

**CONTRIBUTION OF THE INVESTMENT PORTFOLIO
MANAGEMENT STRATEGIES ON ASSETS GROWTH:
A CASE STUDY OF LOCAL AUTHORITY PENSION FUND**

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MANAGEMENT STRATEGIES ON ASSETS GROWTH:
A CASE STUDY OF LOCAL AUTHORITY PENSION FUND**

By

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**A Dissertation Submitted in Partial/Fulfillment of the Requirements for Award of
the Degree of Master of Science in Accounting and Finance (MSc A & F) of
Mzumbe University**

2015

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, contribution of the investment portfolio management strategies on assets growth, in partial fulfillment of the requirement for the award of degree of masters of Science in finance and Accounting of Mzumbe University.

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I, Godfrey Kyaruzi, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

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DEDICATION

I dedicate this work to my lovely parents Mr. Alphonse Kyaruzi and Ms. Scolastica Bisendo also to my lovely brother Joseph Bisendo for their tirelessly support, both moral and material that they had been extending to me from the early stages of my academic life time up to this juncture. I really appreciate them all for their loving care and support

LIST OF ABBREVIATIONS

MSc (A&F)	Master of Science in Accounting and Finance
LAPF	Local Authorities Pensions Fund
SSFs	Social Security Funds
TZS	Tanzanian Shillings
URT	United Republic of Tanzania.
SSRA	Social Security Regulatory Authority
BOT	Bank of Tanzania
SSIs	Social Security Institutions
PFs	Pension Funds
NSSP	National Social Security Policy
URT	United Republic of Tanzania

ABSTRACT

This study intended to examine major investments portfolio that makes contribution towards the assets growth of LAPF. Specific objectives that guided data collection were: To establish investment choice taken by LAPF; to select optimal assets portfolio of the LAPF in the study; and to estimate the optimal portfolio equation for a time series data of 2005 to 2014. In conducting this study, the researcher used a case study design; he collected and used secondary data through interviews and document analysis.

The study revealed that, there are a number of strategies and modes the Fund took in the investment portfolio management towards assets growth which include measures like: leadership commitment and engagement of all stakeholders, public awareness, diversification of portfolio, good governance and risk management, allocation of portfolio assets properly, and marketing of portfolio. It is also reported that members' contribution increased by an average of 34.12% for ten years, this was attributed by the increment of the Fund's members. The study also revealed that, investment portfolio contributes 80.85% of the LAPF assets growth. Finally, it was found out that there were a number of challenges that the Fund faced in investment portfolio management, these included: few listed companies and therefore funds are forced to invest in government securities and real estate (investment property), government interventions, political factors, accountability problems, poor life-cycle cost analysis, problems in budgeting process and budget authority, and inadequate tracking of portfolio performance over its full life cycle. The researcher recommended grouping initiatives using common resources to leverage the knowledge and expertise; portfolio management should treat opportunities, initiatives and projects as investments, and the Fund must incorporate objective criteria to evaluate both existing investments and new investment proposals.

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CHAPTER ONE

INTRODUCTION AND PROBLEM SETTING

1.1 Background of the Study

Pension Funds exist in order to provide post retirement income to employees. The benefits to be provided are highly depend on the Funds' performance in investing the contributions so collected. Poor investment decisions have serious consequence especially to the Fund stakeholders. The investment decisions should be wisely done so as to ensure that return on investments increases so as to be able to pay benefits to stakeholders. Therefore, this research paper is going to assess the contribution of the investment portfolio management strategies towards asset growth with the case of LAPF.

Every human being is vulnerable to risks and uncertainties with respect to income as a means of life sustenance. To contain these risks, everyone needs some form of social security guaranteed by the family, community and the society as a whole (NSSP, 2003).

The social security system in Tanzania comprises of the National Social Security Fund (NSSF), Parastatal Pension Fund (PPF), Public Service Pension Fund (PSPF), the Local Authorities Pensions Fund (LAPF), Government Employees Provident Fund (GEPF), the National Health insurance Fund (NHIF) and the Zanzibar Social Security Fund (ZSSF) for the isles. These Pension Funds mobilizes financial resources from members' contributions and other sources that are channelled to viable investment avenues in order to build their ability of paying improved benefits package and provide quality services. Thus, social security funds must be invested prudently based on among others, safety, yield and socio-economic utility. Furthermore, the investment of social security funds can make a significant impact not only to the financial sustainability of the social security systems but also towards the implementation of national development programmes. The overall investment objective is to maximize returns on investments, preserve the real value of assets and generate at all times liquidity necessary to meet

commitments while taking into consideration the members' and national interests by observing best practices and investment standards (Baruti, 2010: 1-2).

Investment performance is very important if the accumulated assets are used to meet pensioners' obligations and it is true that many developing countries whose schemes represent a large share of retirement income for covered workers. The idea of Social Security Fund (SSF) was developed as one form of economic security in a modern industrialized world. The world's first social security retirement program was put into effect in Germany in 1889 (Impavido, 2002).

An important element in URT's medium and long term drive to reduce and eliminate poverty and social exclusion is partly through having in place SSFs. This includes having in place a modern and effective social security investment scheme and system. The system should encourage and promote access to employment while protecting or safeguarding and sustaining availability of employment opportunities in all sectors of the national economy.

Implicitly, most of Tanzanians are vulnerable to social and economic insecurity. Thus, unless measures are taken to ensure that they can access some kinds of social protection, they will continue to be vulnerable and mostly affected by pangs of poverty. This raises a policy issue of how lives and livelihoods in developing countries such as URT can be made more secure against adversity and deprivation (Stern & Burgess, 1991). For example, the SSFs have been in many years offering conventional benefits namely; old age pension, survivors and withdrawal benefits. These benefits will not be responsive to the social security needs of their respective members and particularly those who are vulnerable to social and economic insecurity in the Informal Sector (IS).

The challenges facing Tanzanian social security system include inadequate investment activities, uneven benefit packages among the existing SSFs, limited coverage and the role of SSFs in the fight against poverty. In responding to these challenges, some of these SSFs have implemented reforms in an attempt to adapt to changes brought about by the changing socio-economic environment.

1.2 Problem statement

The universal declaration of human rights of the 10th December 1948 made everyone as a member of society to have the right to social security (UN, 1949). The State is obliged to ensure a minimum standard of material welfare to all citizens on wide enough to cover the contingencies of life. It includes general basic social support for all citizens, regardless of contribution or employment. In Tanzania, the right to social security to all citizens is stipulated in the Constitution of the United Republic of Tanzania of 1977 as amended in 1984, 1995 and 1998. Some of these rights include the right to social welfare at old age, sickness or disability and other cases of incapacity (URT 1999).

Due to that fact, the government of the URT established various Social Security Funds (SSFs) to work on this. These Funds receive contributions from members and invest part of them to increase their capabilities in meeting members' benefits. Funds invest in various investment portfolios considering various criteria including financial, economic, social, and others. High return in investments contributes much to the assets growth of these Funds since it makes more funds available for beneficiaries (Lefort and Walker, 2002). Problems with many SSFs in the United Republic of Tanzania (URT) delay paying pensioners and beneficiaries due to various reasons including having less return on their investments, choice of investment and Contributions of members (Tungaraza et al, 2002). However, at present there is limited information on asset growth in pensions funds, therefore this study is going to assess the contribution of the investment portfolio management strategies on assets growth of Social Security Funds (SSFs) in Tanzania particularly Local Authority Pension Fund (LAPF) so as to see how the Local Authority Pension Fund (LAPF) is managing its investment portfolio in order to effectively address the goals and objectives of the security system. This enabled the researcher to identify and understand the factors that contribute to improve Local Authority Pension Fund (LAPF) Investment portfolio performance on assets growth in Tanzania.

1.3 Research Objectives

1.3.1 General objective

This study intended to examine major investments portfolio that makes a logical contribution towards the assets growth of LAPF.

1.3.2 Specific objectives

- i. To establish investment choice taken by LAPF.
- ii. To select optimal assets portfolio of the LAPF in the study
- iii. To estimate the optimal portfolio equation for a time series data of 2005 to 2014

1.3.3 Research Questions

The study was guided by the following specific research questions:

- i. What are the investment choices established by LAPF?
- ii. What is the selection of optimal portfolio taken by LAPF?
- iii. What mode taken to estimate optimal diversified portfolio equation?

1.4 Justification of the Study

This study will be important to financial analysts, Academicians, shareholders and beneficiaries. It will help them to establish investment choices taken by LAPF and thus come up with the relevant policies so as to select optimal assets portfolio. Many studies have been focusing on the roles and challenges of pension funds. For instance, the study carried by Baruti and Davis (2000) emphasized on the contributions, challenges and opportunities of pension funds in Tanzania but they did not specifically show how pension funds establish investment choices. Thus, this study examined the contribution of the investment portfolio management strategies towards assets growth and thus filling the existing knowledge gap.

1.5 Scope of the Study

In this study, contribution of the investment portfolio management strategies towards assets growth was examined. The study employed annual data over the time period from 2005 to 2014. This period was chosen because in this period a huge amount of money was channeled in various investment avenues.

1.6 Significance of the Study

The study has significance to knowledge, policy and management practice. On the side of knowledge contribution, the findings of the study will improve understanding on the performance of the LAPF by ensuring that the return on the investments leads to asset growth of the Fund. With respect to policy implications, the finding can assist decision makers in formulating new strategies geared towards enhancing the LAPF investment. Finally, the study may benefit the LAPF management and other Pension Funds which use the same strategies to invest and maintain inventory for the best practice that enable smooth payment of beneficiaries. The study is also so important because it will help the researcher to fulfill the requirements for the award of the degree of MSc. in Finance and Accounting of Mzumbe University and hence get a Master's degree.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature review involves systematic identification, location, and analysis of documents containing information related to the research problem being investigated (Mugenda, 1999:29). Literature review should be extensive and thorough because it gives an overview of what has been said, who the key writers are, what are the prevailing theories and hypothesis, what questions are being asked, and what methods and methodologies are appropriate and useful, therefore, it is essential step and a source for building a knowledge base on the previous thinking on the topic because by knowing what others have done, prepares the researchers for the investigation of their chosen problems with deeper and more complete knowledge. In this chapter, the researcher gives the fundamental definitions of the key terms that will be used in the study, discussion of theoretical aspects of strategies of investment portfolio management towards asset growth and analysis of empirical studies which gives clear relationship of the proposed study to other previous studies, then gives a comprehensive summary of the whole chapter.

2.2 Theoretical Literature Review

2.2.1 Definitions and Investment portfolio strategies

Portfolio Management is the professional management of various securities (shares, bonds etc) assets (e.g. real estate), to meet specified investment goals for the benefit of the investors. Investors may be institutions (insurance companies, pension funds, corporations etc.) or private investors (both directly via investment contracts and more commonly via collective investment schemes such as mutual funds).

The art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing

risk against performance. If we own more than one security, we have an investment portfolio. We can build the portfolio by buying additional stocks, bonds, mutual funds, or other investments. Our goal is to increase the portfolio's value by selecting investments that will go up in price (Barua, 1992).

2.2.2 The Concept of Pension Funds

A pension fund is the set of payment promises in the favor of the plan that are protected by property rights (Prieto, 2002). These funds tend to pool and ultimately invest the funds contributed by employees and their sponsors to provide for an employee's future benefits. There are many pension systems existing although the three basic systems are state pension, private pension companies and voluntary pension systems. The rapid growth of pension funds in many countries, and the stimulus they are providing to the growth of capital markets, both suggest that their activities as financial intermediaries merit considerable attention (Davis, 2000).

Johnson and Graaf (2009) maintained that the growth of pension funds and retirement savings over the last three decades led into a huge global block of capital that dramatically changed the effect of global economy. Moreover, Zahler (2003) argued that the importance of institutional investors is such that in emerging economies, rules governing their portfolio decisions should consider the incorporation not only of microeconomic stability and growth. Pension funds have been increasing the level of savings for the employees and maintaining the living standard of individuals in a country. These provide retirement income to retirees as well as improve health services for the elderly upon retirement. Taking huge government projects and property investments pension fund play an incredible role that cannot be taken by other financial institution because of the huge initial capital layout required. Furthermore, pension funds do supplement government deficits thus enabling the government to achieve its development goal while creating employment opportunities. Examples of such investments in Tanzania include construction of the College of Humanitarian and Social Science University of Dodoma phase one and two and the local Government Training

Institute Hombolo in which USD 10 million was granted to the government of United Republic of Tanzania through the Ministry of Infrastructure. Also, Tsh. 15 billion loan was given to National Housing Corporation. The challenges faced by pension funds when making investment decisions are as follows: Maintaining the return on asset ratio is one area of great importance for the financial sustainability of the fund has proven to be not an easy task. Furthermore, taxation levels in Tanzania prove to be very detrimental for a large amount of investment income is paid to the government (NSSF 2010).

