EFFECT OF SELECTED INTERNAL FACTORS ON THE PERFORMANCE OF OCCUPATIONAL PENSION SCHEMES IN KENYA

BY

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D61/10701/2018

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION SCHOOL OF BUSINESS THE UNIVERSITY OF NAIROBI

2019

DECLARATION

I declare that this project is my original work and it has not been submitted for any academic award in any university or institution of higher learning.

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This research project has been submitted for examination with my approval as the University Supervisor.

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ACKNOWLEDGEMENTS

DEDICATION

This research project is dedicated to my parents, Dr. & Mrs. Chumba; you have continuously imparted in me the importance of education. The project is also dedicated to my siblings, may this inspire you and make you realize that you can achieve everything you set your mind upon.

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ABBREVIATIONS

BoT	Board of Trustees
DBS	Defined Benefit Scheme
DCS	Defined Contribution Scheme
MPT	Modern Portfolio Theory
NSSF	National Social Security Fund
OECD	Organization of Economic Cooperation and Development
OPS	Occupational Pension Scheme
PAYG	Pay-as-you-go
PFA	Pension Fund Administrators
PFM	Pension Fund Managers
RBA	Retirement Benefit Authority
ROA	Return on Assets
ROE	Return on Equity

ABSTRACT

Pension Industry contributes directly to the economy through reduction of old-age poverty and financial market development. The social objective of the pension schemes is provision of an acceptable living standard for its members when they retire. Upon retirement, majority of the population depends on pension income from the schemes. Investment returns for pension schemes therefore is important since it affects several stakeholders in the economy. The objective of this study was to determine the effect of selected internal factors on the performance of OPS in Kenya. The dependent variable was performance of the pension schemes measured by ROA while the independent variables were fund value and investment. Fund investments specifically focused on investment in guaranteed funds, equities and immovable property. Descriptive research design was used in the study and the population consisted of 1,168 OPS registered with RBA as at December 2018. Data was sampled randomly, and 60 schemes were selected for review. Secondary data was utilized in the study. The findings revealed a weak positive correlation of 0.21 between the study variables. Further, the finding revealed a positive relationship between investment in equities and immovable properties with coefficients of 0.0355 and 0.0302 respectively. Fund value and investment in guaranteed funds however, had a negative and weak impact on performance with coefficients of -2.344e-12 and -0.0077 respectively. This therefore implies that changes in fund value does not have a significant impact on fund performance. The study recommends that RBA should educate BoT on optimal asset allocation to ensure that they maximize returns while minimizing risks. RBA should also come up with policies to govern schemes investments in various asset categories.

CHAPTER ONE: INTRODUCTION

1.1. Background to the Study

Pension schemes are institutional investors where funds contributed by sponsors and members are collected and invested to offer future entitlements to beneficiaries Davis (1995). It therefore is an avenue where members diligently save during active working life thus ensuring their needs at old-age are catered for. Pension Industry contributes directly to the economy through reduction of old-age poverty and financial market development. Retirement system is based on three objectives of redistribution, saving and insurance. The guarantee that everyone has at least sufficient income to maintain an acceptable living standard after active employments is the key social objective for retirement schemes Bodie et al (2009).

In 1981, Chile introduced privately managed individual accounts to replace its public pay-as-you-go (PAYG) system. Since 1990, other Latin American countries as well as countries in the Central and Eastern Europe took the same approach to pension system. Pay-as-you-go system used employee current contribution from the workforce to pay current pension liabilities. The PAYG system was sustainable since workers were more than the retirees. The system however faced chronic non-sustainability crisis due to low fertility rates and increasing old age dependency Angrisani et al (2011). In 1990, more than 9 per cent of the population representing half a billion were over 60 years of age and this proportion is anticipated to increase threefold to 1.4 billion by 2030 (World Bank).

The radical change in the dependency ratios has motivated researchers to shift their focus to better pension investments. According to the United Nation's population prospect 2019 on old age dependency, the world ratio is projected to be 18.8 in 2020 up from 16.7 in 2015. This ratio defines the persons who have attained 65 years and above as a proportion of persons those between 25 – 64 years. The old age dependency ratio in Sub-Saharan Africa is projected to be 8.6 in 2020 compared to 8.5 in 2015 while in Kenya it is projected to be at 6.6 in 2020 versus 5.8 in 2015.

Pension schemes operations are anchored on various theories. Agency theory as postulated by Jensen & Meckling (1976) highlights the principal-agent relationship and the problems

that arise from it. Pension Scheme members are the principals while the board of trustees the agent. Principals seeks to minimize agency costs while agents seek to minimize principal control. While running the pension schemes, trustees do not have expertise on issues of investments and administration. The Board therefore contracts the services of experts which include Pension Fund Administrators, Fund Managers, Investment Advisors and Actuaries. Agency relationship also exist in these arrangements.

Stakeholder theory elaborates how stakeholders to an organization are affected by decisions made by management. Pension scheme stakeholders include members, sponsors, beneficiaries and government. Stakeholders are vital to the funds' continuity and success. Trustees have fiduciary responsibility to the beneficiaries of the schemes and should perform their duty with due diligence. Pension scheme stakeholders can take action against trustees according to the stakeholder recourse principle for failure to perform duty of care.

Modern Portfolio Theory provides that investment's risk and return should be evaluated on how it affects the portfolio's overall return and not viewed individually. RBA provides the asset classes and the limits for each class that pension funds can invest in. These asset classes include government securities, quoted shares, immovable property, listed corporate bonds, fixed deposits, guaranteed funds, offshore, unquoted equities private equity and REITs (RBA, 2019). Fund Managers therefore seek optimal portfolios from the asset classes that they can invest in to provide maximum returns and minimize risk exposure to the scheme.

The variables used in this study are factors internal to the pension funds. These factors are the fund value and fund investment. Studies conducted have revealed that fund value has a significant effect on the performance of the fund. Investment in different asset classes provided by the authority affects fund performance differently. Notably, investment in government securities and fixed income assets gives stable returns for pension fund while investment in equities is volatile and negatively affects the pension fund performance.

1.1.1. Internal Factors

Employers establish pension schemes as a competitive tool to attract and retain staff. According to a review conducted by the Economics Intelligence unit on corporate pensions

future, 2010, generous and well-operated schemes can be used as a powerful tool for recruitment and retention in the workplace which has witnessed increasingly scarce loyalty. Performance of these schemes therefore is paramount to all stakeholders.

Internal factors include fund asset value, fund investments, age demographics, fund expenditure, design and governance. Fund governance is critical for the proper management of pension funds. For defined benefit scheme, two thirds of the BoT is nominated by the sponsor. Defined Contribution Schemes half of the board composition is elected by the members while the other half nominated by the sponsor RBA (2000). Odhiambo (2016) in her study on BoT diversity and performance of segregated pension schemes, concluded that performance of the segregated schemes is significantly affected by trustee education level and professional experience.

Members' age is a key factor in pension schemes. Pension funds are established with the main objective being provision of income to members upon retirement. Age profile of members affects how the funds will be invested. Funds with a younger age profile tend to venture more into equity investments or riskier asset classes compared to older age profile which take on a conservative approach and invest in fixed income asset categories Whelan (2005). Pension fund performance is affected significantly by members' age Lungu (2009).

Fund value of a pension fund is composed of contributions made to the scheme by the members and sponsors. Empirically, research conducted on how fund value affects performance have revealed significant relationship between the variables. Studies by Bodie, Detemple, and Rindisbacher, (2009) revealed that fund assets strongly influence financial performance of pension funds. Study by Owino (2013) however revealed that fund value does not have a significant influence on scheme performance.

Investment strategy defines the investment mix in a given portfolio Asebedo and Grable (2004). Pension Fund investments are guided by the schemes' Investment Policy Statement that is filed with RBA for every scheme. The policy is be based on four pillars: diversification, prudent person, maturity matching and clarity Kyiv (2003). Stanko (2002) established that an investment portfolio that is actively managed translates to maximization

of returns. Pension schemes should utilize its growing value by choosing investment vehicles that generate better returns for pensioners.

1.1.2. Performance of Occupational Pension Schemes

Kirkendall (2009) notes that well-defined structure of performance is a powerful tool for prioritization and attainment of organization goals. Performance measurement is thus important and is a basic requirement for continuous improvement (Kaydos, 1991) for any organization.

