AN INVESTIGATION INTO THE ROLE REAL ESTATE INVESTMENT PLAYS IN DIVERSIFYING PORTFOLIOS OF INSTITUTIONAL INVESTORS IN NAMIBIA.

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MUKWA MAGUBBWI KAWESHA

STUDENT NUMBER - 200846086

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Supervisor: Professor Heikki Heino

ABSTRACT

This research study investigated the role real estate investment plays in diversifying portfolios of institutional investors in Namibia. The study was encouraged by the fact that real estate investment in portfolios of most institutional investors in Namibia is low, despite existing research studies having reliably reported attractive risk-return attributes that would suggest much higher allocations. The research design applied both the qualitative and the quantitative research approaches to collect both primary and secondary data. The interviews and the questionnaire were used as the main data-gathering instruments for the research. The relationship between the returns of real estate investment and returns of equity, bonds and cash were analyzed to ascertain diversification.

The main findings of the research revealed that there were low negative correlation coefficients of real estate returns with the returns of bonds and cash. This therefore suggests that real estate could play the role of an effective diversifier by lowering volatility and boost returns for a given level of risk of the portfolios of institutional investors in Namibia. Statically, correlation coefficient results of the returns of real estate with other asset classes over the period 2007 to 2012 showed that there was a negative correlation coefficient of -0.014 between the returns of real estate with those of bonds and a -0.57 correlation coefficient between the returns of real estate and those of cash. However a positive correlation of 0.8% between the returns of real estate and those of equity was observed, suggesting that the diversification benefits between the two assets' returns was there but minimal. The main conclusion drawn from the study is that correlation coefficient results suggested that there was very

little diversification benefits that real estate provided to portfolios of institutional investors in Namibia over the period 2007 to 2012, although no correlations were closer to -1 all were below 1 with some showing negative readings, indicating diversification potential for investing in real estate.

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CAPM - Capital Asset Pricing Model

REITs - Real Estate Investment Trusts

NSX - Namibia stock Exchange

JSE - Johannesburg Stock Exchange

MPT- Modern Portfolio Theory

OECD - Organization for Economic Co-operation and Development

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Finally a special thank you goes to my family especially my husband Edward Kawesha who's been so supportive throughout my studies.

DECLARATION

I, Mukwa Magubbwi Kawesha, declare hereby that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree in any institution of higher education.

Signature: ..... Date: 29th July 2015

Mukwa Magubbwi Kawesha.

1 INTRODUCTION

1.1 Introductory background to the research

This chapter introduces the research study by briefly looking at what the study intends to investigate. The chapter will review the statement of the problem, objectives of the study, significance of the study and limitations.

1.2 Orientation of the proposed study

The role of real estate in portfolios of institutional investors such as insurance companies, endowment funds and pension funds has received considerable attention in recent years. This is due to the fact that real estate has developed into a key asset class that plays an important role in portfolios of many investors. It is one component that has become a major part of portfolio management of any personal or institutional investor's portfolio. According to Fabozzi and Markowitz (2011, p. 44) "Real estate is not an alternative to stocks and bonds it is a fundamental asset class that should be included within every diversified portfolio". Just as important, is the appropriate allocation of institutional investors' funds to real estate investment as it influences the performance of portfolios. "Specifically allocating a portion of investment to a long term investment in commercial real estate can help diversify a portfolio of stocks and bonds and smooth risk" Inland Real Estate Investment Corporation (2012, p. 3). Even though the existing research studies have reliably reported attractive risk-return attributes that would suggest much higher allocations to real estate, in Namibia real estate investment makes up a relatively low fraction of most institutional investors' portfolios, According to the Bank of Namibia (2013, p.36)

real estate investment in asset allocation of unit trusts, investment managers and pension funds in December 2012 was 0.8%.

The focus of this study was on the role real estate investment plays in diversifying portfolios of institutional investors in Namibia with particular reference to the strategies used in allocating funds to real estate investment. Topics particularly tackled in this research study include percentage allocation to real estate in a portfolio, portfolio diversification techniques and strategies, returns and risks, reasons for investing in real estate and factors influencing real estate asset allocation decision. The aim of this research study was to find out the role real estate investment plays in the portfolios of institutional investors in Namibia. The main objective was to investigate the strategies institutional investors use in allocating their funds to real estate investment so as to determine what contribution such strategies make in enhancing diversification benefits. The low percentages allocated to real estate investment among institutional investors in Namibia was investigated so as to establish if this may have been costing institutional investors the opportunity to experience the benefits of portfolio diversification.

According to the Economy Watch (2009, p.2) "Real estate investment involves the commitment of funds to property with an aim to generate income through rental or lease and to achieve capital appreciation". Real estate investment has become an attractive investment option for both personal and institutional investors with the latter paying more attention to this class of investment due to its favorable attributes. Hudson-Wilson (2000, p.3) sees the reasons for real

estate investment as "to reduce the overall risk of the portfolio by combining asset classes, achieve higher absolute return and to hedge against unexpected inflation".

Real estate investment has become one of the key strategies some institutional investors use for diversification purposes following unprecedented market unpredictability over the past years. According to RREEF Real Estate (2012,p.2) "Investors large and small learned the same painful lesson during the 2008 crisis: simply selecting a large number of assets doesn't protect against falling markets when their results turn out to be highly correlated". The RREEF Real Estate (2012, p. 2) goes on to say "What matters instead is adding investments that can be counted on to react differently to economic shocks. Because commercial real estate follows its own unique cycles of investment and leasing, it can add potential diversification to a traditional portfolio of stocks and bonds".

However, despite all the favorable attributes real estate is believed to offer to investors and calls for increased allocation to real estate on portfolios of investors, the allocation of funds to this class of investment by institutional investors in Namibia has remained relatively low. According to the International Monetary Fund (2008, P. 19) asset allocation to real estate by Namibian fund managers in 2005 was 0.4%. The allocations to real estate have not changed much over the years, as the Bank of Namibia (2013, p.36) reported that real estate investment in asset allocation of unit trusts, investment managers and pension funds in December 2012 was 0.8%.

This may demonstrate that investment managers in most institutions in Namibia do not recognize the benefits real estate investment offers. According to the OECD report (2013, p. 32) "fund asset allocation by institutional investors in Namibia is mostly structured as follows; shares 57%, bill and bonds 22%, cash and deposits 12% and others at 9%." Most institutional investors have continued to under allocate to real estate investment. Mackinnon (2007, p.1) believes that "This points to the possibility that institutional investors are missing out on potential improvements in portfolio performance by under–allocating to real estate."

1.3 Statement of the problem

Real estate investment as a percentage of total investment portfolios among institutional investors in Namibia is low, a case which may be costing institutional investors the opportunity to experience the diversification benefits of mixed asset portfolios. This raises questions as to what role real estate investment plays in portfolio diversification of institutional investors in Namibia. This research therefore endeavors to investigate the role real estate investment plays in diversifying portfolios of institutional investors with particular reference to the strategies used in allocating funds to real estate investment.

1.4 Objectives

The objectives of this research will be to assess the returns and risks of mixed-asset portfolios, to establish the role real estate investment plays in portfolios of institutional investors in Namibia, to investigate the strategies institutional

investors use in allocating their funds to real estate investment, to assess why real estate investment among institutional investors in Namibia is low, to analyze how the macroeconomic environment influences real estate investment in portfolios of institutional investors, and lastly to examine how institutional investors in Namibia perceive risk in real estate investment.

1.5 Significance of the study

The purpose of this research was to come up with information that would illustrate the role real estate investment plays in portfolios of institutional investors in Namibia. The researcher envisages that the findings of the research and recommendations that have been made will provide relevant information that will help institutional investors in Namibia to evaluate whether to include real estate investment in their portfolios and if so what percentage of their total portfolios to allocate to real estate investment.

1.6 Limitations of the study

This research targeted and was limited to 13 institutional investors that are based in Windhoek only. However, most of the pension funds and insurance companies in Namibia have outsourced their portfolios to asset management firms. This initially proved a bit difficult for the researcher to go ahead with data collection. Nevertheless, some of the targeted pension funds and insurance companies referred the researcher to asset management funds that were managing their portfolios. The researcher managed to gather all the necessary data and

information that was required for the research study. Time constraint and resources was another constraint during this study.

1.7 Structure of the study

The rest of the research study is structured as follows: Chapter 2 looks at the studies that have been done by other academics, Chapter 3 looks at the methodology that was used in this study, Chapter 4 outlines the analysis of the findings, Chapter 5 looks at the discussion following the analysis of the results and Chapter 6 looks at the conclusion and recommendations that were made thereafter.

2 LITERATURE REVIEW

2.1 Introduction

In the context of this study, a literature review of the empirical work and theory on the role of real estate in diversifying portfolios of institutional investors was provided. Key concepts such as diversification, returns and risk, inflation hedging, modern portfolio theory and the lack of reliable valuation data were analysed and related to the research study.

There is quite a wide range of literature on real estate investment. Most of this literature is not necessarily tailored to the case for Namibia, but is general literature on the role of real estate investment in mixed asset portfolios across the world. The question of incorporating real estate into portfolios of institutional investors and the role it should play thereafter has been an important research topic for years. Another important part of literature in this topic has been the appropriate allocation of institutional investors' funds to real estate investment as it influences the performance of portfolios. In this context of study, four related bodies of empirical literature are reviewed. These include the types of exposure to real estate investment which can be in form of either direct or indirect investment, optimal allocation of institutional investors' funds to real estate investment is reviewed, Portfolio diversification strategies, Investment characteristics of real estate and lastly risk and return of mixed asset portfolios.

2.2 Direct and indirect investment of real estate

Investors can structure their exposure towards real estate in many different ways. Vision focus (2011, p. 3) states that "How institutional investors choose to gain exposure to real estate will depend on their risk appetite, their preferred structure and what levels of involvement they want in the properties in which they invest." Real estate investment can be in form of either direct investment or indirect investment. Research studies have tried to explain how the two forms of investment namely direct real estate investment and indirect real estate investment differ from each other.

Direct real estate investment is the holding of commercial properties whereby an investor directly purchases, owns or controls the real estate investment which is in the form of residential housing, industrial buildings, shopping malls and many others. Stammers (2012, p. 2) says "This strategy relates to investors directly selecting specific properties. The great advantage in this strategy is control. Direct ownership in property allows for the development and execution of strategy and direct influence over return." The other form of exposure to real estate is through indirect investment. Indirect real estate investment is described as a fractional ownership of real estate investment. The three major types of indirect real estate investment include limited partnerships, real estate investment trusts and mortgage backed securities. Investopedia staff (2012, p.3) state that "As an alternative to a direct property purchase, individuals can invest in the real estate market through real estate investment trusts, or REITs. REITs sell like stocks on the major exchanges, and they invest directly in real estate through

properties or mortgages." According to Brown & Kelly (2002, p. 88) "A real estate investment trust is an investment fund designed to invest in various real estate properties. It is similar to a stock or bond mutual fund, except that the money provided by the investors is invested in property and buildings rather than in stocks and bonds."

Differences have been noted between direct real estate investment and indirect real estate investment. Stammers (2012, p. 2) says "REIT investments have a much higher correlation to the overall stock market than direct real estate investments, which leads some to downplay their diversification abilities. Volatility in the REIT market has also been higher than direct real estate." An apparent evidence of the different natures of real estate exposures is found by Hoesli, Lizieri and Macgregor (2008) inflation hedging capability of real estate depends on what type of exposures investors have on real estate. Exposure to real estate securities does not offer an inflation hedge and, in fact, fluctuates more like stocks than the underlying real estate. Exposure to un-securitized real estate on the other hand offers a different behaviour compared to other publicly traded assets and seems to have stronger correlation with both expected and unexpected inflation thus making it a better inflation hedge. Vision focus (2011, p. 6) states that "the methods that institutional investors choose for structuring their real estate exposure will be determined by factors such as their investment goals and tax efficiency."

Other differences that have been noted between direct real estate investment and indirect real estate investment include diversification benefits which is said to depend on the type of real estate exposure. Paliwal (2013, p. 189) says "Direct investment in real estate was also found to provide diversification benefit. However, real estate returns as well as its contribution to diversification was not very impressive when compared to the findings from other countries." Wilkerson (2007, p.48) says "Public equity instruments (i.e., REITs) tend to behave like stocks. They offer little inflation protection, especially in the short term." Webb (1984) found that 61 % of investors diversified by real estate type while 62 % diversified by geography. Louargand (1992) found that 89 % of the surveyed institutional investors diversified by real estate type, 72 % by geographical location and 41% by economic location. 54 % indicated that real estate type was the most important diversification criterion. Brounen (2008, p. 14) states that "the securitised shape of real estate investment introduces a low cost, trading-market dimension, which is not present in the un-securitized real estate market. This difference in trading–mechanism causes significant variations in market performance of securitized and un-securitised real estate markets."

2.3 Optimal allocation to real estate

The optimal allocation of funds to real estate investment and the appropriate role it plays in institutional investors' portfolios has been an area of on-going debate in alternative investments over the years. Different authors try to emphasize the importance of real estate in portfolio allocation. According to Ori (1995, p.28) "Today, the portfolio allocation decision is one of the most important variables of

a profitable real estate investment strategy." Other academics are of the same view on the importance of optimal allocation to real estate investment. Hoesli, Lekander and Witkiewicz (2004, p. 161) state that "The optimal allocation of institutional investors' capital in the various asset classes (often referred to as inter-asset or mixed-asset diversification) is of foremost importance. Indeed, it has a crucial impact on portfolio performance."

Meanwhile most institutional investors do not allocate as much as they should to real estate investment and this has been proven by several studies. Researchers have seen a gap in the allocation of funds to real estate in institutional investors' portfolios between what has been proposed in theory and what is really done in practice. MacKinnon (2007 p.1) states that "Despite the increased awareness amongst institutions about real estate and its perceived benefits, many commentators believe that institutional investors continue to make lower than optimal allocations to it within their portfolios." Bloch (2011, p. 2) argues that "the maximum total amount usually recommended for real estate and infrastructure allocations is about 25%, which is considerably higher than actual institutional allocations." Low investment percentages allocated to real estate could be due to different reasons. Bloch (2011, p. 2) says "It is important to note that efficient allocations in practice depend on numerous factors and parameters." Worzala and Bajtelsmit, (1997, p. 55) say "allocation decisions are not being made in the way that theory would dictate due to the reluctance of real estate managers to adopt new financial techniques that are used for other asset classes."

The appropriate allocation of institutional investors' funds to real estate investment is quite important as it influences the performance of portfolios.

The question of how many asset classes and the percentage of each asset class an investor should hold in a portfolio to diversify risks is obviously a crucial one. According to Brown & Kelly (2011, p. 66) "Among the great variety of institutions, each institution has its "typical" investment objectives and constraints" Academics have set up different percentages to be allocated to real estate and have attached various reasons to their calls. According to Shaukat (2010, p. 17) "real estate should generally be a part of the core asset allocation, rather than merely an opportunistic investment. The size of the allocation depends on an investor's risk/return appetite as well as the rest of the portfolio, but can generally be in the range of 5% - 15%." Chun, Sa-Aadu and Shilling (2004, p 295) argue that "If predictability of real estate returns cannot alone explain why institutional investors should invest between 15 to 20% (or higher) of their assets in real estate, what can?" Hoesli and Macgregor (2000) state that "studies generally conclude that real estate returns are lowly correlated to those of bonds and stocks, and that 15% to 30% of a mixed portfolio should be allocated to real estate." Hoesli, et al. (2004, p. 190) are of the view that "The allocation to real estate remains quite stable in most cases and the general conclusion that 15% to 20% of a portfolio should be allocated to real estate remains valid." O'Donnell (2009, p. 6) on the other hand suggests that "A 5-15% strategic allocation in an investment portfolio can help maintain purchasing power, preserve asset value and enhance risk- adjusted returns." However, some

academics are of the view that allocation to real estate is fair. According to Chua (1999) "The actual allocation of real estate in institutional investment portfolios around the world is fairly significant, averaging 8.3% as of the end of 1995."

