

# COMPARISON OF PERFORMANCE BETWEEN GUARANTEED AND SEGREGATED PENSION FUNDS

BY

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**A Research Project Proposal Submitted in Partial Fulfilment of the Requirement for the award of Master of Arts in Economics (MA Economics), School of Economics, University of Nairobi.**

**September, 2014.**

**DECLARATION**

I, the undersigned, declare that this research report is my own unaided work. It is being submitted for the Degree of Master of Arts in Economics at the University of Nairobi. It has not been submitted before for any degree or examination in any University.

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## **ACKNOWLEDGEMENTS**

I would like to extend my sincere appreciation to everyone who has supported me in my Pursuit of obtaining MA Economics from the University of Nairobi. First and foremost I would like to give my thanks to God almighty through whose grace and mercy I have found strength and the desire to pursue this degree and for granting me health and wealth to accomplish this task. I would like to extend my appreciation to my Wife who has been by my side throughout the entire course.

In recognition and appreciation of the sacrifice and guidance given to me by my supervisors, Dr. Wilfred Nyangena and Dr Nyandemo Samuel Misati in the process of writing this academic research paper, I thank you very much and wish you God's blessing. I would like to thank and appreciate the management and core staff of Retirement Benefits Authority without whom data and critical information for the purpose of completing this study could not have been accessed. I extend a word of appreciation to my classmates who have positively impacted my pursuit of the MA Economics dream.

To all others who in one way or another contributed to my success in this project but whom I could not mention here, thank you all so very much and God bless you.

## **DEDICATIONS**

I dedicate this Research Report to my wife Jimia Sebit, my brother Salim Maalim and my cousin Grace Kimutai for their endless encouragement and support in this pursuit. Thank you for all your support and endless patience.

## **ABSTRACT**

*Social security is a very important aspect of any economy to cater for the vulnerable groups in the society. With this in focus, findings in vision 2030 indicate that more than fifty percent of the Kenyan population is dependant. The Kenyan government aims at increasing contributions to pension schemes in order to provide a comprehensive social security program to its citizens. To achieve these, NSSF act 2013 was assented into law, making it mandatory for every citizen to contribute six percent of their gross salary and the employers to also contribute to the same extend into pension savings for their employees.*

*With the law in play, pension savings are going to increase tremendously raising concern about the capacity of NSSF to administer the funds, accessibility of the funds, efficiency in investment of the funds and regulation of NSSF by RBA. Above all, maximizing the growth of the funds is very important; the two major approaches for holding the funds is the guaranteed or the segregated method. The aim of the study is to carry out a comparative analysis and establish which among the two approaches would be more beneficial to pension savings, maximize income conversion rate during old age and more so to help the government in its quest to provide a comprehensive social security platform for its citizens.*

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## **List of abbreviations and acronyms**

- |       |      |  |
|-------|------|--|
| i.    | RBA  | Retirement Benefits Authority                          |
| ii.   | GDP  | Gross Domestic Product                                 |
| iii.  | NSE  | Nairobi Stock Exchange                                 |
| iv.   | NSSF | National Social Security Fund                          |
| v.    | CSPS | Civil Servants Pension Schemes                         |
| vi.   | ORS  | Occupational Retirement Schemes                        |
| vii.  | IPP  | Individual Personal Pension                            |
| viii. | KRA  | Kenya Revenue Authority                                |
| ix.   | OECD | Organisation for economic co-operation and development |

## DEFINITION OF TERMS

- a) **Scheme:** Means an occupational retirement benefits scheme or any other arrangement set up for the purposes of providing retirement benefits scheme
- b) **Asset:** Means a financial instrument or its equivalent held by Trustees on behalf of a retirement benefit scheme.
- c) **Approved issuer:** Means an insurer registered under the provisions of the Insurance Act or any other issuer approved in writing under the provisions of the Capital Markets Authority Act or under any other written Law.
- d) **Custodian:** Means a custodian registered by the Authority and whom the Trustees have appointed.
- e) **Fund manager:** Means an independent manager registered by the Authority and who has been appointed by the Trustee to manage the assets of the Scheme.
- f) **Fund:** Means the contributions maintained by the Trustee for the investment of the assets of the Scheme in accordance with the terms and conditions of the Trust Deed and from which pension and other similar benefits are made to employees when they leave employment or the dependants as provided herein.
- g) **Income replacement rates:** Means the percentage of retirement income to pre-retirement income of a particular employee.
- h) **Defined benefit (DB) pension Plans:** Defined benefit plans are designed to guarantee an individual a specified amount of benefit after retirement
- i) **Define contribution pension plan:** Refers to an arrangement where the amount to be contributed into the fund is agreed in advance. The employer may commit to complement the employee's contribution, a floor is currently set at six percent but there is no ceiling.
- j) **Guaranteed pension plan:** This is an investment approach undertaken by a pension scheme which must be specified in the scheme trust deed. Here, the trustees of the scheme in case of a group scheme and individuals for individual pension fund decide to delegate all the investment decision to a fund manager where the fund value is guaranteed with an interest say 2%.
- k) **Segregated pension plan:** Refers to a pension plan where the scheme takes responsibility for the performance of their investment, the fund manager basically advises and the fund owners make the choice. If the performance is bad, it may reduce the fund value during bad economic times.

# CHAPTER ONE

## 1.1 Background of the study

The earliest retirement fund system can be traced back in Germany which was started by German Chancellor Otto Von Bismarck (Lindert, 1994). The author credits former German Chancellor Otto Von Bismarck for enacting a compulsory savings programme for workers in large firms who were exposed to the socialism ideologies in 1889. Perotti and Schwienbacher (2008) state that the Bismarck retirement fund system was financed through worker and employer contributions, attracted taxation incentives and paid retirement benefits once the worker reached the age of 65. According to Lindert (1994), retirement scheme contributions under this system were invested in financial securities. This system however had no provision for retirement benefits entitlement to personal representatives in case of death, it was mainly restricted to the civil servants and war veterans and many workers did not live to enjoy the retirement benefits as life expectancy was 60 years (Lindert, 1994). The Bismarck programme was replicated at varying time periods in different countries, for example, Japan 1875, United States 1896, New Zealand 1898, Belgium 1900, Australia 1941, Canada 1966, Denmark 1964, Greece 1978 and United Kingdom in 1948 amongst others (Perotti and Schwienbacher, 2008).

As retirement benefits schemes systems developed, economic and political shocks affected their sustainability in different countries (Meyer 2004; Newmann 2005) and so the only institutions that could be trusted to secure retirement funds were the governments. with France and Finland following suit (Meyer, 2004). In Africa, retirement benefits systems were developed after independence and the retirement fund models that were being used by their colonial masters were adopted (Ahmad, 2008).

### 1.1.1 Retirement Fund Systems in Kenya

Retirement fund systems in Kenya was first put in place after independence in 1963. The first post independent retirement fund body, the National Social Security Fund (NSSF), was established in 1965 (RBA, 2000) other schemes were established by the private sector employers and government bodies (parastatals). The industry functioned without much supervision save for limited supervision on taxation by KRA. In the 2000 Kenya introduced the retirement Benefits Act 1997 for the purposes of regulating the retirement benefits sector.

The retirement fund sector has since been supervised by the retirement benefits authority (RBA), which oversees the 1997 RBA Act. The RBA continues working to develop the industry and advise the government on Retirement policy reforms.

Kenya's retirement benefits system embraces four components namely the NSSF, Civil Servants Pension Scheme (CSPS), Occupational retirement schemes (ORS) and Individual retirement Schemes. Overall the system is estimated to cover 15% of the labour force and to have accumulated assets of 18% of the GDP (Kakwani *et al* 2006). The retirement benefits system covers an estimated 2 million workers leaving an estimated 5 million workers not provided for under any retirement scheme, of which at least 10% are at or near the retirement age (Kakwani *et al* 2006). These exposes a lot of Kenyans to the dependency effect.

The Kenyan constitution 2010 states that it is the responsibility of the government to provide social security to its citizens; it is in line with this requirement that the National Social Security Bill 2013 was created. The Bill seeks to repeal and close the NSSF act that was established under CAP 258 of the laws of Kenya in 1965 and create a new social Security fund.

NSSF Act 1997 provided that all the formal employees should contribute to the scheme 10% (Employer 5% and Employee 5%) of the employee's monthly income subject to a limit of KES 400 per month. The members would then receive the accumulated benefits in retirement as a lump sum (provident fund).

The drawback of the NSSF was that the benefits provided were too little to cater for an adequate retirement income; the income replacement ratio has been averaging 1% to 4%. Further, of the 12.5 million people employed, only 1.5 million contribute to the NSSF. There are 2.1 million people employed in the formal sector the rest are self employed and civil servants.

Under Kenya Vision 2030 Social pillar, the dependency ratio is 50% percent of the entire population which poses a great menace to the economy, age group 0-14 and 65+ forms the majority in this category. The strategies set by vision 2030 to reduce the impact of these vulnerable groups are: Restructure pension schemes to increase savings for the old, reduce dependency ratio, and encourage savings culture to foster investments among economically-active Kenyans so as to reduce the burden of economic dependency among the under-14 and over-65 age groups. It goes ahead and set flagship project to this effect which is establishment of a consolidated social protection fund for cash transfers to orphans and vulnerable children (OVCs) and the elderly. (Kenya Vision 2030)

These visions are further strengthened by the jubilee coalition Unity pillar under social protection. One of the solutions they give is the Creation of a new legislative framework to place cash transfers for the needy on a solid foundation through a new system of social protection payments administered by County Governments (Jubilee coalition manifesto, 2013). The two strategic plans culminated to the formation of NSSF act 2013 which was passed into law in December 2013. The law was to be effected beginning January 2014 but due to logistical problems in terms of regulation, implementation and capacity by NSSF to undertake the enormous scheme, it was upheld by the minister of labour to 31<sup>st</sup> May 2014.

## **1.2 Research problem**

The dependency ratio in Kenya is at 46% according to Vision 2030, this is made up of 0-14 and 65+ year's people of age. One of the primary motivations for the establishment of retirement benefits schemes is to provide for members in their old age. It is also meant to provide retirees with a certain standard of living so as to ensure that their income does not fall below a certain minimum level after retirement. However, many retirees suffer during their retirement due to lack of sufficient income to finance their needs.

Retirement benefits schemes have therefore been viewed as viable platforms for providing for the old and their dependants. The social fabric has changed over time and there is no guarantee that children would look after their parents in old age like tradition would have provided. The cost of living has sky rocketed over the years and everyone is trying to make ends meet, the young generation are struggling to save and invest to make their future more bearable and would have little if any to spare for the aged. The problem is even made worse when the issue of unemployment and HIV pandemic is brought into the play, in fact more burden befalls one in retirement than before.

