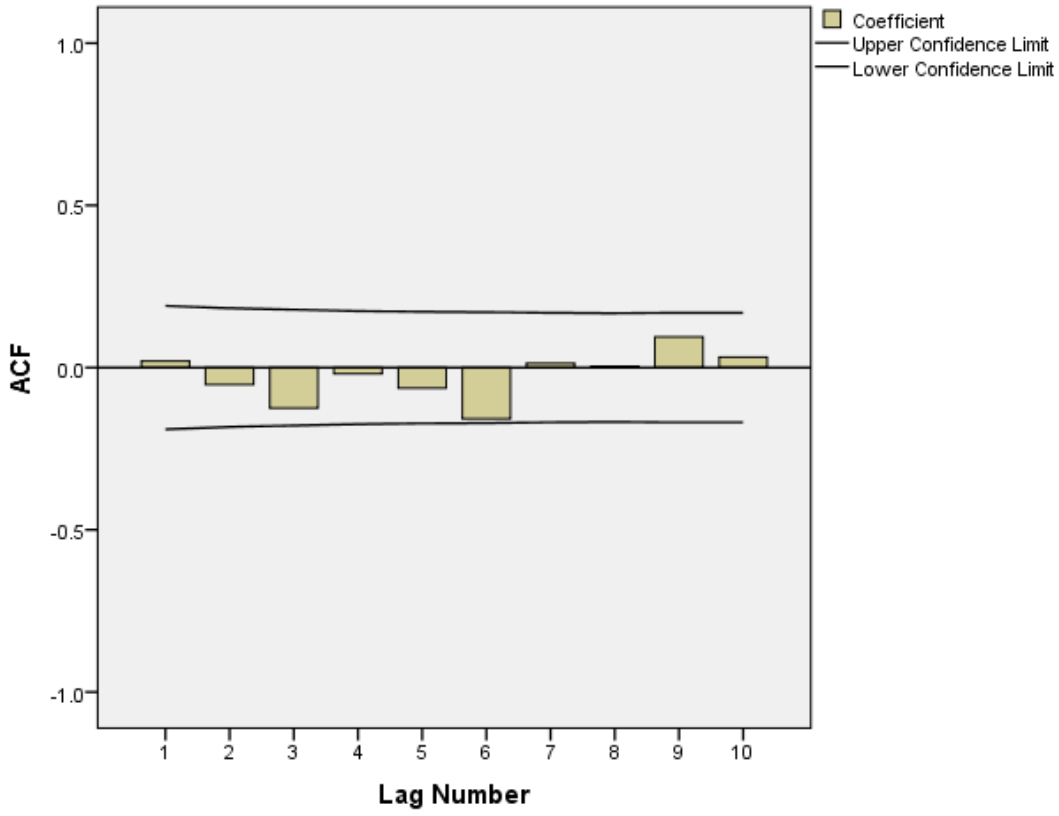
Autocorrelations

Series: Deferred Tax

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	.020	.095	.043	1	.836
2	-.052	.091	.371	2	.831
3	-.125	.089	2.336	3	.506
4	-.019	.087	2.385	4	.665
5	-.063	.086	2.927	5	.711
6	-.157	.085	6.322	6	.388
7	.013	.084	6.346	7	.500
8	.004	.084	6.349	8	.608
9	.094	.084	7.598	9	.575
10	.032	.084	7.742	10	.654