Financial performance of an institution can be determined using ratios. Ratios are association between two financial balances taken from financial statements as defined by Gallagher and Martin (2009). Financial statements offer valuable information about the performance of organizations Brady (2009). Financial ratios are categorized into liquidity, leverage, profitability and efficiency ratios. Profitability ratios measures organizations' ability to generate income relative to revenue. These ratios include Return on Assets (ROA), Profit Margin and Return on Equity (ROE).

ROE measures how management effectively utilizes the capital invested by shareholders (Brunner et al., 2008). ROA measures the net income generated on each shilling of asset invested. ROA is an indicator of efficiency in the use of invested assets for income generation. ROA was used to measure performance of Occupational Pension Funds.

1.1.3. Relationship of Internal Factors and Performance

Pension scheme performance should be evaluated against long-term optimal benchmark Oluoch (2013). This is because of the unique feature of pension fund assets, that is, withdrawals from the pension schemes are restricted up to retirement. Several research studies conducted on pension schemes have sought to clarify the different factors that determine their performance.

Fund value is comprised of the contributions that are made to the scheme by the members and sponsors. Ajibade et al (2018) established that contribution density significantly affects performance of pension schemes in Nigeria. Similarly, Owino (2013) through her review established that pension returns, and contributions have a positive relationship however

weak. Kigen (2016) established that a significant relationship between pension performance and contributions to the scheme. Bodie, Detemple, and Rindisbacher, (2009) also affirmed that in the long-run fund assets strongly influence performance of the schemes.

RBA provides different asset classes that pension schemes can invest in. Pension schemes therefore should design their investment strategies according to the legal limits that govern investments in specific categories of security and investment risk Baldursdottir (2000). Fund Managers should diversify the fund portfolio to ensure that optimal returns are gained and at the same time risk minimized. Mella (2016) in his study established that different asset categories influence pension fund performance differently and in varying degrees. Scheme member age profile informs how the scheme funds are invested and thus affects the performance of the schemes. Schemes that have an older age profile will tend to take conservative approach while schemes with a younger age profile will take a more aggressive approach. Government securities and fixed income assets gives stable returns for pension fund while investment in equities is volatile.

1.1.4. Occupational Pension Schemes in Kenya

Pension Industry is regulated by the Retirement Benefits Authority established in 2000 through the Retirement Benefits Act enacted in 1997. Its core mandate is regulation, supervision, protection of member and sponsor interests and development of the pension industry. In Kenya, pension funds are classified into four categories. These categories include National Social Security Fund (NSSF), Civil Service Pension Scheme, Occupational Pension Scheme and Individual Scheme.

Occupational Pension Schemes are established voluntarily and under irrevocable trust. These schemes are run by board of trustees and their assets are held separate to that of the sponsor. Occupational pension schemes ensure that members have a secure income upon retirement. The scheme can be designed as either contributory scheme (DCS), benefit scheme (DBS) or a hybrid scheme. Hybrid Schemes (HS) has features of both the defined benefit and contribution in varying degrees Chirchir (2010).

Under DBS, the employer bears all the risks and assures its employees a specified benefit upon retirement, irrespective of performance of underlying investment pool Davis (2005). The benefit payable to the employees upon retirement is equivalent to the last pay multiplied by and accrual factor and years in service. However, DBS are losing popularity with many schemes transforming to DCS due to its high financial cost of the defined benefit arrangement on employers. DCS however, both employee and employer contribute to the scheme at a defined rate as provided in the Trust Deed and Rules and the risks are borne by the members. Notable decrease in DBS and consequent increase DCS was witnessed in 2005 with defined benefit dropping to 122 from 140 and defined contribution increasing to 990 from 941 in 2004 (RBA, 2010).

The Pension Industry in Kenya has witnessed growth evidenced by the passing of regulations that stimulate pension uptake in the country. Reforms particularly on voluntary employer occupational schemes through tax incentives provides a good basis on increased pension coverage Raichura (2008). Pension assets under management recorded an increase of 8 per cent in December 2018 amounting to Kshs. 1,166.49 Billion compared to Kshs. 1,080.1 Billion in December 2017. Out of these, Kshs. 980.06 billion was held by fund managers and approved issuers. Kshs. 83.98 billion was internally administered by NSSF and Kshs. 102.4 billion was directly managed by the trustees of the various schemes RBA (2019).

1.2. Research Problem

Pension schemes are established with a social objective of ensuring that its members maintain an acceptable standard of living once they retire. In 1994, World Bank conducted a study on averting old age crisis which indicated that rapid demographic changes due to declining fertility and increasing life expectancy has led to high percentage of older people in the general population. The traditional social fabric whereby the old are catered for by the younger population has shifted due to urbanization, however the old age dependency ratio is expected to increase. Studies by the United Nations revealed that old age dependency ratio in the world is projected to go up to 18.8 in 2020. The ratio is Sub-Saharan Africa is projected to 8.6 while in Eastern Africa it is projected to be 8.5 in 2020.

Similarly, the dependency ratio in Kenya is projected to be 6.6 in 2020 up from 5.8 in 2015 with the number of elderly as a percentage of the population is expected to increase in threefold by 2050. The role of pension schemes therefore cannot be overemphasized. This is because in addition to providing a steady retirement income of its members at retirement, it is an investment vehicle that has led to development of the financial sector. Pension fund liabilities due to beneficiaries are held until their retirement and therefore highlighting the funds unique feature Oluoch (2013). Given their large assets and liability bases, pension funds are key players in the economy and therefore it is in public interest that management is efficient and effective.

Several studies conducted on pension scheme performance have resulted into conflicting outcomes. Njuguna (2010) reviewed strategies that improve efficiency of schemes and the results indicated that governance, regulation, membership age, design and leadership have minimal impact on efficiency of pension schemes. This is contradictory to a study conducted by Ngetich (2012) on growth determinants of personal pension schemes in Kenya. His reviewed indicated that regulation and governance strongly affect the growth of the personal pension schemes. An enabling environment through proper regulations and good governance leads to development of personal pension schemes.

Nderitu (2012) reviewed investment decisions determinants among pension funds. The study noted that expected return, risk-taking capacity and desired investment portfolio influenced investment decisions for pension firms. Similarly, Oluoch (2013) reviewed factors influencing performance of retirement schemes. The review revealed that performance is significantly influenced by investors' age therefore, being an indication that longer life expectancy positively affects returns while relationship between fund value and returns exhibited a weak relationship. However, a study conducted by Owinyo (2017) on financial performance determinants of retirement schemes revealed that age of contributors and contributions received does not influence financial performance of retirement schemes.

Few studies have been conducted on the retirement benefits sector and this study seeks to contribute existing knowledge and identify areas of future research. This study therefore

seeks to answer the question, what is the effect of selected internal factors on the performance of Occupational Pension Schemes in Kenya?

1.3. Research Objective

To determine the effect of selected internal factors on the performance of occupational pension schemes in Kenya.

1.4. Value of the Study

Pension industry has an important role in provision of social benefits to retirees and the economy as a whole. Performance of the schemes is paramount to all stakeholders including government, members, beneficiaries, sponsors, pension fund administrators and fund managers. The performance of the schemes has a ripple effect on the various facets of the economy.

The findings will provide substantial input to already prevailing literature on pension scheme performance and the pension industry. Further academic research on the pension industry is required due to the impact it has on the economy and the shifting demographic. The findings of this study will provide reference material for further studies on pension industry.

The study will be useful to trustees as it will be a basis for their understanding of the factors internal to the schemes that influence performance of the schemes. It will also be useful to the government through the Retirement Benefit Authority. The results of the study will give insight to policy makers on how the selected factors internal affects performance. Policies development and review will therefore be in line with long term performance benchmarks.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The first and second section of this chapter focused on the various theories and empirical studies on retirement benefits respectively. Further discussion on the selected internal factors and how they impact performance of OPS is discussed in detail.

2.2 Theoretical Review

Theories on the pension has been put forward by various scholars however, this study focused on Modern Portfolio Theory, Agency and Stakeholder theories.

2.2.1 Modern Portfolio theory

The MPT was postulated by Harry Markowitz in 1952 in his Portfolio Selection paper. Markowitz notes that investment's risk and return should be evaluated on how it affects the portfolio's overall return and not viewed individually. It is based on assumptions that investors have access to information on risk and returns, efficient markets and information symmetry and rational investors.

