

**A SURVEY OF THE IMPACT OF THE RETIREMENT
BENEFITS ACT, 1997 ON PENSION FUNDS
INVESTMENTS PORTFOLIO //**

By:

Edward Kenga Karisa

D61/P/8064/02

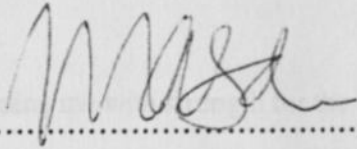
A Management Research Project submitted in Partial Fulfillment of the
Requirements for the Degree of Masters in Business Administration,
School of Business, University of Nairobi

November 2007

DECLARATION

This project is my original work and has not been submitted for a degree in any other university.

Signed


.....

Date

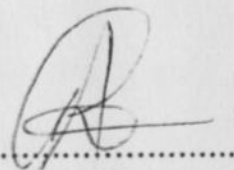
21/11/2007
.....

EDWARD KENGA KARISA

D61/P/8064/2002

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

Signed


.....

Date

22/11/2007
.....

MRS. ANGELA KITHINJI

LECTURER, DEPARTMENT OF ACCOUNTING

DEDICATION

ACKNOWLEDGEMENT

To God: for arming me with strength for the battle. Psalms 18:39

To my wife: for continually prodding me to go back to college; and for her unceasing prayers after I started on my MBA course.

To my children Karisa, Kadzo, Dhahabu and Natasha: for enduring my long absences from home as I worked on this thesis.

To my friend Gilbert Miya: for his encouragement and support

ACKNOWLEDGEMENT

I would like to express my sincere gratitude and appreciation to my wife for encouraging me to embark on the MBA programme, and for her invaluable prayers. In the end it has been a worthwhile and immensely enjoyable undertaking.

I cannot forget my lecturers Mrs. Angela Kithinji and Mr. Mirie Mwangi for introducing me to the world of financial markets and institutions. Mrs. Kithinji has been immeasurably helpful as my supervisor in ensuring that this thesis becomes a reality.

To my boss Mr. Patrick Oloo for giving me time off to work on this thesis, I say many thanks.

Last, but of course not least, I would like to thank all my lecturers in the MBA programme. They re-ignited my interest in finance and accounting. To them I say: You are doing a wonderful job; keep it up!

TABLE OF CONTENTS	PAGE
Declaration	i
Dedication	ii
Acknowledgement	iii
Table of contents	iv
List of abbreviations	vii
List of tables and Figures	viii
Figures	ix
Abstract	x
1.0 CHAPTER ONE: INTRODUCTION	1
1.1 Background	1
1.1.1 Retirement Benefits Act, 1997	1
1.1.2 Pension Schemes	4
1.1.3 Actuarial Valuation	6
1.2 Statement of the Research Problem	7
1.3 Objectives of the Study	9
1.4 Importance of the Study	9
2.0 CHAPTER TWO: LITERATURE REVIEW	10
2.1 Investment and Portfolio Analysis	10
2.2 Management Policy	13
2.3 Managing the Pension Fund Portfolio – The Investment Process	15
2.3.1 Setting the Investment Policy	16
2.3.2 Performing Security Analysis	17
2.3.3 Constructing a Portfolio	18

2.3.4 Revising the Portfolio	18
2.3.5 Evaluating the Performance of the Portfolio	19
2.3.6 Pension Fund Reforms and the Capital Markets	19
2.5 Impact of the Pension Reforms on the Development of the Securities Markets	23
2.6 Regulation of Pension Fund Sector in Emerging Market Economies	27
2.7 Pension Fund Investment	29
2.8 Accompanying Reforms in the Financial System	31
2.9 Pension Funds and the Market for Government Debt	35
2.10 The Role of Pension Funds in the Development of Private Sector Securities	37
2.11 Lessons for Kenya	40
3.0 CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	43
3.1 Research Design	43
3.2 The Population	43
3.3 Data Collection	43
3.4 Data Analysis	44
4.0 CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION	45
4.1 Introduction	45
4.2 Summary Statistics	45
4.3 Trend Analysis	50

5.0	CHAPTER FIVE: SUMMARY OF FINDINGS AND CONCLUSIONS,RECOMENDECTIONS,LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH.	57
5.1	Summary of Findings and Conclusions.	57
5.2	Limitation of the Study	58
5.3	Recommendation	58
5.4	Suggestions for Further Research	59
	REFERENCES	60
	Appendix 1	64

LIST OF ABBREVIATIONS

EMEs	Emerging Market Economies	12
RBA	Retirement Benefits Authority	47
OECD	Organization for Economic Cooperation and Development	48
AFPs	Administradoras de Fondos de Pensiones (Pension Fund Administrators)	56

LIST OF TABLES AND FIGURES

Key Characteristics of Pension Funds 21

Annual Growth Rate of Investment Portfolios (2001-2006) 49

Tables

Table 1 Assets Investment Guidelines..... 12

Table 2 Investment Portfolio of Retirement Benefits Schemes by Type of Investments (Ksh Millions).....47

Table 3 Investments Portfolio Showing Average per Scheme and Growth Rate per Asset Type48

Table 4 Summary Statistics for the Investment Portfolios49

Table 5 Correlated Investment Portfolios.....56

Table 6 Correlation Matrix of the Investment Portfolios64

Figure 11 Trend of Percentage Investment in Immovable Property 54

Figure 12 Trend of Percentage Investment in Guaranteed Funds 55

Figure 13 Trend of Percentage Investment in Other Investments 58

Figures

Figure 1 Key Characteristics of Pension Funds.....	21
Figure 2 Annual Growth Rate of Investment Portfolios (2001-2006).....	49
Figure 3 Percent of Investment per Portfolio (2001-2006)	50
Figure 4 Trend of Percentage Investments on Cash.....	51
Figure 5 Trend of Percentage Investment on Fixed Deposits	51
Figure 6 Trend of Percentage Investment in Fixed Income	52
Figure 7 Trend of Percentage Investment in Government Securities.....	52
Figure 8 Trend of Percentage Investment in Quoted Equity	53
Figure 9 Trend of Percentage Investment in Unquoted Equity	53
Figure 10 Trend of Percentage Investment in Offshore	54
Figure 11 Trend of Percentage Investment in Immovable Property	54
Figure 12 Trend of Percentage Investment in Guaranteed Funds	55
Figure 13 Trend of Percentage Investment in Other investments	55

By:

Edward Kenga Karisa

D61/P/8064/02

Management Research Project submitted in Partial Fulfillment of the
requirements for the Degree of Masters in Business Administration,
School of Business, University of Nairobi

November 2007

DECLARATION

**A SURVEY OF THE IMPACT OF THE RETIREMENT
BENEFITS ACT, 1997 ON PENSION FUNDS
INVESTMENTS PORTFOLIO**

Signed

Date

By:

Edward Kenga Karisa

D61/P/8064/02

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

A Management Research Project submitted in Partial Fulfillment of the
Requirements for the Degree of Masters in Business Administration,
School of Business, University of Nairobi

Date

November 2007

MRS. ANGELA KITIUNI

LECTURER, DEPARTMENT OF ACCOUNTING

DECLARATION

This project is my original work and has not been submitted for a degree in any other university.

Signed for my encouragement and for my ongoing prayers after I started on my MBA course.

Date

EDWARD KENGA KARISA

D61/P/8064/2002

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

Signed

Date

MRS. ANGELA KITHINJI
LECTURER, DEPARTMENT OF ACCOUNTING

DEDICATION

ACKNOWLEDGEMENT

I would like to express my sincere gratitude and appreciation to my wife for encouraging
To God: for arming me with strength for the battle. Psalms 18:39

To my wife: for continually prodding me to go back to college; and for her unceasing
prayers after I started on my MBA course.

To my children Karisa, Kadzo, Dhahabu and Natasha: for enduring my long absences
from home as I worked on this thesis.

To my boss Mr. Patrick Umo for giving me time off to work on this thesis, I say many
To my friend Gilbert Miya: for his encouragement and support

Last, but not of course not least, I would like to thank all my lecturers in the MBA
program: They ignited my interest in finance and accounting. To them I say: You
are doing a wonderful job: keep it up!

Dedication

ACKNOWLEDGEMENT

Dedication

I would like to express my sincere gratitude and appreciation to my wife for encouraging me to embark on the MBA programme, and for her invaluable prayers. In the end it has been a worthwhile and immensely enjoyable undertaking.

List of abbreviations

I cannot forget my lecturers Mrs. Angela Kithinji and Mr. Mirie Mwangi for introducing me to the world of financial markets and institutions. Mrs. Kithinji has been immeasurably helpful as my supervisor in ensuring that this thesis becomes a reality.

Abstract

To my boss Mr. Patrick Oloo for giving me time off to work on this thesis, I say many thanks.

1.1 Background

Last, but of course not least, I would like to thank all my lecturers in the MBA programme. They re-ignited my interest in finance and accounting. To them I say: You are doing a wonderful job; keep it up!

1.1.2 Actualized Y situation

1.2 Statement of the Research Problem

1.3 Objectives of the Study

1.4 Importance of the Study

2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 Investment and Portfolio Analysis

2.2 Management Policy

2.3 Managing the Pension Fund Portfolio – The Investment Process

2.3.1 Setting the Investment Policy

2.3.2 Performing Security Analysis

2.3.3 Constructing a Portfolio

TABLE OF CONTENTS	PAGE
Declaration	i
Dedication	ii
Acknowledgement	iii
Table of contents	iv
List of abbreviations	vii
List of tables and Figures	viii
Figures	ix
Abstract	x
1.0 CHAPTER ONE: INTRODUCTION	1
1.1 Background	1
1.1.1 Retirement Benefits Act, 1997	1
1.1.2 Pension Schemes	4
1.1.3 Actuarial Valuation	6
1.2 Statement of the Research Problem	7
1.3 Objectives of the Study	9
1.4 Importance of the Study	9
2.0 CHAPTER TWO: LITERATURE REVIEW	10
2.1 Investment and Portfolio Analysis	10
2.2 Management Policy	13
2.3 Managing the Pension Fund Portfolio – The Investment Process	15
2.3.1 Setting the Investment Policy	16
2.3.2 Performing Security Analysis	17
2.3.3 Constructing a Portfolio	18

2.3.4	Revising the Portfolio	18
2.3.5	Evaluating the Performance of the Portfolio	19
2.3.6	Pension Fund Reforms and the Capital Markets	19
2.5	Impact of the Pension Reforms on the Development of the Securities Markets	23
2.6	Regulation of Pension Fund Sector in Emerging Market Economies	27
2.7	Pension Fund Investment	29
2.8	Accompanying Reforms in the Financial System	31
2.9	Pension Funds and the Market for Government Debt	35
2.10	The Role of Pension Funds in the Development of Private Sector Securities	37
2.11	Lessons for Kenya	40
3.0	CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	43
3.1	Research Design	43
3.2	The Population	43
3.3	Data Collection	43
3.4	Data Analysis	44
4.0	CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION	45
4.1	Introduction	45
4.2	Summary Statistics	45
4.3	Trend Analysis	50