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



TurnoverSD2

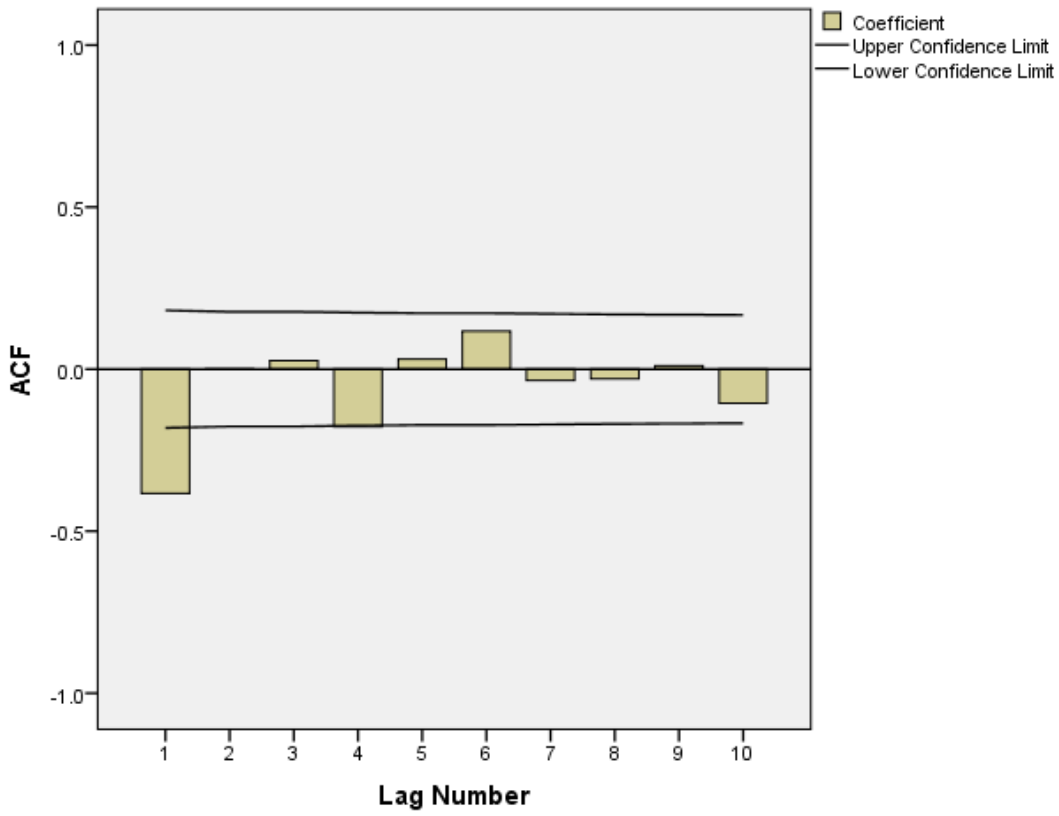
Autocorrelations

Series: TurnoverSD2

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	-.384	.091	17.889	1	.000
2	.000	.088	17.889	2	.000
3	.026	.088	17.977	3	.000
4	-.177	.087	22.113	4	.000
5	.031	.086	22.244	5	.000
6	.117	.086	24.086	6	.001
7	-.035	.085	24.249	7	.001
8	-.030	.084	24.376	8	.002
9	.010	.084	24.391	9	.004
10	-.105	.083	25.970	10	.004