Pension funds that are operated under an advance payment schemes rather than Pay As You Go (PAYG) schemes accumulate large pools of money to cover for these liabilities and invest this money in capital markets (Levy and Post, 2005). The investment decisions of these funds are conducted in house by a committee or through professional fund managers who oversee the allocation process. Holbrook in 1976 argued investment objectives of pension funds may be approached from two principles; the construction of its portfolio should consider the nature of its liabilities and is usually subjective to its ability to maximize the rate of return at an acceptable level of risk.

From historical point of view, public pension funds are managed poorly in most countries. They were forced to invest in government bonds and housing loans at low nominal interest rates, while investments in foreign assets were prohibited. In countries that suffer from high inflation, real investment returns are negative, while countries where nominal interest rates exceeded inflation, the returns on public pension reserves go below equity market returns and well below the returns achieved by private pension funds (Impavido, 2002).

Pennacchi and Rastad (2011) emphasised that the uniqueness of an investment portfolio of a pension fund will be expressed by the demographic characteristic of the fund membership, projected long term flows of contributions funds liabilities as they fall due and the objective of the trustee on the real rate of return. To explain public pension fund portfolio choices considered the maximization of utility of a representative taxpayer and the agency model that maximizes the utility of the pension plan management. They

concluded that hedging risk from changes in market value of pension liabilities is likely to be the socially optimal policy. The regional economic structure of which a pension fund is expecting to invest should be well understood in the process of funds allocation. This will enable an investment manager to be in a position to give a more realistic prediction of future performance of the investments.

2.2.3 The Social Security Funds (SSFs)

SSFs are the fund in which people pay money regularly to the government when they are working and receive payments from the government when they are unable to work especially when they are sick or too old to work. He further defined SSFs as public provision for the economic security and social welfare of all individuals and their families, especially in the case of income losses due to unemployment, work injury, maternity, sickness, old age, and death. The term encompasses not only social insurance but also health and welfare services and various income maintenance programs designed to improve the recipient's welfare through public services. Some of the first organized cooperative efforts to provide for the economic security of individuals were instituted by workingmen's associations, mutual-benefit societies, and labour unions; social security was not widely established by law until the 19th and 20th centuries, with the first modern program appearing in Germany in 1883. Almost all developed nations now have social security programs that provide benefits or services through several major approaches such as social insurance and social assistance, a needs-based program that pays benefits only to the poor (Hornby, 2006: 1399).

Household survey and living index studies reveal that majority of people in Tanzania are faced with insecurity caused by chronic or structural poverty. The perceived insecurity arises mainly from insufficient economic development. However, the removal of chronic social insecurity faced by the poor does not remove the social insecurity associated with risks emanating from conventional contingencies such as loss of employment, disability, old age and death. The fundamental social security needs of the poor in Tanzania are the result of chronic or structural poverty and only secondarily of

conventional social insecurity. An attempt to define social security should therefore take into account both the conventional definition as well as the basic needs definition of social security which portrays the situation in Tanzania.

Social security scheme in Tanzania are defined in the context of the protection provided by society to its members through public measures against the economic and social distress which otherwise would be caused by the stoppage or reduction of earnings arising from contingencies. In most cases the contingencies are associated with either the temporary or the permanent loss of income. It is important to mention that contingencies which could cause economic and social distresses include sickness, employment injury and occupational disease, maternity, old age, invalidity, death and unemployment. The definition above puts emphasis on the role of the public sector and the related net costs and expenditures while overlooking social security as an investment in human capital. Thus, the definition does not adequately fit the socioeconomic context of developing countries such as Tanzania. It also provides limited guidance to effective poverty alleviation (Haule,1994).

According to Holzmann and Jorgensen (2000) social security consists of "public interventions to assist individuals, households and communities better manage risk and to provide support to the critically poor". Underlying this definition the idea that social security is both a facilitator and a protection for the poor. Holzmann and Jorgensen (2008) discuss social security as an investment in human capital and focus more on the causes than on the symptoms of poverty. The definition also regards individuals, households and communities as vulnerable to multiple risks from different sources, both natural and man-made. Based on the above definition, some social security issues evident in Tanzania include poverty, equity and the right to social security.

2.2.4 Assets and Asset Growth

An asset is essentially a resource held by the business. It is characterised by a probable future benefit must exist, the business must have an exclusive right to control the benefit, the benefit must arise from some past transaction or event and the asset must be

capable of measurement in monetary terms. Example of Assets are: Premises, machinery, equipment, fixtures and fittings, patents and trademarks receivables, investments, motor-vehicles, inventory, computers, printers, cash Patents & trademarks are intangible assets while others are tangible assets (Penman, 2007).

2.2.5 Portfolio and Risk Management in a Pension Fund.

Peng (2009) defined Portfolio management as a process that involved strategic process and decision making that balanced the total organization investments to match the ongoing market change; was important for organization growth, survival and transformation. It provided a platform for pension fund to manage risk related to its investments. Management of portfolio could be through active portfolio management a technique that attempts to outperform the market (Readhead, 2008). Active managers take the view that they can identify situations which the consensus of other investors is incorrect as to what price of a security (asset) should be. Passive portfolio management a portfolio management strategy that does not seek to outperform the market rather assumes that the market pricings are correct and there exist no possibility of making profit from market miss pricing.

2.2.6 Define Benefit Plan and Defined Contribution

Defined benefit schemes are those under which the benefits to be provided are defined in advance; they will in due course be calculated using a predetermined formula based on the earnings and years of service of the employee. In this scheme, the employee knows in advance broadly what percentage drop in income he will suffer on retirement (if he stays till then). It is then for the trustees to arrange a level of contributions from employer and employee which will ensure that the funds available will be adequate to meet these obligations. The pension schemes defined benefits in terms of a proportion of the member's final salary, and are thus often referred to as final salary schemes.

Spicer and Pegler's maintained that defined benefit scheme is the average salary scheme where the member's pension is calculated as a proportion of each year's pensionable

salary as it earned. A variation of this scheme revalue past salaries in line with the movement of earnings (Spicer and Pegler's, 1987). Redhead (2008: 216) added that defined benefit schemes are virtually always pensions provided by employers for their employees. They stipulate a particular level of income in retirement, normally based on final salary and length of service.

Spicer and Pegler's (1987) on the other hand, defined the defined contribution scheme, "as benefit that are ultimately payable to an individual member will be those which have been secured by the contributions made in respect of him and the related investment earnings". The concept states that, "members will get the pension that his regular contributions (together with the investment returns that they earn) are able to buy; If the investments of the scheme have performed well, the member will receive a higher pension than if the investments have not been so successful. But the fund does not underwrite the member's risk that cost and wage inflation will outstrip the return from investments, and that his drop in income on retirement may therefore be particularly severe. Such schemes are in numerical minority as compared with final salary schemes.

Redhead added that, it prescribes levels of contribution to the fund prior to retirement. The retirement income obtained through a defined-contribution scheme depends upon the growth rate of the fund and the annuity rates available at the time of retirement. In the UK both employer and employee contributions to pension schemes are tax-deductible, however the pension is taxable (Redhead, 2008:216).

AXA Equitable Insurance Co. Ltd (2012) distinguished defined benefit from defined contribution plan in the sense that, a defined benefits plan focuses on the ultimate benefits paid out. Your employer promises to pay you a certain amount at retirement and is responsible for making sure that there are enough funds in the plan to eventually pay out this amount, even if plan investments don't perform well. On the other hand, defined contribution plans focus primarily on current contributions made to the plan. Your plan specifies the contribution amount you're entitled to each year (contributions made by either you or your employer), but your employer is not obligated to pay you a specified

amount at retirement. Instead, the amount you receive at retirement will depend on the investments you choose and how those investments perform. Some employers offer hybrid plans. Hybrid plans include defined benefit plans that have many of the characteristics of defined contribution plans. One of the most popular forms of a hybrid plan is the cash balance plan.

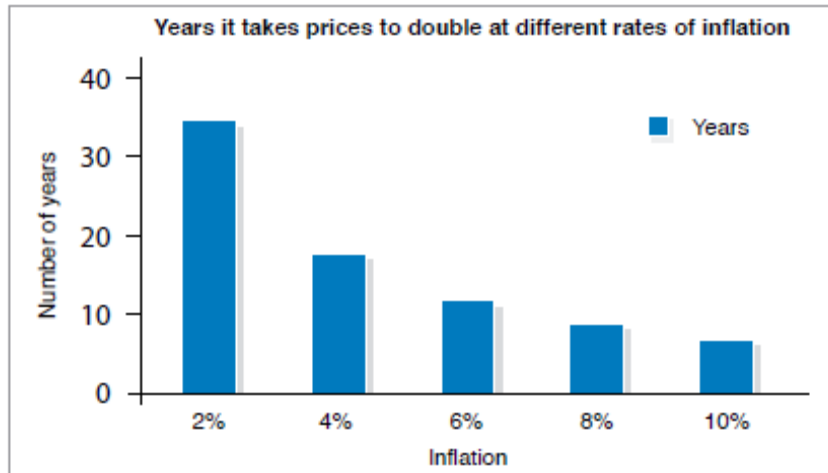
2.3 Challenges facing Defined Benefit Scheme

According to Tuohy (2011), Defined benefit as a scheme it has a lot of challenges to the pension. As the Pension scheme need to invest and at the end they need to meet the deadline, which is to pay the retirement benefit. Most of the risks associated with defined benefit are the Investment risk, Salary inflation risk, the Longevity risk, regulation and taxation risk and the like. But among these risks the Investment risk is the core ideal risk. The empirical evidence suggests that this must be taken very carefully. Below is the analysis to these risks as it has been analysed by various scholars, and how can be taken care, with an example of different countries.

i. Inflation risk

Markets are buzzing with talk of inflation. Inflation erodes the future value of money such that a shilling today will not buy a shilling worth of goods and services in the future. Understanding how inflation will impact liabilities and assets is a major priority for both defined benefit and defined contribution schemes. Inflation is an even more complex risk to deal with within defined benefit schemes. This is because many schemes essentially write insurance contracts that promise members protection from inflation. If this type of risk is not appropriately managed there is a significant risk of liabilities growing faster than assets resulting in deficits being generated or increased. Inflation is very corrosive and even small changes can have a big impact on the cost of goods and services. The following chart (Figure 2.1) shows how quickly the price of a basket of goods doubles for different levels of inflation:

Figure 2.1: Years it takes prices to double at different rates of inflation

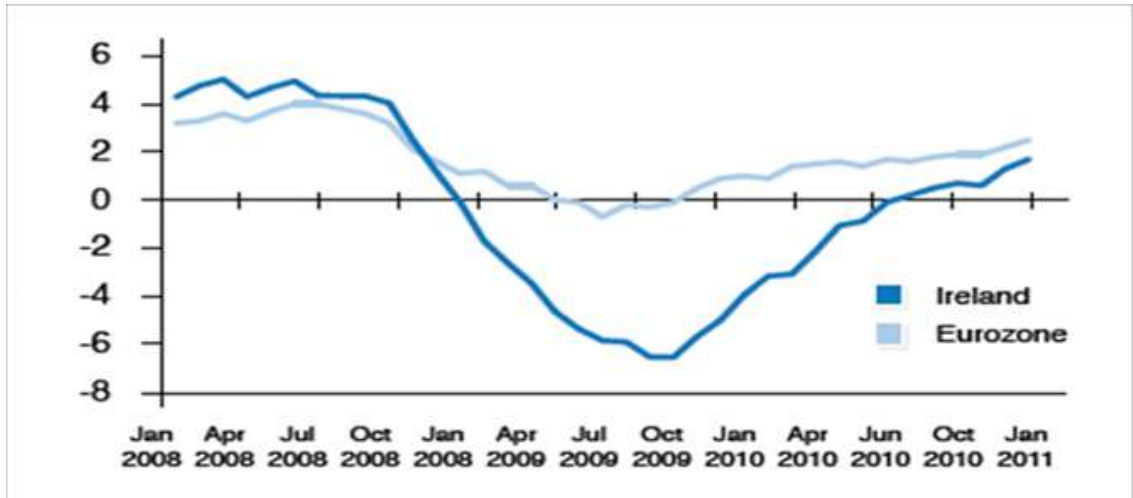


Sources: Acuvest News (2010)

Moving from two percent to four percent inflation may even means that instead of taking 35 years for a basket of goods to double in cost, it takes just 18 years. Think it; if inflation is four percent instead of two percent, your retirement income needs to be double what you had planned just to afford the same standard of living.