2.4 Investment characteristics of real estate

Real estate is associated with characteristics such as being an inflation hedge, lower liquidity, Lack of reliable valuation data and capital gains. Fisher and Sirmans (1994, p.2) state that "The traditional arguments for including real estate in a multi-asset portfolio include the following: Real estate has a low correlation with stocks and bonds, Real estate has historically had a high risk-adjusted rate of return relative to stocks and bonds, Real estate has a positive correlation with both anticipated and unanticipated inflation and therefore provides an inflation hedge." Tyson and Griswold (2009, p. 14) say "Clearly a major reason that many people invest in real estate is for the healthy total returns which include on-going profits and the appreciation of the property." while Prassas (2013, p.2) says "Investors purchase income producing real estate for two primary reasons speculation and investment." LaSalle Investment Management, Research and Strategy (2012, p.35) is of the view that "Whatever the portfolio allocation strategy, the cash flows from real estate investments remain distinctive in the world of financial investments." However, Lee and Stevenson (2004, p. 11) are of the view that "direct real estate should be considered as diversify rather than a return enhancer in the mixed asset portfolio." Stammers (2012, p.2) say "Historically, investor interest in real estate has been for diversification and its ability to maintain the purchasing power of capital."

2.4.1 Real estate's relationship with inflation

Investments that are positively correlated with inflation provide an inflation hedge by preserving the real rate of return and real estate is known for having a long-term relationship with inflation. Various studies have tested the relationship between real estate returns and inflation. These include studies by William (2013) Ross and Mancuso (2011) Anderson (2011) Case, Wachter and Worley (2012) and many more. However, the literature is inconsistent on the view as to whether real estate hedges against inflation.

William (2013) found that "the best hedge against inflation does not exist, but merely depends on what kind of inflation the investor wants to hedge. It also depends on the time horizon being considered." Ross and Mancuso (2011, p. 4) says "Over the long term, real estate may provide some protection against inflation, because real estate revenue, which is derived from periodically resetting contractual rental payments, will adjust to changing external market conditions, such as rising price levels." Real estate has traditionally been believed to be an inflation hedge. Vančura, (2011, p.4) states that "Real estate investments hedge against inflation. Neither shares nor bonds have such features. Prices of real estate are not quickly adjustable to the situation in the market. In contrast to shares, property value is influenced by specific factors like long term written rental contracts which impose more rigidity in the real estate market." Ross and Mancuso (2011, p. 4) say "Over the long term, real estate may provide some protection against inflation, because real estate revenue, which is derived from

periodically resetting contractual rental payments, will adjust to changing external market conditions, such as rising price levels."

As a hedge against inflation in a portfolio, real estate is believed to possess characteristics that lack in bonds and shares. Anderson (2011, p. 3) states that "Bonds and cash are generally ineffective at protecting against purchasing power in rising inflationary environments. Bonds carry fixed coupons that do not adjust to changes in inflation while cash typically earns a yield below current inflation levels." Anderson goes on to say "To cope with potential rising inflation, it is important to ensure that portfolios include meaningful exposure to a broader set of assets than just stocks and bonds, especially assets that tend to preserve value in inflationary environment." In addition Case, Wachter and Worley (2012, p.2) say "The Gordon growth model suggests that real estate can be considered a perfect hedge against inflation unlike, for example, most fixed income products because real estate is a long lived asset with income that adjusts with time."

The hedging capacity of real estate is said to depend on the type of real estate exposure and type of inflation. As noted earlier on by Hoesli, Lizieri and Macgregor (2008) inflation hedging capability of real estate depends on what type of exposures investors have on real estate. Exposure to real estate securities does not offer an inflation hedge and, in fact, fluctuates more like stocks than the underlying real estate. Exposure to un-securitized real estate on the other hand offers a different behaviour compared to other publicly traded assets and seems

to have stronger correlation with both expected and unexpected inflation thus making it a better inflation hedge.

Stammers (2012, p. 2) says "The inflation hedging capacity of a real estate investment comes from the owner's ability to increase rental rates during periods of inflation." Stammers (2012, p. 2) goes on to say "Real estate tends to maintain the purchasing power of capital by passing on all or a portion of the inflationary pressure onto tenants. However, the ability of real estate to act as an inflationary hedge can only be accomplished as the opportunities for new leasing become available."

Crocker, Hartzell and Hoesli (1997, p. 27) found that "securitized real estate in most markets seems to have a low correlation with both expected and unexpected inflation and thus making it a bad inflation hedge." Hamelink and Hoesli (1996) tested the hedging capability of residential real estate in Switzerland using a transaction-based index constructed by a hedonic approach; this type of index tries to erase all problems concerning appraisal smoothing. According to their results "Swiss residential real estate, stocks and bonds were positively correlated with expected inflation and negatively correlated with unexpected inflation." Arnason and Persson (2012) used both the descriptive statistics in terms of correlation analysis and regression analysis and indicate similar results which show that "gold seems to be the only asset class to offer a hedge against inflation, all exposures against real estate, stocks and bonds do not offer any significant hedge against inflation."

Rubens, Bond and Webb (1989, p. 50) using a 95% confidence interval test found that "Different assets yield differing levels of protection against inflation. Only residential real estate is a complete hedge against actual inflation". Brueggeman, Chen and Thibodeau (1984) using a two – factor on two commingled funds, from 1971 to 1984 found that real estate did not provide an inflation hedge against unexpected inflation but only provided an inflation hedge against expected inflation. Wilkerson (2007, p.48) says "The inflation-hedging potential of real estate is best considered in terms of the public versus private split in the real estate market. Public equity instruments (i.e., REITs) tend to behave like stocks. They offer little inflation protection, especially in the short term." Crocker et al. (1997, p.29) further found that "REITs appear to behave like other common stocks with respect to their inability to hedge against inflation."

2.4.2 Lack of reliable valuable data for real estate investment

Several studies have shown that real estate returns are difficult to measure accurately because of lack of reliable valuation data. Nevertheless when it comes to valuating REITs, investment managers mostly rely on CAPM. According to Falk (2012, p.12) "When valuing publicly held assets, or exchange-traded securities, the capital asset pricing model (CAPM) is a favourite among many analysts. In the CAPM model the beta reflects the risk and expected performance of a given asset." Lowrey, (2002) says that real estate is not traded regularly, it is not a homogenous type of asset, prices are rarely reported to a centralised market, and lack of data on capital enhancements may present wrong returns.

Most studies of the investment characteristics of real estate are always faced with the same problem of the data. MacKinnon (2007, p.2) states that "While historical returns on asset classes such as equities or bonds are readily available and widely accepted, the same is not true of real estate, because commercial real estate does not have the same frequency of transactions." MacKinnon (2007, p.2) says "The available measures of real estate performance are therefore not based on actual market values, but rather on estimates of market values." According to the Bank Windhoek property fund report (2010, p.5) "Reliable and verified information on the historic investment performance of direct investment in Namibian property, covering a number of different price classes and in different regions and suburbs is not readily available." Viezer (1999, p. 51) suggests that the uncertainties in real estate return correlations which are likely caused by data limitations are likely to continue in the future.

Real estate investment Lower liquidity issues

Real estate is considered to be a lower liquidity type of asset because it cannot be sold quickly due to a lack of ready and willing buyers. Baum and Crosby (1995) define liquidity as "the ease and certainty with which an asset can be converted to cash at, or close to, its market value." According to Woychuk (2012, p. 3) "Real estate is more difficult to sell because deals are privately brokered. There can be a substantial lag between the time you decide to sell a property and when it actually is sold." RREEF Real Estate, (2012,p.5) say "It's true that core properties don't change hands all that often, and that investors in a direct real estate partnership have limited access to their capital." The illiquidity

characteristic property possesses has been long considered as a disadvantage of direct real estate investment. Ball, Lizieri and MacGregor (1998) state that "difficulties in trading property add a timing risk to uncertainties surrounding the cash-flow and causes problems in implementing an active portfolio management strategy. The lengthy of time taken to transact is an associated disadvantage."

2.5 Modern Portfolio Theory (MPT) in a mixed asset portfolio.

Modern portfolio theory (MPT) is an investment tool that can be used to reduce the level of risk while trying to maximize a specific expected return. The value of an investment can only increase if the expected return is higher than the annual inflation rate. Therefore, most investors want a return that is higher than the annual inflation rate. Markowitz (1952, 87) states that it is possible to combine assets in a portfolio in a way that can provide an efficient portfolio that will produce the highest possible level of portfolio return for any level of risk when measured by the variance or standard deviation. Fisher and Sirmans (1994, p. 3) argue that "Modern portfolio theory hasn't changed! (It is now standard portfolio theory.) An asset class that is significant in size and which tends to be uncorrelated with other assets still provides diversification benefits in a multi-asset portfolio." Strategy is crucial in any investment decision. Schuck (1995, p. 12) is of the view that "strategy is the most important element in property decision making, and the decision-making tool must be dictated by the goal being sought," Schuck (1995, p. 12) goes on to say "MPT is the most useful in conjunction with other methodologies and good old intuition." Meanwhile some academics disagree with the application of modern portfolio theory to the real

estate asset class. Ori (1995, p. 27) suggests for "a Comprehensive real estate portfolio diversification strategy suited to today's complex investment environment and calls it the "market and investment" portfolio diversification approach."

Modern Portfolio Theory is the standard used in examining the significance of combining different securities in a portfolio. Markowitz (1952, p.89) states that "it is necessary to avoid investing in securities with high covariances among themselves. We should diversify across industires; especially industries with different economic characteristics have lower covariances than firms within an industry". When structuring a portfolio, it is important to select a combination of asset classes that offer the best chance of giving low correlations. Investors should consider holding different types of asset classes when structuring an investment portfolio because asset classes perform differently in different economic conditions thus reducing portfolio volatility. Fairbairn Capital, (2013, p.1) says "In an environment where inflation and interest rates are high, cash will perform well. Bonds perform poorly when expectations are that future inflation will be high. Equities will perform well when the outlook for growth in corporate profits is good, and this is often when interest rates are low. Similarly, property performs in low interest rate environments"

The issue of what asset classes an investor should include in an investment portfolio in order to achieve diversification is key. Stevenson (2013) states that "the concept of diversification means that lots of different kinds of markets and

assets- bonds mixed with other shares and say alternative assets, can give you lots of different betas." Diversification benefits of real estate investments have widely been researched. Real estate investment in a mixed asset portfolio has been found to be key especially that there has been unprecedented market unpredictability over the past years. For instance Hoesli and Lizieri (2007, p. 49) say "The inclusion of real estate in a mixed asset portfolio leads to substantial and sustained diversification benefits." Portfolio volatility in a mixed asset portfolio can be avoided due to the different correlations of real estate to those of stocks and bonds.

Baird Private Wealth Management, (2012, p. 3) argues that "Given their low correlation to traditional investments, real estate can potentially enhance diversification and reduce risk." Levels of risk reduction can be achieved through a correlation coefficient that is provided between two different asset classes. According to Hoesli et al. (2004, p.175) "In portfolio allocation models, correlation coefficients between asset classes have a substantial impact on the amount of risk reduction that is achieved through diversification. The closer the correlation between two assets is to -1, the greater the diversification benefits." when structuring an investment portfolio in a mixed asset portfolio an investor should consider the Correlation of returns of one asset class with the returns of other relevant asset classes.

2.6 Risks and return for real estate investment

Risk is the major determinant of an investment's return. According to Ori (1995, p.27) "As large institutions increase their allocation to commercial real estate, portfolio investment and diversification strategies become critical for determining optimal levels of risk and return." Benjamin, Sirmans and Zietz (2001, p. 210) compared the returns and risk on real estate to that of traditional financial investment and reviewed that "real estate offers higher returns along with higher risks than stocks and other assets." Investors need to know the importance of holding asset classes of a certain type in their portfolios. According to Shaukat (2010, p. 16) "Real estate investments, properly structured, have the long-term ability to generate attractive risk-adjusted returns for portfolios of all types." Ross and Zisler (1991) state that the sensitivity of real estate returns is between the unpredictability of financial assets such as bonds and stocks. Real estate can attain more similar returns with lower volatility compared to shares and bonds. Investors can invest in a variety of asset classes so that their exposure to risk is minimized. Brigham and Gapenski (1994) state that if an asset is held in a mixed asset portfolio it mostly tends to be less volatile than the same asset when it is held on its own as a portfolio. Modern Portfolio Theory (MPT) assumes that an investor is both rational and risk averse. Woychuk (2012, p. 4) says "As part of a portfolio real estate allows you to achieve higher returns for a given level of portfolio risk."

Veale (2013, p.107) adds on to say "when the future is (at best) uncertain, alternative investments often offer investors a better reward/ risk trade off." Assets classes in a portfolio can be combined to provide an efficient portfolio that

will give the highest possible level of portfolio return for any level of portfolio risk. According to the study that was done by Hoesli and Lizieri (2007, p. 52) they found out that "For a given return level, the addition of real estate to a portfolio containing financial assets leads to the portfolio's standard deviation being diminished by 5 to 15%. For a given risk level, the average annual return can be enhanced by 50 to 70 basis points." Fisher and Sirmans (1994, p.2) were also in favour of the inclusion of real estate in a portfolio and states that "including real estate in a multi asset portfolio results in a more diversified portfolio that is capable of earning the same return with less risk than a portfolio that does not include real estate."

From the literature review undertaken it is clear that, globally, there have been several research studies on whether the inclusion of real estate investment in mixed asset portfolios of institutional investors plays any role in enhancing diversification, hedging against inflation and increasing returns of a portfolio. There is little research that has been carried out on this subject in Namibia. However, institutional investors in Namibia need to know and understand the role real estate plays in mixed asset portfolios and the attributes of adding real estate investment to their portfolios.

3. METHODOLOGY

3.1 Introduction

This chapter sets out the methodology which was adopted in order to interpret the findings with a need to realizing the research objectives. It covers the Research Design, Study Population, Sampling design, Sample size, Data Sources, Data collection instruments, Measurement of variables and Data analysis. The research design applied both the qualitative and the quantitative research approaches to collect both primary and secondary data. The non-probability purposive sampling technique was used for selecting respondents. The interviews and the questionnaire were used as the main data-gathering instruments for the research. The data was analyzed utilizing a computer package called SPSS and Descriptive statistics and Correlation coefficient were used.

3.2 Research design

This research used both the qualitative and the quantitative research approaches to collect both primary and secondary data. For the collection of primary data in the qualitative research approach, the researcher conducted in-depth recorded interviews with portfolio managers, investment managers and compliance officers from institutions in Windhoek to explore investors' investment strategies which could not be classified on a numerical scale. Written documents on investors' opinions and attitudes towards real estate investment in mixed-asset portfolios were reviewed in order to collect secondary data. According to Vogt and Johnson (2011) "research design is the science and art of planning procedures for conducting studies so as to get the most valid findings."

For the quantitative research approach, primary data was gathered by using portfolio managers, investment managers and compliance officers as respondents to a questionnaire so as to collect data which is numerical in nature. The researcher gathered secondary data through published documents such as annual reports and fund fact sheets of institutional investors to determine what the allocation of funds to real estate investment has been from 2007 to 2012.

3.3 Population

This research was restricted to institutions in Namibia that are based in Windhoek. These are firms such as asset management funds, insurance companies, pension funds and educational institutions. Targeted institutions included Old Mutual Namibia, Sanlam Namibia, Liberty Life Namibia, Government Institutional Pensions Fund (GIPF) Namibia, Momentum Namibia, Capricorn asset management company Namibia, University of Namibia, , Retirement Fund for Local Authorities and Utility Services in Namibia (RFLAUN), Air Namibia Retirement Fund, Investment solutions, Prudential portfolio managers, Stanlib Namibia and Allan Gray investments. The approximate size of the population was 13 institutional investors.

Table 3.1: Institutional investors that were sampled in the survey

Institutions that were sampled in the survey		
Name of institution	**Type of institution**	**Geographical location**
Capricorn Asset Management	Asset management fund	Windhoek
Government Institutional Pensions Fund (GIPF	Government Pension fund	Windhoek
Investment solutions	Asset management fund	Windhoek
Momentum Namibia	Asset management fund	Windhoek
Old Mutual investment group Namibia	Pension Fund and Life insurance	Windhoek
Retirement Fund for Local Authorities and Utility Services in Namibia (RFLAUN)	Retirement Fund	Windhoek
Sanlam Investments Namibia	Asset management fund	Windhoek
Stanlib Namibia	Asset management fund	Windhoek
University of Namibia	Education institution	Windhoek
Liberty Life insurance Namibia	Insurance company	Windhoek
Air Namibia Retirement Fund,	Retirement Fund/ pension Fund	Windhoek
Prudential portfolio managers	Asset management fund	Windhoek
Allan Gray investments	Asset management fund	Windhoek

3.4 Sample

The non-probability purposive sampling technique was used for selecting 39 respondents who included investment managers, portfolio managers and compliance officers from the aforementioned 13 institutions. The sample for the survey comprised 13 firms, which were among the largest Namibian, insurance companies, asset management funds and pension funds. 7 of them were asset management funds, 2 insurance companies while the remaining 4 were pension funds. The sample was limited to companies holding real estate investments in their total asset portfolios. According to Gay, Mills and Airasian (2009, p. 134) "purposive sampling, also referred to as judgemental sampling, is the process of selecting a sample that is believed to be representative of a given population."