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



Operating Profit

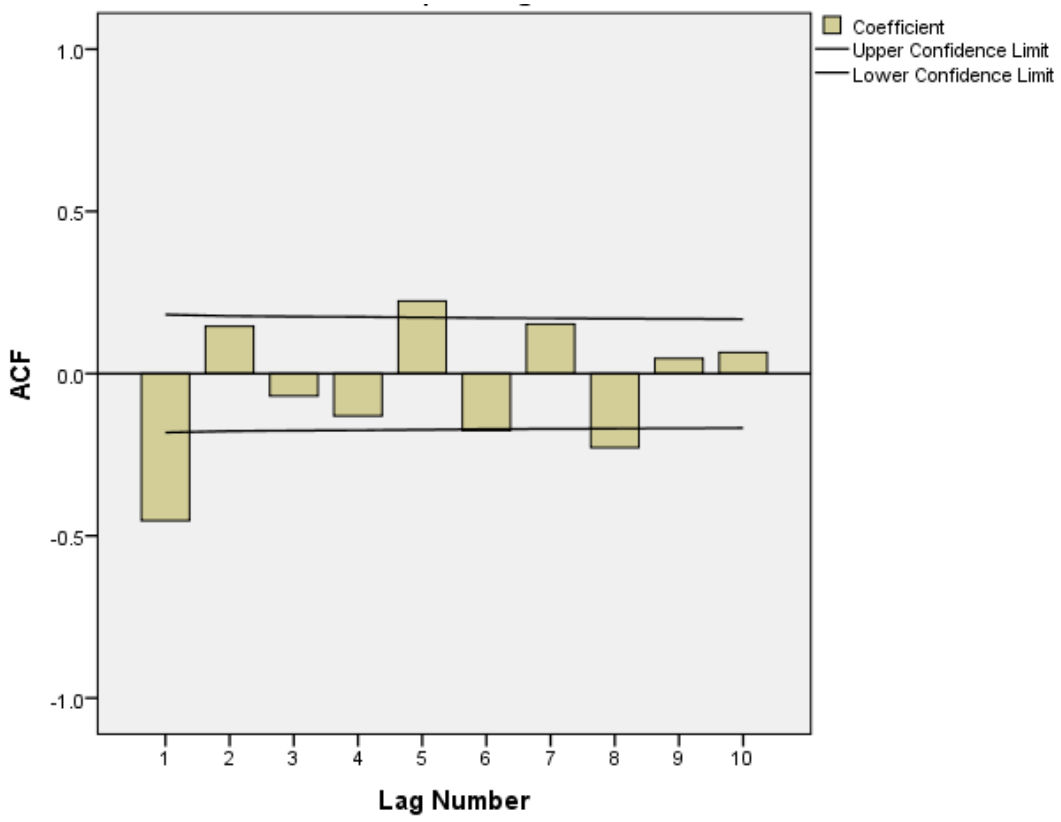
Autocorrelations

Series: Operating Profit

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	-.453	.091	24.880	1	.000
2	.146	.089	27.582	2	.000
3	-.069	.088	28.202	3	.000
4	-.131	.087	30.433	4	.000
5	.224	.087	37.109	5	.000
6	-.175	.086	41.296	6	.000
7	.153	.085	44.517	7	.000
8	-.228	.085	51.756	8	.000
9	.047	.084	52.062	9	.000
10	.065	.084	52.665	10	.000