The starting point to manage inflation is to understand the nature of the pension promises made. Questions include: Are pensions designed to increase in line with salary or consumer price inflation, Using a liability-hedge valuation, what percentage of the past service liability is respect of funding future pension increases, How much would the liabilities increase if inflation expectations were increased, Is there a cap on pension increases (for example, four or five percent) that limits the exposure to unexpected inflation, For active members what is the risk that salary inflation will result in a future funding problem? Benefit changes? (Tuohy, 2011). First off, while Irish and Eurozone price inflation are correlated they are by no means the same thing (see Figure 2.2).

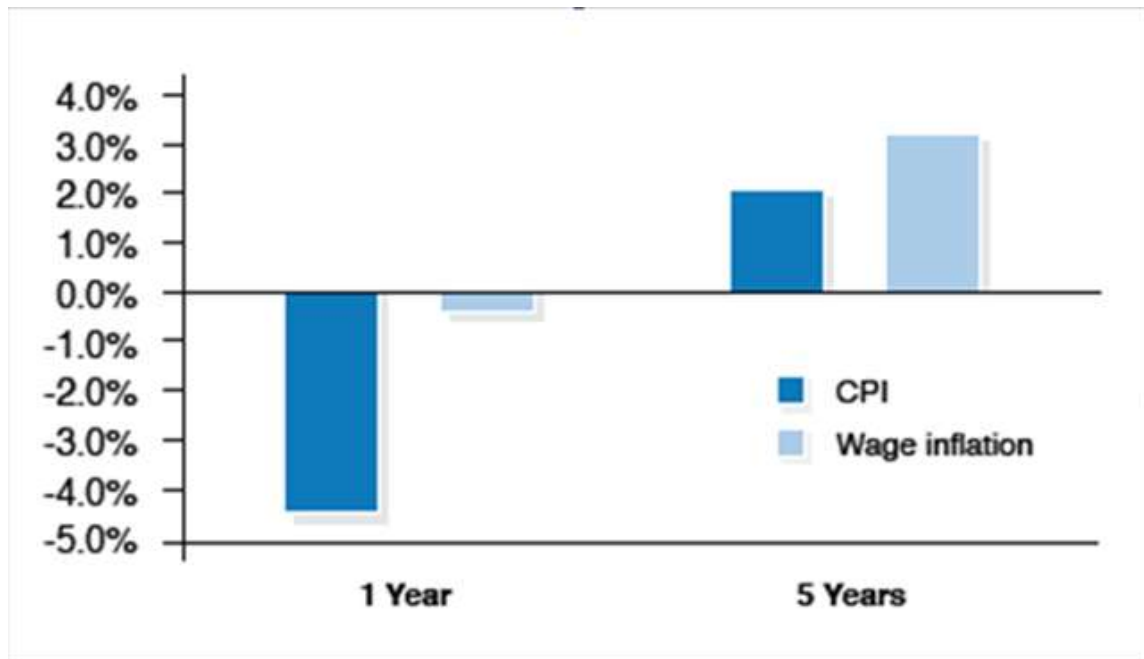
Figure 2.2: Price inflation in Ireland versus Eurozone as a whole.



Source: Central Statistics Office (2011).

The different between Irish and Eurozone inflation is an issue given that available index-linked bonds tend to be linked to some measure of Eurozone inflation. Another thing is that, “inflation-linked bonds are not the solution if what you are trying to hedge is salary inflation. In fact no asset provides a direct link with earning increases.

Figure 2.3: Price inflation versus wage inflation in Ireland.



Source: Central Statistics Office (2009)

Laying aside the fact that euro inflation-linked bonds may not provide a perfect hedge for Irish inflation (either price-or wage-based), a further hurdle presents itself. As the recent inflation has driven investors to become ever more risk-averse, the popularity of inflation-linked bonds has increased to the point where yields have collapsed. Both the US and the UK have seen yields fall on occasion below zero while Eurozone yields remain very low (Tuohy 2011).

ii. Investment Risks

Generally, the objective of pension funds as a social security in investment is to maximize the returns on investments, real value of assets reserve and also, to provide and maintain availability of liquidity for the necessity of meeting some commitment in the fund; Strong consideration on national interests and members through oversees on the investment standards and observing the best practices. Baruti (2010) illustrates that, the “investment activities of social security institutions have dual objectives, namely

security and profitability. The investment made facilitates pension funds to meet maturing financial obligations in the most cost effective ways. Investments enable pension funds to achieve maximum returns within acceptable levels of risks. The investment of social security funds are generally governed by among others, principles of safety, yield, liquidity, diversification and social-economic utility. Investment on social-economic utility comprises the old age facilities, student loans, health infrastructure, low cost housing, tourism and projects for enhancing the human resources.

These types of investment are very potential; in many countries they may make a substantial contribution to long-term GDP rates. Pension funds are always churn their investment in shares, real estates, bonds, fixed deposits and some other investments. Currently in Tanzania most of pension funds invest in fixed and non fixed investment income. These comprised with the government securities (includes, Government stocks, Treasury Bonds and Treasury Bills); Bank deposits; Equities; Loans; Corporate Bonds; and Real estates. Most of the Tanzania's pension funds invest more in Government securities as they are risk free and also in Bank deposits. An example can be seen in Table 2.1 as follows:

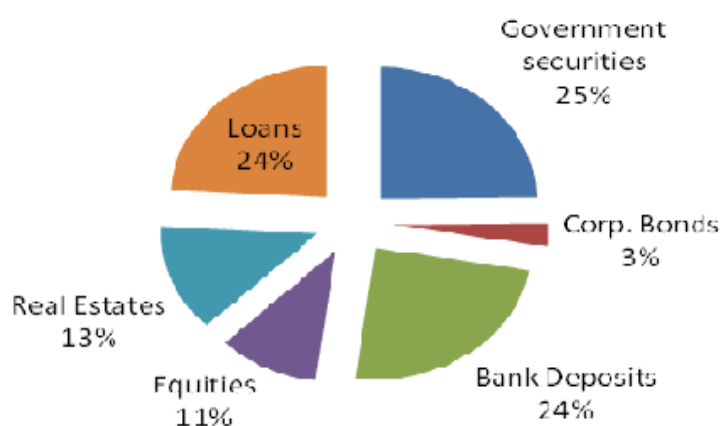
Table 2.1: Investment portfolio of some Social security institutions as at June 2009
(In TZS billion)

Type of Investment	LAPF	NSSF	PPF	PSPF
Government securities	104.78	156.94	86.88	212.65
Corp. Bonds	2.08	8.45	42.08	11.99
Bank Deposits	55.04	149.29	178.87	167.50
Equities	15.94	62.99	73.37	86.00
Real Estates	21.39	198.16	62.07	16.51
Loans	10.47	280.66	72.52	182.70
TOTAL	209.70	856.49	515.79	677.35

Source: Baruti (2010).

Table 2.1 depicts the asset allocation in the portfolio of LAPF and PSPF. It shows that most of the funds were invested in Government securities. Whilst for others, their portfolios were dominated by investment in loans and bank deposits. The total investments for the four Pension funds was as at June 2009 estimated at TZS 2,259.3 billion equivalent to USD 1.69 billion.

Figure 2.4: Total Investment Portfolio as at June 2009



Source: Baruti (2010)

The above investment portfolio indicates that Government securities ranks first followed by Bank deposits and Loans. The real estate also plays a vital in the portfolio. The defined-benefit formula notwithstanding, members of defined benefit plans may bear substantial investment risk. The key issue is the extent to which members of defined benefit plans grant wage or other concessions based on the contributions made by the plan sponsor. Including any additional contributions required as a result of investment shortfalls (Pesando, 2008).

iii. Longevity Risk

Longevity risk is also a growing financial problem for private companies and governments that manage defined benefit pension scheme as well as for annuity providers. Longevity risk connected with the life expectance of the people. The

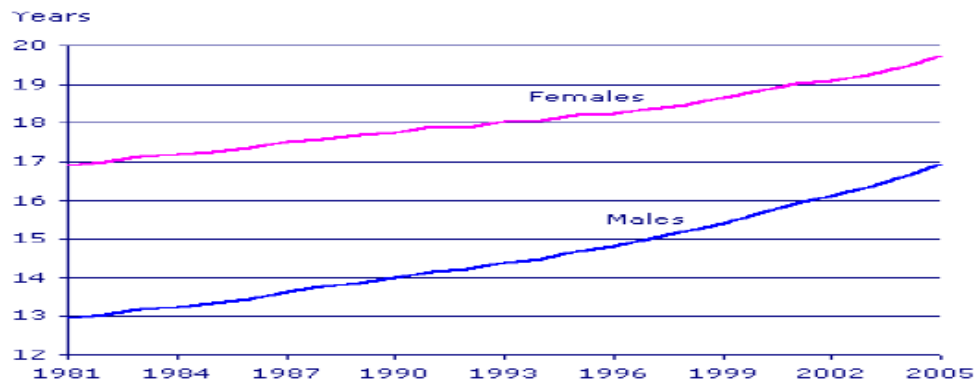
increasing unpredictable life expectancy has meant longevity is placing a greater burden on pension and insurance firm liabilities. The problem with longevity risk from a financial market perspective is that there is no clear mechanism to facilitate a risk transfer. Since longevity is a trend (a non-stationary process) it is difficult to interpret as an insurable event. In essence, most longevity risk follows from the fact that actual longevity assumptions in long-term contracts such as pension plans and annuities. A longevity risk is the risk that scheme members will live longer than expected. It is one among the talking and challenging risks affected the pension funds almost all over the world at the moment. For many decades Unexpected and ambiguity concerning the increases in life expectancy have raised important concerns for retirement savings and for the affordability of defined benefit pension plans, although in some developing countries the issue of increasing in life expectancy is irrelevant as always life expectancy became to deteriorating (Blommestein, 2006:113-119).

For example in 1970 a 65-year old United States male individual had a life expectancy of 13 years. Roughly three and a half decades later, in 1997, a 65 year old male had a life expectancy of 17.5 years. This represents an increase of 1.2 years per decade (Cocco and Gomes, 2011).

In Kenya experience; during the 1999 the life expectancy for males was recorded as 52.8 and for females 60.4 years. This had dropped from 57.9% and 65.9% respectively, (Mogere, 2005). This shows that less-developed countries experience a drop in life expectancy than those in developed countries, which imply that the longevity risk may not be a problem if it happens that people live shorter than expected.

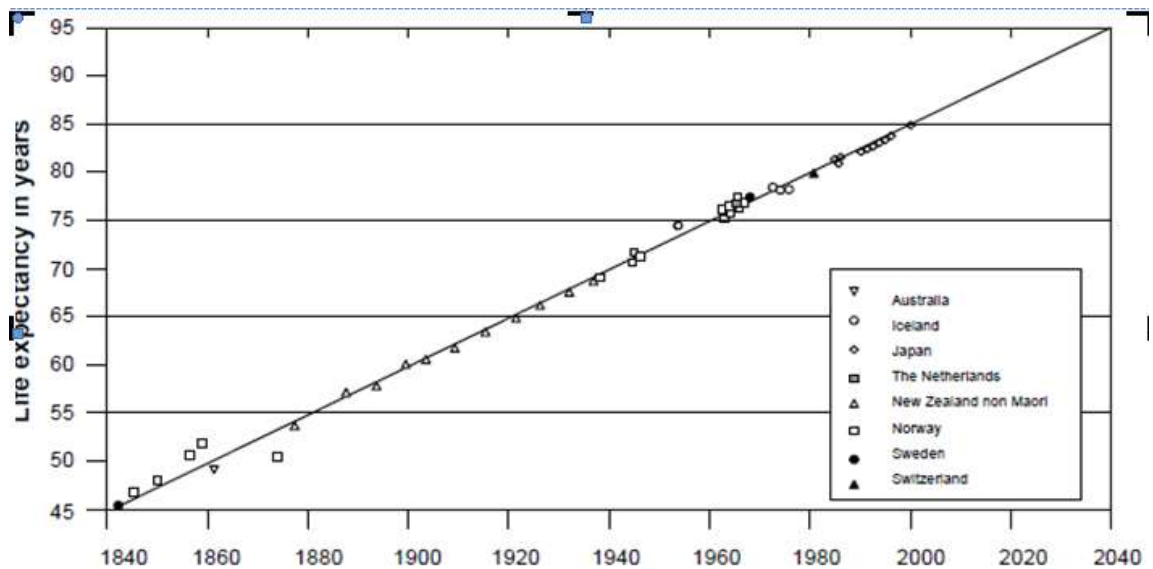
Also, in UK experience; in Figure 2.5, it shows the male life expectancy at 65 rose from 13 years in 1981 to nearly 17 years in 2005 or by around 1.1 percent per annum. By contrast, female life expectancy at 65 rose from 17 years in 1981 to 19.7 years in 2005 or by around 0.6 percent per annum. Figure 2.6 shows that, “in developed countries, life expectancy at birth (for females) has been increasing almost linearly at the rate of nearly three months per year for more than 150 years (David et al., 2008).