3.5 Research instrument

This researcher conducted in-depth recorded interviews as well as the use of a questionnaire which was distributed to the target respondents. The interviews and the questionnaire were used as the main data-gathering instruments for the research. The researcher gave advance notification to the respondents through their official emails notifying them that a questionnaire would be made available to them, which they were expected to complete within a specified period of time and the scheduled dates when the interviews were to be conducted.

3.5.1 An overview of the questionnaire

The main survey instrument consisted of a questionnaire. It was designed based on ideas obtained from real estate investment practitioners and similar surveys conducted in the past. The surveys by Goetzmann and Dhar (2005) and Osei – Nkansah and Kifleyesus (2003) were very useful guides in preparing the questionnaire. These surveys were reviewed to determine which questions were relevant to this research study and those that needed to be revised to suit the purpose of the study. The questionnaire was structured in a way that reflected the main objectives of the study which were to establish the role real estate investment plays in institutional investors' portfolios in Namibia, to investigate the strategies institutional investors use in allocating their funds to real estate investment, to assess why real estate investment among institutional investors in Namibia is low, to analyze how the macroeconomic environment influences real estate investment in portfolios of institutional investors, assess the returns and risks of mixed-asset portfolios, and lastly to examine how institutional investors in Namibia perceive risk in real estate investment. Appendix A shows the questions that made up the questionnaire. Respondents were approached by telephone regarding their willingness to take part in the research survey.

The Questionnaire was sent via the Kwik survey and the responses of participants were collected via a website. The questionnaires were sent via email to the portfolio and investment managers of the firms mentioned earlier on. Follow up telephone calls were made and e-mails written, after a week of sending out questionnaires to remind respondents and also find the possibility of holding

additional face to face interviews. These follow-ups continued until a reasonable amount of responses were received. The respondents were not asked to identify themselves or the name of their institution but were just asked to identify the type of institution they belonged to. The responses are related to the type of institution which was provided by the respondent and not to the name of their institutions.

3.5.2 An overview of content of interview

Interviews were undertaken with investment managers or portfolio managers from 7 of the 13 institutions to which a questionnaire was sent and not all the respondents to the questionnaire were willing to take part in face to face interviews. Questions in the interviews were follow-up questions to those in the survey questionnaire which needed some detailed explanations from the respondents. The interviews assisted in answering the research problem and achieve the research objectives. Appendix B shows the questions that were asked to the 7 investment managers and portfolio managers that participated in the interviews. It was important to get as much background information of each fund as possible in order to analyze the funds' objectives as regards to real estate investment. The background information which was obtained allowed identifying why institutional investors allocate the percentages they do to real estate.

Table 3.2: Major elements of the questionnaire

Major elements of the questionnaire and the purpose of data collection	
Element	**Objective**
Period of time in real estate investment	This question was asked to determine how long investors have invested in real estate portfolios
current allocation to real estate/ /Target allocation/ View on future allocation	This was aimed at analyzing the current allocation to real estate to predict what future real estate has in the portfolios of institutional investors in Namibia
Average allocation to asset classes in the portfolio in the period 2007 -2012	Although the main area of study was real estate, this helped in analyzing the ratio of real estate as an alternative investment to traditional asset classes in portfolios of institutional investors. This could also give an indication as to whether allocation to real estate was increasing or decreasing on an annual basis.
Percentage Allocation to Real Estate in a portfolio	This was important to establish how real estate is treated on portfolios of institutional investors and how much attention is given to it
Major risk factors in real estate investment	This was important to examine how institutional investors in Namibia perceive risk in real estate investment as to assess if it is a contributing factor to why real estate investment among institutional investors in Namibia is low,
Factors influencing real estate investment decision	This was important to investigate the

making	strategies institutional investors use in allocating their funds to real estate investment as to assess the contributions such strategies make to achieving diversification benefits
Method of real estate investment	This was important in identifying what type of real estate exposure institutional investors have and assess what impact such a method of exposure used would play in determining and providing diversification benefits
Reasons for real estate investment	This was helpful in identifying what role real estate investment plays in diversifying the mixed-asset portfolios of institutional investors in Namibia.
Average performance (annualized returns) of the following asset classes in Portfolios of institutional investors in Namibia, in the period 2007 to 2012?	Objective of this question is to establish the mean and standard deviation so as to measure risk and volatility of stocks, bond & bills, cash and real estate investments. The other aim was to establish the Correlation coefficients which will be used to show the strength of the relationship between real estate investment returns and returns of stocks, bond & bills, cash & deposits securities. This will be helpful in identifying what role real estate investment plays in diversifying mixed-asset portfolios of institutional investors in Namibia.

3.6 Procedure

The study utilized both primary and secondary data to collect information from the respondents. In-depth recorded interviews and a questionnaire with closed end questions such as multiple-choice, categorical, Likert-scale, numerical, and ordinal were used. The questionnaire that was distributed to the respondents together with the interviews that were conducted required respondents to give responses to questions about the background and characteristics of the firm, policies and procedures in real estate investment, current fund allocation to real estate investment and asset allocation investment strategies. According to guide by statistics Canada (2010, p. 39) "an interviewer can increase the response rate by stimulating interest in the survey and reassuring the respondent of any concerns he or she might have regarding confidentiality of the data and purpose of the survey." the report goes on to say (2010 p. 55) goes on to say "Questionnaires play a central role in the data collection process. They have a major impact on data quality since the questionnaire is the process whereby data are collected."

3.7 Data analysis

The data was analyzed utilizing a computer package called SPSS. The researcher analyzed the relationship between the returns of real estate investment and returns of equity bonds and cash to ascertain diversification. The risk and volatility of real estate investment, fixed income securities and stocks were also analyzed. Statistical functions such as descriptive analysis and correlation

coefficient were used. Descriptive statistics such as the mean and standard deviation were used to measure risk and volatility of stocks, fixed income securities and real estate investments. Correlation coefficient was used to determine the strength of the relationship between real estate investment returns and returns of stocks and fixed income securities. The results have been presented in tables on graphs and charts.

Formulae 3.1: The formulae used to calculate standard deviation

The **sample standard deviation formula** is:

$$s = \sqrt{\frac{\sum(X - \bar{X})^2}{n-1}}$$

Where,

s = sample standard deviation
$\sum$= sum of...
$\bar{X}$= sample mean
n = number of scores in sample.

Source: Investopedia

Formulae 3.2: The formulae used to calculate correlation coefficient

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2}\sqrt{n(\sum y^2) - (\sum y)^2}}$$

Where n is the number of pairs of data.

Source: Investopedia

3.8 Research ethics

According to Gay, Mills and Airasian (2009, p. 19) "ethical consideration play a vital role in all research studies, and all researchers must be aware of and attend to ethical considerations related to their studies." Respondents were approached by telephone regarding their willingness to take part in the research survey. It was explained to them that participation in this research was on voluntary basis. Introductory letter together with the consent letter were attached to the questionnaire to explain clearly to the respondents that this was an academic research, taken to understanding the role real estate investment plays in diversifying portfolios of institutional investors in Namibia and that all information collected would be utilized purely for this purpose and the responses to be handled with utmost confidentiality. The Questionnaire was sent via the Kwik survey and the responses of participants were collected via a website. The respondents were not asked to identify themselves or the name of their institution but were just asked to identify the type of institution they belonged. The researcher maintained the confidentiality of all responses and the identity of the respondents. Under no circumstances were the identities of respondents revealed to the public or the other respondents.

3.9 Validity and reliability of the research study

According to Greener (2008, p. 38) "it is increasingly usual for business research to mix methods of data collection and analysis. This can be done by using different data collection methods which are all either qualitative or qualitative or can use both qualitative and quantitative methods." In order to ensure that the

measures used by the researcher do actually measure or represent what they are supposed to measure and also to ensure that there was accuracy and precision of the measurements, the research replicated the study thru follow up interviews after the questionnaires were handed back and several written documents of the institutions concerning the question of study were reviewed. The researcher used different methods of data collection such as questionnaire, face to face interviews and document analysis. According to Collis and Hussy (2014, p. 52) "reliability refers to the accuracy and precision of the measurement and absence of differences in the results if the research were repeated."

4. RESULTS

4.1 Introduction

This chapter interprets and presents the findings of the survey whose objective was to establish the role real estate investment plays in institutional investors' portfolios in Namibia, to investigate the strategies institutional investors use in allocating their funds to real estate investment, to assess why real estate investment among institutional investors in Namibia is low, to analyze how the macroeconomic environment influences real estate investment decisions in portfolios of institutional investors, and lastly to examine how institutional investors in Namibia perceive risk in real estate investment.

4.2 Sample characteristics

The demographic features of responses include the following categories namely type of institution, how long they have invested in real estate, method of real estate investment, portfolio allocation percentages, portfolio diversification techniques and strategies, optimal real estate allocation, returns and risks, and factors influencing real estate investment and decision making.

4.3 The respondents

Out of the 13 companies surveyed, only 10 responded and returned their questionnaires for a response rate of 77%. Out of this 5 were asset management funds, 3 were pension funds, 1 retirement fund and 1 was a life insurance company. This can be seen in figure 4.1

4.4 Type of institution

This question was asked to determine which type of institution the respondent belonged to in order to group the responses according to fund.

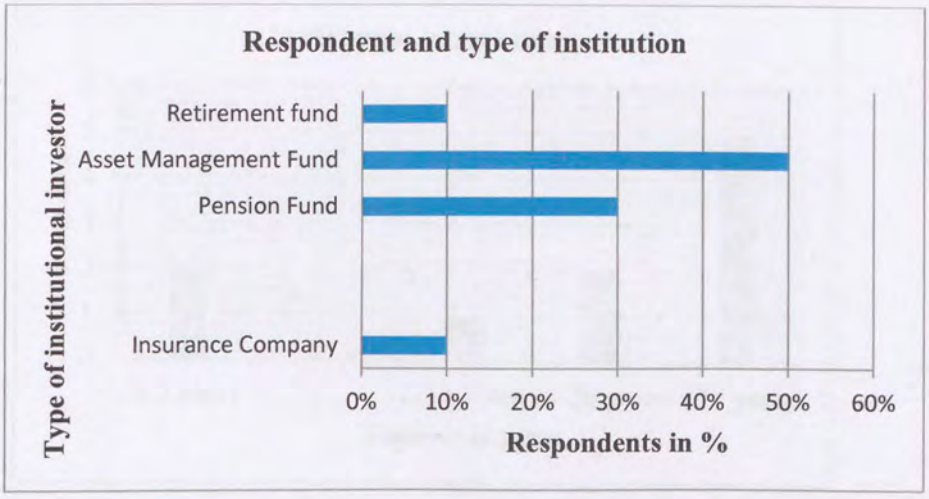

Figure 4.1: Descriptive statistics of Respondents and Type of institution

Source: Survey results

Figure 4.1 above provides a descriptive statistics of the respondents.

A total of 13 companies were surveyed of which 10 responded to the questionnaire for a response rate of 77%. 5 respondents belonged to asset management funds represented by (50%), 3 (30%), belonged to pension funds. 1 belonged to a retirement fund represented by (10%) and 1 (10%) represented a life insurance company. Therefore majority of the respondents were asset management funds as it can be noted from the graph. The 10 respondents were either investment managers or portfolio managers in charge of their firm's investment portfolios.

4.5 Period of time in real estate investment

This question was asked to determine how long investors had invested in real estate. Figure 4.2 summarises the results from the respondents.

Figure 4.2: Period of time institutional investors have invested in real estate

Source: Survey results

As presented in figure 4.2, the survey results showed that 5 (50%) of the respondents indicated that they had invested in real estate for more than 20 years. 2 (20%) indicated that they had invested in real estate for 11 – 20 years and another 2 (20%) indicated that they had been in real estate investment for 0 - 3 years. Only 1 (10%) respondent indicated that they had invested in real estate for the past 6-10 years.

4.6 Average allocation of funds to various asset classes according to type of institutional investor

Although the main area of study was real estate, this helped in analysing the ratio of real estate as an alternative investment to traditional asset classes such as bonds, equity and cash in portfolios of institutional investors

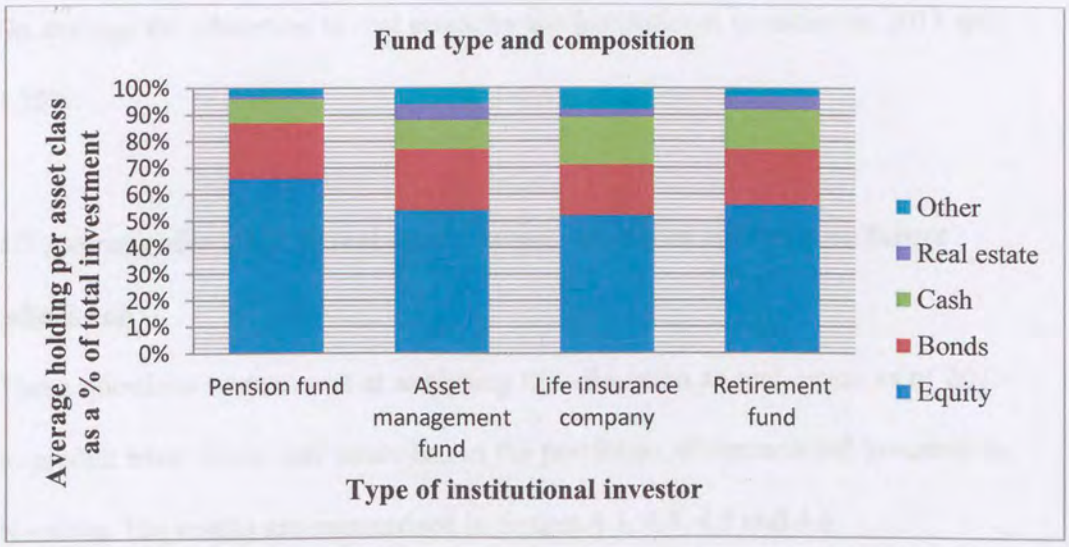

Figure 4.3: Average portfolio compositions by type of fund as of 2013

Source: Survey results

The investment portfolios of the institutional investors in Namibian clearly show that a significant portion of investors' assets are invested in equity as depicted in the graph above in figure 4.3. The graph above provides a breakdown of the overall investment portfolios of the institutional investors. This was total investments in Namibia, South Africa and in the other Common Monetary Area countries in 2013. According to the results obtained from the survey, all the respondents had exposure to other asset classes in addition to their real estate asset investment. In all cases equity received the largest portion of up to a maximum of 66% for pension funds, 54% for asset management funds, 56% for

the retirement fund and up to 52% for the Life Insurance Company. On the other hand real estate received the lowest allocation of as low as 1% by pension funds, 5% by the retirement fund, 3% by the life insurance company and up to 6% by asset management funds. The results show that institutional investors in Namibia allocate only a small proportion of their total portfolios to real estate investment. On average the allocation to real estate by the institutional investors in 2013 was 3.75%.

4.7 Average allocation to real estate, target allocation and view on future allocation

These questions were aimed at analysing the allocation to real estate as of 2013 to predict what future real estate has in the portfolios of institutional investors in Namibia. The results are summarised in figures 4.3, 4.4, 4.5 and 4.6.

