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Transformation from Property Loan Stocks to Real Estate Investment Trusts and the Resulting Influence on International Diversification

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DECLARATION

I, the undersigned, hereby confirm that the attached treatise is my own work and that any sources are adequately acknowledged in the text and listed in the bibliography.

I accept the rules of the University of Pretoria and the consequences of transgressing them.

This treatise is submitted in partial fulfilment of the requirements for the degree of MSc (Real Estate) at the University of Pretoria. It has not been submitted before for any other degree or examination at any other university.

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ABSTRACT

South Africa has made a recent transformation from Property Loan Stock companies and Property Unit Trusts to the internationally recognised Real Estate Investment Trust structures. The locally listed companies that decided to adopt this structure should experience increased global interaction. This study focused primarily on the international direct or indirect real estate investments made from a South African Real Estate Investment Trust perspective. When conducting this investment, the respective companies must obtain financing for the investments, which will have an impact on capital and shareholder structure. The capital structure acts as an umbrella term that includes the shareholder's equity and debt of a company. The study mainly focused on long-term debt. The shareholder structure focuses on the equity of South African Real Estate Investment Trusts in depth and determines if international activity had taken place. Global investments usually have a structure through which money is transferred to foreign countries to execute an investment. This is predominantly referred to as the company structure. The top 13 Real Estate Investment Trusts, by market capitalisation, were examined to first determine whether international investment took place and secondly whether their company structure experienced change after foreign property investments had been made. Emphasis was placed on the risks involved during the international investment process, the reason for company structure changes, as well as the benefits associated with these decisions. The various direct and indirect impacts that the previous themes have on the bottom line of a specific South African Real Estate Investment Trust were also explored, should these investors choose to capitalise on a global scale.

Keywords: capital structure, company structure, international real estate, internationalisation, investment trusts, ownership structure, property risk diversification, REITs

TABLE OF CONTENTS

DECLARATION ii

ABSTRACT iii

LIST OF FIGURES vii

LIST OF TABLES viii

LIST OF ABBREVIATIONS AND ACRONYMS ix

LIST OF DEFINITIONS xi

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY 19

1.1 INTRODUCTION 19

1.2 BACKGROUND 2

1.3 RESEARCH PROBLEM 5

1.3.1 Sub-problems 5

1.4 HYPOTHESES 5

1.5 ASSUMPTIONS 6

1.6 LIMITATIONS 7

1.7 RESEARCH DESIGN 7

1.8 IMPORTANCE OF THE STUDY 8

CHAPTER 2: LITERATURE REVIEW 10

2.1 SOUTH AFRICAN REAL ESTATE INVESTMENT TRUST GLOBALISATION 10

2.2 REAL ESTATE INVESTMENT TRUST TAXATION 20

2.3 JOINT VENTURES AND SUBSIDIARIES 25

2.4 COST OF CAPITAL OF REAL ESTATE INVESTMENT TRUSTS 30

2.5 INTERNATIONAL DIVERSIFICATION RISKS 36

2.5.1 Political risk 39

2.5.2 Tenant risk 41

2.5.3 Liquidity risk 42

2.5.4 Inflation risk 43

2.5.5 Interest rate risk 43
2.5.6 Exchange rate risk 44
2.5.7 Financial statement analysis 47
CHAPTER 3: RESEARCH METHODOLOGY 57
3.1 INTRODUCTION 57
3.2 RESEARCH ANALYSIS 57
3.3 CONCLUSION 65
CHAPTER 4: DATA ANALYSIS 66
4.1 SHAREHOLDER STRUCTURE 66
4.1.1 Introduction 66
4.1.2 Background 67
4.1.3 Data collection and analysis 71
4.1.4 Conclusion 75
4.2 COMPANY STRUCTURE 76
4.2.1 Introduction 76
4.2.2 Background 76
4.2.3 Data collection and analysis 82
4.2.4 Conclusion 87
4.3 DEBT STRUCTURE 88
4.3.1 Introduction 88
4.3.2 Background 89
4.3.3 Data collection 102
4.3.4 Conclusion 113
CHAPTER 5: REGRESSION ANALYSIS 115
5.1 INTRODUCTION 115
5.2 LOGISTIC REGRESSION ANALYSIS 133
5.3 CONCLUSION 140

CHAPTER 6: CONCLUSION AND SUMMARY 144
6.1 INTRODUCTION.....144
6.2 SUMMARY OF FINDINGS.....144
6.3 FINAL REMARKS 150
REFERENCES 151

LIST OF FIGURES

Figure 2.1: Global investment class comparison 2016 14
Figure 4.1: Growthpoint Properties Limited Integrated Report 2015 82
Figure 4.2: Hyprop Investments Limited Integrated Report 2015.....83
Figure 4.3: Redefine Properties Integrated Report 2015 84
Figure 4.4: Resilient Property Income Fund Integrated Report 2015 ..... **Error! Bookmark not defined.**
Figure 4.5: Fortress Income Fund Integrated Report 2015**Error! Bookmark not defined.**
Figure 4.6: Rebosis Property Fund Integrated Report 2015 86
Figure 4.7: Cost of borrowed funds relative to maturity 98
Figure 4.8: Demand curve for borrowed funds 99
Figure 4.9: Capital formation: Retail – Accommodation 1 104
Figure 4.10: Capital formation – Residential private 1 105
Figure 4.11: Prime rate – South Africa 107
Figure 4.12: Consumer Price Index of South Africa.....108
Figure 5.1: Predictor important figure indicating the most significant factor of influence 122
Figure 5.2: Figure visually indicating heteroscedasticity at an acceptable level for research and analysis purposes given the data available for the study 124
Figure 5.3: Predictor importance figure indicating the most significant factors of influence 125
Figure 5.4: Figure visually indicating heteroscedasticity at an acceptable level for research and analysis purposes given the data available for the study 126
Figure 5.5: The bell distribution curve indicates the heteroscedasticity analysis.127
Figure 5.6: Predictor importance 130
Figure 5.7: Normal Probability Plot.....131
Figure 5.8: Residual bell distribution 131
Figure 5.9: Predictor importance figure indicating the most significant factors of influence 135
Figure 5.10: Logistic regression output – predicted variable plotted against the dependent variables.....136
Figure 5.11: The bell distribution curve 137

LIST OF TABLES

Table 2.1: Withholding tax comparison 23
Table 4.1: Financial ratios of SA REITs.....71
Table 4.2: International shareholding (shares) 74
Table 4.3: REIT quadrant model 92
Table 4.4: Solvency ratios.....103
Table 4.5: Average cost of capital of SA REITs sample 106
Table 4.6: Solvency and return ratios of SA REIT sample.....110
Table 4.7: Liquidity ratios of SA REIT sample 111
Table 5.1: Logistic output where each independent variable is tested individually against a common dependent variable in RoEIPD 118
Table 5.2: OLS output data focusing on the t-value and the respective significances 124
Table 5.3: R-squared, adjusted R-squared, and Durban-Watson.....127
Table 5.4: OLS output data focusing on the t-value and the respective significances 128
Table 5.5: R-squared, adjusted R-squared, and Durban-Watson.....129
Table 5.6: Coefficient output 132
Table 5.7: Logistic output.....134
Table 5.8: R-squared, adjusted R-squared, and Durban-Watson.....135
Table 5.9: OLS output data focusing on the t-value and the respective significances 137

LIST OF ABBREVIATIONS AND ACRONYMS

CFO	Cash From Operations
BLUE	Best Linear Unbiased Estimators
EBIT	Earnings Before Interest, and Taxes
EBITDA	Earnings Before Interest, Tax, Depreciation, and Amortisation
EPS	Earnings Per Share
FFCF	Future Free Cash Flow
GDP	Gross Domestic Product
GEPF	Government Employees Pension Fund
GP	Gross Profit
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IJV	International Joint Venture
JSE	Johannesburg Stock Exchange
JV	Joint Venture
NAVPS	Net Asset Value Per Share
NP	Net Profit
OLS	Ordinary Least Squares
OR	Odds Ratio
P/E	Price-to-earnings
PIC	Public Investment Corporation
PLS	Property Loan Stock

PUT	Property Unit Trust
REIT	Real Estate Investment Trust
ROA	Return on Asset
SA	South African
SAPOA	South African Property Owners Association
WACC	Weighted Average Cost of Capital

LIST OF DEFINITIONS

Accrued interest – The interest due on a bond since the last interest payment was made. The buyer of the bond pays the market price plus accrued interest payable.

Acquisition – The acquiring of control of one corporation by another. In “unfriendly” takeover attempts, the potential buying company may offer a price well above current market values, new securities, and other inducements to stockholders. The management of the subject company might ask for a better price or try to join up with a third company.

Amortisation – Accounting for expenses or charges as applicable rather than as paid. This includes depreciation, depletion and write-off intangibles, prepaid expenses, and deferred charges.

Annual report – The formal financial statement issued yearly by a corporation. The annual report shows assets, liabilities, revenues, expenses, earnings, how the company stood at the close of the business year, how it fared profit-wise during the year, as well as other information of interest to shareowners.

Assets – Everything a corporation owns or that is due to it, including cash, investments, money due to it, materials, and inventories, which are called current assets; buildings and machinery, which are known as fixed assets; and patents and goodwill, called intangible assets.

Auditor’s report – Often called the accountant’s opinion, it is the statement of the accounting firm’s work and its opinion of the corporation’s financial statements, especially if they conform to the normal and generally accepted practices of accountancy.

Balance sheet – A summarised financial statement showing the nature and amount of a company’s assets, liabilities, and capital on a given date. In Dollar/Rand amounts, the balance sheet shows what the company owned, what it owed, and the ownership interest in the company of its stockholders.

Basis point – One gradation on a 100-point scale represents 1% – used to indicate variations in the yields of bonds.

Bear – Someone who believes the market will decline.

Bear market – A declining market.

Bearer bond – A bond that does not have the owner's name registered on the books of the issuer. Interest and principal, when due, are payable to the holder.

Bid and asked – Often referred to as a quotation or quote. The bid is the highest price anyone wants to pay for a security at a given time; the asked is the lowest price anyone will take at the same time.

Block – A large holding or transaction of stock usually considered to be 10 000 shares or more.

Blue chip – Refers to companies that are popular for having quality products or services, and for their ability to generate turnover and pay dividends.

Book value – An accounting term. Book value of a stock is determined from a company's records by adding all assets, then subtracting all debts and other liabilities, plus the liquidation price of any preferred issues. The sum arrived at is divided by the number of common shares outstanding, and the result is book value per common share. Book value of the assets of a company or a security may have little relationship to market value. This can be related to the net asset value per share, which some companies use as a performance measure.

Bull – One who believes the market will rise.

Bull market – An advancing market.

Capital gain or capital loss – Refers to the profit or loss from the sale of a capital asset.

Capital stock – All shares representing ownership of a business, which includes preferred and common stock.

Capitalisation – Total amount of the various securities issued by a corporation. Capitalisation may include bonds, debentures, preferred and common stock, and surplus. Bonds and debentures are usually accepted on the books of the issuing

company in terms of their par or face value. Preferred and common shares may be approved in terms of par or stated value.

Cash flow – Reported net income of a corporation plus amounts charged off for depreciation, depletion, amortisation, and extraordinary charges to reserves, which are bookkeeping deductions and not paid out.

Collateral – Securities or other property guaranteed by a borrower to secure repayment of a loan.

Commercial paper – This includes debt instruments issued by companies to meet their short-term or long-term financing needs.

Commission – The broker's basic fee for purchasing or selling securities or property as an agent.

Commission broker – An agent who executes orders for the purchase or sale of securities or commodities.

Common stock – Securities that represent an ownership interest in a corporation. If the company also has distributed preferred stock, both common and preferred have ownership rights. The terms common stock and capital stock are often used interchangeably when the company has no preferred stock.

Consolidated balance sheet – Refers to a balance sheet showing the financial condition of a corporation and its subsidiaries.

Cumulative preferred – A stock having a facility that if one or more dividends are omitted, the absent dividends must be paid before dividends may be paid on the company's common stock.

Cumulative voting – A method of voting for corporate directors that enables the shareholders to multiply the number of their shares by the number of directorships being voted on and to cast the total for one director or a selected group of directors.

Current assets – Those assets of a company that are reasonably expected to be realised in cash, sold, or consumed during one year. These include cash, receivables and money due usually within one year, as well as inventories.

Current liabilities – The money payable by a company within one year.

Debenture – A promissory letter sponsored by the general credit of a company and usually not secured by a mortgage or lien on any specific property.

Depreciation – Normally, charges against earnings to write off the cost less salvage value of an asset over its projected useful life. It is a bookkeeping entry and does not denote any cash outlay nor are any funds earmarked for the purpose.

Director – Person elected by shareholders to attend to the board of directors. The directors appoint the president, vice-presidents, and all other operating officers. Directors decide when dividends shall be paid.

Diversification – Spreading investments among different types of securities and various companies in different fields.

Dividend – The payment nominated by the board of directors to be dispersed pro rata among the shares outstanding. On preferred shares, it is generally a fixed amount. On common shares, the dividend varies with the treasures of the company and the amount of cash on hand, and may be omitted if business is poor or the directors determine to withhold earnings to grow the company by investing in property, plant, and equipment.

Earnings report – A statement, also known as an income statement, issued by a company showing its earnings or losses over a given period. The earnings report lists the income earned, expenses, and the net result.

Equity – The ownership concern of common and preferred stockholders in a company. Also, equity refers to excess value of securities over the debit balance in a margin account.

Fiscal year – Referred to as a corporation's accounting year, which can vary depending on the company. Because of the nature of their business, some companies do not use the calendar year for their bookkeeping year.

Fixed charges – A company's fixed expenses, such as bond interest or overhead expenses, which it has agreed to pay, whether earned or not, and which are subtracted from income before earnings on equity capital.

Free and open market – A market in which the supply and demand are freely expressed in terms of price. Contrasts with a controlled market in which supply, demand, and price may all be regulated.

Fundamental research – Analysis of industries and companies based on factors such as sales, assets, earnings, products or services, markets, and management. As applied to the economy, fundamental research includes consideration of gross national product, interest rates, unemployment, inventories, and savings.

Funded debt – Usually refers to interest-bearing bonds or debentures of a company. Examples of funded debt can include long-term bank loans. However, it does not include short-term loans, preferred, or common stock.

General mortgage bond – A bond that is protected by a comprehensive mortgage on the company's property but which may be outranked by one or more other mortgages.

Holding company – A corporation that owns the securities of another, in most cases with voting control.

Hypothecation – The guaranteeing of securities as collateral, for example, to secure the debit balance in a margin account.

Index – A statistical measure expressed in terms of percentages of a base year or years.

Interest – Payments that borrowers pay lenders for the use of their money. A corporation pays interest on its bonds to its bondholders.

Investment – The use of money for making more money, to gain income, increase capital, or both. Investment can also be described as sacrificing a given present value for relatively uncertain, positive, future cash inflows.

Issue – Any of a company's securities, or the act of allocating such securities.

Leverage – The effect on a company when the company has bonds, preferred stock, or both outstanding, and uses it to expand the property, plant, and equipment of the company.

Liabilities – All the claims debtors have against a corporation. Liabilities include accounts, wages and salaries payable; dividends declared payable; accrued taxes payable; and fixed or long-term liabilities, such as mortgage bonds, debentures, and bank loans.

Liquidation – The process of converting securities or other property into cash.

Liquidity – The ability of the market of a security to absorb a reasonable amount of buying or selling at reasonable price changes. Liquidity is one of the most important characteristics of a good market. It can also refer to the ability to convert property, plant, and equipment into cash.

Listed stock – The stock of a company that is traded on a given securities exchange.

Loan-to-value – A financial term expressing the loan value to the value of the asset being acquired.

Locked in – Investors are said to be locked in when they have profit on a security they own but do not sell because their profit would immediately become subject to capital gains tax.

Market price – The last reported price at which the stock or bond is sold.

Maturity – The date on which a loan or bond becomes due and is to be paid off.

Merger – Combination of two or more corporations.

Net asset value – Usually used to measure the net asset value per share. An investment company computes its assets daily, or even twice daily, by computing the market value of all securities owned. All liabilities are deducted, and the balance is divided by the number of shares outstanding; preferential shares are excluded. The resulting figure is the net asset value per share.

Paper profit (loss) – An unrealised profit or loss on a security still held. Paper profits and losses become realised only when the security is sold.

Portfolio – Holdings of securities by an individual or institution. A portfolio may contain bonds, preferred stocks, common stocks, and other securities.

Preferred stock – A class of stock with a claim on the company's earnings before payment may be made on the common stock and usually entitled to priority over common stock if the company is liquidated. Usually has no voting rights but can be convertible.

Price-to-earnings (P/E) ratio – A popular way to compare stocks selling at various price levels. The P/E ratio is the price of a share of stock divided by earnings per share for a 12-month period.

Primary distribution – Also called primary or initial public offering. This is the original sale of a company's securities.

Prime rate – The lowest interest rate charged by commercial banks to their most creditworthy customers; other interest rates such as personal, automobile/car, commercial, and financing loans are often pegged to the prime.

Principal – The person for whom a broker executes an order, or dealers buying or selling for their own accounts. May also refer to a person's capital or to the face value of a bond.

Property Loan Stock (PLS) company – Makes use of a share linked to a variable rate debenture. Usually has fewer restrictions in terms of listing and operating activities than a Property Unit Trust.

Real Estate Investment Trust (REIT) – An organisation like an investment company in some respects but directing its holdings in direct, equity, or mortgage real estate investments. It has specific conditions relating to distributions and listing requirements.

Refinancing – Same as refunding. New securities are sold by a company, and the money is used to retire existing securities. The object may be to save interest costs, extend the maturity of the loan, or both.

Registered bond – A bond that is registered on the books of the issuing company in the name of the owner.

Risk – The probability of not meeting a certain predetermined required rate of return due to various factors.

Serial bond – An issue that matures in part at intermittent stated intervals.

Sinking fund – Money regularly set aside by a company to exchange its bonds, debentures, or preferred stock from time to time as specified in the agreement or charter.

Speculation – The employment of funds by a speculator. Safety of principal is a secondary factor.

Speculator – One who is willing to assume relatively large risk or uncertainty in the hope of gain.

Spin off – The departure of a subsidiary or division of a company from its parent company by issuing shares in a new corporate entity. Shareowners in the parent company receive shares in the new company in proportion to their original holding, and the total value remains approximately the same.

Split – The division of the unsettled shares of a corporation into a larger number of shares. Ordinarily, splits must be designated by directors and approved by shareholders.

Stock dividend – A dividend remunerated in securities rather than in cash. The dividend may be supplementary shares of the issuing company, or in shares of another company (usually a subsidiary) held by the company.

Syndicate – A group of investment bankers who together underwrite and distribute a new issue of securities or a large block of an outstanding issue. It can be the pooling of funds from listed or private investors to conduct acquisitions or execute large investments when the initiating company's reserves are depleted or an attempt to diversify.

Transfer – This term may refer to two different operations: the delivery of a stock certificate from the seller's broker to the buyer's broker and legal change of ownership, normally accomplished within a few days.

Treasury stock – Stock issued by a company but later reacquired. It may be held in the company's treasury indefinitely, reissued to the public, or retired. It receives no dividends and has no vote while held by the company.

Turnover rate – The volume of shares traded in a year as a percentage of total shares listed on an exchange, outstanding for an individual issue, or held in an institutional portfolio.

Volume – The number of shares or contracts traded in a security or an entire market during a given period. Volume is usually measured daily, and a daily average is computed for longer periods.

Voting right – The common stockholders' right to vote their stock in the affairs that concern the company. Preferred stock usually has the right to vote when preferred dividends are in default for a specified period. The right to vote may be delegated by the stockholder to another person.

Working control – Theoretically, ownership of 51% of a company's voting stock is necessary to exercise control. In practice – and this is particularly true in the case of a large corporation – effective control can sometimes be exerted through ownership of less than 50% – individually or by a group acting in concert. It can also be referred to as a controlling stake in the company.

Yield – Also known as return. The dividends or interest paid by a company expressed as a percentage of the current price.

Zero coupon bond – A bond that pays no interest but is priced, at issue, at a discount from its redemption price.

(Raymond James & Associates, 2016)

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The global Real Estate Investment Trust (REIT) market is estimated at more than $900 billion, where the US market is the biggest market, followed by Australia,

France, and Japan, according to the MSCI World REIT Index. The South African (SA) REIT market forms part of several emerging, recently internationalised REIT countries, contributing 4% to the total global market capitalisation. SA REIT market is miniscule when compared to the largest markets, with a total market capitalisation of around $40 billion with 28 main board listings. The South Africa listed property industry is experiencing accelerated growth in capitalising on real estate investment opportunities via foreign countries. These ventures are being implemented via direct or indirect real estate investments abroad.

This introductory chapter will examine the transition process to the latest REIT structure, which gave rise to simplified international interaction and investments. It will also look at the background of capital, ownership, and company structure changes that occurred during this globalisation phase. How these changes could have occurred, types of strategies that could have been implemented, and benefits of strategies commonly used will be explored.

1.2 BACKGROUND

Globalisation is an occurrence seen around the whole world. Globalisation refers to the procedure of interaction and synthesis between individuals, companies, and governments of different countries. It is a movement driven by one predominant factor, namely, international trade and investment that is underpinned by massive advancements in information technology. Global integration is imminent, and this progression affects various components of societies, being international real estate development, investment, and the financing procedures respectively (Goldblatt, 1999).

In South Africa, REITs are in their infancy stage. It has been a major battle at governmental level to approve this modern REIT structure for listed property companies, but finally on 1 May 2013, the legislation was passed. A month after the passing of these pieces of legislation, the Johannesburg Stock Exchange (JSE) published the new listing requirements for an SA REIT, which was in line with international standards. The new REIT structure is simpler and more flexible than the previous Property Loan Stock (PLS) and Property Unit Trust (PUT) business structures. For example, PLS companies and PUTs had very complicated taxation

structures. This specific problem has been addressed directly and has been resolved with new REIT tax legislation (Boshoff, 2013).

Previously, the South African-listed property sector had either a PLS or PUT structure. The first difference between these two structures is quite simple: the one is a company and the other is a trust. This places them on a different playing field because they differ in terms of statutory and taxation requirements (Rampersad, 2010).

The listed property sector was very complicated; this caused problems for shareholders, who did not understand how their dividends were taxed nor the dividend distribution requirements and transparency of investment strategies that were being followed. An even bigger problem emerged because it also hindered the confidence of foreign investors.

Today, foreign investors can feel that their investments are in safer hands than before because of the simplicity of the structure. The odds are that they also have similar listed REIT structures which increase their familiarity with the process and requirements, but they will ultimately be able to invest with confidence. Locally listed companies will also be able to conduct business more efficiently on an international basis, which will form the foundation of this study.

The ease of international real estate investments and their respective impacts on the financial situation of REITs will also be a primary focus of the study. This global investment trend from a South African point of view is driven by several factors, the main one being political instability, which makes foreign real estate more expensive and increases the long-term risk involved in local real estate investments. The culmination of these events leads to risk diversification and the use of indicators to analyse current risk levels and speculate future risk (Rissik, 2015). Risk also plays a pivotal role in the cost of goods and interest rates, which are essential elements to consider in the property industry.

The REIT structure is a global investment arrangement that is experiencing continued growth, refinement, and ultimately expansion into new countries. The

REIT structure has specific conditions with regard to dividend distribution, taxation, management, audit committees, and listing requirements. REITs have enabled different countries to adopt a coherent structure that acts as an international benchmark, and that will assist in the international competitiveness of listed real estate companies all over the world.

The leading countries of REIT implementation are the United States of America, Australia, France, Japan, Canada, United Kingdom, and the Netherlands (Boshoff, 2013). Apart from global interaction, there are numerous other benefits to adopting the REIT structure, which will be discussed in detail in the following chapters.

Institutional investment in REITs represents confidence in the respective company. Institutional ownership will be able to affect the returns of REITs. These institutions are generally extremely large organisations, such as insurance companies or investment firms, and they have massive cash reserves which must be invested; otherwise, the money would depreciate due to the time value of money. One of the options at their disposal is to invest those reserves in real estate via specialist property investors such as listed REITs. They expect some form of dividends as well as capital growth on their investment (Zietz, 2013).

Real estate investment has certain underlying risks relating to several economic factors, such as the interest and inflation rates in the respective foreign countries and the political situation. These risks can have a direct impact on a firm’s cost of equity and cost of debt. This can lead to an impact on the firm’s cash flow and ultimately its bottom line (Sheng, 2015).

International real estate investment can either amplify or mitigate the risks involved. As mentioned previously, it affects several other factors of an SA REIT such as the weighted average cost of capital (WACC) and the shareholders’ composition of a firm. The capital structure can also be affected by the shareholder structure if a REIT has long-term debt, which is usually the case, though it cannot exceed 60% of the value of its assets. Various determinants and theories have been established to form a capital structure. These can also be used to determine if certain changes have occurred during a specific period (Haron, 2014).

Global legislation and tax requirements can vary, and these can directly impact on international real estate investments. Corporate and capital gains tax from the top developed countries will be investigated to establish the potential impact on international real investments from a South African perspective.

The taxation divisions relate to the subsidiaries of SA REITs. Some alternatives may receive tax incentives as well as additional tax-deductible items which can have a direct impact on the bottom line once again (Hollingdrake, 2012). This report will, however, look at the basic South Africa tax considerations but primarily focus on international taxation.

The most popular and stable investment countries will be identified, and the nations will include the United States of America, the United Kingdom, Australia, and Canada. Emerging market REITs in Asia, Africa, and Europe will also be considered for a more accurate and complete comparison. Their taxation principles for foreign investors will be considered, and it will be established whether SA REITs are following strategies to minimise their exposure to international taxation, for example, forming a joint venture with a local developer instead of establishing a wholly owned subsidiary. The study will look at different ratios to measure the changes that occurred during the modern REIT transition in terms of internationalisation. These indicators will measure the profitability, liquidity, and solvency of the various REITs being examined (Wan Mansor, 2008).

1.3 RESEARCH PROBLEM

During the transition from PLS companies and PUTs to REITs, have SA REITs diversified internationally and, if so, to what extent has it affected their capital, shareholder, and ownership structure?

1.3.1 Sub-problems

The following are the sub-problems of this study:

1. How did ownership structures change in SA REITs during this transformation?
2. Did SA REITs alter their company structures to accommodate their international investments, specifically using options such as securitisation methods, partnerships, wholly owned subsidiaries, and joint ventures?
3. How did international investment risks affect the capital structure of SA REITs, referring specifically to the weighted average cost of capital, cost of debt, and leverage?

1.4 HYPOTHESES

The hypotheses made in this study follow.

1. International shareholding *has not* improved in SA REITs.

   International shareholding *has* improved in SA REITs.

$$H_0: \mu \leq 6\,337\,202 \qquad H_A: \mu > 6\,337\,202$$

2. The South African-listed REIT sector *has not* made use of partnerships, joint ventures, wholly owned subsidiaries, and/or securitisation techniques during international real estate endeavours.

The South African-listed REIT sector *has* made use of partnerships, joint ventures, wholly owned subsidiaries, and/or securitisation techniques during international real estate endeavours.

Qualify: At least 80% of the sample must be able to display participation in the foregoing business activities for the null hypothesis to be rejected.

3. The weighted average cost of capital of SA REITs *has not* declined.

   The weighted average cost of capital of SA REITs *has* declined due to increased international real estate investment behaviour.

$$H_0: \mu \geq 9.77 \qquad H_A: \mu < 9.77$$

1.5 ASSUMPTIONS

The following assumptions were made:

- World economic conditions were suitable for international investments during any global investments made.
- None of these SA REITs were under any duress when any of their international real estate investments, direct or indirect, were made.
- The property development companies listed on the JSE are transparent, accurate, and honest in the presentation of their portfolios, annual financial statement presentation, and ownership structure. No due diligence must be investigated.

1.6 LIMITATIONS

A definite limitation that was experienced is that certain information was not available to conduct a complete and comprehensive analysis on various chapters in this study. Examples of this lack of information include preferred ownership structure strategies, reasons for investing or not investing in specific countries, and favoured capital structures and the benefits thereof. This information can only be obtained when one is employed at the specific company and that the company will provide that information on a confidential basis.

It was furthermore difficult to conduct interviews with real estate investment professionals in foreign countries. They would have had in-depth knowledge of foreign investor strategies as well as expertise in their local investment climate.

The aforementioned lack of information may skew certain results, but it is important to remember that this study did not aim to develop a perfect capital, ownership, and company structure, but it merely made observations to provide relevant theory background and to investigate what is currently implemented by SA REITs.

1.7 RESEARCH DESIGN

Various methods of collecting data were used depending on whether the information was for background and theory purposes or for analysing practical implementations. The theory of each theme was predominantly extracted from journal articles and several textbooks.

Theory provided background information as well as the criteria against which the listed companies were evaluated. This included statistical inference techniques. In some areas, such as the taxation of South African REITs, risk diversification and company structuring expert interviews were conducted to gather context on those subjects. A questionnaire was formulated that contained questions pertaining to each of the three core themes.

The reason for not using a questionnaire for each theme separately is because a single questionnaire would most probably have a higher completion rate, which is

ideal. It is preferred that the same person fill out the questionnaire, which is easily achieved by using one extensive questionnaire.

1.8 IMPORTANCE OF THE STUDY

International real estate investment activities are accelerating at an astronomical pace. More advanced information technology and communication resources make it easier for listed and private individuals to participate in this sector. Why would a private property development company, direct property REIT, hybrid REIT, or equity REIT bother to invest in a foreign country?

The primary reason is risk diversification. Risk influences many different aspects of a company. These aspects include dividend yields, hedging characteristics against the local currency, attracting or discouraging institutional shareholding, share price, the return beta of a company, ease of obtaining finance through the issuing of share or long-term debt, and the cost of capital, to name a few. South Africa currently has a weak currency compared to the US Dollar, Euro, or Pound. This provides a broader range of options to choose from when making a foreign investment for purposes of hedging against the depreciating Rand. For this reason, the research administered in this study is particularly important for all developing countries that are sitting in the same boat as South Africa. The results of this study can also be used for recently listed SA REITs or private real estate companies planning to list, as a benchmark of the impacts and benefits of entering the international real estate investment environment.

This study is not directed at only developing countries; developed countries can also make use of the study findings. The types of risk and capital theories discussed may affect them a little differently, depending on the strength of the country, but the principles will be just as relevant to them. Another application of this study is for any ordinary citizens who are planning to invest listed real estate.

The information obtained from this literature can assist investors, private or public, in what to look for when investing in SA REITs or any REITs for that matter. For example, REITs with very complicated company structures might make it very

difficult to understand from where the company is generating income. Institutional shareholding can probably suggest confidence in the particular company portfolio, and international diversification can possibly suggest a more stable return on equity, specifically in a South African context. Various financial ratios used in combination can provide an accurate picture of the company's current financial situation and predict future actions.

The chapter that follows will be a review of literature pertinent to this study.

CHAPTER 2: LITERATURE REVIEW

2.1 SOUTH AFRICAN REAL ESTATE INVESTMENT TRUST GLOBALISATION

The previous chapter provided an introduction and background to the study. This chapter reviews literature relevant to this study. It has been almost a decade since the new REIT structure was implemented in South Africa. The South African REIT sector is one of the largest emerging market capitalisations among newly adopted REIT countries, and it has kept growing ever since (De Klerk, 2013). Today, the SA REIT sector on the JSE is valued at R340 billion ($25.64 billion) (Rapp, 2016). A Global REIT Report of 2016 conducted by Ernest and Young described the SA REIT market as a mature investment market for international investors, ranking it among established REIT markets such as Australia, Spain, Mexico, and Australia. Prior to South African REIT legislation, there were historically two forms of listed property investment entities in South Africa: PLS companies and PUTs. Both PLSs and PUTs were funds that invested directly into property; however, these funds were unevenly regulated and subject to different tax treatments. Both could adopt the REIT regulatory framework set out by the JSE. Following the introduction of section 25BB into the South African Income Tax Act in 2012, South Africa has also adopted a uniform REIT regime. The REIT regulation and legislation in South Africa is of international standard. More than 25 countries in the world, such as the US, Australia, Belgium, France, Hong Kong, Japan, Singapore, UK, and various smaller emerging markets use a similar REIT model.

Why would companies convert to a new company structure? The previous structures made use of linked units. This means that every share represented a 99% loan to the company and a 1% equity stake. Shareholders could therefore benefit from the tax deduction of the interest on their loan. This system is effective but difficult to understand for public investors (Lewis, 2012). There were no restrictions on PLSs and PUTs as opposed to several strict prerequisites for listing and operation of an SA REIT. A lack of regulation led to very little control in terms of company direction and assurance to shareholders. This problematic structure limited its transparency, and reckless borrowing and management were therefore

a concern. These were not internationally recognised issues, as the world was on a REIT structure and offshore investors could be put off if there is no transparency and if a more regulated, investor-friendly structure was needed. The importance of introducing this REIT structure is to mitigate the ownership structure confusion by allowing normal dividend payments instead of a portion interest combined with dividends. The SA REIT future is to provide local and international investors a clear, transparent investment option in the South African capital market. According to De Klerk (2013), several incremental steps have led to the smooth transition from PLSs and PUTs to REITs. The first was when the National Treasury published the latest REIT tax legislation for South African-listed property companies that applied for REIT status. Shortly afterwards, the JSE announced the new listing requirements to qualify for REIT status. The flexibility and benefits regarding taxation motivated nearly all listed property companies to convert and apply for REIT status.

It is essential to address the requirements to list as an SA REIT early in this study because it will influence several aspects later. These aspects include the liquidity, solvency, and profitability ratios that will be used for test purposes, the taxation implications, capital structure strategies, and risk monitoring requirements (SA REIT, 2013).

The requirements to list as an SA REIT are as follows:

- The company must own more than R300 million ($22 600 000) of property.
- The company must keep its debt below 60% of its gross asset value.
- The company must earn at least 75% of its income from direct property rental, property owned, or investment income from indirect property shareholding.
- The company must have a risk monitoring committee.
- SA REITs may not enter derivative instruments that are not in the ordinary course of business.
- The company must pay at least 75% of its taxable earnings obtainable to its investors each year.

The aforementioned requirements were formulated after the global crisis in 2008. A basic approach was taken to minimise excessive regulation, thus formulating easy,

straightforward and uncomplicated rules (De Klerk, 2013). It is vital to observe the benefits of REIT, as they will be relevant when looking at the globalisation of the SA REIT market. Benefits are attributable to investor behaviour and could possibly assist in the study on institutional as well as international investment in SA REITs. There are a number of advantages of SA REITs (SA REIT, 2013).

The first advantage of SA REITs is inherent to the real estate asset class specifically and that is the ways of hedging against inflation. Real estate experiences capital investment growth and a constant increase in regular income distributions. REITs, in general, provide exposure for investors to high-quality real estate, both nationally and offshore. This study investigates the impact of offshore investments in more detail by measuring their impact on the listed property market. SA REITs can be viewed as a hybrid containing both bond and equity features. This includes the reoccurring cash dispersion income such as a bond and the income growth, the same as an equity. An SA REIT investment is underpinned by lease agreements with tenants in property assets. These lease agreements have escalated, which increased the annual income of the company systematically, as previously stated. The benefit is that REITs have very low vacancy percentages, ensuring a stable income increase per annum and minimising risk for investors.