5.0	CHAPTER FIVE: SUMMARY OF FINDINGS AND CONCLUSIONS,RECOMENDECTIONS,LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH.	57
5.1	Summary of Findings and Conclusions.	57
5.2	Limitation of the Study	58
5.3	Recommendation	58
5.4	Suggestions for Further Research	59
	REFERENCES	60
	Appendix 1	64

LIST OF ABBREVIATIONS

EMEs	Emerging Market Economies	12
RBA	Retirement Benefits Authority	47
OECD	Organization for Economic Cooperation and Development	48
AFPs	Administradoras de Fondos de Pensiones (Pension Fund Administrators)	49

LIST OF TABLES AND FIGURES

Annual Growth Rate of Investment Portfolios (2001-2006).....	21
Tables	
Table 1 Assets Investment Guidelines.....	12
Table 2 Investment Portfolio of Retirement Benefits Schemes by Type of Investments (Ksh Millions).....	47
Table 3 Investments Portfolio Showing Average per Scheme and Growth Rate per Asset Type.....	48
Table 4 Summary Statistics for the Investment Portfolios.....	49
Table 5 Correlated Investment Portfolios.....	56
Table 6 Correlation Matrix of the Investment Portfolios.....	64
Figure 11 Trend of Percentage Investment in Immovable Property.....	54
Figure 12 Trend of Percentage Investment in Guaranteed Funds.....	55
Figure 13 Trend of Percentage Investment in Other Investments.....	55

Figures

Figure 1 Key Characteristics of Pension Funds.....	21
Figure 2 Annual Growth Rate of Investment Portfolios (2001-2006).....	49
Figure 3 Percent of Investment per Portfolio (2001-2006)	50
Figure 4 Trend of Percentage Investments on Cash	51
Figure 5 Trend of Percentage Investment on Fixed Deposits	51
Figure 6 Trend of Percentage Investment in Fixed Income	52
Figure 7 Trend of Percentage Investment in Government Securities.....	52
Figure 8 Trend of Percentage Investment in Quoted Equity	53
Figure 9 Trend of Percentage Investment in Unquoted Equity	53
Figure 10 Trend of Percentage Investment in Offshore	54
Figure 11 Trend of Percentage Investment in Immovable Property	54
Figure 12 Trend of Percentage Investment in Guaranteed Funds	55
Figure 13 Trend of Percentage Investment in Other investments	55

Widows, and Children's Pension Act, Cap 195, and the Participatory Pensions Act Cap 196. There are two other Acts which affected pension schemes, namely: the Insurance Act, Cap 423; and the Income Tax Act, Cap 479.

There was therefore no single law that regulated the retirement benefits sector. The sector was characterized by gross mismanagement of pension schemes. Pension schemes lacked clear investment policies which resulted in poor returns on investments of scheme funds. The Retirement Benefits Act, 1997 put in place much needed reforms and in addition, the Act separated the custody of scheme funds from the management of the same. There is now a requirement that every scheme fund must have a Custodian and a Manager. The Sponsor no longer had unbridled access to scheme funds. The duties of the Custodian and the Manager were clearly delineated. Tough conditions were set for the investment of scheme funds. Clear investment guidelines of scheme funds were provided. This study shows that pension schemes have realized their investment portfolios and in particular the study shows that pension plans have now become major players in the capital market. Investment by pension plans in securities traded at the Nairobi Stock Exchange has increased tremendously, making them major institutional investors. This has improved the liquidity of securities traded at the Nairobi Stock Exchange.

The study shows that pension schemes have kept within the investment ceilings set by the Retirement Benefits Act, 1997. There has also been major changes in the proportions of assets invested in some types of assets in light of the investment guidelines of the Retirement Benefits Act, 1997.

1.0 CHAPTER ONE: INTRODUCTION **ABSTRACT**

The Retirement Benefits Act, 1997 brought much needed sanity in the retirement benefits sector. Before the enactment of the Act, numerous Acts of Parliament related to retirement benefits offered a weak framework for the regulation of the sector, namely the Pensions Act, Cap 189; the Pensions (increase) Act, Cap 190; the Provident Fund Act, Cap 191; the Widows and Orphans' Pensions Act, Cap 192; the Asian Widows' and Orphans' Pensions Act, Cap 193; the Asian Officers' Family Pensions Act, Cap 194; the Widows' and Children's Pensions Act, Cap 195; and the Parliamentary Pensions Act Cap 196. There are two other Acts which affected pension schemes, namely: the Insurance Act, Cap 487; and the Income Tax Act, Cap 470.

There was therefore no single law that regulated the retirement benefits sector. The sector was characterized by gross mismanagement of pension schemes. Pension schemes lacked clear investment policies which resulted in poor returns on investments of scheme funds. The Retirement Benefits Act, 1997 put in place much needed reforms and in addition, the Act separated the custody of scheme funds from the management of the same. There is now a requirement that every scheme fund must have a Custodian and a Manager. The Sponsor no longer had unbridled access to scheme funds. The duties of the Custodian and the Manager were clearly delineated. Tough conditions were set for the investment of scheme funds. Clear investment guidelines of scheme funds were provided. This study shows that pension schemes have realigned their investment portfolios and in particular the study shows that pension plans have now become major players in the capital market. Investment by pension plans in securities traded at the Nairobi Stock Exchange has increased tremendously, making them major institutional investors. This has improved the liquidity of securities traded at the Nairobi Stock Exchange.

The study shows that pension schemes have kept within the investment ceilings set by the Retirement Benefits Act, 1997. There has also been major changes in the proportions of funds invested in some types of assets in light of the investment guidelines of the Retirement Benefits Act, 1997.

1.0 CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

1.1.1 Retirement Benefits Act, 1997

Since the enactment of the Retirement Benefits Act, 1997 pension Schemes have assumed an important role in the financial sector. Section 3(1) of the Act establishes the Retirement Benefits Authority and section 5 states that the object and functions of the Authority shall be: to regulate and supervise the establishment and management of retirement benefits schemes; to protect the interests of members and sponsors of the retirement benefits sector; to promote the development of the retirement benefits sector; to advise the Minister on the national policy to be followed with regard to retirement benefits schemes, and implement all Government policies relating thereto; and to perform such other functions as are conferred on it by this Act or by any other written law.

The Act put in place strict requirements for the registration of retirement benefits schemes, managers, and custodians. With respect to trustees Section 26(2) states that "No person shall be a trustee of any scheme fund if such person: has been sentenced to imprisonment by a court of competent jurisdiction for a period of six months or more; is adjudged bankrupt; was previously involved in the management or administration of a scheme which was deregistered for any failure on the part of the management or the administration thereof; and is disqualified under any other written law, or his holding office as such is deemed by the Authority as being, in any way, detrimental to the scheme."

The trustees of every scheme are also required to keep proper books and records of account of the scheme, and shall cause to be prepared in respect of the scheme fund for every financial year the following: a balance sheet; a statement of income and expenditure; a statement of the assets and liabilities of the scheme as on the last day of

the year; and such other documents as may be prescribed. The accounts must also be audited and a copy submitted to the CEO of the Retirement Benefits Authority.

The Act requires that a custodian keep the assets of a pension scheme. A ‘‘custodian’’ means a company whose business includes taking responsibility for the safe custody of the funds, securities, financial instruments and documents of title of the assets of scheme funds.’ A manager on the other hand is charged with the responsibility of ‘‘the management of the funds and other assets of a scheme fund for purposes of investment...’’ The delineation of custodial and investment functions to be undertaken by different entities has tremendously helped in curbing corruption in the retirement benefit sector.

Section 37(1) of the Act states, ‘‘Every scheme shall have a prudent investment policy on the investment of the funds of the scheme so as to maintain the capital funds of the scheme and generally to secure market rates of return on such investments’’. There are restrictions on the use of scheme funds. Section 38 states that scheme funds shall not be used to make direct or indirect loans to any person; or be invested contrary to any guidelines prescribed for that purpose; or invested with a bank, non-banking financial institution, insurance company, building society or other similar institution with a view to securing loans, including mortgages, at preferential rate of interest or for any other consideration to the sponsor, trustees, members or manager of such scheme.

In addition, the Act has investment guidelines that give the categories of assets and the maximum amount of the aggregate market value of the scheme assets that can be invested in each category. Regulation 38 gives the extent of investment permissible in each category of asset. As can be seen, the Act tries to regulate the way pension funds are to invest their funds, while giving them some measure of freedom on how to do so within given limits. In some EMEs, such as Chile and Peru for example, pension funds have actively engaged in the securitization of bank loans by investing in mortgage bonds (Chile) and leasing bonds (Peru) (Yermo, 2004) In the US the Employee Retirement Income Security Act (ERISA) of 1974 set the stage for the meteoric growth of the pension sector in the US capital markets. The enactment of the ERISA in 1974 introduced the modern era of retirement planning. ERISA established new rules and strict

standards for employer-sponsored retirement schemes – including guidelines for employee coverage, funding and contributions – thereby adding much needed structure to employee pension schemes. In the US, Europe and in some Emerging Market Economies, pension plans have become major institutional investors in the capital markets, controlling assets in the trillions of dollars in equities and corporate bonds.

It is to be noted there are differences in portfolio holdings between individuals (households) and pension funds in terms of time horizons. Portfolio holdings for households are relatively short, whereas because of the long term nature of liabilities, pension funds may hold a high proportion of portfolios in long term assets which yield the highest returns. Because of their size, pension funds have a comparative advantage over households in compensating for the increased risk by pooling and diversifying across assets whose returns are imperfectly correlated. This advantage is linked also to lower transaction costs for large deals and the ability to invest in large indivisible assets such as property (Davis 2005). Pension reform would therefore augment these favourable investments and lead to pension fund growth. The impact of pension fund growth may be through saving. It has been suggested that pension fund reform can raise overall saving in an economy. This would promote economic development by permitting higher rates of rates of investment. (Davis 2005). There is need, however, to develop this argument with caution because in a life cycle model of saving and investment, households that are unconstrained will simply substitute one form of saving (for example, pension funds) for another (such as deposits) The result would be nil effect on household saving, especially if saving via pension funds is voluntary. For savings to be affected positively there must be market imperfections such as liquidity constraints on household borrowing that they could have undertaken to offset pension fund growth. On the other hand, illiquidity of pension assets may mean that household wealth may not be reduced one-on-one when pension assets increase. This is because households do not see such claims as perfect substitute for liquid saving such as deposits. Households may also make inappropriate asset accumulation choices (i.e. inadequate saving) if they are poorly informed about their likely future pension (Davis 2005). One of the reasons of the Retirement Benefits Act, 1997 in Kenya is to make sure that beneficiaries are kept informed about the nature and performance of their pension funds

This study is a survey to determine the impact the Retirement Benefits Act has had on the investments portfolio of pension funds in Kenya.