Markowitz framework measured risk as the portfolio standard deviation and provided a framework that led to the concept of efficient portfolios. Risk components are unsystematic and systematic risk. Systematic risk is unique to the industry and cannot be diversified while unsystematic risk is tied to individual assets and can be diversified.

An efficient portfolio yields the highest return given a level of risk or the lowest risk given a level of return Markowitz (1952). With that, a frontier is established that gives set of optimal portfolios that offer the highest return for a level of risk. Sub-optimal portfolios will fall below the frontier. Portfolio expected rate of return is computed by the weighted average rate of returns for individual investments in the portfolio. Weightage of individual investments is in proportion to the total value of the investment.

This theory is relevant to the study since RBA offers different asset categories pension schemes can invest their funds in. Pension schemes investment strategies should be designed by the BoT according to the legal limits set out by the authority. The classes

selected should also be according to the pension funds risk appetite. PFM should also diversify the fund investments to ensure that returns to beneficiaries are maximized and the investments are within the legal limits set out.

2.2.2 Agency Theory

Agency relationship is an arrangement where one or more persons (principal) engages another person (agent) to perform specific tasks on their behalf Jensen & Meckling (1976). Organizations exist and operate to maximize profitability and value. Under agency relationships, principals seek to minimise costs related to agents while agents strive to maximize rewards and reduce principal control. Agency costs can be minimized through monitoring, rewarding and policing the agent's behaviour (Fleisher, 1991).

Agency theory gives a clear understanding of association between agents and principals. Agents represent principals and are expected to do so with the principal's best interest and without regard to self-interest. Agency problem is evident through the conflict of interest, information asymmetry and adverse selection. These attributes are associated with the agent and are key to the relationship between principal and agent Fleisher (1991)

This theory is relevant to this study since BoT hold assets of the scheme in trust and are responsible for running of the schemes. The main role of BoT is to select the asset classes that scheme funds will be invested in as advised by the investment advisor. While this is expected of the BoT, delegation is necessary in areas where they lack expertise. BoT will therefore, source expert services of fund managers, investment advisors and fund administrators. This also contributes to the principal-agent problem. Good governance calls for documentation by scheme trustees as it is proof of due diligence, duty of care and gives assurance on the running of the pension scheme.

2.2.3 Stakeholder Theory

The Stakeholder theory was postulated by Freeman in 1984. A stakeholder is any person who is affected by an organization accomplishing its objectives Freeman (1984). Freeman (2004) also notes that stakeholders are key to the organizations' continuity and success.

According to Freeman (2004), stakeholder recourse principle holds that, stakeholders can take action against directors for failure to exercise due care. This can also be seen in pension schemes whereby the BoT assumes all legal and fiduciary obligations as imposed by the law. Pension schemes should therefore be operated and managed according to the Act, Regulations and Scheme rules (RBA, 1997 s. 40) since BoT is held jointly and severally liable for any decisions that may negatively influence the scheme.

Friedman (2006) notes that management of corporations should be for the benefit of its stakeholders and managers should act as stakeholders' agents to protect long-term stakes for each group. In the same breadth, OPS are designed to the advantage of sponsors' employees and are managed by appointed BoT. Stakeholders in a pension scheme include members, sponsors, the government and beneficiaries. This theory is important in explaining why firms exist and the responsibility of those in management to different players in the firm. The BoT should therefore seek a portfolio that maximize returns for its members and in addition manage the schemes in accordance to good governance regulations issued by the RBA.

2.3   Empirical Studies

Boateng (2015) evaluated pension fund performance with focus on the Social Security and National Insurance Trust (SSNIT) in Ghana. The evaluation specifically reviewed investment returns over a ten-year period from 2004 to 2013. The review revealed that SSNIT returns fell below market returns (Ghana Stock Exchange) and inflation significantly affected returns. Other contributors to the performance of SSNIT was lack of expertise at SSNIT which was evidenced by lower returns. Challenges encountered during SSNIT fund investment were noted as currency risk, political interference and industry and regulatory challenges which also influence performance of the funds.

Namukwambi (2017) investigated the factors inhibiting pension funds from investing in Namibia. The study used probability random sampling and 44 registered pension funds from a population of 109 pension funds and 8 investment firms from population of 14 investment companies were selected. Primary and secondary data was utilized, and analysis was done using Microsoft Excel and SPSS. Findings indicated that pension investments in

Namibia was inhibited by lack of investment skills, limited financial instruments and shallow capital markets and recommended that informal and formal education on investments for Trustees should be introduced and capital market deepened. The study however focused on funds managed by trustees and therefore funds managed by institutional investors including insurance and unit trust did not form part of the study. The study also failed to highlight the factors that attract the pension schemes to invest in foreign countries as opposed to Namibia.

Petraki and Zalewska (2017) did a comprehensive analysis on long-term performance of Personal Pension Funds (PPF) relative to their Primary Prospectus Benchmarks and T-bills. Target population was 9,659 funds that operated in UK between 1980 to 2009. A sample of 4,531 pension schemes was selected for review. The study revealed that pension funds do not have long-term performance targets. This is attributed to the ease with which the existing PPBs can be outperformed due to funds can diversify their portfolio in assets not included in the benchmark.

Ajibade et al. (2018) conducted a review on fund financial performance and fund characteristics in Nigeria. Secondary data was sourced from 11 fund administrators and National Pension Scheme in Nigeria and covered 2010 to 2016. Independent variables, pension characteristics, were fund expenditure, fund age, idle contributions and contribution density. The study revealed that idle contributions, fund age and contribution density significantly impact performance of Pension schemes while expenditure has minimal influence on financial performance of pension schemes. Given the long-term unique feature of pension schemes, the results are limited only to a 5-year period of data review.

Broeders et al. (2019) analyzed the relationship between payment of performance fee and investment returns for occupational pension funds in Netherlands over a 5-year period from 2012 – 2017. A sample of 218 occupational pension schemes with average assets under management of 1,090 billion Euro was used in the study. The dataset included excess return, major asset class performance and total return. The results revealed that larger funds pay less performance fees due to better negotiating power compared to smaller funds.

There was no statistical relationship between payment of performance fees and returns. Investment returns for schemes that paid performance fees therefore, were neither higher or lower than those who did not pay.

Odhiambo (2016) conducted a study with an objective to establish how BoT diversity affects financial performance of segregated schemes in Kenya. 38 pension schemes with Liaison Financial Services as their scheme administrator were sampled for this review. Secondary data over the five-year period 2010 – 2014 was extracted from the fund reports and data analysis done using SPSS. Study results revealed that trustee professional experience and education level positively influences scheme financial performance. The study was however limited to pension schemes under one PFA and hence limited fund managers who use similar investment strategies.

Kigen (2016) in his study reviewed how fund size influences pension fund performance in Kenya and specifically reviewed cumulative assets, membership size, fund costs and density of contributions. Descriptive survey was used with the target population being 1,232 registered pension funds in Kenya as at December 2014. 93 schemes were selected using purposive sampling and data collected covered the period 2011 – 2015. Findings revealed that pension contribution, fund assets, and investment and administrative expenses have significant impact on pension performance. Exit age and proportion of active members however, did not have significant effect on scheme financial performance.

Ichingwa and Mbithi (2017) analyzed how total pension contribution affected pension schemes' financial performance in Kenya. Registered OPS in Kenya as at 2016 were 818 and formed the study population with a sample of 261 schemes randomly selected. Secondary data sourced from scheme financial statements was reviewed and descriptive and inferential statistics used as data analysis techniques. Findings revealed that total contribution significantly impacts pension scheme performance. They further recommended that schemes in Kenya should explore avenues of recruiting more members and thus increasing total contribution.

Were et al. (2017) in their study reviewed determining factors of pension financial performance in Kenya. The review noted trends of poor performance which ultimately

compromised the role of pension funds of providing income for its members upon retirement. The target population were 818 registered OPS as at December 2016, with a randomly selected sample size of 261 schemes. Secondary data sourced from schemes' financial statement was used. Descriptive research design and correlation analysis was used to establish the relationship between the variables. Independent variables were leverage, access to capital, firm size and retained earnings. Findings revealed that the independent variables, leverage, access to capital, firm size and retained earnings strongly influence the pension financial performance.