Anyone can invest in SA REITs, ranging from multinational corporations to single private investors. It is very safe, quick, and easy for any investor to invest in SA REITs. The entry cost to obtain exposure to high-quality commercial real estate assets is one share. Unlike direct property investments, the shares can be freely traded per the investor's preference. The cost incurred when buying or selling shares will also be much less as opposed to direct property transactions. From a management perspective, SA REITs are performance-driven and entrepreneurial. This refers to the management team being allowed to obtain the best sustainable performance from the real estate assets. Advantageously, investors do not have the problem of conducting property management daily.

When an investor considers investing in an SA REIT, it will be relatively easy to predict the potential income that will be derived. The reason is that 75% of the income must be from rental, which is derived basically from lease agreements. Lease agreements in commercial real estate are usually long term with annual

escalations and thus easily predictable. According to Corbett (2016), the Delta Property Fund, which is a listed property company on the JSE, is specifically looking for properties that fit blue-chip companies' preference to obtain long-term leases. The long-term leases also help to underpin good cash flow.

A low-risk real estate investment structure is demonstrated by SA REITs. The reason is that the investor is exposed to a diversified portfolio in terms of diverse types of property and offshore real estate. Listed property companies usually have very strict governance requirements. SA REITs are active tools for diversifying an investment portfolio. Certain portfolio management theories will be discussed later. Their correlation with the broader equity markets is low; however, all public companies still face market risk which cannot be eliminated via diversification, but adding SA REITs to an equity portfolio can increase and stabilise returns for investors looking to take on long positions.

SA REITs should not only have been used as a diversification tool for equity portfolios but can be included in all diversified investment portfolios. Private individuals can invest in SA REITs for pension or retirement annuity purposes because no tax will be levied on capital gains or distributions.

SA REITs develop the economy, and their impact grows annually. The listed property sector is currently larger than the retail and hospitality sector. SA REITs have forged their mark on the international investment stage (Rapp, 2016). Transparency accounting has increased tremendously by providing regular statutory reporting to investors. SA REITs provide liquidity to the real estate market. Liquidity risks will be investigated in more detail later.

The primary motive for this study is the international interaction from a South African point of view. This boils down to diversification of investment portfolios, which in difficult economic times helps to acquire a stable return and to keep the investment risk to a minimum. Property developers have several diversification options at their disposal. The first is to decide on a combination of different property types, which include predominantly commercial, retail, residential, and hospitality properties. Some SA REITs specialise in only one property type, for example, retail or hospitality, which introduces a second diversification tool that can be implemented

in specialised or diverse real estate portfolios, namely, location (Caradoc-Davies, 2016).

Location can be classified into categories to better comprehend the magnitude of this diversification mechanism. The location of property can be applied on a small scale, for example, having properties in different suburbs in the same province. Medium-scale location diversification can imply a portfolio with properties across South Africa and large-scale location that will include an international property portfolio.

It is clear from Figure 2.1 that real estate has experienced the most growth worldwide. The distribution in terms of real estate types is 75% residential and 25% commercial. There are opportunities for investment in the correct asset class and during the correct investment climate by considering several economic indicators and demographics (Savills, 2016). This study will measure several of the economic factors against the real estate asset class to measure performance and diversification of the companies.

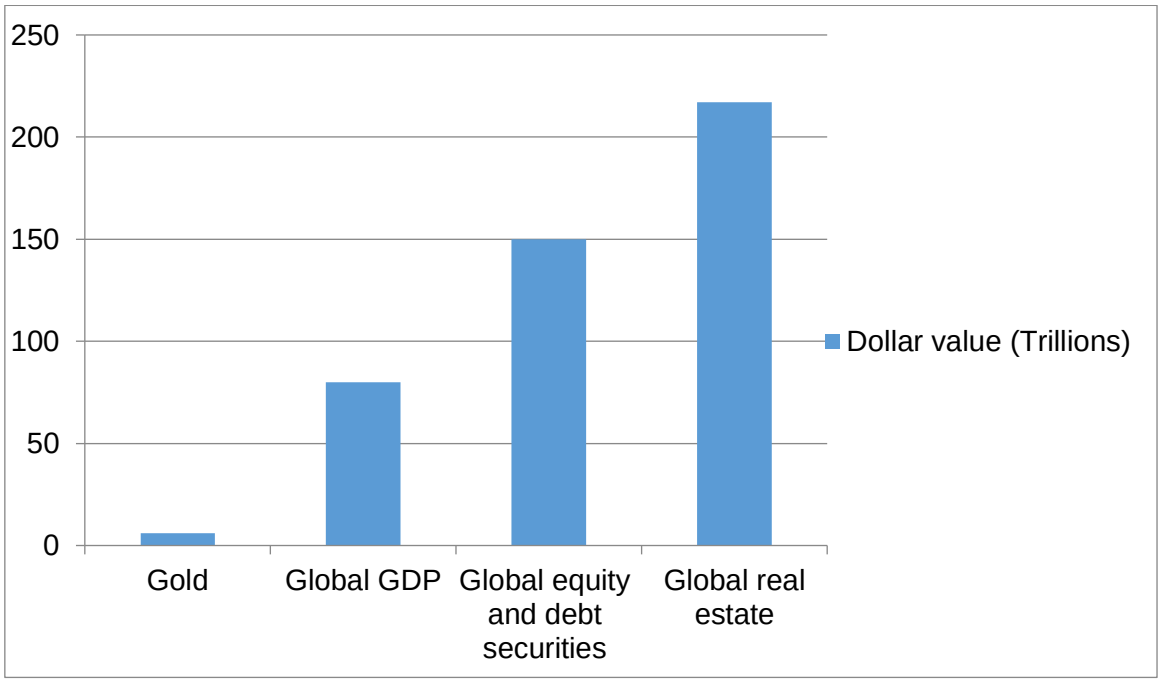

Figure 2.1: Global investment class comparison 2016

Source: Chang (2017)

According to Radford (2016), real estate is the most stable and most pursued investment asset, especially during uncertain times. As per the IP Global Africa division, many clients liquidate their shares and other investments to transfer into fixed assets, more specifically into fixed assets in Australia, Germany, and the United Kingdom, as these countries are considered the safest property investment markets or at least the most preferred by their customers. These countries are considered safe havens because the populations in the major cities are growing and thus the need for retail properties, housing, and hospitality facilities are in short supply, creating a major increase in the property values across the charts.

Low liquidity is often frowned upon because it is difficult to liquidate quickly and move the money elsewhere, but lately, the low liquidity of fixed assets has provided stability. The real estate market usually takes more time to feel the impact of external influences, thus reducing the risk suffering from short-term market reaction due to situations that are still being clarified. It is a clear indication that citizens in South Africa are either getting nervous, in the case of private investors, or want to avert the effects of inflation, being higher than normal at 6% in the case of SA REITs (Radford, 2016).

Foreign deals have been occurring regularly the past couple of months. The reason for this analysis of locally listed REITs is to confirm that international real estate acquisitions have been taking place more frequently, and thus reiterates the importance of the research being conducted in this study. The SA REITs that have been active in international investments are Textron Property Fund, Fortress Income Fund, Resilient, New Europe Property Investments, Fortress Property Fund, Attacq, Delta Africa, Tower Property Fund, Redefine International, and Hyprop Investments. These SA REITs have invested in several different countries such as Croatia, Germany, the United Kingdom, Serbia, Ghana, Zambia, Nigeria, Namibia, Romania, Poland, Montenegro, and Australia. The South African-listed property sector distributed 5% of their assets offshore before the REIT transition took place, as opposed to 36% currently. This is an important figure to illustrate that SA REITs had been diversifying their portfolios on a global scale (Muller, 2016).

Although Australia, Canada, Germany, the United States, and the United Kingdom are the preferred options for offshore investing due to their stability, South African real estate investments must not be ignored, according to Anderson (2016), who interviewed one of the front runners, namely, Delta Africa. They partnered with a local property development company, which altered Delta Africa's company structure. This will also be discussed later under wholly owned subsidiaries and joint ventures.

The flipside of SA REITs increasing their asset base especially internationally is the attraction of both national and international institutional investors. This will be discussed in more detail later in terms of the impacts that such investments can have on property development or investment companies.

A study has been conducted on the presence of international real estate investments in mixed-asset investment portfolios. This study by Chua (1999) focuses on the risk-return variations of a global mixed-asset portfolio, whereas the results derived can give a confident indication on expected risk-return characteristics in SA REITs with investment solely in direct and/or indirect property. This study was conducted on the five largest real estate markets in the world, namely, the United States of America, the United Kingdom, Japan, Germany, and France. These countries are coherent with the international investment trends of SA REITs, as seen by briefly looking at various articles described previously.

The study by Chua further highlighted some differences between real estate and other investment assets such as gold, equities, or cash. Real estate has higher transaction costs, taxation requirements, and asset management fees, which all have an impact on the return on investment. It focuses on the volatility of appraisal-based real estate total return indices. The true inherent risk of appraisal smoothing is that appraisers consider values from the past as well as current real estate values and the infrequent valuations of individual properties, at various times per annum. This causes a smoothing effect in which the true volatility as measured by the standard deviation is not correctly understood (Chua, 1999).

The information for any real estate return study must be adjusted for taxation, management fees, and transaction costs. Only then can true portfolio optimisation

and planning be fulfilled. If information on real estate appraisal-based indices is obtained over several years, it is important to note that different countries can be in distinct stages of the real estate cycle, or also known as the property clock. For example, according to results contained in Kelly (2013), different cities in the United States of America are in various stages. Washington and Chicago's values are bottoming out while the rent in Houston and San Francisco is experiencing tremendous growth. This could lead to the real estate indices in America being smoothed if this is not considered.

In the study performed by Chua (1999), the largest and most favourable investment countries have been used, and the asset classes that were compared include real estate, bonds, gold, equities, and cash. A time-series regression analysis and logistic models have been used to determine the reasons for the transition to REIT status. The study found that it is viable to include international real estate in a mixed-asset investment portfolio. This conclusion is applicable to the real estate investment portfolios and means that real estate investment portfolios must also investigate the options of diversifying on a global scale.

Institutional investors generally invest in large amounts of capital in income-generating equities. Primarily, there are five different types of income related to an investment, namely, ordinary income, qualified dividend income, short-term capital gains, long-term capital gains, and return on capital. From a REIT perspective, they usually do not pay income tax, but the asset base is restricted to real estate and mortgage debt, and they are required to also distribute a predetermined percentage of their taxable income. Most REITs will produce an ordinary income in the form of dividends, long or short capital gains, and return on capital. This means that dividend distribution can be more than the actual taxable income, since REITs can have extremely large depreciation write-offs for the institutional investor. These benefits may vary with mortgage REITs, which do not have the same depreciation write-off characteristics (Morningstar, 2008).

Large institutional investments in REITs can provide valuable information about a REIT and indicate expected long-term prosperity. This can be valuable to a REIT because such an investment can illustrate to the market that there is confidence in the company, which can lead to an increase in share prices and a possible increase

in returns. Thus, a REIT can focus on attracting institutional investors to establish a stable shareholder base that will include multinational corporations as minority shareholders. An analysis has been done by Zietz (2013) to determine whether institutional investments in REITs affect the returns generated by REITs. The fundamental expectation of this study prior to conducting the regression analysis was that the returns of REIT should not be correlated to the level of institutional ownership but merely when changes in such shareholding occur. The reason for this expectation is that market participants adjust their expectations about the company on the day the changes happen; thus, the change is viewed as an isolated event. These individual changes in institutional ownership must be monitored, and these events can possibly have an impact on performance and an inconsistent level of institutional shareholding in a REIT.

The results reiterated that shareholder activism is a single act; there are no hostile takeover intentions during such proceedings. It found that larger institutions can exercise more power within the respective company of investment with the sole purpose of aligning company objectives with its own. Institutional ownership has a positive effect on the market performance or risk-adjusted returns of the REIT. It also influences the return on assets and operating performance, thus referring to Tobin's Q ratio and establishing that the diminishing marginal utility exists for the alpha returns. The returns can therefore be more than the market index as institutional ownership increases (Zietz, 2013).

An interesting discovery during this study was that companies that experience increases in institutional ownership also had increases in their return on assets as well as their Tobin's Q ratio. These results demonstrate that market participants are encouraged by the fact that institutional shareholding in those companies has increased because they can expect the above-mentioned ratios to improve (Zietz, 2013).

The perceived operating profitability of these firms is heavily dependent on capital markets because REITs' internal financing options are relatively limited because of the high dividend payout obligation. The Tobin's Q ratio is positively affected by increases in institutional ownership because it relates to the cost of capital, the company's ability to obtain financing more effectively, and reduced stock volatility.

These factors proved to be more stable and favourable in companies with stable institutional shareholding (Zietz, 2013). Coming back to South African REITs, they are required to distribute only 75% of their taxable income to investors, while other countries are obligated to pay out 90%. This can influence the results of the Tobin's Q ratio when it is administered in the South African-listed sector, as these firms will have more capital on hand and will therefore be able to finance investments internally more regularly than foreign countries would be able to afford. The impact of institutional ownership changes might not be as significant on the operating performance and return of assets as with companies used in the study.

The study encourages smaller REITs to attract institutional investment because the market is limited for corporate control on REITs, and change shareholding will improve monitoring and governance of these companies. Smaller listed REITs usually suffer from high market volatility which can be suppressed by enhancing institutional relationships for better corporate governance (Zietz, 2013).

The following investigation has been done with the same motive of determining whether institutional investment can assist the performance of a given REIT. A study conducted by Brockman (2014) specifically distinguished between REITs that were externally advised on operational matters and those having institutional investors, thus internally advised. The study was conducted in the USA, and to provide some context on the research scenario prior to 1986, all REITs were obligated to make use of an external management company to control their complete investment portfolio as well as the properties in their portfolio.

After the passing of the Tax Reform Act of 1986, companies were no longer required to appoint external management companies, which was when institutional investment strategy originated in the REIT sector. Literature produced by Cannon (1995) proved that internally managed REITs outperformed REITs that were appointing external advisory companies. It is crucial to remember that institutional ownership contributes significantly to the corporate governance of a REIT.

According to Shleifer (1986), a proposed institutional investor must make consideration specifically to regulate and control the company with their prominent

ownership investment. They must also decide whether they will be trading for private benefit.

This study undertook a rigorous investigation to focus on the term that the institutional investment committed itself to provide a long-term benefit for the subject REIT (Brockman, 2014). Only equity REITs were used for data sampling and examination purposes. The study concluded that REITs, which had significant institutional investment and were therefore internally managed, outperformed externally managed REITs.

One massive factor that determines the institutional investment decision-making process is the size of the REIT. REITs should strive to increase market capitalisation to attract institutional investment. A pitfall with this argument is that novice REITs which have recently listed might attempt to acquire lower-quality property purely to bulk up their portfolio, which can affect their return on assets and Tobin's Q ratio. These are two indicators that can either attract large institutions or discourage them; the latter will be the case when "bulking up" occurs.

The ratios that will be used to examine the changes that took place since the REIT structure was adopted in South Africa will be discussed in the fourth chapter, which pertains to financial ratios.

2.2 REAL ESTATE INVESTMENT TRUST TAXATION

Most of the real estate investment companies listed on the JSE either converted from being PLS or a PUT to REIT status or were new listings that adopted the REIT structure since inception. South Africa has become one of the largest REIT markets in the world, which is why looking at taxation implications is a necessity (De Klerk, 2013). A summary of certain global taxation principles will be discussed later. The reason for investigating different global tax rates is because the applicablility to investment decision-making. Investors assess marginal tax rate disparities between countries. Identifying sustainable lower tax rates is critical during a feasibility and financial viability study, where numerous homogenous are separated by sovereignty. Various other factors will obviously be significant contributors, tax is merely isolated for contextual and explanatory purposes.

Qualified distributions refer mainly to dividends being distributed by a company to its shareholders. First, one must look at the diverse ways in which dividends can be taxed in America based on a study by Gordon (2007). The first method of taxation on dividends is ordinary income, which is taxed at the investor's highest rate. In the United States of America, almost 70% of all REIT dividends paid out were taxed as ordinary income. REITs can also distribute money from the net profits that are currently sheltered within the REIT by depreciation and other inferences. The reason these payments are deemed return on capital is that it lowers a person's cost basis when received. Assuming the investor holds these shares for a period longer than one year, it is safe to say that the return on capital when adjusted to basis will generate long-term capital gain on the shares, should the investor decide to sell (Gordon, 2007).

Long-term capital gains is another form of taxation on REIT dividends that is paid out when a REIT disposes of properties and realises long-term capital gains, but it is more applicable to timber REITs, and thus not applicable to this study. Sometimes a REIT receives qualified distributions, which means that it received dividends on shares owned in another company. The qualified dividends can also be paid out to its shareholders, as this will be seen further on in the study. These qualified distributions form part of rental received in SA REITs (Gordon, 2007).

Numerous senior management members for Property Loan Stock Companies and representatives from the Treasury deliberated several significant impacts that this new structure will have on the REIT environment. A White Paper was drafted based on the proceedings, and it ultimately resulted in the REIT structure known today. The REIT structure longed for flexible structure coupled with tax allowance to avoid over-regulation in this market. Today, SA REITs are regulated by the JSE and treated as companies, implying that they are unrestrictive and transparent (De Klerk, 2013).

The dominant characteristics of the latest section 25BB by the Tax Laws Amendment Act of 2013 are summarised by Boshoff (2013) as follows:

- A dividend withholding tax of 15% will be subjected to foreign investors. This is not a barrier when it comes to attracting international investors because for

the year 2015, which was a disastrous year for the South African economy, the SA REIT sector produced a total return of over 13% in dividend and capital appreciation.

- The original Tax Act's applicability remains resolute. Every REIT on the JSE must submit tax returns on an annual basis for the listed entity as well as all its subsidiaries and associates.
- REITs can recall tax losses accumulated to date.
- Property company subsidiaries owning investment property, as described by the International Financial Reporting Standards (IFRS), are obligated to submit a separate set of financial statements.
- Section 25BB of the Income Tax Act provides the tax allowances applicable to the SA REITs. It explicitly clarifies the definition of a REIT listed on the JSE, qualified distribution deductions, and explaining the nature and procedure for implementing capital gains tax on disposals of shares in controlled companies of immovable property.
- There is no admission tax to adopting the REIT structure.
- Pertaining to section 25BB, there is no capital gains tax applicable on the disposal of immovable property owned.
- The property allowances of section 13 are no longer relevant.
- Qualified distribution in the form of dividends and debentures are deductible expenses.
- If profit is realised on the disposal of minority stakes or other financial instruments, it is considered income.
- Rental or qualified distributions from minority stakes or other financial instruments are considered rental income.
- An SA REIT must have derived 75% of its gross income from rental income specifically.
- Rental income can include the use of immovable property as well as penalty interest, qualified distributions received from other REITs, direct real estate

investment, and distributions received from other local or international associates or subsidiary firms.

The following are items that cannot form part of a company's rental income: asset management fees, deal fees, underwriting fees, interest received, qualified distributions from non-REIT property companies, and distributions from minority stakes in property investment companies.

It is indispensable to recognise the significance of these new tax considerations in the context of attracting foreign investment to South Africa and allowing SA REITs to conduct business more efficiently abroad. Although international investors must pay withholding tax of 20%, increasing tax certainty will motivate them to consider investments in South Africa (De Klerk, 2013). This is a highly liquid investment strategy with increased capital flexibility. The SA REIT sector is currently highly regulated by the JSE for added certainty to potential international investors.

As international real estate interaction increases, a probable trend can be that SA REITs will attempt to buy minority or majority stakes in foreign REITs to expand their real estate portfolios, instead of investing in direct property that has its own set of obstacles. Shares bought in foreign countries will be subjected to certain pieces of tax legislation that must be evaluated before making an investment decision. Several European countries, Australia, and the United States of America will be investigated to determine the taxation legislation in place from a South African REIT perspective. Table 2.1 illustrates the different withholding taxes of countries implementing a REIT system.

Table 2.1: Withholding tax comparison

Description	**Country and Percentage**								
Large Markets	Australia	USA	UK	Spain	Canada	Italy	France	De.	Belgium
Withholding tax (%)	30	30	20	19	25	20	30	25	20

Small Market	Vietnam	Taiwan	Dubai	Ireland	Hungary	Hong Kong	Kenya	Malaysia	RSA
Withholding tax (%)	20	20	0	20	0	16,5	10	15	20

The fundamentals of different withholding tax around the world will be investigated. A summary of this makes for a good comparison with South Africa's 15% withholding tax. The lower withholding tax in South Africa must be considered when looking at the investment decision-making process of foreign investors. As it pertains to the overall study of international SA REITs, a tax factor could have persuaded a potential investor.

The foregoing information is critical for this chapter, as it will help to explain decision-making from the point of view of SA REIT management as well as foreign investors. The brief background of why South Africa currently has REITs is explained to emphasise the benefit that the changes have implemented. South Africa is not the founder of the REIT structure but has adopted a similar structure perfected by countries such as the United States, Australia, and Canada. As a result, the listed property sector in South Africa is more accessible to all private and institutional investors. The listing requirements provide insight into the number REITs established, categories of REIT listed, and the REIT portfolio diversity. The primary research problem is concerned with SA REITs diversifying their portfolios offshore. International investment can be either direct or indirect, which can be seen in the chapter on capital structure changes. Logically, taking the listing requirements of SA REIT into account, a REIT might want to know the tax implication of indirect investment in foreign REITs. Foreign direct investment can be more strenuous than an equity investment.

Foreign equity investment taxation considerations can explain to an extent why SA REITs can approve or neglect investments in specific countries. Most countries enforce withholding tax should the foreign investor decide not to reinvest the distribution. Knowing the various tax implications, management of SA REITs can compare the feasibility of the investments, where certain countries enforce little or no withholding tax to attract investments, such as in the Netherlands and Spain.

Interestingly, two of the largest REITs in South Africa, namely, Growthpoint Properties Ltd and Redefine Properties Ltd have a substantial portion of their portfolios in Australia and the United Kingdom, which have withholding tax rates of 30% and 20% respectively. This can indicate that the SA REITs do not regard the high tax rate as important or they intend to reinvest. It can also indicate that they had invested purely because of currency hedging benefits of the United Kingdom and Australia.

Taxation in terms of withholding tax varies between the various countries. Therefore, such information can be considered during the investment process conducted by management. The primary research problem considers the international investment decision-making of SA REITs, and identifying cost-saving factors that could possibly influence decision-making procedures is critical. There are several other factors to consider when exercising such a feasibility comparison, of which withholding tax can be included. SA REITs are granted tax benefits when distributing dividends, and achieving a tax break poses a massive opportunity to cut costs to be used for more productive measures. These withholding tax considerations might be agenda for certain directorates and not for others.

2.3 JOINT VENTURES AND SUBSIDIARIES

Multinational organisations strive to diversify on a global scale, but external pressures frequently force the behaviour of the firm to change and cooperate in an isomorphic environment. One strategy that organisations can adopt to provide assurance from both internal and external claimants in foreign countries is the entry mode decision (Daphne Yiu, 2002). Foreign environments can be severely restrictive, where occasionally their firms will be faced with a choice to conduct an international investment. Real estate investment companies must choose between entering a joint venture with a local firm while establishing a subsidiary that will be wholly owned and being the majority shareholder. These are two options to use as investment vehicles, of which both have benefits and disadvantages.

According to Daphne (2002), the foreign entry mode choice has several determinants to consider. First, a REIT must have a comprehensive understanding of the complicated and multi-faceted elements of the host country’s institutional

environment. The foreign REIT must develop a framework that will provide synthesis with the local institutional environment as well as continuous future integration. The institutional theory will provide a renewed perspective on ownership strategies for foreign expansion. This is a significant consideration because previous studies suggested that the decision between conducting a joint venture and a wholly owned subsidiary is all a matter of correlating corporate responsibilities with partners. This investigation magnifies the institutional theory and more specifically the foreign entry mode decision, proposing that such a decision entirely has to do with conformity. A foreign REIT entering new territory must conform with the institutional environment of the host nation and the organisation tactics inherent to conducting real estate investment practices. It is evident from looking at the taxation section previously discussed that all countries have different institutional environments and organisational practices that demand conformity.

The study introducing this institutional theory aims to unravel several distinct propositions. The first proposition argues that a REIT will more likely enter into a joint venture with a firm already located in the host nation than establish a wholly owned subsidiary when the degree of regulative and normative burdens is escalating. The second proposition suggests that a REIT will usually make use of the same investment vehicle as its competition when it is in the same foreign country. The third proposition implies that a REIT will most likely choose a joint venture with a local firm in a foreign country where the regulatory sphere is severely restrictive (Daphne Yiu, 2002).

The study concluded that the decision between a joint venture and establishing a wholly owned subsidiary cannot be considered in terms of only the level of control between the parties involved. REITs must consider the institutional environment and the increasing pressures of the isomorphic pressures, the regulatory restrictions of the host nation, and the outlook of the business partners involved (Daphne Yiu, 2002).Joint ventures will play a significant role in the expansion of real estate portfolios. A joint venture is defined by Behrens (1990) as investors' assembling with the intention of entering an agreement where both parties can draw benefit and reduce risks inherent to real estate, operated under one management structure. The

study also suggests that joint ventures are still a viable investment mechanism for real estate investment.

The formation of joint ventures can be underpinned by motivation or the reasons why any REIT would want to partner with another REIT. The first motivation for forming a joint venture is to gain access to capital. Financiers can be mortgage or equity REITs that have the intention of deriving income from the money borrowed or to retain a percentage of ownership in the development. Joint ventures are usually project-specific. Another motivation for a joint venture is when a novice REIT wants to obtain and share knowledge. REITs might even be well established but might lack expertise in a certain sector, and this would be a sound structure to reduce unfamiliar risks. A joint venture can also be a way of obtaining a specific tenant that might be considered vital for one's investment philosophy. For example, if a REIT has a large portfolio with government-tenanted properties, it might look at joint ventures with local foreign developers to obtain a government-tenanted portfolio (Campbell, 2002).

Joint ventures between REITs can be either local or international, which is why the study conducted by Fisher (2004) investigated international joint ventures (IJVs) in real estate investment context. This study, however, focuses more on the international REITs acquiring US real estate and subsequently partnering with US real estate firms to form the international joint venture. The study argues that international investment real estate investment seeks to minimise political and economic risk as much as possible, the key being stability in the political arena.

The broad analysis of the characteristics of IJVs outlined by Fisher (2004) includes non-recourse debt, leverage possibilities, and the length of the project. These pillars form a foundation in terms of negotiating powers, responsibilities, ownership, profit distribution, and the risk each party represents. A study by Woodside (1996) defined these characteristics of IJVs in more depth as indicated below.

- IJVs provide collaborative alliances between at least two multinational real estate investment firms.
- The establishment of an IJV can be time-consuming and vague because parties involved are not well researched on this topic. This situation demands

external stakeholders or IJV professionals to provide aid and guidance in the formation, implementation, and setting up procedures.

- This analysis defines the motivation differently in that the parties will want to obtain product-market opportunities, a business competitive advantage, or a combination of the two, depending on each firm's requirements.
- IJVs can be very unstable due to internal factors or externalities.

IJVs have several disadvantages; for example, REITs may be restricted severely on institutional grounds when financiers do not have expertise or experience in certain countries. Financiers play a prominent role in the expansion of REIT portfolios due to the payout restriction, which could vary anywhere from 75% to 90%. Thus, a REIT cannot accumulate funds and requires assistance from financiers. Banks will be hesitant to invest because of unstable economic and political factors; this will provide a risk analysis to determine the viability of such an investment (Fisher, 2004). The study maintains that it is critical for the IJV to determine the means of dissolution. Property management fees are very high, and majority shareholding allows the right to define the policy of the IJV. The most causes of IJV failure are explained, the first being when government interferes with the IJV by means of restrictions or not being interested in such investments. The IJV could pose a business threat in terms of market domination, hence cannibalisation of a sector.

The parties involved cannot conclude on a management style fit for both, and a lack of in-depth research, experience, or expertise in a foreign country can lead to mistakes, errors, overestimations, and miscalculation (Fisher, 2004). The conclusion of the study was that the IJV will continue to thrive, but there were several drawbacks because of the lack of information held by private real estate investment companies.

The parent firm in IJV contributes resources in return for an equity share or control over management strategies at an operational level. Seung Ho Park (2006) states that control can be divided into three categories, namely, output control, social control, and process control. Previous literature acknowledged the distinction between share controls by the parent firm, also known as the dominant approach.

It argued benefits and negative aspects for both options. The division of the three types of control will determine how a parent can commit itself to the joint venture in terms of resource contribution.

It is important to clarify that a large resource contribution into the IJV is not always good for the parent company; the parent will be severely dependent on the general operation, control measures, corporate governance, and ultimately the success of the IJV. This will allow partner firms to exploit this dependence of the parent, should there be disputes and the situation become unsavoury.

Management control is considered just as essential as mere equity share in the IJV. For this reason, the study of Seung Ho Park (2006) suggests that three types of control cannot be substituted, but they must be applied in a combination that suits the need of the parent firms. Output control refers to the parent company's establishing objective goals and specific, precise requirements expected of the IJV. Based on the performance of the IJV, these predetermined benchmarks must then be rewarded, or penalties must be exercised on the responsible party (Merchant, 2000). The management strategy of the joint venture (JV) is on an anticipated outcome basis with the catalyst being high-rewarding incentives, in the event that the outcomes are fulfilled.

Process control implies that an IJV is operated via predetermined activities and procedures. In other words, the parent firm is responsible for stipulating the processes and activities in which the IJV must participate. The parent company also implements continuous monitoring and reporting on the activities exercised, and formalises standard rules and systems to be followed. Mandatory social control influences, caters for social interaction between private sector and the community surrounding new development or investments. These interactions can usually be values and general understanding between the IJV and the parent firm. This form of control is communication-intensive, which includes teams, task forces, ceremonies, and rituals in the presence of the IJV and parent company (Seung Ho Park, 2006).

Any SA REIT willing to explore foreign real estate investments must consider the transaction cost economies of their investment strategy. Each REIT has unique

transaction cost economies. This theory indicates the company's selection of transaction approaches. Various transaction styles can include markets, hierarchies, a combination of the two structures, and efficient specifications. REIT efficiency specification can include uncertainty, asset preference, and the regularity of transactions (Seung Ho Park, 2006).

As illustrated in the previous discussion, international joint ventures can be a preferred method to gain access and favourability in foreign countries, but Chang (2010) asserts that wholly owned subsidiaries perform better than joint ventures. The return on asset (ROA) and the operating ROA of various joint ventures, as well as wholly owned subsidiary entities, were compared for in-depth analysis. The results suggested that wholly owned subsidiaries over a three-year period outperformed joint ventures comprehensively (Chang, 2010). The findings of the study are applicable to any SA REIT that considers participating in IJVs or wholly owned subsidiaries. Real estate investment is a long-term investment. A strategy that might therefore be evident in practice is where the REIT initially forms an IJV to gain recognition and compliance in the foreign nation and later converts into a wholly or majority-owned subsidiary. The transaction cost theory's forecast of better return by wholly owned subsidiaries is also vastly supported by these findings.

2.4 COST OF CAPITAL OF REAL ESTATE INVESTMENT TRUSTS

Most companies use long-term capital, common equity, or preferred stock capital with the intention of growing their business. This is especially valid in the case of REITs because they operate in a highly capital-intensive sector. REITs will make use of financing for various reasons, but a universal rule specific to REITs is the minimum dividend distribution legislative requirements. It is very difficult for REITs to accumulate enough capital for developments and acquisitions purely by means of reserves, hence debt financing or stock financing.

Borrowing capital comes at a cost, namely, the cost of using another company's money in order to fund one's own operations. The use of borrowed capital is a good thing in a business that can maximise its market value. It requires executive management to keep the cost of financing operations to a minimum. In fact, the cost of capital must be lower than the return it derives from the investments made;

otherwise, the company value will reduce and vice versa. The right investment must be made by the management committee if funding is available. This requires a comparative analysis of the different cost of capital available. The company is required to formulate a financing policy to act as a benchmark for future financing decisions.

Soule (1953) posits that the cheapest capital available to a company is not always the best. He suggests that the cheapest capital available is the one with the most inherent risk. Borrowed capital is the cheapest option available to REITs by some margin. The most expensive form of capital available to REITs is common equity capital, but it is also the safest method of financing investments. The reason that common equity is the most expensive is that the company is not obligated to pay fees for the hiring of the capital, nor does it have to return the borrowed capital at a certain point in time.

This study suggests that the company must issue common stock together with preferred stock and/or long-term debt financing in order to achieve the lowest possible cost of capital while keeping unwarranted risks to a minimum. Borrowed capital can be especially risky because the lenders have the power to place severe restrictions on the company, such as limiting their dividend distributions or immobilising the fixed assets of the company. The amount of senior capital used must be relative to common equity capital because if it is neglected, the company can be in a position where it is over-geared or over-leveraged. When firms are over-leveraged, the risk increases dramatically because the borrowed capital of the company is largely dependent on the market conditions which can change over the short term (Soule, 1953).

In the case of REITs, a stable rental income is evident. This is an advantage as well as an opportunity to leverage the company sometimes above the normal business leverage ratios. One standard deviation of the firm’s gross income is a good indicator of the stability and the predictability of funds earned from operations (Soule, 1953). The smaller the standard deviation, the more room for high leverage ratios the company possesses. There is more than one leverage ratio which will be discussed later in this chapter.

Numerous factors can influence the financing decision of a company; some are difficult to measure, for example, attitudes, experience and proficiency of the management committee, the company's financial flexibility, and the internal environment of companies. One can segment the funding decision-making procedure to four measurable figures: the cost of financing, financial returns of investments made, actual payments, and the surplus of the cash flow of the company. Several methods for calculating the cost of capital will be discussed. The methods include common equity capital cost and preferred stock cost calculations, keeping it separate from long-term debt calculations. The long-term debt calculation is much simpler because each listed SA REIT must share its cost of long-term debt figures with the shareholders. The market risk premium plus the rate of return for risk-free government bonds will provide the cost of borrowed capital.

The equation for calculating the cost of equity is depicted as:

$$Cost\ of\ Equity(COE) = \frac{Dividends\ per\ share}{Market\ value of\ stock} + Growth\ rate\ of\ dividends$$

All listed SA REITs make their average cost of long-term debt from local as well as offshore financial institutions known to the shareholders. This figure will be used as the debt part of the WACC as COD, “cost of debt”.

The WACC formula will be used to compile the data on listed SA REITs in Chapter 4. These calculations can play a chief role in the company’s ability to grow its asset size, which in the case of REITs has a direct relationship with profitability and an indirect relationship with equity beta. The study conducted also illustrates the effect of economies of scale on the cost of capital in the case of REITs. The focus will be on the direct and indirect relationships hypothesised by the study of REITs. Several ratios were used to prove or disprove these relationships; these ratios will provide a clear indication of changes in debt and capital structures in SA REITs that the study will be using for its data collection.