1.1.2 Pension Schemes

A pension scheme (or a pension plan) is an entity that is formed into which funds are paid and invested for the purpose of eventually paying retirement benefits (Fabozzi et al, 2002). Employers normally establish pension schemes. The entities that establish pension schemes are called sponsors. Contributions into a pension scheme are usually made from employee payroll deductions. The employer usually contributes a percentage of the employees' salary into the scheme.

There are two main types of pension schemes: defined benefit plans and defined contribution plans. A defined benefit plan states the amount of benefit or the method of determining the benefits to be received by employees after retirement (Welsch et al, 1979). The sponsor of the pension scheme undertakes to pay retired employees a specified amount. Because the sponsor makes a commitment to make such payments, then he assumes the risk of insufficient funds in the plan to meet the monthly contractual payments to the retired employees.

Defined contribution plans on the other hand do not provide specific benefits. They only specify that the retired employee will receive whatever benefits can be paid from the pension fund accumulation and its earnings (Welsh et al, 1979). The sponsor, in this case, is only required to make specified contributions into the plan on behalf of the beneficiary; for example 7.5% of the employees monthly basic pay. The amount to be paid to the employee at retirement is not guaranteed. The amount to be paid will depend on the return made by the invested plan funds. If the plan funds are invested wisely and high returns are earned, then the payments to the employees at retirement will be similarly high and vice versa.

Hybrid Pension Plans combine the characteristics of the defined benefit plans and the defined contributions plans. However, they are not found in Kenya at the moment.

The right of an employee to receive a benefit under a pension plan is known as vesting. It refers to the right to receive pension benefits even if an employee leaves the company before his retirement date. Thus an employee may be vested after 3 years of joining a pension scheme. In the past in Kenya before the enactment of the Retirement Benefit Act, 1997 many employers used partial vesting as a means of retaining employees.

This encouraged staff to stay on in the organization so that they could be fully vested and be eligible to receive the full benefits. The Retirement Benefit Act now requires employees to be fully vested in 3 years.

Some pension plans are portable; that is, employees can carry the plans from one employer to another (Brigham et al, 2004). Portability has assumed prominence due to the frequent changing of jobs and the many retrenchments and down - sizing in the current job market in Kenya. It is important to note that defined contribution plans are always portable. It is difficult, however, for a defined benefit plan to be portable, unless of course both the old and the new employers are sponsors of the same plan.

Yeager and Seitz (1989) observe that a pension fund can be fully funded. A fully funded pension fund is one that holds assets that are equal in value to the present value of all future benefits earned to date. In a defined contribution plan there is no promise of a specific amount that will be paid to the retiree, hence the problem of funding does not arise. In a defined benefit plan the amount that will be paid to the retired employee is given, say Ksh. 30,000 per month until death. The complication here is that it is not known for how long the employee will live after retirement. All the same, actuaries are able to estimate the present value of the expected future benefits. A plan whose assets value (valued at current market prices) is equal to the present value of all expected retirement benefits is said to be fully funded. As a minimum, defined benefit pension plans must have assets that equal the present value of future benefits. This is the only way of guaranteeing payments in future as stated in the pension plan. If a pension plan pays current benefits to retirees using current operating revenues of the company or

organization, then the plan is said to be unfunded. This is dangerous since in the event that the company collapses, then the employees and retirees together would lose their benefits (Yeager and Seitz, 1989).

Under-funding occurs when the present value of the future benefits is more than the value of the assets held by the pension scheme. In this case the sponsor has to make good the un-funded pension liability. This is a cost to the sponsor (Welsch et al, 1979). Where the value of the assets is more than the present value of the future benefits the plan is over funded

Welsch et al, 1979, define two types of pension costs. Normal pension cost arises where a pension plan is started at the time a company is established. In this case employees, upon their initial employment, would be eligible for the pension plan. After the inception of the plan, the company would incur only normal pension cost. Past service cost on the other hand is where a pension plan is established years after the formation of a company. This means that by the time the pension plan is established some employees would already have worked for the company for some years. Therefore these employees, as well as new employees recruited after the pension plan is in place, would qualify for the plan. Past service cost is the pension cost associated with employee service performed for the company prior to the inception of the pension plan. Every year the company would incur normal pension cost for both the employees recruited at the time the plan was established and the employees recruited earlier. This cost is the contribution the company has to make to the pension plan to cover for the retirement benefits of the current period. But over and above this, the company would give "past service credits" to employees who were already working with it at the time the pension plan was formed or established. In this sort of situation therefore the company bears a one time pension cost (in addition to the normal pension cost incurred on a year-to-year basis) to provide for a "catch up" for prior employees. This is the cost that is called past service cost.

1.1.3 Actuarial Valuation

Welsch et al (1979) define actuarial valuation as "a formal estimate of the present value of benefits to be paid under a pension plan and a calculation of the amounts of employer

contribution or accounting charges for pension cost". In Kenya pension funds are required to be valued by an actuary at least once every three years. The valuations result in modifications of prior service cost and of current (normal) cost. The actuarial rate of return is the discount rate that actuaries use to compute the present value of future benefits of defined benefit schemes. In most cases it is the same rate as the rate of return of the fund's assets. When deciding what actuarial rate of return to use, one has to be careful because the rate used will determine the amount of contributions to be made into the fund. The lower the rate the higher the contributions, and the higher the rate the lower the contributions. The actuarial rate is actually a forecast of expected future rate of return on the schemes assets.

The actuarial rate of return can be estimated by: (a) using the rate of the plan's recent performance. If the plan funds or assets have been earning a return of, say, 9% then the actuarial rate of return is estimated as 9%; (b) basing the rate on the long-term historical returns on different assets classes, and then applying these historical returns on the plans current mix to get a weighted average.

1.2 Statement of the Research Problem

For a long time the retirement benefits sector in Kenya has been bedeviled by gross mismanagement (Odundo 2003, 2005). In order to put a stop to the spiraling cases of theft of pension funds, and with a view to harmonizing the law relating to retirement benefit schemes, the government enacted the Retirement Benefits Act, 1997. It was hoped that with the enactment of this Act, not only would sanity be returned to the sector but that properly managed pension schemes would become major players in the financial market and especially in the capital market. Studies have shown that reforms in the retirement benefits sector are usually accompanied by wide ranging improvement of the financial sector in general and, in particular, of the capital market (Davis, 2005)

Finance literature teaches that there is a trade off between risk and return for different classes of investments. The higher the risk the higher the return demanded by investors.

The Stocks, Bonds, Bills and Inflation: 1997 Yearbook by Ibbotson Associates, documented the historical trade off between risk and return for different classes of investments between 1926 and 1996. It was shown that those assets that produced the highest average returns also had the highest standard deviations and the widest ranges of returns. Small company stocks had the highest average returns of 17.7 percent and the highest standard deviation of 34.1 percent. On the other hand U.S Treasury bills had the lowest standard deviation of 3.3 percent but the lowest average return of 3.8 percent. (Brigham et al, 2001). It is important to realize that the standard deviation of a portfolio is generally smaller than the weighted average of the standard deviations of the individual assets that make up the portfolio. Most stocks, and in fact many other types of investments other than stocks, are positively correlated but not perfectly positively correlated. As long as investments are not perfectly positively correlated, combining them into portfolios will reduce risk even if it does not eliminate it completely. For the two extreme cases of investments which are either perfectly positively correlated or perfectly negatively correlated risk will not be reduced at all in the former case and will be completely diversified away in the latter case. These are, however, rare cases. Combining assets into a portfolio will diversify away the unsystematic risk, leaving only the systematic or market risk which cannot be diversified away.

It was perhaps with this in mind that the Retirement Benefits Act, 1997 came up with investment guidelines, setting out ceilings for the different types of assets in which pension schemes may invest. This should enable pension funds to combine different types of investment with a view to maximizing returns while at the same time minimizing risk. The question, however, is: have pension schemes complied with the investment guidelines promulgated by the Retirement Benefits Act, 1997?

This study is a survey to determine whether the Retirement Benefit Act, 1997 has influenced pension funds investment in Kenya.

1.3 Objectives of the Study

2.1 Investment and Portfolio Analysis

1. To determine the effect of the Retirement Benefits Act, 1997 on investments portfolio of pension funds in Kenya.
2. To determine whether, as per the requirement of the Retirement Benefits Act, 1997, pension funds in Kenya have adhered to the stipulated investment guidelines.

1.4 Importance of the study

The Retirement Benefits Act 1997 was meant to seal the many loopholes that existed in the prevailing retirement benefits legislation. The resultant prudent management of pension schemes arising from sealing the leakages of pension funds would naturally lead to their growth in terms of contributions and returns on investments. More funds would be available for investment. The increased investment would lead to the growth of corporate debt and equities market in Kenya. It is expected that market liquidity would also increase as a result of increased activity by pension funds in the stock exchange. This study will, therefore, show whether the growth in pension funds as a result of the reforms in the retirement benefits sector has resulted in an alignment of pension funds investment portfolio to conform to the requirements of the Retirement Benefit Act, 1997. The health of pension plans is paramount to many Kenyans who expect to receive benefits from their life's savings in their retirement years. We will study the pension reforms in the Emerging Market Economies of Latin America, Eastern Europe and Asia to see whether the effects of pension reforms in those countries can be replicated in developing economies such as Kenya.

2.0 CHAPTER TWO: LITERATURE REVIEW

2.1 Investment and Portfolio Analysis

Pension schemes or plans invest the funds they receive from both the employer (sponsor) and the employees (beneficiaries) in various securities and instruments. They must earn a reasonable return on investment to guarantee reasonable future retirement benefits for employees upon retirement. However, investment is prone to risk. Risk refers to the chance that some unfavourable event will occur. The riskiness of an asset can be looked at in two ways. Stand alone risk which is the risk associated with an asset when considered in isolation, that is, the risk an investor would face if he or she held only one asset, and portfolio risk which is the risk arising when the asset is held as one of a number of assets. Investment risk is the probability of actually earning a low or negative return. Ordinarily pension schemes hold assets in portfolios. When investing in a portfolio pension schemes should look at the expected return and the standard deviation (the measure of risk) of the portfolio. The scheme should invest in the portfolio with the highest expected return and the least standard deviation. Stand alone risk can be diversified away when the single asset is combined with others into a portfolio. Stand alone risk is therefore not relevant in the portfolio sense. Rational investors will eliminate it and render it irrelevant. In fact, as a rule, as the number of assets (such as stocks) in a portfolio increases, the risk of the portfolio declines. The extent to which risk is reduced by increasing the number of assets in a portfolio is a function of the degree of correlation among the assets. The correlation coefficient ranges from -1 to $+1$. In a large portfolio, the smaller the positive correlation coefficients, the lower the risk.