Figure 2.5: Life expectancy at age 65 in the UK, 1982-2005



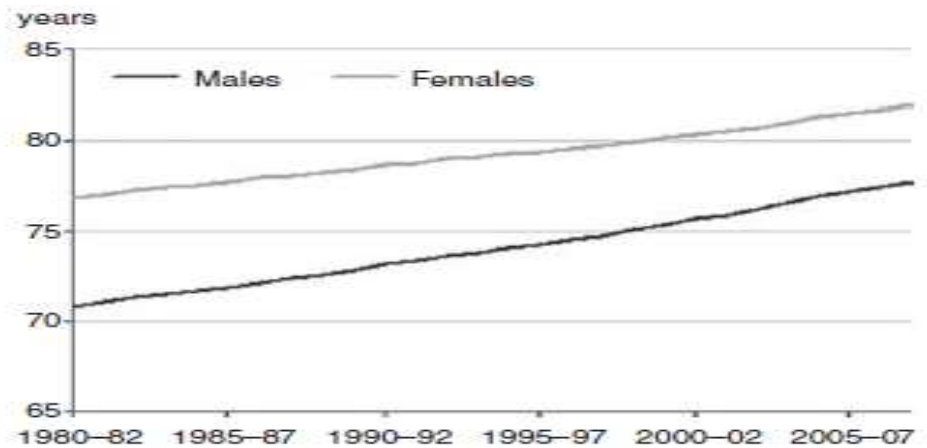
Source: Office for National Statistics (2007).

Figure 2.6: Record female life expectancy from 1840-2000



Source: Oeppen and Vaupel (2003)

Figure 2.7: Life expectancy at birth in the United Kingdom, for the period 1980-2007



Source: Office of National Statistics (2008)

Figures from the Office of National Statistics indicate that life expectancy at birth in the United Kingdom has reached its highest level on record for both boys and girls. “A new born baby boy could expect to live 77.7 years and a newborn baby girl 81.9 years if mortality rates remain the same as they were in 2007-2009 (see Figure 2.7) based on principal population projections, life expectancy at birth for those born in 2009 was projected to be 88.7 years for males and 92.3 years for females (Office of the National Statistics, 2010).

Although further improvements in longevity are expected, the extents to which age groups will experience the most significant changes are uncertain. One possibility is that longevity will continue to improve indefinitely through medical advances, improved nutrition and a better lifestyle. Conversely, pandemics, war and adverse lifestyle choice may limit longevity improvements. However, the impact on pension schemes is clear; increasing longevity will cost employers more. A survey conducted by Mercer showed that member life expectancy assumptions increased by around 6 months in 2009, leading to increases in scheme liabilities of approximately 1.5%.

The question on how the defined benefit pension schemes can handle the longevity risk issues or changes in mortality rates, may be on the purchases of annuities at retirement age, however for the young pension plan members there is considerable uncertainty with respect to the level of aggregate life expectancy, and consequently the annuity prices, that they will face when they retire. The following actions have been taken in regard to the longevity risk as well as some other methods for covering the longevity risks. In December 2003, Swiss Re. issued a 400 million dollars three-year life catastrophic bond. This was a direct attempt by Swiss Re. to insure itself against catastrophic mortality deterioration. More recently, there has been a growing interest in longevity swaps (Cocco and Gomes, 2011). This kind of contract is available only for pensioners and it is retained on the company's balance sheet. "The removal of longevity risk through an insurance policy/swap where the trustees will receive (or pay) the difference between the pension payments expected and the actual pension payments due. Asset risks and inflation risks are retained by the scheme: Likely to require significant trustee and management time for ongoing monitoring (Watkins, 2011:69-74).

Other types of risk management in longevity risk are buy-in and buy-out strategy. Buy-in strategy; this is typically to pensioners: in here benefits with reference to selected members are secured through an insurance policy assigned to the trustees. The removal of employer covenant, interest rate, inflation, investment and mortality risk for the secured benefits, may not require additional funding. Reporting processes need to be established for ongoing accounting and administration. Buy-out strategy; this is typically for all members: members benefits are secured through an insurance policy assigned to the individuals. Removal of employer covenant, interest rate, inflation, investment and mortality risk in full is likely to require additional funding and management time for implementation (Watkins, 2011:69-74, Byrne and Winter, 2009:115-127).

Risk management framework in defined benefit pension plans must be flexible and transparent in a platform whereby it can bring an immediate insight into the guided risks operators of defined benefit, and also look on the interaction of these risks in defined benefit pension scheme. Some of these insights happen if a pension plan holds equity

assets to back liability cash flows that are, at best, indirectly related to equity returns, due to this situation the pension plan will be prone to falls in equity values.

Assets and liabilities risk diversification are highly important when the management of risks in defined benefit pension scheme is considered. For many years this issue has been left aside and many are opt for the equity to generate their returns. Defined benefit has been exposed to falls in equities value and has been also exposed to a fall in interest rate (Plantinga, 2005). Standard assumptions about the relationship between the changes in equities and interest rates imply that these two exposures provide a limited amount of natural offset. That is, when equities fall, interest rates tend to rise, providing some relief in the form of a reduction in the liability value (McCulloch, 2005:99-112).

There are a number of factors to be considered in the management of defined benefit scheme. These factors some often interact and led to confusion. To solve some risks arising from the pension funds, some suggestions have been given by the literature. Plantinga (2005) suggests that there should be the use of liability-driven benchmark for the performance and risk-management of the investment portfolio, in order to ensure that the investment policy remains focused on serving the pension beneficiaries.

Liability-Driven-Investment (LDI) strategies refer to an investment strategy that is aligned with the liabilities of an investor and explicitly considers their stochastic nature. The impact of relative differences between liabilities and assets on the goals and constraints set by the decision maker make it crucial to look at both sides simultaneously. In UK context, LDI concepts aim to immunize the sponsor from certain risk factors (Blome et al., 2007). Pension funds should make sure that their investment strategy based on an asset that's matching the liabilities and the risk characteristics. Plantinga (2005) further proposes a portfolio of assets that is cash flow matched with the real liabilities and one matched with the nominal liabilities. In addition, they have a third portfolio, which is the portfolio of surplus assets that can be freely invested. The benchmark portfolio should be based on this strategy. In reality, this strategy may be difficult to attain due to a lack of index-linked assets. Nevertheless, in the near future,

the growing supply of inflation-linked products may be able to meet this demand. Furthermore, creating sufficient surplus-assets may help to cushion the risks from unexpected inflation developments.

In addition, Blome et al. (2007) proposes the use of risk management techniques such as Asset-Liability Modelling (ALM), which is a financial risk assessment and asset planning tool used by pension funds to help them choose the strategic pension policy under uncertainty in a coherent and consistent balance sheet approach and another technique is Liability-Driven-Investment strategies.

Knox (1993) discusses that during the 1980s there was a trend of many countries away from defined benefit plan towards defined contribution plans. This development means that the individual member bears the full investment risk in the preretirement period and the annuity rate risk at retirement, as no pension benefit (expressed as a percentage of salary) is provided. The reason behind this situation differs between countries to countries. But in few, it includes;

- i. As risk is the central tendency in defined benefit scheme some employers desired to reduce these risks, increasing legislation, which often has made defined benefit plans more complex and costly to administer.
- ii. The presence of surplus in many defined benefit plans and the related issues of overfunding, which may have been encouraged by conservative actuarial assumptions.
- iii. The high rate of return in the 1980s which made defined contribution plans more attractive to members, the trend toward individual responsibility and the desire by many governments for employees to accept greater responsibility in providing their retirement benefits (for example, with reductions in social security benefits in many countries).
- iv. The increasing levels of vesting and preservation required by many governments often have been expressed in terms of members' accumulated contributions,

changing taxation structures that permitted and encouraged defined contribution arrangement.

Brown and Liu (2001) specify that highly mobile workforces change the viewpoint of employers who are now more likely to provide flexible pension benefit plans to meet the needs of today's employees who wish full portability of their assets. The employees also have a strong desire to control their own pension assets in a booming capital market.

2.4 Empirical Literature Review

Christopher (2005: 1-2) discusses that Investments may be held for a variety of different purposes. An insurance company holds assets to back a specific identifiable portfolio of liabilities. It will have received premiums from policy-holders in return for a promise of future benefits or to provide an indemnity against certain risks. The company must therefore set up provisions in respect of the liabilities and hold appropriate assets to back those liabilities. An insurance company will also hold further assets as a solvency margin, derived from capital invested by shareholders and from profits retained from past operations. These assets are not held to back specific liabilities, although some of them may be regarded as held against the possibility that the assets held to back the provisions may turn out to be insufficient when the liabilities eventually mature.

Otherwise they can be regarded as assets which should be invested to give a good return to the shareholders, either through investment in the development of the business, or through investing to maximize returns. Some individual assets may be held in order to hedge specific liabilities, since the characteristics of the asset are the same as or similar to those of the liability and this may enable the investor to "hedge" the liability and thereby reduce the risks associated with the liability, since the hedging asset will behave in a similar way to the liability in changing market conditions. A similar principle may apply in respect of a portfolio of assets which is constructed to match a particular portfolio of liabilities.

Local Authority Pension Fund operates in many countries with very small reserves, covering pension payments for up to one year ahead. However, there are also a large number of both high incomes in developing countries where public pension schemes are partially funded and have accumulated significant reserves (Haule, 1994:42). LAPF have the potential to benefit from low operating costs because they enjoy economies of scale and avoid large marketing costs. But this competitive advantage has in most countries been dissipated by poor record on investment performance. This has been attributed to a weak governance structure, lack of independence from government interference, low level of transparency, and public accountability (Maduhu, 2010:45).

Institutional real estate investment primarily pension reserve assets grew rapidly in the 1980s. The fiduciary demands of a growing asset pool coupled with disappointing results in the latter half of the decade led to an increasing interest in the application of Modern Portfolio Theory (MPT) to the management of large-scale real estate portfolios. This paper reports the results of a study conducted in mid-1990 that surveyed the 426 largest institutional portfolios on portfolio management practices relating to diversification strategies, risk measurement, and evaluation of investment returns (Louargand, 1992).

The survey simulated several measures gathered by Webb (1983) assessed the rate of acceptance or utilization of ideas and techniques in the portfolio management community. Results indicate that change is perhaps slower than might be expected. Real estate performance measures have become more sophisticated in the past seven years with a shift away from accounting type measures toward fully discounted measures, including several variations on the Internal Rate of Return (IRR).

Risk-adjustment techniques have changed to the extent that portfolio managers have a greater likelihood of using responsiveness analysis but few other innovations are well-known. Only a small percentage of respondents use traditional tools of Modern portfolio theory (MPT)-based analysis, but the majority are cognizant of recent developments in the literature that attempt to show alternative methodologies for achieving true diversification within real estate portfolios (Louargand, 1992).

Baruti (2010: 1) discusses that the Social Security Institutions (SSIs) mobilizes funds in terms of members' contributions and income from investments. These funds are invested in various high yielding avenues to safeguard the members' interest by paying improved benefits and provide quality services. The investments activities of Pension Funds (PFs) in Tanzania like other social security systems worldwide are faced by challenges of multiple crises. These crises compel SSIs to be more responsive by adopting and implementing measures that aims at addressing the socio-economic impact of the downturn. It is also noted that, some SSIs have facing difficulties to operate effectively and only a few are operating smoothly. The implications noted so far are reflected in the investment losses incurred and increased expenditures. Thus, for SSIs to continue providing improved benefits packages; they must identify unexploited potential opportunities. Furthermore, given the limited investment avenues in Tanzania, SSIs are facing a challenge of competing with other investors for few available opportunities. The higher demand for the few available avenues have lead to declining yields specifically that of Government Securities and Fixed Deposits.