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



Total Cost Shown

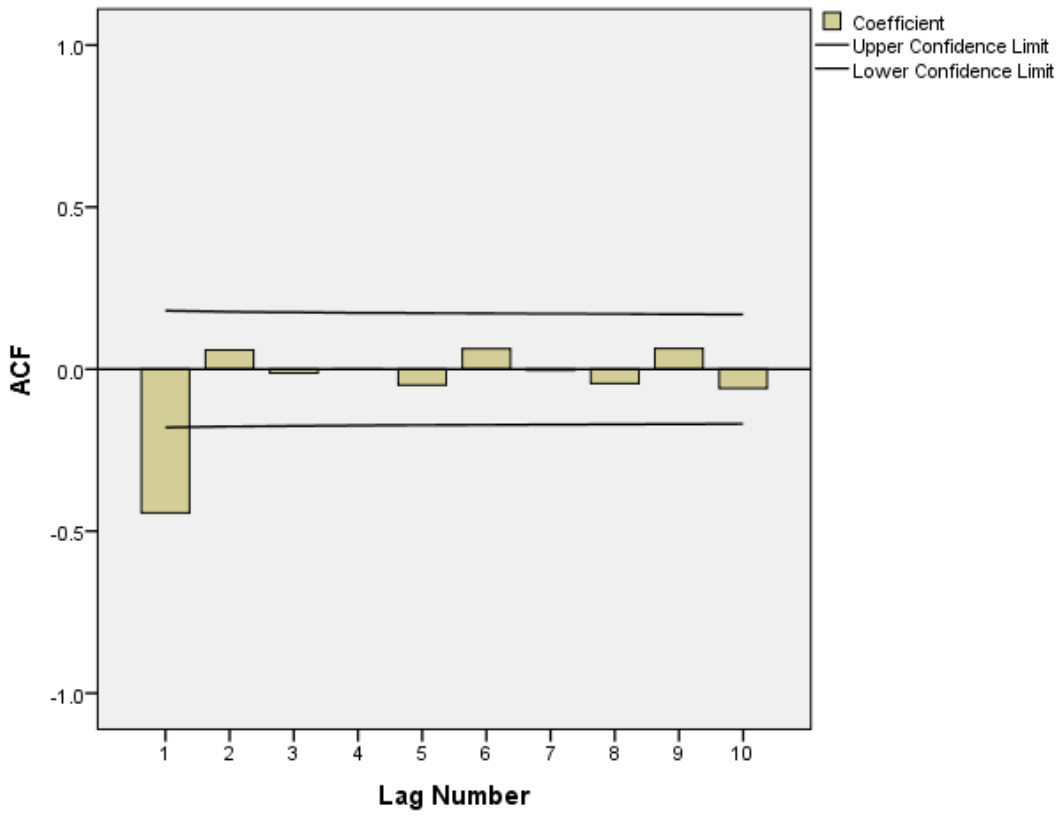
Autocorrelations

Series: Total Cost Shown

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	-.443	.090	24.217	1	.000
2	.059	.088	24.665	2	.000
3	-.012	.088	24.685	3	.000
4	-.001	.087	24.685	4	.000
5	-.049	.086	25.011	5	.000
6	.063	.086	25.546	6	.000
7	-.003	.086	25.547	7	.001
8	-.044	.085	25.814	8	.001
9	.064	.085	26.385	9	.002
10	-.059	.084	26.876	10	.003