Kibe (2018) evaluated the effect of portfolio mix on pension scheme performance in Kenya by reviewing a sample of 33 registered pension schemes with RBA as at 2017. Secondary data was obtained from filed statements with RBA and covered 10 years from 2007 to 2017. Multi-collinearity and normality were applied as diagnostic tests on the quantitative data obtained. Descriptive survey was used and data analyzed using regression and correlation. The findings revealed that portfolio size influences performance of these schemes significantly. Data from some of the 33 registered pension schemes was incomplete and lacked proper records hence making it difficult to retrieve historical data.

2.4   Determinants of Performance of Occupational Pension Schemes.

OPS are established by sponsors for the benefit of their employees. The role of these schemes is providing optimal returns on members' assets Baldursdottir (2000). Performance of the schemes is of key interest to various stakeholders including members, the government, sponsor and the beneficiaries.

Van Horne et al (2010) defined pension performance as earnings that members get after investment of scheme contributions. The regulation governing pension funds and their management is unique in that it restricts early withdrawal or access to funds by the members. This is attributable to the long-term liabilities of the funds and thus investments should be done prudently to ensure that schemes meet their obligations when they fall due. Financial performance of schemes should therefore be reviewed against optimal long-term standards (Oluoch, 2013).

Performance of OPS is affected by various factors which are both internal and external to the schemes. This study will focus on selected internal factors and how they impact the pension scheme performance. Performance will be assessed by ROA.

2.4.1 Fund Investment

Pension schemes design their investment strategies according to legal limits that govern investments in specific classes of security and investment risk Baldursdottir (2000). The asset categories available and the law governing how to invest in them determines the diversification freedom (Rono, 2009) for Pension Fund Managers.

The asset classes provide by RBA for investment include government securities, quoted shares, immovable property, listed corporate bonds, fixed deposits, guaranteed funds, offshore, unquoted equities private equity and REITs (RBA, 2019). Commercial paper, non-listed bonds and other debt instruments issued by private companies was introduced in 2016 through legal notice no. 107 as a new separate asset class category. Pension fund asset allocation is a primary determinant of the level of investment return.

The age also determines contribution accumulation periods into the scheme. Younger employees will have longer accumulation periods while older employees will have shorter periods of contribution accumulation into the scheme. Investment of the pension funds is also influenced by age profile of member. Schemes with majority of its members having a young profile will take on investment in equities and more risky assets. The converse is true, schemes with a large proportion of older member will take on a conservative approach and invest more in fixed return securities Whelan (2005). This is also because, towards retirement, members require a stable and assured income.

2.4.2 Fund Value

Fund assets is comprised of the contributions that are made to the scheme by the members and sponsors. Ajibade et al (2018) established that contribution density significantly affects performance of pension schemes in Nigeria. Similarly, Owinyo (2013) through her review established that pension returns, and contributions have a positive relationship however weak. Kigen (2016) a significant relationship between pension performance and

contributions to the scheme. Similarly, Bodie, Detemple, and Rindisbacher, (2009) established that in the long-run fund assets strongly influence financial performance of pension funds.

2.5   Conceptual Framework

Conceptual framework is a theoretical structure that visually or graphically describes the variables being studied (Mugenda, 2008). The variables used in this study are selected internal factors as independent variable and performance as dependent variable. Scheme performance was measured using the ROA. The selected internal factors include the fund asset value and fund investments.

Fund value significantly impacts fund performance according to the study conducted by Bodie, Detemple, and Rindisbacher, (2009). On the other hand, fund investment decisions by the board of trustees also impacts performance. Investment guidelines provided by RBA gives fund managers the opportunity for portfolio diversification to ensure that fund returns are maximized, and risks minimized.

Independent Variable   **Dependent Variable**

Fund Value

Fund Investments:
- Proportion of Guaranteed Funds
- Proportion of investments in Equity
- Proportion of investment in

Performance of Occupations Pension Schemes

Return on Assets (ROA)
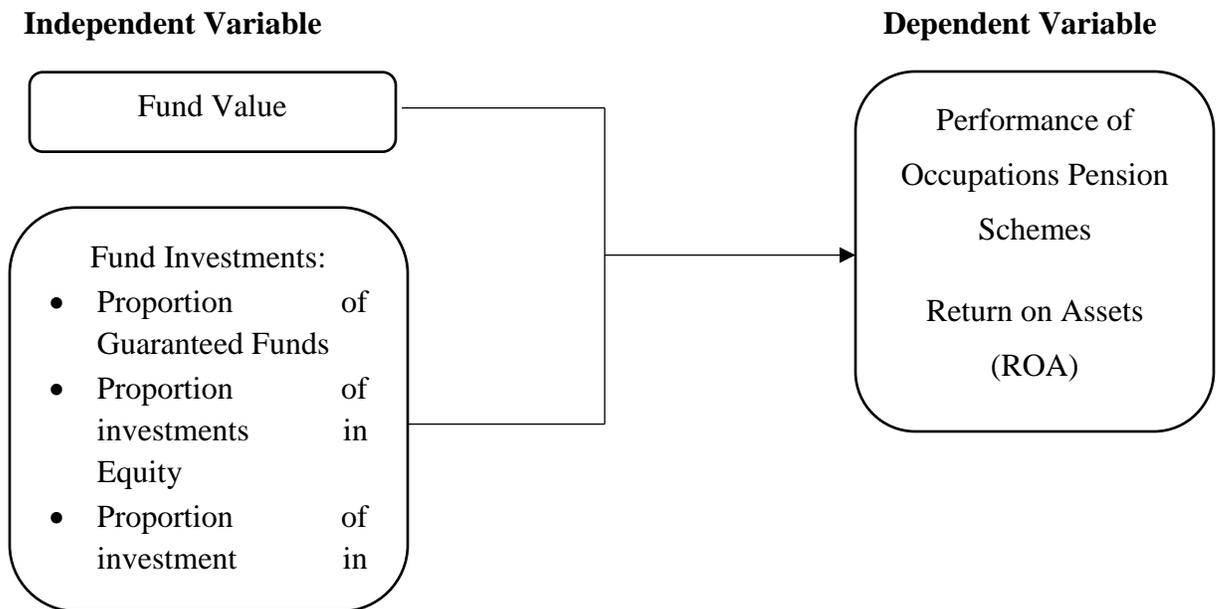
2.6   Summary of Literature Review

Literature reviewed provides an insight on various theories and factors that affect fund performance. Scheme stakeholders are members, sponsors, beneficiaries and the

government. BoT should manage the schemes according to good governance regulations provided by RBA. Failure to do so, action against the board by the stakeholder can be lodged with the authority as guided by the principal of stakeholder recourse. Similarly, agency theory highlights the principal-agent problem that arises due to the relationship between the principal (scheme members) and the agents (BoT). Notably, BoT do not have expertise on running and investing pension funds and will therefore source for these services from experts. RBA provides different asset classes for fund investment. According to the MPT, investment risks and returns should be evaluated as a portfolio and not individually. This allows diversification of fund investment by fund managers as they seek to maximize returns and minimize risks.

Empirical studies reviewed revealed that governance and regulation significantly affects pension scheme performance. The literature has also revealed contradicting results on factors that affect fund performance, with some studies showing positive relationship between fund assets, investments and pension scheme performance while others revealed weak relationship. This study therefore, seeks to determine the effect of selected internal factors on the performance of occupational pension schemes in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter summaries the research design, study population, sample size and data collection and analysis.

3.2 Research Design

Research design is a conceptual structure that guides how research will be done Kothari (2014). Descriptive research design was used. This research design involves gathering and tabulating data that describes the variables under study. The design was chosen since it is good at describing the association between the study variables.

3.3 Population

The population is the whole range of data under review. The study population consisted of 1,186 Occupational Pension Schemes as at December 2018.

3.4 Sample

A sample as a smaller group of the population Mugenda and Mugenda (1999). The study used random sampling and 60 occupational pension schemes were randomly selected.

3.5 Data Collection

Secondary data was used due to its quantitative nature. Data on fund assets and investments was sourced from annual financial statement of the schemes. The copies of these financial statements are held with Trustees, Fund Managers, Fund Administrators and filed with RBA. The data covered a 5-year period from 2014 - 2018.

3.5.1 Diagnostic Test

Diagnostic tests conducted on the data was normality, linearity and multicollinearity tests. Both linearity and multicollinearity tests will be done using SPSS.

3.6 Data Analysis

Multiple regression analysis and correlation was used for data analysis. Mean, median and standard deviation of the variables was computed using descriptive statistics.