The return on equity, growth in firm size, and funds from operations growth are ratios which conclude that there is a direct relationship between the size of a REIT and its profitability and an inverse relationship between the equity beta and the size of the firm. The size of the firm in the case of equity REITs refers to the size of its portfolios, the market value of its total assets. The equity beta applies to companies with financial leverage. It is not to be confused with an asset beta; the equity beta changes in positive correlation with the debt of a leveraged company. Betas in general measure a listed firm’s responsiveness to market conditions; thus the equity beta is related to a firm’s stock. To clarify, the inverse relationship means that if a REIT, for example, grows its portfolio, the equity beta will decrease. This means that the business will be less vulnerable to changes in the market. This study will not focus extensively on the equity betas because there are several problems regarding the accuracy of the simple calculation. The difficulty in estimating some figures lies in the more elaborate calculation.

Senior management of a REIT must decide on a given capital structure to implement that will hopefully reduce the cost of capital. A study conducted by Elayan (1990) provided insight into the factors that influence capital structure choices in a REIT. Interestingly, this study made use of several leverage and cash flow calculations and based its conclusion on one of the following two theories: agency cost theory or the leverage clientele effect. The agency cost theory implies that all the firms forming part of the same industry will make use of one optimum capital structure that synthesises perfectly with a given business sector. However, the leverage clientele effect suggests that firms from the same industry apply several different capital structures although they are operating in the same business sector.

The study reiterates the fact that REITs' asset size or firm size growth is an important indicator for capital structure decision-making. It brings in volatility and growth rates for earning measures as well. The calculations used to extensively interpret the leverage situation of a given REIT are what will be used during the investigation of this study and will contain the following (Elayan, 1990):

1. $LEV\ 1 = \frac{Long\ term\ debt}{Market\ value\ of\ equity} * 100$
2. $LEV\ 2 = \frac{Long\ term\ debt}{Total\ assets} * 100$
3. $LEV\ 3 = \frac{Long\ term\ debt}{Total\ capital} * 100$

Where

total capital is equal to long-term debt plus equity

4. $Growth\ Cash\ Flow\ (CF) = Annual\ percentage\ change\ in\ cashflow$
5. $Growth\ Asset\ Base\ (AB) = Annual\ percentage\ change\ in\ asset\ size$
6. $MTG = \frac{Mortgage\ income}{Total\ income} * 100$
7. $MB = \frac{Market\ captilization + total\ liabilities}{Total\ Assets}$
8. $ROE = \frac{Net\ income}{Shareholders' equity} * 100$

Where

net income is before dividends paid to common shareholders but after dividends to preferred shareholders

Shareholders' equity excludes preferred shareholders

The aforementioned leverage ratios provide a breakdown of the weighted average cost of capital calculation, but the three ratios in combination do not necessarily demonstrate the same results. In terms of improving the capital structure of a REIT, these ratios can give more in-depth information as to where problems or opportunities are situated (Elayan, 1990). Some SA REITs are considered hybrids. This means that they provide mortgage REIT services, hence the mortgage income to total income (MTG) calculation.

The real estate business is considered a cash flow business (Konig, 2014). To obtain comprehensive results for detecting changes in the capital and debt structures with an international perspective, one must look at the cash flow position of a REIT in conjunction with its leverage situation. A study administered by Highfield (2008) tested if cash holdings by REITs are inversely related to funds from operations, leverage, and internal advisory facilities. It also investigates the fact that previous literature suggests that cash holdings are directly affected by growth opportunities and the cost of external finance. The study proved that managers hold little cash for the purpose of limiting the agency problem with cash flow. The agency problems refer specifically to the conflicting interests between the shareholders and the management committee or the board of directors in SA REITs.

The foregoing study was conducted in US REITs; it showed that the cash holdings of REITs relative to other industries are substantially less when expressed as a percentage, about a tenth in comparison to firms in other industries. The data sample includes an equal distribution of mortgage, equity, and hybrid REITs. The regulatory minimum dividend distribution per legislation is 90% in the United States, which explains why the cash holdings will be less than the norm, but average cash holding per REIT was 1.57% of total assets. The statistics indicate that managers deliberately keep cash and cash equivalents to a minimum. Internal or external managers may also affect the cash flow and financing decisions of the firm, but in SA REITs the executive board of directors have a personal interest in the company

in the form of shares via remuneration and will therefore tend to make decisions beneficial to the firm. Prior to the results obtained, the study speculated that the factors influencing cash and cash equivalents are cash flow, leverage, market-to-book value, capital market access, and governance. Net operating income is usually the definition used by SA REITs, but funds from operations as used by the study refer to net income which excludes the gains or losses of property sales. They use a different term to explain the same concept (Highfield, 2008).

The statistics used to determine the cash flow and cash holding situation of the REITs in this study are:

1. $Cash = \frac{Cash\ and\ equivalents}{Total\ assets} * 100$
2. $FFO = \frac{Net\ income + depreciation}{Total\ assets}$

An inverse relationship was expected between cash flow and cash holdings. The results concluded that the cash holding of the REITs has an inverse relationship with its funds from operations and leverage capabilities (Highfield, 2008). One must obtain this information to make calculated assumptions on future growth opportunities for REITs. The cash flow descriptive indicators must be used in conjunction with the leverage ratios to paint a more detailed picture of the firm's financial position.

2.5 INTERNATIONAL DIVERSIFICATION RISKS

SA REITs that wish to invest offshore must accommodate certain risks, even though information can be gathered, analysed, and interpreted to arrive at a calculated decision. These risks can be systematic or unsystematic. Unsystematic risk arises when variances occur that are caused by factors outside of the market fluctuations, for example, risks that are unique to a specific industry or business. Fluctuations occurring from within the market are known as systematic risk and are unavoidable. The modern portfolio theory suggests that when a portfolio is comprehensively diversified, the unsystematic risk can be eliminated. Risk is correlated to the efficiency of the market (South African Property Owners Association [SAPOA], 1999. The real estate environment is less efficient than the stock market. This can

lead to the assumption that unsystematic risk might play a more significant factor to consider than systematic risk

The local positioning of real estate markets can lead to increased risk, and there are lower transaction events for single properties. Real estate can be inseparable and often unique, which makes its comparability difficult for investors as opposed to comparing common stocks. There might be a lack of accurate and disciplined analysis on future trends in certain areas. The generalised rule of thumb methods might reiterate the lack of financial theory in the industry, as well as massive discrepancies between expected outcomes and actual results, which can be narrowed down to inexperience in some cases. In case of firms that only develop property without any property acquisitions or equity investments, the lengthy real estate production process might cause inherent risk of supply lagging too much behind the demand, which could lead to higher-than-expected vacancy rates (SAPOA, 1999).

The risks discussed in the next subsections will affect the beta of SA REITs. These will also provide significant insight when using data analysis to determine whether the listed real estate companies have indeed considered the challenges faced when diversifying their portfolio internationally.

Manakyan (1995) hypothesised that the location of real estate assets in a portfolio that invests in direct real estate does indeed influence the risk-adjusted returns of REITs. A regression analysis tested the influences of property characteristics on the portfolio rate of return by means of several financial and property-related ratios. It suggested that real estate specific variables are rarely factored into the risk-adjusted rate of return of a given REIT.

The basic method for calculating the return of a given REIT is as follows (Manakyan, 1995):

$$Sharpe\ index\ (S) = \frac{R_i - R_f}{\sigma_i}$$

Where

R_i refers to the rate of return of a given REIT during the period. This is calculated using the formulae explained below.

The mean risk-free return during the period is demonstrated as R_f. It is calculated by averaging the annual return of long-term government bonds.

The standard deviation was determined on the annualised risk-adjusted returns for the REIT sample.

The total return for REIT is depicted as:

$$R_i = \frac{P_1 + D - P_0}{P_0}$$

P_1 is the stock price of the REIT at the end of the period

P_0 is the stock price at the beginning of the period

D represents the dividend distribution for the given period

Most of the property and financial ratios that were used to test the regression analysis have already been explained in the previous chapter. One that has not been taken into consideration is the times interest earned ratio as illustrated below (Manakyan, 1995).

$$Times\ Interest\ Earnes\ (TIE) = \frac{EBIT}{Interest\ charges}$$

This study found that real estate specific characteristics influence the return of a given REIT portfolio. The ratio relating to more property specifically had a positive influence on the risk-adjusted return of the sample property portfolios, but the financial ratio, for example, the P/E ratio, which is usually a common indicator in

stock return measurements, had lower significance on the data set. However, the researcher suggests that an investor must not ignore the financial ratio completely, as it provides other meaningful information about the company in terms of financial and solvency positioning.

2.5.1 Political risk

Political risk is arguably one of the most critical factors to consider in the foreign real estate investment procedure. Jaffe (1996) alludes that the institutional characteristics of a proposed foreign investment destination are an opportunity for risk reduction. The relationship between risk and return is influenced enormously by the institutional structure, which differs from country to country. Real estate is different from stock investments because stocks can be sold immediately as problematic situations in foreign countries unfold, whereas real estate is highly illiquid. Unexpected events or legislation changes can prove to be hostile towards international investors, which can make it difficult to recoup the investment made from a foreign perspective.

In South Africa, the home asset bias theory will not apply particularly because of the country's current political and economic situation; thus, it can be assumed that local, rational investors will be curiously looking for opportunities offshore. The exchange rate is significantly undervalued and is already struggling against the major foreign currencies. Most international asset classes will therefore look attractive. Jaffe (1996) describes certain formal variables that might help investors assess the foreign investment nation's risk factor in terms of the institutional framework in place for international investors.

Before the major categories of political risk are discussed, another study by Cashman (2015) merely reiterates how crucial political risk considerations are to a potential foreign investor. It also explains how this type of risk can increase the cost of equity as well as the weighted average cost of capital of REIT. It refers to primary political indicators that deserve attention during the investment decision-making process, namely, political rights index, political change index, and the corruption perception index.

The first major category is risk valuation variables. The institutional decision-making at the government sphere is covered here, for example, unfair administration of legislation, incompetent enforcement of the laws in that country, the levels of corruption, threats of nationalisation, or hostile expropriation events or signs of a revolution in the country. The institutional investor must therefore pay close attention to the political risk index. The credit risk rating of a given international country must be examined, which entails the government levels of debt and ability to repay debt obligations. REITs investing offshore would preferably take out insurance on their real estate investments; hence, the riskier the country of investment, the higher the insurance premiums on the direct property will be. An international investor would most probably decide on a stable country to keep these costs to the absolute minimum (Jaffe, 1996).

Property rights bundles can vary between different countries, with the first of this category being in terms of security. Security refers to the government's ability to keep its citizens safe and protect them against foreign or local threats. Arbitrary expropriation is another factor that larger corporations would want to monitor continuously. Expropriation is a serious consideration for private foreign investors, but corruption and bribery are not an alluring sign for international investment. Bribery levels are likely to be lower in nations where legal protection is highly prioritised. Countries with property rights are more likely to drive entrepreneurship and innovation, which is what multinationals are looking for when making investment decisions. Intellectual property must be protected by the institutional framework to lower the risk premium of the country and to create a safe environment for foreign investment.

The next category for political risk is socio-economic variables. The life expectancy of the citizens in a country can determine if it is investable and can also determine the class of real estate that a REIT can consider. The quality of life the country allows its citizen can be narrowed down to infrastructure and municipal service delivery. Home ownership in a country is an interesting figure to evaluate. The study obtained home ownership statistics for each of the 32 countries on which its sample was based. A higher figure can indicate that the property right of private citizens is highly protected and that people are motivated to buy houses and maintain

ownership. This illustrates a favourable investment climate for proposed investors (Jaffe, 1996).

The last category pertains to foreign investor legislation specifically established to regulate foreign direct investment in each country. One must look at the institutional attitude towards foreigners; for example, if a country is insolvent, it will tend to be more generous towards international investors. The degree of foreign investment is different for each country, and it can also change during market behaviour. If there is too much foreign investment, caused by legislative changes for example, it can restrict investment behaviour to a certain extent by making it difficult and more expensive. Foreign ownership is a variable that directly influences foreign investment in a country, as it again pertains to the protection of property rights and security of investment. The risk of the country in terms of quality investment climates is quite dependent on the foreign ownership legislation (Jaffe, 1996). The conclusion of Jaffe (1996) was that these political variables correlate significantly with the risk level of a country. The rate of home ownership is indicative of an expropriation event.

2.5.2 Tenant risk

Tenant risk is a very specific type of risk, which is important to mention in the light of conducting international real estate investments. Ordinarily, real estate properties have income streams attached to them via a lease agreement. These fixed-income assets are then pooled for securitisation purposes and subsequently obtain a credit rating. Default risk is determined for the entire pool of assets. Fixed-income leases or bonds need to be interpreted individually. This concept can apply to properties occupied by a single tenant as suggested by the author because it is easy to obtain a credit rating and default risk on the tenants and then determine if the tenant is investment grade or not. During the preliminary stages of the international real estate investment process, potential preferable investment grade tenants must be examined. Quality tenants can ultimately determine the success of a development. The study makes a clear distinction between net cash flows from current leases and from future leases. Current lease cash flow can be studied with more certainty in terms of the tenant's default risk and credit rating. The security of cash inflows from current leases can be calculated accurately under normal circumstances, but future cash flows are so unpredictable that no default risk or credit rating can be

determined whatsoever. When conducting business offshore, Graff (1999) suggests investing in current cash flows, as they are lower risk than future cash flows.

2.5.3 Liquidity risk

The real estate development and investment industry is a highly illiquid business as opposed to bonds or stocks, for example. Banks are like REITs in that they also have assets with attached income streams and liabilities that must be met within certain time frames. The balance sheets of both industries operate on the same basis. Driga (2009) investigated the liquidity risk of banks and how to identify, manage, and monitor certain variables pertaining to this type of risk. It is important to note that the liquidity risk is also highly related to change in other types of risk, such as interest rate risk or political risk. The liquidity risk of REITs appears during the funding of assets and the management of lease agreements. Liquidity risk refers to the ability of a REIT to fund and increase its asset base while meeting its liability obligations. The liability obligations must preferably be met within a predetermined period and at a reasonable cost.

A few variables to determine the liquidity of a company are described by Driga (2009). Although these relate more to banks, they do have relevance in the REIT industry as well. The variables to determine the liquidity of a company are as follows:

- The operating expense ratio is a major and unavoidable cash outflow of any REIT. $Total\ operating\ expenses : Gross\ operating\ profit$
- Refurbishment costs incurred during the fiscal year
- Lease renewals expressed as a percentage
- The average length of lease agreements to maturity
- The construction duration of new developments
- The interest charges on long-term debt

The conclusion of Driga (2009) provides guidelines on how to measure and manage liquidity, such as that the REIT or any property development company must stress-test their number and, by doing this, determine liquidity risk tolerances.

2.5.4 Inflation risk

Previous studies have found that real estate investment does indeed provide a hedge against inflation. However, this assumption is not relevant REIT equity investments as opposed to direct real estate investments. An investor would most probably want to invest with as little effort as possible; if they want to invest in real property, it would involve large transaction costs, maintenance costs, construction and development costs, high illiquidity, and tenants' relations management. It is also vital to note that the sample of REITs in the study originated from three eastern Asian counties, which are all emerging markets. Inflation risk has been deemed to be more obvious in emerging markets than in developed countries (Roache, 2009). The study focused on the interaction between REIT stock prices and inflation as well as the effect of inflation hedging over the long term in emerging markets. The investor composition in the relevant stock markets is also under investigation in the study.

A similar study has been carried out on the same topic of inflation hedging capabilities of real estate stock. The sample REITs were divided into the equity, mortgage, and hybrid categories and were tested against three types of inflation, namely, actual, expected, and unexpected inflation (Yobaccio, Rubens & Ketcham, 1995).

Interestingly, both studies found that real estate stock did not act as a sufficient hedge against inflation. The study by Yobaccio *et al.* (1995) found that real estate stock performed exceptionally poor during unexpected inflation movements. Both studies were implemented on real estate equity investment and not on direct real estate, which resulted in different deductions. From a REIT perspective, direct property might be an option of investment; thus, the foregoing studies reflect shareholder interest.

2.5.5 Interest rate risk

The real estate development industry is highly capital-intensive. REITs especially have been forced to accumulate much of the capital needed through long-term debt because of tax incentives and legislation that required minimum dividend distributions. Long-term borrowed capital comes at a cost for using someone else's

funds, known as interest. The interest charged by banks or financial institutions is driven by the repo rate. The repo rate refers to the rate at which the Reserve Bank of a country lends funds to other commercial banks. The commercial banks then lend capital to private citizens at the prime rate, which is basically the repo rate plus a profit percentage for the banks. The risk of interest rates rising means that long-term debt of REITs will become more expensive. This will impact several elements of the real estate industry, the first being REIT stock prices as discussed by Pauley (2011). That study of Pauley (2011) investigated the relationship between the REIT stock price change and interest rate movements.

The aforementioned study concluded that interest rate movements have a low and negative correlation with REIT prices. It is safe to say that changes in REIT prices cannot be adequately explained by a change in interest rates (Pauley, 2001). Another study investigated the effect of interest rate movements on REIT returns. The results revealed that interest rate changes impact REIT returns significantly. The clear correlation between the two variables is consistent regardless of the type of REIT because the sample included hybrid, mortgage, and equity REITs (Swanson, Theis & Casey, 2002).

Studies have also been carried out on the impact that interest rates have on capitalisation rates used in the real estate industry. Previous literature suggests that interest rate changes must correlate with cap rates, but determining the value of real estate is a highly complicated field. According to the aforementioned study, capitalisation rates will increase by 50 to 75 basis points for every 100 to 150 base points of increase in the interest rates. The results have several severe limitations and the conclusiveness in terms of practical application of the ratio above is not yet supported. Different cap rates are available for almost every type of property in the real estate sphere, including residential, retail, office, and industrial properties. It will be next to impossible to summarise the effect of interest rate changes on all the different types of properties.

2.5.6 Exchange rate risk

What does this risk entail? Real estate investing in a different country with a different currency includes one transaction, but the investors enter two speculative foreign

exchange markets as well. Additional uncertainty is created regarding the rate of exchange and presumably must be compensated for the expected return. The following formulae discussed the components of foreign currency risk, namely, (1) changes in cash flows and security values in one's own currency or in the domestic market and (2) changes that occurred in the foreign currency relative to the domestic currency.

$$R_1^f = \frac{(D_1^f + P_1^f)(S_1^{\frac{d}{f}})}{(P_0^f)(S_0^{\frac{d}{f}})} - 1$$

Rate of return on foreign investment = Product of 1 plus the rate of return in the security and the ratio of ending to beginning exchange rates less 1

In the expression, $P_0^f + P_1^f$ denotes the beginning and closing prices of the foreign security, and D_1^f represents the interest earned or dividend paid by the security held. The beginning and ending value of the foreign currency in terms of the domestic currency is represented by $S_1^{\frac{d}{f}}$ and $S_0^{\frac{d}{f}}$ respectively. Investors must consider the correlation between the standard deviation of the foreign currency relative to the domestic currency as well as the standard deviation of the asset prices in their local currency. Co-movement or positive correlation between the two standard deviations will result in great variability of the holding period return in the security, which increases the riskiness of the investment. On the other hand, an inverse relationship between the foreign investment price standard deviation and the foreign currency relative to the domestic currency can limit risk to an extent in the form of one market offsetting possible losses in the other. This amplifies the diversification principle of limited risk, reducing the portfolio standard deviation via investment in independent or negatively correlated markets. It is possible that exchange rate risk can be diversified until only market risk remains. How can exchange rate risk be reduced or even eliminated? It can be done via derivative instruments such as future and forward contracts that will help limit variability risk. However, before derivative strategies are discussed, it is essential to note the relationship foreign investment has with nominal interest rates and inflation. Real interest rates are positively

correlated to nominal interest rate changes and negatively correlated to inflation as illustrated in the equations below. This principle is known as the Fisher effect.

$$\left(1 + R_f^d\right) = \left(1 + R_{real}^d\right) * \left(1 + \Omega^d\right)$$

$$\left(1 + R_f^f\right) = \left(1 + R_{real}^f\right) * (1 + \Omega^f)$$

The equation that follows explains the relationship between changes in the inflation rate relative to interest rate differences. The relative interest rate differential must equal the relative inflation rate differential between countries.

Domestic real interest rate = Foreign real interest rate

$$\left(1 + R_{real}^d\right) = \frac{(1 + R_f^d)}{(1 + \Omega^d)} = \frac{(1 + R_f^f)}{(1 + \Omega^f)} = \left(1 + R_{real}^f\right)$$

$$Simplified\ leaves, \qquad \frac{\Omega^d - \Omega^f}{(1 + \Omega^f)} = \frac{R_f^d - R_f^f}{(1 + R_f^f)}$$

In essence, opportunity exists not only for SA REITs to hedge their investment against the weak domestic currency but also to hedge their investments against foreign currency fluctuations via purchased forward contracts and the futures currency markets, if they feel uncertain about the foreign currency volatility. A study by Bergstorm (1975) produced efficiency sets of theoretical domestic and world portfolios, and the results indicated that an internationally diversified portfolio reduces volatility and increase expected return. The benefits must be seen in the light of possible unforeseen events that are closely related to political risk. Countries affect trade wars and control to flow of capital in and out of a specific country. Capital flow restrictions or high withholding taxes can be detrimental for an investor because of possible illiquidity of funds invested or additional costs and taxes eroding the returns generated.

It is logical that when REITs are investing offshore, an exchange rate risk or opportunity may arise. Especially for SA REITs and given the current state of the

South African currency and highly volatile economic climate, it would be an alluring trend to invest in countries with stronger, more stable currencies with lower political risk. The Rand is already undervalued, and during the past couple of years, it slowly depreciated further against the Dollar, Euro, and Pound. A unique opportunity surfaces for SA REITs to invest in Dollar-, Pond- or Euro-denominated currencies. The exchange rate influences the cash flows of company operations, security value, as well as the discount rate used to value these projected cash flows for analysing projects. The investment value after implementation is highly dependent on the foreign currency fluctuations in terms of historic cost reporting; possible impairment can arise that can either benefit or negatively influence investment values.

Gains from an investment in terms of cash flows and capital gain can be offset by exchange rate losses and vice versa. A study by Niyimbanira (2011) examined the effect of exchange rates on the JSE's top 40 companies. The companies in that study were separated between those that derived most of their income offshore and those generating most of their income locally. The results indicate that the top 40 companies are negatively exposed to exchange rate risk. IFRS (International Accounting Standards [IAS] 21) stipulated that any gains or losses experienced by a company due to movements in the exchange rate must form part of the consolidated income (Smith, 2012).

2.5.7 Financial statement analysis

The purpose of this subsection is to act as a summary that illustrates all the financial ratios used in this study. Financial statement analysis is particularly useful when information about a company is needed. It is also critical to note that financial ratio analysis depends on the perspective of the interested party; for example, a possible partner for a joint venture will look at a different set of ratios than an ordinary shareholder wanting to buy stock or than a long-term debt financier would look at. When executing such an analysis, the statements must be audited and all the statements must be from the same period. Using one or two ratios may not always explain a situation completely, which is why this study made use of several combinations of ratios for each segment of REIT. These are needed to provide a comprehensive and detailed understanding of changes that occurred. These financial ratios will gather information from three types of financial statements that

must be made available to the public by listed companies and in this case by SA REITs. The balance sheet or statement of financial position, income statement, and the cash flow statement will be the most important statements used during the data capturing process (McClure, 2010).

Before the various financial ratios are explained and categorised, an explanation of the different statements will be given to fully understand why these statements are useful and relevant to international investment and financial ratio analysis. As stated previously, the financial analysis procedure will help to determine the financial position and level of performance of any company if the financial statements are available. Analysts usually have a goal when conducting a financial study on a company. This means they use ratios to derive data to make predications, assumptions, and recommendations to clients, colleagues, or supervisors. Several distinctions must be made off the bat, such as that there is a clear distinction between profit and cash flow.

Profit is the excess amount of sales, and cash flow refers to the amount received in cash during a sales transaction. In the listed property industry, profit plays a role when properties are sold for more than they were purchased, and this will form part of the operating income of the company, but the primary indicator of a REIT's capabilities will be its cash flow situation. This is because in the case of equity REITs, the lease agreements are the primary form of income which is viewed as cash flow (Konig, 2014). Another clear distinction that is worth understanding is that liquidity refers to the ability to meet short-term debt obligations, and solvency is the ability to meet long-term debt obligations (Robinson *et al.*, 2009).

The income statement reflects the amount of revenue a firm generates for a given period as well as the expenses it incurred to obtain the revenue. It is also known as the statement of operations, and the basic underlying equation is income minus expenses. Analysts can use this statement to determine the growth in earnings for a given period, its historical background, as well as to make predictions on expected earnings. The first essential component of the income statement is net income. Thus, the term refers to revenue after deductions have been made. From a real estate perspective, this could entail rental defaults or a free month as an incentive for long-term tenants. As mentioned previously, the gain or loss on the sale of a

property will be included in the net income as a gain or loss. Earnings before interest, tax, depreciation, and amortisation (EBITDA) is a total that illustrates where potential operating expense changes might occur or specific revenue fluctuations can be expected. The result that will occur in numerous financial ratios in this study is net profit, also known as the bottom line. This is normally the responsibility of the chief executive officer, and it reflects whether that person is driving the company forward, growing the company, or keeping the company stagnant. The most common ratio pertaining solely to the income statement is (Robinson *et al.*, 2009):

- $Gross\ profit\ margin\ (GP) = \frac{Gross\ profit}{Revenue} * 100$
- $Net\ profit\ margin\ (NP) = \frac{Net\ profit}{Revenue} * 100$

The earnings per share can also be calculated using the net profit minus preferred stock dividend divided by the amount of common stock issued. The growth in earnings per share (EPS), net profit (NP), and gross profit (GP) from previous years can also be determined.

The statement of financial position or more commonly known as the balance sheet indicates what an entity owns and what it owes to other entities. The three main components of a balance sheet are assets, liabilities, and equity. Assets refer to what the entity owns, and they can be divided into tangible and non-tangible assets. Non-tangible assets strengthen the balance sheet of companies in the real estate industry because it indicates the size of a real estate portfolio. Liabilities can also be divided into current and non-current liabilities, where current refers to short-term debt that will be due within a year, and long-term debt is for longer than one year. Equity refers to who owns the entity; it is consistent with common stock and preferred stock. There are advantages and disadvantages to each type of stock. The stock proportions can indicate minority and majority shareholding in an entity. The basic underlying equation of a balance sheet is assets equal liabilities plus equity. One can buy an asset with capital, and it can be funded with cash or debt, which translates to equity and debt (Robinson *et al.*, 2009).

The various ratios that can be implemented by using solely the balance sheet can be divided into solvency and liquidity ratios. As mentioned earlier, they distinguish

between the entity's ability to honour long-term and short-term debt obligations. The liquidity ratios are as follows (Robinson *et al.*, 2009):

- $Current\ ratio = \frac{Current\ assets}{Current\ liabilities}$
- $Quick\ (Acid\ test) = \frac{Cash+Marketable\ securities+receivables}{Current\ liabilities}$
- $Cash = \frac{Cash+Marketable\ securities}{Current\ liabilities}$

The solvency ratios that can be implemented solely on the balance sheet and are as follows:

- $Long-term\ debt\ to\ equity = \frac{Long-term\ debt}{Total\ equity} * 100$
- $Debt\ to\ equity = \frac{Total\ debt}{Total\ equity} * 100$
- $Total\ debt, Loan\ to\ value\ (LTV) = \frac{Total\ debt}{Total\ asset} * 100$
- $Financial\ leverage = \frac{Total\ assets}{Total\ equity} * 100$

There are several limitations to these ratios, but it is basically the only information that researchers and shareholders have available to make a calculated decision. The main reason for problems to arise from ratios is when analysts compare companies from different industries to one another. This will not be the case in this study because all the firms are in the real estate industry; establishing baselines and making good judgements can therefore be executed more accurately. All the operations of the sample of companies are homogeneous, and opinions can be better generalised for the industry (Robinson *et al.*, 2009).

The cash flow statement provides information about an entity's cash receipts and payments. The ending cash flow balance for a year is carried over to the following year. This statement is cash-based and not accrual-based as in the case of the income statement. The income statement indicates revenue when it is earned, but the cash flow statement indicates revenue when the cash receipt has been received. The balance of the cash flow statement is known as cash, and cash equivalents also appear on the balance sheet under current assets. Under hypothetical conditions, a company can show massive profits on the income statement; with a cash balance of next to nothing, the results would be disastrous for such a firm. Two

fundamental issues that the cash flow balance indicate to an investor are whether the company has cash available to fund new investments and financing activities and whether a company has enough funds to distribute dividends to its shareholders (Robinson *et al.*, 2009).

The cash flow statement covers three core business activities: operating activities, investing activities, and financing activities. Operating activities refer to the daily operations or activities that generate business revenue. In the case of REITs, this refers to income from lease agreements by tenants. Net income, cash income from other operations, finance costs, taxation paid, capital items, and distributions to shareholders will generally form part of operating activities. Investment activities include property, plant, and equipment; intangible assets; long-term assets; or a combination of long- and short-term investments. In the real estate environment, investing activities will usually refer to long-term asset acquisitions of disposals. Financing activities include obtaining or repaying capital, for example, equity or long-term debt. Cash inflows will be from issuing stock, either common or preferred stock. Cash outflow will be payment to reclaim stock, for example, treasury stock, paying dividend, or repaying long-term debt (Robinson *et al.*, 2009).

Before the various ratios pertaining to cash flow are discussed, it is important to note the calculation of free cash flow to the firm. Business managers will find it useful to know the amount of cash that is free after capital and operating expenditures have been paid. This cash amount will be available to fund future expansions of the company or for dividend distribution to owners. The calculation for the future free cash flow (FFCF) is as follows (Robinson *et al.*, 2009):

$$FCFF = NI + NCC + Int(1 - Tax\ rate) - FCInv - WCInv$$

- NI = Net Income
- NCC = Noncash charges (such as depreciation and amortisation)
- Int = After-tax interest expenses
- FCInv = Fixed capital expenditures (fixed capital, such as property, plant, and equipment)
- WCInv = Working capital expenditures

The FCFF can also be calculated by using the total cash from operational activities (CFO).

$$FCFF = CFO + Int(1 - Tax\ rate) - FCInv$$

The CFO, in this case, includes interest expenses under the operating activity total.

Management will be able to determine the cash on hand if investment or dividend distributions must be made. The following represents various ratios relating to the cash flow of a given company.

Performance cash flow ratios (Robinson *et al.*, 2009):

- $Cash\ flow\ to\ revenue = \frac{CFO}{Net\ revenue}$
- $Cash\ return\ on\ assets = \frac{CFO}{Total\ assets}$
- $Cash\ return\ on\ equity = \frac{CFO}{Shareholders' equity}$
- $Cash\ to\ income = \frac{CFO}{Operating\ income}$
- $Cash\ flow\ per\ share = \frac{CFO - Preferred\ dividends}{Number\ of\ common\ share\ outstanding}$

Coverage ratios (Robinson *et al.*, 2009):

- $Debt\ coverage = \frac{CFO}{Total\ debt}$
- $Interest\ coverage = \frac{CFO + Interest\ paid + Taxes\ paid}{Interest\ paid}$
- $Reinvestment = \frac{CFO}{Cash\ paid\ for\ long\ term\ assets}$
- $Debt\ payment = \frac{CFO}{Cash\ paid\ for\ long\ term\ debt\ repayment}$
- $Dividend\ payment = \frac{CFO}{Dividend\ paid}$
- $Investing\ and\ financing = \frac{CFO}{Cash\ outflows\ from\ investing\ and\ financing\ activities}$

The financial ratios that will be utilised during this study will include calculations pertaining purely to one statement as well as ratios requiring information from several statements.

Previous discussion highlighted institutional shareholder changes that occur during the time the internationalisation process resulting from the newly implemented REIT structure, will use the following ratios to determine if fundamental changes have occurred:

1. $Confidence\ indicator = \frac{Institutional\ shareholding}{Total\ equity} * 100$
2. $Dividend\ yield = \frac{Annual\ dividend\ per\ share}{Price\ per\ share} * 100$
3. $PE\ Ratio = \frac{Market\ price\ per\ share}{Earnings\ per\ share}$
4. $Book\ value\ per\ share = \frac{Total\ shareholders' equity - Preferred\ equity}{Total\ outstanding\ shares}$
5. $Return\ on\ equity = \frac{Net\ income}{Total\ shareholders' equity} * 100$
6. $Robin's\ Q = \frac{Market\ value\ of\ the\ firm}{Asset\ value\ of\ the\ firm}$
7. $Debt\ to\ equity = \frac{Total\ debt}{Total\ equity} * 100$
8. $Financial\ leverage = \frac{Total\ assets}{Total\ equity} * 100$
9. $Net\ profit\ margin\ (NP) = \frac{Net\ profit}{Revenue} * 100$
10. *Total asset value of the firm*

The following subsection of this chapter will briefly evaluate the financial position of a REIT. These ratios pertain specifically to the financial structure of REITs and can provide significant insight. The figure to determine the financial position of REIT includes:

1. $Cash\ flow\ to\ Long - term\ debt = \frac{CFO + depereciation + amortization}{Total\ Long\ term\ debt} * 100$ Where this will indicate the risk of the firm – a high figure indicates minimal risk and vice versa.
2. $Gross\ profit\ to\ debt = \frac{Total\ debt}{EBITDA} * 100$

   This figure indicates how long it will take to repay all the debt of the firm.
3. $Debt\ to\ capital = \frac{Total\ debt}{Total\ capital} * 100$

   This figure illustrates how a REIT is financing its operations.

These financial indicators will determine shareholding changes. It is likely that as a future prospective multinational institution wanting to invest, these will be the figures to consider before investing in an offshore company. In other words, these figures will be useful to attract institutional investment but also to measure the performance and operational changes in the firm.

The subsequent chapter discusses the company structure implemented during the internationalisation of the SA REIT environment and how the company physically structures and positions itself to accommodate offshore investment. Various diagrams will be used to clearly illustrate the difference between the company's structures and those used among SA REITs. Financial ratios will not be used during the investigation in this chapter.

The capital structure changes of the various REITs since the new internationally recognised structure was implemented will be explained by using financial ratios and calculations. The first formula is the weighted average cost of capital equation; it is important to note that when the equitation is separated into the different elements, it can indicate other information about the company. This is how the WACC is separated from several of the financial ratios.

The formula to calculate the cost of equity is illustrated as:

$$Cost\ of\ Equity(COE) = \frac{Dividends\ per\ share}{Market\ value of\ stock} + Growth\ rate\ of\ dividends$$

All listed SA REITs make their average cost of long-term debt from local as well as offshore financial institutions known to the shareholders. This figure will be used as the debt part of the weighted average cost of capital as COD.