Kenyan constitution 2010 under article 43 (3) states that; the State shall provide appropriate social security to persons who are unable to support themselves and their dependants. Kenya Vision 2030 and Jubilee alliance manifesto stipulates that the government would restructure pension savings by increasing the compulsory contribution and revamping the NSSF. These plans are aimed at reducing the dependency ratio which led to the birth of NSSF act 2013.

The compulsory increase in pension contributions to NSSF and pension schemes calls for more concern about the magnitude of money being channeled to NSSF and whether they have the muscle to implement the program effectively, there is the fear of mismanagement and inappropriate investment decisions that might be under taken by NSSF.

NSSF act 2013 states that it shall provide pension upon retirement on savings accumulated over the working years as opposed to the lump sum initially paid in the provident fund, pension industry players are keen on whether NSSF operations would be transparent, accessible and would undertake optimal investment to maximize pension savings. With the aim of maximizing retirement benefits at old age, it would be prudent to study which investment criteria gives maximum return between the two available ways and seek to inform the pension schemes and NSSF which investment criteria would maximize the growth of the funds.

### **1.3 Objectives of the Study**

#### **1.3.1 Overall objective**

The broad objective of this study is to examine the performance of segregated funds and the guaranteed funds over the years. In light of the expected growth in pension savings in the economy, what would be the best way to invest pension funds so as to ensure adequate savings upon retirement?

#### **1.3.2 Specific objectives**

- i. Determine the impact of the mode of investment on the rate of growth of pension funds.
- ii. Examine how contributions and payments from the fund affect the growth of a pension scheme.
- iii. Draw policy recommendations based on the study findings.

### **1.4 Justification / Significance of the Study**

In Kenya, the income replacement ratio falls way below the international labor organization (ILO) recommended standard of 40 percent (GoK, 2008). This is further complicated by the fact that the old have special and different needs, including health care compared to the younger generation. Their behaviors are also different, older people work less hence earns less, implying that they have low disposable income, thus making them even more vulnerable.

According to Africa Development Bank (2011), 36 million people were age 65 and above in 2010 and accounted for 3.6 percent of the African population. The Bank projects the ageing population to increase as more people reach 65 years and could account for 4.5 percent of the population by 2030 and nearly 10 percent of the population by 2050 leading to a shift in the demographic dependency ratio.

Unfortunately, in most African countries, Kenya included, we have a weak health care systems as well as lack of viable social security systems coupled with high poverty levels. Further, the traditional family support systems which acted as insurance and safety net for providing for the old have also failed. Worse still, most African countries have witnessed a large scale migration of the labor force to urban areas.

The effect of the HIV/AIDS pandemic has also worsen the situation and has led to a situation where the elderly are increasingly shouldering the responsibility of most families which have been affected by the pandemic. In some cases, the old have become the prime earning members of their families, hence, making them more susceptible. More so, in the face of the sky rocketing cost of living with limited resources and unstable incomes they cannot support their households.

To maximize pension savings and to reduce dependency, contributions are received by the pension fund from the sponsor and members; it is upon the trustees and fund managers to tackle the problem of investments. This can be a daunting task as trustees are required to take decisions about matters in which they themselves may not be experts. To enable trustees make prudent judgment trustees must first clearly understand the constraints, goals and objectives of the scheme and also how the fund can achieve those objectives. Trustees are therefore obliged to set up an investment strategy/policy that documents the objectives and targets of the scheme. Fund managers fortify the trustees' decisions by tactfully or strategically allocating the pension fund based on more factual reasons prevailing in the investment market. Because of their long-term nature, pension's funds need to be invested more prudently to preserve their value.

Written theory and legislation demands a "prudent approach" to investment - exposing different segments of the fund to different investment risks so as to achieve an averaging of risks in an effort to attain the highest practical return that can lower the cost of pension "obligation" considerably. In other words, investment by pension fund must constitute well-diversified and well-dispersed portfolio. With this in mind, it is important to analyze the two major ways in which pension funds are held; the segregated funds and the guaranteed funds. As matter of policy, this would guide the scheme members and the trustees of the scheme on the most optimal way to invest their funds and maximize their fund growth. Like fund managers, the scheme and its members need to be knowledgeable enough to make optimal decisions and not to be over reliant or be at the mercy of the fund managers. The trustees



should be educated and knowledgeable so as to make viable choices and maximize member's funds during retirement.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter covers the theories and studies that have been carried out with the aim of providing useful information in the area of pension fund performance.

#### 2.1 Theoretical Review

##### 2.1.1 The life cycle saving model

It was first developed by Modigliani and Brumberg (1954) and later generalized by Feldstein (1974). The life cycle model postulates that an individual live in two periods; in the first, he/she earn a wage from his/her labour and the second he/she retires.

The individual therefore is assumed to accumulate wealth during their working life and de-save during their retirement to smoothen his/her consumption. Thus the only motivation for saving in this framework is to provide for retirement. The life cycle hypothesis also assumes that through savings households generates capital stock and changes in household savings translate into changes in aggregate savings (Bailliu and Reisen, 1997).

However, the life cycle saving model has been contested. Deaton (1992) argues that an increase in pension wealth has no impact on the overall savings. This is because households would simply alter their non pension wealth to fully offset the increase in pension wealth. Pisando (1992) on the other hand argues that funding of pensions generates increased savings given that pension assets are normally illiquid and therefore other household wealth may not always be reduced one to one when pension assets increase. Additionally, in most cases the pension laws prohibit pensioners from assigning their future pension benefits.

##### 2.1.2 Modern Portfolio Theory

Modern Portfolio Theory (MPT) emphasizes how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of risk, emphasizing that risk is an inherent part of a higher reward. According to the theory, it is possible to construct an “efficient frontier” of optimal portfolios offering the maximum possible expected return for a given level of risk.

This theory was pioneered by Harry Markowitz in his paper “Portfolio Selection,” published in 1952 by the *Journal of finance*. There are four basic steps involved in portfolio construction: Security valuation, asset allocation portfolio optimization and the performance

measurement. Harry Markowitz laid the foundations of MPT, the greatest contribution of which is the establishment of a formal risk/return framework for investment decision making. By defining investment risk in quantitative terms, Markowitz gave investors a mathematical approach to asset allocation and portfolio management. MPT is limited by measures of risk and return that do not always represent the realities of the investment markets. The assumption of an elliptical distribution is a major practical limitation because it is symmetrical. Using the variance (or its square root, the standard deviation) implies that uncertainty about better-than-expected returns is just as disliked as the uncertainty about returns that are worse than expected. Furthermore, using the more upside than downside returns appear more risky than arguably they are and the opposite for returns with a predominance of downside returns. The result is that using traditional MPT techniques for measuring investment portfolio construction and evaluation frequently distorts investment reality, Sortino and Satchell (2001). Prior to Markowitz's work, investors focused on assessing the risks and rewards of individual securities in constructing their portfolios. Standard investment advice was to identify those securities that offered the best opportunities for gain with the least risk and then construct a portfolio from these.

### **2.1.3 Barbell Theory**

This is a very simple investment allocation theory where your assets are focused on the extreme ends on the risk spectrum, the weight is on two ends.

This would be much different from a standard (MPT) which has become the standard method of asset allocation in the past 20 years. In other words, if the two ends of the barbell represent opposite ends of the risk spectrum, then you will allocate all of your money between the very safe end and the very aggressive end. For example, you might allocate 70% of your money to inflation protected treasury securities and 30% of your money to very aggressive small growth company stocks. The “Floor and Upside” strategy means that, before investing in any kind of risk portfolio, it makes sense to build a “floor” of safe streams for the retirement years. First, define your baseline consumption, and then project what will be needed during your retirement years. This gives us a baseline income needed for retirement. Factor in any other guaranteed income sources you expect, such as social security and/or a pension. Determine how much additional money you will need above those guaranteed sources and use financial assets, to secure a level of income and meets those basic needs, (Walnut Hill Advisors LLC).

## **2.2 The impact of retirement savings**

Retirement benefits assets have been shown to have a positive impact on the capital and financial market development through the substitution and complementary roles. Walker and Lefort (2002) argue that retirement funds decrease the cost of capital via three channels which in turn spurs economic growth. First, due to pension reforms, the capital markets are more developed and thus issuances of securities are cheaper.

Second, the expected investments time horizon of pension funds is longer than that of individuals and firms, thus reducing the 'term premium'. Third, the risk premium may be reduced due to pension funds pooling and professional management. Reduction in both term premium and risk premium may lead to decreased average cost of capital.

Further, the retirement benefits funds may generate a better functioning of the capital markets through the accumulation of assets due to its longer term nature of liabilities; investment in illiquid and long term assets that yield higher returns, hence, providing a long term supply of funds to the capital market (Davis, 1995). The retirement benefits assets therefore foster competition and efficiency of loans and primary securities markets. It also complements banks by purchasing long term debt securities or in investing in long term bank deposits.

On the direct effect of retirement benefits performance, Barr (2000) argues that, for retirement benefits assets to induce economic growth, three conditions have to be fulfilled. First, pension reforms must lead to high saving rates; second, high savings rates must be translated into productive investments which results into increased output as predicted by the standard Solow (2000) growth model. However, Barr warns that all these three links does not necessarily hold.

The performance of pension funds can be enhanced via improved corporate governance (Davis and Hu, 2008). Clark and Hebb (2003) identifies four drivers in which pension funds may improve through corporate governance; i) the use of indexation techniques in the pension industry which hinders the sale of shares in under performing companies which are in the Stock Exchange index; ii) the increasing demand by the owners for more transparency and accountability; iii) the pressure for pension funds to undertake socially responsible investing; and, iv) the pressure to humanize capital with social, moral and political objectives extend pension funds simple concerns for rate of return.

### **2.3 Nature and Operations of Retirement Benefits Schemes**

A retirement fund is a legally separated pool of assets bought with contributions to a retirement fund for the exclusive purpose of financing retirement benefits (OECD, 2008b; Yermo, 2002). A distinction is however often made between a retirement fund and a retirement plan (OECD 2008b). A retirement plan has a legally binding contract with a clear retirement objective that may be part of the employment contract or may be required by law. Retirement plans may offer additional benefits such as disability, sickness and survivors' benefits (Yermo, 2002). A retirement fund can be incorporated to manage retirement assets of various retirement plans. In Kenya however, each retirement plan is allowed to manage only Retirement assets of their own (RBA, 2008). Thus retirement plans are also called retirement funds or retirement schemes in Kenya.

The retirement fund members have a legal or contractual claim on the assets of the fund (Yermo, 2002). Retirement funds are therefore established under trusts law with legal capacity to invest and manage beneficiary funds with diligence and stewardship.