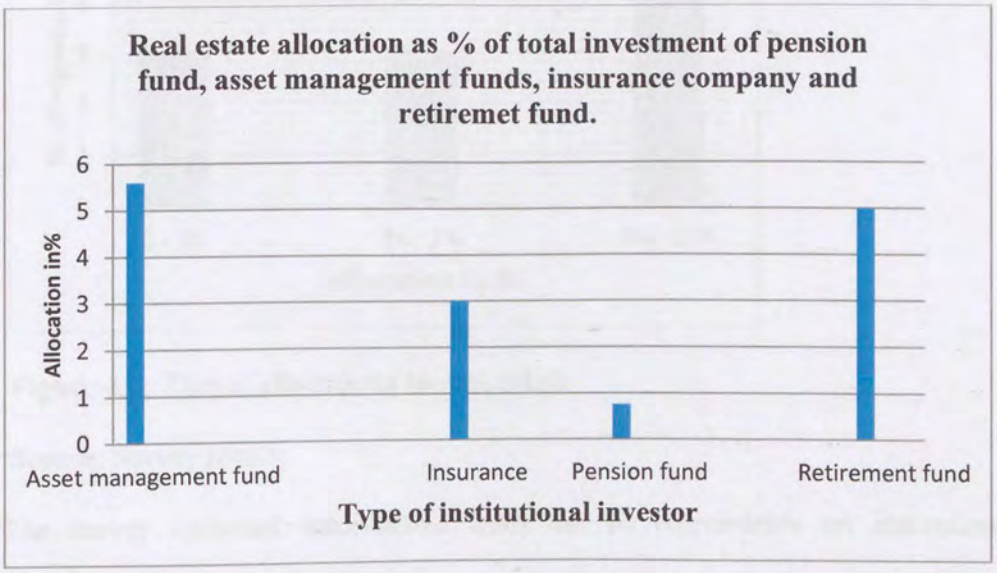

Figure 4.4: Allocations to real estate according to type of institutional investors in 2013

Source: Survey results

According to figure 4.4 above, as of 2013 the allocated percentages to real estate investment of the overall portfolios according to type of institutional investors in Namibia ranged from 0.76 % to 5.6%. As presented in the survey results, it can be seen that asset management funds' asset allocation to real estate is slightly higher than the other institutions. The allocation to real estate by asset management funds was 5.6%. Pension funds are seen to allocate the lowest funds to real estate of about 0.76%. The retirement fund allocated 5% while the insurance company allocated 3%. Therefore on simple average the allocation to real estate on portfolios of all the institutional investors that participated in the survey is 3.6%.

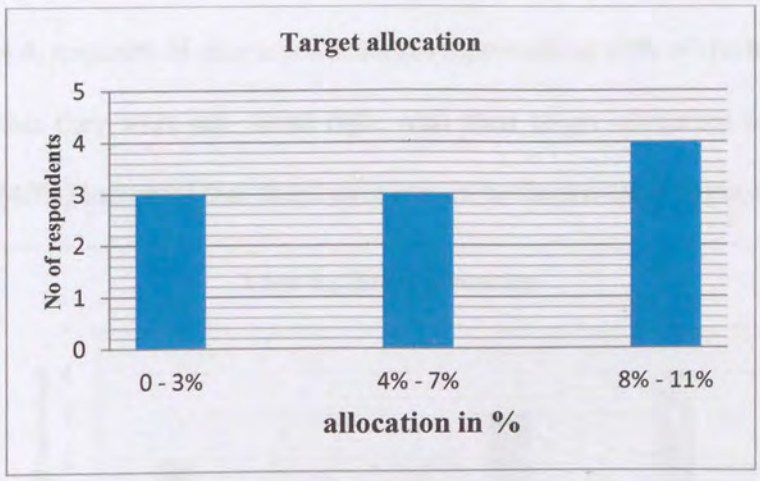

Figure 4.5: Target allocations to real estate

Source: Survey results

The survey collected information from the 10 respondents on institutional investors target allocation to real estate investment and results are shown in the graph above in figure 4.5. 4 (40%) of the respondents indicated that their target allocation to real estate investment was between 8% and 11% while 3 (30%) said

their target allocation was between 4% and 7% and the other 3 (30%) indicated that their target allocation was between 0 and 3%.

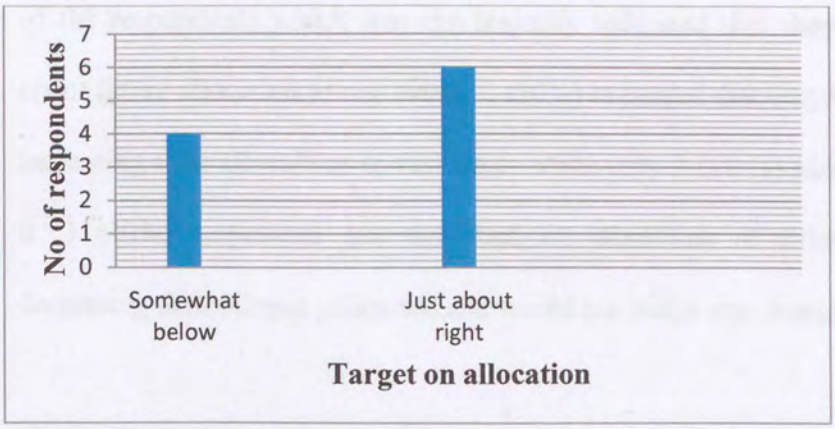

Figure 4.6: Achievement of target allocation

Source: Survey results

Despite the relatively low allocations to real estate as presented in figures 4.3 and 4.4, majority of the respondents (6) representing 60% of the total respondents said that they were just about right with their target allocation to real estate while 4 (40%) indicated that there were somewhat below their target allocation.

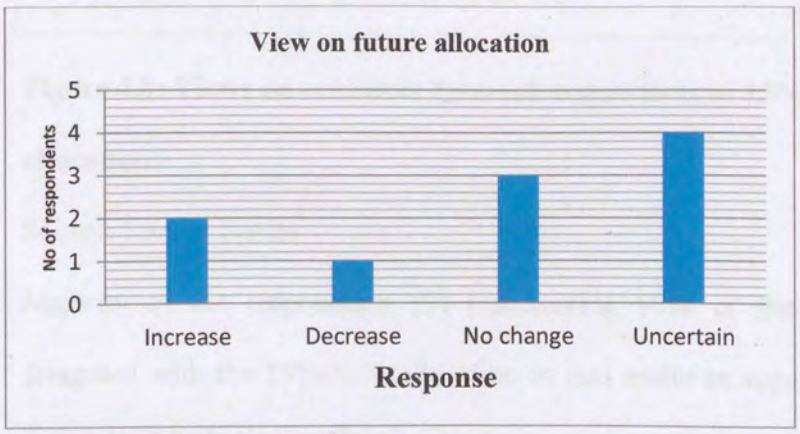

Figure 4.7: View on real estate future allocation

Source: Survey results

As for the question on whether institutional investors in Namibia would increase or decrease their current allocation to real estate in the next 3 to 4 years. 4 (40%) of the respondents which was the majority indicated that they were uncertain about future allocation to real estate. 2 (20%) indicated that they had intentions of increasing their allocations to real estate while only 1 (10 %) planned to decrease it. 3 (30%) responded that they had no intentions of either increasing or decreasing their current allocation and would not make any changes.

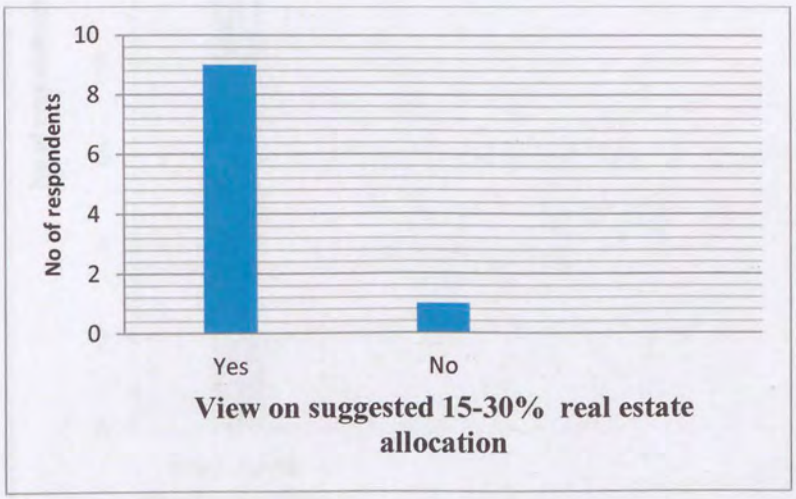

Figure 4.8: Views on academic research suggestions of 15%-30% real estate allocations

Source: Survey results

Majority of the respondents (9) representing 90% of the total respondents disagreed with the 15%-30% allocation to real estate as suggested by academic research while only 1(10%) agreed with the suggested allocation.

4.8 Investor's preference of real estate exposure

This question was asked to determine the investors' preference of real estate exposure in their portfolios. Graph 4.9 summarises the results from the respondents.

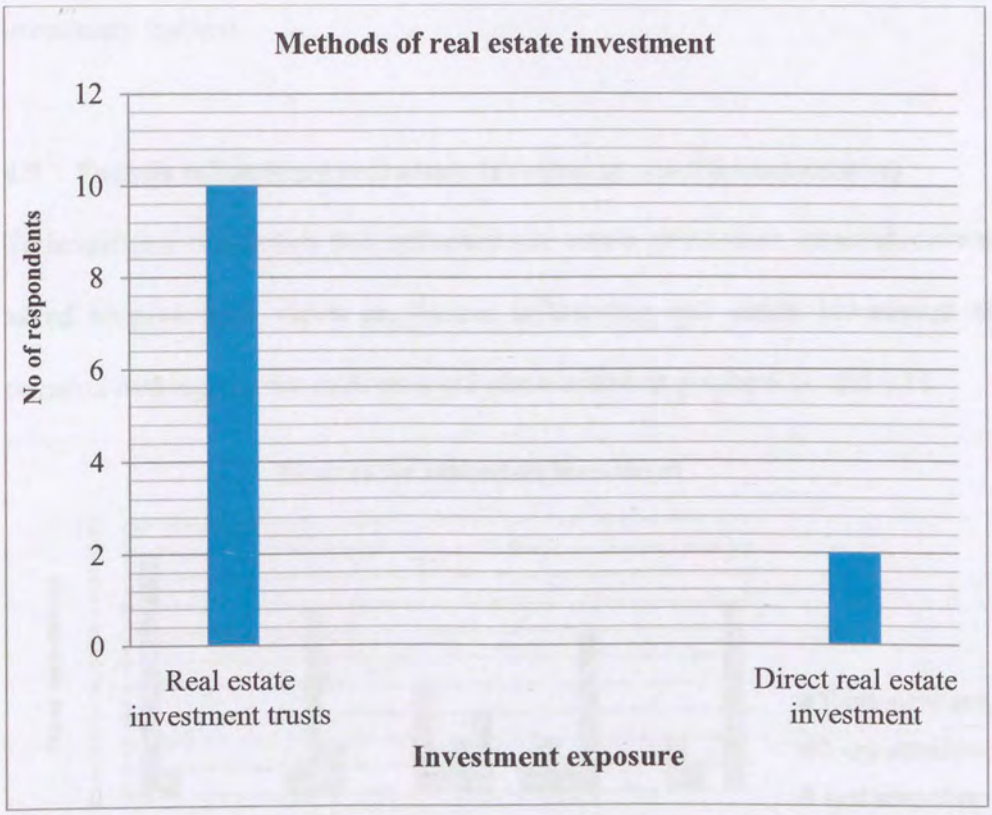

Figure 4.9: Methods of real estate investment

Source: Survey results

The survey results showed a very strong positive bias towards real estate investment trusts which are structured in form of listed properties. Survey results indicated that real estate investment trusts is the main form of real estate investment method used by most institutional investors in Namibia as the survey result indicated that all the 10 respondents representing 100% of the respondents

structured their exposure to real estate through the (REITs) method. Of the same 100% of respondents that indicated that they structure their exposure to real estate through REITs, 2 (20%) also invested in direct real estate investment. The survey therefore reviewed that institutional investors do not ideally use other methods of exposure to real estate besides REITs and the direct real estate investment method.

4.9 Factors influencing real estate investment and decision making

To investigate the factors that influence real estate investment, respondents were asked to give their views on factors influencing real estate investment and decision making and the responses are summarised in graphs 4.10 and 4.11

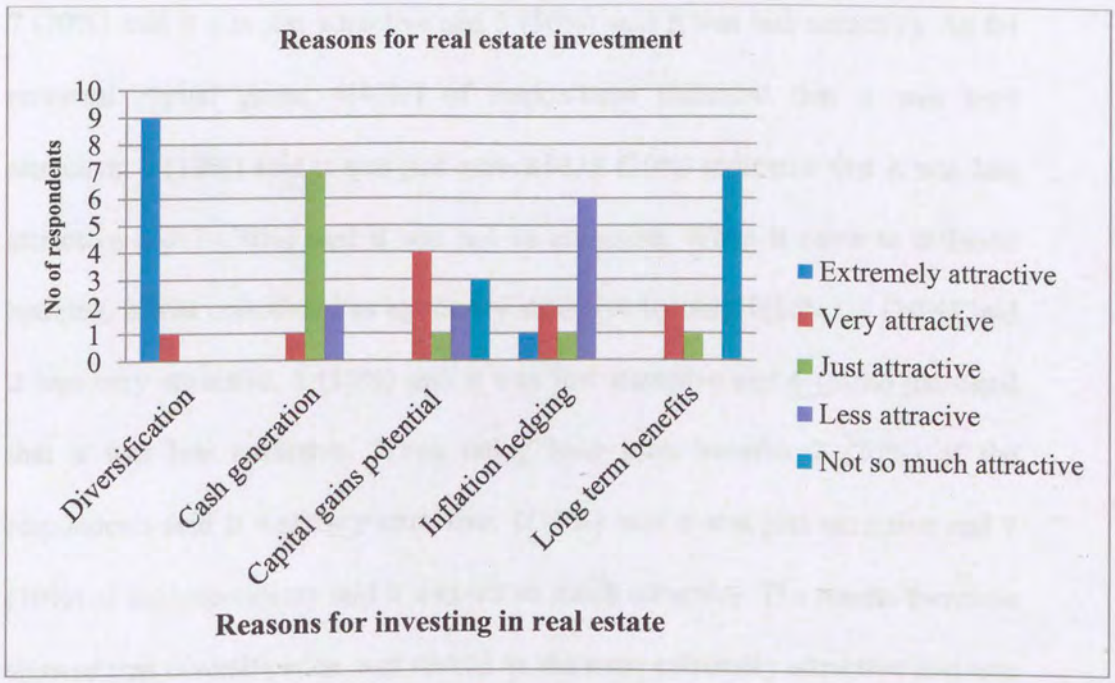

Figure 4.10: Reasons for real estate investment

Source: Survey results

Respondents were asked to rate the above attributes in figure 4,10 which include diversification, cash generation, capital gains potential, inflation hedging and long term benefits, in their order of their attractiveness with extremely attractive being the highest and not so much attractive being the lowest. When looking at factors to take into account when considering real estate investment, there was a substantial consensus among investment managers from most institutions that diversification was the most attractive factor for including real estate in a portfolio. As seen from figure 4.10, 9 (90%) of the respondents said diversification was an extremely attractive attribute for real estate investment in a mixed asset portfolio while 1 (10%) rated it as very attractive. When rating cash generation, just one respondent represented by 1(10%) rated it as very attractive, 7 (70%) said it was just attractive and 3 (30%) said it was less attractive. As for potential capital gains, 4(40%) of respondents indicated that it was very attractive, 1 (10%) said it was just attractive, 2 (20%) indicated that it was less attractive and 3 (30%) said it was not so attractive. When it came to inflation hedging, it was considered as extremely attractive by only 1(10%), 2 (20%) said it was very attractive, 1 (10%) said it was just attractive and 6 (60%) indicated that it was less attractive. When rating long term benefits 2 (20%) of the respondents said it was very attractive, 1(10%) said it was just attractive and 7 (70%) of the respondents said it was not so much attractive. The results therefore showed that diversification was ranked as the most extremely attractive attribute institutional investors take into account when considering real estate investment into a mixed asset portfolio.