The financial ratio that the study will be implementing and the possibly indicated capital structure changes include:

9. $LEV\ 1 = \frac{Long\ term\ debt}{Market\ value\ of\ equity} * 100$
10. $LEV\ 2 = \frac{Long\ term\ debt}{Total\ assets} * 100$
11. $LEV\ 3 = \frac{Long\ term\ debt}{Total\ capital} * 100$

Where

total capital is equal to long-term debt plus equity

12. $Growth\ Cash\ Flow\ (CF) = Annual\ percentage\ change\ in\ cash\ flow$
13. $Growth\ Asset\ Base\ (AB) = Annual\ percentage\ change\ in\ asset\ size$
14. $MTG = \frac{Mortgage\ income}{Total\ income} * 100$
15. $MB = \frac{Market\ captilisation + total\ liabilities}{Total\ Assets}$
16. $ROE = \frac{Net\ income}{Shareholders' equity} * 100$

Where

net income is before dividends paid to common shareholders but after dividends to preferred shareholders

shareholders' equity excludes preferred shareholders

17. $Cash = \frac{Cash\ and\ equivalents}{Total\ assets} * 100$
18. $FFO = \frac{Net\ income + depreciation}{Total\ assets}$
19. $Interest\ coverage = \frac{CFO + Interest\ paid + Taxes\ paid}{Interest\ paid}$
20. $Debt\ coverage = \frac{CFO}{Total\ debt}$
21. $Debt\ to\ equity = \frac{Total\ debt}{Total\ equity} * 100$
22. $Total\ debt, Loan\ to\ value\ (LTV) = \frac{Total\ debt}{Total\ asset} * 100$

This section highlights methods which will be used to measure and interpret proposed internationalisation techniques on SA REIT portfolios. Risk is explained in detail as background information necessary for investigating the reasons for certain decision-making. Country-specific decision-making, for example, first-world countries and emerging markets, can pose different types of risks that will affect the entire reasoning behind selecting or not continuing with an investment. Usually, risk mitigation is of primary concern in real estate because of its long-term nature. Listed property companies are not short-term gain-orientated; thus, they tend to mitigate risk completely or accept a moderately low risk. Diversifying offshore brings other

risks into play that would locally not have been a problem, and these risks can be interpreted in terms of where companies initiated investment. Risk is dually noted internally and externally by the public and more specifically by investors. A given REIT can become popular if it is recognised for taking on usually greater risk, which can care for institutional investors.

Another method of measuring the international diversification of SA REITs is numerical, in the form of financial statement analysis. Weighted average cost of capital, return on equity, percentage of institutional and international equity in a company, and cash flow analysis are all performance measures in black and white. It is available for the public to view and interpret the sustainability and stability of the company. One can also view its entire list of assets in any given SA REIT to determine if offshore diversification has taken place. An immediate representation of the company's current position is available.

Companies looking to invest in foreign countries might want to participate in a joint venture agreement or establish a subsidiary. SA REIT actively participating in joint ventures might recognise the massive benefits of entering into such an agreement with a local property developer for a given foreign country. It is likely that this type of structure has already been implemented by the several SA REITs as well as other methods of assessing offshore diversification strategies and possible strategies for novice SA REITs.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The preceding chapter reviewed literature relevant to this study. This chapter addresses the research methodology that will be followed during this study. First, it is important to understand what research methodology is (Melville, 2010). The problem or situation will be the research problem, which can be solved using various methods depending on the problem. New knowledge is the key to conducting research (Mory, 2009). A systematic framework is necessary to obtain results. The sub-problems are not limited to a single research method but a combination of methods to obtain more comprehensive results.

3.2 RESEARCH ANALYSIS

This study will adopt a comparative historical paradigm, observational data collection and make use of a correlation research methodology. The type of data collected will include primary data in the form of historically recorded data, a comparative analysis between past and present data, as well as descriptive research in the form of statistical econometric analysis. Secondary data will be predominantly quantitative and will be used for comparison. The data collected is primarily time-series data, consisting of financial and economic information over a 10-year period. A major limitation of this data is that the INET BFA database becomes incomplete after five years. This incompleteness skews the data, inferences, and conclusions. Companies tend to keep some of the information in-house, and this increases the difficulty of obtaining the missing information. Each sub-problem investigates a different area of the sample companies to provide a full analysis on whether the company has diversified offshore or if international investors have increased their holding in these companies.

Financial information and financial ratios will be gathered from the largest 13 SA REITs listed on the JSE. These companies represent over 90% of the listed property sector and will undoubtedly indicate sector trends and homogenous management style or diversity of management styles. Various economic indicators will also be gathered over a 10-year period. The financial and economic indicators are used for a cross-sectional and time-series analysis via comparison of the company. It will be

considered how their performance measures have changed over the past decade. The goal of using the financial and economic data analysis is to determine whether South African REITs have internationalised their portfolios after the REIT conversion. Various regression analysis will be run on the same set of financial and economic data to provide a more statistical approach to investigate the proposed behavioural changes after the transition to REIT structures. The data will be gathered via online sources, the Reserve Bank website, and company financial statements.

Sub-problem 2 will specifically not analyse any quantitative data; it will merely use qualitative and predominantly visual data. Diagrams and illustrations will be used to better explain the company structure currently being implemented in the REIT industry. The company structure information will be obtained via the REITs' integrated reports. These documents are also made available to the public. A printed version can be found at the head offices of all the REITs as well as the INET BFA website using the Internet as stated earlier. The reason for qualitative data analysis is due to difficulty in translating internal organisational structure, subsidiary and joint venture arrangements and hierarchy to significant numerical information.

The last section of regression analysis is aimed at identifying whether companies have diversified and as a result improved their subsequent financial positions. Chapter 5 will primarily make use of quantitative data by means of financial ratios. The financial ratios will be divided into those determining the firm's financial position, those that determine how a company is leveraged, the weighted average cost of capital calculation, and then other base ratios such as net asset value per share (NAVPS) and operating income, relating specifically to the capital and debt structure. Chapter 4 contains quantitative data for supporting information as well as the hypothesised data. This information will be available on the financial statements of all the entities mentioned and can be obtained at their head offices or on their respective websites. The resources needed to obtain the information remains the same as explained above.

Primary financing and capital budgeting formulae will be used for a more accurate statistical interpretation of the possible changes that occurred. The formula for the weighted average cost of capital is:

$$WACC = \left(\frac{Market\ value\ of\ equity}{Total\ firm\ capital}\right) * COE + \left(\frac{Market\ value\ of\ long\ term\ debt}{Total\ \ firm\ capital}\right) * COD$$

The financing or capital structure of the SA REIT sample will predominantly be analysed by this figure because it is a culmination of various other financing formulae such as return on assets, return on equity, leverage, and loan-to-value characteristics. Free cash flow may indicate different lower results than traditional business sectors because of the incentive for REITs to deduct dividends from tax; hence, possible massive payouts will ensue if no new positive net present value (NPV) projects are undertaken.

The Logistic analysis process comes with several theoretical assumptions and backgrounds will be explained later. The starting point in analysing the data at hand is to plot a scatter diagram. From this visual presentation, it is possible to determine the underlying functional relationship. The basic relationships distinguished are both linear and non-linear. The presence of outliers could also be identified at this stage and removed before performing regression techniques (e.g. the last observation for dividend yield %).

The foregoing is the appropriate regression analysis to conduct when the dependent variable (such as conversion date in this case) is dichotomous (or binary). A dependent variable is binary (0/1, True/False, Yes/No, Pass/Fail) in nature. In such regression, the value of Y ranges from 0 to 1. Like all regression analyses, the logistic regression is a predictive analysis. Logistic regression is used to describe data and to explain the relationship between one dependent binary variable and one or more metric (interval or ratio scale) independent variables. Unlike ordinary linear regression, however, logistic regression is used for predicting binary-dependent variables (treating the dependent variable as the outcome of a Bernoulli trial) rather than a continuous outcome. Given this difference, the assumptions of linear regression are violated. The residuals cannot be normally distributed. Additionally, linear regression may make nonsensical predictions for a binary-dependent variable. What is needed is a way to convert a binary variable into a continuous one that can take on any real value (negative or positive). To do this, logistic regression first takes the odds of the event happening for different levels of each independent

variable, then takes the ratio of those odds (which is continuous but cannot be negative) and calculates the logarithm of that ratio. Thus, the logit or log-odds transformation of the dependent variable is referred to as the *link function* in logistic regression. Although the dependent variable in logistic regression is binomial, the logit is the continuous criterion upon which linear regression is conducted. The error (residual) variances are not normally distributed; instead, they are more likely to follow a logistic distribution.

The purpose of the model is to estimate the probability that an observation with characteristics will fall into a specific one of the categories. If the response (or dependent) variable is the outcome of a Bernoulli trial (0 or 1), the response distribution will be binomial, and what is modelled is the probability of an observation being a 1 (P(Y=1)). In logistic regression, the parameters are chosen to maximise the likelihood of observing the sample values rather than minimise the sum of squared errors as in least squares estimation techniques.

Logistic regression is used to find the probability of event = success and event = failure. In logistic regression, the value of Y ranges from 0 to 1, and it can be presented by the following equation:

Odds = p/ (1-p) = probability of event occurrence / probability of not event occurrence

Ln (odds) = ln (p/ (1-p))

Logit (p) = ln (p/ (1-p)) = $\beta_0 + \beta_1 X_1$

Indicated above is the one independent variable X_1.

Above, p is the probability of presence of the characteristic of interest and ln represents natural logarithm. The error term (residual) has a logistic distribution. This categorical prediction can be based on the computed odds of success, with predicted odds above some chosen cut-off value (such as .500) being translated into a prediction of success.

With logistic regression, a one unit change in X_1 is associated with a β_1 change in the Log odds of “success”, alternatively, an Expo(β_1)-fold change in the odds where

Expo () means exponentiation of the coefficient β_1 all else being equal. An odds ratio greater than one means that an increase in X leads to an increase in the odds that the dependent variable equals one; an odds ratio less than one means that the odds are decreasing.

An important point regarding the application of logit is regression. It is widely used for classification problems. Logistic regression does not require a linear relationship between dependent and independent variables. It can handle various types of relationships because it applies a non-linear log transformation to the predicted odds ratio. To avoid over-fitting and under-fitting, all significant variables should be included. An approach to ensure this practice is to use a stepwise method to estimate the logistic regression. It requires large sample sizes because maximum likelihood estimates are less powerful at low sample sizes than ordinary least squares. The independent variables should not be correlated with each other, that is, no multicollinearity.

The following statistical tests are typically used in analysing logistic regression output. These estimates provide the relationship between the independent variables and the dependent variable, where the dependent variable is on the logit scale. These estimates give the amount of increase or decrease in the predicted variable. The standard errors are used for testing whether the parameter is significantly different from 0. The standard error will lead to the t-value interpretation. The t-value will predominantly be used to accept or reject certain variables for predicting the impact on the dependent variable.

It is often of interest to question which variables in the predictor set (the X-independent variables) were most strongly associated with the outcome variable (Y). To answer this question, it is necessary to rank the predictors by some measure of association with the outcome. Unlike linear regression, where predictors are often ranked by partial correlation, there is little consensus on how best to rank predictors in logistic regression. A popular approach is to use the p-value of the Wald chi-square test. Ranking is interpreted as a position in terms of strength of evidence of non-zero association. The strengths of this method are ease of computation and familiarity of many researchers with p-values. A downside is that it indicates only the strength of evidence that there is some effect, not the magnitude of the effect.

Independent variables are often ranked by one minus the p-value of the Wald chi-square statistic, so that a ranking from largest to smallest would indicate descending strength of evidence of an association of an independent variable with the outcome (Y) variable.

The linear regression model (or OLS) establishes a linear relationship between the dependent variable (Y) and independent variable(s) (X_i). If there is only one independent variable, this case is referred to as simple regression. If more than one independent variable is involved, the term multiple regression is used. This model is then used to calculate estimated Y values, which are compared to observed values. The difference between observed and predicted values is labelled an error term.

Mathematically, the general linear regression equation is expressed as follows:

$$\mathrm{Y_i} = \beta_0 + \beta_1 \mathrm{X}_1 + \cdots + \beta_i \mathrm{X_i} + \varepsilon_{\mathrm{i}}$$

Where

$\mathrm{Y_i}$ = dependent variable

β_0 = a constant

β_i = coefficient of $\mathrm{X_i}$ (independent variable(s))

ε_{i} = error term or residual

The error term is distributed as follows: $\varepsilon_{\mathrm{i}} \sim \mathrm{N}(0, \sigma^2)$

The main goal is to develop a linear function for the given sample of data that will, with relative accuracy, predict the effect of changes in the independent variable(s) on the dependent variable (Porter, 2009). In the equation above, the parameters are chosen to minimise the sum of squared errors rather than maximise the likelihood of observing the sample values, as is done in logistic regression.

It is worth noting that in the aforementioned equation, the regression coefficients (or β coefficients) represent the independent contribution of each independent

variable to the prediction of the dependent variable. Another way to express this is to say that, for example, variable X_1 is correlated with the Y variable, after controlling all other independent variables. This type of correlation is also referred to as a partial correlation. To evaluate the adequacy of the regression estimates, several characteristics should be examined. The tests statistics discussed are the most basic tools for interpreting the related changes in the subject sample and will be used to speculate and draw inferences and conclusions on the transition from PLS and PUT to REIT status in the South African-listed property sector.

How accurately do the estimated Y values (obtained from the regression line) fit the actual values in each sample? The value of R-squared cannot determine whether the coefficient estimates and predictions are biased; therefore, the residual plots must be assessed. Its value will always vary between 0 and 1, with a better linear fit when the R-squared value is closer to 1 and vice versa. R-squared does not indicate whether a regression model is adequate. A low R-squared value can be obtained for a good model, or a high R-squared value for a model that does not fit the data. The adjusted R-squared is when the R-squared is adjusted by the degrees of freedom. The signs of the coefficients must be correct as per the theory. A positive sign indicates that the dependent and independent variables move in the same direction, that is, when the independent variable increases, so does the dependent variable and vice versa. A negative sign highlights that the variables move in opposite directions. As discussed previously, it is important to measure the significance of each individual coefficient. A rule of thumb is that a coefficient with $t \approx 2$ can be considered significant (i.e. the null hypothesis that $\beta=0$ is rejected, implying that the coefficient associated with independent variable X is significantly related to the dependent variable Y).

To rank the elements that affected change, Wald values calculated during a logit regression analysis were used. These values or their p-values represent the significance of the dependent variable at a certain level of confidence. For analysis and interpretation purposes, any value lower than 2 will be declared insignificant (Porter, 2009).

In ordinary least squares (OLS), the adequacy of a model specification can be checked in part by establishing whether there is autocorrelation of the regression

residuals. Autocorrelation of the errors violates the ordinary least squares assumption that the error terms are uncorrelated, meaning that the Gauss Markov theorem does not apply, and that OLS estimators are no longer the Best Linear Unbiased Estimators (BLUE). While it does not bias the OLS coefficient estimates, the standard errors tend to be underestimated (and the t-scores overestimated) when the autocorrelations of the errors at low lags are positive. While a scatterplot can be used to check for autocorrelations, the linear regression model can be tested for autocorrelation with the Durbin-Watson test. The test for the presence of first-order autocorrelation is the Durbin-Watson statistic (d). Since d is approximately equal to $2(1 - r)$, where r is the sample autocorrelation of the residuals, $d = 2$ indicates no autocorrelation. The value of d always lies between 0 and 4. If the Durbin-Watson statistic is substantially less than 2, there is evidence of positive serial correlation. As a rough rule of thumb, if Durbin-Watson is less than 1, there may be cause for alarm. Another assumption of the ordinary least square regression model is collinearity. Collinearity occurs when the independent variables are not independent of each other. Multicollinearity might be tested by looking at the correlation matrix – when computing the matrix of Pearson's Bivariate Correlation among all independent variables; the correlation coefficients need to be smaller than 1. If multicollinearity is found in the data, centring the data that is deducting the mean score might help to solve the problem.

The last assumption relating to the OLS model is an error distribution analysis in the form of heteroscedasticity. This occurs if all random variables in the sequence or vector do not have the same finite variance. In other words, the error in estimating the data should not increase as time progresses. Even though it is regression analysis, using heteroscedasticity data will still provide an unbiased estimate for the relationship between the predictor variable and the outcome, the standard errors, and therefore inferences obtained from data analysis are suspect. Biased standard errors lead to biased inference, so the results of hypothesis tests are possibly wrong. For this study, heteroscedasticity will be visually tested instead of making use of theoretical calculations. A scatter plot is an effective way to check whether homoscedasticity (that the error terms along the regression are equal) is given.

3.3 CONCLUSION

A qualitative method was deemed appropriate for this study.

To explain the effect of an international REIT structure conversion on the listed property sector of South Africa, several types of data and data collection methods have been implemented to best explain such an impact. Although these methods cover an extensive range of variables and testing analysis, the study cannot possibly include all international events that took place within the last decade, which might have resulted in external influence on the REIT conversion decision. The study could not cover these events and might skew the data and resulting interpretations of the data. Information gathered during interviews with managing directors of the largest companies who are major supporters of this conversion reveals that tax benefits and liquidity seem to form part of the structure features. This explains why key company indicators such as the NAVPS and net income changes could prove to be vital information on industry structure conversion.

The chapter that follows will be an analysis of data for this study.

CHAPTER 4: DATA ANALYSIS

4.1 SHAREHOLDER STRUCTURE

4.1.1 Introduction

Investor confidence in each company, among other indicators, can be analysed based on the shareholder structure. Institutional investment in each company refers to multinational corporations that purchase equity stakes in companies that they believe are sustainable and that will provide a stable, annual dividend, as well as capital growth on the investment. Examples of the largest institutional investors include the South African government-owned Public Investment Corporation (PIC) and Government Employees Pension Fund (GEPF) among various other private pension funds and insurance companies. The percentage of institutional shareholding in a company can reflect confidence, as stated above, which is why this indicator will play a dominant role in the analysis of shareholder structure of the different REITs. This chapter measures how institutional portfolio managers proceed with investment strategies. In other words, their decision-making strategies are explained to an extent by measuring these indicators. Behavioural finance can be measured by several of these indicators. The portfolio composition of investors usually includes factors such as immunisation, index-linking, performance, and practical constraints, which will be explained in depth later (Hager, 1987).

The purpose of the foregoing is to determine whether any shareholder changes to the SA REITs have occurred since the international REIT structure was introduced in South Africa. The investigation can predominantly be divided into the institutional changes to the SA REITs to examine if multi-corporations believe that this international structure provides improved interaction internationally and thus regard these companies as a safer investment option. These indicators can relate to the main problem in terms of international investor shareholding in companies, which might be able to confirm or deny the fact that SA REITs are increasing their international interaction and are considered a safe and sustainable investment for reasons relating to the familiarity of a standardised, legal structure. Institutional investors with large sums of capital available who invest in REITs are looking for long-term stable capital appreciation while receiving a string of dividend annually.

4.1.2 Background

Institutional investors include financial intermediaries, investment firms, banks, pension funds, and many other types of multinationals. These types of companies have much excess capital available, which they tend to invest more aggressively than place it into a bank account that will yield low returns. Therefore, an investment manager tends to trade securities for the future, keeping in mind the risks involved with various types of strategies and expected earnings formation. Portfolio managers can optimise returns by obtaining superior information. However, this can be illegal when they can process information about companies faster and thus know everything about the respective companies in terms of their prospects and general business operations. The third method of alpha maximisation is behavioural biases. These biases make use of certain effects such as the January effect, the Monday effect, the winner-loser effect, and several others. These effects can offer the investor abnormal returns if they correctly recognise the influences on the asset price (Santoni, 2012).

The Bayes' rule is a common technique that is supposed to be implemented when any portfolio or investment manager is presented with a set of information. This rule refers to the fact that they must consider the probabilities, which, in turn, would rationalise their decision-making ability. Another technique that is commonly applied in institutional behaviour is the expected utility theory, which boils down to the fact that the investors can expect a certain outcome or return upon investing. The rational decision-making approach is that someone would enter an investment if the cost of entering is less than the expected possible utility that can be derived for the endeavour. It is crucial to note that the expected utility of wealth and expected wealth do not have a linear relationship (Ortiz, 2011).

The expected utility theory helps any investor to make decisions when encountering uncertainty. It explains rational human behaviour, not just for investment purposes but also for the consumption of goods and services behaviour of an ordinary person. A portfolio manager can use this theory to determine what type of investment can yield the largest expected utility, with the underlying assumption that the investors' behaviour is that of a normal person. A normal person would always prefer more wealth than less (Yalcin, 2012). One theory has served as a cornerstone for

behavioural finance, namely, the prospect theory. This theory accounts for the fact that the investors might not always behave like rational people, meaning that they may occasionally choose an option that does not yield the highest utility. Tversky (1973) performed several studies to determine how prone to risk individuals are. It was found that there is risk-adverse behaviour that correlates with expected utility theory as well as risk seekers, which demonstrates the need for this model. The author suggested that both models must be implemented in conjunction, to obtain a comprehensive understanding of the individual behaviour.

The investment decision of a hedge fund manager can be related to several heuristic biases that translate into behavioural finance. An example of this type of bias is the fact that portfolio managers dedicate enormous amounts of attention to the headline earnings of a company. The headline earnings has several biases linked to it. The representativeness of a company plays a primary role in attracting institutional investment. Representativeness is all the judgements about a given company that are commonly based on stereotypes. Two other types of investment strategies include the overreaction of investors, who can become excessively pessimistic about, for example, very low P/E ratios and sell accordingly, or trend followers. Trend followers invest per market and do not take on unnecessary risk; this is a passive type of investment strategy (Santoni, 2012).

Herding refers to the idea that there is safety in numbers; one should therefore buy where everyone else buys. Overconfidence of a portfolio manager can be positive or negative, depending on the ability of the manager. Anchoring is when an investor places extreme emphasis on a sole source of information that normally would not have influenced one’s decision-making. These are several common strategies of institutional investors (Santoni, 2012). Self-deception is also a common behavioural approach where the investment managers see themselves as better and more intelligent than their peers and competitors. This type of bias can lead to behaviour that limits the manager from acknowledging his mistakes. People’s investment decision, when faced with uncertainty, can also be related to their mood. Emotions can play a dominant role because they can be influenced by several other factors, such as the hindsight theory, over- or under-confidence, uncertain and high-

pressure situations, self-attribution bias, or the illusion of self-control and information knowledge.

Research by Ortiz (2011) correlates with the effects of behavioural finance as just explained. The disposition effect is another cognitive trend that pertains to the idea that investors experience pride when a gain has been realised, but when losses are realised, their regret is non-existent. They then gamble with the realised losses without feeling discouraged or remorse. Over- and under-reaction are reiterated in this discussion, which boils down to the same reaction to information as explained previously. A modern asset pricing model and portfolio selection framework has been designed to synthesise the traditional asset pricing models with the utility derived from investment in stocks.

Conservatism and the endowment effect are also highlighted. These refer to the investors' inability to react to the latest information available and the idea of an investor's valuing something higher when they own it than they would have upon acquiring those assets respectively. These heuristics are implemented daily in financial markets. Heuristics are simple generally accepted rules implemented to assist the decision-making abilities of people. The danger is that these rules of thumb can lead to major cognitive biases. Cognitive biases can strain the investment strategies and decision-making abilities of investors and portfolio managers (Schoenhart, 2008). It is essential to state that familiarity in a certain market might determine the investment weight in that specific sector, which is why institutional investment firms will mostly like to have a division that specialises in the financial sector on the JSE to become familiar with the financial banking and real estate investment trust segment. One must, however, not underestimate the impact of social interaction in investment decision-making. News and information about markets, economies, and companies can be readily available almost immediately, which can play a significant role in the behaviour of institutional investors. Herding, as mentioned earlier, can come into effect during social interaction and behaviour (Nofsinger, 2011).

It is important to note that market anomalies can occur in institutional behaviour. Market anomalies are experimental results that are inconsistent with the traditional asset pricing models applied. They can be defined relative to normal return

behaviour; such anomalies can indicate inefficiency in a currently implemented asset pricing model. Examples of common market anomalies are event-driven return predictability, short-term moment, long-term reversibility, and assets with high volatility relative to certain underlying fundamental and post-headline earnings announcement drift (Schoenhart, 2008).

Institutional investors invest according to their need. The investment policy can be revealed by looking at the company's portfolio composition. This all boils down to risk perceptions that portfolio managers must consider. In behavioural finance, risk perception can be broken down into several psychology perceptions or paradigms, for example, risk aversion theory where investors will tend to avoid risk in future investment after they had suffered a loss. The house money effect, in contrast, refers to the cognitive approach of taking on more risk after experiencing profits or gains. The positive relationship between risk and return can play a pivotal role in the decision-making framework of a portfolio manager (Nofsinger, 2011). Riskier companies tend to have more debt in their capital structure. It is fair to predict that SA REITs with a large asset base and relatively low long-term debt are considered a safer investment; thus, the institutional investment behaviour towards such REITs will increase. The data analysis will provide information on this theory.

In conclusion, institutional investors will be looking at their portfolio structure, which introduces the modern portfolio theory. This theory suggests that investors must perceive their collective investment as one portfolio structure; the idea is that it reflects the highest possible return at a specific level of risk. Risk is predominantly measured by the standard deviation of return on an investment (Nofsinger, 2011).

All portfolio structures must consider the following cornerstone elements: security, yield, spread, marketability, term, taxation, and exchange risk. Apart from the core principles, there are several other factors that institutional investors can consider, such as immunisation, index-linking, competitor performance, and other practical constraints. One must obtain clarity as to what institutional investors will consider during the data collection and analysis procedure. Thus, the institutional criteria will include banks, trustee savings banks, finance houses, building societies, unit trusts, investment trust companies, insurance companies, pension funds, friendly societies, and trustee investments (Hager, 1987).

4.1.3 Data collection and analysis

The data collected and interpreted in this subsection has been derived from the 13 leading SA REITs according to their asset size. These selected REITs make up over 92% of the real estate asset in the REIT sector and will provide comprehensive information on the trends of the real estate industry in South Africa. Financial ratios such as confidence indicator, dividend yield, and return on equity for the last decade are explained in Table 4.1.

Table 4.1: Financial ratios of SA REITs

Name	Confidence indicator (%)			Dividend yield (Cents)			Book value to shares (R)			Return on equity (%)		
	'05-	'15	Δ	'05	'15	Δ	'05	'15	Δ	'05	'15	Δ
Growth	55.8	59	3.2	106.5	173.4	66.9	15.5	23.4	7.9	0.5	10.7	10.2
Hyprop	55.5	19.3	-36.3	190	543	353	16	3.1	-12.9	47	17.5	-29.6
Fortress	27.3	23.1	-4.2	79.7	123.1	43.4	1.6	5.8	4.1	37.6	19	-18.6
Redefine	22.6	45.4	22.8	29.8	142.8	113	2.4	10.2	7.8	16.8	12.4	-4.4
Resilient	19.7	23.5	3.8	52.1	205.1	153	6.3	69	62.7	54.2	20.9	-33.3
Vukile	73.6	41.7	-31.9	64.1	278	213.9	1	1.5	0.5	90.8	17.9	-72.9
Delta	62.2	46.1	-16.1	23.7	237	213.3	6.4	11.1	4.7	1.6	18.3	16.7
Arrowhead	31	56.4	25.4	98.4	150.3	51.9	0.6	8.4	7.8	11.4	13.5	2.1
Accelerate	7.2	63	55.8	13.8	49.2	35.4	1.2	1.4	0.1	2.1	16.1	14
Octodec	19.1	17.5	-1.6	137.3	189.2	51.9	12.9	27.4	14.5	10.8	19.1	8.3
Emira	33	34.1	1.1	34	375.1	341	5.3	31.8	26.5	11.8	21.3	9.5
Rebosis	38.6	54.8	16.2	22.2	54.7	32.5	2.4	15.3	12.9	3.2	3.1	-0.2
SA Corp	86.5	46.7	-39.8	23.5	39.6	16.1	1.8	4.6	2.7	9.2	8.6	-0.7
Average	40.93	40.82	-0.12	67.32	196.96	129.64	5.65	16.3	10.7	22.8	15.2	-7.61

Source: INET BFA

The first financial ratio is the confidence indicator, which is calculated by dividing the total institutional shareholding in the given REIT by the total amount of equity in the company. As stated earlier, the institutional shareholder usually holds a sizable

percentage of the shares in a company. As indicated in Table 4.2, the institutional shareholding has decreased, since the new REIT structure has been implemented by 12 base points. It basically remained the same through the whole transition process of the real estate sector, which suggests that institutions remain confident in the new REIT structure. The dividend yields as stated in cents have increased tremendously for an average of 67 cents earning per share to 196 cents per share, which suggests that investors receive a higher return on their investment. Investing in SA REITs has therefore become more profitable and thus more desirable to institutional investors looking for dividend yield growth. This is one of the key elements of growth that a long-term investor looking for stability wants from their respective investments. This is an indication that the aftermath of the new structure implementation positively influenced the listed real estate sector in South Africa. It is indispensable to note that the change in dividend payout can be related to the fact that REITs are now required to distribute at least 75% of their earnings according to legislation and that dividend distribution is tax-deductible; thus, management might be tempted to pay out most of the earnings. The dividend performance is not entirely dependent on management's decision-making policy; there are also legislative restrictions.

The financial leverage ratio decreased severely despite the fact that the asset grew almost exponentially. This means that the equity of all the REIT under investigation increased substantially, and because the institutional shareholding remained the same throughout the past 12 years, the institutional holding in the REITs must have increased. The increase was thus linear with the increase in total equity of all the REITs.

The book value per ordinary share demonstrates the amounts that will be distributed to the ordinary shareholder in the case of company insolvency after assets have been liquidated and debt has been paid. The ratio also accounts for preferred stock, which is paid before final distribution to ordinary holders is done. The book value has increased by almost 11 basis points. This is a positive indication that companies have increased their asset size because they issued shares to obtain financing. Leverage can play a significant role in this statistic because investment by REITs is

usually not entirely financed by equity stock but makes use of short- to long-term debt finance.

The return on equity has decreased by 76 basis points over the restructuring period. Institutional investors do not want the return on equity to decrease because they form part of the company's equity, meaning their return on investment also decreases. An explanation can be that the equity base of the various companies has increased at a rate higher than the net profit. Another explanation can be that operating expenses, taxation, or interest payable to debtors have increased during this period, which kept the net profit under pressure although the gross profit has increased at the same rate as the equity base. Higher interest rate is plausible with companies following an aggressive investment strategy, which will require making use of considerable debt. This excludes the possibility of a joint venture and refers mainly to portfolio acquisition and independent developments solely funded by a single REIT.

The debt-to-equity ratio of SA REITs has reduced during the REIT phase. It is calculated by dividing the total debt by the total equity. The results show a decrease to an average debt-to-equity ratio of 0.56. This means that for every Rand of equity, the company has 56 cents of debt. The figure has gone down from 2.65, which illustrates that most of the companies during their infancy have considerable amounts of debt and have managed their debt better as their portfolio grew. Once again, the legislative requirements of the new REIT structure may have affected the figure substantially, instead of arguing that this decrease is purely a management decision. It is highly unlikely that the various REITs have decreased their equity base and thus keep their debt the same. The more likely scenario that occurred throughout the industry is that they reduced their debt substantially and thus became less risky. Lower risk may attract more institutional investment, although, as indicated previously, the confidence indicator remained the same even though the REITs became more sustainable from a long-term debt perspective.

The asset size of the firm and the financial leverage ratio can be interpreted in conjunction. The financial leverage ratio divides the asset size in millions of Rands with the total equity of the company. The asset size of all the REITs under investigation has increased substantially, by more than 410% in the last 10 years.

Despite this, the financial leverage of the firms has decreased from 3.59 to 1.56. It can therefore be assumed that the equity in all the REITs increased at an even faster rate than assets respectively. The confidence indicator remained the same, which highlights that the bulk equity increases happened via private citizen investments. Institutional shareholders might have increased in terms of the number of participants, but as a percentage of the equity, no changes occurred.

The asset size changes can relate to the profit changes directly. It is logical that if the asset size increases, the net profit also increases by a considerable margin. The net profit increases can also be attributed to lower operational costs, lower taxation, or interest payments, but the main contributing factor will be the asset size increase. This is a positive indicator and will reflect well on the management committee because it means that the committee creates quality products with a yield that gradually grows over time. Table 4.2 explains the changes that occurred during the REIT transition in the number of shares issued to foreign investors.

Table 4.2: International shareholding (shares)

	International shareholding		
Year	2005	2015	% Δ
Growth	1294224	154433408	11833
Hyprop	1	17453117	1745311600
Fortress	1	52097652	5209765100
Redefine	1	319920117	31992011600
Resilient	1	18657100	1865709900
Vukile	1	1046345	104634400
Delta	56411	195688	247
Arrowhea	596409	4110331	589
Accelerate	3196082	2492652	-22
Octodec	1	121311	12131000
Emira	40000	11729864	29225
Rebosis	1	4381087	438108600
SA Corp	701419	56557274	7963
Average	452657	50215073	10993

Source: INET BFA

The question of international diversification during the transition period from PLSs and PUTs to REIT can substantially be answered by the statistics collected in Table 4.2. The statistics illustrate the number of shares held by international companies or individuals since incorporation. In the case of REITs, it refers to companies older

than 10 years and the shares by international investors currently as of 2016. This statistic shows that international interaction and investment after the REIT structure had been implemented have increased exponentially. The number of shares held by international investors, from numerous countries at an individual and institutional level, increased exponentially over the over last 10 years. Foreign companies and individuals have invested their funds in SA REITs. This can indicate a trend in the real estate industry, and it shows that the aim of SA REITs is to attract and enhance international shareholding in their own capital structure. Chapter 5 might illustrate whether SA REITs tend to invest their own funds in foreign countries directly or indirectly. SA REITs are an investment option for international investors, representing stability and confidence in the listed property sector in South Africa.

4.1.4 Conclusion

The financial ratios discussed in Chapter 4 have indicated positive and negative prospects for the REITs of South Africa. The return on equity has decreased, which might be a point of concern; on the other hand, net profits, asset size, financial leverage, and international shareholding have increased dramatically. The median international shareholding increased to more than 6 337 202 shares per SA REIT; hence, the null hypothesis is rejected. Several statistics cannot be entirely explained, since legislative requirements might prohibit companies from exercising management strategies to the extreme. It will therefore not reflect an accurate conclusion on how REITs can operate or indicate a best practice for future studies in this direction. The lack of information about the motivation for certain statistics is a hurdle for researchers because some of these ratio decisions are considered management secrets which can give them a competitive advantage. Such information will not be obtained and limits the complete interpretation of the figures presented. It is interesting that institutional shareholding has remained the same. It is expressed as a fraction of the total equity for the past 10 to 12 years. Despite the fact that a new REIT structure has been introduced, international shareholding and interaction have increased and positive changes have occurred to asset size, financial leverage, and net profit figures. It did, however, increase in a linear relationship to total equity of the companies. There is sufficient evidence to suggest

that international shareholding on average has increased in SA REITs since the incorporation of the new REIT company structure in 2013.