Retirement funds collect and accumulate contributions from employees and their sponsors (employers who establish the retirement scheme), invest the contributions and hold the proceeds in stewardship for the benefit of the members on retirement (OECD, 2004; EBRI, 2004). OECD further shows that although both the employee and the employer contribute to the retirement fund, the employer is not obliged to contribute any fixed amount. The contribution rates by the sponsor and the employee are listed in the retirement fund constitution (Trust Deed and Rules) and they differ from one employer to another.

On retirement an employee retirement benefits may be paid out in a lump sum or may be paid in monthly installments or there may be an initial lump sum on retirement and consequent monthly installments (Almaric, 2006; World Bank, 2005; Scott, Watson and Hu, 2009; Yogo, 2009). The payment regime depends on the stipulations of the trust covenant (Trust deed and rules), the retirement fund design, the contributions made by both the employee and the sponsor during the worker's membership in the fund and the returns generated by the retirement fund (Almaric, 2006).

RBA regulation do not allow members who leave employment before retirement date to withdraw retirement benefits from their employer's retirement funds, except in cases of retirement due to ill health or those who suffer permanent disability (RBA Act 1997, as cited in Nyakundi, 2009). The implication is that workers who leave their job before the retirement

age of 50 cannot access their employer's contributions but may withdraw their own contributions. The employer's contributions may however be transferred to another scheme of the employee's choice. Retirement savings contributed by both the employee and the sponsor can also be used as collateral when buying a home.

In summary, retirement funds are distinct entities that are neither commercial corporations nor state owned enterprises. They therefore do not compete for customers or market share and they are single product entities as defined by the Retirement law to provide members with financial security throughout their retirement life (Asher and Nandy, 2006a). Retirement funds do not seek growth to pay dividends but instead they are evaluated on the basis of value adding to the members and long-term solvency and they limit risk by segregating their assets from those of the sponsoring entities.

## **2.4 Determinants of Retirement Fund Performance**

### **2.4.1 Investment Strategy**

Stanko (2002) defines "investment strategy" as the assortment of investments made by retirement funds. The investment strategy determines the investment mix of the total funds of a retirement fund that aims at having a careful balance between investment risks and returns (Stanko 2002; Eichholtz and Margaritova, 2009). The investment strategy is therefore a plan that guides the choice of the investments that retirement funds make and by extension the returns funds return.

Risky assets (equity investments) generally generate higher returns compared to the less risky ones (bonds) (Eaton and Nofsinger, 2001). In this study guaranteed funds majorly invest in bonds and segregated funds in equity. This positive relationship between risk and returns causes a dilemma since to get more returns; retirement funds have to take more risks (Eaton and Nofsinger, 2001). It is therefore suggested that retirement funds adopt appropriate investment strategies that provide higher returns on investments with moderate risks (Eaton and Nofsinger, 2001).

According to organization for economic cooperation and development OECD (2006), the investment strategy varies depending on the type of retirement fund. In the case of a DB, the goal of the investment strategy is to generate the highest possible returns consistent with the liabilities and liquidity needs of the retirement fund. In a DC retirement fund, the main goal of the investment strategy is to generate gains that accrue to individual member account balances in light of the investment goals. The investment strategy thus contributes to the

returns obtained on investments, which directly impacts on the financial efficiency of the retirement fund (OECD, 2006).

The appropriate investment strategy should be anchored on four pillars namely: the prudent person rule (ensuring that all investments made are in the best interests of members), diversification (ensuring that retirement investments are not concentrated in a specific asset), maturity matching (ensuring that investments mature as liabilities become due) and it should have a clear statement of investment policies (Kyiv, 2003).

Despite the higher returns expected from equities, poor global market performance since 2005 has led many institutional investors to shift their investment mix to incorporate more fixed interest securities at the expense of equity investments (OECD, 2009b). This was done to mitigate the effects of the low returns noted on equity. Strategic decision-making is therefore related to the investment strategy (Campbell and Viceira, 2002) since strategic decision-making is the process of setting the parameters of institutional performance, matching its objectives and goals to long-term investment strategies informed by experience and expectations. According to Campbell and Viceira (2002), strategic investment decision-making results in higher returns that contribute to increased efficiency.

A good investment strategy results in more returns than lesser risks for retirement funds (Kyiv, 2003; Leisako, Mitchell and Piggot, 2005). To achieve retirement fund efficiency, retirement funds must devise sound investment strategies and apply them consistently (Kyiv, 2003).

The investment strategy leads to the attainment of the retirement fund's short-term (less than 3 years), intermediate (3 to 10 years) and long-term (more than 10 years) goals (OECD, 2009b). The investment strategy determines the short-term and long-term sustainability of a retirement fund (OECD 2009b; Maurer, Schlag and Stamos, 2007). In other words, an investment strategy ensures that money is available to pay benefits and other costs as they fall due (Bikker et al. 2009). The investment strategy thus provides an appropriate mix between the long-term and short-term financial instruments where the investments are made in consideration of the expected maturity of liabilities (Bikker et al. 2009).

An investment strategy ensures that retirement funds do not act haphazardly in times of stock market volatility (Springer and Cheng, 2006). The strategy ensures that the management is aware of the strategy relating to buying and holding of investments such that

assets are purchased when prices are low and short-term ones are disposed of when prices are high (Kake, 2006).

The investment strategy contributes to better re-investment plans (Eaton and Nofsinger, 2001). According to Eaton and Nofsinger (2001), the reinvestment plans involve ploughing back the earnings to the same high yielding assets to take advantage of compounding effect. In addition, the investment strategy should result in savings in the form of taxation on the investment returns generated since it focuses on the more tax efficient investments (Kakes, 2006).

The above literature indicates that the investment path undertaken by a pension scheme greatly affect its performance and growth, a more risky route would be more rewarding but caution has to be observed to mitigate against market shocks during market down turn. The conservative approach of guaranteed pension is less risky because they invest in bonds and the returns are bound to be low.

#### **2.4.2 Retirement Fund risk management**

In retirement fund management risk tend to reduce the returns on investment over the long run, creates uncertainty about the value of retirement assets and difficulty in payment retirement liabilities when they become due. These raises question that impact on the governance aspect of retirement funds when irregularities and market volatility lead to losses in the retirement funds (Maurer et al. 2009). These are the driving factors behind guaranteed funds.

Applied to retirement funds, risk reflects any variable that prevents a retirement fund from achieving its intended objectives of providing adequate retirement income (Mangiero, 2006; Yermo, 2007). The impediments to retirement fund objectives may include failure by the sponsors to meet their promises, stock market volatilities and operational inadequacies (Mangiero, 2006). According to Mangiero (2005), “retirement fund risk management implies management of multiple risk types – such as financial, operational and legal risks and assumes the use of derivatives.” Mangiero (2005) thus views retirement fund risks as including both operational and financial uncertainties.

Retirement fund risk management involves five steps namely identification (threats and opportunities), evaluation, prioritization, treatment (accept, mitigate, exploit or avoid) and monitoring (Blake, 2007). According to Blake (2007), retirement fund risk management is a structured process that should be handled with expertise to optimize retirement benefits. It



involves the measurement and assessment of retirement fund risks and the design, monitoring and revision of the retirement fund's parameters (contributions, benefits and investments) in order to address these risks in line with the fund's objectives (Blome et al. 2007). The main goals of retirement fund risk management are the minimisation of retirement costs and minimisation of the chances of benefit cuts to beneficiaries (Blome et al. 2007).

Retirement funds risk management has become important as a result of the global demographic aging coupled with social security benefit cuts and the volatile stock market returns (Maurer, Mitchell and Rogalla, 2008). The major concern for retirement fund stakeholders has been the variability of the value of retirement fund investments which have always been based on the aberrant market values (Maurer et al. 2009).

Bikker et al. (2009) concur that retirement funds are instrumental in the transfer of risk from individuals to collectives and hence are better risk managers compared to individual investors since they have incentives to invest long run and bear the long-term risks. The collectivism of the retirement fund members enables them to bear risk that would have been otherwise avoided thus making them more efficient (Bikker et al. 2009).

The above discussion shows that collective approach to risk management is quite critical, thus a pension fund is a good approach to capitalize on available opportunities in the market and maximize retirement savings for its members. Thus, the performance of these schemes is very important and must be managed taking into account all the risk there is in the market.

### **2.4.3 Retirement Fund Governance**

Governance describes who the organization is there to serve and how the purposes and priorities of the industry should be served. Governance is more concerned with the functioning of the retirement industry. Governance is regulated by the retirement benefits authority Act 1997 and regulations (2000). The legal and regulatory framework forms the bulk of the retirement fund governance structure and it stipulate the need for separation between ownership and control of the trustees from management which is done by service providers. The governance structure in a retirement fund is that the members and beneficiaries get reports from trustees, who in turn get the reports from fund managers and administrators of the funds. The RBA model of supervision of the retirement funds is done through a rigorous compliance model – According to RBA, well governed funds returned better growth than funds that are struggling on compliance with the governance structures.

Both the segregated and guaranteed funds are regulated by RBA and must have trustees to oversee the activities of the scheme.

The governance structure is aimed at safeguarding the interest of pension savings and ensuring that prudence is observed by the market players. These structures contribute immensely to the performance of the various fund structures that we have.

#### **2.4.4 Size of the Retirement Fund**

One of the controversial issues in retirement fund management literature is the relationship between fund performance and the size of the retirement fund. Research points to a positive relationship between fund size and fund performance (Bikker and Dreu, 2009; Chen, Hong, Huang and Kubit, 2004; Mahon and Donohoe, 2006; Ahmad, 2009; Vittas, Impavido and O'Connor, 2008; Ardon, 2006). By implication, the bigger the retirement fund the better the performance of the fund (Dahlquist, Engstrom and Soderlind, 2000; Gallagher and Martin, 2005). On the other hand, Chan, Faff, Gallagher and Looi (2004) found no association between the fund size and performance. Empirical studies are therefore still inconclusive on the optimal size of a retirement fund.

The issues of economic and efficient administration of retirement funds and its relation to size were first documented in Caswell (1976). According to Caswell (1976), retirement funds in the construction industry experienced economies of scale that were related to their size. Caswell (1976) defined economic efficiency as consisting of the achievement of predetermined objectives with a minimum expenditure of resources. Economies of scale are defined as the relationship between changes in the physical units of output and monetary costs associated with the inputs. Retirement funds should operate on the appropriate scale; not too big, not too small (Caswell, 1976).

According to Mahon and Donohoe (2006), Blake, Lehmann and Timmermann (2001) and Zera and Madura (2001), significant economies of scale exist in retirement fund administration. They suggest that smaller retirement funds bear excessive operating costs per participant since many of their expenses are fixed. The most important factor affecting retirement fund costs therefore is size determined on the basis of the number of members in the retirement funds (Mahon and Donohoe, 2006).