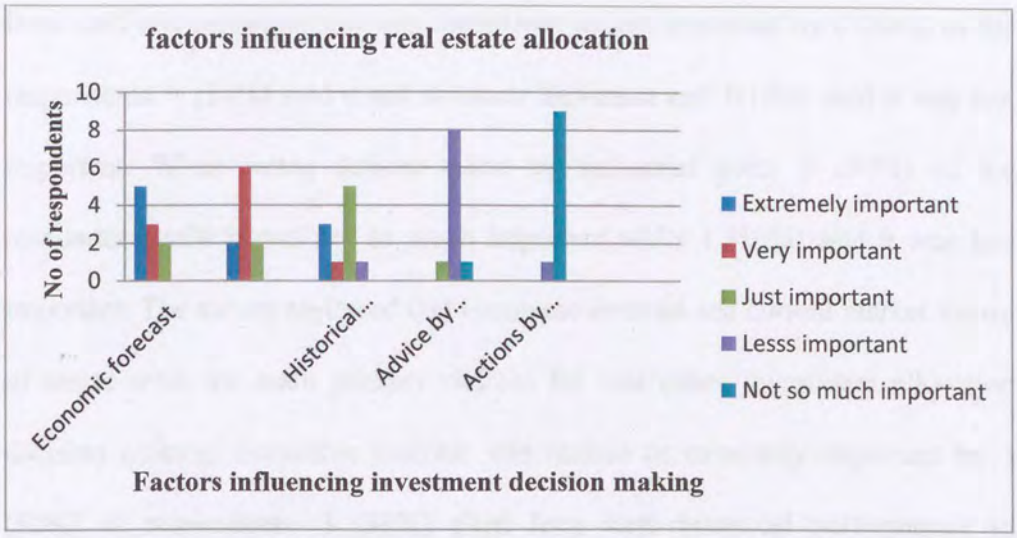

Figure 4.11: Factors influencing real estate allocation decision making

Source: Survey results

Respondents were asked to rate the above factors in figure 4.11 which include economic forecast, asset's current market value, historical performance, advice by staff and pears and lastly actions by industrial peers, in their order of importance with extremely important being the highest and not so much important being the lowest. As presented in figure 4.11, when looking at economic forecast, 5 (50%) of the respondents said economic forecast was an extremely important factor to consider for the inclusion of real estate in a portfolio, while 3 (30%) rated it as very important and 2 (20%) said it was just important. When rating current market value of the asset, 6 respondents represented by 60% rated it as very important, 2 (20%) said it was extremely important and the other 2 (20%) said it was just important. As for long term historical performance, 3 (30%) of respondents indicated that it was extremely important, 1 (10%) said it was very important 5 (50%) indicated that it was just important and 1 (10%) said it was less important. When it came to rating advice

from staff and consultants, it was considered as less important by 8 (80%) of the respondents. 1 (10%) said it not so much important and 1(10%) said it was just important. When rating actions taken by industrial peers 9 (90%) of the respondents said it was not so much important while 1 (10%) said it was less important. The survey reviewed that economic forecast and current market values of assets were the main primary sources for real estate investment allocation decision making. Economic forecast was ranked as extremely important by 5 (50%) of respondents. 3 (30%) cited long term historical performance as extremely important while 2 (20%) said the most extremely important factor was Current market value. 9 respondents represented by 90% indicated that actions taken by peers in the industry was not so much important.

4.10 Regulations and rules affecting allocation process

When the respondents were interviewed to explain if there were any rules or regulations in place that affected the real estate allocation process, all the respondents indicated that they had well-defined investment rules and regulations concerning portfolio allocation. They indicated that these regulation and rules affected the asset composition of the total portfolio and the percentage to be allocated to each asset class. These rules ranged from those prescribed by the institutions' management to those set by the Namibian government. The latter applied particularly to the pension funds because these regulations served as a guide in the investment decision-making process of the pension funds. For instance the Namibian Pension funds act, Act no 24 of 1956 regulation 28 outlines the size of investment institutional investors can invest in each asset

class . Investment in immovable property, and shares in, loans to and debentures, both convertible and non-convertible, of property companies is prescribed as follows, only 5% can be invested in a single property, 5% per property development project and a total of up to 25% may be invested in property.

4.11 Techniques for real estate allocation and valuation process

The respondents were asked to identify the techniques they use in real estate allocation and valuation process and figure 4.12 summarises the responses that were reviewed.

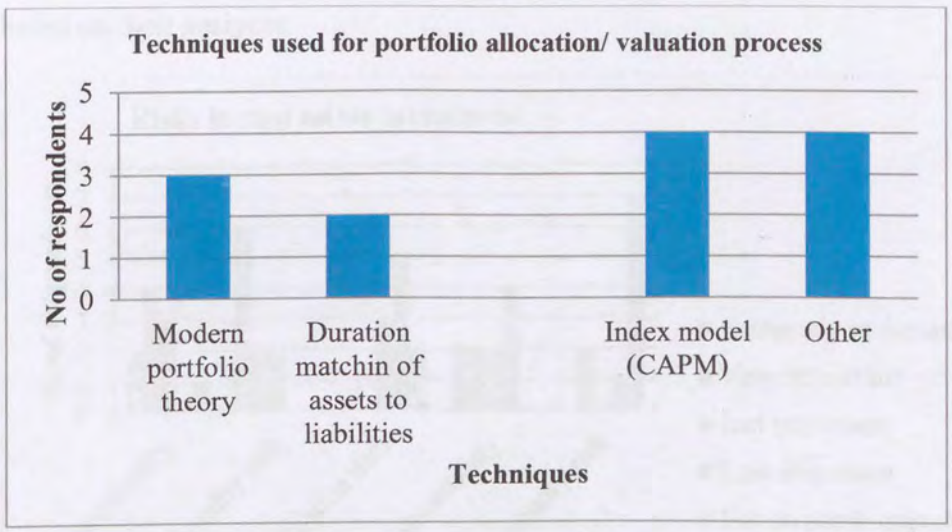

Figure 4.12: Techniques used for portfolio allocation/ valuation process

Source: Survey results

Note: Responses do not add up to 100% since respondents could select more than one choice

The most dominant technique used by the institutional investors in their real estate allocation process is the CAPM with a response rate of (40%) chosen by 4

respondents. 4 (40%) respondents indicated that they use other technique which was just as dominant as CAPM. 3 (30%) of the respondents indicated that they use Modern portfolio theory. It was interesting to note that only 2 (20%) of respondents employed Duration matching of assets to liabilities technique.

4.12 The risk factor in the real estate investment

In order to find out about the risk factors of real estate, respondents were asked to identify what they perceived as the main risk factors associated with real estate investing and to review which method they use to analyse the risk and return component. Figure 4.13 and 4.14 present findings on the views of respondents based on their analyses.

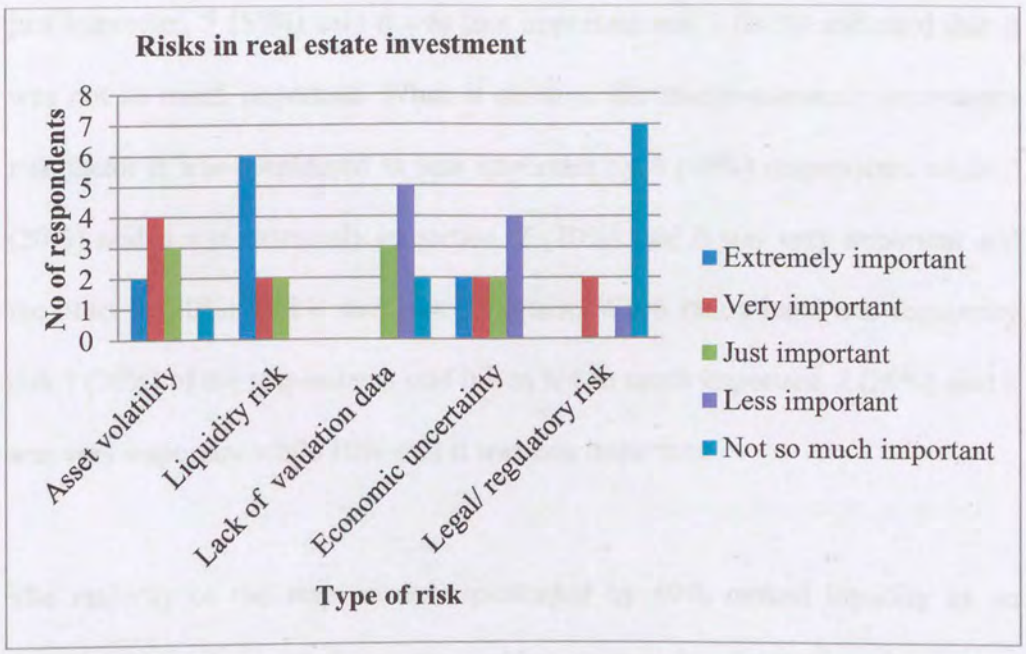

Figure 4.13: Risk factors in real estate investment

Source: Survey results

Respondents were asked to rate the above risk factors in figure 4.13 that included asset volatility, liquidity risk, lack of valuation data, economic uncertainty and legal and regulatory data in their order of importance with extremely important being the highest and not so much important being the lowest. When looking at asset volatility, 2 (20%) of the respondents said asset volatility was an extremely important factor to be aware of when considering real estate investment, while 4 (40%) rated it as very important and 3 (30%) said it was just important. When rating liquidity risk of the asset, 6 respondents representing 60% of the total respondents rated it as an extremely important risk factor to consider, 2 (20%) said it was extremely important and the other 2 (20%) said it was just important. As for lack of reliable valuation data 3 (30%) of respondents indicated that it was just important, 5 (50%) said it was less important and 2 (20%) indicated that it was not so much important. When it came to the macro-economic uncertainty risk factor it was considered as less important by 4 (40%) respondents while 2 (20%) said it was extremely important. 2 (20%) said it was very important and the other 2 (20%) said it was just important. When rating legal and regulatory risk 7 (70%) of the respondents said it was not so much important, 2 (20%) said it was very important while 10% said it was less important.

The majority of the respondents represented by 60% ranked liquidity as an extremely important risk factor to consider when making real estate investment decisions while 20% cited asset volatility as the extremely important factor. The other 20% indicated that macro-economic factor was the most extremely important factor to consider. The results showed that the top three perceived risk

factors of real estate investment are liquidity risk ranked as an extremely important factor, followed by asset volatility as most important and lack of reliable valuation data and the risk ranked as important. The most common response for not so important with a 70% response was legal and regulatory as the least risk. It can therefore be concluded that based on the survey results liquidity risk is the most significant risk factor investors take into account when they are making real estate investment decisions.

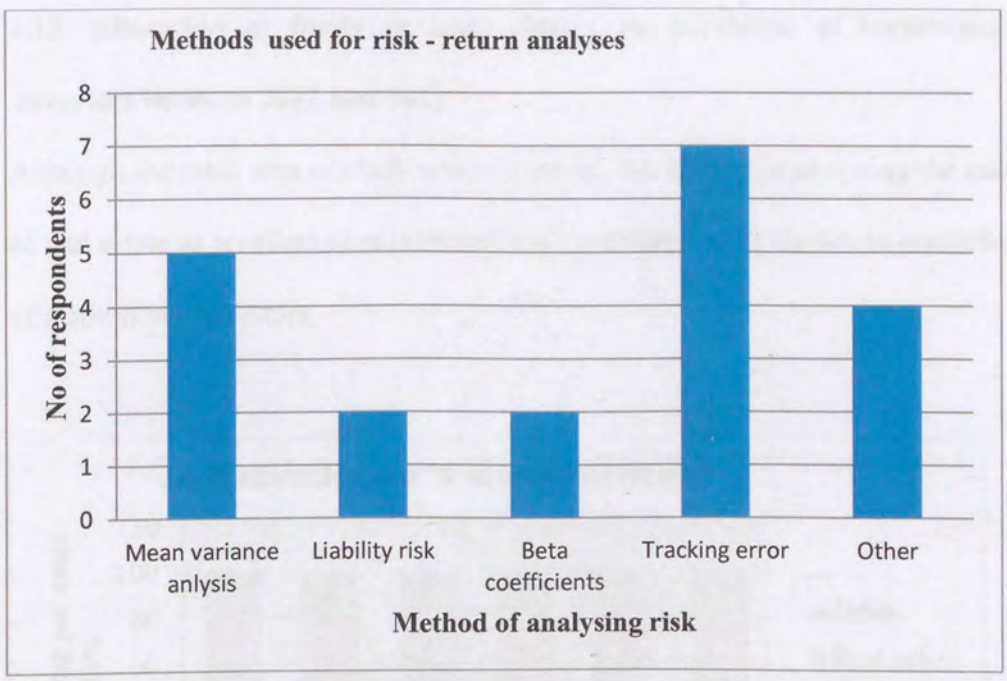

Figure 4.14: Techniques for analysing the risk and return component of asset classes in portfolios of institutional investors.

Source: Survey results

Note: Responses do not add up to 100% since respondents could select more than one choice.

When respondents were asked as to which technique they use when analysing the risk and return component of various assets in their portfolios, as indicated on the graph above in figure 4.14, majority of the respondents represented by 70% indicated that they used the tracking error technique as compared to the mean variance analysis which had 5 (50%) of respondents who said they used. 4 (40%) of the respondents said they used other methods while liability risk and beta coefficients each was used by 20% of respondents respectively.

4.13 Allocation of funds to asset classes on portfolios of institutional investors between 2007 and 2012

Although the main area of study was real estate, this helped in analysing the ratio of real estate as an alternative investment to traditional asset classes in portfolios of institutional investors

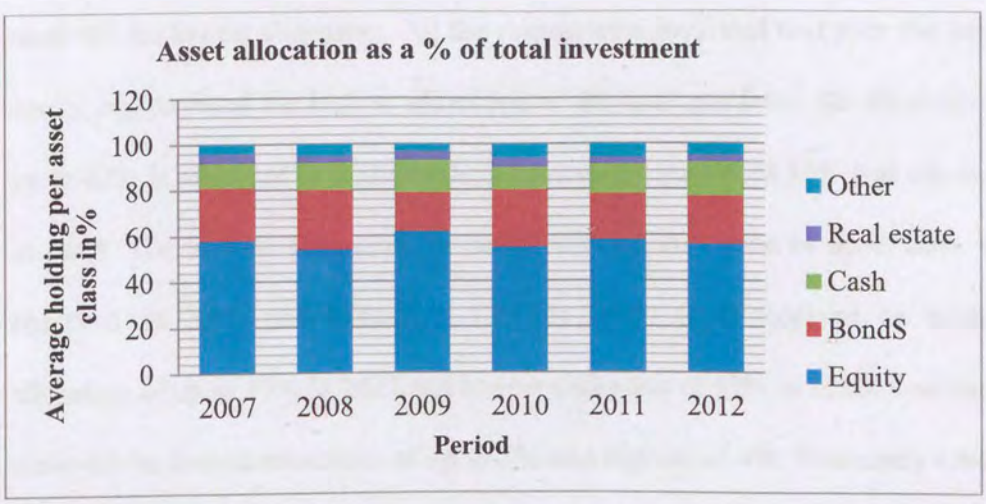

Figure 4.15: Yearly average portfolio compositions of institutional investors in Namibia in the period from 2007 to 2012.

Source: Survey results

The average allocations to various asset classes are total investments by Namibian institutional investors both in Namibia and outside Namibia. This is so because majority of the institutional investors that participated in the survey indicated that they had investments both in the Namibian market, South African market and in the Common Market Area countries. Furthermore all the respondents from asset management funds indicated that their firms are dual listed both on the NSX and the JSE. The annual allocations of the total portfolio to equity, bonds, cash and real estate were obtained from different institutional investors in Namibia for the period 2007 to 2012.

Figure 4.15 above provides a breakdown of the average asset allocation for the institutional investors over the period 2007 to 2012. As it can be seen from the graph, the pattern of asset allocation remained the same from previous years. The largest portion of the total investment was allocated to equity and real estate received the lowest allocation. All the respondents reviewed that over the years, equity has received the highest allocation of the total portfolio. An allocation of up to 62% is observed in 2009 while the lowest allocation of 54% was observed in 2008. The highest allocation for bonds with an allocation of up to 26% was observed in 2008 and lowest of 17% in 2009. Cash received an average allocation of up to 15% in 2012 and lowest allocation of 10% in 2010. Real estate received the lowest allocation of up to 3% and highest of 4%. This study reveals that the major asset class on portfolios of institutional investors in Namibia is equity while on the other hand only a small fraction of the total portfolio is allocated to real estate. This was a common trend in all the portfolios of

institutional investors that participated in the survey regardless of the type of institutional they are.

4.14 Performance of various asset classes in portfolios of the Namibian institutional investors between 2007 and 2012

This question was asked to try and establish the mean and standard deviation so as to measure risk and volatility of equity, bond, cash and real estate investments. It was also intended to establish the Correlation coefficient which was used to show the strength of the relationship between the returns of real estate investment and returns of equity, bond and cash. The results are summarised in figure 4.16, tables 4.2, 4.3 and 4.4.