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



Leverage - long term

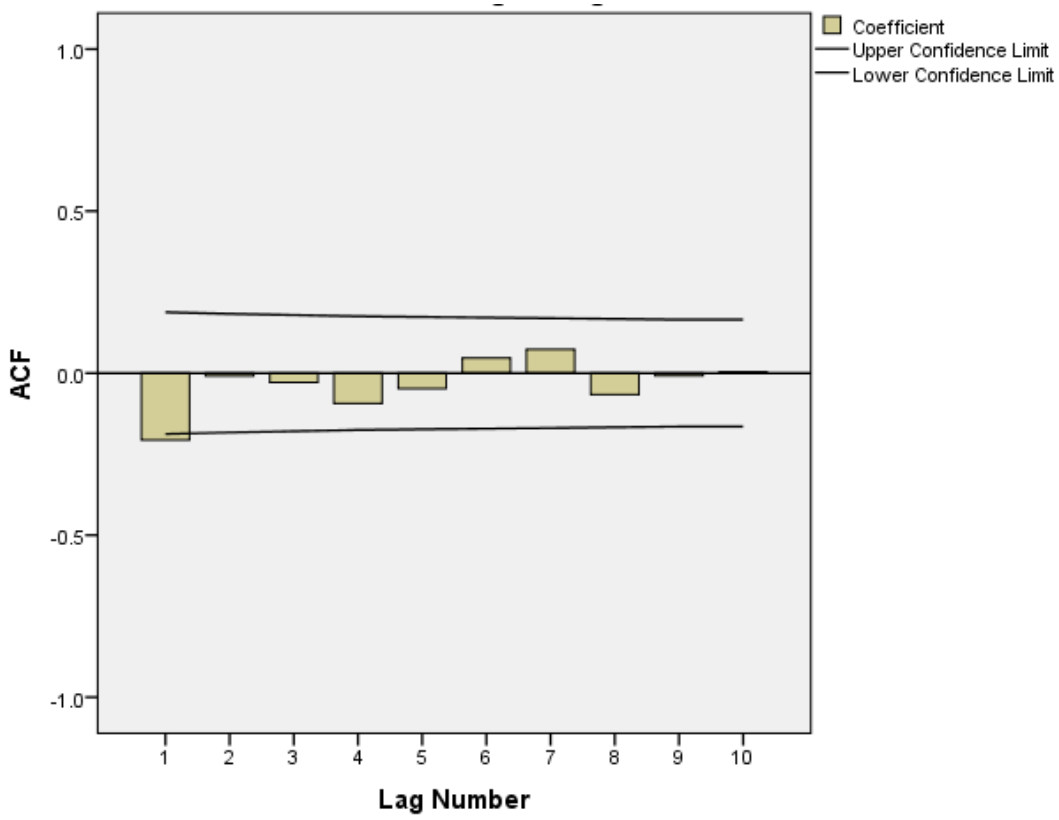
Autocorrelations

Series: Leverage - long term

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	-.207	.094	4.835	1	.028
2	-.009	.092	4.843	2	.089
3	-.028	.090	4.943	3	.176
4	-.093	.088	6.074	4	.194
5	-.048	.087	6.379	5	.271
6	.046	.086	6.672	6	.352
7	.073	.085	7.419	7	.387
8	-.066	.084	8.049	8	.429
9	-.008	.083	8.059	9	.528
10	.003	.083	8.060	10	.623

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



Equity

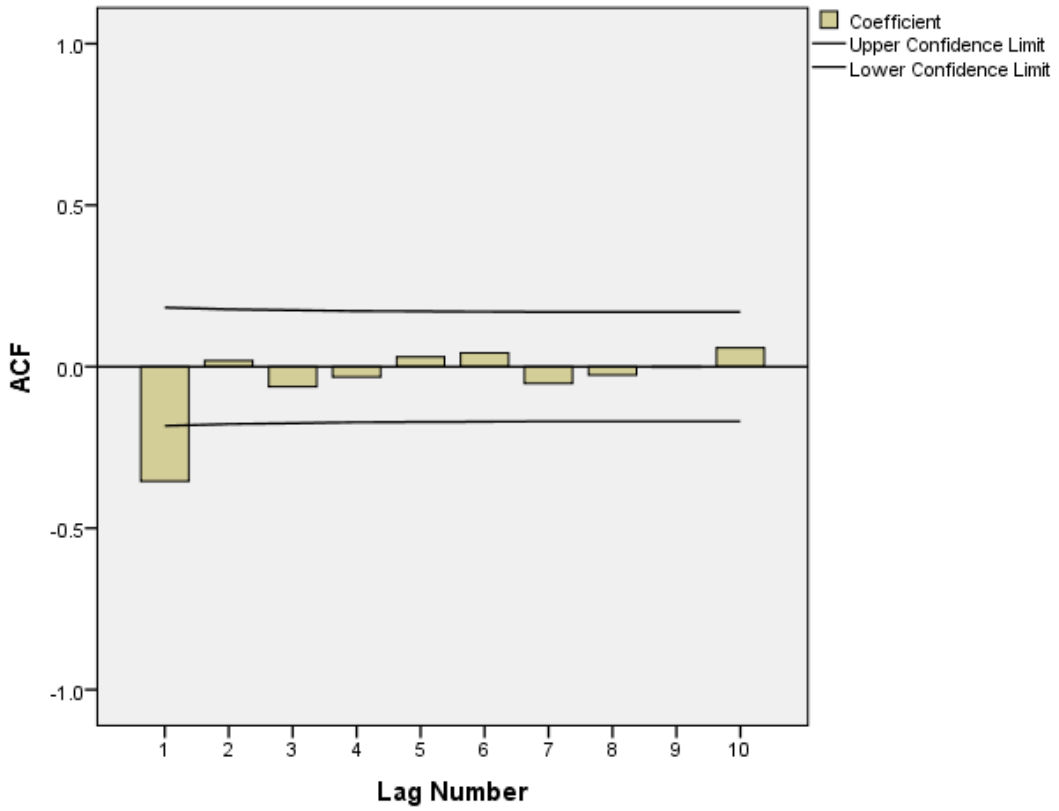
Autocorrelations

Series: Equity

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	-.354	.091	15.008	1	.000
2	.018	.089	15.051	2	.001
3	-.062	.087	15.554	3	.001
4	-.032	.086	15.690	4	.003
5	.031	.086	15.817	5	.007
6	.043	.085	16.069	6	.013
7	-.051	.085	16.438	7	.021
8	-.026	.085	16.530	8	.035
9	-.002	.085	16.530	9	.057
10	.058	.085	17.001	10	.074