Recognizing the dramatic effects that retirement fund size can have on performance, the Irish Funds Industry Association (2009), cited in Mahon and Donohoe (2006), urges small retirement funds to pool their assets. According to the association, retirement pooling would

allow retirement funds to “pool” assets into a single investment vehicle that would invest in assets, such as global equities, bonds and cash deposits on behalf of the investing retirement funds. The argument expounded that pooling would result in considerable economies of scale, which would in turn lead to cost savings and enhanced returns to provide greater consistency in asset management and enhance control over risks.

Retirement funds in Nigeria followed the merger directives imposed on commercial banks which resulted in retirement funds being able to absorb and efficiently process information on capital market operations (Ahmad, 2009). Through these mergers, large retirement funds were created which resulted in lower average transaction costs and custodial fees for the investors. The mergers thus made retirement funds to be more efficient.

Vittas et al. (2008), however, observed that large retirement funds enjoy the benefit of low operating costs because they avoid large marketing costs. These economies may however be eroded by poor investment performance, weak governance structures, lack of independence from the sponsor and low levels of accountability and transparency (Vittas et al. 2008).

In Massachusetts smaller retirement systems face diseconomies of scale in their administration and management which resulted in higher costs (Ardon 2006). Ardon (2006) shows that out of the 106 retirement funds he surveyed, 26 retirement funds had less than \$50 million in assets and only one with \$750 million yet each retirement fund had the same number of administrators and staff as well as advisors and consultants. The smaller funds recorded administrative costs equal to 0.78% of their asset values whilst the bigger funds recorded administrative costs of 0.44% of the asset values (Ardon, 2006). Very small retirement funds are therefore uneconomical to operate and will result in low levels of efficiency. Faktum (2009) found that Danish retirement companies are the lowest cost operators in the OECD countries since the retirement funds operate at ideal sizes “not too big, not too small.”

Furthermore, retirement plan assets tend to increase with the number of employees (Henon and Kanouse, 2004). Comparing the value of assets with the number of employees in the retirement fund, Henon and Kanouse (2004) found that 62% of retirement funds with 25 000 or more employees have asset values exceeding \$1 billion while only 74% of the retirement funds with 1000 – 2499 employees have asset values averaging \$20 billion.

Large retirement funds are also more efficient than the smaller ones because there are significant economies of scale in paying benefits, keeping records and investing funds

effectively (Ghilarducci and Terry, 1999). In large retirement funds technological advances permit a reduction in expenses, internal reorganisation produces price advantages and cost reductions. Greater specialisation improves efficiency (Ghilarducci and Terry, 1999).

Henon and Kanouse (2004) however caution that large retirement schemes are not necessarily efficient if proper tools and processes are not in place. Without the latter, large retirement funds spend a lot of money on communication to members, member education, investment decisions, collecting contributions from workers, keeping records, paying benefits to retirement managers and general administration (Henon and Kanouse, 2004).

In the Kenyan context, small retirement schemes can achieve economies of scale by investing through the umbrella fund. Here the fund management, administration and custodial services are issued by the same provider. Investment is then done in a pooled fund in terms of units, the units purchased has specific characteristics based on the risk profile of the investor. The trend in the market now is that funds invest in unitized funds where ownership is determined by the number of shares held. The investment chosen is based on the scheme risk appetite and the fund manager advice. Small schemes and individual pension plans can now invest in unitized products with Old mutual, Zimele pension fund, Amana capital, ICEA Lion, Alexander Forbes, Britam and CFC Life.

#### **2.4.5 Investment Process**

All investment requires careful analysis of many factors on which the decision depends. There are five basic steps that will guide an investor to make an investment decision. The five steps are as follows;

- i. Identify the goals, objectives and constraints of the various participants in the investment process which an investment must satisfy in order to be acceptable.
- ii. Analyze the overall investment environment-market, legal, financing and tax in which the investment decision must be made.
- iii. Forecast the expected future benefits and costs (cash flows) arising from the ownership of the investment. This analysis involves four types of decisions: operating, financing, and reversion decisions as well as tax planning.
- iv. Apply appropriate decision-making criteria to compare the benefits with the costs of the investment. An analysis must be carefully developed to be relatively certain of the investments ability to meet the constraints and objectives of all the participants in the investment process.
- v. Accept or reject the investment under the assumptions of the input variables.

(Jaffe and Sirmans, 2001)

The legal environment plays a major role in the investment analysis. Whereas market analysis is interested in the economic constraints of an investment, the legal environment investigates the legal constraints. One of the major legal decisions is the choice of business entity for engaging the investment. Each entity has advantages and disadvantages and factors such as liability, management, ease of transferability, and taxation greatly influence the decision.

## **2.5 Empirical Literature Review**

The retirement fund industry is a significant source of capital in the Kenyan financial markets (Omondi 2008). According to Omondi, retirement funds invested a sum of Ksh. 223 billion in the Kenyan financial sector in 2007 of which Ksh. 77 billion was invested in government securities. Retirement funds are thus significant institutional investors and must therefore be managed efficiently.

Empirical review of retirement fund performance literature is mostly composed of studies on mutual funds and a few studies on retirement funds' performance. This review contains a look at fund performance in general, with a particular focus on performance persistence, and spans over 40 years of research.

Sharpe (1966) looked at the performance of open-end mutual funds and found that to a major extent the capital market is highly efficient, but there is some evidence of persistence in performance. Henriksson (1984) evaluated the performance of open-end mutual funds and concluded that their empirical results do not support the hypothesis that mutual fund managers are able to follow an investment strategy that successfully times the return on the market portfolio. Ippolito (1989) looked at mutual fund data and found evidence that is consistent with optimal trading in efficient markets. He concluded that risk-adjusted returns in the mutual fund industry, net of fees and expenses, are comparable to returns available in index funds. Grinblatt and Titman (1989) looked at mutual fund performance and tests indicated that the risk-adjusted gross returns of some funds were significantly positive. Mutual funds are a good reflection of segregated fund because they are based on the risk profile of an investor.

Sharpe (1992) described an asset class factor model, which makes it possible to determine how effectively individual fund managers have performed their functions and the extent (if any) to which value has been added through active management. Brown et al. (1992) showed

that survivorship bias can give the false impression of persistence in mutual fund performance. Grinblatt and Titman (1992) looked at mutual fund data and found evidence that differences in performance between funds persist over time and that this persistence is consistent with the ability of fund managers to earn abnormal returns. Hendricks et al. (1993) found that in the period 1974–1988 relative performance of no-load, growth-oriented mutual funds persisted in the near term, with the strongest evidence for a one-year evaluation horizon. Coggin et al. (1993) examined the investment performance of US equity retirement fund managers. They found that retirement fund managers were good at picking stocks, but poor at timing the market. The best managers produced substantial risk-adjusted excess returns. Selection of fund managers for a pension scheme should be pegged on their performance and persistence.

Brown and Goetzmann (1995) explored equity mutual fund data and found clear evidence of relative risk-adjusted performance persistence; however, the persistence was mostly due to funds that lag the S&P 500, depends upon the time period observed and is correlated across managers. Elton et al. (1995) found that bond funds underperformed the returns predicted by a relative pricing model that they developed by the amount of expenses, on average. They note that there is no evidence that managers, on average, can provide superior returns on the portfolios they manage, even if they provide their services free of cost. Grinblatt et al. (1995) found that mutual funds which bought past winners (followed a momentum strategy) realized significantly better performance than other funds.

Elton et al. (1996b) found persistence in risk-adjusted stock mutual fund returns. Ferson and Schadt (1996) advocate conditional mutual fund performance evaluation in which the relevant expectations are conditioned on public information variables. This method made the average performance of the mutual funds in their sample look better. Gruber (1996) sought to solve the puzzle as to why investors buy actively managed open end mutual funds when their performance on average has been inferior to that of index funds. He suggests that the solution to the puzzle is that if managers and past performance do not form a predictable future performance. Ferson and Warther (1996) modified classical performance measures to take account of well-known market indicators (interest rates, dividend yields and other commonly available variables). This conditional performance evaluation makes mutual funds' performance look better.

Carhart (1997) considered the persistence in equity mutual funds' mean and risk-adjusted returns. He concluded that the results do not support the existence of skilled or informed

mutual fund portfolio managers. Daniel et al. (1997) looked at the performance of equity mutual funds. Their results showed that mutual funds, particularly aggressive-growth funds, exhibit some selectivity ability, but that funds exhibit no characteristic timing ability. Indro et al. (1999) reported that fund size (net assets under management) affects mutual fund performance and found that, in effect, 20% of non-indexed US equity funds were too small and 10% too large. Ackermann et al. (1999) examined hedge fund data from 1988–1995 and found that hedge funds consistently outperform mutual funds, but not standard market indices. However, hedge funds are more volatile than both mutual funds and market indices. Incentive fees explained some of the higher performance, but were not correlated with total risk.

Liang (1999) looked at hedge fund performance. ‘Funds with “high watermarks” (under which managers are required to make up previous losses before receiving any incentive fees) significantly outperform those without. Hedge funds provide higher Sharpe ratios than mutual funds, and their performance in the period of January 1992 through December 1996 reflects better manager skills, although hedge fund returns are more volatile. Average hedge fund returns are related positively to incentive fees, fund assets, and the lockup period.’ Edelen (1999) showed that the common finding of negative return performance at open-end mutual funds is attributable to the costs of liquidity-motivated trading: open-end equity funds provide diversified equity positions with little direct cost to investors for liquidity. Blake et al. (1999) analysed a data set on UK retirement funds. Their main finding was that strategic asset allocation accounts for most of the ex post variation of UK retirement funds’ returns. Moreover, the vast majority of funds had negative market-timing estimates.

Wermers (2000) examined mutual fund databases and concluded that their evidence supported the value of active mutual fund management. Liang (2001) studied hedge fund performance and risk from 1990 to mid-1999. Hedge funds had an annual return of 14.2 per cent in this period, compared with 18.8 per cent for the S&P 500 Index, although the S&P 500 was much more volatile. Kothari and Warner (2001) argue that standard mutual fund performance measures are inadequate for detecting abnormal fund performance. They suggest using event-study procedures that analyse a fund’s stock trades.