Diversifiable or idiosyncratic risk of an individual asset is the risk that can be eliminated if the asset is held in a reasonably well diversified portfolio. Diversifiable risk is caused by random events such as strikes, botched marketing campaigns, losing a major customer, lawsuits, and other such events that are unique to a specific firm. There is a risk that no amount of diversification can eliminate. This risk is called market risk. It is caused by systematic factors such as inflation, recessions, war, and interest rates volatility. Market risk is the risk that is inherent in the market. It is measured by the

degree to which a given security's returns tend to move up or down with the market. The Capital Asset Pricing Model (CAPM) is a tool used to analyze the relationship between risk and rates of return. According to the CAPM, the relevant risk of a security is its contribution to the risk of a well diversified portfolio. The market portfolio is regarded as the benchmark for a well diversified portfolio. The relevant risk of an individual stock or security is referred to as the beta coefficient. According to the CAPM, this is the risk that the stock contributes to the market portfolio. In the language of CAPM, $b_i = (\sigma_i/\sigma_M)\rho_{iM}$ where b_i is the stock's beta coefficient, σ_i is the standard deviation of the i th stock's returns, σ_M is the standard deviation of the return on the market and ρ_{iM} is the correlation between the i th stock's return and the return on the market.

Since almost all investors invest in portfolios of assets it is more useful to talk about portfolio risk and return. An infinite number of portfolios can be formed from a set of N securities (Sharpe et al, 2004). The feasible set or the attainable set (also called the opportunity set) represents all portfolios that could be formed from a group of N securities. However, the investor does not have to evaluate all the portfolios. It is from the attainable set that the efficient set is determined. The efficient set of portfolios is also called the efficient frontier. Portfolios outside the attainable set are not possible. Portfolios inside the feasible set but dominated by others are said to be inefficient. These portfolios are inefficient (and dominated by others) because some other portfolio would provide either a higher return for the same degree of risk or a lower risk for the same rate of return. Only the portfolios in the efficient set can be candidates for selection by investors. The question immediately emerges: which specific portfolio should an investor choose, given the efficient set of portfolios? That is, how will an investor select an optimal portfolio? This can only be determined by looking at the investor's indifference curve. The indifference curve is the investor's risk/return trade-off function. It is a reflection of the investor's attitude toward risk.

Indifference curves can be drawn on a plane with expected portfolio return plotted on the Y-axis and portfolio risk plotted on the X-axis. Indifference curves are convex in shape and slope from the left to the right. The steeper the indifference curve, the more risk averse the investor. An investor should plot his indifference curves onto the efficient

set. The portfolio that is chosen is the one at the point where the indifference curve is tangent to the efficient set. This is the optimal portfolio.

The Retirement Benefits Act, 1997 has investment guidelines that give the categories of assets that pension plans can invest in, and the maximum amounts that can be invested in each category. Regulation 38 gives the extent of investment permissible in each category of asset. From these assets categories pension schemes can come up with their optimal portfolios.

Table 1 Assets Investment Guidelines

ITEM	COLUMN 1	COLUMN 2
	CATEGORIES OF ASSETS	MAXIMUM PERCENTAGE OF AGGREGATE MARKET VALUE OF TOTAL ASSETS OF SCHEME OR POOLED FUND
1	Cash and demand Deposits in institutions licensed under the Banking Act.	5%
2	Fixed Deposits, Time Deposits and Certificates of Deposits in institutions licensed under the Banking Act.	30%
3	Commercial Paper, Corporate Bonds, Mortgage Bonds and Loan Stocks approved by the Capital Markets Authority and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category.	30%
4	Kenya Government Securities and investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category.	70%
5	Preference Share and Ordinary shares of companies quoted in a stock exchange in Kenya, Uganda or Tanzania and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category.	70%
	Immovable property in Kenya and units in property Unit Trusts Schemes incorporated in Kenya and collective	30%

6	investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category.	
7	Guaranteed funds	100%
8	Any other assets	5%

Source: Retirement Benefit Act, 1997

The Retirement Benefits Authority, which is the institution charged with the responsibility of ensuring compliance with the Act, became operational in 1999 (RBA Annual Report, July 1999 – June 2000). The year 1999/2000 was the first full year of operations for the Authority. In the annual report – July 1999 to June 2000 – the Chairman of the Authority states “ I am pleased to report that in the past one year all the necessary ground work for the full commencement of the operations of the Authority were completed. In this regard, the Authority has now begun in earnest to focus on its core mandate...” The report goes further to state that in the first year the main activities undertaken were recruitment, setting up of offices and the administrative infrastructure. No compliance work was undertaken. The Chairman states further, “With the necessary administrative and legislative arrangement having been completed, the Authority is now poised to embark on its core business. In this regard, the Compliance Department has already made arrangement to register all retirement benefits schemes...” The Authority therefore started enforcing compliance with the Act in the year 2000/2001. This survey will therefore consider data for the period 2001 to 2006, with 2000/2001 as the base year. Before that period there was no compliance with investment guidelines as required by the Retirement Benefits Act, 1997. Data for the year 2000/2001 is regarded as the baseline data.

2.2 Management Policy

With the passage of the Retirement Benefit Authority, 1997 pension funds assets have grown. This is because pension funds are now managed better than before. Pension funds are used by employers as part of the benefits they offer to their employees. For the employee, membership in a pension plan is important in that the employee is assured of some level of income in retirement. Therefore for both the employer and the employee proper management policy with regard to the pension plan is crucial. There are four areas

of management policy that require critical consideration: benefits to be received; vesting procedures; funding of liabilities; and investment policy for the portfolio (Yeager et al 1989)

The Retirement Benefits Act, 1997 does not prescribe the amount of benefits or the benefit formula that pension schemes should adopt. The aim of the Act was to address the problem of rampant mismanagement and unmitigated theft of pension scheme funds. The other problem was the practice where employers would offset employee loan balances at retirement against pension benefits. The Act has made this practice illegal. Companies are therefore free to prescribe their own benefit formulas. Many pension plans in Kenya tie benefits to the years of service and the level of incomes. For example the Kenya Reinsurance Corporation pension Scheme pays benefits that are tied to years of service and the salary the employee is earning at retirement.

Before the Retirement Benefits Act, 1997 came into being the employer or sponsor had a free hand in the choice of vesting plan. The considerations that employers in Kenya used in vesting of beneficiaries, as is the case with pension plans all over the world, were “the desire to control costs, the desire to retain qualified employees, and the desire to provide an equitable program” (Yeager et al 1989). The vesting arrangement adopted by a company affects the cost of the pension plan and the benefits that the employer can afford to provide. Hence companies had varied vesting arrangements. The RBA, however, put an end to this and now requires that beneficiaries should be fully vested within three years.

It is important that pension Schemes should be fully funded. A pension scheme is fully funded if the present value of all future benefits earned to date is equal to the value of the assets of the scheme. Obviously this is not always the case. This is because the actuarial assumptions used to calculate the present value of the future benefits are rather mercurial. The actuarial rate of return, the personnel assumptions, and the future salary assumptions are not static and can be quite volatile. Understandably, the RBA requires that pension funds must be valued at least once every three years. Every three years the actuary examines the assumptions and modifies them where necessary. Then the present value of

the future benefits is recalculated and compared with the value of the assets of the scheme, valued at ruling market rates. The fund may then be over-funded or under-funded. Over funding is not a problem to the sponsor. But what should be done to a situation of under funded liabilities? The sponsor (or employer) is required to make contributions sufficient to amortize the unfunded liabilities over a period of time. Obviously this has created problems for employers that operate defined benefit pension plans. As a result many companies have responded by converting their defined benefit pension plans into defined contribution plans or provident funds.

The funding status and the actuarial rate of return will determine the risk tolerance of a defined benefit scheme. An under-funded plan calls for a conservative approach toward risk. This means that the plan funds would be invested in fairly safe investments in order that, over time, the funding gap is closed. Alternatively, the company could have a strategy of making large contributions to the scheme and assume a lower actuarial rate of return. An over-funded pension scheme on the other hand can afford to take on riskier investments and adopt a more aggressive investment strategy. The company would then reduce contributions and increase the scheme's risk exposure by investing in high yielding but riskier investments. "The objective is to meet the plan's actuarial rate of return, which is set by actuaries who estimate future pension obligations, based on assumptions about future salary increases, current salaries, retirement patterns, worker life expectancies, and the firm's benefit formula"(Reilly and Brown,1997)

For defined contribution pension schemes, the employees bear the investment risk. The employer does not guarantee the retirement income of the employee and therefore the problem of under funding does not exist. The risk profile of the trustees as contained in the investment policy will determine the return on the investment of the scheme's funds.

2.3 Managing the Pension Fund Portfolio – The Investment Process

Section 37(1) of the Retirement Benefits Act, 1997 requires pension schemes to have an investment policy. The investment policy guides the investment process. According to Sharpe et al (1999) the investment process is made up of five steps. These five steps

constitute the functions of investment management, namely: setting the investment policy; performing security analysis; constructing the portfolio; revising the portfolio; and evaluating the performance of the portfolio.

2.3.1 Setting the Investment Policy

The investment policy is the foundation of the investment process upon which the entire investment process rests. The investment policy will incorporate the risk profiles of the pension scheme's trustees; that is their level of risk aversion. The attitude of the investors towards risk will be influenced by the amount of funds at the disposal of the pension plan. Trustees with a lot of funds at their disposal are likely to be more courageous and take on riskier investments that promise higher returns than those trustees with small amounts of funds.

An investment policy is a form of long range strategic plan (Sharpe et al, 1999). Therefore, like any other strategic plan, the investment policy will have a mission statement and objectives. An investment policy should have as a minimum the following: (a) mission statement (b) risk tolerance; (c) investment objectives; (d) policy asset mix; and (e) active management.

The mission statement is a statement of the purpose or the *raison d'être* of the pension scheme. Thus the mission statement of a pension scheme may state something like this: "to guarantee maximum retirement benefits through secure investments of scheme funds." The risk tolerance clearly sets out the risk levels that are permissible to the trustees of the pension scheme without detracting from its mission. The risk tolerance will be a function of the amount of investable wealth the fund commands and the age profile of the workforce. If a scheme has a young workforce and huge resources it may invest in fairly risky investments. Where a pension plan has an old workforce and/or small resources it is likely to invest in secure but low yielding investments. Investment objectives are the goals or targets of the pension scheme. The scheme may have as its objective that its assets must earn a rate of return of at least the return on the market. The asset mix refers to how the scheme's funds are distributed among the different asset

classes such as equity, bonds, fixed deposits, real estate etc. The choice of the asset mix is important in ensuring that the scheme's mission and objectives are achieved and must therefore be made very carefully. In active management, as opposed to passive management, the investment manager believes that there are mis-priced securities in the market. Here there is the implicit assumption that the markets are not efficient. For these managers their forecasts of risks and return for securities differ from consensus opinion. Passive management on the other hand assumes that the market is efficient and therefore one cannot, as it were, beat the market. In passive management, the investment manager believes in the consensus estimates of risk and return. The preferred investment style is "buy and hold."