Baruti, further added that the guidelines for investment of SSIs is that the investment activities of social security institutions (SSIs) have dual objectives, namely security and profitability. On one hand, the investments made facilitate PFs to meet maturing financial obligations in the most cost effective ways. On the other hand, investments enable PFs to achieve maximum returns within acceptable levels of risks. Notwithstanding, the investment of social security funds are generally governed by among others, principles of safety, yield, liquidity, diversification and social-economic utility. The investments made on the basis of social and economic utility include, student loans, low-cost housing, old-age facilities, health infrastructure, tourism, and projects enhancing human resources. In many countries, these types of investments may make a substantial contribution to long-term national growth rates even if the indirect rates of return may not always be fully reflected in the monetary rates of return. The overriding principle however, entails that although the above listed criteria are the basic principles, the Pension Funds shall carry out investment activities on the basis of technical, commercial and financial viability.

Many pension funds are beginning to realize that their governance arrangement should be a top priority, not only through responsibility to literally billions of individuals, but also because it creates an opportunity for wealth creation. At the same time, it is important to point out that while strongly is surely important in institutional investment; it is a very difficult area to get right and manage successfully. Generally, after revising various literatures, it is obvious that many studies have done on the aspect of the need of having SSFs, poor track record of public pension funds problems that SSFs do in making their investments decisions. Since contributions and investment portfolios contribute much to the asset growth of the Funds therefore the researcher focused this study to assess the contribution of the investment portfolios management strategies towards assets growth of LAPF as one of the SSFs in Tanzania. Tanzania is one of such country perceived to experience poor track record of public pension funds subsequently need to build pension reserves that meet the growing customer's needs on public pension schemes. This includes revamping governance structure and investment management of their public pension funds with strong governance structure, independence from government and a high level of transparency and public accountability (Haule1994:76).

Pratten and Satchell (1998) maintained that the objective of the investment policies of trustee were to achieve a good return on the assets of the schemes to provide attractive pensions and limit the costs of the sponsoring employers while avoid risking a significant reduction in the value of schemes' assets and income. Pension funds are exposed to a variety of risk from the decisions of the board of trustee, it is therefore important for the board of trustee to consider the safety aspect of the selected investment opportunities by making risk assessment. The main determinant of the investment performance of pension fund is asset allocation, rather than the stock selection (Ibbotson and Kaplan, 2000).

Investment styles and return objectives in real estate portfolio management have focused on higher return strategies: wealth creation, value added, income enhancement, and incremental risk. The ability of the Real estate investment trusts (REIT) to achieve these goals through direct real estate (active) portfolio management is determined by

management skills and experience. Due to real estate's illiquidity and asymmetric information flows, portfolio diversification and optimization strategies are followed over multiple periods. Where it may take a stock managers weeks to adjust the portfolio to new optimal weights based on new return and risk information, it may take the real estate portfolio managers up to three years to adjust the portfolio, depending on size and market conditions (Stoesser, 2000).

When developing large institutional real estate portfolios, one of the main objectives is to identify and target outperforming markets based on high risk-adjusted rates of return. Factors used in determining target markets are: real estate market opportunities, demographic attributes, and market size. Due to the capital intensity, high transaction and information costs, most direct real estate portfolio managers underwrite properties on a buy and hold basis, extending the investment horizon. This allows the manager to focus on long-term cyclical labour market and demographic trends. For example, the emergence of the echo-boomer and retirement of the baby boomers are expected to support apartment markets in the future (Han, 1996).

OECD (2010) strategy on pension fund portfolio management maintains that there is a need of establishing clear investment objective into account with the retirement income objectives while taking in to account the need for diversification and risk management. Yermo and Srinvas (2002) concluded that Latin America pension funds investment in foreign equity indices of developed countries would have not only improve returns but also lower risk. Hu, Stewart and Yermo (2007) argued that some countries still heavily rely on quantization limits have integrated these into a risk based approach to supervision giving Kenya as an example of a country through its Retirement benefit applying broad range investment guidelines of pension funds. Rusconi (2008) attributed the prevalence of active over passive management and high fees than necessary in South Africa funds to weak board discipline, conflict of interest and knowledge gap. A study by Clark and Urwin (2007) using a sample of large pension funds from different countries in North America, Europe and Asia-Pacific concluded that their superior performance was linked to strong governance.

At the national level risks analyzed are: inflation, industrial production, risk premiums, term structures, business cycles, taxes, etc.; at the regional level risks analyzed are: unsystematic risks, employment based and growth, demographic trends, income levels and growth, and vacancy rates; at the local level risks analyzed are: employment base and growth, demographic trends, income levels, vacancy rates, construction levels and costs, space utilization rates, and taxes; and at the property level risks analyzed are: physical characteristics, location and site characteristics, lease characteristics, property management expertise, and financing (Lieblich and Pagliari, 1996).

Davis (2000) maintains that Pension funds are typically sponsored by employers, such as companies, public corporations, industry or trade groups; accordingly, employers as well as employees typically contribute. Funds may be internally or externally managed. Returns to members of pension plans backed by such funds may be purely dependent on the market (defined contribution funds) or may be overlaid by a guarantee of the rate of return by the sponsor (defined benefit funds). The latter have insurance features in respect of replacement ratios (pensions as a proportion of income at retirement) subject to the risk of bankruptcy of the sponsor, as well as potential for risk transfers between older and younger beneficiaries, which are absent in defined contribution funds (Bodie, 1990a). For both types of fund, the liability is in real (inflation adjusted) terms. This is because the objective of asset management is to attain a high replacement ratio at retirement (pension as a proportion of final salary) which is itself determined by the growth rate of average earnings. Defined contribution plans have tended to grow faster than defined benefit in recent years, as employers have sought to minimize the risk of their obligations, while employees seek funds that are readily transferable between employers.

Davis (2000) added that the key characteristics of Pension funds are common to other institutional investors. These includes, risk pooling for small investors, providing a better trade-off of risk and return than for direct. Holdings, a premium on diversification, both by holding a spread of domestic securities (which may be both debt and equity) and also by international investment, a preference for liquidity, and hence for large and

liquid capital markets, which trade standard or 'commoditized' instruments, ability to absorb and process information, superior to that of individual investors in the capital market. On the other hand, unlike bank lending, pension funds rely on public information rather than private, which link strongly to their desire for liquidity, large size and thus economies of scale, which result in lower average costs for investors. These may arise from inter alia, ability to transact in large volumes which typically leads to a lowering of transactions costs. Investors share the costly services of expert investment managers and thereby save in advisory fees. Size also enables the funds to invest in large indivisible investments (although there is a tension with desire for diversification); countervailing power, which may be used to reduce transactions costs and custodial fees. This countervailing power also gives rise to ability to ensure the most favourable terms from capital market intermediaries on the one hand, and on the other gives a potential for improved control over companies in which they invest, thus reducing the incidence of adverse incentive problems.

According to Social Security Schemes Investment guidelines, 2012 issued by BOT Made under sect 26(2) of the Social Regulatory authority Act No.8 of 2008. A scheme shall only invest in the investment categories to the extent to which the market value of the investment in the category expressed as a percentage of the total assets of the scheme does not exceed the percentage prescribed hereunder:

Table 2.2: The Social Security Schemes Investment Guidelines

S/n	Investment Category	Investment limit as a percentage of Total Assets
1.	Government debt (Treasury bills and Treasury bonds)	20 – 70
2.	Direct Loans to the Government	10
3.	Commercial paper, promissory notes and corporate bonds (including Residential Mortgage Backed Securities)	40
4.	Of which unlisted corporate debt	10
5.	Real Estate	30
6.	Of which non - income earning property	5
7.	Ordinary and Preference Shares	15
8.	Of which private equity	5
9.	Infrastructure Investment	25
10.	Deposits with licensed banks and financial institution with original maturity of at least six months (in call deposits, notice deposits, term deposits and certificate of deposits)	35
11.	Investment in licensed collective investment schemes.	30
12.	Loans to corporate and cooperative societies	10
	Other – subject to prior approval by the bank.	

Source: SSRA (2012)

According to Article 22 of the Universal Declaration of Human Rights of the 10th December 1948 everyone, as a member of society, has the right to social security. The State therefore is obliged to ensure a minimum standard of material welfare to all its citizens on a basis wide enough to cover all the main contingencies of life. This includes general basic social support for all citizens, regardless of contribution or employment. In Tanzania, the right to social security for all citizens is stipulated in the Constitution of the United Republic of Tanzania of 1977, as amended in 1984, 1995 and 1998. Some of these rights include the right to social welfare at times of old age, sickness or disability and in other cases of incapacity (SSRA, 2012).

Various previous studies explain why institutional investors today must continue to consider both private direct real estate investments, as well as public or securitized forms of ownership, in order to develop an optimal portfolio that includes appropriate subcategories of real estate assets. Market depth, liquidity, asset quality, diversification,

and price volatility are all considered strategically used portfolio management criteria in this must primer for the diversified portfolio investor (Mueller, 1995).

Investment decision-making is usually considered to be made up of two distinct sets of activities: strategic asset allocation and tactical investment selection. Strategic asset allocation is about "the big picture", and sets the direction for the portfolio in terms of its broad subdivision into asset classes. It is concerned with achieving the overall balance of types of asset that is appropriate for the broad structure of the liabilities and consistent with the fulfillment of the objectives of the investment strategy. Tactical investment selection is concerned with the implementation of an agreed strategic asset allocation through the selection of individual stocks, financial instruments or other relevant assets within each of the asset classes in order to meet the objectives set for each asset class.

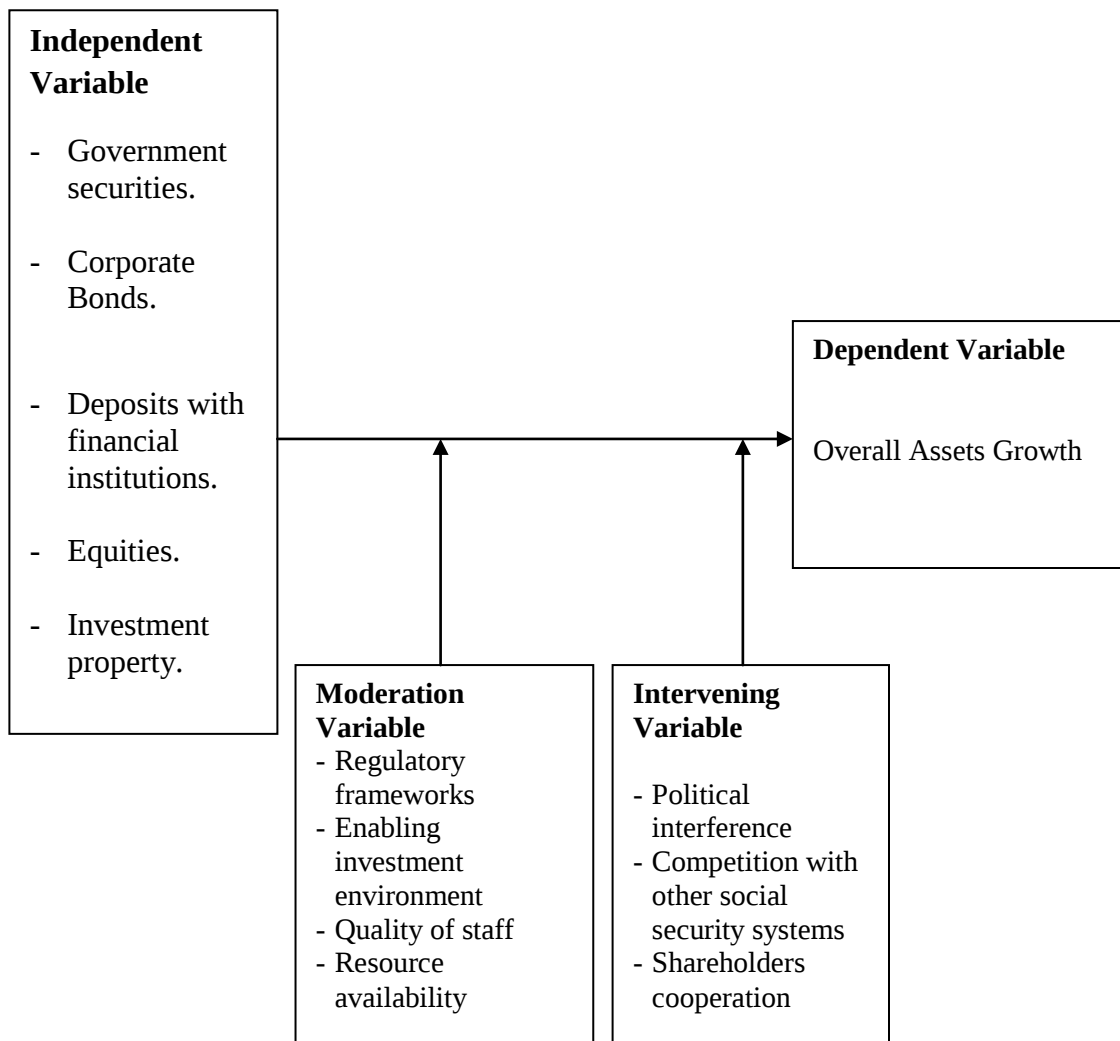
Strategic asset allocation is an important and integral part of the overall financial governance of an institution, which should be a major preoccupation of the Investment Committee, where one has been established, and requires the approval of the Governing Body, at least in broad terms, and in greater detail if there is no Investment Committee to look after the detailed articulation of the policy. Whilst value can certainly be added by making good decisions regarding individual investments at the tactical level, more often than not it is the strategic asset allocation decisions that make a real difference to the overall performance of a portfolio and to the ability of the portfolio to perform well in different economic conditions (Christopher, 2005:1).