4.2 COMPANY STRUCTURE

4.2.1 Introduction

The international REIT structure was intended to make the South African-listed property sector more accessible to foreign investors. Should this be the case, SA REITs have several company structure options available to expand and diversify their portfolio. The purpose of this section is to investigate whether SA REITs are expanding their portfolios internationally as well as the company structure currently used in order to proceed with the proposed international trend. These interactions between different parties can be divided into mergers, acquisitions, and joint ventures. It instils cooperation between different players in the same industry, ensuring mutual benefits for the deal. Section 4.2 will also review some tax and legal structure imposed in foreign countries with strong currencies, which could make for sound investment from a South African point of view. To explain these structures, incorporated visual diagrams will be used.

4.2.2 Background

Mergers, acquisitions, and joint ventures involve decision-making from management. In SA REITs, an internal management decision will be required, and therefore approval must be obtained from the shareholders. The motive of such business strategies will not be easily determined or obtained by means of data collection unless it is publicly introduced by management. Therefore, the history and background of how and why mergers and acquisitions have taken place can be considered. The primary motives of such business strategies include size expansion and growth of the company. Economies of scale can be a massive advantage in working with foreign local firms, and companies might go for company mergers and acquisitions for profitability reasons. Profitability can include other advantages such as return on share and profit volatility. Companies might want to strengthen their presence in a market by increasing their market share or market power (Goldberg, 1983).

From a property perspective, joint ventures specifically can assist South African property developers, for example, to enter a foreign country to obtain cooperation with the institutional framework of that specific government or to obtain specialised knowledge of a local market. In the property development industry, size and profitability remain a dominant motivation for acquiring portfolios of other competitors or for merging with industry participants. There are several other motivations for why any company would want to venture into mergers and acquisitions (Goldberg, 1983). The Competition Commission of South Africa will not usually allow a monopoly takeover in industries and therefore regulate aggressive mergers and acquisitions. However, one motivation for companies is to limit the competition in their sector. In extreme cases, this motive can be a pitfall; for example, a company can become so dominant in a market that it will buy majority shareholding in its competitors. The dominant company could be so strong that it will weaken its competitors; thus, its major shareholding will become bad investments and will report losses. The dominant company will literally be killing itself because of its market supremacy and its major shareholding in most of its competitors. As mentioned, this is an extreme case of mergers and acquisitions, but it has happened before. The Competition Commission will prevent such a situation from unfolding, and thus all mergers and acquisitions must gain approval from the Commission.

The process of mergers and acquisitions can predominantly fall into three distinct categories, namely, horizontal, vertical, and conglomerate. Horizontal mergers mean that two direct competitors merge, for example, a REIT merges with another REIT. This is a common form of integration in the listed real estate industry because of the statutory restriction that states that REITs must derive 75% of their income from property-related activities. Vertical amalgamation combines companies with a buyer-seller relationship. An example is a REIT merging with real estate brokerage firms or a property management company. Conglomerate mergers refer to companies merging that are not direct competitors, those firms do not have an established buyer-seller relationship. This form of merging is not that common in the listed property industry purely because of the aforementioned limitation. The REIT structure strives to keep the entire sector property related in terms of income derived and investments made. REITs or any other company that wishes to continue with a

merger or acquisition, even a joint venture, will most likely make use of professionals. These participants will have in-depth knowledge and expertise relating to deal structures and valuations of companies and assets. Investment banks are common intermediaries regarding such activities (Gaughan, 2011).

REITs can merge with industry competitors to sign a first right of refusal contract. The type of contract can be referred to as a call option, which means that the buyer of the call option has the right to buy financial instruments or assets at a certain time for a specified price. The buyer is not obligated to buy the underlying, but essentially the seller of the option must present the buyer the first right to buy the underlying. The call option can expire if the buyer does not exercise the relevant right and the buyer pays a fee to the right, usually referred to as a premium (Sullivan, 2003). The disadvantage of this type of option is that the strike price is not necessarily negotiable and can result in the buyer overpaying for the underlying, should he exercise the right. Rebosis Property Fund has recently exercised a call option for one of its subsidiaries. The facts are that the property strike price is at a 7.4% yield for several regional shopping centres and the shares are trading at a forward yield of 11%. This is not necessarily a good proposition because it will result in the dilution of the dividend for the next couple of years. The share price will also be affected negatively (Muller, 2016). These options can be synonymous with a joint venture. Forming of subsidiaries can be priced quite accurately, and such a calculation will consider the spread, which means the variation between the market price of the asset and the exercise price of the option, the time until expiration of the option and the volatility of the option. The Black-Scholes Model is used to determine a risk-free hedge scenario. From a property investment point of view, Dollar-denominated lease agreements can create a risk-free hedge against a depreciating Rand. For example, the Black-Scholes Model will determine the value of such a lease agreement if a call option has been assigned to a lease (Bruner, 2004).

A company might recognise a gap in the market and feel that an acquisition or merger might expose unutilised market power, thereby providing a competitive advantage. Companies can react to diminishing opportunities for growth in their own sector due to shrinking demand or extreme competition. In the property industry, this is not likely because of the sheer size of the market. However, one motive that

can be a primary contributor to mergers, joint ventures, and acquisitions in an industry is the need and desire to diversify a portfolio, from a proper development point of view. Diversity can be in the form of obtaining international exposure in emerging markets and developed countries or sectorial diversification, such as branching into residential, industrial, retail, or commercial sectors respectively. In the property development sector, companies feel the need to bulk up the asset size, which offers benefits in terms of economies of scale by means of the cost of financing. Larger portfolios may appear to be more sustainable, which is comforting to financiers. To give an indication of how portfolio sizes can differ, the range of JSE-listed REITs are roughly between R315 million in total assets to R102 billion (Goldberg, 1983).

Companies might want to embark on mergers and acquisitions because of branding considerations. Such activities can be justified to obtain resources, patents, or other production factors. REITs might want to increase their presence in a specific geographical area, and acquiring of or merging with certain portfolios will provide such an expansion (Frankel, 2005). This is a more effective option because existing portfolios have already developed assets in their respective area of concern and have already proved a sound maturing period, reducing the risk of the buyer or originator of the acquisition or merger. Managers can add value to a company, and it can thus also be a motive for mergers or joint ventures to acquire more respectable management together with the expertise and knowledge they provide. Existing management in a company can be incompetent in their duties, asserting a need to displace them with more innovative management that will be better in creating value and a quality product. As will be discussed later, taxation loopholes can be exploited by means of joint ventures or mergers (Goldberg, 1983).

Managers might want to establish themselves as being aggressive in their investment approach through portfolio acquisitions and mergers with competitors. Top-level management might recognise the market conditions and situations of their competitors that will initiate a merger or acquisition activity. For example, if a competitor’s share price is falling, it provides an opportunity for the competition to secure a hostile takeover (Goldberg, 1983). All mergers, acquisitions, and joint ventures have certain parties involved in the respective activities. A buyer will be the

one initiating the deal, the entity expressing the interest in another company. The buyer is either an expert in such transactions or a novice party. Top-level management of an entity will usually recognise the opportunity, as mentioned previously. The sellers will be the company that must decide on whether they want to participate in this endeavour. They can preferably negotiate the dealing so that they also benefit from the business activity. Corporate staff must also participate and contribute to issues affecting them personally. In some companies, the staff members have shareholding in the company, which will involve them more in such major decisions. Most of the shareholders will be from individuals, institutional investors, government-owned entities, and international investors. These participants must also be supportive of the directorate's decisions.

A study conducted by Finkelstein (2009) investigated the effects on international merger performance after a merger had taken place. The investigation focused considerably on the relationship between cultural difference and post-acquisition integration. It highlighted that inconsistent performance indications occurred during previous data analysis in a similar field of study. It found that cultural characteristics of the company must be observed in the decision-making procedure of any merger or acquisition. Post-acquisition integration approaches depend on the cultural differences between the two formerly independent companies. These integration techniques are more applicable to, for example, property management companies. It is essential to take note here because not all REITs contract out their asset management duties and will face integration difficulties following any mergers or acquisitions. The final discussion of the study concluded that companies that face greater levels of uncertainty and apply a higher level of integration techniques are more likely to attain promising performance levels.

A common occurrence that can be expected when investigating the structure of the various SA REITs is the holding company principle. Making use of a holding company can have several advantages. Shelf companies can be established, which will be either wholly owned, subject to majority shareholding, subject to minority shareholding, or a joint venture structure by the so-called "umbrella" company. To take it a step further, some SA REITs are predominantly owned by a single trust belonging to private individuals; thus, the trust owns the holding company, and the

holding company owns the various shelf companies or joint ventures (Gaughan, 2011). Possible scenarios that can be expected from the SA REITs that are increasingly more interactive on a global scale are equity investments and acquiring direct property portfolios of other REITs. These equity investments can be further divided into associates, subsidiaries, and joint ventures. Financial ratio and economic indicators will be greatly analysed because this will indicate if REITs tend to buy majority or minority shareholding in their competition or whether they prefer joint ventures. It is important to note that joint ventures might be property-specific instead of establishing a shelf company, to limit the risk for both parties (Bruner, 2004). The reason is that one company in a joint venture will usually be experienced and the other will be a novice in the field; hence, project-specific joint ventures will have an existing clause for the dominant party. Joint ventures imply that both parties contribute exactly half to the project. In the majority shareholding situations, the associate's entire financial results must be displayed with the parent company's year-end financial report, whereas with the subsidiary performance, only the gains or losses of the shareholding portion held by the parent must be reported on in conjunction with year-end audit, per IFRS. This must have an impact on the decision-making process of management because, should their investment fail, the public notation could have been avoided to an extent with minority shareholding or a joint venture.

Strategic alliances usually consist of separate entities being formed, while with two or more companies each has a shareholding in the entity. The parties involved cater for only their own needs and contribute to the alliance accordingly. It helps each company to achieve its strategic goals and is common in the pharmaceutical, airline, and computer industries. Joint ventures can be a strategic alliance, but the alliance forces more concrete commitments from both parties. It is more cost-effective and less complicated than conducting a merger or acquisition. One possibility of a joint venture is the benefit of expanding into foreign markets. Foreign markets can help to hedge a company's investment against a depreciating local currency, which is the case of South African property developers. Local developers might look to exploit this advantage for security purposes as well as diversification purposes (Gaughan, 2011).

4.2.3 Data collection and analysis

Numerous SA REIT company structures will be investigated using visual data in conjunction with explanations to describe the situation more effectively. The idea is to determine whether SA REITs are diversifying on a global scale and subsequently to interpret the impact of the REIT transition of the South African-listed property development industry.

The Growthpoint structure illustrated in Figure 4.1 has been simplified, but the relevant information is still indicated accurately. It is the largest SA REIT on the JSE with an asset value of over R100 billion, and with a very complicated legal structure.

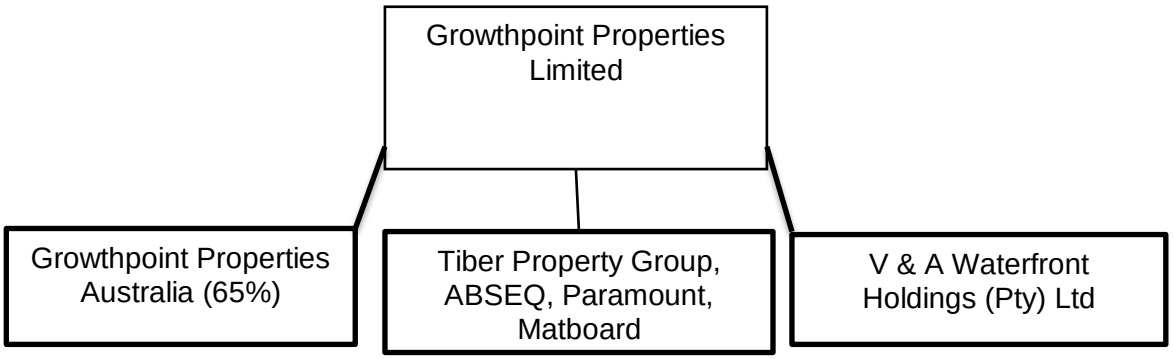

Figure 4.1: Growthpoint Properties Limited Integrated Report 2015

The majority shareholding in Growthpoint Properties Australia accounts for nearly 30% of their entire asset base. Although their diversification extends primarily to Australia, this is a massive indication of their management's investment strategy. Internationalisation of their portfolio is a key concern. Listing Growthpoint Properties Australia (GPA) on the Australian Securities Exchange emphasises the need for foreign investment. The Australian Dollar is also significantly stronger than the Rand, which translates to the fact that 30% of their portfolio is hedged against a depreciating Rand. The other associates and subsidiaries mainly hold properties located in South Africa. Hyprop Investments Limited has a portfolio value of R25 billion.

The international investments made by Hyprop refer to having listed its wholly owned subsidiary on the Mauritius Stock Exchange. This entity owns 37.5% in Attach, which is another listed company also based in Mauritius. All the real estate owned by these entities is sub-Sahara-based, excluding South Africa. Hyprop specialises in retail property development; thus, all the assets in Africa are shopping centres. The total international investments of Hyprop account for about 10% of its portfolio. Significant strides towards diversifying abroad are not that evident yet, although the sub-Saharan properties are most probably Dollar-underpinned investments. Figure 4.2 represents the company structure of Hyprop.

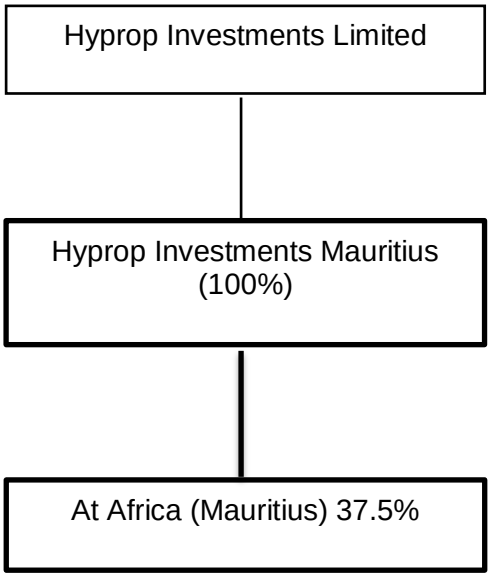

Figure 4.2: Hyprop Investments Limited Integrated Report 2015

Redefine Properties is highly integrated and diversified with a total asset value of R70 billion. It also has a subsidiary listed on the JSE, namely, Redefine International PLC. Redefine International PLC has exposure to foreign countries, which indirectly provides for international investment. Redefine also has a 50% shareholding in a property in Germany and another in Northpoint, which accounts for direct investments offshore, specifically focusing on the European markets. Cromwell Property Group is a listed REIT on the Australian Securities Exchange; its portfolio entails Australian properties and several investments funds. This REIT has taken full benefit of the new REIT structure, as evident by the excessive international investment strategies implemented. The hedging effect of its investment can have a reduced risk on the company's beta and increased returns. The international portfolio directly and indirectly accounts for 15.3% of its portfolio. Global investment strategies are being implemented, but its South Africa portfolio remains the core of the company. Figure 4.3 represents the company structure of Redefine Properties.

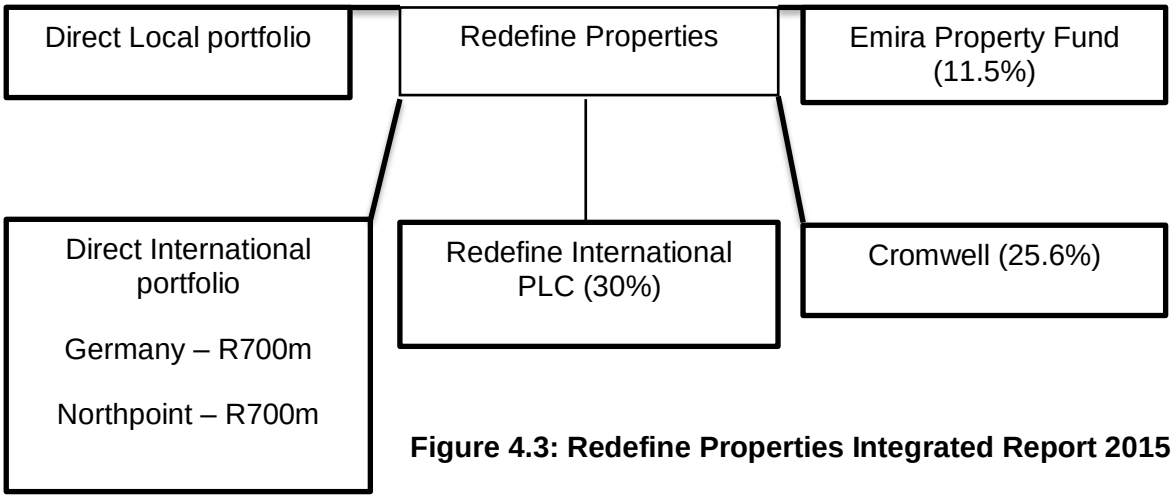

Figure 4.3: Redefine Properties Integrated Report 2015

Resilient has a total asset value of R34 billion, but it has a substantial amount of equity investments in fellow SA REITs and private property developers. Extensive direct development in Nigeria forms the cornerstone of its foreign investment strategy. The shareholding in Nephi or New Europe Property Investments PLC provides excellent indirect foreign exposure being listed on the London Stock Exchange. Nephi invests strictly in Eastern Europe countries such as Slovakia, Romania, and Serbia. Capital Property Fund, which was part of a horizontal merger

with Fortress Income Fund, is a listed SA REIT. Fortress and Rock Castle are also SA REITs. Resilient has a different strategy in that its foreign investments are more indirect via equity stakes than direct investment. The Nephi shareholding comprises 11.5% of its portfolio and the direct Nigerian properties only 2%. Resilient has implemented a global strategy as well, recognising the benefits of offshore investment and especially considering exchange rate advantages.

Fortress Income Fund has made an equity investment in Nepi, which is listed on the London Stock Exchange, and focuses on investing in Eastern European countries. Interestingly, it has a majority shareholding in the only residential-specific REIT listed on the JSE. It has integrated its equity investments in several SA REITs, and it has decent international exposure in a company that grew its share price by 850% in the last seven years.

SA Corporate has also made several investments in the sub-Saharan region, excluding South Africa. This includes a joint venture that will provide an indirect real estate offshore investment position. The contract in joint ventures is like other sub-Saharan deals, namely, Dollar-underpinned leases providing a hedge for a weakening Rand. Tower Property Fund has also recently made its first international offshore investment into Croatia. The contracts are Euro-underpinned and provide a strong hedge against even the US Dollar variations. One of the smaller REITs listed on the JSE has recognised the benefits of global investment, and it has targeted the United Kingdom. A massive 40% of its portfolio consists of direct and indirect real estate investments in England and Wales respectively. Its total asset base is only about R6 billion; nevertheless, its properties are Pound-underpinned, which is an ideal position for any global currency variation. Its majority asset base is still incorporated in South Africa. Rebosis Property Fund merged with Ascension Properties Limited in a horizontal merger, and it entered the global investment arena when it acquired a majority stake in the Latex-listed New Frontier Group. The New Frontier Group has made several investments in the UK retail market (Muller, 2016). Figure 4.6 explains the company structure of Rebosis.

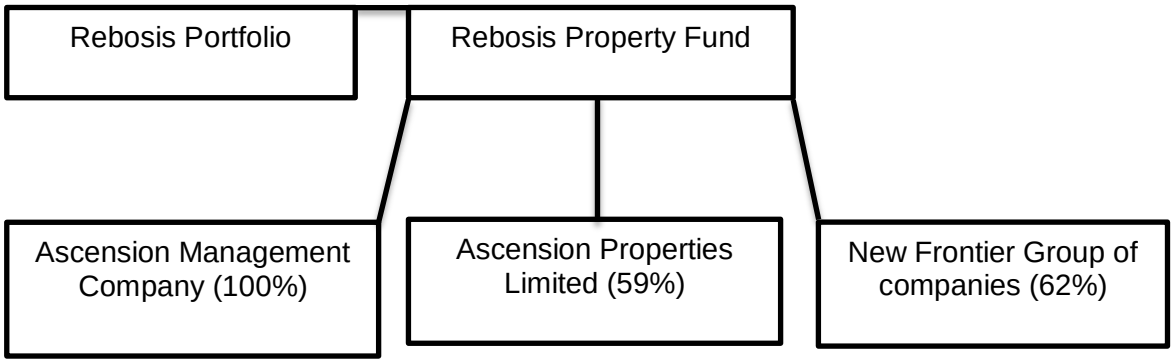

Figure 4.6: Rebosis Property Fund Integrated Report 2015

Delta Property Fund has also been investing offshore by means of their entity, Delta International. Delta International, a wholly owned subsidiary of Delta Properties, strictly focuses on African countries to conduct direct or indirect investments. The prospects appear to improve their African real estate position even further. The reason for sub-Saharan properties can be related to relatively inexpensive land and US Dollar-denominated leases. According to Kloppers (2016), several other property developers, including listed Pivotal Property Fund and unlisted Zen Prop and Moolman Group, are also looking to Eastern Europe for property acquisition and investment. Kloppers (2016) reiterates that joint ventures are the preferred option for first-time investors, while the author highlighted that the reason for some developments, specifically in Eastern Europe, is the low cost of financing and the yield on properties that are almost double the interest rates. Some of the companies are not investing yet purely because of weak economic conditions in South Africa but are building long-term companies and relationships in those countries. Buying property in a country solely because of inexpensive financing costs can be problematic and can lead to overpaying for property or buying lower-grade assets.

Attach is another listed SA REIT that has been relishing the advantages of offshore investments. It has extensively integrated into various emerging and developed markets, including sub-Saharan countries, Mauritius and Europe. It even listed a sister company on the Mauritius Stock Exchange, At Africa. Accelerate Property Fund is another SA REIT. It is one of the largest, but it has not been diversifying offshore at all. Its portfolio encompasses properties located in South Africa exclusively. Vukile has not made any international acquisitions or investments yet.

Its portfolio is comprised of South African properties mainly in the retail and government sectors.

Arrowhead Properties and Octodec Property Fund also have a portfolio consisting of South African-based assets. No global investment activities have been recorded for these two SA REITs yet; prospects are to grow the local asset base. Stupor is another listed SA REIT that has the intention of investing in Europe. It had a dual listing on the JSE and the Bermuda Stock Exchange. Its portfolio contains properties located in Germany, United Kingdom, and Switzerland respectively. Several joint ventures have been executed with locally listed and private property development companies, but all the joint ventures were project-specific (Anderson, 2016). Sirius is yet another REIT listed on the Latex Exchange that is interested in the European markets, specifically Germany. Its portfolio extends across all Germany and includes 42 properties. It does not have a South African portfolio but only German properties. A probable strategy could be to attract a local REIT to obtain shareholding in its company. It will provide sound international exposure although its portfolio is limited to one European country, which will increase the risk of the assets (Anderson, 2016).

4.2.4 Conclusion

This chapter examined the investment operational and company structures of the 16 largest REITs listed on the JSE and the Latex Exchange. The idea was to determine whether the SA REITs have increased their international interactions and if they have made any stride towards investing in offshore developed or emerging markets and to investigate some company structures used by the leaders in the listed South African real estate sectors. All the companies made use of a holding company. In some instances, it is merely a holding company with no further division in the company structure; thus, the entire portfolio is in the holding company. This was a common occurrence in companies that have not yet made any offshore investment. Companies that have been interacting with foreign REITs and seeking offshore opportunities have made use of joint ventures excessively, as well as associates and subsidiaries. REITs acquired direct real estate and made indirect real estate equity acquisitions.

The question whether SA REITs have increased their international activity since the introduction of the new REIT structure has been answered to an extent. About half of the REITs investigated, which represents more than 92% of the total REIT market, have made at least one international investment. This is a significant figure that illustrates a trend towards internationalisation of the SA REIT sector. Interestingly, the most active companies in terms of offshore expansion include the five largest REITs on the JSE. They have recognised the advantages of investing offshore, perhaps acting as an example for the rest of the industry. The international deals are driven by Euro- or US Dollar-underpinned acquisitions, meaning that the idea for most of these investments is to act as a hedge against the weakening South African Rand. Several other motives for offshore transactions include the low cost of financing in some countries in conjunction with high yields that provide ideal investing conditions. On the local front, several horizontal mergers occurred between REITs and numerous joint ventures have been accomplished, all project-specific. The subsidiary and associate structure of the various REITs does not seem to follow a pattern or industry-specific format. It appears to be tailored according to the needs and objective of the company as well as the market they want to enter. In conclusion, the null hypothesis is not rejected, suggesting that there are not enough SA REITs in the sample that made use of the various collaborative business practices. There is thus insufficient evidence to suggest that SA REITs have increased their participation in joint ventures, partnerships, wholly owned subsidies, or securitisation means since the transition from PLSs and PUTs to REITs.

4.3 DEBT STRUCTURE

4.3.1 Introduction

The capital structure of REITs can change over time and consists of various sources of finance. These sources can include equity and debt predominately, but the debt section will be focused on extensively. It is important to look at these changes to determine how aggressive the SA REITs have been to expand their portfolios. The change in various debt ratios will be comprehensively investigated to determine the liquidity and solvency of the REITs as well as other performance indicators. This subject will be divided into two parts. Part one of this chapter will investigate the SA REITs via the financial ratios as explained above, and Chapter 5 will perform a

regression analysis on selected data from part one. Background knowledge of certain corporate finance aspects will be investigated and explained in order help to interpret the data collected. This will include information on WACC, long-term debt financing, international financial management, risk involved in financing and international investment and on the cost of capital, financial leverage, credit management, Du Pont analysis, as well as pieces of legislation that could have an impact on debt structure changes.

4.3.2 Background

The capital structure of a company relates to corporate finance. Corporate finance implies that any company must know exactly where it will obtain long-term financing, what type of long-term investments it must make and how it will manage its daily financial operations. These are important questions that must be considered by any manager or board and relate specifically to the real estate environment where long-term debt financing and making long-term investment decisions are relevant. Real estate is a long-term investment industry. Measuring the cash flows from an investment directly influences decision-making. REITs have short-term assets but predominantly invest in real estate, which is considered long-term assets, and brings into play the tools to determine the success of an endeavour. Corporate finance includes the company structure decision in terms of a sole proprietor, partnership, private company, or various other forms. Aside from managing the capital structure of an organisation, it monitors the working capital of a company. It is useful to know if a company can honour its short-term commitments. This is measured daily (Jordan, 2010).

The first topic of discussion is financial leverage. This ratio has also been collected for the subject REITs under investigation. Financial leverage refers to total debt to total equity, which ties directly to two other important ratios, namely, the earnings per share and times interest earned ratios. The earnings per share considers the return on assets times the rate of debt times the taxation rate divided by the number of shares issued. Times interest earned is calculated by dividing earnings after tax and interest with the amount of interest payable (Finnerty, 1990).

The leverage of a company must be closely monitored because it can affect the dividend yield to their shareholders. Two types of risk are apparent in this situation, namely, business risk and financial risk. Business risk refers to the uncertainty of future sales, and financial risk relates to the fluctuations of the short-term and long-term interest rates. The business risk in real estate works differently than other sales-dependent companies. Real estate deals with escalating monthly cash inflows and monthly fixed cash outflows. The cash inflows can be predicted with a great amount of certainty, thus the risk of massive variations positively or negatively is relatively low. Financial risk relates to the interest that must be paid when a company makes use of debt to finance its operations, be it long or short term. In the case of real estate developments, long-term finance is the primary form of debt. One will see that the REITs closely regulate the average expiring date of their debt facilities (Finnerty, 1990). Financial risk must be considered because of the effect of interest rate fluctuations if a rate is not fixed. Again, this risk will directly affect the three foregoing financial ratios and is illustrated clearer in the following.

If a REIT overpays for an asset, for example, at a yield of 6%, the ripple effect will influence the earning per share as well as the share price. The REIT will most likely release shares and make use of debt financing to make the acquisition. If the company issues shares at a forward yield of 10%, most investors will usually look at the dividend per share and the projected growth of the earnings per share, although there are other figures to look at such as the funds from operations, adjusted funds from operation, or net income of the REIT (Grabowski, 2011). The earnings per share will be diluted for several years to recover the cash flow in order to deliver a high forward yield again. The share price will also be affected negatively because the market can see that the company is paying too much for its assets and the shareholders' return is not sufficient. Such scenarios are highly likely for REITs looking for high-quality assets. If they pay too much, the times interest earned will spike and take a while to recover after several rental escalations have occurred. The financial leverage, earning per share, times interest earned ratio, and earnings before interest and tax are affected by the cost of capital. This brings about the next point of discussion, namely, the weighted average cost of capital.

The WACC formula plays an incremental role in the investment decision that a firm makes, especially in real estate development companies. The WACC allows a REIT to determine if a project can be successful and to establish benchmarks such as in-house goals and standards. Usually when the internal rate of return is applied to development, it must beat the WACC in order for the project to be financially viable. The interest earned will then be more than the interest paid. There are various ways to calculate the cost of equity, but traditionally it refers to the expected yield of stock plus a risk premium. It is also important to notice that a weighting is implemented and in some instances the WACC is adjusted for taxation (Finnerty, 1990). WACC is directly correlated to the risk and return principle. The simplest way to measure the risk of any investment is to use the standard deviation of its expected return. The beta variable is the most reliable and most frequently used indicator of risk in a company. It measures the correlation between the dividend and share price of a company relative to the overall market.

If a company issues new stock, there can be another cost called flotation cost, which can be incurred when using an intermediary. These costs can be quite significant and must also be accounted for to obtain an accurate measurement. Inflation can have an influence on the WACC of firms. This is because the cost of goods and services becomes more expensive as inflation or the consumer price index (CPI) increases. As a result, property owners make the minimum lease escalation equal to inflation or inflation-linked. Interest rates also increase when inflation increases in order to force people to contribute more to savings. This gives rise to nominal and real returns, which means that, from a property development perspective, if an asset increases in value by 10%, and the CPI is 7%, the real capital appreciation is only 3%. The same can be said for a return on an investment. Should it remain the same year on year, the real return will be negative because the purchasing power of the money decreases (Porras, 2011).

Perspective is needed when considering the cost of capital for real estate entities particularly. Real estate can be narrowed down to four distinct entities, which include private equity, private debt, public equity, and public debt as seen in Table 4.3. The reason context is provided is that each of these real estate entities has different goals and objectives which will influence their financial leverage and ultimately their

capital structure (Grissom, 1996). For this study, all the data was collected from REITs, which fall under the public equity category. Apart from the primary types of real estate entities that exist, there are numerous other factors that can cause different capital structures and the cost of capital. As stated earlier, these variables will be determined predominately by the objectives of the company. The listed REITs may not all be at the same position in the economic and real estate cycle, which is why the quality and credit rating of their tenants might not all be the same. Listed REITs do not all specialise in the same property sector. Their composition of properties by type and size also varies. Legislation might restrict their ability to generate more finance. Apart from that, they will employ different loan-to-value ratios, have different bond ratings, loan terms, and maturity dates of their debt facilities (Grabowski, 2011).

Table 5.3: REIT quadrant model

	Public	Private
Equity	REITs REOCs (real estate operating companies)	Direct Acquisitions Joint Ventures Commingled/Special Account Funds Private Equity Real Estate Funds Non-Traded REITs Closed End Funds
Debt	CMBS	First Mortgages Mezzanine Loans Subordinate Loans Bridge Loans Participating Loans

Source: Grabowski (2011)

Financiers will carefully observe the value of the entity when providing finance and determining an accurate cost of capital. The underlying assets approach is one method of determining the value of an entity, which is demonstrated by the calculation below. It relates to the net asset value of the company; this is important because most investment trusts strive to increase their net asset value per share (Grabowski, 2011).

$$Indicative\ value\ of\ 100\%\ of\ common\ stock$$
$$= Net\ working\ capital + Fair\ market\ value\ of\ fixed\ assets$$
$$+ Other\ assets + Intangible\ assets - Long\ term\ debt$$
$$- Preferred\ stock\ capital - Other\ liabilities$$

Another method to determine the value of an entity is the direct capitalisation method. This method is also frequently used in the valuation of commercial real estate because it focuses primarily on the net income being generated from the assets. The calculation involves dividing the net cash flow generated by the appropriate capitalisation rate. Capitalisation rates are usually set by benchmark companies and can be affected by factors considered by long-term investors, such as the quality of the assets management committee and tenants, entity structure, potential earnings growth, the expected overall return (capital appreciation and net income), dividend-paying capacity, debt coverage, leverage ratios, and corporate governance. Another method frequently applied to businesses is the discounted cash flow method, which is based on the expected return to the entity's shareholders. The total income growth must be forecast with other components of this formula, namely, the discount rate being used. The discount rate is the cost of capital, but sometimes the cost of capital plus an added risk factor might reflect the quality of the tenants, management, financial position of the entity, and corporate governance. The other component of this equation is the long-term expected growth rate. This figure can relatively be accurately estimated in the real estate environment because of the periodic income stream and even more accurately estimated if an entity has high-quality tenants (Grabowski, 2011). This is estimated with the assumption that the company will remain as it is with no expected acquisitions, mergers, or disposals occurring in the future and escalation taking place only annually. Provision can be made for no payments by tenants in the net cash flow from operations.

Financial leverage, interest rates, debt coverage ratios, weighted average cost of capital, and international investments are all associated with risk. Risk management plays an incremental role in any business in any sector. The risk being analysed will differ from sector to sector, but the isolation of individual risk factors that can influence the future cash inflows of an entity must be administered accordingly. SA

REITs have a committee measuring and managing their sector-specific risks. These risks are considered because it is critical to management and shareholders that the probable future income is estimated as accurately as possible, as it influences the decision-making of all parties involved. There are risks that can be eliminated or at least be transferred to other parties, known as insurable risks. Then there are risks that will not influence decision-making but are merely a function of utilising financial leverage. REITs are going to make use of financial leverage; thus, interest rate risk, for example, will not affect the decision to invest and utilise the gearing effect but mainly the extent of debt they take on. Then there are unavoidable risks that are market-related and affect all, no matter the extent of risk management that any company implements.

Insurable risk, for example, is taking out insurance for the assets of the company or appointing a property management company to manage all the assets in terms of rental collection, tenant management, and maintenance. The risk is transferred to another party; thus, the risk of the subject entity is eliminated or reduced. The risks in this industry can be calculated relatively accurately because of the companies specialising in these types of risk. It allows the opportunity for companies to pool certain risks and subsequently outsource specific services, making other parties liable for these risks (Briston, 1978).

Financial risk is another type of risk that cannot be eliminated, should the company make use of debt of any kind. Most companies do make use of debt and this, in turn, increases the volatility of the projected returns. It is safe to predict that the higher the debt service-to-income ratio, the greater impact interest changes will have on the company. This risk is controllable by the investors or entity because it is their decision whether they make use of debt to finance investments.