2.3.2 Performing Security Analysis

There are two types of security analysis methods: fundamental analysis and technical analysis. Security analysis assumes that the market is not efficient and that some securities are mis-priced. Technical analysis is done in two steps. The first step involves examining past prices with a view to identifying recurring trends or patterns of security prices. The assumption is that history repeats itself. The second step examines more recent security prices to see whether there are any emerging trends or patterns that look like those of the past. So if recent and emerging trends can be seen it is easy to extrapolate and predict the future price of the security. Technical analysis is backward looking.

Fundamental analysis is based on the theory of present value. Fundamental analysis assumes that securities have a "true" or "intrinsic" value. And this value is calculated by finding the present value of all the expected cash flows that will be received from the security. The fundamental analyst will therefore forecast the following: (a) the size or amount of cash flow such as dividends, interest etc; (b) the timing of the cash flow; and (c) the discount rate.

The present value is then computed by capitalizing the cash flow streams with the discount rate. The result is the estimated value of the security. Finally a comparison is made between this computed value and the current market price of the security. If the present value is greater than the market price then the security is said to be under-priced. The assumption is then made that very soon the price of the security will rise to its true value. The security is therefore a good buy. On the other hand, if the present value of the cash flows from the security is less than its market price then it is over-priced and its price will soon come down to reflect its true value. The security should therefore be sold.

2.3.3 Constructing a Portfolio

This is the third stage of the investment process and involves making a determination of the securities to invest in and the percentage or proportion of each security. The security to invest in will be a function of the investor's risk profile (i.e. whether risk averse, risk taker or risk indifferent) and the amount of funds at his or her disposal. Other considerations that have to be taken into account are: (a) diversification – which entails not putting all your eggs in one basket. It means putting funds in various securities in order to spread the risk. The aim is to diversify away all the unsystematic or idiosyncratic risk; (b) selectivity – which involves forecasting the movement of the price of the security. In other words, the issue here is: how will the price of individual securities move in the future? Technical analysis will aid in this decision; and (c) timing – which focuses on the question: how do the forecasted price movements of common stocks compare with the forecasted price movements of fixed income securities? After taking into account all these factors a portfolio is then constructed.

2.3.4 Revising the portfolio

As time goes by, factors in the market change, or the investment objectives of the investor may change, rendering the once optimal portfolio to be no longer optimal. This then calls for the portfolio to be revised. Portfolio revision involves reviewing the investment policy and carrying out another security analysis and portfolio construction. Some or all of the securities in the old portfolio may be sold off and new ones bought.

2.3.5 Evaluating the Performance of the Portfolio

Portfolio performance evaluation is the last step in the investment process. Portfolio performance evaluation is done periodically to assess how well the securities have performed. The return of the portfolio is compared with target return that had been set for the portfolio. The target return may be that of an index in the stock exchange. The performance of the portfolio will determine how successful the pension scheme is in achieving its mission.

2.3.6 Pension Fund Reforms and the Capital Markets

The pension industry, in both the developed and emerging market economies, has grown rapidly during past decade. Pension funds in the Group of Seven (G-7) countries accounted for 29 percent of those countries' GDP in 1991 and rose to 45 percent of GDP in 2001. Because of the rapid aging of the populations in these countries, the fiscal burden of national pay- as - you - go systems has increased. This is due to the substantial increase in the support ratio, which is the ratio between those who have retired and those still working (Chan – Lau, 2004). It has been estimated that the support ratios in the European Union in 2040 will be two times of the levels of 1990 (Walter, 1999).

In the developed world, doubts about the sustainability of the pay- as – you – go systems have prompted governments to search for a different approach of providing retirement income rather than implementing temporary measures such as increasing contribution rates, raising the retirement age, or cutting benefit levels. The preferred approach has been to gradually replace the pay-as-you-go unfunded system with a fully funded system so that retirement income will be fully financed by investing the members' contributions in financial assets. Among the developed countries, the United Kingdom and the United States of America have fully adopted funded systems to a larger extent than countries in continental Europe (Chan – Lau, 2004).

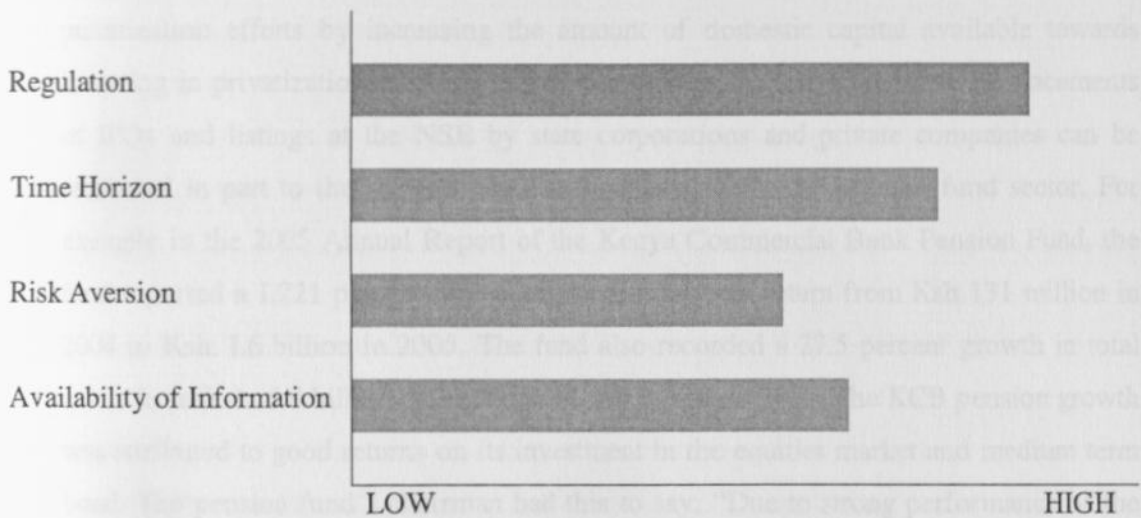
The emerging markets of Latin America and Eastern Europe are way ahead in the process of changing from the pay-as-you-go systems to fully funded systems compared to the developed world. The reasons for this are similar to those of the developed world. Huge unsustainable fiscal imbalances in these countries forced governments to undertake pension reform at a relatively early stage (Chan-Lau, 2004). However in terms of assets under management as a percent of GDP, fully funded systems in Latin America and Eastern Europe still lag behind those in Canada, the United Kingdom, and United States of America. As we shall see later, Chile is the only exception. Pension reforms in Chile started in 1981 and by 2002 pension funds assets amounted to 55 percent of GDP. Other countries in Latin America that have done well in pension reforms are Peru, Bolivia and Argentina (Chan-Lau, 2004)

Pension plans are major players in the financial systems of the developed countries. For instance, at the end of 2001 the U.S. retirement industry held assets with an aggregate market value of \$11 trillion and 33 percent of all mutual fund assets. (Brigham and Daves, 2004). On the other hand figures compiled by the Organization for Economic Cooperation and Development (OECD) show that pension fund assets in six of the largest non-emerging OECD countries amounted to US \$ 8.5 trillion in 2001. The size of the assets managed by the pension fund industry in the developed countries is significant when compared against the G-7 equity markets (\$23 trillion) and bond market (\$34 trillion). In the emerging market economies, the domestic pension fund industry is increasingly and rapidly becoming a major source of domestic financing and has potential to shape the future evolution of domestic financial markets (Chan-Lau 2004).

The key features or characteristics of pension plans are regulation, time horizon, risk aversion, and availability of information; (see figure 1 below). The governance and investment policies of a pension plan determine how it can invest in the following categories: a company's own securities, international securities, stocks, bonds, and real estate. Pension funds normally have long investment horizons, by virtue of the fact that they have relatively stable and known inflows (contributions) and outflows (benefits). Because of the need to secure the retirement income of retirees, pension funds have traditionally been managed passively, for low risk, and have concentrated their

investments in highly secure stocks and bonds. However, there have been regulatory changes in many countries and coupled with a surge in available capital has enabled pension funds to diversify into higher risk but more lucrative investments. For example in the U.S pension funds have invested in “alternative investments” such as timber and farmland, oil and gas, venture capital, and leveraged buyouts (*Pension Management*, March 1996).

Figure 1 Key Characteristics of Pension Funds



Pension funds are more regulated than most institutional investors. In the United States, the 1974 Employee Retirement Income Security Act (ERISA) is the main instrument for government regulation of pension funds, and the Securities and Exchange Commission (SEC), the Inland Revenue Service (IRS), and the Department of Labour govern rules of operation and required information disclosure. A number of regulatory changes have made an impact on pension fund investment in the United States: (a) the introduction of the “Prudent Man (Investor)” rule in 1979 allowed pension funds to begin to diversify into higher-risk investments; (b) the “Safe Harbour” regulation of 1980 enabled pension funds to shift investments into venture capital by limiting the institutional risk borne by

the pension fund; (c) the 1988 courts rulings obligated pension funds under ERISA to vote corporate proxies in a manner consistent with the fund's governance requirements.

With regard to relevance to developing and transition economies, pension fund creation and reforms have been encouraged through structural economic reforms promoted by multilateral financial institutions such as the World Bank (WB), the International Monetary Fund (IMF), and the International Finance Corporation (IFC). These reforms have urged developing countries to privatize government social security schemes to encourage higher domestic savings and foster the development of local capital markets. Pension fund creation and reforms in developing countries has supplemented privatization efforts by increasing the amount of domestic capital available towards investing in privatizations of state-owned enterprises. In Kenya the wave of placements of IPOs and listings at the NSE by state corporations and private companies can be attributed in part to the reforms that have taken place in the pension fund sector. For example in the 2005 Annual Report of the Kenya Commercial Bank Pension Fund, the fund reported a 1,221 percent increase in net investment return from Ksh.131 million in 2004 to Ksh. 1.6 billion in 2005. The fund also recorded a 27.5 percent growth in total assets from Ksh. 6.9 billion in 2004 to Ksh. 8.8 billion in 2005. The KCB pension growth was attributed to good returns on its investment in the equities market and medium term bond. The pension fund's chairman had this to say, "Due to strong performance of the stock market, assets holdings in equities during the year increased in value impressively to Ksh 3.1 billion in 2005 up from Ksh. 2.4 in 2004" (Daily Nation, Tuesday 8 Aug. 2006) This is a 29.2 percent growth in the fund's equity holdings.