Berk and Green (2004) derived a rational model of active portfolio management. They state that ‘the lack of persistence in returns does not imply that differential ability across managers is nonexistent or unrewarded or that gathering information about performance is socially wasteful.’ Bollen and Busse (2005) examine daily mutual fund data, consider quarterly

returns and conclude that superior performance is a short-lived phenomenon that is observable only when funds are evaluated several times a year. Huij and Verbeek (2007) investigated the persistence in mutual fund performance using monthly return data of more than 6400 US equity mutual funds over the period 1984–2003. Their results clearly support the idea that past performance of mutual funds has predictive power for future performance. Cuthbertson et al. (2008) used a 1975–2002 data set for UK equity mutual funds and found the existence of stock picking ability among the top 5–10% of funds, whilst most poor performing funds were not merely unlucky, but demonstrated ‘bad skill’. Agarwal et al. (2009) examined the role of managerial incentives and discretion in hedge fund performance. First, they found that funds with better managerial incentives (higher total deltas, higher option deltas, greater managerial ownership, and the presence of a high-water mark provision in the hedge fund contract) are associated with better performance. Second, they observed that funds with greater managerial discretion (longer lockup and restriction periods) generate higher returns.

Barras et al. (2010) analysed monthly returns of 2,076 actively managed US open-end, domestic equity mutual funds that existed at any time between 1975 and 2006. They found that 75% of funds exhibit zero alpha (net of expenses). Further, they found that the proportion of skilled (positive alpha) funds declined from 22% in 1993 to just 1% in 2006. Jagannathan et al. (2010) considered hedge fund returns from 1996 until 2005, and found significant performance persistence among superior funds but little evidence of persistence among inferior funds. Busse et al. (2010) examined the performance and persistence in performance of 4,282 active US equity institutional products managed by 1,384 investment management firms between 1991 and 2007. They found little to no evidence that performance persists.

In summary, the literature on fund performance over the last 40 years shows that fund size (net assets under management) affects mutual fund performance and market indices. Incentive fees explained some of the higher performance, but were not correlated with total risk, average hedge fund returns are related positively to incentive fees, fund assets, and the lockup period, strategic asset allocation accounts for most of the ex post variation of UK retirement funds’ returns and that funds with better managerial incentives are associated with better performance. Pension schemes have to be well informed of investment and the schemes to come up with reward system to motivate fund managers. Performance in funds invested in mutual funds which are market based depends on managerial skills in investment; lack of market knowledge can lead to poor performance. These give challenge to the Kenyan pension



industry to invest more in financial knowledge of the scheme trustees. Growth of the pension funds in regards to their investment criteria is therefore important and should be studied and clear cut advice to maximize growth be given pension industry players. These form the basis of the study of the two major investment criteria's in the pension industry. Empirical literature reviewed suggests that there is variation in performance between actively and passively managed funds.

Different authors (Asebedo and Grable 2004; Markese 2000; Stanko 2002) relate the investment strategy to the mix that an investor makes in the investment portfolio. Asebedo and Grable (2004) further identify two investment management styles: passive and active management and argue that passive investment management is more conservative than active investment management. The study will investigate the appropriate investment strategy to maximize fund performance given the two major ways of holding the funds.

Literature on the relationship between size and asset growth reveals mixed findings. Studies that report on the absence of the relationship include Cicotello and Grant (1996), Droms and Walker (2001) and Grinblatt and Titmat (1994). Contradictory results on the same proposition are included in Gallagher and Martin (2005) and Cheong (2007). In terms of risk, Droms and Walker (2001) noted that portfolios of smaller funds are more risky than larger funds but found that smaller funds outperforming the larger funds. Malhotra and McLeod (2000) found contradicting results on the same issue. The contradictory findings sets forth the question of the optimal fund size and investment approach that maximizes the fund growth the most.

## **2.6 Conceptual Framework**

The relationship that exists between the scheme members and the trustees is that of fiduciary, in that, they have to exercise at most good faith to the benefit of the members, one of the expectations is that the investment decision they make will maximize the scheme return be average or even worse decrease. We use the agency theory to examine the manner in which a pension scheme and fund managers contracting relationship is managed. Agency theory, is used in the organizational economics and management literature as a theoretical frame for structuring and managing contract relationships and to explain the behavior of principal and the agent. Here the contracting party is the pension scheme who is the principal and the contracted party is the fund manager.

In agency theory, a principal chooses to contract with an agent for reasons of cost and expertise. The principal may decide that their organization lacks the expertise or resources

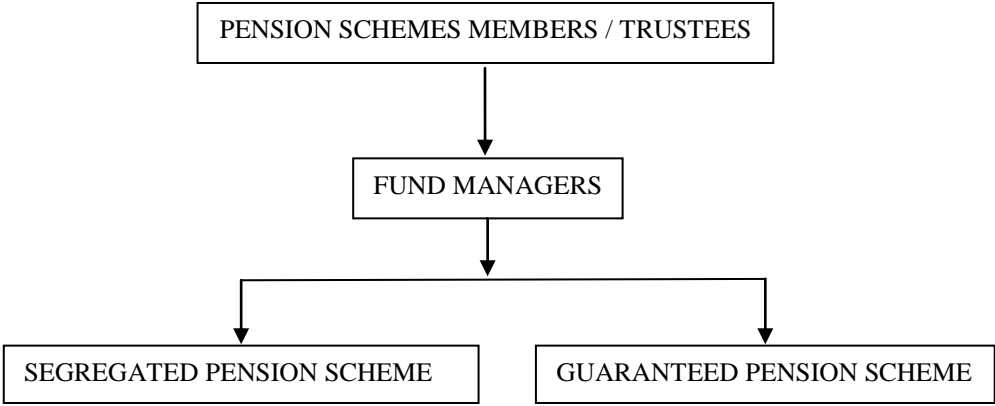
required to produce a good or service and that the cost of hiring or developing that expertise in-house exceeds the cost associated with contracting for expertise. This is the case with most pension schemes and given the RBA regulation of separating sponsors assets from the pension funds. A pension scheme, especially an occupational scheme is usually large and the RBA act provides for the affairs of the scheme to be undertaken by the trustees who are a representation of the scheme members, the trustees are charged with all the responsibilities of administration and investment. In many cases, they lack the necessary knowledge for investment hence the need for contracting to a fund manager.

The principal and agent agree on the terms of the contract including the inputs, processes, outcomes, quality and satisfaction parameters, monitoring and performance-reporting requirements, how the agent is to be compensated for doing the work of the principal, and the sanctions that will result if the principal detects the agent pursuing his/her own goals above the principals objectives. The only challenge in the context of a pension scheme is the level of assertion that is exerted by the trustees when it comes to investment returns, some fund managers in fact do not disclose their gross investment returns to the detriment of scheme, investment returns by different fund managers also need to be monitored so that the scheme would invest with the best and all matters investment must be disclosed in the scheme financials.

The fund managers know about investment and how much return they can make but the scheme and its members rarely would understand what transpires in the market. This brings out the tendency of the fund managers to maximize their profit at the expense of the scheme members. When one party knows more about attributes of a product or service than another and, as a result, the uninformed party runs the risk of purchasing a product or service of low quality. There is no perfect information in the market; the trustees do not have access to the knowledge of the performance of the various fund managers over the years to guide them on the best to maximize their return. Again, when a party to the contract uses information and expertise, acts opportunistically, in his own interest, to the exclusion of the agreed upon contract goals leads to the maximization of the objective of the agent at the expense of the goals that are set by the principal. The cost of contracting a new agent is normally very expensive, some contracts, in fact have prohibitive clauses and moving to a new provider may require some time to avoid switching charges, this may make some fund managers to be less aggressive and not meet the objectives of the scheme.

At the top of the hierarchy in the pension industry is the regulating Authority RBA, it provides the regulation on how pension savings are held and managed in Kenya. The principal are the scheme members who can decide to be aggressive in their approach to investment or conservative so as to protect their funds. The behavior of the fund managers can be thought of as either putting high (h) effort or low effort (l), these can go in either way of investment criterion chosen ( Segregated or Guaranteed pension), even in the guaranteed set up fund managers declare different rates at the end of the year

These relationships can be thought of graphically as below;



**Figure 2.1 (Source, Author) Structure of the pension industry**

Form the hierarchy, fund managers give two approaches of which a pension scheme can choose from, that is the segregated and guaranteed pension based on the objective of the scheme. An investor who is risk averse will choose guaranteed pension and an investor with high appetite for return will choose segregated pension.

The activities that take place at the investment level (by fund managers) would determine the rate at which the pension savings would grow. These form the logic of the study whereby in a segregated setting, the activities of the fund manager are closely monitored and investment decisions are made in collaboration with the trustees of the scheme with the objective of maximizing the fund values. In a guaranteed setting, the scheme takes a passive and conservative approach on their investment, decisions on investment are left to the fund managers and a guaranteed rate is given to cushion the schemes during market down turn. In this type of investment the declared rate of return may differ depending on the aggressiveness of the fund managers in the market. To maximize fund performance and reduce the dependency problem at retirement, the masses must be well informed on where

best to put their money, be well equipped on how to analyze performance of the fund managers and make informed decision.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter describes the methodology that will be used to carry out the study. Research methodology is the operational framework within which the facts are placed so that their meaning is seen more clearly. The methodology used encompasses the research design selected, the population, data collection procedure and data analysis.

#### **3.2 Research Design**

The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data. The research design to be used will be explanatory research, it focuses on the why question, answering the ‘why’ questions involves developing causal explanations. Causal explanations argue that phenomenon Y (e.g. the rate of growth of pension funds) is affected by factor X (e.g. investment return).

Dummy variables will be employed in the study as qualitative variable to incorporate the two modes investment. A dummy variable is a numerical variable used in regression analysis to represent subgroups of the sample in your study. In research design, a dummy variable is often used to distinguish different treatment groups i.e. guaranteed and segregated pension.

#### **3.3 Population**

The target population will be all the registered pension schemes with RBA. According to RBA, there were 1459 registered pension schemes in Kenya as at 31 December 2012. Of these, 38 have invested as both segregated and guaranteed, 1092 are guaranteed, 273 are segregated and 56 converted from guaranteed mode to segregate over the period of study. The trustees in conjunction with scheme members decide as to whether their funds will be held as segregated or guaranteed through the investment policy document of the scheme.

#### **3.5 Data Collection Procedure**

The data will mainly be obtained from secondary sources. Secondary data means information that has already been processed and collected by somebody else or data that is not collected by the person who is doing research. Secondary data analysis provides larger and higher-quality databases that would be unfeasible for any individual researcher to collect

on their own. In addition, analysts of social and economic change consider secondary data essential, since it is impossible to conduct a new survey that can adequately capture past change.

The fund values and pension scheme statistics from audited accounts submitted by pension schemes to RBA on an annual basis forms the basis of the data for these study. The data will be sourced from RBA through a formal request upon which it shall be used for analysis. This is a reliable source of data because all fund managers and schemes are required to submit this data to RBA for compliance purposes six months after the year end of the scheme.

### 3.6 Data Analysis

Data collected for each of the pension schemes will be quantitative in nature. Quantitative analysis is a business or financial analysis technique that seeks to understand behavior by using complex mathematical and statistical modeling, measurement and research. By assigning a numerical value to variables, quantitative analysts try to replicate reality mathematically.