The last type of risk is known as business risk or investment risk. It can be divided into risk of management inefficiencies and economic factors. The management committee of a company can make a mistake due to various reasons which cannot be accounted for on an estimation basis. Such errors will be totally unexpected and will impact the company negatively (Grabowski, 2011).

Economic factors also form part of business risk because such risk will be unexpected and is very difficult to predict by a risk management committee. Poor economic conditions might affect the rental collections or could reduce the escalation rate for the year, resulting in lower returns (Grabowski, 2011). A way to accommodate the risk is to be conservative in the expected return predictions, thus creating a small margin of safety. It might, however, affect the share price negatively because of investors expecting a lower return on their investments. The management committee must find a balance between the associated risks involved and ensuring the highest possible returns. Some REITs are deal-driven, which means that they invest only when investment opportunities are presented to them. These companies might take on more risk in one deal and low risk or even no risk in other deals.

Real estate companies have two types of risk in their ordinary course of business: that of no payments by tenants together with achieving a favourable escalation rate, and the risks associated with acquisitions. Acquisitions are vitally crucial for REITs because of their need to grow their asset base with higher-quality property. The risk involved is unavoidable and can be limited in only some areas. As stated earlier, REITs will make use of debt, equity, and reserves to finance these acquisitions, which is why interest rate risk and inflation risk management must be done promptly.

Legislation limits listed funds in their leveraging capabilities, but for private real estate developers who have the ability of leveraging a 60 or 70% loan-to-value ratio, these risks are real and must be taken into consideration. Interest rate risk has directly to do with the debt interest an entity must repay; a risk of a sudden rise in interest rates can increase the interest repayments to more than the rental income received from the property. Along with interest rate risk, local political risk also affects the interest rate negatively, should monetary and fiscal policies deteriorate. Relating to the escalations, inflation or purchasing power risk poses a threat to REITs because they are under pressure to enforce escalation rates that beat inflation by some margin while ensuring renewed leases.

The third risk, as stated earlier, is economic-related, predominantly supply and demand risk. REITs will tend to specialise in property types which yield the highest return but also indicate the strong signs of maintaining sustainable long-term

returns. Companies will conduct a significant geographical demand and supply analysis. Certain areas might experience a greater demand for certain property types than others. Spatial and geographical investigations are extremely important to mitigate such economic risk. While investigating these various risks forms part of transferring these risks, entities can hedge themselves into favourable positions and thus avoid risk. In the investment industry, hedges can take the form of options and derivatives, but more real estate specific is the fixing of interest rates on borrowed capital. Often a REIT will state the percentage of borrowed capital that has been fixed. It is a vital statistic because a high percentage will suggest security and stability over the short and medium term (Briston, 1978).

The aforementioned risk ties in directly with financial leverage. Property developers – small, medium, or large – make use of financial leverage, which implies making use of debt to finance their activities. The primary reason for using this strategy is the large sums of capital needed in the real estate industry. Making use of debt is not necessarily negative for a company because the interest paid in the remainder of the debt is tax-deductible. Companies that buy and sell properties must, however, pay capital gains tax on the gain made on the property, but some property developers only let out their property and can make use of this advantage.

Financial leverage involves the borrowed capital to equity, which means that if the return of an investment is higher than the weighted average cost of capital, the return on equity will increase. This is a strategy that can help a real estate developer finance more properties or larger property with the same amount of cash available, which otherwise would not have been possible. Some REITs refer to financial leverage as the loan-to-value ratio expressed as a percentage, which implies the amount of borrowed capital to total market value of asset acquired. The reason for this ratio is in favour of the lender of capital, usually banks, because they want to see their risk of loss, should the borrower default on their loan. It indicates what the banks will be able to recover and what not.

To measure risk as well as the financial leverage position of a company, the times interest earned ratio plays a pivotal role. It measures the net income from operation to the total amount of debt service repayable. This indicator becomes especially important with high leverage companies. They increase their risk significantly but

also their ability to finance larger projects, enabling them to grow at a faster rate. These measurements are employed to manage the financial risk of a company (Greer, 1982).

Real estate development companies that wish to make use of borrowed capital will most likely be concerned with the interest rate imposed on bonds and mortgages. To clarify, a mortgage requires a down payment at the start of the term, whereas bonds do not, but both have a term, a face value, a specified coupon repayment, and a yield to maturity. Bonds can be constructed in many forms depending on the situations of the parties involved; for example, bonds can be secured or unsecured, fixed or variable, or full recourse or non-recourse. They can be tailored to a specific need, which is why they are attractive to borrowers. The type of bond will also determine the amount of risk that each party will take on.

Interest is the price of borrowing capital; naturally, a lower cost for borrowing capital will make investment seem more attractive, and a greater need for borrowed funds will ensue. The opposite is also plausible, being that the higher interest rates rise, the less demand there will be for borrowed capital. Investment will become more expensive and not appear attractive to investors. Banks will be looking at lending to investors as much as possible and will want to sell their product at the highest possible interest rate to make more profit.

The foregoing basic supply and demand principle for borrowed funds will determine an equilibrium price for borrowed capital, namely, the interest rate. This is simply because this model does not consider inflation. Inflation suggests that an amount one day will not purchase the same amount of goods and service in the future; thus, the value of money deteriorates over time. This deterioration of money can be expressed as a figure of inflation. This implies that banks are to receive a certain amount of interest on a bond; it will be the nominal rate of return because after inflation has been accounted for, the return will be considerably less. The real rate of return will govern the decision-making of banks and will lead to extensive investigation on accurately predicting future inflation rates, as it will affect their profit margin directly. The interest rate charged by banks is highly dependent on maturity risk, which suggests that the longer the term of the bond, the more likely the risk of default. In turn, the banks will employ a higher rate on longer-term bonds to limit

their risk exposure (Finnerty, 1990). Figure 4.7 illustrates the relationship between the interest rate required and the maturity of a bond.

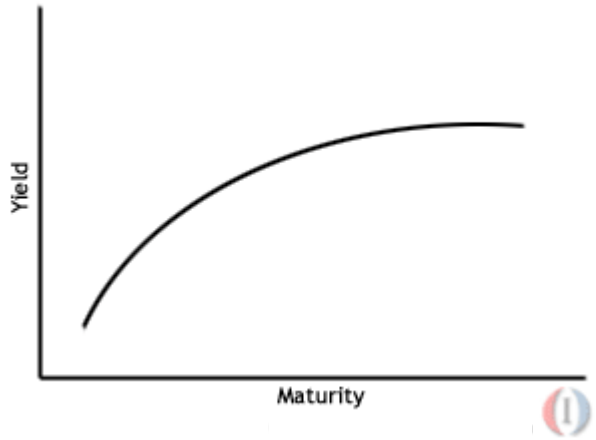

Figure 4.7: Cost of borrowed funds relative to maturity

REITs in South Africa frequently enter short-, medium- and long-term bond notes. This represents 3-year, 3- to 5-year, and 5- to 10-year debt notes which act as a facility for the REITs. This means that the REIT will start to pay interest only once they make use of the funds made available to them. The REITs will try to keep their average yield to maturity as low as possible because it will reduce their cost of capital. Short- or medium-term debt notes will be the preferred option, and once it has expired, another similar term note will be facilitated.

An assumption that can be made is that REITs will want to fix their cost of borrowed capital to provide security and sustainability for their shareholders. This implies that they pay a fixed interest rate whether the interest rates rise or fall. This is possible because it is an excellent hedging mechanism for unexpected future changes, but the banks might foresee some interest rises within the next three or five years. They will therefore sell hedging advantage to the borrower by increasing the rate. The rate will then be increased, but then it is fixed for the bond maturity. Companies that want to be aggressive in their financial leverage strategy, meaning they strive for a high loan-to-value ratio, will opt for fixed-rate bonds at a premium to minimise their risk in the future.

Figure 4.8 explains the inverse relationship between the interest rates of loanable funds and the price of loanable funds. Another advantage that a REIT can benefit from is the economies of scale pertaining to borrowed capital. Higher bond values will benefit from lower interest rates, as depicted in Figure 4.9 (Ross, 2010).

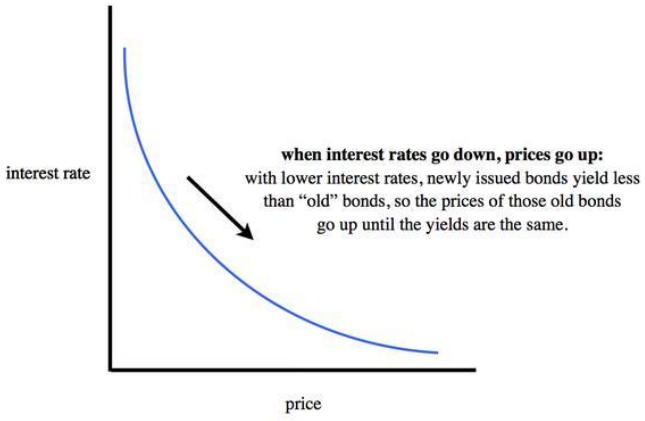

Figure 4.8: Demand curve for borrowed funds

The last part of the debt structure background involves discussing the international investment possibilities of REITs, which pertain directly to the main problem of this study. The currencies of different countries have different values. The currencies are traded or exchanged daily, and depending on the demand for the currency, a price is determined. The exchange rate is the price of a country currency expressed in terms of another country's currency (Jordan, 2010). In the real estate sector, the value of a property is expressed in the currency of the country in which it is erected. For example, if an office is developed in South Africa, the value of that specific property will be a Rand value. The exception to this rule is when buildings are erected in emerging markets where the currency is particularly weak, so the developers will require the tenants to enter US Dollar-denominated leases, meaning the rent is paid in the specified currency. Thus, the income will cause an increase in the business value of the property instead of the income being received in the local currency. Otherwise the building value and income derived from the investment will reflect a coherent value.

Property developers will continue to seek diversification options. One of them is the development of property and making real estate equity investments on a global scale. From an emerging market point of view, it represents hedging opportunities,

and from a developed market's perspective, they can benefit from inexpensive high-quality and high-yielding acquisitions. The data collection in this study entails SA REITs and the international interaction of their business dealings, which is what the background focused on, thus from an emerging markets perspective.

The foregoing scenario introduces one of the biggest concerns in international investing, namely, exchange rate risk. This risk is dominant in direct international real estate investment because of its illiquidity, as opposed to equity investments which can be liquidated quickly if the currency is weakening. The reason for the illiquidity is that there are not many buyers when it comes to selling a massive commercial or retail property. Exchange rate risk can be divided into three types of exposure in terms of the short run, long run, and translation risk. Short-run exchange rate risk refers to the day-to-day change in currency values. This can be mitigated by means of forward exchange agreements or forward contracts (Jordan, 2010). It is important to know that the short run changes in the currency are not that applicable in the real estate investment industry because it deals with long-term investment decisions relating back to the illiquidity of direct real estate investment. The main participants in the foreign exchange market are government central banks, such as the South African Reserve Bank, commercial banks which deal directly with consumers, and corporations which can act as intermediaries between the public and the futures market (Finnerty, 1990).

Long-run exposure must be considered by real estate investors that seek to diversify globally because the value of foreign operations can vary due to unforeseen and unexpected events related to economic conditions. Several studies have been executed by private sector multi-national firms that determined the vast impact that currency changes can have on their bottom line. As opposed to short-run hedging mechanisms, long-run forward markets do not exist; companies must therefore aim to match their foreign cash inflows and outflows or – more property-related – to match their foreign assets and liabilities. For example, if an SA REIT is looking to develop a property offshore, it might consider obtaining finance from a commercial financial institution located in that specific country. This way, the liabilities value change will partially offset the value changes in the assets.

Translation exposure is the third aspect of exchange rate risk that a company must consider. This is purely an accounting dilemma; for example, if a company has assets offshore, they must be recorded in the balance sheet, but the financial statements must appear in the currency of the parent company's origin and headquarters. A problem arises when determining what exchange rate must be used to convert the asset values to the local currency. According to the FASB 52, the exchange rate that currently prevails must be used to convert the values, as the changes in values will be recorded in a special account that caters for the unrealised gains or losses occurring during the translation. Importantly, the unrealised gains or losses are not accounted for the net income but are only included once those offshore assets are liquidated or sold.

Political risk affects firms internationally and locally. This risk factor can also vary in the different industries; for example, a subsidiary in a foreign country which requires assistance from the parent company might be useless in the hands of somewhere else, such as the government in that country. Other industries such as mining and property development companies face the risk of nationalisation which can pose considerable uncertainty and therefore risk in politically unstable countries. Taking this into consideration, political risk ties with long-term decision-making of an investor looking to diversify offshore (Finnerty, 1990).

All these operations must be funded by some institution or corporation. This will be discussed in the closing stages of this chapter. Debt and equity are required to conduct investment, but where does this capital come from? A new real estate development can be funded by the parent company in the form of reserves or an interest-free loan with no repayment date if it is a subsidiary of the parent. This is a simple form of investment, but it can cause problems if local market funding is required because the public might waver from providing finance to a company that is already suitably funded by its parent. Another form of financing is the inter-group funding, which refers to one subsidiary helping another to build up capital without the need for repayment on a specified date or merely delayed repayments. Capital movements are highly regulated between countries; it might thus not be possible to raise capital in one country for the funding of operations in another country (Briston, 1978).

Government assistance can also help with the funding of investments; for example, governments can ease legislative restrictions in certain areas and provide roads and municipal services to attract investments in those areas. In other words, government makes it easier for investors to develop real estate in certain areas, a mutually beneficial scenario, with the increased economic activity in specific areas while developers achieve their return on investment with the assistance of government authorities. Government grants and subsidies can also guide investment activities and attract international investors looking for relaxed legislative procedures. Institutional loans can be from the World Bank, European Investment Bank, or any commercial bank in the subject foreign country. All these institutions have a role to play in financing private sector operations and will most likely be considered when financing an international development in a real estate development context (Briston, 1978).

4.3.3 Data collection

The data that follows have been collected from the financial statements of the 13 largest SA REITs listed on the JSE by asset size. These interpretations relate to the debt of the firms, and because of the world crisis in 2008, certain legislation and regulations might have been established to limit the borrowing capabilities, such as financial institutions, because REITs include mortgage REITs that lend money to other REITs and private developers. Some novice equity REITs might be very aggressive in their investment strategy and thus exercise high loan-to-value ratio and times interest earned ratios, thereby increasing their default risk. However, they may not do so due to rules put in place by the government and the JSE to prevent reckless borrowing. In other words, the data presented here might indicate an industry trend that is purely management decision-making but could in fact be because these REIT are limited by the JSE in their capabilities. Table 4.4 presents the financial ratios related to the SA REITs' solvency indicators.

Table 4.4: Solvency ratios

Name	LTD to Cash flow (%)			Gross profit to Debt		
Year	2005	2015	Δ	2005	2015	Δ
Growth	4.03	-4.47	-8.50	4.81	6.09	1.28
Hyprop	2.59	1.61	-0.98	9.26	3.95	-5.31
Fortress	4.03	-11.93	-15.96	12.88	11.87	-1.01
Redefine	-1.02	-1.36	-0.34	5.26	5.60	0.35
Resilient	-2.91	-2.40	0.51	9.50	6.25	-3.25
Vukile	4.60	49.95	45.35	7.35	2.93	-4.42
Delta	-0.70	4.52	5.22	10.06	7.60	-2.46
Arrowhead	12.06	-1.40	-13.46	5.44	3.15	-2.29
Accelerate	2.81	18.54	15.72	18.37	4.99	-13.38
Octodec	1.21	2.78	1.57	10.23	5.85	-4.38
Emira	37.42	-0.92	-38.34	4.13	4.28	0.14
Rebosis	-7.94	-15.83	-7.88	36.33	10.48	-25.84
SA Corp	53.93	28.11	-25.83	0.61	5.49	4.88
Average	8.47	5.17	-3.30	10.32	6.04	-4.28

Source: INET BFA

Table 4.4 contains indicators reflecting the financial positions of the various REITs. Long-term debt divided by the cash flow from operations including amortisation and depreciation is a good risk indicator. The ratio refers to the long-term debt being eight times more than the cash flow from operations, which was the industry average, but there are several outliers that were 37 and 53 times more than their cash flow. A probable reason why these figures could have been so high is that most REITs establish during this period and aggressive investment strategies could have been implemented to establish a larger asset base faster. The average reduced 40% with only one outlier; this is a massive shift in the overall risk per REIT in the industry. The REITs might have become more established due to larger asset sizes.

The analysis that follows indicates how long it will take to repay the total debt of the given REIT. The average of the industry went down by the exact same figure, namely, 40%, from 10.32 to 6.04, which is very interesting. However, this similar change can be an industry-specific occurrence because REITs primarily make use of long-term debt, and the escalation on rental income ensures that gross profit rises steadily. The debt figure will be almost the same for both ratios, but the difference

exists in that the income used, cash flow, the distribution of dividends, and taxation payable have been deducted from the gross profit.

A REIT long-term debt to cash flow is a way provide sensitivity and scenario analyses for the business, which is why it is a risk indicator. For example, any acquisitions or disposal of more than 25% of assets or liabilities of a market infrastructure must be approved by the registrar per the Financial Markets Act 19 of 2002. It can be safe to assume that reckless borrowing and acquisitions will be monitored accordingly. Figure 4.9 depicts the capital formation and development essentially in South Africa in the retail sector.

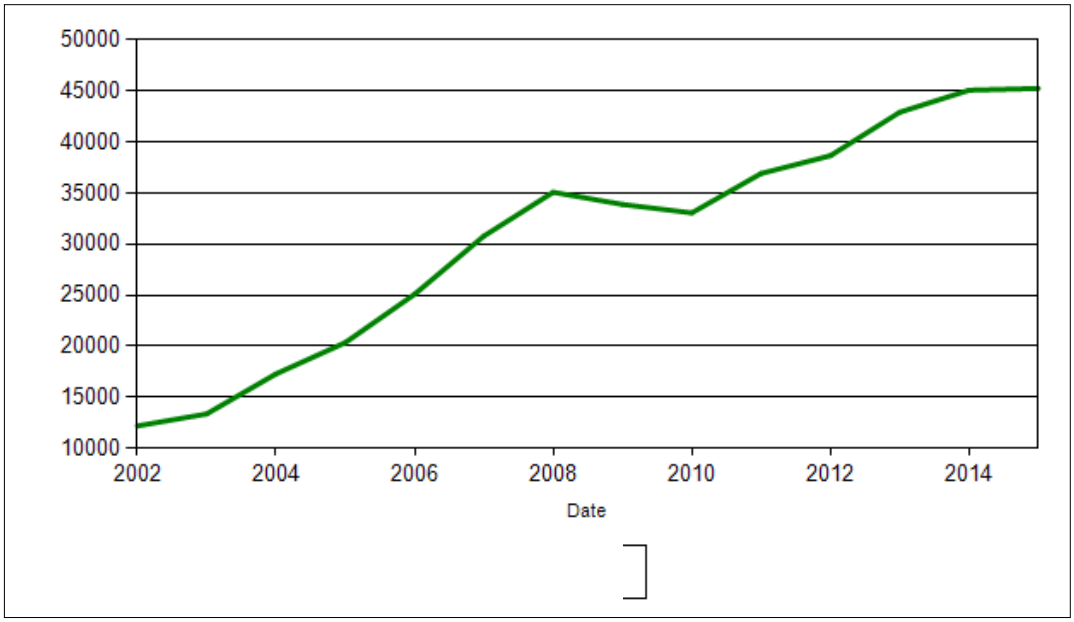

Figure 4.9: Capital formation: Retail – Accommodation 1

Source: South Africa Reserve Bank

The capital formation figures represent the amount of retail and accommodation developments. The amount of residential housing in the private sector has been developed in terms of Rand value. This is indicative of the changes in long-term debt to cash flow and the gross income to total debt of the REITs being investigated because most REITs have a substantial retail portfolio, which has increased four-fold in the past 12 years. This explains the gross income and cash flow increases relative to debt. As for the residential capital formation, it refers to the Rand value of housing developments by private individuals and companies. The massive increase

in housing can be related to population increase and wealth being distributed equally, resulting in a larger middle class who can afford the investment of a house. Real estate developers such as REITs would have recognised this increase in housing developments and focused their developments – retail and commercial – on housing development-intensive areas. Figure 4.10 refers to the amount of development in the residential space nationally.

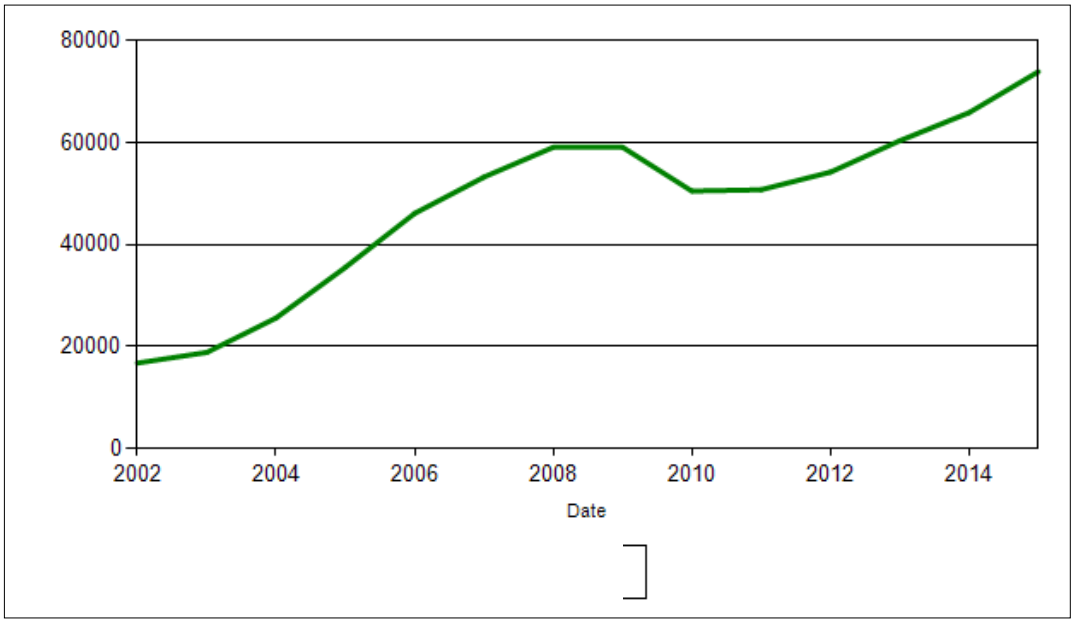

Figure 4.10: Capital formation – Residential private 1

Source: South African Reserve Bank (2016)

Table 4.5 presents the average cost of capital of SA REITs sample.

Table 4.5: Average cost of capital of SA REITs sample

Name	WACC (%)		
Year	2005	2015	Δ
Growth	8.35	8.90	0.55
Hyprop	11.13	7.10	-4.03
Fortress	10.89	7.82	-3.07
Redefine	11.25	8.35	-2.90
Resilient	10.57	8.88	-1.69
Vukile	11.18	8.40	-2.78
Delta	8.90	8.10	-0.80
Arrowhead	8.13	8.96	0.83
Octodec	7.81	8.90	1.09
Emira	9.96	9.00	-0.96
Rebosis	9.26	8.20	-1.06
Average	9.77	8.42	-1.35

Source: INET BFA

The weighted average cost of capital has been rigorously discussed in Chapter 2. This calculation includes the cost of equity capital and the cost of debt with a weight being assigned to each. It is a very important figure to management because this is where the company can save costs and directly increase the net profit. The cost of capital can be negotiated with financial institutions. A forward yield for shareholders is decided by management to an extent because decreasing the forward yield too much will affect the share price of the REIT. The cost of equity is usually determined on an annual return basis, leaving the debt financing as the primary negotiable rate. Another purpose of this figure that is of paramount importance to the management committee of any REIT is that it directly impacts the investment decisions that can be pursued. This indicator acts as the hurdle rate for any new development or investment made by the company; thus, the yield of an investment must be higher than the company's weighted average cost of capital; otherwise, the investment would result in losses rather than gains. It directly affects their performance goals because it acts as a hurdle rate for performance measurement.

It is clear from Table 4.5 that WACC has decreased from almost 10% to 8.42%; in other words, if a REIT wants to do a development, the yield must be higher than 8.42% per the industry average. This also means that REITs cannot afford to

execute acquisitions that are too expensive. Something must be compromised to retain a favourable hurdle rate, and usually the shareholders' return will suffer from overpaying for an investment, which has further repercussions for the company. Apart from negotiating skills with the banks and economies of scale relating to borrowed capital, the reduction in WACC can be attributable to a reduction in the prime rate, which could have been affected by higher and relatively stable inflation the past couple of years, as can be seen in Figures 4.11 and 4.12.

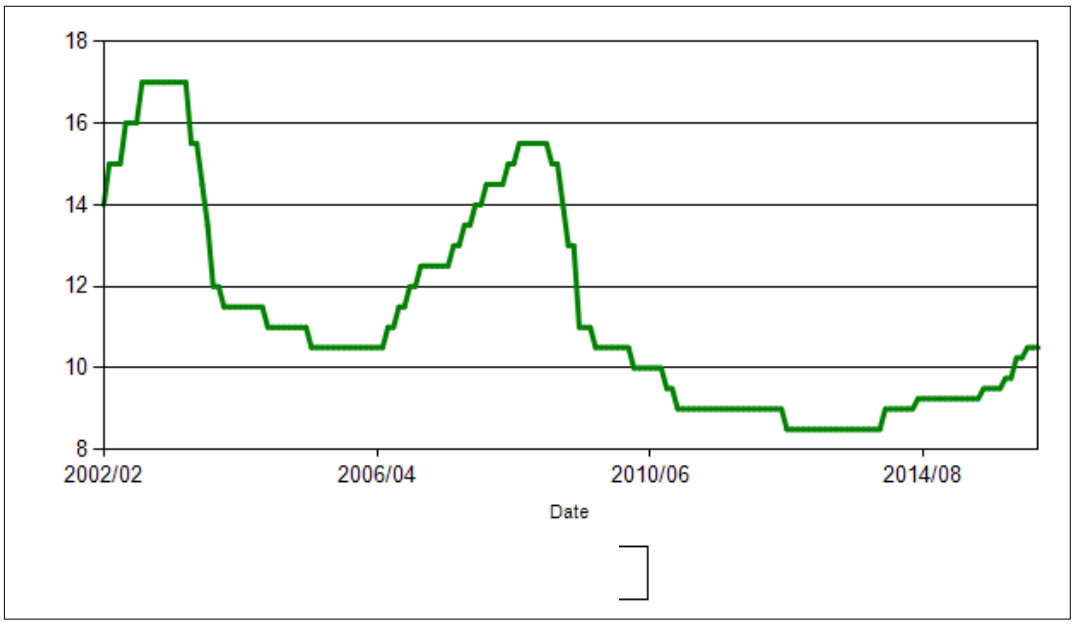

Figure 4.11: Prime rate – South Africa

Source: South African Reserve Bank

An inverse relationship between inflation and the prime rate is clear in Figures 4.11 and 4.12. The prime rate decrease has benefited all real estate developers in South Africa directly, which it is safe to assume the lower WACC does not purely reflect management performance but macro-economic influences as well, which are factors outside the control of REIT management or commercial banks.

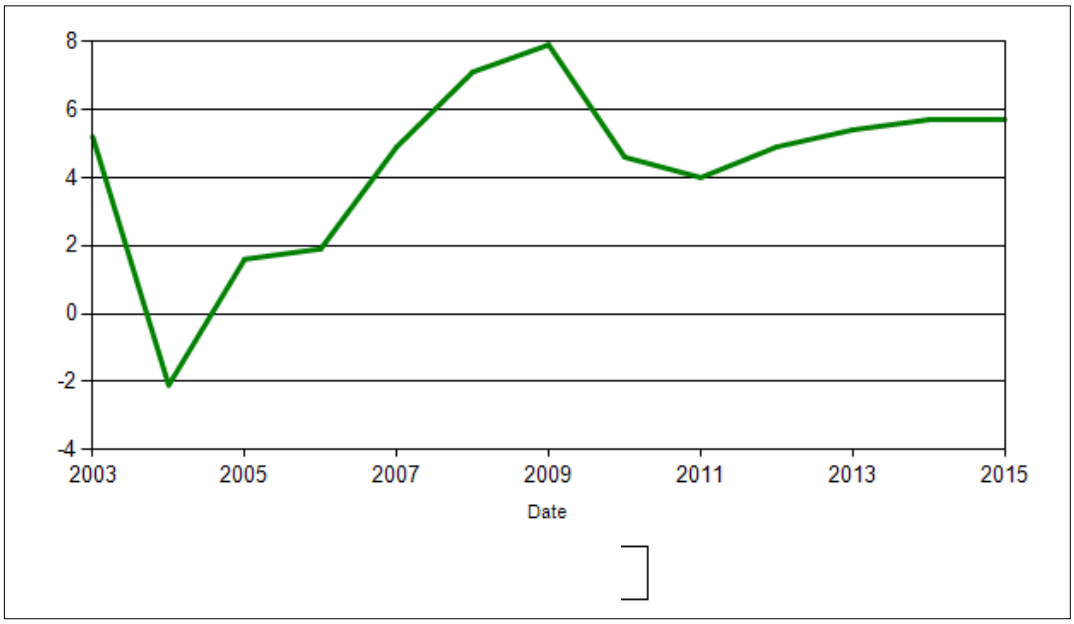

Figure 4.12: Consumer Price Index of South Africa

Source: South African Reserve Bank

LEV 1 is the long-term debt divided by the total equity in the REIT. Essentially, it suggests that for every Rand of long-term debt, there should be a Rand of ownership equity, but the historical value indicates that REITs had R2 – 30 for every R1 of shareholders' equity. Together with the large long-term debt ratio, there were numerous outliers that recorded long-term debt of more than R10 for every R1 of shareholders' equity. This figure decreased by some 190% to arrive at the present industry average of only 40 cents for every R1 of shareholders' equity. A more significant fact is that there are currently no outliers in the 13 largest REITs in South Africa in respect of this ratio. All the REITs are within a 20% collar with the highest having 48 cents of long-term debt for every Rand of shareholders' equity. The risk profile has changed dramatically, and it appears to be an industry trend.

LEV 2 refers to the long-term debt being divided by the total assets, as highlighted in Table 4.6. This differs from the loan-to-value ratio in Figure 4.9 because it uses the total debt of the company relative to assets. LEV 2 has decreased from 45 cents of long-term debt to only 24 cents for every R1 of shareholders' equity. This figure was already not in a bad position from a solvency point of view, meaning that borrowers would have been willing to provide funds because banks would have

ample security in the event of a default, which was more than likely looking at LEV 1. The decrease could be attributable to the vast increase in total assets. The total asset value have increased at a rate much greater than that of borrowed funds required, and REITs made use of equity capital finance acquisitions. Thus, long-term debt would not have increased parallel to asset growth.

The long-term debt of SA REITs is now in an even better position – very low relative to assets. This makes it attractive for financial institutions when borrowed funds are required because capacity and security are in good standing. The last ratio in Table 4.6 accounts for the return on assets, meaning that the net income of the REIT divided by the total assets value is expressed as a percentage. The return on assets has increased by 2.5% to a current 10%, which means that the average portfolio of the largest REITs in South Africa yield 10% on their total assets. This is a positive figure because it exceeds the hurdle rate or WACC of 8.4%, and it means that REITs are not paying too much for their acquisitions and developments. One outlier is Resilient, with a return on assets of 16%, which means that its portfolio has some very high yield properties but also that its portfolio is purely retail-driven, while most of the other REITs are a combination of high yield and low-yielding properties, namely, commercial, retail, residential, and industrial. All the ratios in Table 4.6 have indicated improved financial positions by all the REITs in the data sample. Some performed better than others.

Table 4.6: Solvency and return ratios of SA REIT sample

Name	LEV 1 (%)			LEV 2 (%)			Return on assets (%)		
Year	2005	2015	Δ	2005	2015	Δ	2005	2015	Δ
Growth	46.16	42.24	-3.92	29.79	27.02	-2.76	-0.32	6.81	7.13
Hyprop	126.51	27.33	-99.18	46.72	20.51	-26.20	17.36	13.10	-4.27
Fortress	712.54	17.90	-694.64	82.12	12.02	-70.09	4.34	12.79	8.45
Redefine	144.06	47.85	-96.21	58.14	30.78	-27.36	6.61	8.12	1.51
Resilient	122.47	20.41	-102.06	51.50	17.94	-33.56	22.80	16.04	-6.76
Vukile	989.34	21.89	-967.45	84.81	15.87	-68.94	5.88	12.96	7.09
Delta	102.47	72.39	-30.08	45.25	33.59	-11.66	-0.76	7.95	8.71
Arrowhead	32.67	32.78	0.11	18.10	24.31	6.21	10.00	9.97	-0.03
Accelerate	59.40	47.81	-11.59	34.61	30.86	-3.75	8.53	10.39	1.86
Octodec	107.67	41.75	-65.92	41.64	15.24	-26.40	4.19	11.33	7.14
Emira	20.65	38.57	17.92	16.04	25.02	8.98	9.16	13.77	4.61
Rebosis	528.17	71.21	-456.96	77.84	35.79	-42.05	1.70	1.54	-0.16
SA Corp	7.52	34.93	27.41	7.00	24.66	17.66	8.57	6.03	-2.53
Average	230.74	39.77	-190.97	45.66	24.12	-21.53	7.54	10.06	2.52

Source: INET BFA

The penultimate set of financial indicators adds to solvency and liquidity disputes on the SA REITs. Financial institutions will want to recognise these figures to make accurate decisions, although one aspect which is not covered in this study is the credit rating of the REITs. The credit rating and management thereof will also form part of a creditability and capacity standpoint. Cash refers to the total amount of cash available divided by the total assets. REITs have a tax advantage in the form of their dividend distributions and their interest payables are tax-deductible. This

explains why the figures are extremely low; distributions will most likely be as high as possible to avoid paying tax. The amount of cash available relative to assets has decreased to below 1% of the total assets, which can therefore be characteristic of the new REITs structure and related pieces of legislation that have been implemented seven years previously. The vast tax advantages lure REITs to pay out most of the earnings in the form of dividends instead of retaining earnings in the form of reserves.

The financial indicators that follow include dividing the earnings before interest and tax by the amount of interest payable in that fiscal year. This indicator becomes especially important when REITs or private development companies aim for higher leverage ratios. The results reveal an increase in the interest coverage by REITs. Since the international REIT structure has been implemented by a 26% larger interest, coverage is recorded. This suggests that REITs have reduced their use of debt during this period because from earlier investigations, the earnings before interest and tax have indicated steady growth. Debt and therefore the debt service payable annually must have decreased as well at a higher rate than the earnings before interest, and taxes (EBIT) increased. REITs are showing their willingness to expand their portfolios by making use of borrowed capital.