Currently pension funds in Kenya hold approximately Ksh130 billion of assets, or 23 percent of GDP with the formal retirement benefits sector covering about 11 percent of the labour force. The scenario would be completely different if pension schemes were made mandatory in Kenya. Apart from contributions to the National Social Security Fund (NSSF), which is a social security scheme, employers are not obliged to establish pension schemes for their employees. In South Korea, pension schemes were introduced one by one, bringing an ever growing proportion of the population under the umbrella of pension schemes. The result was to make every body, even farmers and private business

individuals, to belong to a pension scheme (Bong – min Yang, 1997). In Latin America, with Chile leading the way, countries are experiencing significant growth in pension creation as a result of the reforms undertaken by these countries. The IFC has provided technical assistance and has invested in several countries, including Peru and Argentina.

What is the effect of pension reforms on the financial sector in general and on the capital markets in particular? In order to appreciate the effect the pension sector reforms can have on the capital market we shall look at the Emerging market Economies of Latin America, which have undertaken pension fund reforms similar to those undertaken in Kenya and which have positively affected the capital markets there. Even though the reforms in Latin America have gone much further than those undertaken in Kenya there are nonetheless many similarities. Latin America (especially Chile) is now regarded as a model in pension reforms and is used as a point of reference in pension fund reforms in developing countries.

2.5 Impact of Pension Reforms on the development of Securities Markets

In the Emerging Market Economies of Latin America and Eastern Europe, the rapid growth of pension assets under management has been a major driver in the development of local securities markets (IMF 2003a). The growth of these markets parallels the growth of securities markets in developed countries. According to Walter (1999) and Davis (2001), this growth is driven by increased institutionalization of the asset management functions. Pension funds in these countries hold sizeable fixed income securities most of which are in local currency denominated bonds. For example, as of June 2003, pension funds bond holdings were as follows: Malaysia and Poland 70 percent; Argentina, India, and Mexico, 80 percent; and in Hungary 90 percent.

Local currency yield curves have been established as a consequence of increased depth and liquidity in the local government bond markets. These benchmark yield curves have, in turn, fostered the development of the local corporate bond market. The amounts issued, however, are small compared to the size of the local government bond markets

(IMF, 2002). The reasons for this include low liquidity, inadequate credit risk rating, and expensive underwriting procedures. Because of this, the growth of the corporate bond market has been hampered. Government bond issuance may also have contributed to crowd out corporate bond issuance in some countries like Brazil (IMF, 2002). Viewed from the point of view of domestic investors, government bonds linked to inflation and foreign currency indices offered better risk adjusted returns than corporate bonds. These linked bonds offer both high returns and inflation and foreign currency hedge also.

Empirical evidence suggests that financial systems go through stages of development, namely: bank, market, and securitized phases (Rybczinski, 1997). In the bank phase, all financing is done and facilitated by banks. In the market phase, securities markets and institutional investors start to develop, becoming dominant in the securitised phase. Developing countries such as Kenya, and most Emerging Market Economies are still dominantly in the bank phase. The developed world on the other hand is either in the market or securitized phase. In the securitized phase, securities finance generally rather than just packaging of loans in the form of securities takes center stage (Davis 2005). Davis (1993) argues that pension reforms can have the effect of moving financial systems from the bank phase to the market and securitized phase by developing institutions that are unwilling to be subordinated to domestic banks and which have a strong appetite for securities. Again, Davis (2005) argues that in the less developed structure of EMEs, a move to market based systems away from relationship banking and bank dominance can occur more readily in response to pension reform. Growth of pension funds as institutional investors in some OECD countries where funded pensions were long established tended to precede financial liberalization. Davis (2005) says that pension fund growth clearly accompanied and spurred financial liberalization in some EMEs such as Chile and could do the same in other countries.

Davis and Hu (2004) and Walker and Lefort (2002) confirm that pension assets can affect economic growth indirectly through financial market development, or by their economy wide impact through corporate engagement (Clark and Hebb 2003; Davis (2002a and 2004). Levine and Zervos (1998) found that stock market liquidity and banking development were related to growth. The stock market, by facilitating long term

investment, may give rise to “endogenous growth” benefits to the economy that are not present with short-term bank credit (Davis 2005). Pension funds as institutional investors are more important in market-oriented countries and may be a catalyst for a shift away from a bank based system.

It has been shown that capital market development has had a positive impact on firm performance in Chile (Gallego and Loayza 2000). It has also been found that capital market development has a positive impact on economic growth (Levine and Zervos 1998).

Pension reform can be justified by its expected benefits on capital markets (Yermo 2005). There is a chicken and egg argument, though, as to whether pension reforms cause capital market development or vice versa. It is argued that in order for pension reforms to be successful, a certain level of capital market development is necessary. Moreover, the benefits from pension reform and capital market development may only materialize to the extent that certain basic initial conditions are in place, such as sound fiscal management (Yermo 2005).

Yermo(2005) shows that capital markets development in Latin America has been driven largely by regulations imposed by the government on the pension industry and other financial institutions, the state sponsored modernization of the capital market infrastructure, and tax and bankruptcy reform. In the OECD countries, pension funds are an independent driving force of financial innovations whereas in Latin American countries the development of capital markets is largely determined by government instructions that touch on every aspect of their operations, such as the amount of contributions made to pension funds and how the funds should be invested. In Chile for example, portfolio rules force pension funds to hold mainly domestic assets and in some countries oblige them to invest a minimum percentage of their assets in government bonds. In Kenya there is no requirement for minimum investment in any particular asset. There are, however, ceilings above which pension funds may not invest in particular types of investments.

In Chile the pension reform contributed directly to financial deepening. In Chile and Peru pension funds have participated actively in the securitization of bank loans, by investing in mortgage bonds (Chile) and leasing bonds (Peru). Such investments have helped to diversify risks in the financial system and to contribute to the stability of the banking sector (Yermo 2004). Pension fund investment has also contributed to the growth of corporate debt and equities markets in these countries. On the other hand regulations have constrained the role of pension funds in the development of derivatives instruments. In Chile there is some evidence of increases in market liquidity as a result of pension fund investment. However, liquidity should be much higher considering that the Chilean market has a high capitalization. The reason for this muted effect can be partly traced to the structure of the pension industry in that country and investment and performance rules. The pension fund administration is highly concentrated, and there is little product differentiation in investment strategies and performance. Pension fund managers have essentially pursued "buy and hold" strategies that are detrimental to the liquidity of capital markets. As pension funds have become large relative to the market, such strategies have become institutionalized since large block sales of securities can turn prices against them (Yermo 2005). The size of pension funds can however become so big that the administrators are forced to take a more pro active investment approach in order to preserve an adequate performance and forcing more reforms.

In fact pension reforms have had far reaching changes in the development of the financial sector in Latin America. The reforms have led to the modernization of the financial market infrastructure observed in this region over the past few years. This has forced an adjustment of standards and practices in other financial institutions and the capital markets. Transparency and integrity in financial markets have dramatically improved. These improvements would have been unthinkable without the pension reforms (Davis 2005).

2.6 Regulation of Pension Fund Sector in Emerging Market Economies

A study of the regulations of private pension funds in seven emerging markets reveal that Like in Kenya, pension fund reforms in EMEs such as Latin America have been undertaken via regulation. The regulation is through legislation. An important feature in the development of capital markets in Latin America has been the introduction of a new type of financial institution called the pension fund administrator. This is the equivalent of the pension fund manager in Kenya. The function of the pension fund administrator in Latin America, like the pension fund manager in Kenya, is to invest contributions in portfolios of financial assets. In Chile, for example, the pension fund administrators are required to comply with high regulatory standards, which have been complemented with vast reforms to depository, settlement, and risk-rating services. The administrator and its employees are prohibited from transacting with the pension fund. This is meant to curb conflict of interests. Pension fund administrators are not allowed to purchase on their own behalf stocks that may be acquired by the pension fund. The pension fund administrator must have some independent directors whose duty is to guard the interests of the pension funds. There is a high fiduciary responsibility required of pension funds administrators. They must achieve some required minimum return or profits on the investment of the funds they manage. They must reimburse the pension fund for any losses incurred. There are regulations that govern pension fund administrators pertaining to corporate governance. For example, they must attend the shareholder meetings of the companies whose shares they have purchased for the pension fund and vote in all agreements, including the election of board members. The AFPs, as the administrators are known, cannot vote for candidates to the board that are persons related to the majority shareholders or who control the company. They must file reports to the supervisory authority regarding events or transactions by security issuers that could be detrimental to the pension fund investments. There are regulations limiting the extent to which pension funds can collude in collective action. In fact, in Chile, it has been ruled by the supervisory authority that "it is entirely contrary to the spirit of the law for one or more pension funds to form an association or act in a block in order to exercise their shareholder rights." Like in Kenya, there are rules governing disclosure to scheme members, external audit and reporting to the supervisory authority, the Pension Fund Superintendencies, the equivalent of the Retirement Benefits Authority in Kenya.

A study of the regulations of private pension funds in most emerging markets reveal that they are based on quantitative investment limits. Investments limits have as their goal the protection of retirees' rights, which is considered better than the prudent man rule applicable in advanced countries like the United States of America. And there is a very good justification for this, namely that the underdevelopment and lack of transparency of local securities markets in EMEs make them susceptible to manipulation and excess volatility. That is, the securities markets are not considered as efficient enough and can give rise to insider trading. There have been some murmurings in Kenya, for example, that there are certain individuals who are manipulating share prices at the NSE. Also in these countries, the general public, pension fund board of trustees, and pension fund managers lack the financial sophistication that is obtainable in the developed world (Chan-Lau 2004). In Kenya there have been allegations of manipulation of the Nairobi Stock Exchange and the inordinate volatility of the equity prices has been attributed to such manipulation.