3.6.1 Analytical Model

Below is the equation applied in the study:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y: Performance of OPS measured by Return on Assets (ROA).

α: equation intercept.

$\beta_1, \beta_2, \beta_3, \beta_4$: Coefficients of the independent variables.

X_1: Fund value which is the cumulative net value of the fund.

X_2: Guaranteed Funds measured by proportion of fund assets invested in guaranteed funds.

X_3: Equity Investment measured by proportion of fund assets invested in equities.

X_4: Immovable Property measured by proportion of fund assets invested in immovable property.

ε: Error term.

3.6.2 Test of Significance.

Data analysis was done using multiple regression with a confidence level at 95%.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1. Introduction

This chapter outlines analysis of data collected over the five-year period from 2014 - 2018.

4.2. Descriptive Statistics

Table 4.1: Descriptive Statistics

	ROA	Fund Value	Guaranteed Funds	Equities	Immovable Property
Mean	0.08	1,366,906,474.69	0.53	0.09	0.02
Standard Error	0.00	213,872,655.38	0.03	0.01	0.00
Median	0.09	292,778,963.50	1.00	0.00	0.00
Mode	0.00	201,926,073.00	1.00	0.00	0.00
Standard Deviation	0.04	3,704,383,054.63	0.49	0.11	0.07
Sample Variance	0.00	13,722,453,815,422,600,000.00	0.24	0.01	0.00
Kurtosis	0.62	25.09	1.97	- 1.38	14.69
Skewness	- 0.05	4.76	0.11	- 0.58	3.91
Range	0.31	26,005,259,536.00	1.00	0.34	0.36
Minimum	- 0.05	1,716,464.00	0.00	0.00	0.00
Maximum	0.26	26,006,976,000.00	1.00	0.34	0.36

(Source: Research Findings)

From the descriptive statistics results in Table 4.1 above, performance of occupational pension schemes measured by ROA over the five years under review had a mean of 8.0% and a standard deviation of 4.0%.

Independent variables used in the study were Fund value and fund investments. From the descriptive statistics, the fund value had a mean of 1,366,906,474.69 and a standard deviation of 3,704,383,054.63. Fund investments measured by the proportions of fund

assets invested in guaranteed funds, equities and immovable property. From the descriptive statistics, the mean of the variables was 53% for guaranteed funds, 9.0% for equities and 2.0% for immovable property with a standard deviation of 49%, 11% and 7% respectively.

4.3. Diagnostic Tests.

Diagnostic tests conducted included: normality, linearity and multicollinearity.

4.3.1 Normality Test

Normality assessment on data was computed numerically using Shapiro-Wilk test. Below are the results:

Table 4.2: Normality Test

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Return on Assets	.088	300	.000	.983	300	.001
Fund Value	.361	300	.000	.366	300	.000
Guaranteed Funds	.338	300	.000	.660	300	.000
Equities	.362	300	.000	.743	300	.000
Immovable Properties	.519	300	.000	.302	300	.000

a. Lilliefors Significance Correction
(Source: Research Findings)

A data is normally distributed when the test is non-significant, that is, $p > 0.05$. From the table above, the variables are not normally distributed since p-vale is less than 0.05. The sample size used in the study was 60 occupational pension schemes, tests can therefore still be done since the sample size is more than 30 Gujarati and Porter (1999).

4.3.2 Linearity Test

Linearity test was done using SPSS. Below is the linearity output for the data:

Table 4.3: Linearity Test Output

		Sum of Squares	df	Mean Square	F	Sig.
Fund Value	Deviation from Linearity	.598	297	.002	1.118	.655
Guaranteed Funds	Deviation from Linearity	.028	11	.003	1.296	.226
Equities	Deviation from Linearity	.070	27	.003	1.320	.139

| Immovable Property | Deviation from Linearity | .030 | 16 | .002 | .931 | .534 |

(Source: Research Findings)

Where p-value is greater than 0.05, the independent variable has no significant effect on the dependent variable. The p-value for the variables were all greater than 0.05 and therefore, the variables are linear.

4.3.3 Multicollinearity Test

Multicollinearity test is key in establishing the correlation of study variables. Multicollinearity was tested using SPSS. Decision point for testing multicollinearity is such that if the VIF value lies between 1 – 10, there is no multicollinearity between the variables under study. Below is the multicollinearity output:

Table 4.4: Multicollinearity Tests Output

Model	t	Sig.	Collinearity Statistics	
			Tolerance	VIF
(Constant)	9.366	.000		
Fund Value	-2.905	.004	.790	1.266
Guaranteed Funds	-.816	.415	.268	3.725
Equities	.776	.438	.268	3.731
Immovable Property	.678	.498	.810	1.235

a. Dependent Variable: Return on Assets

(Source: Research Findings)

The VIF values for all the variables are between 1 and 10 and therefore, there is no multicollinearity.

4.4. Correlation Analysis

From the below table, there is a negative correlation between fund value and ROA (r=-0.1196), guaranteed funds and ROA (r=-0.1139): there is positive correlation between equities and ROA (r=0.1108) and between immovable property and ROA (r=0.0187).

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Table 4.5: Correlation Analysis

	ROA	Fund value	Guaranteed Funds	Equities	Immovable Property
ROA	1				
Fund value	-0.1196	1			
Guaranteed Funds	-0.1139	- 0.3111	1		
Equities	0.1108	0.3266	- 0.8530	1	
Immovable Property	0.0187	0.3965	- 0.2961	0.2761	1

(Source: Research Findings)

4.5. Regression Analysis

MS Excel was used to conduct regression analysis to determine the relationship between dependent and independent variables.

4.5.1 Regression Output.

Table 4.6: Regression Statistics

Regression Statistics	
Multiple R	0.208430081
R Square	0.043443099
Adjusted R Square	0.030472836
Standard Error	0.044288173
Observations	300

(Source: Research Findings)

Correlation coefficient, R indicates the nature of relationship between the variables. From the regression results, a weak positive correlation of 0.21 exists between the variables. Adjusted R squared, 0.03 indicates the variance level in the dependent variable that is explained by the independent variable changes. At 95% confidence level, 3% of performance changes in OPS is caused by changes in the fund value and investments.

4.5.2 Statistical Significance of the model

Statistical significance of the model is summarized in the ANOVA table:

Table 4.7: Analysis of Variance

	df	SS	MS	F	Significance F
Regression	4	0.026278922	0.00656973	3.349438512	0.01058125
Residual	295	0.578625479	0.001961442		
Total	299	0.6049044			

(Source: Research Findings)

The results above indicate that the model significance level was 0.011. The model can therefore be relied upon since the significance level value is below 5%.

4.5.3 Estimated Model Coefficients

Table 4.8: Estimated Model Coefficients

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.0880	0.0094	9.3561	0.0000	0.0695	0.1066	0.0695	0.1066
Fund Value	-2.344E-12	7.773E-13	-3.0165	0.0028	-0.0000	-0.0000	-0.0000	- 0.0000
Guaranteed Funds	-0.0077	0.0101	-0.7642	0.4454	-0.0276	0.0122	-0.0276	0.0122
Equities	0.0355	0.0436	0.8149	0.4158	-0.0503	0.1213	-0.0503	0.1213
Immovable Property	0.0302	0.0418	0.7222	0.4708	-0.0521	0.1124	-0.0521	0.1124

(Source: Research Findings)

Estimated model equation:

$ROA = 0.088 - 2.344E\text{-}12X_1 - 0.0077X_2 + 0.355X_3 + 0.0302X_4 + \varepsilon$

Fund value has a very weak negative impact on the scheme performance. Investment in guaranteed funds is negatively related with performance while investments in both equities and immovable property is positively related to performance of the pension schemes. Unit increase in investment in equity and immovable property will lead to an increase in ROA of 3.55% and 3.02% respectively.

4.6 Discussion of Research Findings

The findings above reveal a weak positive correlation of 0.21 between the independent and dependent variables. Further review of the model coefficients revealed that fund value has a very weak negative impact on performance of OPS. This concurs with Owino (2013) where her review concluded that statistically fund value does not affect scheme returns. Investments in guaranteed funds indicated a weak negative influence on scheme performance. A unit change in investment in guaranteed funds leads to a decrease in the performance of schemes by 0.77%.