2.5 Conceptual Framework

Conceptual framework is used to provide a common language for the research design and as a basis in this presentation. This is the set of broad ideas and principles taken from relevant fields of inquiry and used to structure a subsequent presentation (Reichel and Runey, 1987). In this study, the researcher developed a conceptual framework which was constantly reviewed throughout the research process so as to meet the research objectives. For the purpose of this study, the researcher was not able to concentrate on all variables but only to dependent variable asset growth which depends

on independent variables including all investment portfolios. The researcher used these variables so as to assess the contribution of the investment portfolio management strategies towards asset growth and to propose the possible solutions to reduce or eliminate challenges in investment portfolios management.

Figure 2.8: Conceptual Framework



Source: Research Study (2015)

According to the conceptual framework, the research focused on variables that determine the Overall assets growth of LAPF investments to enable it be a vibrant social security system in the URT.

One was identified as the dependent variable which is overall assets growth of LAPF. It is important to mention that LAPF is perceived to enjoy a strong financial base and is considered as one of the leading Social Security Fund (SSF) in the country in terms of the services offered and payment of benefits to its members. The assumption was that lack of good management can lead to the poor investment and subsequent poor growth and performance of the institution. The effective management attributes was measured by establishing the actual management variable such as business strategies, understanding pension security systems, management system and structure, roles and responsibilities and quality of management among others in order to establish management issues required to increase investment portfolio of the company.

The independent variable which is Investment portfolio management was perceived to have a great potential in producing positive and negative influence on LAPF performance which the researcher perceives to depend on factors such as commitment of management, investment resources and the image of the organization among stakeholders.

The study also explored the functions and impact of other factors classified as moderating variables and intervening variables which influences independent determinants in order to yield high performance, growth and development of LAPF. Major moderating factors included regulatory framework, enabling investment environment, quality of staff and resource availability. On the other hand the intervening variables focus on aspects such as political interference, competition with other SSFs and co-operation of the shareholders.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the details of study area. Research methodology as a systematic approach through which research is undertaken includes the research methods and procedures that were employed in conducting this study.

In this chapter the researcher described research design, the organization as a case, area of study, study population, variables and their measurements, sample size and sampling techniques, types and sources of data, data collection methods, reliability and validity issues and data analysis methods. In that case, the researcher collected data regarding the contribution of the investment portfolio management strategies towards asset growth of LAPF.

3.2 Research Design

The research design is the arrangement of the condition for the collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in the procedure (Kothari, 2004). The research design for this study was case study where qualitative and quantitative methods were applied. The study was qualitative in a sense that it was based on qualitative phenomena since it assessed the contribution of the investment portfolio management strategies towards assets growth of LAPF and also quantitative in nature since it tried to determine the level of investment portfolios towards assets growth. In conducting this study, the researcher used a case study design so as to come up with the detailed information about the contribution of the investment portfolio management strategies towards asset growth of LAPF. Case study design was adopted due to the following merits as outlined by Kothari (2004):

- i. A case study design provides an intensive description and analysis of a single situation.

- ii. It involves in depth contextually analysis of the similar situations in other organizations where the nature and definition of the problem happen to be the same as experience in the current situation.
- iii. It is a fairly exhaustive method which enables the researcher to study deeply and thoroughly different aspects of the phenomenon.
- iv. It is flexible in respect to data collection methods.
- v. It saves both time and costs.

3.3 The Organization as a Case

A case study is a single bounded entity studied in a detail with a variety of methods, over an extended period of time” (Creswell, 1994). In this study the researcher used the LAPF as his case study; the LAPF is the contributory pension scheme which was established under the Local Authorities Pensions Fund Act, CAP 407. Further amendments to the LAPF Act were made in April 2012 to align it with the Social Security Regulatory Authority Act CAP 135. These amendments were effective from July 2012. The major functions of the Fund include registering eligible members, collecting monthly contributions, investing the funds so collected with a view to earn income and payment of members’ benefits. The Fund has a vision to be the country’s premier social security institution providing quality services with sustainable resources. Its mission is to provide competitive social security services to its members in the most efficient and effective manner using dedicated staff and appropriate technology. The Fund is having its values which include providing services to its members, stakeholders, and the general public while observing the following guiding principles: accountability and responsibility, responsive to challenges and opportunities, integrity and diligence, transparency and courtesy to all. The Researcher decided to use the LAPF as his case study due to the fact that, the Fund is one of the fund in the URT and also He is a member of this pension Fund; it was easy for him to get access to the relevant data for the study which eventually made him to come up with reliable and relevant findings, and to save time and money as costs of doing this study.

3.4 Types and Sources of Data

Data may be classified as primary data and secondary data; in this study the researcher used secondary data. These data was needed because they generate new and original information. In this study, the researcher collected secondary data. Secondary data was collected from various sources includes LAPF Headquarters and on internet. The LAPF documents such as Annual financial reports, various investment policies, number of members and monthly contributions, returns on investments on various assets etc.

The secondary data was very important to be used in this study since it was useful to answer the research questions of the study. Secondary data does not also exhaust people's views by re-collecting readily available data and allow for large scale studies on a small budget. These data are also having some disadvantages because they were not made for the researcher's study but for other uses therefore, the researcher did not take them directly instead modified them to be more useful for the study.

3.5 Data Collection Methods

In this study the researcher used various data collection methods depending on the type of information required, who are having that information, how complex is that information, and also how confidential is that information. The researcher used interviews and document analysis as methods of data collection. The reasons for employing these two methods of data collection was due to the nature of the study and also to enhance the validity and reliability of data collected and used for the purpose of achieving the study's objectives and answering the research questions.

3.6 Document Analysis

Secondary data are collected by other sociologist, government departments, official bodies, or individuals and then re-used. Document analysis as one of the way of collecting secondary data involves gaining of data through a range of documents and making formal evaluation of the documents that will be for the contents analysis. In this

study the analysis were done by the researcher on the Fund's documents including LAPF Annual financial reports, various investment policies, number of members and monthly contributions, returns on investments on various assets etc. The results were compared with the specified requirements and standards for determining whether the item or activity is in line with the targets of the Fund.

3.7 Methods of Data Analysis

Data obtained from the field were in raw form and were difficult to interpret. Such data were summarized, organized, and checked to ensure the completeness, accuracy, clarity, and consistence. Marshall and Rossman (1995) indicate that, data analysis brings order, structure, and meaning to the mass of data and it is a time consuming, creative, and fascinating process. The process facilitated proper recording and enabled the researcher to discover the relevance of each data collected consistence with the research objectives. Due to the nature of this study, both qualitative and quantitative data analysis techniques were used. The data were analyzed on item by item basis putting into consideration the importance of each item under the study. The researcher used SPSS software as an instrument of data analysis before giving interpretation so as to show the contribution of the investment portfolios management strategies towards assets growth and the level of investment portfolio towards assets growth. The researcher used statistical and financial computations so as to realize the predetermined objectives. The researcher also used tables, charts, and graphs; the use of descriptive methods for data analysis is purposely to increase the validity and reliability of data collected and used.

The descriptive method of data analysis assists the researcher to come up with a number of conclusions, solutions to the problem, and various recommendations. In order to achieve the objectives of the study, the researcher employ three methods of analysis, each for one objective. The study used skewness approach to establish the investment choices taken by LAPF, Covariance & Variance-covariance analysis to select optimal portfolios, and standardized coefficients of beta to estimate the optimal diversified portfolio equation.

Specific objective I

Specific objective one was to establish investment choice taken by LAPF. Data required includes Government Securities, Corporate Bonds, Equities, Investment property, Loans and deposits of Financial Institutions. The skewness was used to analyze the data through the following equation

$$S = E \frac{(x - \mu)^3}{\sigma^3} \dots\dots\dots(1)$$

Where X= individual values (values of LAPF investment asset)

U= average values (mean value of LAPF investment asset)

σ =standard deviation (risk values of investment assets)

Skewness is a measure of the degree of asymmetry of a distribution. If the left tail (tail at small end of the distribution) is more pronounced than the right tail (tail at the large end of the distribution), the function is said to have negative skewness. If the reverse is true, it has positive skewness. If the two are equal, it has zero skewness. In financial terms, distribution is positively skewed and therefore, concentrations of large value are on right side of the distribution. Hence more returns from investment are obtained. If distribution is negatively skewed, then concentrations of large value are on left side of the distribution. Hence, loss from investment is obtained.

Specific objective II

The Specific objective two was to select optimal assets portfolio of the LAPF, the researcher used Covariance & Variance-covariance analysis to select optimal portfolio. Data required includes Government Securities, Corporate Bonds, and Equities, Investment property, Loans and deposits of Financial Institutions. The covariance analysis used, off diagonal matrices in variance -covariance matrices means covariance. Where by positive covariance means positive sign signifying that matrices are moves in the one or the same direction

$$Cov(X, Y) = E\{(x - \mu_x)(y - \mu_y)\} \dots \dots \dots (2a)$$

Where x=the independent variable (LAPF investment assets)

μ_x =the mean of independent variable (mean of LAPF investment assets)

y=dependent variable (total assets of LAPF)

μ_y =the mean of dependent variable (mean of total assets)

$$E(XY) - \mu_x \mu_y \dots \dots \dots (2b)$$

Specific objective III

The Specific objective one was to estimate the optimal portfolio equation for a time series data of 2005 to 2014, the researcher used standardized coefficients of beta analysis. Data required includes Government Securities, Corporate Bonds, Equities, Investment property, Loans and deposits of Financial Institutions. In this study standardized coefficient of beta used to estimate the optimal portfolio

From equation (3) can be written in a matrix form as follows:

$$Y = \hat{\beta} X + \hat{\mu} \dots \dots \dots (3)$$

Where by y=investment portfolio/total assets of LAPF (dependent variables)

X=Investment assets of LAPF (independent variables)

B= Standardized Coefficients beta

U=Standard error term

To estimate $\hat{\beta}_1, \hat{\beta}_2, \dots, \hat{\beta}_n$, it is required to solve for k-simultaneous equations which can be obtained from equation (3) by its variance-covariance matrix as follows:

$$(\hat{x'x})\beta = x'Y \dots\dots\dots (3d)$$

Where $x'x$ is variance-covariance matrix and x' is transpose of the independent variable. Solving for Y , inverse $(x'x)^{-1}$ of the variance-covariance matrix of the independent variables is multiplied both sides.

$$\hat{\beta} = (x'x)^{-1} x'Y \dots\dots\dots (3e)$$

Therefore in this study Standardized Coefficients beta used to show how much LAPF can increase investment assets to the BOT ceiling in Government Securities, Corporate Bonds, Equities, Investment property, Loans and deposits in Financial Institutions to increase return on investment.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter presents the research results of the findings. It is divided into two sections whereby the first part is a descriptive analysis and the other part is an analytical part. The analysis carried out using Skewness, Covariance, Variance-Covariance and standardized coefficients of beta. These approaches were used to explain various aspects in the study so as to come up with the answer to each research question in relation to specific objectives.

4.1.1 Data analysis

The research data obtained from LAPF financial statement from 2005 to 2014 which used in this study to answer the research questions. The data include Government Securities, Corporate Bonds, Deposit with Financial Institutions, Equities, Investment property and Loans. The intension of using these data was to see the approach LAPF used to makes choice of investment. The skewness, covariance, variance-covariance and standardized coefficients of beta analysis ware performed through Spss and results presented into Table.