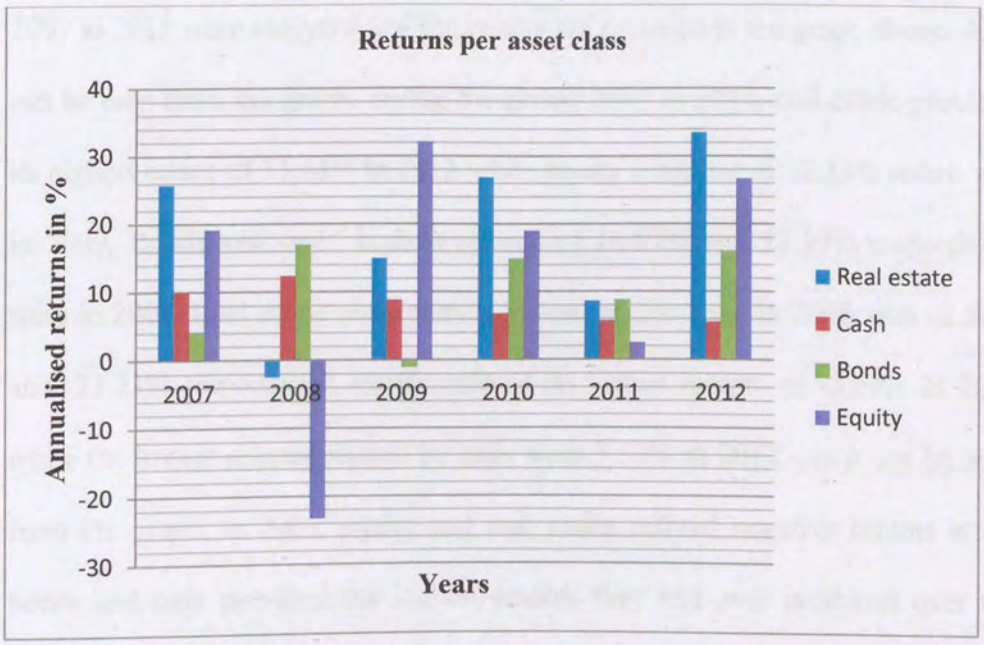

Figure 4.16: Average returns on investment to asset classes in portfolios of institutional investors in Namibia in the period 2007 to 2012

Source: survey results.

The FTSE/ JSE All indices were used for the returns on various asset classes because majority of the institutional investors that had participated in the survey indicated that they had investments both in the Namibia market and South African market. Furthermore all of the asset management fund respondents indicated that they are dual listed both on the NSX and the JSE.

For the purpose of this study, average annual returns for equity, bonds, cash and real estate were obtained from different institutional investors in Namibia for the period 2007 to 2012. The performances of each of the four asset classes from 2007 to 2012 were analyzed and the results are revealed in the graph above. As it can be seen from the graph, during the period 2007 to 2012, real estate provided its highest return of 33.48% in 2012 while equity's highest of 32.13% return was in 2009. Bonds and cash' highest returns of 16.97% and 12.39% respectively were in 2008. Real estate and equity's lowest returns were in 2008 with -2.51% and -23.23% respectively. Bonds offered its lowest returns of -0.99% in 2009 while the lowest returns offered by cash were 5.58% in 2012. As it can be seen from the graph, in 2008, equity and real estate offered negative returns while bonds and cash provided the highest returns they had ever produced over the period 2007 to 2012. The annual returns of real estate and equity show a general trend of rising returns whenever the returns of bonds and cash start decreasing. These opposite movements were observed throughout the period of 2007 to 2012.

As it can be noted from table 4.2, the total return on average for real estate over the period 2007 to 2012 was 17.87%. This was the highest average return of all the asset classes. The results indicate that on average, real estate outperformed all the other three asset classes namely equity, cash and bonds over the period 2007 to 2012.

Table 4.2: Calculated average returns on investment to asset classes (%) in the portfolio in the period 2007 -2012

	2007	2008	2009	2010	2011	2012	average
Real estate	25.73	-2.51	14.99	26.90	8.64	33.48	17.87
Equity	19.19	-23.23	32.13	18.98	2.57	26.68	12.72
Bonds	4.21	16.97	-0.99	14.96	8.82	15.99	9.99
Cash	10.11	12.39	8.90	6.88	5.77	5.58	8.27

Source: Survey results

The correlation coefficients were calculated from returns shown in figure 4.16 and show the correlation of real estate with the other assets classes.

Table 4.3: Correlation between real estate returns and other asset classes

Asset class	Real estate	Correlation status
Bonds	-0.014%	Extremely weak negative relationship
Cash	-0.57%	Strong negative relationship
Equity	0.808%	Very strong positive relationship

Source: Survey results

The results show that there is a negative relationship between the returns of real estate with those of bonds which is -0.014, and a negative relationship between the returns of real estate and those of cash with a -0.57 correlation coefficient, however a positive correlation of 0.8% between the returns of real estate and those of equity was observed.

Table 4.4: Standard deviation of asset classes

Asset class	Equity	Cash	Bond	Real estate
Standard deviation	18.47 %	2.45%	6.64%	12.21%

Source: Survey results

With respect to risk, as seen from the table above, real estate presented a standard deviation of 12.21% which was less risky than equity which had a standard deviation of 18.47% but more risky than bonds which had standard deviation of 6.64% and much more risky than cash which had a standard deviation of 2.45%.

4.15 Conclusion

The survey consisted of 10 respondents who were either investment managers or portfolio managers in charge of their firm's investment portfolios. Majority of these were from asset management funds. The findings showed that 5 (50%) of the respondents indicated that they had invested in real estate for more than 20 years. Equity was seen as the major asset class receiving the largest portion of up to a maximum of 66% on some portfolios of investors while on the other hand real estate received the lowest allocation of as low as 0.7% by pension funds. The respondents indicated that regulation and rules affected the percentage to be

allocated to each asset class. These rules ranged from those prescribed by the institutions' management to those set by the Namibian government. Economic forecast was pointed out to be an extremely important factor to consider for the inclusion of real estate in a portfolio.

The respondents said diversification was an extremely attractive attribute for real estate investment in a mixed asset portfolio and sighted liquidity as a major risk factor to consider in real estate investment. Correlation coefficient results of the returns of real estate with other asset classes over the period 2007 to 2012 showed that there was a negative correlation coefficient of -0.014 between the returns of real estate with those of bonds and a -0.57 correlation coefficient between the returns of real estate and those of cash, however a positive correlation of 0.8% between the returns of real estate and those of equity was observed.

5. DISCUSSIONS

5.1 Introduction

This chapter provides the discussion of the findings obtained from the research study which were made in accordance with the research objective.

5.2 Main discussions

As noted in figure 4.1, the majority of respondents to the survey were investment managers from asset management funds. This is due to the fact that most of the pension funds and insurance companies in Namibia have outsourced their portfolios to asset management firms. These Asset fund managers therefore manage the portfolios of these pension funds, retirement funds and insurance companies.

According to the survey results in figures 4.3 and 4.4 on the question of average allocation of funds to various asset classes in particular real estate according to type of institutional investor, the results show that the percentages invested in real estate by asset management funds is slightly higher than the other institutions. This could be due to the fact that some asset management funds indicated that besides investing in REITs, they have exposure to direct real estate investment as well. As of 2013 the allocated percentages to real estate investment of the overall portfolios according to type of institutional investors in Namibia ranged from 0.76 % to 5.6%. As presented in the survey results in figure 4.4, it can be seen that asset management funds' asset allocation to real estate is slightly higher than the other institutions. The allocation to real estate by asset

management funds was 5.6%. Pension funds are seen to allocate the lowest funds to real estate of about 0.76%. The retirement fund allocated 5% while the insurance company allocated 3%. Therefore on simple average the allocation to real estate on portfolios of all the institutional investors that participated in the survey is 3.6%. These survey results are consistent with earlier findings that revealed that real estate investment in portfolios of institutional investors in Namibia is relatively low. The Bank of Namibia (2013, p.36) reported that real estate investment in asset allocation of unit trusts, investment managers and pension funds in December 2012 was 0.8%.

Based on the personal interviews that the researcher had with portfolio managers from the institutions that took part in the survey, the respondents gave different reasons for their present percentage allocations to real estate investment. Asset management funds attributed the low percentages allocated to real estate to the fact that Investment prospects in domestic financial and property markets and opportunities for diversification are very limited in Namibia and this result in most of institutional investors opting to explore investment opportunities in South Africa. It was revealed that Namibian institutional investors find it less complicated to make their investment in South Africa as the Namibia financial system and economy is closely linked to South Africa. For instance the Namibia dollar is pegged one to one with the South African rand therefore no currency exchange rate risk comes into play. The results are consistent with what has been reported by Dawn property consultancy (2013, p 1) that Namibia faces limited investment opportunities and the growing economy is forcing investors to look

for investment opportunities in South Africa. Some investors revealed that they are subsidiaries of South African based parent companies which determine investment policies for the local Namibian subsidiaries and all investment allocations to different asset classes are determined by the mother companies.

Furthermore, in note 4.12, it was revealed that regulations ranging from those set by the Namibian government to those set by the boards and managements of individual institutions play a significant role in real estate allocation processes of most institutions in Namibia. Pension funds cited government regulation as a reason for the low allocation to real estate. For instance the Namibian Pension funds act, Act no 24 of 1956 regulation 28 stipulates what type of exposure and percentages to be allocated to each asset class on portfolio of Namibian institutional investors. These institutional investors have to adhere to the Act's regulations and they are supervised and regulated by Namibia Financial Institutions Supervisory Authority.

Figure 4.15 provided a breakdown of the average asset allocation for the institutional investors over the period 2007 to 2012. The survey revealed that the pattern of asset allocation remained the same from previous years. The largest portion of the total investment was allocated to equity while real estate received the lowest allocation. All the respondents revealed that over the years, equity has received the highest allocation of the total portfolio. The survey results in figure 4.3 which gave a breakdown of asset allocation for 2013 revealed that there has been no major changes in portfolio composition and asset mix of most

institutions. The findings revealed that the major asset class on portfolios of institutional investors in Namibia still remains equity while only a small fraction of the total portfolio is allocated to real estate. This was a common trend in the portfolios of all the institutional investors in Namibia that took part in the survey regardless of the type of institutional they are. All the respondents revealed that over the years, equity has received the highest allocation of the total portfolio. According to the OECD report (2013, p. 32), institutional investors in Namibia invested much of their assets in equity which accounted for about 57%, bill and bonds, 22%, cash and deposits 12% and others at 9%.This study reveals that the major asset class on portfolios of institutional investors in Namibia is equity while on the other hand only a small fraction of the total portfolio is allocated to real estate. It therefore can be concluded that real estate is not a major asset class on the portfolios of most institutional investors. Institutional investors invest in financial securities such as equity, bonds and cash as their main asset classes.

According to figure 4.6 majority of the respondents indicated that they were somewhat just about right with their target allocation to real estate and only 2 had intentions of increasing their allocation to real estate in the near future. This implies that most institutional investors still consider real estate as an alternative investment which is not as important as financial securities such as bonds, equity and cash. As for the question on whether to increase or decrease current allocation to real estate, as seen in figure 4.7, 4 (40%) of the respondents said that they were not certain about future allocation to real estate. This could be due to the fact that most respondents indicated that future portfolio composition is

determined by changes in the macroeconomic environment. Changes could be then made to their portfolio allocations to suit the changing investment requirements or market conditions.

When analysing the question on whether institutions would increase their allocations to real estate in the near future, considering the fact that the results show that only 20% of the respondents indicated that they had intentions of increasing their allocations to real estate in the next 3 to 4 years infers that real estate is not likely to grow on portfolios of institutional investors any time soon because it is not regarded as a major asset class as the other financial securities such as bonds, equity and cash. However, some institutional investors have started realising the importance of including real estate in a mixed asset portfolio, nevertheless as seen in figure 4.8, majority of the respondents represented by 90% disagreed with the 15%-30% allocation to real estate investment as suggested by academic research. The disagreement was based on the risks of direct real estate investments such as liquidity, Asset volatility and Lack of reliable valuation data. They however thought that allocations of between 8% and 15% may be fairly reasonable.

According to figure 4.9, the survey reviewed that institutional investors do not really use the direct real estate investment method to structure their exposure to real estate investment. This could be due to the fact that no independently established historical valuation information is available about the price of real estate and if it is present, this information is often difficult to get hold of. Bank

Windhoek property fund (2010, p.5). Investors find it very difficult to get hold of information on the historical investment performance of direct real estate investment in Namibian they can base their investment decisions on. Furthermore the asset class of real estate does not typically have enough close substitutes in the market and finding buyers or sellers may prove difficult due to a lack of any organized market that focuses on direct real estate trading.

According to figure 4.10, the results showed diversification as the most important attribute for the inclusion of real estate in portfolios of institutional investors. Diversification benefit was suggested to be the main reason institutional investors included real estate in their portfolios, this finding was in line with the findings in table 4.3 which indicated that the correlation coefficient results for the returns of real estate to the other asset classes showed that there was a little diversification benefit that real estate provided to portfolios of institutional investors in Namibia between the period 2007 to 2012.

Furthermore contrary to what might have been expected from a classical asset allocation model, the inflation-hedging attribute was not considered as attractive factor of including real estate in a portfolio and was seen as less attractive by 60% of the respondents. This could be due to the fact that most institutional investors in Namibia prefer to structure their real estate investment is in form of REITs and not in direct investment. The hedging capacity of real estate is said to depend on the type of real estate exposure and type of inflation. Hoesli et al. (2008, pp 1-20) found that the type of real estate exposure plays a significant role

in hedging against inflation. The hedging ability of real estate comes from holding direct real estate and being able to increase rental rates during periods of inflation. The findings in figure 4.9 indicated that institutional investors in Namibia do not necessarily structure their real estate investment through direct real estate and this explains why inflation hedging is not such an attractive attribute for institutional investors when they are considering real estate investment because they seem to be aware that their type of exposure to real estate does not necessarily hedge against inflation.

When it comes to risk factors in real estate investment, according to figure 4.13, the most extremely important major risk factor institutional investors take into account when considering real estate investment was Liquidity. This was said so by majority of the respondents represented by 60% of the total respondents. This could be due to the fact that unlike financial assets, Property investments cannot be easily converted into cash. As a result it becomes costly and time consuming to trade property assets. This is in line with existing literature. According to Woychuk (2012,) Time lost between the time you put the property on the market and the time when it actually is sold can be costly and challenging. With the liquidity risk, most investors fear that when immediate cash needs arise, the asset won't trade or sell at market value because of difficulties in bringing buyers and sellers together due to a lack of organised market and lack of valuation information as has been earlier noted. This is consistent with the earlier result that indicated that all the 10 (100%) of the respondents favour to structure their real estate investments exposure towards real estate investment trusts (REITs)

which are listed properties as investment methods because they (REITs) display less liquidity problems as compared to physical direct real estate investment. It can therefore be inferred that liquidity risk is the most significant risk factor investors take into account when there are making real estate investment decisions.

With regards to the strategies institutional investors use in real estate investment and allocation, figure 4.11 shows that 50% of the respondents said economic forecast was an extremely important factor to consider for the inclusion of real estate investment in a mixed asset portfolio. Most asset fund managers agreed that macroeconomic conditions such as inflation, growth rate and interest rate were important factors to consider when making real estate investment decisions. Majority of the Investors said that their objective when making any form of investing is to beat inflation. For example, some respondents indicated that their objective was to achieve higher returns on investments, with a target of 3% above inflation per annum. Therefore the process of determining the mix of assets to hold in a portfolio becomes critical. Investment managers then aim to balance risk and return by apportioning a company's investment portfolio to different asset classes according to the economic forecast.

Economic forecast is an important aspect of business, be it in specific sectors of the economy or even specific firms as it plays a vital role in making investors get a rational idea of how economic conditions may be in future. Economy forecast helps investors to make decisions that may help prevent a calamitous future.

According to the survey results, economic forecast was followed by current market values of assets. These results are so consistent because market values of assets are determined by macro-economic factors such as inflation rate, interest rate and growth rate. Furthermore, besides economic forecast, based on secondary data, the study revealed that most of the institutional investors in Namibia are subsidiaries of South African based parent companies, therefore some investment decisions and investment policies for the Namibian local subsidiaries are determined by South African based parent companies.