Investment in equities however has a positive impact on the schemes' ROA with a unit increase in investment in equities leading to an increase in performance of the schemes by 3.55%. The findings of the study concur with the findings by Mella (2016), who concluded that equity investments positively impact schemes' ROA. The findings however contradict study by Owinyo (2017) whose findings revealed that equity investment does not have a substantial impact on ROA.

Investment in immovable property has a positive effect on scheme performance. Unit change in investment in immovable property leads to an increase in ROA by 3.02%. According to RBA, investment in immovable property by pension schemes has consistently been high and was ranked second at 19.71% as at July 2019 compared to other asset classes.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter summarizes the results and conclusions drawn from data analysis. It will also provide recommendations and suggestions for future research.

5.2 Summary

Descriptive statistics indicated that the mean and standard deviation of ROA was 8.0% and 4.0% respectively, fund value had a mean of 1,366,906,474.69 and a standard deviation of 3,704,383,054.63. Fund investments measured by the proportions of fund assets invested in guaranteed funds, equities and immovable property had a mean of 0.53 for guaranteed funds, 0.09 for equities and 0.02 for immovable property with a standard deviation of 0.49, 0.11 and 0.07 respectively.

There was a weak positive correlation of 0.21 between the study variables. Analysis of Variance (ANOVA) reveals a significance level of 0.011, the data can therefore be relied on since the significance level (p-value) is less than 5%. Adjusted R squared of 0.03 indicates that at 95% confidence level, 3% of performance changes in Occupational Pension Schemes is caused by changes in the fund value and investments.

The regression equation reveals that, the impact of fund value on fund performance measured by ROA is insignificant given that its coefficient is -2.344e-12. Similarly, ROA is negatively associated with investments in guaranteed funds and positively associated with investment in equities and immovable property. An increase in investment in guaranteed funds results to a decrease in ROA by 0.77% while an increase in investment in equities and immovable properties will result in an increase in ROA by 3.55% and 3.02% respectively.

5.3 Conclusion

The objective of this study was to establish the effect of selected internal factors on the performance of occupational pension schemes in Kenya. The study was conducted over a five-year period from 2014 – 2018 and data was obtained from RBA. A sample of 60 OPS were randomly selected for this study. Regression analysis was done to determine the relationship between the scheme performance and fund value and investment.

The research findings indicated that performance of pension schemes measured by ROA and fund value is very weak. Increase in fund value therefore does not translate to better returns for the pension schemes. Similarly, investment in guaranteed funds has a negative effect on pension scheme ROA. An increase in investment in guaranteed funds therefore leads to a decrease in ROA by 0.77%. The relationship however negative is weak. Further, the study revealed a positive correlation between performance and investment in equities and immovable property. An increase in investment in equities and immovable properties will result in an increase in ROA by 3.55% and 3.02% respectively.

The relationship between the study variables, R=0.21 was positive. Adjusted R square =0.03, indicated that at 95% confidence level, 3% of performance changes in Occupational Pension Schemes is caused by changes in the fund value and investments. This therefore means that in addition to the selected internal factors reviewed in this study, there are other factors that affect scheme performance which include BoT knowledge on scheme investments and regulatory environment.

5.4 Recommendations for Policy and Practice

Research findings indicated that fund value and investment in guaranteed funds have weak negative effect on the performance of the pension schemes while investment in equities and immovable properties positively affects performance. Pension schemes should invest more in equities and immovable properties due to the positive impact they have on performance.

The role of the scheme BoT is to choose the best asset allocation that minimizes risk and gives maximum returns. To successfully do this, at least one member to the board should

have financial knowledge to help in advising the board on matters investment. The board should also have smaller committees including a financial committee that are mandated with running the various aspects of the schemes. RBA should continually ensure that schemes adhere to regulations stipulated in the Act.

The results also indicated that 3% of performance changes in Occupational Pension Schemes is caused by changes in the fund value and investments. This implies that in addition to the selected internal factors reviewed in this study, other factors affect the performance of OPS. These factors include regulation and BoT education. Regulations should create an enabling environment for pension schemes to invest in different classes of assets to enable them to maximize their returns and reduce risk exposure.

5.5   Limitations of the Study

Follow up with the Pension Fund Administrators on data was challenge citing confidentiality. The research was also done on part time basis therefore there were time constraints since the researcher is a full-time employee. Despite the limitations, the study objectives were achieved.

5.6   Suggestions for Further Research

Further research can be conducted to establish the optimal investment level schemes can hold for the different asset categories in order to maximize returns while minimizing risk exposure.

BoT plays an important role in pension schemes. Further research can be done to establish how and to what extent does BoT influence the returns of the pension schemes. A survey can also be conducted to establish adherence to the regulations set out by RBA on BoT qualifications.

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APPENDICES

APPENDIX ONE: DATA COLLECTION FORM

Variable	2014	2015	2016	2017	2018
Fund Value					
Proportion of funds invested in Guaranteed Funds					
Proportion of funds invested in Equity					
Proportion of funds invested in Immovable Property					

APPENDIX TWO: DATA USED IN THE ANALYSIS.

Return on Assets (ROA)					
RBA Scheme No.	**2018**	**2017**	**2016**	**2015**	**2014**
1735	0.02	0.12	0.07	-0.01	0.11
39	0.03	0.09	-0.02	0.03	0.09
1215	0.01	0.13	0.08	0.00	0.13
854	0.04	0.13	0.12	0.00	0.11
71	0.07	0.09	0.10	-0.05	0.14
2005	0.09	0.08	0.05	0.03	0.05
1083	0.07	0.03	0.00	0.02	0.13
127	0.06	0.09	0.08	0.07	0.14
142	0.06	0.09	0.07	0.07	0.14
840	0.05	0.09	0.07	0.07	0.13
864	0.03	0.16	0.13	0.01	0.14
923	0.06	0.13	0.15	0.04	0.12
491	0.03	0.15	0.16	-0.04	0.12
1923	0.09	0.10	0.05	0.07	0.12
1703	0.09	0.09	0.08	0.07	0.11
1674	0.05	0.07	0.03	0.02	0.06
1255	0.04	0.08	0.06	0.04	0.09
940	0.03	0.12	0.10	0.05	0.11
492	0.05	0.16	0.11	0.01	0.13
1797	0.07	0.11	0.11	0.09	0.11
667	0.09	0.10	0.00	0.13	0.13
461	0.06	0.09	0.00	0.07	0.11
367	0.04	0.17	0.11	0.04	0.14
1912	0.12	0.13	0.10	0.08	0.08
346	0.06	0.16	0.09	0.05	0.12
277	0.07	0.15	0.13	0.00	0.14
400	0.05	0.11	0.09	0.01	0.12
402	0.07	0.09	0.00	0.07	0.10
1152	0.08	0.09	0.08	0.07	0.11
1943	0.07	0.06	0.05	0.07	0.02
1915	0.06	0.09	0.07	0.07	0.09
985	0.09	0.09	0.07	0.07	0.08
437	0.10	0.10	0.00	0.12	0.13
916	0.10	0.10	0.10	0.12	0.12

679	0.10	0.10	0.10	0.13	0.13
1026	0.10	0.10	0.10	0.12	0.12
1621	0.10	0.09	0.10	0.12	0.12
1700	0.10	0.10	0.10	0.12	0.12
466	0.00	0.06	0.03	0.02	0.07
1837	0.08	0.08	0.00	0.05	0.09
894	0.07	0.12	0.09	0.04	0.12
1013	0.06	0.16	0.15	0.01	0.14
162	0.23	0.16	0.16	0.03	0.11
1655	0.04	0.11	0.10	0.01	0.20
436	0.04	0.15	0.15	0.01	0.13
1889	0.11	0.13	0.14	0.09	0.10
108	0.04	0.14	0.10	0.02	0.19
37	0.03	0.14	0.00	0.02	0.13
893	0.10	0.12	0.26	0.08	0.10
768	0.06	0.14	0.15	0.03	0.15
11	0.06	0.09	0.11	0.05	0.10
1604	0.05	0.08	0.10	0.05	0.09
785	0.06	0.12	0.14	0.09	0.11
1822	0.12	0.12	0.15	0.08	0.09
1006	0.07	0.11	0.07	0.07	0.10
1089	0.07	0.11	0.08	0.08	0.11
558	0.07	0.11	0.08	0.08	0.10
1990	0.06	0.09	0.00	0.05	0.05
908	0.04	0.10	0.00	0.04	0.10
1854	0.05	0.09	0.00	0.05	0.10