4.1.2 Empirical analysis for investment choices taken by LAPF

To identify the major investment choices taken by LAPF, one approach was undertaken. The approach entailed the use of mathematical presentation to show the results of skewness of each variable. The results from table 4.1 were obtained from skewness analysis through SPSS that intended to answer the question says what are the investment choices established by LAPF?

Table 4.1: Skewness results of the LAPF investment

ASSET CLASSES	SKEWNESS
Government Securities	0.547
Corporate Bonds	-0.652
Deposit with Financial Institutions	-0.617
Equities	1.538
Investment property	1.194
Loans	0.607

Source: Researcher own analysis (2015)

The results from table 4.1 revealed that government securities had skewness of 0.547. It was positively skewed and therefore concentration appeared to be more on the right side. Furthermore, LAPF had more returns on government securities resulted from investment in government securities.

Corporate Bonds had skewness of -0.652, it was negatively skewed and therefore concentration appeared to be more on the left side. This implies that investment in corporate bonds had loss due to negative sign of the value. Deposit with Financial Institutions had skewness of -0.617, it was negatively skewed and therefore concentration appeared to be more on the left side. This implies that investment in Deposit with Financial Institutions had loss due to negative sign of the value. The Equities had skewness of 1.538, it was positively skewed and therefore concentration appeared to be more on the right side. The positive sign of equities implies that LAPF had more returns from investing in Equities. The investment property had skewness of 1.194, it was positively skewed and therefore concentration appeared to be more on the right side.

The positive sign of investment property implies that LAPF had more returns than risk from investing in Investment property. The loans had skewness of 0.607, it was positively skewed and therefore concentration appeared to be more on the right side. The positive sign of loan value implies that LAPF had more returns from investing in Loans.

Therefore, LAPF chooses to invest more in Government Securities, Equities, Investment property and Loans which indicated positive sign that implies high returns generated

from investment on assets. Also appendence 8 to 13 of histogram spss results justifies the results above.

4.2 Empirical analysis for selection of optimal asset portfolio.

To select optimal portfolio taken by LAPF, mathematical presentation used which shows the covariance for each of investment assets. The covariance analysis used to analyses financial data. In financial terms, off diagonal matrices in variance -covariance matrices means covariance, where positive covariance means that LAPF increases the investment assets while negative covariance means that LAPF decreases investment assets.

Table 4.2: Variance–Covariance Matrix of LAPF assets

	Government securities	Corporate Bonds	Deposits with financial institutions	Equities	Investment property	Loans
Government securities	4994.797	175.959	1182.696	1270.821	2833.254	3444.809
Corporate Bonds	175.959	21.323	87.847	28.710	50.575	99.762
Deposits with financial institutions	1182.696	87.847	437.602	257.130	513.951	744.950
Equities	1270.821	28.710	257.130	352.993	769.379	860.116
Investment property	2833.254	50.575	513.951	769.379	1792.743	2079.074
Loans	3444.809	99.762	744.950	860.116	2079.074	2642.840

The result from table 4.2 was obtained from covariance analysis through Spss that intended to answer the question which says what is the selection of optimal portfolio taken by LAPF?

The results from Table 4.2 off diagonal results had positive sign signifying that matrices are moves in one or the same direction, meaning that the assets move in one/same direction. In this result, it revealed that if assets increased together the returns from investment of assets also increased.

According to the covariance interpretation, the assets in LAPF moved in the same direction, meaning that the management increased their investment in all asset classes.

Therefore, selection of optimal portfolio taken by LAPF was government securities, Corporate Bonds, deposits with financial institutions, Equities, Investment property and Loans. Since, addition of investment in asset led to increase of return from asset.

4.3 Estimation results of optimal diversified portfolio equation

To identify the major investment, estimation of optimal diversified portfolio equation was carried out. The investment estimation of optimal diversified portfolio equation taken by LAPF was analyzed by looking at the standardized coefficient of beta of each investment assets. In this study positive standardized coefficient of beta means LAPF has a room to increase assets while negative coefficient of beta value means LAPF has to reduce values in assets.

Table 4.3: Standardized coefficient of beta of LAPF.

Coefficients ^a SPSS RESULT						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-9.676E-10	.001		.000	1.000
	GSECURITIES	1.000	.000	.358	1.282E7	.000
	COOPERATEBONDS	1.000	.000	.023	1.508E6	.000
	DFINSTITUTIONS	1.000	.000	.106	3.396E6	.000
	EQUITIES	1.000	.000	.095	1.769E6	.000
	INVPROPERTY	1.000	.000	.214	2.637E6	.000
	LOANS	1.000	.000	.260	5.691E6	.000

a. Dependent Variable: TOTALASSET

The results from Table 4.3 standard coefficients of beta results was obtained from coefficient analysis through SPSS that intended to answer the question which says what is the selection of optimal portfolio taken by LAPF?

Figure 4.1: Summary of the results of standardized coefficients of beta values of optimal diversified portfolio taken by LAPF

$$\hat{\beta} = \begin{matrix} \left(\begin{matrix} \text{GS} \\ \text{CB} \\ \text{DI} \\ \text{EQ} \\ \text{IP} \\ \text{LO} \end{matrix} \right) \end{matrix} = \begin{matrix} \left(\begin{matrix} 0.358 \\ 0.023 \\ 0.106 \\ 0.950 \\ 0.214 \\ 0.260 \end{matrix} \right) \end{matrix}$$

Where: B=Beta values of investment assets,
 GS=government securities,
 CB=corporate bonds,
 DI=Deposit with financial institution
 EQ=equities IP=investment property LO=loan

The result from figure 4.1 of standard coefficients of beta shown that government securities had 0.358, it was statistically significantly and positively related to total asset with p-value less than 0.05, level of significance. This implies that additional investment of 1 billion in government securities led to an increase of government securities by Tsh 0.358 billion provided that other assets kept constant.

Corporate Bonds had 0.023 that was statistically significantly and positively related to total asset with p-value less than 0.05, level of significance. This implies that additional investment of Tshs 1 billion in Corporate Bonds led to an increase of Corporate Bonds

by Tsh 0.023 billion provided that other assets are constant. The deposit with financial institutions had 0.106 that was statistically significantly and positively related to total asset with p-value less than 0.05, level of significance. This implies that additional investment of Tshs 1 billion in deposit with financial institutions led to an increase of deposit with financial institutions by Tsh 0.106 billion, holding other assets constant. The Equities had 0.950; it was statistically significantly and positively related to total asset with p-value less than 0.05, level of significance.

This implies that additional investment of 1 billion in Equities led to an increase of Equities by Tshs 0.950 billion provided that other assets are kept constant. Investment property had 0.214 that was statistically significantly and positively related to total asset with p-value less than 0.05, level of significance. This implies that additional investment of Tshs 1 billion in investment property led to an increase of investment property by Tsh 0.214 billion provided that other assets are constant. The Loans had 0.260 that was statistically significantly and positively related to total asset with p-value less than 0.05, level of significance. This implies that additional investment of Tshs 1 billion in Loans led to an increase of Loans by Tsh 0.260 billion provided that other assets are constant. The results shows that, in order to maximize total assets (Revenue), LAPF has to increase investment in Government securities, corporate bonds, deposit with financial institutions, Equities, Investment property and loans.

Therefore all LAPF investment assets have shown positive response and return to asset although it varies on size of returns.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

This chapter presents the discussion of findings and interpretation of what have been presented in chapter four. This chapter interprets investment choices taken by LAPF, selection of optimal asset portfolio and results of optimal diversified portfolio equation in relation to each research question and objective of the study.

5.2 Interpretation of investment choices taken by LAPF

From Table 4.1, it shows that LAPF Management invested highly in Government securities and had TZS 23,323,884,000 cash at bank (statement of financial position 2014). Such huge amount of cash at bank was necessary for benefit payment to retirees (beneficiaries) including survivors.

However, investment property has high profit potential and at the moment it is classified as having high return. According to the Social security schemes investment guidelines issued by BOT, real estate (investment property) has a threshold of 30% of the total assets. Moreover, investments in corporate bonds, and Deposits with financial institutions exhibited loss making potential. Consistency with loss making potential LAPF Management invested less in corporate bonds.

Furthermore, Table 4.1 indicates that investment in corporate bonds has loss making potential (i.e. negative skewness value). The study revealed that LAPF Management invests in corporate bonds which take 7 – 25 years to mature. Whereas LAPF does honour monthly bills in particular corporate bonds which take longer to reach maturity. The loss making potential is earned as result of ‘‘Matching principle’’ which demands Short – term liabilities to be financed by short – term assets while Long – term liabilities are financed by Long – term assets. If LAPF is investing in corporate bonds which take

longer to mature in relation to liabilities which take Shorter to mature such investment choices are not optimal.

5.3 Interpretation of empirical analysis for selection of optimal asset portfolio

Table 4.2 shows Variance–Covariance Matrix (VCM) of LAPF asset classes. There were six asset classes, beginning with government securities to Loans. The diagonal matrix from left to right shows variance between assets and off diagonal matrix are covariance-matrices. Table 4.2 revealed that Government securities have higher variance compared to other assets. The interpretation of variance values, the higher the variance the higher the return, the higher the risk.

Moreover, off–diagonal matrices are the Covariance matrices. It is revealed that all matrices are positive, meaning that the assets move in one/same direction. According to the covariance interpretation, assets in LAPF moved in the same direction, meaning that the management increased their investment in all asset classes.

5.4 Interpretation for estimation results of optimal diversified portfolio equation

The equation from Figure 4.3 shows that, in order to maximize total assets (Revenue), LAPF has to increase on all assets. The Management has to increase investment in government securities by 0.358 billion, corporate bonds by 0.023 billion, deposit with financial institution by 0.106 billion, Equities by 0.950billion, investment property by 0.214 and loans by 0.260 billion. More interested is that LAPF had a room to invest more in corporate bonds and also get the returns. This suggests that there is still room to increase investment portfolio as per BoT ceiling.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the conclusion and recommendations of the observations of what have been discussed in chapter five. The conclusion has been given in relation to each research question and objective of the study, recommendations have been given to tackle some challenges, and then the researcher gives areas for future and further studies.

6.2 Conclusion

The conclusion is based on each research question and specific objectives. The study has revealed various challenges in investment choices by the Social Security funds. These challenges include dueling directives from various governing organizations, political factors since politics has been an element of investment decision making, accountability issue, self-interest by leadership, problems in budgeting process and budget authority, culture, and poor life-cycle cost analysis. Other challenges are inadequate or non-existent metrics for establishing what constitutes strategic success, absence of viability of what is being done throughout the organization, inadequate tracking of portfolio performance over its full life cycle, and insufficient information to make the tough calls. All of these issues contribute to an inefficient allocation of resources, dissipated organizational focus and above all, lower than possible creation of value.

6.3 Recommendations

Basing on the response of specific questions of the study, in order to increase its assets growth from year to year, the researcher said that the Fund as an organization is not constrained to create one portfolio for all its initiatives. Since portfolio management can be conducted at any level, the choice of using one portfolio or using many depends on the size of the organization and its structure. There is usually a hierarchy of portfolios (portfolios of portfolios) that roll up to the master portfolio. The key is to group

initiatives using common resources so as to leverage the knowledge and expertise needed for execution. He further recommended that, portfolio management should treat opportunities, initiatives and projects as investments, using a consistent process to propose, select and manage their execution – not just to completion, but through to benefits realization (including decommissioning costs). To be effective, the Fund must incorporate objective criteria to evaluate both existing investments and new investment proposals, and it must apply these criteria in a consistent way so that everyone in the organization comes to trust the process as fair and objective and finally the researcher recommended that an effective portfolio management there should be a top-down process that ensures that:

- i. Investments are aligned with business objectives (a key executive concern). The organization has to ensure that spending is balanced across those objectives , risk and value are balanced appropriately. Investments underway should remain healthy and there should be cost avoidance by stopping the funding of high risky, poorly aligned, low projected return projects
- ii. There is improvement in resource utilization to more effective resource planning and scheduling optimization. This will need full cooperation from all stakeholders of the Fund including the Fund's management/administrators, workers, members, and other interested parties but the Fund's management particularly the department dealing with planning and investment should take a great role on this.