Probably the most important financial indicator from a shareholder's perspective after earnings per share and dividend distribution is the loan-to-value ratio of a REIT. This refers to the total debt divided by the total asset value of the REIT. A clear reduction in this value from 54% to a current 35% debt to asset industry average is evident. REITs did not necessarily make use of less debt, as illustrated in the previous ratios, but a more likely explanation is the tremendous growth in asset value, which is much higher than the rate of borrowed capital implementation. The current industry average represents stable REITs that maintain just enough debt on the books to maintain aggressive asset base growth, which is a primary goal for any REIT to increase the net asset value of the company. The best method to do so is through asset base growth. Liabilities can only be reduced to an extent. Because of tax advantages and financing options available, a certain amount in debt can be healthy for a business. Table 4.7 relates to liquidity ratios of the sample SA REITs.

Table 4.7: Liquidity ratios of SA REIT sample

Name	Cash		Interest coverage		Debt coverage (%)		Loan to value (%)	
Year	2005	2015	2005	2015	2005	2015	2005	2015
Growth	0.09	0.47	0.93	4.79	0.20	0.15	0.35	0.36
Hyprop	0.39	0.29	6.88	2.72	0.08	0.19	0.63	0.25
Fortress	0.16	0.02	1.79	6.34	0.14	0.51	0.88	0.33
Redefine	0.00	0.18	1.92	5.18	0.20	0.18	0.61	0.36
Resilient	0.18	0.13	4.58	20.10	0.11	0.76	0.58	0.23
Vukile	0.75	3.75	2.33	4.10	0.09	0.35	0.91	0.28
Delta	2.50	0.55	1.69	3.78	0.05	0.13	0.53	0.53
Arrowhead	7.73	0.88	2.83	3.16	0.18	0.32	0.33	0.26
Accelerate	0.88	0.81	11.84	5.30	0.05	0.20	0.42	0.35
Octodec	0.01	0.47	1.68	4.57	0.10	0.17	0.61	0.41
Emira	0.21	0.38	9.50	6.44	0.44	0.23	0.22	0.35
Rebosis	1.95	1.16	4.56	1.37	0.03	0.10	0.85	0.50
SA Corp	6.29	2.19	6.77	4.42	1.64	0.20	0.07	0.29
Average	1.63	0.87	4.41	5.56	0.25	0.27	0.54	0.35

Source: INET BFA

4.3.4 Conclusion

This chapter investigated the proposed debt structure changes for the period when the new REIT structure was implemented. The idea of this new REIT structure was to increase the international diversification and interaction with REITs around the world. These changes were intended to benefit SA REITs in several ways. The debt structure is one of those ways in which REITs could draw advantage in the form of cost of capital and the amount of borrowed capital used and the asset growth relative to leveraging techniques. First, several economic indicators changed through the period of investigation. This resulted in some changes directly and indirectly on the consumer prices index which increased considerably and afterwards remained stable. The prime rate has reduced and remained constant during the end of the period.

Capital formation in the residential private sector has increased, which can implicate the growth of the middle class who can afford to invest in a house as well as the growth in retail capital formation. This can be proof of the real estate developer recognising a growing middle class and the future demand in concentrated areas. The financial position of the real estate industry has improved in terms of several ratios relating to the cash flow, cash and cash equivalents, long-term debt, and interest coverage. REITs have decreased their weighted average cost of capital, which can be attributable to acquiring debt in foreign countries to finance offshore investments, where the cost of capital is substantially lower than in South Africa. Another reason for lower cost of capital is the decrease in the prime rate; this reduced the cost of capital locally. Loan to value has decreased significantly in all the largest REITs on the JSE. The loan-to-value ratio reduced because of the significant expansion of the various portfolios and legislative restrictions later established by the JSE. Finally, the return on asset has increased by almost 20%. This suggests several possibilities, such as that the net income of the various portfolios has increased unsurprisingly due to escalation. This can also indicate REITs acquiring and developing higher-yielding properties with an industry average of 10% yield on their properties, with merely a single outlier. The outlier specialised in retail asset only as opposed to all other REITs that have a combination of high yield and low-yielding properties respectively, which include a combination of

residential, commercial, retail, industrial, government-tenanted, and specialised assets. There is sufficient evidence to suggest that the weighted average cost of capital of SA REITs has decreased to less than 9.77 on average; therefore, the null hypothesis is rejected. This rejection leads to the conclusion that the WACC has decreased since the transformation to the new international REIT structure.

The next chapter will be on regression analysis.

CHAPTER 5: REGRESSION ANALYSIS

5.1 INTRODUCTION

The foregoing chapter was a data analysis for this study. This chapter will focus on regression analysis. The data set includes four economic indicators, namely, gross domestic product (GDP), gold price, ZAR/AUD Dollar exchange rate, and the ZAR/USD exchange rate. It also includes three financial indicators: dividend yield, the return of the REIT sector less the market total return illustrated as “RoEIPD”, and leverage factor.

The purpose of this chapter is to statistically investigate the following questions:

1. Can the transition of South African property companies to REIT status statistically be explained by individual financial indicators?
2. Are some of these selected financial indicators, in turn, explained by other financial indicators?
3. Can broader economic variables explain the transition to REIT status?

Data was obtained for various variables from 2007 to 2012 for 13 companies. This data set is an example of *unbalanced* panel data, as data was not available for all companies for all years. There was a total of 24 series, including the dependent variable REIT conversion date. This is a dichotomous outcome variable, which can only assume one of two values – 0 (not converted) and 1(converted).

The remaining 23 series are independent (explanatory) variables. Two main groups are distinguished – exogenous economic indicators influencing these companies (eight) and the rest being internal (endogenous) company financial variables or ratios.

Econometric tools are used to investigate and measure the dependency, changes, variations, and correlations between selected variables pertaining to the REIT implementation in the South African-listed property sector. The statistical background section will explain in detail the procedures applied and focus specifically on the results of these tests and their interpretation. Although these results can provide some explanation of the relationship and interaction between

variables, it should be stated that quality information was lacking in the industry. Conclusions drawn from this data are based on assumptions made and the best possible use of the data at hand. Bearing this in mind, the current data provide insights in this field, and with more complete data, further studies in the field might confirm or reject these conclusions. Nevertheless, even where high correlation occurs, different points of view should be considered to acknowledge the plausibility of other explanations as well as other elements and data which was not included in this study.

The third section of this chapter measures what effect individual indicators have on the REIT transition data. Several tests were therefore done to determine if any indicator individually explains the REIT conversion specifically. The data set on which all these tests have been conducted contains information on financial ratios of the selected REITs. Given the nature of the dependent variable (a dichotomous variable), logistic regression techniques were employed.

The fourth section of the chapter branches away from the primary problem of the study. The purpose is to select three critical financial variables in a listed property development company and to measure the explanatory power of other financial indicators as well as the Rand/US Dollar and Rand/Australian Dollar exchange rates as exogenous or explanatory variables by making use of the ordinary least squares estimation technique. The importance of variables can be determined according to a ranking of Wald values by their coefficients, indicating the significance of the individual variables as well as define variations of the dependent indicators.

The fifth section of this chapter is where the changes in three financial ratios and four economic variables were tested by collectively explaining the REIT conversion data. This means that only one test was administered, which produces a list of indicators that had the highest influence on changes in the independent variable or REIT conversion. These influential variables are discussed in detail as to why they would contribute towards the REIT conversion, taken from a local and international perspective.

Company financial indicators play a critical role in daily operations and ensuring stability and sustainability for all parties involved. This study determined the key

information needed by REITs and estimated the primary elements that could have influenced change on the key indicators. To rank the elements that affected change, Wald values obtained through a logit regression analysis were used. These Wald values represent the significance of the coefficient of the dependent variable at a certain level of confidence as decided by the researcher.

The objective of logistic regression is to find the best fitting model to describe the relationship between the dichotomous (before/after) variable of interest (REIT conversion date) and a set of independent variables. The set consists of 12 indicator variables reflecting financial data of the REIT companies. Logic regression will generate the coefficients (along with their standard errors and significant levels) and an equation to predict a logit transformation of the presence of the characteristic of interest, that is, the REIT transformation date. The Wald test assesses the significance of independent variables. Table 5.1 provides the logistic regression output, for variables individually tested against the dependent variable.

Table 5.1: Logistic output where each independent variable is tested individually against a common dependent variable in RoEIPD

	Beta	S.E.	Wald	Do	Sig.	Exp (B)	-2 Log likelihood	R-squared	Adjusted R-squared
Constant	-.612	.22	7.768	1	.005	.542			
WACC	.003	.026	.017	1	.896	1.003	118.003	.000	.000
Debt to assets	-.825	.992	.691	1	.406	.438	118.175	.008	.011
Leverage factor	-.019	.024	.603	1	.437	.981	118.167	.008	.011
Return on equity	-.003	.004	.405	1	.525	.997	118.454	.005	.006
Earnings yield	.048	.033	2.097	1	.148	1.049	116.416	.026	.036
Dividend yield	.013	.016	.642	1	.423	1.013	60.743	.038	.058
Net profit margin	.008	.003	5.682	1	.017	1.008	103.492	.072	.100
Operating profit margin	.003	.003	.737	1	.391	1.003	109.204	.008	.012
P/E ratio	.004	.007	.266	1	.606	1.004	118.513	.004	.006
NAVPS	.000	.000	2.217	1	.137	1.000	109.210	. 049	.067
Share price	.000	.000	1.122	1	.290	1.000	110.403	.013	.018
RoEIPD	-.002	.004	.236	1	.627	.998	118.643	.003	.004

The first analysis was conducted to determine how each individual variable influences the change to REIT status, namely, the dependent variable. Twelve tests were executed, each containing a different independent variable but maintained the same regress. This fulfilled the general assumption needed to compare results using this econometric model.

Table 5.1 reveals the outcome of a series of individual logistic tests performed with the REIT conversion date as the dichotomous dependent variable, which can only take the value of 0 or 1. The independent variables are listed in Table 5.1 and represent some financial indicators that are useful in summarising the overall performance and state of REIT companies. The table provides the logistic regression coefficient of each indicator along with its standard error. From these, the Wald statistic is calculated (as the ratio of the coefficient and the standard error squared). When assessing the contribution of individual predictors in each model, one may examine the significance of the Wald test, which is based on large samples. These tests provide the Wald chi-square value and 2-tailed p-value used in testing the null hypothesis that the coefficient (parameter) is 0. Coefficients with p-values less than alpha are statistically significant. For example, if alpha is chosen to be 0.05, coefficients with a p-value of 0.05 or less would be statistically significant (i.e. the null hypothesis can be rejected, and it can be concluded that the coefficient is significantly different from 0). It should be noted that since the sample size is low, one cannot assume that coefficients are insignificant. Wald's test is best suited to large sample sizes.

Nonetheless, apart from the Wald test for the null model where only the constant is present in the model, only the net profit margin yielded statistically meaningful results with a p-value of 0.017 or 1.7%. The interpretation of the statistically significant beta positive movement with net profit margin is that the coefficient shows the increase (since the coefficient is positive) in the predicted log odds of having the REITs conversion by .008 for a one unit change in the net profit margin. The net profit margin was thus significantly related to the probability of conversion (b = .008, OR = 1.008, P < .05). None of the other variables, with perhaps some very marginal significance outcomes for NAVPS (p-value of 13.7%) and Earnings Yield (p-value of 14.814.8%), statistically explain variation in the REIT conversion date data.

The next statistic of importance for a continuous dependent variable is the odds ratio (OR) defined as Exp (β). This is the exponentiation of the β coefficient. The odds of the dependent variable equalling a REIT conversion (=1) is some linear combination of the independent variables and is equivalent to the exponential function of the linear regression expression. OR less than 1 corresponds to

decreases and OR more than 1.0 corresponds to increases in odds. OR close to 1.0 indicates that unit changes in that independent variable do not affect the dependent (REIT conversion date) variable.

According to Table 5.1, almost all the financial indicators have odd ratios close to one, indicating that changes in those variables do not affect the REIT conversion date (the dependent variable). The only exception is the debt-to-asset ratio, which has an OR well below 1, implying that an increase in the debt-to-asset ratio resulted in the odds of obtaining a positive outcome, for the conversion rate date variable is 0.438 lower than the cases where date did not take place.

Finally, the Cox-Snell R^2 and Angekok R^2, as well as the pseudo R-squares measures of goodness of fit, confirm the message of the other statistics. The Cox-Snell R^2 and Angekok R^2 are attempts to provide a logistic analogy to R^2 in OLS regression. The Angekok measure adapts the Cox-Snell measure so that it varies from 0 to 1, as does R^2 in OLS. The low Nagelkerke R^2 values obtained for the different indicators show that they account for less than 10% of the variance in REIT conversion at the date specified.

Ordinary least squares regression models were also applied to shed light on the operations of the listed property development companies. Investors will find such information useful, since it could assist in predicting the financial and operational positions of the companies they might consider investing in.

It was attempted to explain the variation in the independent variables (economic indicators and financial ratios) identified in the original database (and in the logistic regression specification) by means of linear regressions. Variables influencing these magnitudes (now dependent variables) were selected from the same database and used as independent variables in an OLS model. The variables selected based on importance as reflected by the p-values in the logistic regression, namely, the net profit margin and dividend yield, along with the share price, were further analysed.

It is important to note that the independent variables in the aforementioned OLS models will not entirely explain the variation in the chosen three dependent variables. There will always be other factors that could lead to changes in said

dependent variables, which this study did not consider. These factors are reflected in the error term (or residual) of the regression equation.

A serious drawback is the lack of sufficient, quality information, especially in the time before REIT was introduced. However, the best was done with the information at hand, and it should be borne in mind when interpreting the results and making inferences.

To evaluate the goodness of fit of these estimated relationships, the following statistical measures will be applied: an overall measure of goodness of fit (R^2), individual significance of individual coefficients using t-statistics, Durban-Watson (serial correlation), and visual heteroscedasticity tests. All of these were described in detail.

Share price was specified to be a function of NAVPS, dividend yield, and exchange rate (R/Pound) as:

$$Share\ Price_i = \alpha + \beta_1\ NAVPS_i + \beta_2 Dividend\ yield_i + \beta_3 Exchange\ rate_{\ i} + \varepsilon_i$$

The regression equation above was estimated to determine which explanatory variables had the most significant effect on share price, with what accuracy this can be determined, and the overall goodness of fit of the model.

The overall measure of the goodness of fit of this equation is the R^2 coefficient, which in this case equals 0.863. This means that 86.3% of the variation in the independent variable on share price is explained by the independent variables included in the specification.

Figure 5.1 portrays the predictor importance in share price regression.

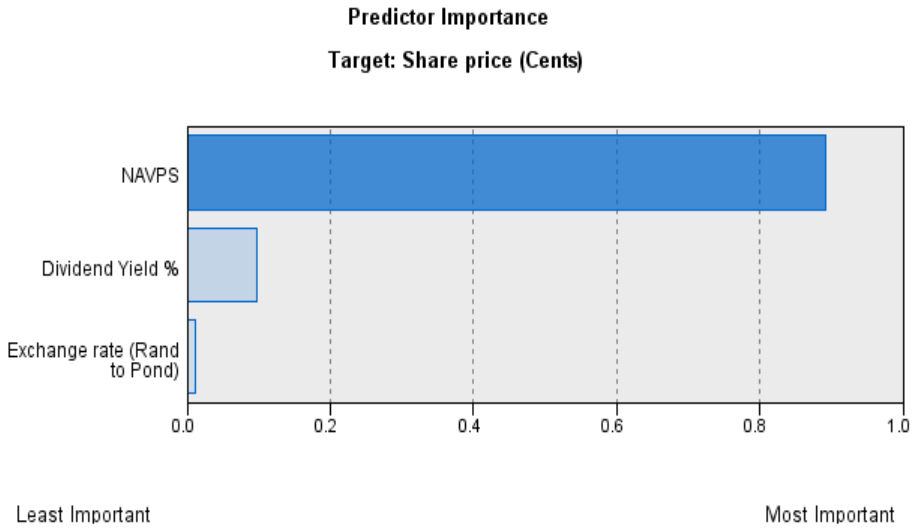

Figure 5.1: Predictor important figure indicating the most significant factor of influence

It is clear from Figure 5.1 that NAVPS is the dominant explanatory variable of variation in the share price. In other words, NAVPS at (90%) explains the major part of the variation in share price. Dividend yield (±10%) and exchange rate (±1%) also explain some variation, but to a much lesser extent. Later in this section, it will be decided whether these explanatory variables will be included or excluded in the specification.

Table 5.1 reports the regression estimates and the test statistics of the regression specification above. Values for the regression coefficients for the independent variables (including the constant term) are reported in the first column. The t-values for the estimated coefficients of the independent variables are reported in the third column (obtained by dividing the estimated coefficient (col1) by the standard error (col2). The t-value gives an indication of the significance of an estimated coefficient at a chosen level of significance. A rule of thumb is that estimated coefficients with a t-value ≥ 2 is significant at a 5% level of significance (95% level of confidence). In this case (except for exchange rate), all t-values are ≥ 3 and therefore highly significant at a 1% level of significance (99% confidence level). The results reported in Table 5.2 are confirmed, with NAVPS having a t-value of 22.7, making it the most

significant independent variable with a predictor importance of 90%. The exchange rate variable is the least significant with t=2.54.

Next, the signs of the estimated coefficients must be inspected. A positive sign indicates that an increase in the independent variable will cause an increase in the dependent variable. A negative sign will cause the variables to move in opposite directions; for instance, an increase in the independent variable will cause a decrease in the dependent variable and vice versa.

The regression results concur with theory in the sense that the share price is almost directly and positively correlated with the NAVPS because REITs can grow solely by directly investing in more property. Other businesses can grow by increasing sales. REITs must grow their asset base to stay competitive; thus, if REITs increase their NAVPS, it means that they are expanding and the business is growing. This illustrates a sense of sustainability and will encourage investors to buy such company's stock, thereby increasing the share price of the REIT.

Although dividend yield does not explain the changes as elaborately as the NAVPS, it is necessary to note that it has a very strong negative significance, which is in line with theoretical expectations. This implies that if there is a decrease in dividend yield, there will be an increase in share price and vice versa. This result supports the fact that if the share price does not increase or decrease during a fiscal year and the dividend yield expressed as a percentage increases, negative correlation ensues. This is indicated in Table 5.2 as a highly significant t-value of -7.507.

The Rand/Pound exchange rate weakens if the exchange rate increases. The coefficient of this variable is negative and significant, implying that an increase in the Rand/Pound is associated with a lower share price. The explanation for this is that a depreciating South African currency will make South African investments less attractive, which is likely to be reflected in the share price of South African REIT property companies. Table 5.2 provides the regression output with share price as the dependent variable.

Table 5.2: OLS output data focusing on the t-value and the respective significances

Share price coefficients					
Model Term	Coeffieicent	Std. Error	t	Sig.	Importance
Intercept	2409,618	483,45	4,984	0	0
NAVPS	1,29	0,057	22,706	0	0,891
DividendYield	-208,253	27,743	-7,507	0	0,097
ExchangeRandtoPond	-0,818	0,322	-2,542	0,013	0,011

To obtain an overall sense of the success of the model to predict share prices, Figure 5.2 plots observed shares price against predicted share prices. If the model were 100% capable of predicting the share prices, the observations in the figure would lie on a 45-degree line through the origin. Visual inspection of the figure indicates that the narrow band of observations reflects a model as relatively successful in predicting share prices.

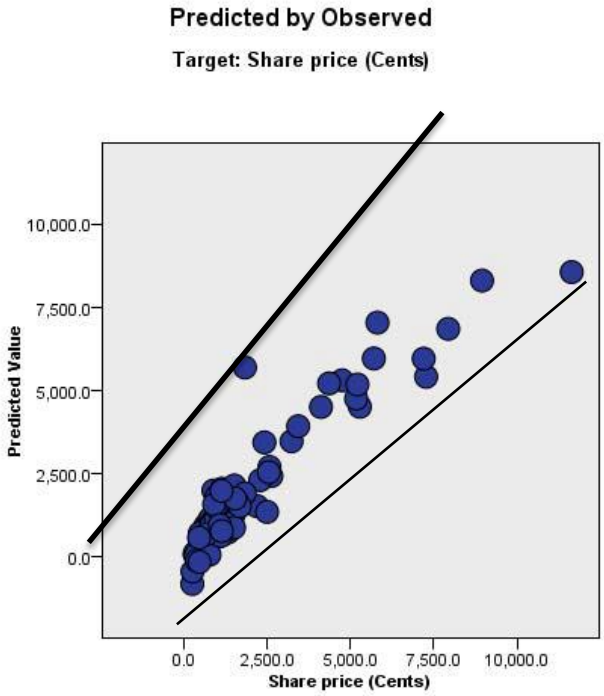

Figure 5.2: Figure visually indicating heteroscedasticity at an acceptable level for research and analysis purposes given the data available for the study

Net profit margin was specified to be a function of operating profit margin, debt to assets, leverage factor, exchange rate (R/AUD), earnings yield, and Price/Earnings ratio:

$$Net\ profit\ marg_i = \alpha + \beta_1 Operating\ profit\ marg_i + \beta_2 Debt\ to\ asset_i + \beta_3 Leverage_i + \beta_4 Exchange\ rate_i + \beta_5 Earnings\ yield_i + \beta_6 PE_i + \varepsilon_i$$

In this case, the coefficient of multiple correlations (R^2) for this regression specification is 0.841. This value shows how accurately the estimated Y values (obtained from the regression line) fit the actual values in each sample. The 84.1% is regarded a high correlation coefficient. Hence, the independent variables in the regression specification above explain variations in the dependent variable adequately. Figure 5.3 provides information of the variables which have the highest correlation with net profit.

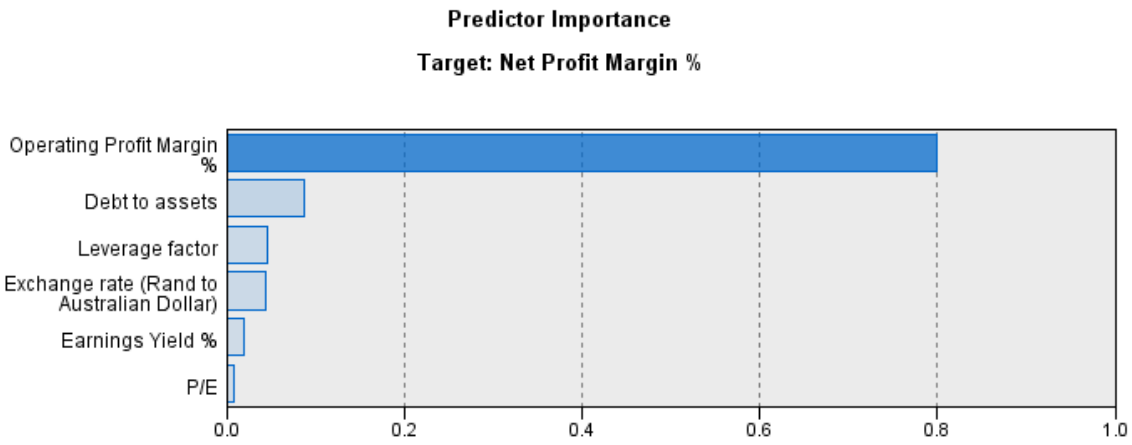

Figure 5.3: Predictor importance figure indicating the most significant factors of influence

Figure 5.3 illustrates that the operating profit margin is the most influential variable in explaining variations in the dependent variable, net profit margin, with an importance factor of 80%. Several other factors also contributed to changes in the net profit margin; all contributions are lower than 10%. Given the extremely low

contribution of these variables, they could not be discussed in detail in terms of test statistics.

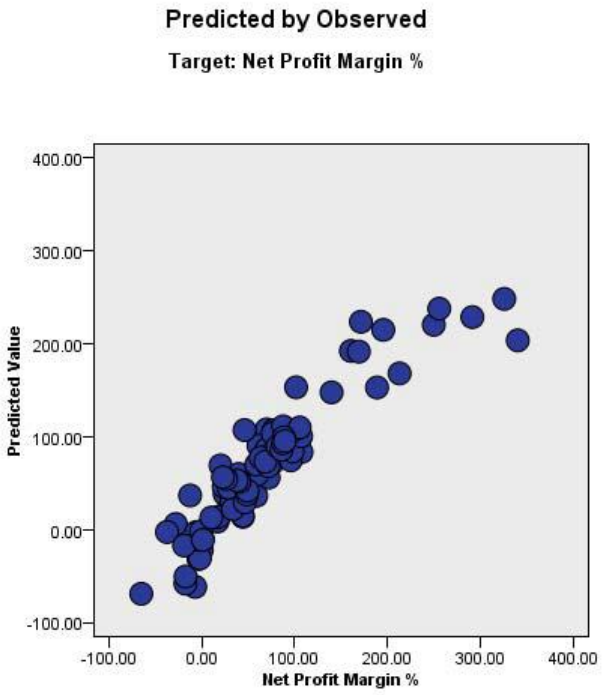

Figure 5.4: Figure visually indicating heteroscedasticity at an acceptable level for research and analysis purposes given the data available for the study

The data in Figure 5.4 indicate slight signs of heteroscedasticity as can be seen by the hand-drawn lines superimposed on the data. The lines diverge towards the end of the interpolation period. This may point to heteroscedasticity (unequal variances of error terms).

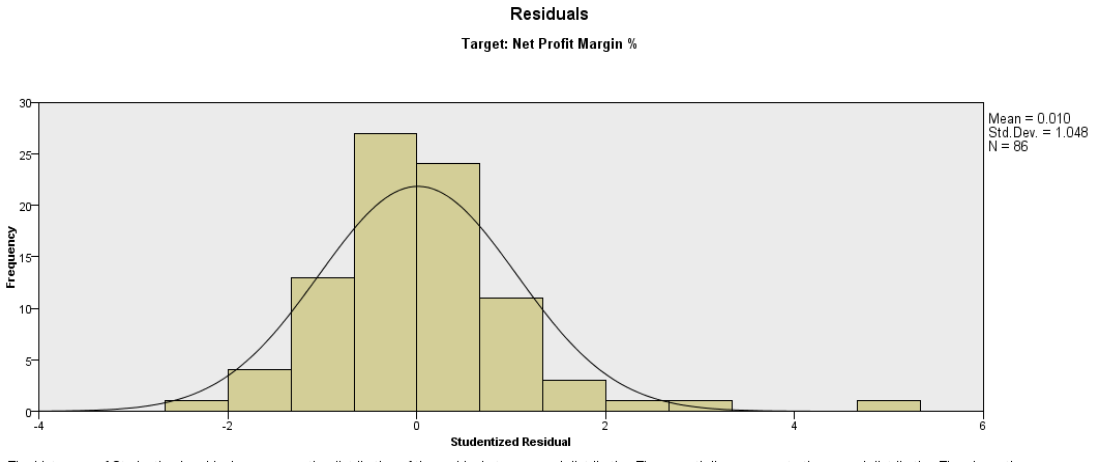

Figure 5.5: The bell distribution curve indicates the heteroscedasticity analysis

Figure 5.5 plots the standardised residuals of the net profit margin regression. As can be seen, the data fits a normal distribution quite well with the mean equals 0, but with some residuals laying more than 1 standard deviation unit from the mean.

The error term variance appears to be acceptable for purposes of this study by making use of the visual examination of the actual and predicted values. The Durban-Watson indicator given in Table 5.3 is 1.808, which is close enough to the generally accepted benchmark of 2, to assume that there is no serious autocorrelation. The adjusted R-squared (R^2 adjusted for degrees of freedom) for this test is 0.651, which gives the proportion of the total variation in the dependent variables explained by the explanatory variables. Table 5.3 represents the amount of correlation between the variables regressed, whereas Table 5.4 provides the output of the net profit regression. In Table 5.3, R-squared and adjusted R-squared represents the accuracy with which the actual data describes the predicted variables. Durban-Watson indicates autocorrelation in the data set.

Table 5.3: R-squared, adjusted R-squared, and Durban-Watson

R	R-squared	Adjusted R-squared	Durban-Watson
0.831	0.691	0.651	1.808

Table 5.4: OLS output data focusing on the t-value and the respective significances

Share price coefficients					
Model Term	Coeffieicent	Std. Error	t	Sig.	Importance
Intercept	-42,731	23,836	-1,793	0,077	
OperatingProfitMargin	0,803	0,049	16,337	0	0,8
DebttoAssets	-86,35	16,095	-5,365	0	0,086
Leveragefactor	14,143	3,638	3,888	0	0,045
ExchangeRandtoAustralianDollar	0,088	0,023	3,772	0	0,043
EarningsYield	-1,687	0,688	-2,454	0,16	0,018

According to Table 5.4, the operating profit margin is the dominant explanatory variable in explaining the variation, in net profit margin. Its significance is confirmed by its t-value of 16.33. Except for the price earnings ratio (PE), all other explanatory variables are also significant at a 5% level of significance. Only earnings yield and PE are not significant at a 1% level of significance (99% confidence level). The coefficients of the price-earnings variables are not statistically significant at conventional levels of significance.

It is important to note that the signs associated with the estimated coefficients all agree with the underlying theory. For instance, a positive relationship between the net and operating profit margins is expected, since the net profit is derived from the operating profit. Thus, any increase or decreases in operating profit margin will have a similar effect on the net profit margin.

The operating profit refers to gross income minus the operating expenses, where REITs have the biggest opportunity to cut costs and increase their operating net profit. Interest and taxes will be deducted after operating profit is determined, and should a REIT keep its leverage factor, the same interest and taxes will be the same in proportion to income, which limits the ability to manage costs and improve the net profit. Looking at operating profit especially in a property development perspective, it maximises profit, while providing positive returns to invested stakeholders. REIT management, investors, shareholders, and lenders may want to predict the net profit of a given REIT; this study shows that attention must be given to the management of the operating profit.

The dividend yield regression function below shows that NAVPS, the share price, debt-to-asset ratio, RoEIPD, and the prime rate are explanatory variables for the dividend yield. RoEIPD entails the return margin that SA REITs outperforms the all-share index annually.

$$Dividend\ yield_i = \alpha + \beta_1 NAVPS_i + \beta_2 Share\ price_i + \beta_3 Debts\ to\ assets_i + \beta_4 ROEminIPD_i + \beta_5 Prime\ rate_i + \varepsilon_i$$

The R^2 in this case is 0.911, which is a very high correlation. It means that 91.1% of the variation in dividend yield is explained by the independent variables included in the specification above. The adjusted R-squared is 0.998. It can therefore be assumed that forecasts made with this model will be reasonably accurate. This is significant, since it may influence decision-making of all parties involved in the real estate sector, namely, investors, management, lenders, credit agencies, insurance companies, and REIT management. The reported Durban-Watson statistic equals to 2.43, which indicates that autocorrelation is probably absent and that no patterns exist in the error term. Table 5.5 represents the accuracy with which the actual data describe the predicted variables in stating the R-squared and the mount of auto-correlation in the output.

Table 5.5: R-squared, adjusted R-squared, and Durban-Watson

R	R-squared	Adjusted R-squared	Durban-Watson
0.999	0.998	0.998	2.430

Figure 5.6 shows the independent variables that have the strongest correlation to dividend yield, that is, the factors with the most influence on the dividend yield.

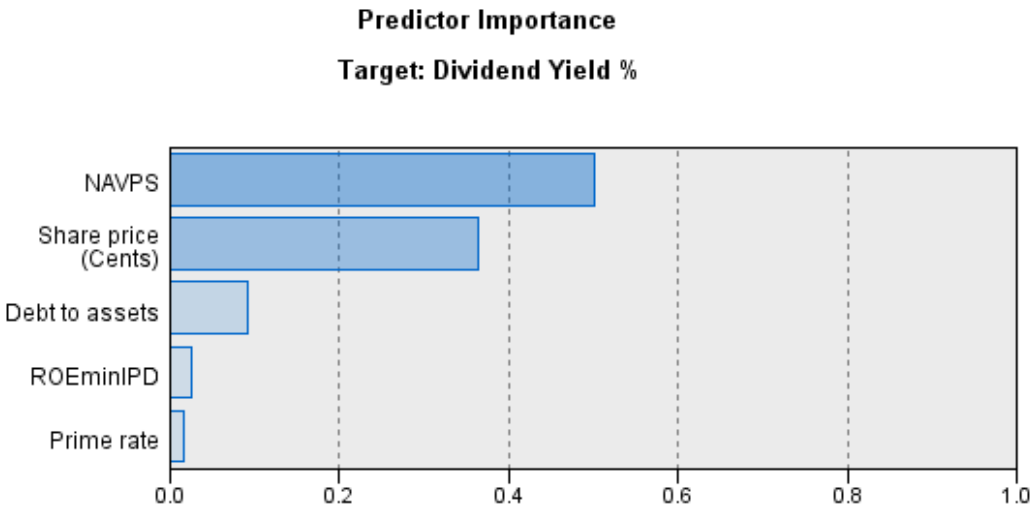

Figure 5.6: Predictor importance

As illustrated in Figure 5.6, two variables stand out in describing change in the regress – NAVPS at 50% and share price at 35%. The predictor importance for the other variables, although statistically significant, are 10% and below. They will therefore individually not contribute to the explanation of the variance in the dependent variable.

The t-values of the various explanatory variables (excluding the intercept) are highly significant at a 99% confidence level. However, only NAVPS and share price will be discussed in more detail. Figure 5.7 visually illustrates heteroscedasticity at an acceptable level for research and analysis purposes given the data available for the study.

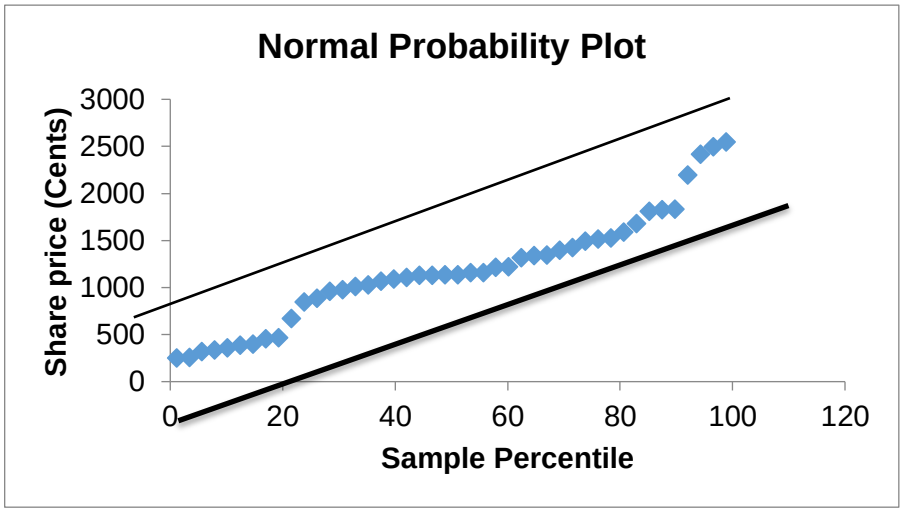

Figure 5.7: Normal Probability Plot

The bell distribution curve in Figure 5.8 indicates support for the acceptable heteroscedasticity analysis.