Fund Value

RBA Scheme No.	2018	2017	2016	2015	2014
1735	574,209,642.00	544,424,089.00	439,803,594.00	368,249,653.00	344,220,635.00
39	23,926,246,000.00	25,420,879,000.00	26,006,976,000.00	23,214,213,000.00	24,237,696,000.00
1215	11,812,186,000.00	10,748,748,430.00	8,475,005,734.00	7,029,316,912.00	6,406,424,083.00
854	199,805,975.00	195,996,519.00	173,511,182.00	165,680,741.00	180,124,086.00
71	181,310,121.00	174,651,347.00	177,181,488.00	185,650,704.00	184,031,722.00
2005	28,060,690.00	22,661,415.00	18,132,142.00	9,686,585.00	1,716,464.00
1083	7,727,156,000.00	7,682,798,000.00	7,862,225,000.00	7,347,875,000.00	7,482,113,000.00

127	738,575,000.00	703,987,000.00	627,483,000.00	531,581,000.00	447,326,000.00
142	314,526,611.00	286,003,142.00	250,381,230.00	201,495,092.00	193,801,458.00
840	141,325,592.00	121,097,285.00	101,105,177.00	91,747,424.00	76,839,957.00
864	3,036,088,000.00	2,831,231,000.00	2,378,213,718.00	2,147,718,000.00	2,095,028,000.00
923	1,667,070,986.00	1,617,517,571.00	1,452,409,309.00	1,500,694,864.00	1,420,963,481.00
491	77,625,445.00	72,810,623.00	62,176,289.00	63,277,850.00	69,540,867.00
1923	329,004,252.00	269,153,576.00	207,114,236.00	162,550,306.00	122,575,099.00
1703	294,153,483.00	295,608,612.00	281,746,915.00	245,835,789.00	215,126,708.00
1674	53,377,966.00	42,618,685.00	37,256,963.00	31,169,227.00	26,183,114.00
1255	1,441,100,627.00	1,433,475,861.00	1,210,611,482.00	1,108,138,675.00	828,748,722.00
940	1,078,113,603.00	915,078,167.00	718,964,724.00	648,415,142.00	709,577,625.00
492	50,030,929.00	43,757,379.00	34,943,296.00	29,149,334.00	27,674,994.00
1797	23,173,191.00	20,951,934.00	17,716,496.00	13,580,119.00	10,550,034.00
667	723,641,215.00	637,669,551.00	559,041,891.00	510,093,720.00	441,173,611.00
461	470,001,159.00	404,553,564.00	340,617,509.00	315,064,038.00	271,717,463.00
367	433,745,009.00	435,773,928.00	374,924,309.00	371,881,177.00	359,116,676.00
1912	553,907,148.00	449,450,685.00	361,765,923.00	110,588,548.00	76,346,867.00
346	215,229,825.00	193,586,956.00	153,109,570.00	137,653,060.00	178,181,869.00
277	759,465,128.00	721,234,353.00	597,581,176.00	564,653,177.00	598,381,365.00
400	197,518,109.00	177,730,969.00	154,136,489.00	142,386,279.00	132,799,520.00
402	1,244,708,399.00	1,060,380,124.00	905,507,268.00	807,967,376.00	729,415,263.00
1152	249,648,874.00	217,002,139.00	189,260,985.00	170,907,797.00	150,071,074.00
1943	336,579,021.00	299,124,512.00	250,348,082.00	192,062,840.00	124,686,885.00
1915	260,720,748.00	135,004,786.00	106,786,532.00	78,135,492.00	56,980,577.00
985	99,686,143.00	92,164,841.00	77,401,564.00	55,263,801.00	57,825,582.00
437	653,166,000.00	580,387,000.00	509,972,000.00	467,030,000.00	394,010,000.00
916	257,792,786.00	227,201,315.00	208,288,241.00	199,899,761.00	168,979,193.00

679	241,147,412.00	249,280,194.00	219,123,059.00	205,472,597.00	173,785,250.00
1026	237,288,216.00	189,581,992.00	153,588,915.00	127,498,109.00	107,762,794.00
1621	194,363,989.00	158,069,041.00	128,328,359.00	103,322,307.00	78,093,785.00
1700	47,773,723.00	47,098,931.00	38,950,307.00	33,559,516.00	27,619,174.00
466	201,926,073.00	201,926,073.00	179,466,696.00	161,278,729.00	145,224,864.00
1837	50,311,604.00	38,936,835.00	34,377,982.00	28,217,496.00	21,364,802.00
894	969,792,780.00	821,248,199.00	621,750,475.00	494,716,598.00	416,980,718.00
1013	500,612,853.00	479,823,063.00	510,292,401.00	630,882,386.00	686,810,166.00
162	443,042,606.00	1,195,039,841.00	1,060,722,395.00	992,232,281.00	937,825,088.00
1655	11,677,623,000.00	11,396,581,000.00	11,504,764,000.00	11,601,124,000.00	11,701,049,000.00
436	6,291,271,000.00	5,842,063,676.00	4,858,521,350.00	4,573,494,171.00	4,888,955,000.00
1889	2,388,144,220.00	2,023,426,242.00	1,694,171,930.00	1,521,546,924.00	1,360,199,967.00
108	1,880,190,147.00	1,826,753,950.00	1,467,352,578.00	1,302,288,064.00	1,247,507,082.00
37	478,599,852.00	432,465,919.00	396,012,181.00	329,834,743.00	319,155,191.00
893	64,405,708.00	61,681,156.00	91,697,530.00	99,378,531.00	93,805,849.00
768	89,469,733.00	99,017,713.00	86,589,247.00	95,390,917.00	95,775,264.00
11	385,071,433.00	344,880,229.00	357,331,672.00	442,424,406.00	465,515,596.00
1604	186,403,777.00	238,198,297.00	325,851,551.00	376,801,398.00	429,348,781.00
785	863,434,407.00	899,839,852.00	838,999,863.00	807,532,698.00	723,654,319.00
1822	491,352,950.00	382,917,981.00	291,404,444.00	237,340,073.00	184,466,760.00
1006	953,964,325.00	837,470,447.00	752,495,265.00	617,092,874.00	480,948,834.00
1089	693,908,875.00	661,635,705.00	593,530,030.00	542,957,627.00	494,437,430.00
558	341,001,772.00	309,475,187.00	264,613,459.00	237,849,107.00	207,933,667.00
1990	212,146,270.00	154,353,369.00	103,084,346.00	65,346,533.00	30,024,096.00
908	190,123,703.00	193,258,367.00	163,449,609.00	142,125,462.00	122,984,884.00
1854	107,641,107.00	87,671,790.00	66,065,484.00	50,058,470.00	69,782,292.00
Proportion of investment in Guaranteed Funds					

RBA Scheme No.	2018	2017	2016	2015	2014
1735	0.00	0.00	0.00	0.00	0.00
39	0.00	0.00	0.00	0.00	0.00
1215	0.00	0.00	0.00	0.00	0.00
854	0.00	0.00	0.00	0.00	0.00
71	0.00	0.00	0.00	0.00	0.00
2005	1.00	1.00	1.00	1.00	1.00
1083	0.00	0.00	0.00	0.00	0.00
127	1.00	1.00	1.00	1.00	1.00
142	1.00	1.00	1.00	1.00	1.00
840	1.00	1.00	1.00	1.00	1.00
864	0.00	0.00	0.00	0.00	0.00
923	0.00	0.07	0.15	0.15	0.15
491	0.00	0.00	0.00	0.00	0.00
1923	1.00	1.00	1.00	1.00	1.00
1703	1.00	1.00	1.00	1.00	1.00
1674	1.00	1.00	1.00	1.00	1.00
1255	0.00	0.01	1.00	1.00	1.00
940	0.00	0.00	0.00	0.00	0.00
492	0.00	0.00	0.00	0.00	0.00
1797	0.00	0.00	0.00	0.00	0.00
667	1.00	1.00	0.00	1.00	1.00
461	0.50	0.00	0.86	0.86	0.86
367	0.00	0.00	0.00	0.00	0.00
1912	0.00	0.00	0.00	0.00	0.00
346	0.00	0.00	0.00	0.00	0.00
277	0.00	0.00	0.00	0.00	0.00
400	0.45	0.14	1.00	1.00	1.00
402	1.00	1.00	1.00	1.00	1.00
1152	1.00	1.00	1.00	1.00	1.00
1943	1.00	1.00	1.00	1.00	1.00
1915	1.00	1.00	1.00	1.00	1.00
985	1.00	1.00	1.00	1.00	1.00
437	1.00	1.00	1.00	1.00	1.00
916	1.00	1.00	1.00	1.00	1.00
679	1.00	1.00	1.00	1.00	1.00
1026	1.00	1.00	1.00	1.00	1.00
1621	1.00	1.00	1.00	1.00	1.00