Dummy variables will be used to depict the mode of investment where 1 will stand for guaranteed and 0 for segregated pension schemes to capture the impact of the two modes of investment on the growth of pension funds. Use of logarithm to base ten was employed to minimize skewness in the distribution of the data set.

Mathematically the factors that influence the growth of pension funds can be summarized as below:

$$\log_{10}Y = a + b_1\log_{10}X_1 + b_2X_2 + b_4X_3 + b_3D_i + b_5X_4 + b_6\log_{10}X_5 - b_7\log_{10}X_6 + \varepsilon$$

Where:

$\log_{10}Y$  = Percentage Rate of growth of the fund over the years. This is the change in fund value from year to year for the pension schemes.

$a$  = the Y intercept which is expected to be zero if there is no activity in  $X_1$ ,  $X_2$  and  $X_3$

$b_1, b_2, b_3, b_4, b_5, b_6, b_7$  = are the coefficients of  $X_1, X_2, D_i, X_4, X_5, X_6$  and  $X_7$

$\log_{10}X_1$  = Membership in the scheme – the number of people participating in saving for retirement in a pension scheme

$X_2$  = Number of years in existence since the formation of the scheme.

$X_3$  = the percentage of the gross salary contributed to a pension scheme by both the employee and the employer.

$D_i$  = the mode of investment of a pension scheme as either Guaranteed or Segregated pension scheme. This is the dummy variable included to distinguish the two types of investment

$X_4$  = Annual investment return credited to a pension scheme by the fund manager net of all expenses.

$\log_{10}X_5$  = contributions made by members of a pension scheme as savings for their retirement

$\log_{10}X_6$  = Withdrawals made from the schemes from people who have left the schemes for reasons like job termination, disability, and relocation to another country and death

$\varepsilon$  = Error term – this is the residual term used denote other factors that are exclude from the model but might be having impact on the dependent variable.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND FINDINGS**

#### **4.1 Introduction**

In this chapter the findings of the data analysis are presented. The data of the schemes was collected and analyzed in response to the objective of the study. The objective of the study was to establish the impact of the two modes of investment (guaranteed and segregated pension) on the rate of growth of a pension scheme. A total of 1459 pension schemes registered by RBA as at the end of December 2012 were used. The findings presented in this chapter demonstrate the relationship between the rate of growth of a pension fund and the various factors that affect its growth.

Quantitative data was collected for each of the pension schemes and analyzed in two stages; Descriptive statistics and correlation coefficients, followed by regression analysis.

#### **4.2.2 Descriptive statistics**

Descriptive statistics provides simple summaries about a data set and about the observations that have been made. Such summaries may be either quantitative, i.e. summary statistics, or visual, i.e. simple-to-understand graphs. These summaries may either form the basis of the initial description of the data as part of a more extensive statistical analysis, or they may be sufficient in and of themselves for a particular investigation. Using the data obtained from RBA, descriptive analysis is done to get a visual impression of the available data, from the tables below; minimum is the list value in the data set, maximum is the highest value in the data set, mean is the summation of the entire data divide by the total number of entries (N) and standard deviation measures the amount of variation or dispersion from the mean. A low standard deviation indicates that the data points tend to be very close to the mean (also called expected value); a high standard deviation indicates that the data points are spread out over a large range of values. Logs were employed to minimize dispersion in the data set.



**Table 4.1 Descriptive Statistics for all funds**

```
sum
Variable | Obs      Mean      Std. Dev.   Min      Max
-----+-----
growthrate | 1364    2.021602   .6684315    0      7.102296
members    | 1364    1.60726    .7652002    0      4.088667
yrsinop    | 1364    13.93035   8.998834    2      65
levelofcon~n | 1364    .3095666   1.756261    0      30
gs         | 1364    1.200147   .4002567    1      2
-----+-----
interestrate | 1364    10.59897   3.243554    0      35
cont       | 1364    5.117991   .9001644    2.11    7.85
pyts      | 1364    3.415425   1.806821    0      7.393869
```

**Table 4.2 Descriptive Statistics for guaranteed funds**

```
sum
Variable | Obs      Mean      Std. Dev.   Min      Max
-----+-----
growthrate | 1091    1.993122   .616224     0      5.556008
members    | 1091    1.434961   .6788802    0      3.379487
yrsinop    | 1091    13.0275    7.313126    2      50
levelofcon~n | 1091    .2926574   1.784918    0      30
interestrate | 1091    10.69844   3.17672     0      17
-----+-----
cont       | 1091    4.832053   .7125026    2.11    7.15
pyts      | 1091    3.035046   1.6972      0      5.936507
```

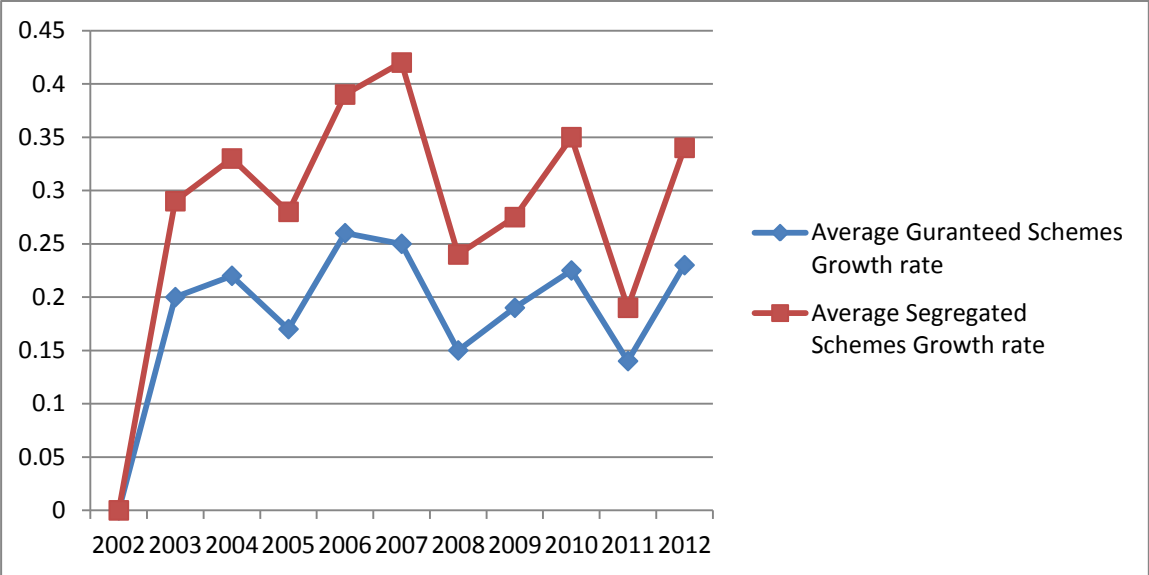
**Table 4.3 Descriptive Statistics for segregated funds**

```
sum
Variable | Obs      Mean      Std. Dev.   Min      Max
-----+-----
growthrate | 273     2.135416   .8372313    0      7.102296
members    | 273     2.295828   .7016179    0      4.088667
yrsinop    | 273     17.53846   13.23374    2      65
levelofcon~n | 273     .3771418   1.63811     .08     17.5
interestrate | 273     10.20147   3.475714    1      35
-----+-----
cont       | 273     6.260696   .622515     4.06    7.85
pyts      | 273     4.935548   1.384294    0      7.393869
```

From the data sets above, the growth of funds in some instances has decline over the years which can brought about by winding up of some pension funds, downsizing in an organization and poor investment decisions. The maximum values in the segregated funds data set are quite high compared to the guaranteed funds because large funds normally invest as segregated pension schemes to capitalize on economies of scale. The tables indicate that the mean fund growth rate for the segregated funds is higher than that of the guaranteed funds

this can be interpreted to mean that segregated funds have a higher growth rate than the guaranteed funds.

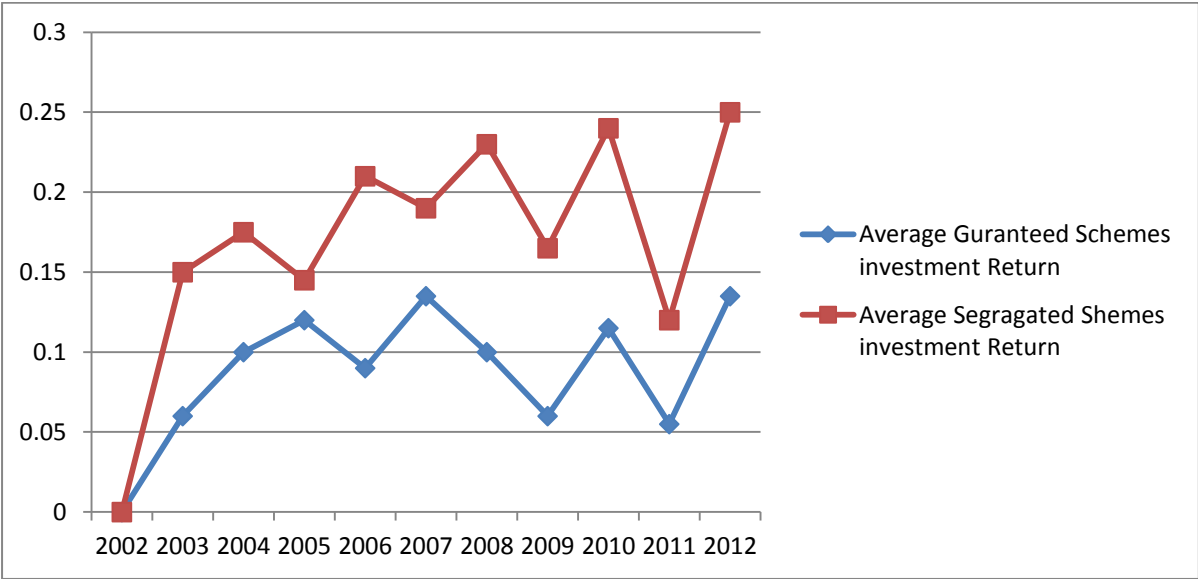
**Graph 4.1 Comparison of growth rate between segregated and guaranteed pension schemes.**



The graph above 4.1 shows that on average the segregated funds have a higher growth compared to the guaranteed funds. The highest growth was realized in 2007 and the average growth went down after the post election violence of 2008.

The table below shows interest rate earned by the pension schemes over the period of study, generally the segregated pension schemes are superior to guaranteed pension schemes when it comes to returns from investments.

**Graph 4.2 Comparison of investment return between segregated and guaranteed pension schemes on annual basis.**



**4.2.2 Correlation**

A correlation between the dependent variable (Growth of pension funds) and the independent variables was determined. This analysis was to locate the critically important factor on which the fund growth depends on.