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



J203 All share index

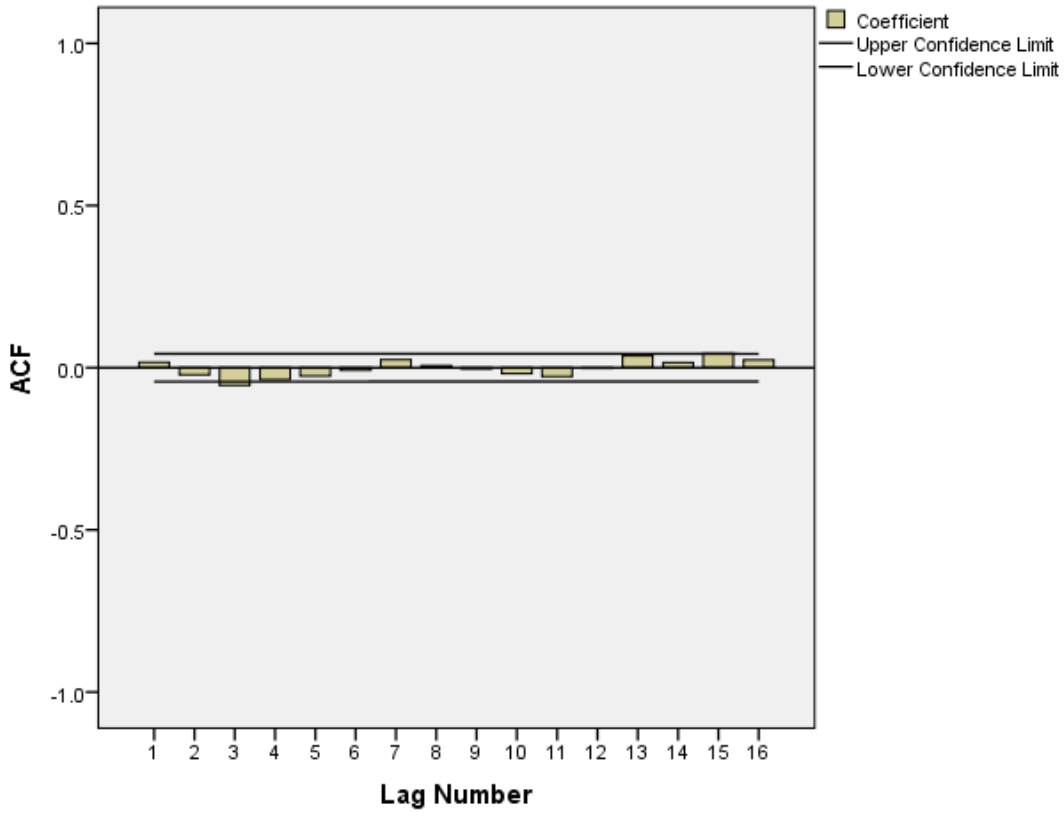
Autocorrelations

Series: J203 All share index

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	.017	.021	.608	1	.435
2	-.022	.021	1.654	2	.437
3	-.055	.021	8.164	3	.043
4	-.037	.021	11.131	4	.025
5	-.026	.021	12.575	5	.028
6	-.008	.021	12.705	6	.048
7	.025	.021	14.083	7	.050
8	.006	.021	14.168	8	.078
9	-.004	.021	14.207	9	.115
10	-.018	.021	14.935	10	.134

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.



J256 PLS index

Autocorrelations

Series: J256 PLS index

Lag	Autocorrelation	Std. Error[a]	Box-Ljung Statistic		
			Value	df	Sig.[b]
1	.241	.021	126.294	1	.000
2	.132	.021	164.453	2	.000
3	.024	.021	165.691	3	.000
4	.030	.021	167.717	4	.000
5	.040	.021	171.155	5	.000
6	-.021	.021	172.153	6	.000
7	.057	.021	179.138	7	.000
8	.016	.021	179.715	8	.000
9	.036	.021	182.587	9	.000
10	-.014	.021	183.039	10	.000

a. The underlying process assumed is independence (white noise).

b. Based on the asymptotic chi-square approximation.