The most dominant technique used in asset allocation valuation process is the CAPM with a response rate of 40% as indicated in figure 4.12. It is not surprising that most respondents used CAPM. Falk (2012, p.12) found that CAPM is the most utilized pricing tool when it comes to valuing publicly listed assets or securities. This is so because it reflects the risk and expected performance of a given asset. Typically investors would want to know the relationship between risk and expected return of securities that they are investing into compared to the overall market. This model is very popular among investors because it is the key element that separates the risk affecting an asset's return into two types. These are unsystematic risk and systematic risk. Other techniques category was just as dominant as CAPM, as 40% of the respondents indicated that they used other techniques besides those that were presented in the questionnaire. The second method of technique used as indicated by 30% of the respondents was Modern portfolio theory.

Duration matching of assets to liabilities was used by 20% of respondents. The ability of assets to generate adequate cash flows to meet liability funding obligations in a business is of great importance. If an investment manager can calculate the duration of its assets and the duration of its liabilities, it can make a determination as to the interest rate sensitivity of the portfolio, and thus estimate its ability to meet its future obligations. It was therefore interesting to note that only 20% of respondents employed this technique. This could be due to the fact that majority of the respondent do not have direct real estate exposure on their portfolios. It is consistent with the earlier results which reviewed that the exposure to direct real estate is very minimal. This technique mostly applies well to those investors who are exposed to physical direct real estate investment. The long-term, secure, rental income stream associated with assets let on long leases to financially sound tenants, often incorporating inflation-hedging features, which makes real estate particularly appropriate for duration matching of assets and liabilities.

All the respondents had applied different techniques in their portfolio allocation process due to different obligations and investment objectives. Each and every institution has its own unique goals it desires to achieve and challenges it faces as it tries to achieve those goals. Brown & Kelly (2002, p. 66). According to figure 4.14 Tracking error which is the extent to which a portfolio's performance differs from the performance of the benchmark to which it's being compared was the most common among respondents. This can be attributed to the fact that all the investors indicated that they have a benchmark portfolio that guides them in their

allocation process. Typically whenever an investor includes other asset classes in the portfolio other than a typical total stock market fund, they increase tracking error. An allocation to REITs, international stocks, or a small-cap value fund, for example, would have that effect. Most institutional investors that were surveyed had exposure to other asset classes besides real estate and this could explain the 70% response rate for the tracking error technique. However, they noted that the techniques used were determined by changes in the macroeconomic environment to suit their changing investment rules, objectives and market conditions.

Mean-variance analysis which got a response rate of 50% proved to be important to investors because it provided them with a basis on which to assess the trade-off between risk and return as its (mean-variance) analysis quantifies the relationship between expected return and portfolio variance. By being able to weigh against expected return, investors attempt to make more efficient investment choices pursuing the lowest risk for a given expected return, or pursuing the highest expected return for a given level of risk.

For the purpose of this study, average annual returns for equity, bonds, cash and real estate were obtained from different institutional investors in Namibia for the period 2007 to 2012, as represented by figure 4.16. The FTSE/JSE/NSX All Share Index was used for the returns on various asset classes because majority of the institutional investors that had participated in the survey indicated that they had investments both in the Namibia market and South African market. Furthermore all of the asset management funds respondents indicated that they

are dual listed both on the NSX and the JSE.

As it was noted in the graph, in the period 2007 to 2012 real estate provided its highest return of 33.48% in 2012 while equity's highest return of 32.13% was in 2009. Bonds and cash' highest returns of 16.97% and 12.39% respectively were in 2008. Real estate and equity's lowest returns were in 2008 with -2.51% and -23.23% respectively. Bonds offered its lowest returns of -0.99% in 2009 while the lowest returns offered by cash were 5.58% in 2012. As it can be noted from the results in table 4.2 and figure 4.16, each asset class performed differently from the others throughout the period 2007 to 2012. This implies that each asset class will perform differently at a given point in the business cycle and responds differently to economic market conditions such as inflation, interest rates and growth rates. This conforms to what has been established that asset class performance depends on shifts in the economic environment. When inflation and interest rates go up, money markets will perform well. Bonds will do well when future inflation is expected to be low. Equities tend to perform well when corporate profits are expected to be good, and this is usually in conditions where interest rates are low and property performs well in low interest rate conditions Fairbairn Capital, (2013, p. 1).

As it can be noted from figure 4.16 in 2008 as equity and real estate offered negative returns, bonds and cash provided the highest returns they have ever produced over the period 2007 to 2012. The returns results for 2008 imply the importance of diversification because as the returns of equity and real estate offered negative returns, those of bond and cash offered positive returns. The

annual returns of real estate and equity show a general trend of rising returns whenever the returns of bonds and cash decrease as seen from figure 4.16 throughout the period of 2007 to 2012. This implies that if a portfolio is made up of different securities, volatility can be reduced and diversification benefits can be enhanced as different asset classes display different correlations with each other and tend to display differing returns over time.

The main findings of the research revealed that there were low negative correlation coefficients of real estate returns with the returns of bonds and cash. This therefore suggests that real estate could play the role of an effective diversifier by lowering volatility and boost returns for a given level of risk of the portfolios of institutional investors in Namibia. Statically, correlation coefficient results of the returns of real estate with other asset classes over the period 2007 to 2012 showed that there was a negative correlation coefficient of -0.014 between the returns of real estate with those of bonds and a -0.57 correlation coefficient between the returns of real estate and those of cash. However a positive correlation of 0.8% between the returns of real estate and those of equity was observed, suggesting that the diversification benefit between the two assets' returns was there but it was insignificant.

The main conclusion drawn from the study is that correlation coefficient results suggested that there was very little diversification benefit that real estate provided to portfolios of institutional investors in Namibia over the period 2007 to 2012. Although no correlations were close to -1 all were below 1 with some showing

negative readings, indicating diversification potential for investing in real estate. Hoesli et al. (2004, p.175) found that diversification benefits can be much greater when the correlation coefficients of the returns of two assets is closer to -1, but as the correlation coefficient starts to approach 1, the benefits start to lessen. The survey results indicated that the returns of real estate had a weak negative correlation coefficient with bonds which has the second largest allocation of the portfolio and were positively correlated with equity which has the largest portion of allocation on most portfolios of the institutional investors. Therefore as the correlation of the returns between equity and real estate are very close to 1, the diversification benefits lessened. It is worth noting that these survey results are consistent with earlier findings by Paliwal (2013, p.189) diversification benefits of real estate in other countries seemed to be notable than what was experienced in Namibia.

The positive correlation from the survey results between the returns of real estate and those of equity could be due to the fact that most institutional investors' exposure to real estate in Namibia is through the REITs which are listed properties and not through direct real estate investment. Wilkerson (2007, p.48). REITs investment tends to differ from direct real estate investment because the latter behaves similar to any other stock that is listed on the stock exchange market. The implication of this is that the diversification benefits of real estate depend on the type of real estate exposure an investor has. The diversification benefits an investor gets from the above mentioned types of real estate investment will also be determined by the location of the investment. This is

supported by two surveys of institutional investors' diversification strategies, which review that real estate type and geographical location are important in enhancing diversification benefits. Webb (1984) found that 61 % of investors diversified by real estate type while 62 % diversified by geography. Louargand (1992) found that 89 % of the surveyed institutional investors diversified by real estate type, 72 % by geographical location and 41% by economic location. 54 % indicated that real estate type was the most important diversification criterion. Therefore Institutional investors should strategize as to which type of real estate exposure they are going to have in their portfolios in order to obtain the greater benefits. Some real estate exposure gives very little diversification benefits as compared to others. Furthermore as REITs returns continue to provide high correlations with financial asset classes such as equity they cease to provide as many diversification benefits as conventional direct real estate investment in portfolios of investors.

The higher the correlation coefficient, the more closely the REITs and equity returns move together over time. This, thus, implies that REITs returns then become negatively correlated with inflation and cannot hedge against inflation. This thereby explains the survey result in figure 4.10 which indicated that institutional investors in Namibia do not consider real estate as an important factor that can hedge against inflation. They mostly structure their exposure to real estate investment through real estate investment trusts which have been found to be not a good hedge against inflation. REITs returns become negatively correlated with inflation over time and cannot hedge against inflation. Crocker,

Hartzell and Hoesli (1997). REITs have the same characteristics as common stock and they tend to react in a similar way with stocks to economic changes. This, therefore, implies that REITs lacks the capacity to hedge against inflation. The ability of real estate to hedge against Inflation depends on what type of exposures investors have on real estate investment. The main conclusion drawn from the study is that inflation hedging and diversification benefits of real estate investment in a mixed asset portfolio depend on the type of real estate investment exposure of an investor.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter looks at the important findings that were reviewed by the survey and the recommendations that were made thereafter.

6.2 Conclusion

The purpose of this study was to establish the role real estate investment plays in diversifying portfolios of institutional investors' in Namibia. The main objective was to investigate the strategies institutional investors use in allocating their funds to real estate investment so as to determine the contributions such strategies make in enhancing diversification benefits.

The main findings of the research revealed that there were low negative correlation coefficients of real estate returns with the returns of bonds and cash. This therefore suggests that real estate could play the role of an effective diversifier by lowering volatility and boost returns for a given level of risk of the portfolios of institutional investors in Namibia. Statically, correlation coefficient results of the returns of real estate with other asset classes over the period 2007 to 2012 showed that there was a negative correlation coefficient of -0.014 between the returns of real estate with those of bonds and a -0.57 correlation coefficient between the returns of real estate and those of cash. However a positive correlation of 0.8% between the returns of real estate and those of equity was observed, suggesting that the diversification benefit between the two assets' returns was there but was insignificant. The conclusion that the diversification

benefit was insignificant is supported by Hoesli et al. (2004, p.175) who found that "The closer the correlation between two assets is to -1, the greater the diversification benefits. These benefits diminish with increasing correlation coefficients, and disappear when the correlation coefficient is equal to 1." The main conclusion drawn from the study is that correlation coefficient results suggest that there was very little diversification benefits that real estate provided to portfolios of institutional investors in Namibia over the period 2007 to 2012. Although no correlations were closer to -1 all were below 1 with some showing negative readings, indicating diversification potential for investing in real estate.

It can therefore be inferred that real estate does not play a very significant role in diversifying portfolios of institutional investors in Namibia. The correlation coefficient results showed that there was very little diversification benefits that real estate provided to portfolios of institutional investors in Namibia between the period 2007 to 2012. The results of this study are consistent with earlier findings by Paliwal (2013, p. 189) "real estate returns as well as its contribution to diversification was not very impressive when compared to the findings from other countries."

According to the survey results, the findings revealed that the major asset class on portfolios of institutional investors in Namibia still remains equity while only a small fraction of the total portfolio is allocated to real estate. This was a common trend in the portfolios of all the institutional investors in Namibia that took part in the survey regardless of the type of institutional they are. These

results go in line with the OECD report (2013, p. 32) which found that institutional investors in Namibia invested much of their assets in equity which accounted for about 57%, bill and bonds, 22%, cash and deposits 12% and others at 9%. The relatively low percentage allocated to real estate was said to be due to the fact that Investment prospects in domestic financial markets, property market and opportunities for diversification are very limited in Namibia. This results in most institutional investors opting to explore investment opportunities in South Africa, especially that the Namibia financial system and economy is closely linked to South Africa. For instance the Namibia dollar is pegged one to one with the South African rand. Therefore Namibia institutional investors feel comfortable to make their investment in South Africa.

Furthermore it was revealed that regulations and rules play a significant role in the allocation processes of portfolios in terms of the asset composition of the total portfolio and the percentage to be allocated to each asset class for most institutions in Namibia. These rules ranged from those prescribed by boards of individual firms to those set by the Namibian government. The latter applied particularly to the pension funds because these regulations served as a guide in the investment decision-making process of the pension funds.

Liquidity was reviewed as a major risk factor institutional investors take into account when considering real estate investment. With liquidity risk most investors feared that when immediate cash needs arise, the asset would not trade or sell at market value because of difficulties in bringing buyers and sellers

together due to a lack of organised property market and lack of valuation information in Namibia. Liquidity was seen as the main reason why investors in Namibia structure their real estate investments exposure towards real estate investment trusts because they (REITs) display less liquidity problems as compared to physical direct real estate investment. However, the diversification benefits of real estate investment in a mixed asset portfolio depend on the type of real estate investment exposure an investor has.

The strategies used for portfolio allocation process are selected based on changes in the macroeconomic environment to suit the changing investment rules, objectives and market conditions. Economic forecast and current market values of assets were indicated as the main primary sources for real estate investment allocation decision. Macroeconomic conditions such as inflation, growth rate and interest rates were said to be important factors in the real estate investment decision making and asset allocation process as a whole. It therefore can be inferred that the future growth of Real estate investment on portfolios of institutional investors in Namibia will be determined by macroeconomic conditions.

6.3 Recommendations

Due to the wide range the topic of real estate investment covers, it is recommended that further research studies be conducted in Namibia especially that most of the existing studies on real estate is not necessarily tailored to the case for Namibia, but is general literature on the role of real estate investment in

mixed asset portfolios across the world. Research studies with a Namibian perspective should be conducted to investigate the best ways in which institutional investors can structure their exposure to real estate in order to achieve higher diversification benefits. For instance Paliwal (2013, p. 189) in his study on Diversification in a Small Market: Some Evidences from Namibia. Found that "Direct investment in real estate was also found to provide diversification benefit. However, real estate returns as well as its contribution to diversification was not very impressive when compared to the findings from other countries." Follow up studies should be conducted to investigate why diversification benefits are not impressive on portfolios of institutional investors in Namibia. Studies should be conducted to investigate if real estate investment trusts on portfolios of investor in Namibia can be a proxy for direct real estate investment, and to investigate which real estate sectors and geographic regions could be used to achieve higher diversification benefits.

Investment in physical direct real estate in Namibia is significantly low and is mostly ventured into by asset management funds. It is thus recommended that other institutional investors as well should invest in physical direct real estate. The inclusion of direct investment in commercial property brings significant further benefits to the portfolio because investors cannot obtain all of the benefits of real estate investment from REITs alone. Direct investment in real estate through commercial properties generates an attractive income stream and effective inflation hedging potential while REITs minimize the liquidity problems associated with direct real estate investment since they are traded on

the stock market. Therefore the combination of both physical direct real estate investments with publicly traded REITs provides investors with maximum benefit of real estate investment in the form of diversification and inflation hedging.

REFERENCES

Anderson, D. (2011). *Hedging inflation with a real assets investment strategy.* Retrieved from http://www.harrismycfo.com/pdf/WS_PDFSharrismycfohedginginflationvi.pdf

Arnason, O., & and Persson, K. (2012). *Swedish real estate as a hedge against inflation - With comparison to stocks, bonds and gold.* Stockholm : Real Estate Development and Financial Services.

Ball, M., Lizieri, C., & MacGregor, B. (1998). *The economics of commercial property market.* London: Routledge.

Baird Private Wealth Management (2012). *The role of alternative investments in a diversified portfolio.* Retrieved from http/www.rwbaird.com/bolimages/Media/PDF/Whitepapers/Demystifying-the-Role.pdf

Bank of Namibia (2013). Financial Stability Report Volume 7 No 2. Namibia, Windhoek: Bank of Namibia

Bank Windhoek property fund (2010). *Property booklet.* Retrieved from http:// www.cam.com.na/newsroom/

Baum, A., & Crosby, N. (1995). *Property investment appraisal.* London: Routledge.

Benjamin, D.J., Sirmans,S.G., & Zietz, N. E. (2001). Returns and risk on real estate and other investments: more evidence. *Journal of real estate portfolio management.* 7(3), 183-241

Bloch, B. (2011). *Diversifying Your Portfolio with Real Estate and* Infrastructure. Retrieved from http://www.investopedia.com/articles/stocks/11/real-estate-infrastructure-asset-allocationasp

Brigham, E., & Gapenski, L.(1994). *Financial Management: Theory and Practice,* (7th ed.). Orlando, Florida: The Dryden Press,

Brueggeman, W.B., Chen A.H. & Thibodeau T.G. (1984). Real Estate Investment Funds: Performance and Portfolio Considerations. *Journal of the American Real Estate and Urban Economics Association. 12*(3) 333-354.