Most regulatory investments restrictions aim at minimizing portfolio diversification, diluting ownership concentration limits, and avoiding investment in the securities of the sponsor. With respect to limits to invest in the securities of the sponsor a bitter reminder can be cited in the case of Enron. Enron's chairman and other senior officers encouraged employees to invest their retirement funds in the company's stock, and even prevented them from switching 401(k) funds out of Enron stock once the company's problems surfaced. The employees ended up losing their life savings, and on top of that their jobs (Brigham and Daves, 2004). Investments limits in assets considered riskier, such as equity are tighter. In Kenya, however, the regulation on investment in equity is liberal, allowing pension funds to invest up to 70 percent of their assets in shares. Other limitations include regulations requiring pension funds to invest only in high credit quality paper. For example, pension funds in Mexico cannot invest more than 5 percent of assets in securities rated single A. Investments in high yield assets in that country are not allowed. In many emerging markets, investments in derivatives are prohibited because they are considered too risky and complex. The exception seems to be Chile, which has active participation by pension funds in the foreign exchange and interest rate

derivative markets. Recent regulatory changes in Peru allowed pension funds to use derivatives beginning 2004. Similar measures are under study in Poland and Hungary (Chan-Lau 2004). There are also significant restrictions to invest in foreign securities. Here the argument is that pension fund managers cannot adequately manage the foreign currency risk involved in investing abroad. Moreover, in these countries there is a widespread belief by the government and sometimes shared by the public that scarce domestic capital should be invested domestically. For these reasons many pension funds in Asia do not at all invest in foreign securities (Holzman et al, 2000).

A number of arguments can of course be advanced to counter the use of regulations limiting investments. For one, investments limits can lead to less than optimal portfolio holdings by unnecessarily restricting portfolio choices. Two, investments limits by implication assume that assets are evaluated on the basis of their individual risk rather than by their contribution to the overall portfolio risk. It is sensible to analyze the risk and return of an asset in terms of how that security affects the risk and return of the portfolio in which it is held (Brigham et al, 1999). Three, investment limits are inflexible and cannot accommodate rapid changes in financial conditions or structural changes in financial markets.

2.7 Pension Fund Investment

Like in Kenya, in most EMEs where pension reforms have been undertaken the pension fund administrator and the pension fund itself are separate legal entities. There is a host of comprehensive prudential regulatory framework to regulate the way pension funds are to be invested. Liquid financial assets bought by pension funds must be traded in the secondary markets and valued at market prices. For the less liquid assets, the supervisory authorities of some countries such as Mexico, sets a valuation mechanism based on historical prices and valuation of related securities. Latin American countries that permit investment in securities issued by the private sector and traded in regulated secondary markets have introduced new systems for risk rating. A Risk Rating Commission initially undertook ratings in Chile. From 1994 private corporations rate the risk of bonds. On the basis of these ratings the Commission sets a risk category. The Commission must

approve shares before pension funds can invest in them. In order to be approved the company that issues the shares must have a history of at least three years with positive operating results and comply with certain requirements related to their financial ratios. In Kenya, there are no such rating requirements.

As we have seen above, there are investments limits or ceilings by issuer and ownership concentration, in addition to limits by asset class. In Kenya the ceilings are per asset category only and not by issuer or ownership concentration. For example, a Chilean pension fund cannot own more than 7 percent of any given company's stock, or invest in it more than 5 percent of its assets. Looked in another way, one can argue that this forces pension funds to diversify their investments and not put all their eggs in one basket. However, it can also be argued that this limitation makes pension funds not to take full advantage of investing in blue chip companies and that it actually inhibits diversification. Other countries also impose limits on the percentage of a company's stock that pension funds can hold; for example it is 5 percent in Argentina and El Salvador, 10 percent in Columbia and Uruguay, and 15 percent in Peru (Chan – Lau, 2004).

In some of the Latin American countries, portfolio limits have been relaxed over time as the regulatory and supervisory frameworks were established or reformed to ensure a proper functioning of the capital markets. Thus, equities investment was allowed in Chile in 1985, five years after the passing of the Securities Law. By comparison, Kenya's Retirement Benefits Act 1997 appears to have been much bolder than the Chilean Securities Law.

Other countries in Latin America are gradually liberalizing their investment regimes. For example, Peru first permitted investment overseas in 2001. Mexico recently eliminated a rule that required pension funds to invest at least 65% of their assets in financial instruments with a maturity of less than 182 days (Davis 2005).

There are also investment floors in some countries, which are a great source of distortions. In Bolivia and Uruguay, the aim of investment floors on government bonds was to ease the fiscal cost of the transition debt to a funded pension system. In Mexico,

the requirement to invest in inflation - indexed securities was justified as a measure to ensure a stable real rate of return on funds. Such conservative investment helps the government to manage its contingent liability as a result of the retirement benefit guarantee offered to transition workers. In Costa Rica, the floor is on mortgage securities. This appears to be justified by the government's desire to promote housing finance while offering pension funds an attractive long-term investment. Regardless of the seemingly noble objectives of these floors, there is always the possibility of distortions to the diversification and performance of pension funds. In Kenya the Retirement Benefit Act does not set floors for any particular asset class.

There are strict regulations to prevent conflicts of interest between pension fund managers and related entities arising from the investment of pension funds. All Latin American countries set low limits on investment in securities of issuers related to fund managers. In Chile and Mexico the limit is 5% of the pension fund assets. Pension funds cannot invest in assets issued or guaranteed by members (or relatives) of the governing body of the pension fund administrator, by managers or owners of authorized entities.

In Kenya there is a separation of custody of pension assets, which must be done by an independent entity (called the custodian) from the pension fund administrator (called the manager)

The minimum guaranteed returns requirement, the requirement to make good losses suffered by pension funds, and the mark-to-market requirement have encouraged herd behaviour among pension fund managers. This is because managers have an incentive to choose similar portfolio allocations so that they do not under-perform their peers. This increases focus on short-term results with managers attempting to retain contributors by "playing the market." This can lead to excessive turnover in pension fund portfolios where pension fund managers behave like mutual fund managers (Chan-Lau, 2004).

2.8 Accompanying Reforms in the Financial System

To ensure a smooth functioning of the private pension fund system, Latin American countries have undertaken reforms in other areas of the financial system. These areas are:

the financial market infrastructure, the banking and capital market regulations, and taxation. The financial infrastructure was modernized. Risk rating, custodial, and brokerage services, and trading and settlement systems were reformed either before or at the same time as the introduction of the reforms of the retirement benefits sector.

Davis (2005) asserts that even though the infrastructure reforms of the financial system were necessary in their own right, it was the reform of the pension system that brought home the need for improving many of them. In fact, Davis argues, the development of the risk rating industry in Latin America has been intrinsically related to the establishment of the pension fund industry. Sadly, risk rating has not been established in Kenya yet. With the capital market growing in recent months and with an upsurge of IPOs, the time is ripe for Kenya to require the rating of publicly traded securities.

The trading systems in stock exchanges have been modernized. Pension fund portfolios are valued daily in Latin American countries. As a result the technology used by financial institutions to value their assets has been revamped. Also, as seen above, depository and custodial services must be provided by independent financial institutions separate from the pension fund administrator. This has helped to develop the custodial services industry in Latin America. In Kenya the depository and custodial system has also been revamped with the incorporation of the Central Depository and Settlement Corporation (CDSC). Now, in order to engage in trading at the Nairobi Stock Exchange investors must open a CDS account. Paper share certificates and bonds are being phased out. The Nairobi Stock Exchange has now switched to an electronic trading system. This was made all the more urgent considering the increased activity at the exchange. As of December 2005, there were eight registered pension fund custodians and twelve registered managers. Prior to the enactment of the Retirement Benefit Act, 1997 most pension funds were managed by insurance companies.

In Latin America other accompanying reforms in the financial infrastructure have been in the clearing and settlement systems. In Chile, a company jointly owned by the Santiago Stock Exchange and the major financial institutions and intermediaries was formed in 1989. The mandate of this company is to facilitate the clearing and settlement of

securities. It takes only one day to settle instruments issued by financial institutions. Essentially settlement is done the same day of the transaction. Settlement of bonds and stocks must be done in two days. This is quite a challenge to Kenya where settlement of financial instruments takes an average of four days.

Regulatory reforms in the financial sector are equally important. Davis (2005) points out that the enforcement of financial contracts through regulations and effective supervision is a key institutional feature that makes possible the development of financial markets. The efficiency of the financial system is determined by the extent to which contracts are defined and made effective by legal rights and enforcement mechanisms (Laporta et al, 1998). There is evidence to show that the quality of legal rights in financial systems can explain economic growth, while the relative role of banks versus markets cannot (Levine 2000).

It is worth noting that most reforms in securities markets are aimed at improving the functioning of the private pension systems. For example, the main objective of the 1994 reform to the capital markets in Chile was to increase the flexibility of investments by pension funds and life insurance companies. The reform improved the regulation and supervision of conflicts of interests such as insider trading. In Peru the capital markets law was reformed and introduced clear fiduciary responsibilities for asset managers (Yermo 2005).

Latin American countries have made improvements in shareholders rights. This includes the protection and strengthening of minority shareholders' rights. In this regard Chile scores as high as Anglo-Saxon countries (Laporta et al 1998). Peru has also followed suit. The reforms in Peru include permitting proxy voting by mail, stricter disclosure requirements for listed companies, and the promotion of independent directors.

Latin America does not score very high when it comes to creditor rights. Laporta et al (1998) carried out a survey which showed deficiencies in this area particularly in Colombia, Mexico and Peru. Creditor protection deals with such issues as what happens to the rights of creditors during bankruptcy and reorganization. For example do secured

creditors rank first during bankruptcies or are the claims of other constituencies honoured first?

Tax reforms are another important aspect that has relevance to the pension fund sector. The tax regime of a country will determine whether debt is preferable to equity as a source of financing. The tax shield benefits debt holders by reducing tax payable. This is because the interest expense is tax deductible. Taxation will also impinge on the savings of a country. In Kenya the employer's contribution to a registered pension scheme is deductible as business expense in computing corporate income taxes. Investment income on scheme funds is not taxed. An employee who is a member of a tax compliant pension scheme enjoys tax-deductible contribution subject to a statutory limit. Employees will only be taxed at prescribed rates upon access of benefits at retirement or earlier subject to income tax withdrawal conditions. These rates are much lower than the rates of the normal income tax (Income Tax Act, Cap. 470 of the laws of Kenya). It is therefore beneficial for an individual to save through a pension scheme than with a bank. Bank savings are made after tax has been suffered (RBA News, March 2006). Latin American countries have reformed their tax regimes. Chile carried out a significant tax reform in 1984 that drastically reduced the tax rate for reinvested profits from 46% to 10%, and created uniform taxes for distributed profits by reducing those of open corporations from 43.3% to 31.5%. Much of the increase in savings observed in Chile over the last two decades can be attributed to the tax reforms (Urthof, 1998).

As a result of the aforementioned reforms, the pensions industry in Latin America has gained a dominant position in the financial system. Pension funds assets managed by pension fund managers in Chile reached 56% of GDP in 2002. Pension assets in Chile overtook those of insurance companies and mutual funds within a year of being established, even though the latter had been running for many years. Between 1982 and 1997 pension fund asset growth was 26%, against 17% for insurance companies and 13% for mutual funds. By December 2002 the assets held by pension funds in Chile were more than three times those of insurance companies. This dominance of pension funds in the domestic capital markets of Latin America is demonstrated by the extent of the capitalization of the various markets that they own. In Chile, pension funds are the

biggest investors in government, mortgage, and corporate bonds (Yermo 2004). However, they own less than 10% of listed stocks. As at the end of 1997, pension funds in Argentina held 2.9 percent of stock market capitalization, 13.8 percent of the corporate bond market, and 6 percent of the mortgage bond market. In Peru, as at the end of 1998, pension funds held 5.2 percent of the equities market and an impressive 40.6 percent of the corporate bond market (Yermo 2004).