**Table 4.4 Correlations Output for all schemes**

```

. cor
(obs=1364)

      | growth~e  members  yrsinop  levelo~n      gs  intere~e      cont
pyts  -----+-----
----
  growthrate | 1.0000
    members | 0.1080  1.0000
    yrsinop  | 0.0321  0.2263  1.0000
levelofcon~n | 0.0938  0.0918  0.1076  1.0000
      gs     | -0.5200 -0.4503  0.2006  0.0193  1.0000
interestrate | 0.1277  0.1638  0.2003  0.1752  0.0613  1.0000
      cont  | 0.1501  0.6421  0.3113  0.0484  0.6352 -0.2322  1.0000
      pyts  | -0.0227 -0.2454 -0.3487 -0.1079  0.4210  0.2964  0.5484
1.0000
    
```

**Table 4.5 Correlations Output for guaranteed schemes**

```

. cor
(obs=1091)

          | growth~e  members  yrsinop levelo~n  intere~e      cont
pyts
-----+-----
--
  growthrate | 1.0000
    members | 0.0815  1.0000
    yrsinop | 0.0182  0.2000  1.0000
levelofcon~n | 0.0936  0.1206  0.1215  1.0000
interestrate | 0.2081  0.1735  0.1655  0.1887  1.0000
          cont | 0.1253  0.5134  0.2690  0.0742  0.3445  1.0000
          pyts | -0.0503 -0.0324 -0.3181 -0.1194 -0.3477 -0.3486
1.0000

```

**Table 4.6 Correlations Output for segregated schemes**

```

. cor
(obs=273)

          | growth~e  members  yrsinop levelo~n  intere~e      cont
pyts
-----+-----
--
  growthrate | 1.0000
    members | 0.0712  1.0000
    yrsinop | 0.0705  0.0768  1.0000
levelofcon~n | 0.1083  0.0221  0.1140  1.0000
interestrate | 0.3036  0.0798  0.3412  0.1195  1.0000
          cont | 0.1324  0.5353  0.2241 -0.0902  0.1374  1.0000
          pyts | -0.1132 -0.2440 -0.3114 -0.1741 -0.4050  0.6969
1.0000

```

As shown in table 4.5 above, the correlation index for the relationship between growth of a pension scheme and the independent variables, contributions has the highest positive correlation to the rate of growth followed by interest rate, level of contribution then the mode of investment. The correlation analysis for the two types of investment indicate that interest rate for the segregated funds 0.03 have a higher correlation to the rate of growth compared to that of the guaranteed funds 0.20. The relationship between growth of pension funds and contributions made to the scheme shows that contributions in the segregated setup has a higher relationship than in a guaranteed set up.

### 4.2.3 Regression

The growth of pension funds over time was analyzed by regression of the growth of a pension scheme against factors influencing its growth. The objective is to establish the relationship between these factors and growth of pension funds. F test was also calculated to determine whether any of the variables is significantly different from zero.  $R^2$  test shows the percentage to which the dependent variable is significantly different from zero, a lower  $R^2$  means that the rate of growth of a pension scheme is not adequately explained by the variables in the model but other factors not taken into consideration in the model.

**Table 4.7 regression for all funds**

```
. reg growthrate members yrsinop levelofcontribution gs interestrates cont pyts,
nocons
```

Source	SS	df	MS			
Model	5556.17525	7	793.739322	Number of obs =	1364	
Residual	627.309073	1357	.462276398	F( 7, 1357) =	1717.02	
Total	6183.48432	1364	4.53334628	Prob > F =	0.0000	
				R-squared =	0.8986	
				Adj R-squared =	0.8980	
				Root MSE =	.67991	

growthrate	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
members	.074641	.0308475	2.42	0.016	-.1351549	-.014127
yrsinop	.0023935	.002259	1.06	0.020	-.0068251	.0020381
levelofcon~n	.0428138	.0107386	3.99	0.000	-.0638798	-.0217477
gs	-.058158	.0601124	-0.97	0.003	-.1760813	.0597652
interestrates	.151168	.0048519	6.42	0.000	.02165	.040686
cont	.4350065	.0205594	21.16	0.000	.3946749	.4753381
pyts	-.193309	.012595	-7.41	0.000	-.1180167	-.0686013

From the table 4.7 above, F is less than 0.05 hence we can reject the null hypothesis that at least one of the variables in the model is equal to zero. The coefficients indicate that contributions have the highest positive impact on the growth of a pension fund followed by the interest rate. A payment from a pension fund is the only factor that is negatively related to the rate of growth of a pension fund, meaning its increase causes a decrease in the growth of pension fund. Interestingly the guaranteed funds dummy variable is negative, indicating that the segregated fund would grow at a higher rate than the guaranteed funds. The analysis also indicates that all the variables in the model are significantly different from zero by observing the t value and p value. All the p values are less than 0.05 showing that all the variables are statistically significant from zero.

**Table 4.8 regression for guaranteed funds**

```
. reg growthrate members yrsinop levelofcontribution interestrate cont pyts , nocons
```

Source	SS	df	MS	Number of obs = 1091		
Model	4315.93853	6	719.323088	F( 6, 1085) = 1806.61		
Residual	432.005231	1085	.398161504	Prob > F = 0.0000		
Total	4747.94376	1091	4.35191912	R-squared = 0.9090		
				Adj R-squared = 0.9085		
				Root MSE = .631		

growthrate	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
members	.0520423	.0329422	1.58	0.010	.11668	.0125954
yrsinop	.0047172	.0028714	1.64	0.021	.0103512	.0009169
levelofcon~n	.0442798	.0110231	4.02	0.000	.0659089	.0226508
interestrate	.0228577	.0052047	4.39	0.000	.0126453	.03307
cont	.3358943	.0171305	25.45	0.000	.4022816	.4695069
pyts	-.1750697	.013113	-5.72	0.000	-.1007994	-.0493401

**Table 4.9 regression for segregated funds**

```
. reg growthrate members yrsinop levelofcontribution interestrate cont pyts, nocons
```

Source	SS	df	MS	Number of obs = 273		
Model	1249.64934	6	208.274891	F( 6, 267) = 299.15		
Residual	185.891223	267	.696221808	Prob > F = 0.0000		
Total	1435.54057	273	5.25839035	R-squared = 0.8705		
				Adj R-squared = 0.8676		
				Root MSE = .8344		

growthrate	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
members	.0134599	.0849107	0.16	0.004	.1806397	.1537198
yrsinop	.0298003	.0041592	0.07	0.043	.0078907	.0084874
levelofcon~n	.0442903	.0314473	1.01	0.020	.1062065	.0176259
interestrate	.0485802	.0161545	1.77	0.048	.0032263	.0603867
cont	.5495617	.0549907	6.36	0.000	.241291	.4578323
pyts	-.0624971	.0498948	-1.25	0.041	-.1607345	.0357403

The above two tables 4.9 and 4.10 are regression done separately for the guaranteed and the segregated funds, both runs shows that the variables are significantly different from zero.  $R^2$  values also show that the variables very well explain the changes in the rate of growth of pension funds. Focusing on the rate of investment return, the coefficient in the segregated funds shows that it has a higher impact compared to the guaranteed fund. The tables also show that segregated funds contribute more funds and leading to a higher growth compared to the guaranteed fund, this is deduced from the contribution variable.

### **4.3 Interpretation of Findings**

From the analysis, the variable that had the most impact on the growth of pension funds were mode of investment, rate of investment return, contribution and the payments made from the scheme. The mode of investment and the payments have a negative relationship with the rate of growth meaning that when they increase the rate of growth of pension funds would decrease. The interpretation of the impact of the mode of investment which is a dummy variable would differ from the other variables; in the data, the guaranteed funds were coded 1 and segregated funds 0, these would mean that the model was guaranteed and by the virtue of the coefficient being negative would mean that segregated fund intercept is greater than guaranteed fund intercept. These mean that segregated funds mode of investment result to higher rate of growth of pension funds than the guaranteed mode of investment. Investment return and contribution have relative high impact on the rate of growth of a pension fund indicating that the need to stress on more saving and the return that schemes get from their investments with the fund managers. The negative coefficient which is relatively significant of the payments made from pension schemes indicates that the amount of money leaving a scheme has significant impact on the growth of pension funds. Payments from a pension scheme are increased by factors like; death, termination of employment, emigration and downsizing of firms. KRA regulations allow an individual to access 100% of personal contribution and 50% of employers contributions from a pension scheme if one leaves employment or termination of employment.

The number of members in a pension scheme, the percentage of gross income of employee contributed by the employee and employer and the number of years that a scheme has been in existence has moderate impact in the rate of growth of a pension scheme. This goes to stress of the importance of investment and management in the rate at which a pension fund would grow. Correlation analysis indicate that the number of members in a scheme, years of existence, investment return and contributions have a weak positive correlation with the rate of growth of a pension scheme while the mode of investment and payments from the scheme have a weak negative correlation with the growth of a pension fund.

The regression analysis shows there is a linear relationship between growth of pension funds and members in the scheme, number of years of existence, mode of investment, investment return, contribution and payments from the scheme. The F test is less than 5% showing that the model is significant. R-Square (Coefficient of Determination) was determined to establish how much of the variability of fund returns can be caused or explained by asset

allocation over time. The R Square and the Adjusted R Square values which are 89.8% and 89.8% respectively show that the weighted combination of the predictor variables explained approximately 90% of the variation in the dependent variable in the model. These mean that variables are a good in explaining the growth of pension funds; the high percentage is backed by the mode of investment and investment return which are very important in growth of a pension scheme. It is evident the role active approach to management of the pension funds play is very important especially given that the guaranteed model has a negative coefficient. Active management can be enhanced by relaxation of restrictive limitation on investment by Retirement Benefits Authority and aggressive approach set forth by the investment policy set by the trustees of a pension fund rather that adopting generic copies provided by the fund managers.

The model indicates the importance active engagement of trustees and members of a pension scheme to increase the return that they get from their pension savings. The agent who is the fund manager has his own interests which are quite different from that of the investor (the principal). The segregated pension schemes take an active approach to investment and the analysis indicate they lead to higher growth of pension funds rather that the guaranteed funds which leave all matters for the fund managers to handle. Study show that income replacement ratio 1 to 4 % on retirement and the model shows that withdrawals from pension schemes has significant effect on the growth of a pension scheme, the set pension scheme by NSSF to retirement is a welcomed move as this would help lock down funds till retirement. The present RBA regulations allows for withdrawal of 100% personal pension savings plus 50% employers savings which is a setback in safe guarding money set during sun set years. The new NSSF act provides the set directive to private pension schemes that savings are going to commuted only in case of death and a pension given on retirement.



## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The study intended to address the research problem: comparison of performance between guaranteed and segregated pension schemes? Secondary quantitative data was collected and analyzed to satisfy the objectives of the study. Specifically, the following tests were carried out on the data: Correlation, R Square, ANOVA and Coefficients. The findings of the analysis have been documented and have formed the basis for this chapter. This chapter presents a summary of the findings, the conclusion that addresses the research question and the recommendations of the study.

#### **5.2 Summary of the Findings**

The objective of the study was to compare the performance between guaranteed and segregated pension funds; this is aimed at establishing which of the two forms of holding pension savings leads to higher growth of pension funds. From the study it was found out that there is a linear relationship between the growth of pension funds and the variables included in the model which affect its growth. The R square indicates that the variables explain 91% of the variation in the growth of a pension fund. The mode of investment chosen by the pension fund (guaranteed or segregated) and the payments have a relatively large negative relationship with the growth of pension fund. The model is guaranteed in the sense that in the data guaranteed schemes were coded 1 and segregated funds coded 0; this indicates that segregated model would have a higher intercept compared to the guaranteed model. This means that the segregated mode of investment leads to a higher growth of pension funds than the guaranteed mode of investment. In the segregated mode of investment the trustees take an active role in deciding the investments that are going to be undertaken by their funds and they bore all the gains and losses from their investment, in the guaranteed setup on the other hand, the fund manager mitigates against the losses by keep reserves and investing only on fixed income assets in the market and tend to shy away from investing in stocks which is associated with high risk high return.

The coefficient for payments is relatively high at -0.19 which indicates it is very important that regulations surrounding payments from a pension scheme should be looked into critically, the existing rule is that a member of a pension scheme can withdraw his savings to the tune of 100% personal savings and 50% employers contribution in Kenya after leaving employment. The law does not prohibit individuals switching jobs from accessing their

savings; this also contravenes the spirit of saving for retirement as individuals are allowed to use that part of their savings that are set for sunset years when they will be less productive. Kenyan Vision 2030 shows that more than 40% of the Kenyan population is dependant and it recommended a new social security be put in place, this vision was also shared with Jubilee coalition manifesto, the two culminated to the formation of NSSF act 2013 which was enacted to increase pension savings and to repeal NSSF act 1965 which had a ceiling of Kshs. 400.00 on NSSF savings. NSSF act 2013 states that individuals would only access their funds on retirement as pension rather than lump sum as was provided in the previous provident fund, it goes further and extend the same regulation to private pension plans that are going to be operated outside NSSF. These would go a long way increasing the growth of pension savings and enable the government in its mandate to provide all the needy citizens with social security and reduce the dependency menace with the elderly.

The contribution variable has the biggest positive coefficient of 0.44 to the growth of pension funds. This makes savings to a pension plan a very significant pillar to the growth of and individual saving for retirement, it shows that the more people are encouraged to save for retirement the more they are going to have during retirement. The move by the new NSSF act 2013 is a welcomed move as is evident by the findings of the study; it states that it is compulsory for all employees and employers to contribute 6% of the employee gross salary towards pension savings totaling to 12%. The contributions are done in two phases, tier I and tier II, in the former, it is based on the minimum wage declared by the minister of labor from year to year and is a compulsory contribution to NSSF by all employees and employers. This is a significant increase in the contributions previously received by NSSF which had a ceiling of Kshs 400.00, at the moment it stands Kshs. 720.00 which is Kshs. 320.00 more. The latter, tier II, can be contributed to a private pension plan which has been approved by RBA and would be subjected to law. Enactment of the law would see a significant increase in amount of savings in the industry which is one of the driving forces behind the study.

The correlations analysis indicated that number of members in the scheme, years in operation, percentage of contribution, the rate of investment return and contribution made to a pension scheme had relative weak positive correlation to the growth of a pension scheme, which was below 0.4. However, the correlation of the contribution was quite high indicating that there is relatively high relationship between the growth of pension scheme and the level of saving to the plan. The guaranteed model showed a negative correlation which is below -0.4 indicating that the relationship between the rate of growth of a pension scheme and the mode of investment is quite significant which backs the concern of the study on the

importance of knowing which between the modes of holding pension funds is more beneficial to the pensioners. Payments made from the scheme has a relatively weak correlation with the growth of pension funds at -0.022 which is higher than -0.4.

### **5.3 Conclusions**

The number of members in a pension scheme, the number of years a scheme has been in operation and the percentage of contribution from employee's gross salary by both employer and employee has little effect on the growth of pension fund. The mode of investment as to either guaranteed or segregated pension has the highest impact on the growth of pension plan and since the model is guaranteed, it shows that segregated has a higher growth level than the guaranteed pension plan. Given that the regression model shows that the relationship is negative it is expected that a segregated model would be the opposite, which is positive.

The rate of investment return and contributions of pension scheme has high impact on the growth of a pension scheme. Given that the mode of investment shows that segregated funds leads to a higher growth of pension schemes and the impact of investment return on a pension fund is relatively substantial, it indicates the importance of concentrating on the investment aspect of a pension scheme. With the enactment of NSSF act 2013, which outlines increased compulsory pension savings, the idea should not only be centralized around increasing contributions but also the investment criteria which would give pensioners enough income on retirement or increased benefits to beneficiaries in the event of death.

Payments from a pension plan have a significant negative impact on the growth of a pension scheme. This means that the regulatory authority should has tighten its rules on when individuals can access their pension savings so has o increase savings for retirement, the current regulation is that an individual leaving employment can access 100% employee contribution and 50% employer contribution. This regulation does not prohibit access based on the age of the person leaving employment leading to depletion of pension savings. However the new NSSF act 2013 provides the savings would only be accessible upon retirement or death, these is a welcomed move as increased savings would even make it possible for the government through proceeds from investment of pension funds provide adequate social security to the general public.

Time has changed and access to better education has increased rural urban migration and most of the middle aged persons reside in urban areas, the cost of living keep on increasing everyday while there is no commensurate increase in wages making the middle aged to have little or nothing at all to save for the elderly in the rural homes. The HIV pandemic,

unemployment predisposes the old people to more malady than would have been case with old social set up where people were living as community taking care of the elderly. This makes locking down of pension savings to retirement and meticulous actions taken to maximize returns from investment from pension savings.

The efforts put forth by RBA to ensure that trustees of a pension are trained on matters relating to pension funds regulation, administration and investment is very important, at the moment they have made it compulsory for all the trustees to be trained to increase awareness and to offer better services to the members of a pension scheme. These would also go a long way to enhance increased participation of trustees in the investment of the funds that they have been selected to oversee, it is expected that from the trainings the trustees would be able to engage the fund managers more and demand better returns through aggressive approach to investment as opposed to the past where most of the scheme would invest as guaranteed plans and give low rate of returns to the pension schemes.

The fear about market slump can be averted by careful investment by employing efficient portfolio techniques by hedging against opposing risks and these will be enhance through increased education and having fund managers with good experience in the investment market. The equity market is known to give more returns rather that fixed interest securities like bonds and debentures, the high returns is coupled with high risk that if the market forces happen on the negative side, the equity market is normally affected severely. Good investment education and would give technical knowledge on how to analyze the market trend and characteristics of companies before investing in equity assets.

#### **5.4 Recommendations for Policy**

There is need for sensitization of the general public of the importance of saving for retirement and especially on how to ensure that they get the most out of investment done from their savings. In the past NSSF has been in isolation in holding public funds and was characterized by lack of transparency and cumbersome access to funds upon retirement, it is time that the working class who have been forced by the new NSSF act 2013 to increase their savings for retirement demand for more transparently, professionalism and easy and quick access to their money when need be.

Research by Kenya Vision 2030 indicated that almost half of the population in Kenya lives as dependants and this problem can be alleviated to a great extend by the new NSSF act if it is handled well, if the money collected is invested well the returns can be utilized by the government to fund is agent to provide for the less fortunate in the society. These would also

form a very reliable source of borrowing for the government to finance its budget deficit rather than seek funds from external sources. Therefore, the government should fast track the implementation of the law and put up proper regulation in collaboration with RBA and set out clear ways in which the savings are going to be held to avoid a replica of what has been the tradition with NSSF.

The new law should not just be about increasing contributions and money to the government but rather be based on a professional approach especially with regard to matters relating to investment, the NSSF should be able to come out and be competitive in the market by offering the market a variety of products like the ones in the market. In the market there is the option of holding your funds as guaranteed or segregated based on your risk appetite and the drive to give members of a pension scheme a higher returns for their saving.

The model in the study reveals that holding a pension scheme as segregated leads to a higher growth of the pension funds as opposed to guaranteed mode of investment; hence it would be beneficial for existing private pension plans and the NSSF to adopt this aggressive approach to the investment market so as to realize higher returns for pension savings. Given that if a company does not have a private pension plan would automatically have their tier II held by NSSF which would be a significant amount depending on the gross income of an employee. These calls on NSSF to be more innovative and proactive approach when it comes to investment or all the employers because of poor service and an satisfactory return by NSSF would be forced to opt to a private pension plan on their tier II contributions. These are what are foreseen by the private sector and their gearing up to tremendous increase in pension plans and savings given the history with NSSF. Now the players pitching their services in the market sitting all the inadequacy of holding funds with NSSF and why new employers who had no pension plans should consider saving with private service providers. These is call on NSSF to up their game otherwise the idea of increasing pension savings to enable government provide enhanced social security to the public would be blown to the private service providers benefit instead of meeting the intended purpose.

The provision by the new NSSF act 2013 that pension savings would only be accessed upon death or retirement of an individual is a welcomed move as evident by the model, payments from a pension scheme has a significant negative relationship with the growth of pension schemes. The existing RBA regulation allowed the members of a pension scheme to access 100% of their personal savings and 50% of employer's savings upon leaving employment regardless even when one is switching employment. It goes ahead and provides that it is going to give a pension as opposed to a lump sum amount upon retirement is also in the right

move in cushioning the elderly in their sunset years. The study indicates that it is important that payments from pension funds be minimized so that pension funds would grow even more.

The previous NSSF act was insufficiently funded and gave a lump sum as it had been set as a provided fund rather than a pension scheme, the model indicates that contributions to a pension fund play a very critical role in the growth of a pension fund as it is the savings that are invested to realize return and subsequent increase in the growth of a pension. The directive given by the new NSSF act 2013 of increased pension contributions is a move to a right direction and the opponents of the move should be fought as much as possible as it is going to increase the savings for retirement. The new NSSF has faced numerous court battles but findings of the study indicate that the government should not relent in the stand that they have taken to increase pension savings so as to provide adequate money for elderly on retirement. It is believed that pension security increases longevity hence it is important that matters surrounding it be handled with a lot of care and professionalism to realize this great vision of providing adequate social security to the nation.

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