Brown, K., & Reilly, F. (2002). *Investment analysis and portfolio management* (7th ed.). USA: South-Western

Brounen, D. (2008). *The boom and gloom of real estate markets*. Erasmus Research Institute of Management. Rotterdam

Case, B., Wachter S.M & Worley, R.B (2012). *Inflation and real estate investment.* Retrieved from http/ realestate.wharton.upenn.edu/research/papers/full/716.pdf

Chun, G. H., Sa-Aadu, J., & Shilling, J.D. (2004). The Role of Real Estate in an Institutional Investor's Portfolio Revisited. *The Journal of Real Estate Finance and Economics*, *29(*3), 295-320.

Chua, A., (1999). The role of international real estate in global mixed-asset investment portfolios. *Journal of Real Estate Portfolio Management, 5* (2), 129-137.

Collis, J., & Hussey, R. (2014). *Business research a practical guide for undergraduate and postgraduate students*. 4th ed England: Palgrave Macmillan

Crocker, L. H., Hartzell, D. J. & Hoesli, M. E. (1997). International Evidence on Real Estate Securities as an Inflation Hedge. Real Estate Economics, pp. 193-221.

Dawn property consultancy (2013). *Lack of investment opportunities drains Namibia.* Retrieved from http://www.dawnpropertyconsult.co.zw/lack-investment-opportunities-drains-nam/

Economy Watch. (2009). *Real estate investment, real estate investing.* Retrieved from http://www.economywatch.com/investment/real-estate-investment.html

Fabozzi, F. J., & Markowitz, H.M. (2011). *The theory and practice of investment management: Asset allocation, valuation, portfolio construction and strategies*. New Jersey: John Wiley & Sons

Fairbairn Capital (2013). *The how and why of diversification.* Retrieved from http://www.fairbairncapital.com/pdfs/default/articles/Diversification

Falk, J. (2012). *Direct and Indirect Real Estate in a Mixed-asset Portfolio - Is direct or indirect preferable?* Department of Real Estate and Construction Management, Stockholm: Real Estate Management

Fisher, D.J. & Sirmans, C. F. (1994). The Role of Commercial Real Estate in a Multi-Asset Portfolio. *Journal of property management. 59* (1) 54

Gay, R.L., Mills, G.E., & Airasian, P. (2009) *Educational research competencies for analysis and applications*. (9th ed.). New Jersey: Pearson Education Ltd.

Goetzmann, W N. & Dhar, R. (2005). *Institutional Perspectives on Real Estate Investing: The Role of Risk and Uncertainty.* Retrieved from http://ssrn.com/abstract=739644

Government Gazette of the Republic of Namibia (2013). *Amendments of the regulations of the pension funds : pensions funds act, 1956.* Retrieved from http://wwwicancpd.net/ftp/public/legislation/5205-Gov%N126-127.pdf

Greener, S. (2008). *Business research methods*. (1st ed.). USA: Bookboon.

Hamelink, F. & Hoesli, M., (1996). Swiss real estate as a hedge against inflation. New evidence using hedonic and autoregressive models. *Journal of property finance 7,* (1) 33-49.

Hoesli, M., & Lizieri, C. (2007). *Real estate in the investment portfolio.* Retrieved from http://www.vastgoedkennis.nl/doc/publicaties/site/real_estate_investment portfolio_Hoesli_Lizeri.pdf

Hoesli, M., & Macgregor, B.D. (2000). *Property investment: Principles and practice of portfolio management.* New York :Routledge

Hoesli, M., Lekander,J., & Witkiewicz,W. (2004). International evidence on real estate as a portfolio diversifier. *Journal of Real Estate Research 26*(2), 161-206.

Hoesli, M., Lizieri, C. & MacGregor, B., (2008). The Inflation Hedging Characteristics of US and UK Investments: A Multi-Factor Error Corretion Approach. *The Journal of Real Estate Finance and Economics*, *38* (2)183-206.

Hudson-Wilson, S (Ed.). (2000). *Modern real estate portfolio management.* (1st ed.).Pennsylvania, USA: Wiley & Sons

Inland Real Estate Investment Corporation. (2012). *The benefits of diversification with real estate.* Retrieved from http//www.adsorgrouevents.com/eveents2012/connected/pdf

(2008). Namibia selected issues and statistical appendix. *IMF country report no. 08/82*. Washington DC: International Monetary Fund publication services.

International Monetary Fund (2008). *Namibia: Selected Issues and Statistical Appendix.* Washington, D.C: IMF Publication Services.

Investopedia staff (2012). *Diversification beyond stocks.* Retrieved from http:// www.investopedia.com/articles/05/021105.asp.

LaSalle Investment Management, Research and Strategy (2012). *The Changing Role of Real Estate in a Portfolio.* Retrieved from http://www.lasalleresearch.com/2012-isa/the-changing-role-of-real-estate-in-a-portfolio

Lee, S., & Stevenson, S.(2004). *Real estate in the mixed asset portfolio: The question of consistency.* Retrieved from http://centaur.reading.ac.uk/21527/1/1004.pdf

Louargand, M. A., (1992), "A Survey of Pension Fund Real Estate Portfolio Risk Management Practices", *Journal of Real Estate Research*, 7(4) 361-373.

Lowrey, C.F. (2002). A framework for constructing international real estate portfolios. Prudential Real Estate Investors Research.

MacKinnon, G. (2007). *Optimal allocation to Real Estate in Canada.* Canada: Real Property Association of Canada.

Markowitz, H.M. (1952). Portfolio Selection. *The Journal of Finance,* 7(1), 77-91.

O'Donnell, E.J. (2009). *Real assets and inflation hedge investing.* Retrieved from http://www.top1000funds.com/attachments/430_09_08_real_assets_investing.pdf

Organization for Economic Co-operation and Development (OECD). (2013). *Pension markets in focus 2013.* Retrieved from http://www.oecd.org/daf/pensions/pensionmarkets.

Ori, J. J. (1995). *A seven – step portfolio diversification strategy*. Retrieved from http://www.paramountcapitalcorp.com/pdf/SevenStepDiversificationStrategy.pdf

Osei – Nkansah, D. & Kifleyesus, S. (2003). institutional investor behaviour in allocating real estate in the mixed – asset portfolio: A survey of Swedish pension funds and life insurance companies

Paliwal, U.L. (2013) Diversification in a Small Market: Some Evidences from Namibia. *International Journal of Economics and Finance*, *5* (5) 184 – 189

Prassas, F. (2013). *Institute of real estate management: Finance and asset management.* Chicago: Institute of real estate management

RREEF Real Estate. (2012). *Direct real estate: Institutional grade investing for individuals' portfolios.*

Ross, L., & Mancuso, J. (2011). *Structuring a private real estate portfolio.* Russell research : Russell investments

Ross, S. A., & Zisler, R.C. (1991). Risk and Return in Real Estate. *Journal of Real Estate Finance and Economics*, (4)175-190.

Rubens, J. H., Bond, M. T. & Webb, J. R., (1989). The inflation-hedging effectivness of real estate. Journal of Real Estate Research, *4*(2), 45-55.

Schuck, E.J. (1995). Why Diversification does work. *Real Estate Review. 25* (I), 1-12

Shaukat, M. (2010) *The Benefits and Importance of Commercial Real Estate.* Munich Personal RePEc Archive.

Stammers, R. (2012). *Add some real estate to your portfolio*. Retrieved from http://finance.yahoo.com/news/add-real-estate-portfolio-182502029.html

Statistics Canada (2010). *Survey Methods and Practices*.

Stevenson, D. (2013). *Managing your investment portfolios for dummies*. Chichester, West Sussex: John Wiley & Sons

Tyson, E., & Griswold, R.S. (2009). *Real estate investing for dummies.* Indiana: Wiley Publishing, Inc

Vančura, F. (2011) *Role of real estate in portfolios of pension funds*

Veale, R. S. (2013). *The investor's guide to alternative investments. The role of alternative investments in portfolio design*. New York: Prentice Hall Press:

Viezer, T.W. (1999). Building Real Estate Portfolios, one deal at a time with an eye on diversification. *Real Estate Finance, 16* (I), 3- 44

Vision focus. (2011) *Real estate: New opportunities for institutional investors.* State street services

Vogt, W.P., & Johnson, B.R. (2011) *Dictionary of statistics & methodology – a nontechnical guide for the social sciences*, (4th ed.). Newbury, CA: SAGE.

Watts, W. (2014). *What is the single best hedge against inflation? There may not be one.* Retrieved from http://blogs.marketwatch.com/thetell2014/06/06/what-asset-is-the-single-best-hedge-against-inflation-there-may-not-be-one/.

Webb J.R., (1984). Real estate investment acquisition rules for life insurance companies and pension funds: *A Survey Journal of the American Real estate and Urban Economics Association,12*(4), 495-520

Wilkerson, B. R., (2007) *Real Estate: Portfolio Allocation, Diversification, and Timing.* Boston: Property & Portfolio Research, Inc.

Worzala, E. M., & Bajtelsmit, V. L. (1997). Real estate asset allocation and the decision making framework used by pension fund managers. *Journal of Real Estate Portfolio Management, 3* (1) 47-56.

Woychuk, I., (2012). *Exploring real estate investment: Advantages and disadvantages.* Retrieved from http://www.investopedia.com-exploring-real-estate-investments-advantages-and-disdvantages/

APPENDIX 1: INTRODUCTORY LETTER

The role real estate investment plays in diversifying portfolios of institutional investors in Namibia.

Dear respondent,

Thank you for taking the time to complete this survey. Your feedback is integral to academic research in understanding the role real estate investment plays in diversifying portfolios of institutional investors in Namibia.

This is an academic study and all information collected shall be utilized purely for this purpose and your responses will be handled with utmost confidentiality. This online survey should take about 15 minutes to complete. It would be appreciated if all questions were answered and the questionnaire submitted on /before 5th September 2014.

Confidentiality:

All information will be kept strictly confidential. Your name or institution will not be associated with your responses and you will not be identified in any way through any report that will be published.

Voluntary participation:

Your participation should be absolutely voluntary and there is no penalty should you choose to withdraw from the study or choose to not answer any questions.

Contacts and questions:

If you have any question concerning this survey, you may contact the researcher, Mukwa Magubbwi Kawesha by email at mmkawesha@yahoo.com. You may also contact the researcher's supervisor, Prof Heikki Heino at 0817741501.

UNIVERSITY OF NAMIBIA
Inspiring Minds & Shaping the Future

THE ROLE REAL ESTATE / PROPERTY INVESTMENT PLAYS IN DIVERSIFYING PORTFOLIOS OF INSTITUTIONAL INVESTORS IN NAMIBIA.

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Contacts and questions:

If you have any question concerning this survey, you may contact the researcher, MukwaMagubbwiKawesha by email at mmkawesha@yahoo.com. You may also contact the researcher's supervisor, Prof HeikkiHeino at 0817741501.

APPENDIX 2: SURVEY QUESTIONNAIRE

INSTRUCTION: please tick the appropriate answer. For example √ and fill in the blank spaces where necessary

1. What kind of institutional investor are you?

    a) Pension fund

    b) Insurance company

    c) Retirement fund

    d) Education endowment fund

    e) Other (please specify)

2. If you are asset fund managers, for which institutions do you manage investment portfolios? (If need be, kindly select more than one choice.)

    a) Pension fund

    b) Insurance company

    c) Retirement fund

    d) Education endowment fund

    e) Other (please specify)

3. How long has your institution invested a portion of its assets in real estate?

    a) 0 – 3 years

    b) 4 – 5 years

    c) 6 – 10 years

    d) 11 – 20 years

    e) 20+ years

4. Which of the following is the method most frequently used by your institution to invest in real estate? (Pick more than one if needed.)

a) Real Estate Investment Trusts (REITs)

b) Separate, managed accounts

c) Co-mingled real estate fund

d) Partnerships

e) Sole, direct investment

f) Other (please specify)

5. Which technique do you use for portfolio allocation and valuation process? (If need be, kindly select more than one choice)

a) Modern Portfolio Theory

b) Maturity matching of assets to liabilities

c) Duration matching of assets to liabilities

d) Index model (capital asset pricing model)

e) Other

6. What % of your overall portfolio is currently held in real estate?

7. Which of the following are the three most important factors influencing your real estate asset allocation decision? Rank in the order of importance (starting with 1)

Advice from internal staff/ external consultant_____

Economic forecasts_____

Current market values of asset_____

Long term historical performance_____

Actions taken by industry peers_____

Other (please specify) _____

8. Do you have any rules or regulations that affect your asset allocation process? If yes, can you briefly indicate them?

9. What is your target allocation to real estate investment of your total portfolio?

a) 0% - 3%

b) 4% - 7%

c) 8% - 11%

d) 12% - 15%

e) 16% and above

10. Over the next 3-4 years, do you expect to increase or decrease your assets allocated to real estate?

a) Increase

b) Decrease

c) No change

d) Uncertain

11. On a 5-point scale, with 1 being "Much Below," and 5 being "Much Above," are you at, above or below your target allocation to real estate?

1	2	3	4	5	
Much below	**Somewhat below**	**Just about right**	**Somewhat above**	**Much above**	**N/A**

12. Do you agree with the15% -30% allocation to real estate in a mixed portfolio as suggested by some academic researchers?

a) No

b) Yes

c) Uncertain

13. What has been the investment allocation to the following asset classes in the period 2007 -2012?

	2007	2008	2009	2010	2011	2012
Real Estate						
Equity						
Bonds						
Cash						

14. On a 5-point scale, with 1 being "extremely attractive," and 5 "not so attractive," how do you view the following attributes when considering real estate investment?

Diversification _____

Cash generation _____

Potential for capital gains _____

Inflation hedging _____

Long-term benefits _____

Other (please specify) _____ _____

15. What has been the average investment returns in the following asset classes in the period 2007 -2012?

	2007	2008	2009	2010	2011	2012
Real Estate						

Equity						
Bonds						
Cash						

16. In your view, which of the following are the top three major risk factors in real estate investment? Rank in the order of most risk (starting with 1)

Asset volatility_____

Liquidity risk_____

Lack of reliable valuation data_____

Macro-economic uncertainty_____

Legal and regulatory risk_____

Other (please specify) _____

17. Which method do you use in analysing the risk-return component of various asset classes in your portfolio? (If need be, kindly select more than one choice)

a) Mean variance analysis

b) Liability risk

c) Beta coefficients

d) Tracking error

e) Other

APPENDIX 3: SURVEY INTERVIEW QUESTION

1. Please explain the major reasons for the current percentage allocation to real estate on your portfolio
2. Do you have any rules or regulations that affect your asset allocation process? If yes, can you please explain briefly?
3. Could you please give your view on the suggestions by some researchers who have researched on real estate investment and suggest that investors should allocate between 15% to 30% of their total portfolios to real estate investment?
4. What would be the ideal fraction of the total portfolio to be allocated to real estate on the portfolios of institutional investors in Namibia? Please explain your answer.
5. How do you view the future of real estate on the portfolios of institutional investors in Namibia?
6. Kindly explain your views on the risk factors of real estate investment in Namibia.
7. Would you please explain the reasons for the structure of your real estate exposure?

APPENDIX 4: MARKET DATA ON FTSE / JSE All Share Index.

MARKET DATA TO THE END OF SEPTEMBER 2012						
PERFORMANCE DATA						
	Month	Quarter	Year to date	1 Year	3 Years (p.a.)	5 Years(p.a.)
INDEX RETURNS INCLUDING INCOME & INFLATION						
FTSE / JSE All Share Index (Free Float)	1.64%	7.26%	14.81%	24.43%	16.01%	6.64%
FTSE / JSE Capped All Share Index	1.64%	7.25%	14.86%	24.54%	16.37%	7.55%
FTSE / JSE SWIX All Share Index	1.20%	7.26%	17.28%	26.96%	17.21%	8.42%
JSE Property Unit Trusts	- 1.41%	9.56%	22.12%	29.05%	22.11%	13.53%
All Bond	0.93%	5.00%	13.07%	17.04%	12.66%	10.57%
Alexander Forbes Money Market	0.44%	1.36%	4.25%	5.72%	6.26%	8.17%
Short Term Fixed Interest Rate Index	0.40%	1.35%	4.17%	5.61%	6.25%	8.03%
JP Morgan Global Bond Index	- 1.08%	3.69%	5.46%	6.06%	7.94%	10.82%
MSCI World Index	0.63%	7.78%	16.06%	25.55%	11.19%	2.02%

(Rands)						
Citi *WGBI (was Salomon Brothers Bond Index)* (Rands)	- 0.88%	3.90%	5.69%	6.02%	7.30%	10.30%

Source: Alexander Forbes: Namibia manager watch survey.