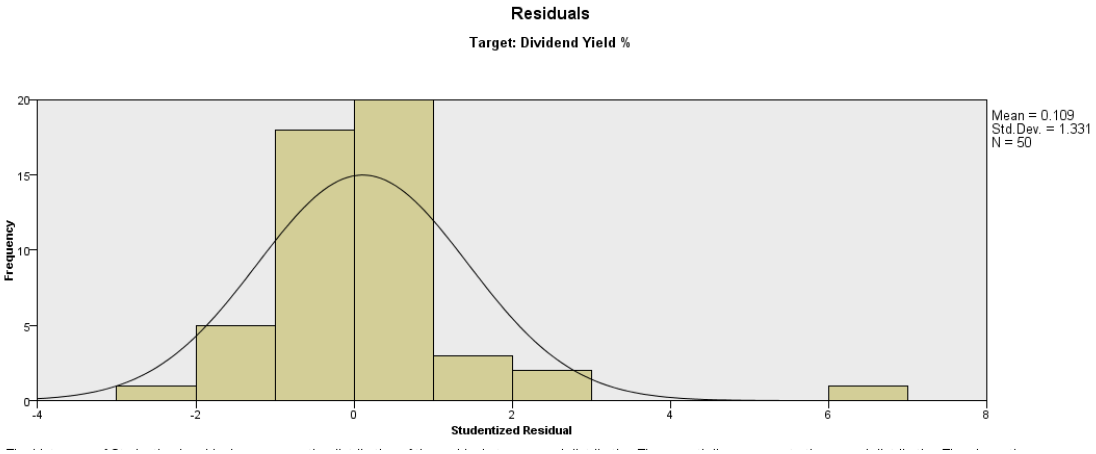

Figure 5.8: Residual bell distribution

Although the results obtained in Figure 5.8 appear plausible, the weaknesses inherent in the data should be emphasised again. The error term is unlikely to be normal with a large outlier in the data likely to influence the results obtained. Table 5.6 provides the OLS output focusing on the t-values and their respective significances.

Table 5.6: Coefficient output

Dividend yield coefficients					
Model Term	Coeffieicent	Std. Error	t	Sig.	Importance
Intercept	12,618	10,914	1,156	0,254	0
NAVPS	0,061	0,003	22,149	0	0,502
SharepriceCents	-0,055	0,003	-18,881	0	0,365
Debttoassets	93,389	9,836	9,494	0	0,092
ROEminIPD	-0,947	0,196	-4,971	0	0,025
Primerate	-3,654	0,0924	-3,955	0	0,016

An overall view of the information suggests that the intercept is not significant and all the independent variables are significant with at least a 99% level of significance (except for intercept). As stated earlier, in line with the predictor importance table, only the NAVPS and share price will be explained. The NAVPS in Table 5.6 has a t-value of 22.149, which is extremely significant, and it has a positive relationship with the dividend yield. The strong positive relationship suggests that if the dividend yield rises, the NAVPS also increases. REITs strive to increase their NAVPS because it is the only way to improve the company and grow it sustainably. SA REITs are obligated to derive 75% of their income from property either directly or indirectly, making large direct property investment the sole route to expand business operation. NAVPS refers to asset minus liabilities divided by the number of issued shares excluding preference shares. When REITs are forced to increase their asset base to satisfy the listing requirements, they increase their income because of lease agreements attached to the asset they invest in. Such an increase allows more funds to be made available for dividend distribution purposes.

Naturally, an increase in the dividends distributed will follow, not only to keep the shareholders content but also as another listing requirement that obligates SA REITs to pay out at least 75% of their distributable income to their shareholders. The leverage factor employed by the company can also increase the NAVPS, again making more funds available for dividend distributions.

The statistical results obtained in section 1.3 where a logistic model was fitted were generally disappointing. Of the 12 financial indicators acting as explanatory variables and modelled individually, only one (net profit margin) displayed a statistically significant Wald statistic with a p-value of 0.017. The odds ratios

revealed that 11 of the 12 financial ratios showed OR close to 1.0, indicating that unit changes in those variables did not affect the dependent variable (i.e. the REIT conversion date). The 12th variable, the debt-to-asset ratio, has an OR well below 1.

Based primarily on the significance values of the variables investigated in the logistic regression, three variables were selected to act as dependent variables, with some remaining financial indicators acting as independent variables in OLS regressions. These regressions provide acceptable – and expected – statistical results.

The purpose of the section is to expand the set of independent variables by including broad macro-economic data. The data set includes four economic data types (GDP, gold price, ZAR/AU Dollar exchange rate, and the ZAR/US Dollar exchange rate) and three financial indicators (dividend yield, RoEIPD, and leverage factor). As done before, logistic and least squares regressions are applied to the data set.

5.2 LOGISTIC REGRESSION ANALYSIS

The logistic regression output, where all independent variables were tested collectively against the RoEIPD, is presented in Table 5.7.

Table 5.7: Logistic output

	B	S.E.	Wald	do	Sig	Exp(B)
RoEIPD	-6.561	224.608	.001	1	.997	.001
GDP	.026	.522	.002	1	.961	1.026
Gold price	-.064	5.447	.000	1	.991	.938
Dividend yield	-3.993	51.605	.006	1	.938	.018
Exchange rate (Rand to AUD)	-28.233	454.367	.004	1	.950	.000
Leverage factor	35.846	1228.067	.001	1	.977	0.500
Exchange rate (Rand to USD)	8.817	115.626	.006	1	.939	0.537
Constant	-59470.615	1199435.952	.002	1	.960	.000

In the first test, all the independent variables were tested separately to the REIT conversion data, which yielded no substantial results. Applying a multivariate linear regression to the data set produces the statistics that follow. A satisfactory adjusted R^2 testing the overall goodness of fit was calculated in Table 5.8 with a value of 73.9%. This means that a combination of these variables plays a sizable role in explaining the variation in the dependent variable. Thus, the estimated Y variables are described by the historical recorded values with relatively high accuracy. A Durban-Watson statistic of 3.066 points to some serial correlation in the error term but not enough to invalidate the regression results. Table 5.8 provides information on the accuracy with which the actual data describes the predicted variables as well as the amount of auto-correlation.

Table 5.8: R-squared, adjusted R-squared, and Durban-Watson

R-squared	Adjusted R-squared	R	Durban-Watson
.776	.739	.881	3.066

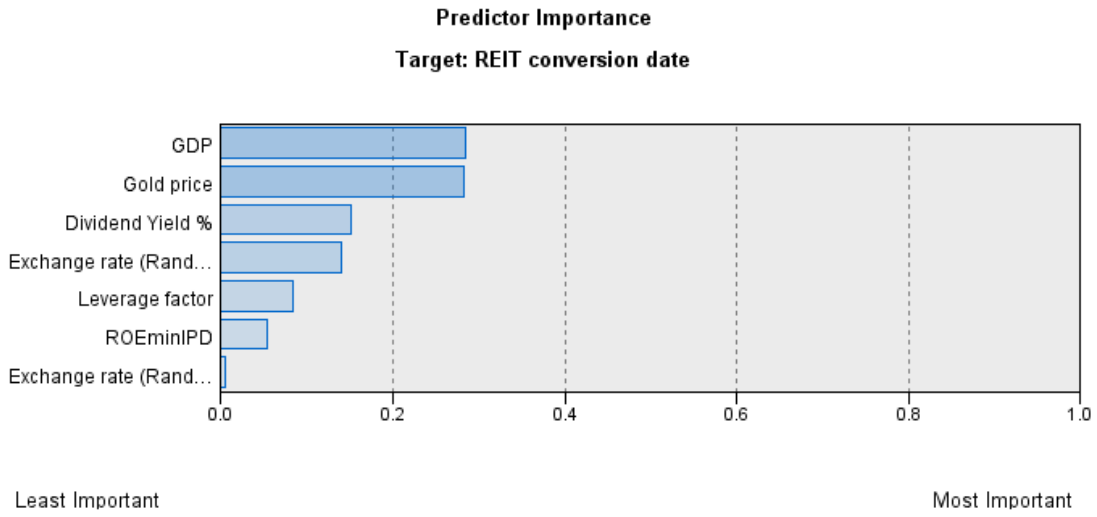

Figure 5.9: Predictor importance figure indicating the most significant factors of influence

As opposed to the previous models where a single variable dominated the predictor importance table, several factors here have a similar importance rating. In Figure 5.9, the contribution of five independent variables is located within a range 10% to 30%. This means that no single variable alone affected the change in the dependent variable but that a combination of variables over the period led to a REIT transition initiative. The gross domestic product and gold price have the highest importance rating, both being 30% where dividend yield and exchange rate between ZAR/AUD, leverage factor, and RoEIPD vary in importance from about 10% to 18%. These factors will be discussed next.

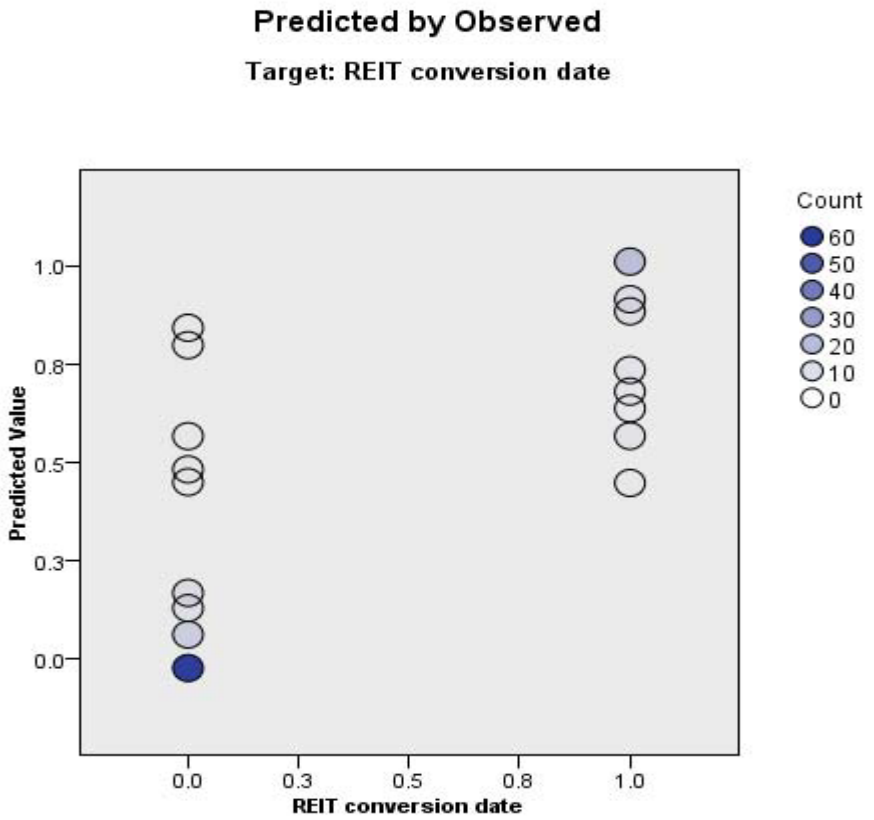

Figure 5.10: Logistic regression output – predicted variable plotted against the dependent variables

Visual data examination of the bell distribution curve shows some question as to the normality of the residual data. A logistic transformation regression induces some heteroscedasticity in data, but with a relatively large number of observations, as shown in Figure 5.10, the data does not appear to have heteroscedasticity. The Durban-Watson indicator for the model is 3.066. This indicates that the error term data is slightly positively correlated, with the benchmark being at 2. As a result, this can mean that there are trends or patterns in the data which this model has not picked up or identified. The bell distribution curve, in Figure 5.11, supports the decision to accept the level of heteroscedasticity, given the quality of information available. Table 5.9 provides the logistic regression output focusing on the t-values and the respective significances.

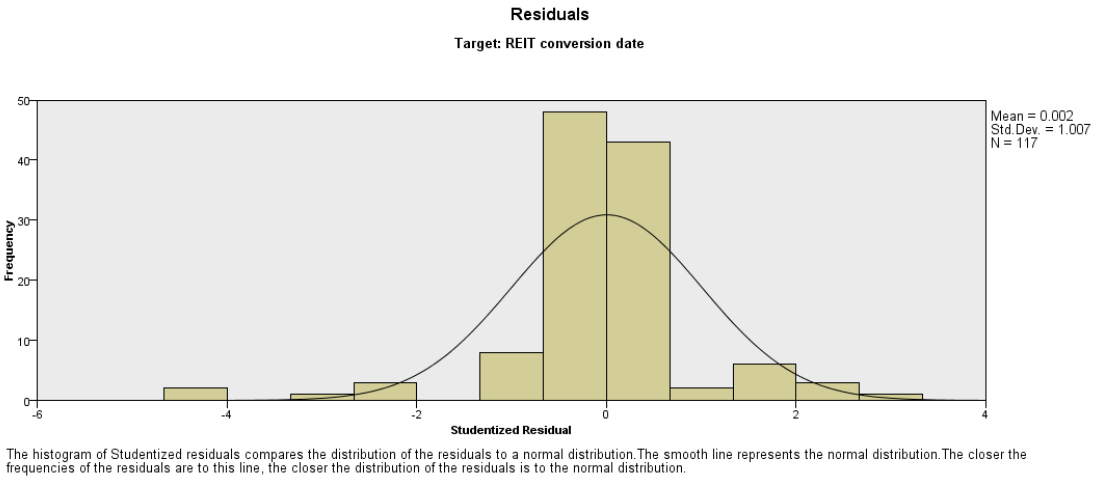

Figure 5.11: The bell distribution curve

Table 5.9: OLS output data focus on the t-value and the respective significances

REIT conversion date coefficients					
Model Term	Coeffieicent	Std. Error	t	Sig.	Importance
Intercept	-9,072	1,483	-6,121	0	0
GDP	0	0	4,846	0	0,285
Goldprice	0	0	-4,823	0	0,282
Dividendyield	-0,024	0,007	-3,528	0,001	0,151
ExchangeRandtoAustralianDollar	0,002	0,001	3,409	0,001	0,141
Leveragefactor	0,121	0,046	2,635	0,01	0,84
ROEminIPD	-0,008	0,004	-2,102	0,038	0,054

From the coefficient table, all variables except for the ZAR/USD exchange rate is statistically significant. It is important to note that the two most significant variables relating to REIT transition are economic-related as opposed to financial ratios. Both the GDP and the gold price in Table 5.9 is significant at a 99% level of confidence. The only variable that is not statistically significant is the ZAR/AUD variable. The positive relationship shown by the coefficient suggests that an increase in GDP contributes proportionally to the REIT conversion in South Africa. A growing GDP means that a country is producing more goods and services, creating more job opportunities, increasing savings and increasing capital formation. This will filter through to the JSE and into the listed property sector, confirming the positive relationship between REIT conversion and GDP.

The REIT structure implementation is focused on simplifying the shareholder daily operations, simplifying the shareholder buying and selling process together with making the minimum share buy-in of one share in any given REIT. Transparency for the private individual is another crucial factor; these factors enhance the share price of the companies, giving it more credibility and in a better position to obtain more attractive financing for future developments.

The gold price in Table 5.9 has a t-value of -4.823. This inverse relationship refers to a decline in the REIT conversion status if the gold price increases. The primary reason for the inverse relationship is because of opportunity cost. Gold is an alternative investment to investing in listed property companies. This suggests that if SA REITs adopt a more transparent, globally recognised operating structure, investors can feel more confident investing in the respective sector. Property companies are sustainable and aim for long-term growth, making them a substitute for gold. Gold is seen as a long-term capital appreciation investment; hence, if listed property becomes more attractive, long-term investors may decide to change the vehicle for their long-term strategy.

The dividend yield has a t-value negative 3.528 at a 99% level of confidence. The inverse relationship refers to the independent variable decreasing, since the REIT status has been brought into effect. As stated earlier, the yield is expressed as a percentage, meaning the divided for the fiscal year is divided by the share price. This is crucial because a new, improved and more transparent company structure is employed. Shareholders, both individuals and institutional investors, could have started investing more regularly in various REITs, thus increasing share activity of the SA REITs. Increased activity in the shares or increased investment in the SA REITs will naturally cause a rise in the share price. The listing requirements obligate the REITs to distribute more dividends than previously, but the share price per this regression analysis has increased at a more significant rate than that of dividend distributions, resulting in a decrease in the dividend yield expressed as a percentage.

Another plausible explanation can be that, while the share price increased moderately, the dividend distributions also remained the same regardless of the listing obligations, but the listed REITs could not expand their portfolios at the same

rate as that of the share price. The lack of asset expansion limits the ability of REITs to distribute more dividends, and as a result, the yields as a percentage would have decreased after the REIT conversion.

The exchange rate (ZAR/USD) had a t-value of 3.409, which is significant at a 99% confidence level. The relationship to the regressed is positive, illustrating a weakening of the South African Rand relative to the Australian Dollar. It must be said that during data collection, the largest SA REIT had a massive portfolio in Australia. The exchange rate could have had a demonstrative effect on its portfolio. The implementation of the REIT structure could have added favourable credibility for the listed property sector, the JSE, as well as the country. It can convey a message of maturity, transparency, and be globally updated. An “open for business sign” is put up, so to speak, strengthening the local financial market and providing confidence for investors who want to purchase South African currency. The portfolio expansion of several smaller SA REITs also extended in Australia specifically with very little or no investment in the United States or the United Kingdom during the data sample period, explaining why these exchange rates played such a predominant role.

For the following independent variable, the listing requirements for a given SA REIT might have played the most decisive role in explaining its significance. The leverage factor, also known as the loan-to-value ratio, refers to the ratio of the assets and total debt of the company. The t-value for the leverage factor is 2.635 with a positive correlation. This variable is significant at a 95% confidence level. The listing requirement of the JSE obligates any registered REIT to keep its total debt below 60% of its total asset value. The positive correlation suggests that the leverage factor increased when the REIT status was introduced. A possible scenario can be in the smaller REITs in the data sample. Such REITs would want to expand aggressively, which means increasing the debt level of the company. The latest requirements allow them to be quite aggressive in their approaches with a maximum of 60% loan-to-value ratio. It can also be that because of the minimum listing asset value of only R300 million, numerous REITs were listed since the REIT status had been introduced. New REITs generally have a higher loan-to-value ratio than REITs that have matured over a certain period. This theory is supported by the data

collected in Chapter 4 of this study where it was clear that the novice REITs are highly leveraged as opposed to older REITs. This hostile approach makes sense because a quality asset base improves the cost of capital and the shareholder quality of a REIT regarding institutional investors.

The penultimate independent variable that adds significance to the change from PLSs and PUTs to REIT status is RoEminIDP. This data variable entails the return on equity minus the overall return index of the SA REIT sector. What this variable suggests is the period where a given REIT outperformed the SA REIT market. The t-value of the independent variable is negative 2.102, thus referring to this variable as being significant at a 95% confidence level. The relationship between the regressand and the independent is negative, which suggests that the average REIT outperforming the overall SA REIT market has decreased since inception of the REIT structure. A plausible explanation for this scenario is that the entire REIT market has improved in terms of equity base and return via dividend and capital appreciation, making it more difficult for any given REIT to perform better than the market. Investment strategies of the companies might have changed since this REIT transition in terms of not acquiring more and more properties to increase the asset base but acquiring quality high-yielding properties. This will help REITs to not only keep up with the market but possibly to outperform it as well. Real estate types also come into play in terms of the cycle they are in currently.

5.3 CONCLUSION

Various econometric models were applied to a data sample that was comprised of financial ratio obtained from the 13 largest SA REITs and several economic indicators of South Africa. The first logistic regression model tested the REIT conversion data against each independent variable separately. The intention was to determine whether any individual financial variable had a significant effect on the decision to execute a REIT conversion. The results showed that none of the independent variables in isolation had a significant effect on such a conversion of the listed real estate sector. Every correlation analysis starts with the R-squared, indicating the direction and strength of the correlation between two variables. All independent variables had an R-squared of 0. This means there is no correlation between the dependent and independent variables. There is no need to investigate

the strength and direction of the independent variables further. A lack of significance means there is no need to investigate the usefulness of each model and reject the independent variables at a 95% level of significance.

The second test made use of OLS to determine what variables affect certain key SA REIT indicators, which acted as the regressand or dependent in each test. The independent variables were selected indicators from those used in the logit analysis. The share price was first used as the regressand. NAVPS, dividend yield, and the exchange rate of Rand to Pond had the highest R-squared in relation to the dependent variable. These independent variables are significant at a 95% confidence level because all had a significance value of less than 0.05 or a t-value greater than 2 or less than -2. The regression model is useful. REITs strive to increase their NAVPS because it is the only way for shareholders to see that the company is progressing and expanding the business operations, which is why share price is so highly dependent on this indicator.

The next OLS had the net operating profit as the dependent variable. The results reveal that the dominant influence in the data sample was operating profit margin. It had the highest R-squared by some margin at 80% correlation with the regressand. This implied a regression analysis to determine a useful model. This independent variable proved significant at a 95% confidence level, with a t-value of positive 16.34 and the p-statistic being less than 0.05.

The foregoing makes sense because the net profit is derived from the operating profit margin. Even more, much significance is placed on the operating profit because it represents the biggest opportunity for any given REIT to cut costs apart from negotiating a proposed acquisition. This can suggest that the operating expense ratio can be a significant indicator of the net profit so that the leverage factor of the company stays the same; thus, interest payments will increase proportionally. Dividend yield was also a regressand in the regression model. The results found that the NAVPS and the share price had the most considerable influence on the dividend yield. The data sample measured dividend yield as a percentage of the share price. In this case, the NAVPS correlated positively and the share price negatively when changes occurred to the dividend yield. The NAVPS increased due to the expansion of the portfolio and this entailed the increase in the

company's profit, making the dividend yield increase. Should the share price remain stable or increase at a lower rate, the asset increases. The share price is inversely related to the dividend yield because the dependent is expressed as a percentage of the share price. It makes sense that if the share price increases and the dividend distribution remains constant or improves, a more stable rate dividend yield will decrease.

In the final model of the chapter, an ordinary least squares regression model in explaining the REIT conversion was considered. The data set included four economic data (GDP, gold price, ZAR/AUD Dollar exchange rate, and the ZAR/USD exchange rate) and three financial indicators (dividend yield, RoEIPD, and leverage factor). The variables mentioned above all had an R-squared of more than 93.8%. This means that all are significantly correlated to the dependent variable on a superficial level; hence, an in-depth logistic and regression output is calculated. All the t-values of the independent variables were above 2 or below -2, or alternatively all the variables prove significant in having t-statistics less than 0.05. This results in the overall usefulness of the OLS model.

The results show that although neither variable in isolation using logistic regression had any significant effect, the variables combined were relatively successful in explaining the REIT conversion decision. There was no real individual variable that dominated the importance predictor table. The sum five variables ranged from between 8% and 30%, with t-value of 95% and 99% level of confidence respectively. Most dominant of the independents were the GDP and gold price. A probable explanation of the GDP can be because the country grew faster and became more competitive on a global scale that the attractiveness of converting to REIT status became more attractive. Investors take an interest in well-performing emerging markets, which calls for a transparent and easy structure to access the financial markets, in this case, the listed property sector. All the variables except for the ZAR/USD indicated the expected relationship towards the dependent variable.

The gold price had an inverse relationship to the REIT conversion. A plausible explanation is the status of gold (physical gold and gold-producing companies) as an alternative investment vehicle when the gold price rises. Other variables that influence the REIT conversion is the leverage factor or the loan-to-value ratio, the

exchange rate Rand to Australian Dollar, and the RoEIPD. These variables were probably also affected by external factors such as the listing requirements imposed by the JSE for REITs. Requirements such as the minimum dividend distribution of 75%, maximum leverage of 60%, or the minimum listing asset value all influenced the companies in the data sample. Nevertheless, the model provides a good indication of other factors that were possibly significant to the REIT conversion and which can be used as predictions and future interpretations for countries also considering adopting the international REIT structure.

The chapter that follows will conclude the study.

CHAPTER 6: CONCLUSION AND SUMMARY

6.1 INTRODUCTION

The penultimate chapter discussed the regression analysed used in the study. This final chapter will conclude the study and also provide a summary of the findings of this study.

6.2 SUMMARY OF FINDINGS

An international company structure, the REIT structure, specifically orientated towards the listed property sector on the JSE, was implemented in South Africa in 2012. This structure replaced PLSs and PUTs with the goal of creating a more user-friendly, transparent, and effective investment environment for shareholders and investors alike. The REIT structure allows private shareholders to invest in listed property by purchasing a single share in any given listed property company, providing the option for any individual or institutional company to obtain ownership of quality commercial property indirectly.

Financial ratios and statistical models were used to measure the change that occurred with regard to shareholder and debt structures of SA's 13 largest REITs based on asset value. These SA REITs represent more than 92% of the entire listed property sector, making the data ideal for identifying trends and analysing company behaviour. Along with converting to REIT status, the structure has several requirements that will affect the daily operations of REITs, such as the loan-to-value ratio cannot exceed 60%, REITs must distribute at least 75% of their distributable income, and the company must generate at least 75% of its income via direct or indirect property investments, among others. Listed property companies, for example, that were highly leveraged with the intention of aggressively expanding their portfolio will now be limited in their borrowing capabilities. These listing requirements are reiterated because they undoubtedly had an influence on several financial ratios post-REIT transition, which will affect the company's management decision-making and rate of expansion ability.

The first sub-problem of this study questioned the shareholder changes in SA REITs. This section made a clear distinction between international, local,

institutional, and private shareholding. Making this distinction can explain company conditions regarding stability in operations and long-term sustainability, thus being able to deliver long-term returns to major shareholders. A major shareholder in a company is one that owns more than 1% of the given company. While not directly related to shareholding, the change in return on equity of the sample SA REITs was measured over a period of 10 years. These results indicated an increase in the return on equity, which will undoubtedly be noted by any proposed or current shareholder. The increase of 2% can be viewed as moderate for the period of analysis but positive, nonetheless. The return indicator can be investigated coherently with the dividend yield. Dividend yield increased by 192% over the sample period for the SA REITs in question. An enormous rise in earnings from the shareholder's perspective, this could prove instrumental, especially in institutional ownership. The dividend yield is expressed as a percentage of the share price, which means that the dividend growth exceeded the natural market share price escalations. A possible relation can be attributed to tremendous dividend growth over the 10-year period and the international shareholding across the company sample. Institutional shareholding remained the same throughout the sample period. The primary problem is, however, whether international shareholding has improved since the inception of the REIT structure. As opposed to institutional shareholding, international equity in the company sample increased exponentially, with the average international shareholding per company at 452 657 in 2005 or, since the inception of the latest SA REIT, at 50 215 073 shares per company as of 2015.

Why is it necessary to mention the aforementioned financial ratio changes? The international holding in SA REITs has increased exponentially. These financial ratios, which reflect performance and stability, could have influenced foreign investors' decision-making. The shareholder structure of SA REITs has indeed internationalised, regardless of the reasons for the change. This study does not include other local and global events, such as the 2008 financial meltdown, which could also have played a significant role in offshore investors seeking refuge in emerging markets and still delivering sound returns when compared to the rest of the world. It can, though, be safely concluded that the REIT conversion may have been one factor that influenced this increase in international representation, as it

occurred in the middle of the sample period. There is thus sufficient evidence to suggest that international shareholding has increased; hence, the null hypothesis of sub-problem 1 is rejected.

The study attempted to determine how SA REITs have diversified internationally by means of their portfolio expansions relating specifically to the company structures. The results reflect in part on the management of the SA REITs and their decision to invest offshore as opposed to the investment decision of external international investors was to buy South African shares. The results can be divided into those who made use of subsidiaries, associates, and joint ventures and those who did not. The company sample enlarged even further to 16 companies for a more comprehensive analysis. The top 50% of the companies, those with the largest asset values, did make use of joint ventures, associates, and subsidiaries. These are also the companies that made headway in terms of investing offshore. The companies that did not implement such company structures did not attempt international investment in property either directly or indirectly. It must be mentioned that of the 50% that did invest offshore, only the four largest REITs on the JSE aggressively expanded their portfolios globally. Given these statistics, the null hypothesis of sub-problem 2 is not rejected. There is not sufficient evidence from the sample to infer that the listing property sector of South Africa has diversified its portfolios internationally since the REIT transition.

A quarter of the REIT sample diversified in the foregoing respect, which can indicate several conclusions. First, this quarter represents the largest REITs, and because of the deteriorating South African Rand, they may have more funds available to execute financially viable offshore investments. Secondly, these companies possibly saw a hedging opportunity that their competitors did not utilise. How the top REITs timed the market could have been a significant factor in this respect. Executive management insight and forecasting could have been the difference in investment strategies. Thirdly, other smaller SA REITs are not concerned about hedging to a currency but rather focus on their local portfolio expansion. These results suggested the REIT status conversion did not yield significant international diversification. The conclusion can be made that the global expansion of those companies is more related to money market situations, economic conditions,

executive management experience and decision-making, and hedging benefits than the REIT status implementation specifically.

It is fundamental that SA REITs investigate their debt structure, as this will be made public. Shareholders, lenders, and investors all find significance in these figures because they represent sustainability and diligent management as well as efforts to effectively use loans to increase portfolios while minimising interest expense and increasing returns. Financial leverage, asset growth, and the weighted average cost of capital form the primary focus of this section, headlining the financial positions of the REITs. There are several other financial indicators, but these are considered essential for this study. The loan-to-value ratio decreased on average by 19% per company, resulting in a 35% total debt to total assets reduction across the data sample. The REIT listing requirements limit the loan-to-value ratio to 60% of the total assets of any given REIT. Interestingly, given the ability to obtain high loan-to-value ratios, the industry average is merely half of the prerequisite. This may imply that companies do not only use loans or borrowed capital strictly in conjunction with cash; they also make use of share capital – promising shareholders forward yields and in return providing a dividend and capital appreciation of their shares. Several factors can influence the reduced loan-to-value ratio, such as a management decision to lower the financial risk of the company, but it can be concluded that the REIT conversion is possibly one of the factors relating to the change in this ratio. As previously stated, the listing prerequisites are skewing the results.

The cost of capital is calculated using the forward yield of equity capital and the cost of debt or borrowed funds. A decrease of 1.35% in the WACC occurred during the sample period. Global interest rates are very low as opposed to South African interest rates. The companies that did invest in the UK, Germany, and Australia obtained financing at discounts. These discounts are reflected in the decrease in WACC. Internationalisation of portfolios includes 50% of the sample, meaning that the reductions in WACC are due to other factors. The proportion of the change can be ascribed to the largest companies investing abroad. There is insufficient evidence to suggest that significant capital structure changes occurred due to internationalisation of SA REIT portfolios; hence, the null hypothesis of sub-problem 3 is not rejected.

International investments most likely would have made use of borrowed funds from interest rates that are lower than those of South Africa. These interest rates would have been considered proportionally together with local cost of capital, thus reducing the overall WACC. Offshore investments could be responsible for a percentage of the change in the WACC. REITs could have achieved more favourable forward yields from their shareholders, or the variation could have related to increasing economies of scales as the companies grow. REITs grow their asset bases, continuously improving the quality of their portfolio. Lenders would be more competitive with their interest rates if they feel more comfortable with the borrowers in terms of size and rating of the portfolio. During the sample period, the repo rate – or the rate at which the Reserve Bank lends to other banks – also decreased towards the end of the period. This resulted in a prime rate reduction and certainly affected the decrease in the overall listed property WACC. Management from SA REITs could have realised or may have been advised that the cost of borrowed funds decreases as the loan term shortens. They might have engaged in medium- or short-term debt agreements, meaning short- to medium-term debt notes. Several factors had a considerable influence on the WACC, but the respective decrease could indicate international diversification to an extent.

The econometric tests are related to the given sub-problems. The tests make use of econometric tools to measure change in certain financial ratios, dividend yield, net operating profit, and the share price change over the same sample period. Share price is tremendously affected by the net asset value per share or NAVPS, which makes sense because the primary method for REITs to illustrate growth in daily operation is to increase its asset base and thereby increase its NAVPS. Net operating profit is directly affected by the gross operating profit, which also demarcates the fact that operating expenses ultimately have a profound effect on a REIT's net profit and therefore the earnings attributed to the shareholders. The reason for regressing these financial indicators is to show that the investment decision does affect a company's share price, NAVPS, and dividend yield. These regressions prove that investment internationally or locally affects companies on a financial level. It shows that investment and diversification play a role in performance, which relates directly to the primary problem of international investment after a universal company format was adopted.

The factors that prove significant to the conversion are all investment-related. This ties in with the primary problem concerned with international investment. The REIT conversion data was first tested on each data set individually to see whether any financial and economic indicators played a leading role in the conversion process. The results concluded strongly that no individual indicators had any significant effect on the decision to convert to REIT status or its implementation. The same experiment was executed, but this time the REIT conversion data was tested on the entire data set as a collective. The results indicate that several independent variables as a combination could have had a significant effect on the decision to transition to the REIT structure. As previously stated, the results show that other factors could also have led to the transition.

Nevertheless, the factors that the model indicate as having influenced the conversion include gross domestic product, gold price, leverage factor, exchange rate between the Rand and the Australian Dollar, and the dividend yield respectively. International investors may have noticed that South Africa as an emerging market is growing its GDP and thus becoming increasingly competitive on a global scale, making it a sound investment destination. However, because of the confusion and lack of transparency with the old structures, a modern internationally recognised structure would have been the sensible choice for the listed property sector of South Africa. Gold is an alternative investment class to real estate and is generally considered to run on fear, a very passive investment. This explains why gold has an inverse relationship to the transition which made real estate a more attractive investment in terms of how it used to operate. Shareholders can expect a higher forward yield, forcing management to produce more attractive dividend yields year on year. Management could evoke higher dividends regardless of the REIT conversion which must be taken into consideration.

There is insufficient evidence to infer that SA REITs have diversified internationally since the transition from PLSs to REITs. This conclusion is based on the sub-problems for hypotheses 2 and 3 not being rejected. This means that the company and capital structure does not have enough evidence to prove that a real change has occurred. The rejection of sub-problem 1 alone cannot be used to support the primary problem. The regression analysis indicated several factors that could have

implemented a transition based on asset attractiveness, but it does not explain the whole or a significant part of the transition from PUTs and PLSs to REITs to support the primary hypothesis that property has become a more attractive investment option. Consequently, the primary hypothesis is not rejected, meaning that SA REITs have not diversified internationally as a sector since the REIT conversion took place.

Future research into this the diverse world of listed real estate, is possible with various areas of specialization. As mentioned before, the lack of access to contributing information remains internal to the sample firms and is usually confidential on nature upon which accurate conclusion is entirely dependent on. The channel is created for company specific research, where sensitive information I s available.

6.3 FINAL REMARKS

On a final note, the data used to calculate numerous of the tests were lacking, especially earlier in the sample period. This could have skewed several of the conclusions to an extent; nevertheless, the best interpretation was made given the data available. More complete and accurate data pave the way for future investigation into the field of property investment. What was the international effect of converting from PLSs and PUTs to REITs on South Africa's listed property industry? The study found several indications that the listed property market is making advances into diversifying globally, as can be seen by the international shareholding and company structure analysis. No conclusive evidence was found, however, that the transition has drastically internationalised the SA REIT sector. This fact is underpinned by a tremendous lack of data in this field and global incidences and phenomena not considered by this study.

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