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APPENDICES

APPENDICES: INVESTMENT OF LAPF AND OUTPUT RESULTS

APPENDIX 1

INVESTMENTS PORTFOLIO 2005-2014 (Amount in TZS BILLIONS)

	Government securities	Corporate Bonds	Deposits with financial institutions	Equities	Investment property	Loans	total invest portfolio
As at 30th June 2005	38.76	2	7.51	3.46	22.72	1.14	75.59
As at 30th June 2006	49.56	1.5	9.97	6.02	22.76	3.9	93.71
As at 30th June 2007	65.44	3.6	18.35	5.89	21.14	3.95	118.37
As at 30th June 2008	80.95	10.4	34.13	7.53	21.32	8.94	163.27
As at 30th June 2009	104.782	12.7	55.04	15.94	21.39	10.47	220.322
As at 30th June 2010	133.5	12.6	46.64	16.08	42.14	37.41	288.37
As at 30th June 2011	145.54	13.6	62.88	20.15	53.65	70.06	365.88
As at 30th June 2012	176.8	12.04	57.3	27.33	78.6	102.9	454.97
As at 30th June 2013	201.56	8.8	46.62	39.13	111.04	124.47	531.62
As at 30th June 2014	254.96	8.7	58.49	63.64	137.52	120.88	644.19
TOTAL	1251.852	85.94	396.93	205.17	532.28	484.12	2956.292

APPENDIX 2

INCOME FROM INVESTMENTS 2005-2014 (AMOUNT IN TSHS BILLIONS)

YEAR	INCOME	INVESTMENT	RETURN ON INVESTMENT(ROI)%
2005	5.2	75.59	6.89
2006	8.1	93.71	8.69
2007	11.4	118.37	9.8
2008	17.3	163.27	11.2
2009	25.9	220.32	12.35
2010	31.54	288.37	11.37
2011	32.06	365.88	8.27
2012	56.32	454.97	11.49
2013	48.82	531.62	9.17
2014	48.16	644.19	7.54

FORMULA ROI=INCOME FROM INVESTMENT/TOTAL INVESTMENT

APPENDIX 3

MEMBERS CONTRIBUTION FROM 2005/2014(AMOUNT IN BILLIOS)

YEARS	YEAR 2005	YEAR 2006	YEA R 2007	YEAR 2008	YEAR 2009	YEA R 2010	YEA R 2011	YEA R 2012	YEA R 2013	YEAR 2014
contributi on amount	11.84	15.9	23.71	32.21	47.05	54.24	80.5	89.06	119.2	159.23
Percenta ges increase		34.29	49.12	35.85	46.07	15.28	48.4	10.62	33.82	33.6

Average contribution = $34.29+49.12+35.85+46.07+15.28+48.40+10.62+33.82+33.6/9$

Average members' contribution = $307.05/9$

Average members' contribution =**34.12%**

APPENDIX 4

NET ASSETS 2005-2014 (AMOUNT IN TZS BILLIONS)

YEAR END	YEA R 2005	YEA R 2006	YEAR 2007	YEAR 2008	YEAR 2009	YEA R 2010	YEAR 2011	YEA R 2012	YEAR 2013	YEAR 2014	TOTA L
Investme nt portfolio	75.6	93.7	118.4	163.3	220.3	288.4	365.9	455	531.62	644.19	2956
Other assets	8.55	57.4	60.79	53.66	51.16	72.96	84.31	84.63	113.42	113.26	700.1
Net assets	84.1	151	179.2	216.9	271.5	361.3	450.2	539.6	645.04	757.45	3656

%OF INVESTMENT PORTFOLIO = Total investment portfolio/Total Net assets

%OF INVESTMENT PORTFOLIO = 2956/3656X100

%OF INVESTMENT PORTFOLIO = 0.8085339168490153X100

PERCENTAGE (%) OF INVESTMENT PORTFOLIO=80.85%

Descriptive Statistics
SPSS RESULT APPENDIX 5

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
govsec	10	1.2519E2	70.67387	4.995E3	.547	.687	-.576	1.334
c.bond	10	8.5940	4.61764	21.323	-.652	.687	-1.283	1.334
Depost	10	39.6930	20.91894	437.602	-.617	.687	-1.340	1.334
Equity	10	20.5170	18.78812	352.993	1.538	.687	2.289	1.334
Invest	10	53.2280	42.34079	1.793E3	1.194	.687	.206	1.334
Loans	10	48.4120	51.40851	2.643E3	.607	.687	-1.608	1.334
Valid N (listwise)	10							

Coefficients^a SPSS RESULT APPENDEX 6

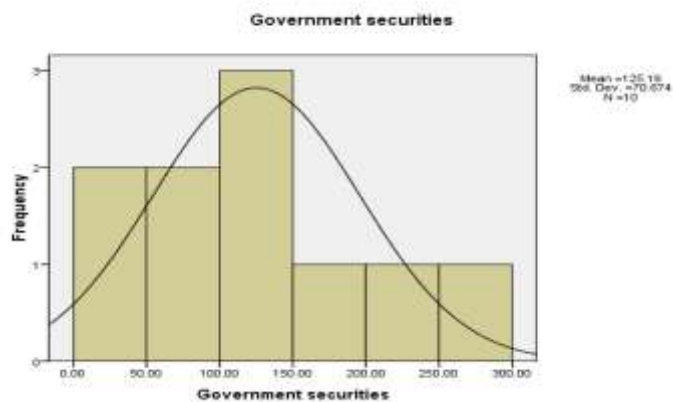
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1	(Constant)	-9.676E-10	.001	.000	1.000
	GSECURITIES	1.000	.000	.358	1.282E7
	COOPERATEBONDS	1.000	.000	.023	1.508E6
	DFINSTITUTIONS	1.000	.000	.106	3.396E6
	EQUITIES	1.000	.000	.095	1.769E6
	INVPROPERTY	1.000	.000	.214	2.637E6
	LOANS	1.000	.000	.260	5.691E6

a. Dependent Variable: TOTALASSET

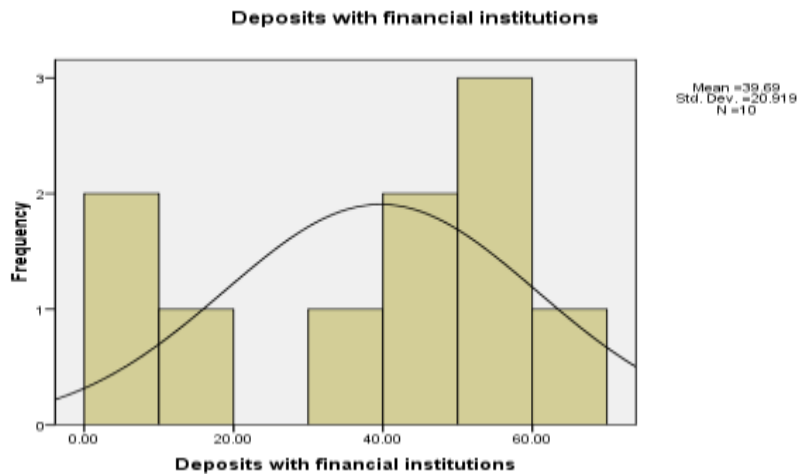
SPSS RESULT APPENDIX 7

Correlation							
		Government securities	Corporate Bonds	Deposits with financial institutions	Equities	Government property	Loans
Government securities	Pearson Correlation	1	.239	.007	.007	.017	.007
	Sig. (2-tailed)		.000	.980	.980	.980	.980
	Sum of Squares and Cross-products	94073.200	1107.670	10644.200	1.14400	23496.200	3.10000
	Covariance	4990.707	173.000	1102.096	1.27000	2033.250	3.44000
	N	10	10	10	10	10	10
Corporate Bonds	Pearson Correlation	.239	1	.007	.007	.239	.007
	Sig. (2-tailed)	.000		.980	.980	.000	.980
	Sum of Squares and Cross-products	1107.670	10644.200	790.622	250.300	430.170	897.000
	Covariance	173.000	1102.096	87.847	20.790	50.070	90.762
	N	10	10	10	10	10	10
Deposits with financial institutions	Pearson Correlation	.007	.007	1	.007	.007	.007
	Sig. (2-tailed)	.980	.980		.980	.980	.980
	Sum of Squares and Cross-products	10644.200	790.622	900.410	2.53400	4025.562	6.70000
	Covariance	1102.096	87.847	471.603	257.190	513.050	744.000
	N	10	10	10	10	10	10
Equities	Pearson Correlation	.007	.007	.007	1	.007	.007
	Sig. (2-tailed)	.980	.980	.980		.980	.980
	Sum of Squares and Cross-products	1.14400	250.300	2314.100	3.17200	8924.410	7.74000
	Covariance	1.27000	20.790	237.130	303.990	700.070	600.130
	N	10	10	10	10	10	10
Government property	Pearson Correlation	.017	.239	.007	.007	1	.007
	Sig. (2-tailed)	.980	.000	.980	.980		.980
	Sum of Squares and Cross-products	23496.200	430.170	4025.562	4.03000	81034.000	1.07000
	Covariance	2033.250	1102.096	513.050	700.070	1702.540	2.07000
	N	10	10	10	10	10	10
Loans	Pearson Correlation	.007	.007	.007	.007	.007	1
	Sig. (2-tailed)	.980	.980	.980	.980	.980	
	Sum of Squares and Cross-products	3.10000	897.000	6700.000	7.74000	10711.000	2.27000
	Covariance	3.44000	90.762	744.000	600.130	2070.000	2.34000
	N	10	10	10	10	10	10

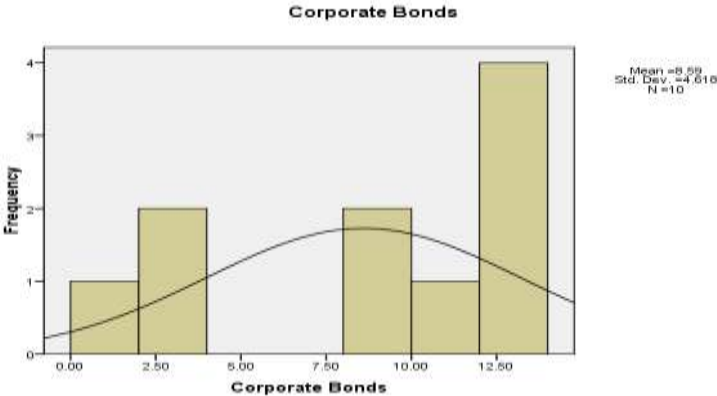
Histogram spss result appendix 8



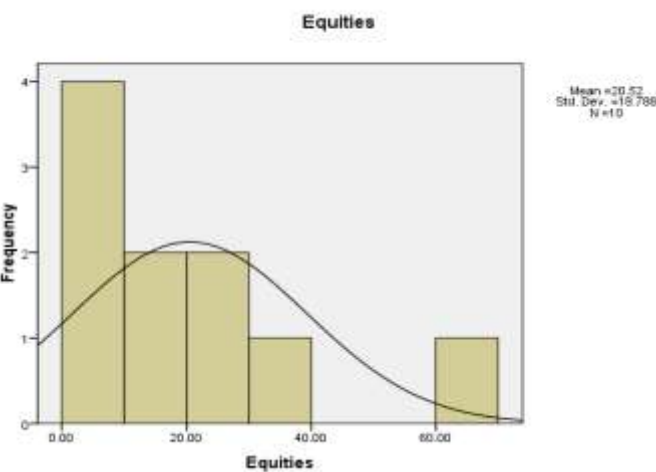
Histogram spss result appendix 9



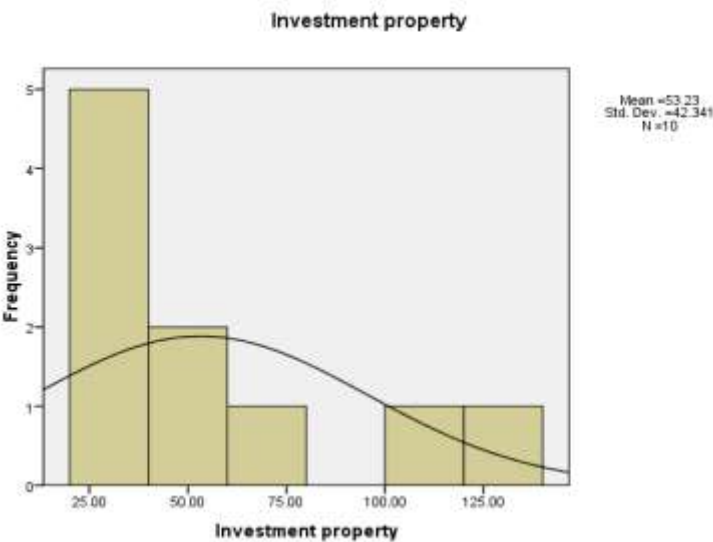
Histogram spss result appendix 10



Histogram spss result appendix 11



Histogram spss result appendix 12



Histogram spss result appendix 13