1700	1.00	1.00	1.00	1.00	1.00
466	1.00	1.00	1.00	1.00	1.00
1837	1.00	1.00	1.00	1.00	1.00
894	0.43	0.45	0.44	0.44	0.44
1013	0.00	0.00	0.00	0.00	0.00
162	0.05	0.05	1.00	1.00	1.00
1655	0.00	0.00	0.00	0.00	0.00
436	0.00	0.00	0.00	0.00	0.00
1889	0.00	0.00	0.00	0.00	0.00
108	0.00	0.00	0.00	0.00	0.00
37	0.00	0.00	0.00	0.00	0.00
893	0.00	0.00	0.00	0.00	0.00
768	0.00	0.00	0.00	0.00	0.00
11	0.36	1.00	1.00	1.00	1.00
1604	1.00	1.00	1.00	1.00	1.00
785	0.00	0.00	0.00	0.00	0.00
1822	0.00	0.00	0.00	0.00	0.00
1006	1.00	1.00	1.00	1.00	1.00
1089	1.00	1.00	1.00	1.00	1.00
558	1.00	1.00	1.00	1.00	1.00
1990	1.00	1.00	1.00	1.00	1.00
908	1.00	1.00	1.00	1.00	1.00
1854	1.00	1.00	1.00	1.00	1.00

Proportion of investment in Equity

RBA Scheme No.	2018	2017	2016	2015	2014
1735	0.30	0.31	0.22	0.18	0.15
39	0.31	0.30	0.22	0.19	0.17
1215	0.24	0.24	0.21	0.20	0.18
854	0.33	0.28	0.25	0.24	0.20
71	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00
1083	0.27	0.27	0.17	0.20	0.18
127	0.00	0.00	0.00	0.00	0.00
142	0.00	0.00	0.00	0.00	0.00
840	0.00	0.00	0.00	0.00	0.00
864	0.25	0.28	0.27	0.25	0.23
923	0.21	0.22	0.16	0.19	0.17

491	0.26	0.34	0.24	0.24	0.25
1923	0.00	0.00	0.00	0.00	0.00
1703	0.00	0.00	0.00	0.00	0.00
1674	0.00	0.00	0.00	0.00	0.00
1255	0.25	0.23	0.00	0.00	0.00
940	0.26	0.23	0.00	0.00	0.00
492	0.22	0.20	0.15	0.12	0.18
1797	0.07	0.05	0.00	0.00	0.00
667	0.00	0.00	0.00	0.00	0.00
461	0.19	0.16	0.00	0.00	0.00
367	0.26	0.26	0.24	0.24	0.20
1912	0.25	0.25	0.24	0.24	0.23
346	0.17	0.22	0.20	0.20	0.21
277	0.29	0.30	0.00	0.00	0.00
400	0.16	0.24	0.00	0.00	0.00
402	0.00	0.00	0.00	0.00	0.00
1152	0.00	0.00	0.00	0.00	0.00
1943	0.00	0.00	0.00	0.00	0.00
1915	0.00	0.00	0.00	0.00	0.00
985	0.00	0.00	0.00	0.00	0.00
437	0.00	0.00	0.00	0.00	0.00
916	0.00	0.00	0.00	0.00	0.00
679	0.00	0.00	0.00	0.00	0.00
1026	0.00	0.00	0.00	0.00	0.00
1621	0.00	0.00	0.00	0.00	0.00
1700	0.00	0.00	0.00	0.00	0.00
466	0.00	0.00	0.00	0.00	0.00
1837	0.00	0.00	0.00	0.00	0.00
894	0.08	0.09	0.08	0.07	0.08
1013	0.18	0.22	0.21	0.19	0.18
162	0.00	0.14	0.00	0.00	0.00
1655	0.17	0.19	0.17	0.19	0.17
436	0.24	0.30	0.28	0.25	0.22
1889	0.20	0.23	0.17	0.17	0.15
108	0.22	0.25	0.22	0.20	0.21
37	0.27	0.29	0.23	0.25	0.20
893	0.27	0.25	0.28	0.26	0.25
768	0.30	0.31	0.30	0.28	0.29
11	0.11	0.00	0.00	0.00	0.00

RBA Scheme No.					
1604	0.00	0.00	0.00	0.00	0.00
785	0.20	0.26	0.25	0.24	0.22
1822	0.10	0.14	0.15	0.12	0.13
1006	0.00	0.00	0.00	0.00	0.00
1089	0.00	0.00	0.00	0.00	0.00
558	0.00	0.00	0.00	0.00	0.00
1990	0.00	0.00	0.00	0.00	0.00
908	0.00	0.00	0.00	0.00	0.00
1854	0.00	0.00	0.00	0.00	0.00

Proportion of investment in Immovable Property

RBA Scheme No.	2018	2017	2016	2015	2014
1735	0.00	0.00	0.00	0.00	0.00
39	0.00	0.00	0.00	0.00	0.00
1215	0.34	0.33	0.31	0.32	0.31
854	0.00	0.00	0.00	0.00	0.00
71	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00
1083	0.00	0.04	0.00	0.00	0.00
127	0.00	0.00	0.00	0.00	0.00
142	0.00	0.00	0.00	0.00	0.00
840	0.00	0.00	0.00	0.00	0.00
864	0.00	0.00	0.00	0.00	0.00
923	0.18	0.17	0.14	0.00	0.00
491	0.00	0.00	0.00	0.00	0.00
1923	0.00	0.00	0.00	0.00	0.00
1703	0.00	0.00	0.00	0.00	0.00
1674	0.00	0.00	0.00	0.00	0.00
1255	0.00	0.00	0.00	0.00	0.00
940	0.09	0.10	0.00	0.00	0.00
492	0.00	0.00	0.00	0.00	0.00
1797	0.00	0.02	0.00	0.00	0.00
667	0.00	0.00	0.00	0.00	0.00
461	0.00	0.00	0.00	0.00	0.00
367	0.00	0.00	0.00	0.00	0.00
1912	0.00	0.00	0.00	0.00	0.00
346	0.00	0.00	0.00	0.00	0.00
277	0.00	0.00	0.00	0.00	0.00
400	0.00	0.00	0.00	0.00	0.00

402	0.00	0.00	0.00	0.00	0.00
1152	0.00	0.00	0.00	0.00	0.00
1943	0.00	0.00	0.00	0.00	0.00
1915	0.00	0.00	0.00	0.00	0.00
985	0.00	0.00	0.00	0.00	0.00
437	0.00	0.00	0.00	0.00	0.00
916	0.00	0.00	0.00	0.00	0.00
679	0.00	0.00	0.00	0.00	0.00
1026	0.00	0.00	0.00	0.00	0.00
1621	0.00	0.00	0.00	0.00	0.00
1700	0.00	0.00	0.00	0.00	0.00
466	0.00	0.00	0.00	0.00	0.00
1837	0.00	0.00	0.00	0.00	0.00
894	0.00	0.00	0.00	0.00	0.00
1013	0.00	0.00	0.00	0.00	0.00
162	0.00	0.00	0.00	0.00	0.00
1655	0.36	0.36	0.34	0.34	0.34
436	0.00	0.00	0.00	0.00	0.00
1889	0.00	0.00	0.00	0.00	0.00
108	0.12	0.12	0.13	0.13	0.13
37	0.00	0.00	0.00	0.00	0.00
893	0.00	0.00	0.00	0.00	0.00
768	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00
1604	0.00	0.00	0.00	0.00	0.00
785	0.29	0.15	0.16	0.16	0.16
1822	0.00	0.00	0.00	0.00	0.00
1006	0.00	0.00	0.00	0.00	0.00
1089	0.00	0.00	0.00	0.00	0.00
558	0.00	0.00	0.00	0.00	0.00
1990	0.00	0.00	0.00	0.00	0.00
908	0.00	0.00	0.00	0.00	0.00
1854	0.00	0.00	0.00	0.00	0.00