It is apparent that pension funds have become key institutional investors in the financial system. But, because of the high investment in government securities and the banking sector, direct pension financing to the private sector through bonds and equities is still relatively low compared to bank credit. For example in Chile, total direct investment in the non-financial private sector represented less than 12 percent of GDP in December 2002. This is in contrast with bank credit to the private sector of almost 67% of GDP in December 2002 (Yermo 2004).

2.9 Pension Funds and the Market for Government Debt

In developing and emerging market economies, most pension funds investments are in government securities. In Kenya, as at December 2005 retirement benefits schemes held 43 percent of their investments in government securities (RBA News, March 2006). In the emerging markets of Latin America, more than half of pension funds investments are in government securities, with the notable exception of Chile and Peru. In Chile, Peru and El Salvador the change from the old social security system was carried out through what was called recognition bonds. These “Bonos de Reconocimiento” are bonds with a long maturity issued by the government to compensate those who had accumulated pension rights under the old system. These have been a welcome innovation because of their relatively long maturity and the fact that they have a zero coupon. When these bonds were made transferable in 1994, they facilitated the development of a benchmark yield curve that can be used for pricing private sector securities. The transition to the funded system has contributed to the depth of the economy. It is unfortunate that not all Latin American countries have allowed the trading of these bonds in secondary markets (Yermo, 2004).

An interesting innovation that has taken place in emerging market economies is coupon stripping. Coupon stripping is where coupon-bearing bonds are treated as portfolios of zero-coupon bonds with each interest payment as well as the principal considered as a separate bond. This innovation allows insurance companies to match their long-term liabilities. Pension funds also have a high demand for these long-term coupons by virtue of the relative stability of contributions, the long-term nature of pension liabilities, and the limited switching between funds in most emerging market economies. Another financial innovation linked to pension reforms in the emerging market economies has been the introduction of inflation-indexed bonds. For example in Mexico, the government decided that in order to guarantee an adequate performance, pension funds should invest a certain minimum amount in such bonds. Since their introduction in 1998 with the introduction of the mandatory pension fund their demand by pension funds has been rapidly increasing ever since.

From a historical perspective, Latin American governments have been unable to raise long-term financing domestically. They have by and large been dependent on volatile foreign capital. This is true for Kenya also. The exception to this is Chile, which succeeded in the 1980s to avoid the worst of the debt crisis, and has since been regarded as a model of prudent financial management. This can to some extent be linked to the role of pension funds. However, there are other important factors at play that have also contributed to the development of the market for government securities such as discouraging short-term borrowing by the private sector and portfolio inflows through punitive reserve requirements. Chile's fiscal frugality, an efficient indexation unit (the UF), and the government's promotion of market liquidity through debt management made possible the development of a long-term government bond market.

It is clear that pension reform has contributed to the improvement of the government bond market in many emerging market economies such as that of Chile. This has been facilitated by the fiscal restraint and, as noted above, the provision of recognition bonds by the government. From 1994, when the recognition bonds became transferable, they have been traded in exchanges. They have relatively long maturities and are therefore a

stable source of funds for the Chilean government. In other countries, the role of pension funds has been conditioned by investment regulations aimed at ensuring a high level of investment in government bonds. For example, in Mexico the contribution of pension funds to the growth of the indexed bond market has been determined by investment regulations that require them to invest at least 51 percent of their assets in inflation-indexed securities. In 2002 the pension funds actually invested over 70 percent of their assets in inflation-indexed government bonds. The Mexican pension funds have, however, made very little contribution to the increase in maturities because up to December 2001 regulations did not allow them to invest more than 65 percent of their assets in instruments of maturities longer than 183 days (Yermo, J. 2000). Where pension funds have contributed to providing long-term funds, it has often been as a result of government regulations or political pressure. For example, in Argentina pension funds could invest up to 30 percent of their assets in an "investment account". After the 2001 crisis, the government bonds held by pension funds were transformed into illiquid long term loans to government. In Bolivia, the government requires pension funds to buy US\$ 180 million worth of government securities per year. This has turned pension funds to be the largest holders of government securities in a space of few years. The pension funds must buy US\$ denominated government bonds that must be held to maturity (15 years) and which pay 8% coupon. 60 percent of the pension funds' assets were invested in these bonds in December 2001. Pension funds also buy government bonds in the secondary market that have maturities of between one and three years. The Bolivian government is under fiscal pressure and is considering substituting the US\$ denominated government bonds held by pension funds into domestic currency denominated debt (Yermo 2004).

2.10 The Role of Pension Funds in the Development of Private Sector Securities

Generally speaking, pension funds in most developing and emerging market economies have not been able to invest significantly in the stock market. Since most of the evidence on the impact of pension funds on the stock market is from Chile we shall consider the Chilean case. The Chilean pension reforms were started in 1981. However, it was in 1985 that pension funds in Chile were permitted to invest in the capital market. This was

followed by heavy investments by pension funds in shares. There is a high correlation between the amount of equities held by pension fund assets and the increase in the ratio of stock market capitalization to GDP, which has reached levels similar to those of the most developed OECD countries i.e. over 100 percent (Yermo, 2004). The high correlation between pension fund investment in equities and stock market capitalization is not necessarily a proof of causality. Catalan et al (2000) using Granger causality tests shows that causality in the Chilean case could run both ways. It would appear that the driving factor behind the correlation is in fact the high price volatility of the Chilean stock market.

Evidence on market liquidity, measured as the ratio of value of stocks traded to GDP, seem to be supportive of causal link with pension fund investment. Igleas (1998) provides evidence showing how transaction costs in securities markets fell in Chile after pension funds started investing in the private sector. Fees charged by the Santiago Stock Exchange for market transactions dropped from 0.5 and 0.015 percent in 1985 to 0.12 and 0.0 percent in 1994. Holzman (1997) identified a positive correlation between the growth of pension fund assets and stock market liquidity in Chile. Lefort and Walker (2000a) found corroborating evidence showing that the growth in pension investments has contributed to greater liquidity of the stock market since 1985. Nonetheless, the tremendous growth in pension fund investments and the rapidly growing allocation to domestic equities since 1985 does not seem to have raised liquidity to the levels observed in other Latin American countries, let alone in developed countries. Liquidity is well below the development threshold level of 15 percent proposed by Dmirguc-Kunt and Levine (2000) for the 1990s. The low liquidity of the Chilean and other Latin American stock markets can be explained in part by the high degree of ownership concentration and deficiencies in disclosure standards and in the protection of the rights of minority shareholder that have only been addressed recently. In other Latin American countries though, such as Mexico and Brazil the deficiencies have been partly offset by foreign investors who have been actively trading in local stocks. These foreign investors have made Brazil and Mexico two of the most liquid markets in the region, accounting for over 90 percent of all Latin American equity trading.

Other reasons for the low liquidity of Chilean capital markets include: capital controls and burdensome tax treatment of foreign portfolio investment that have prevented foreign investor from playing an active role in its markets; the high degree of synchronization in the choice and timing of stock purchases and the rapid accumulation in pension fund assets thus creating a market where “buy and hold” is the only viable investment strategy; and lack of large counterpart that can buy their stocks when they are ready to buy. In view of all this the Chilean government liberalized the capital account at the end of 2001, the Central Bank eliminated all administrative barriers that regulated capital flows and ADR issues, and the Ministry of Finance eliminated the tax on short-term purchases and authorized short sales. All these measures are expected to have a positive impact on the stock market development.

Looking at the corporate bond market in emerging market economies the experiences are mixed. For example, the corporate bond market in Chile has experienced very limited growth compared to the mortgage bond market. The dominance of the longer-term debt seems to be due to the availability of indexation rather than the growth of pension funds assets. Tight information disclosure standards introduced in the 1980 Securities Law has gone a long way in enhancing the development of the corporate bond market. Overall, pension funds in emerging market economies have had an important presence in the corporate bond market. In August 2002, for instance, 5% of the Chilean pension funds portfolio was invested in corporate bonds with an average duration of 5 years. In some EMEs, such as Chile, pension funds are permitted to invest in infrastructure bonds. The bonds are normally backed by insurance companies that guarantee the reimbursement of the principal amount invested. In Peru, the availability of leasing and subordinated bonds has helped develop a local corporate bond market. The lack of a reliable yield curve however exposes pension funds trading corporate bonds in the secondary market to credit risk. Also, risk-rating requirements have limited the contribution of pension funds to the development of the corporate bond market. Still, corporate bonds are a growth area. Peruvian funds are able to invest in real estate backed bonds, and such investments accounted for 2 percent of their assets whereas in Columbia pension funds invest over 3 percent in such bonds. In Bolivia, Colombia, and Mexico pension funds are also important investors in corporate bonds.

2.11 Lessons for Kenya

What lessons can be gleaned from the experiences of EMEs that can be relevant for Kenya. It is clear that pension reform in the EMEs has had important beneficial externalities on the financial markets. In all countries, pension reform has necessitated the creation of a transparent framework for financial regulation and supervision of the new pension fund system. Pension reform has forced the development or modernization of agents and systems in the financial infrastructure. Examples include custodial, risk rating, brokerage services, and trading and settlement systems. Though these improvements could have taken place independently of the pension reform, the mandatory nature of the funded pension systems provided the political justification for these much needed developments.

In Kenya apart from the National Social Security Fund, which is mandatory, all other pension schemes are private and not mandatory. The government of Kenya used to have an unfunded pension scheme but was forced to change to a funded contributory pension scheme. Once an employer decides to establish a pension scheme for its employees, it is obligated to abide by the Retirement Benefit Act, 1997. The pension reform in Kenya has not led to the same level of financial infrastructure modernization as has happened in the EMEs such as Chile. With the increased activity at the Nairobi Stock Exchange that can be attributed in part to the growth of pension funds, the modernization of the financial infrastructure will not wait any longer. The Capital Markets Authority incorporated the Central Depository and Settlement Corporation Limited to be the vehicle to operate the central depository and settlement system (CDS). This system was commissioned in November 2004. It is expected to improve the custodial and settlement system. Both shares and bonds are now traded through the CDS system. Risk rating has not yet been made a requirement in the financial system. However, with the recent increase in activity at the NSE and with experiences such as the Uchumi debacle it is a matter of time before risk-rating is introduced in Kenya. The Capital Markets Authority has introduced an electronic trading system at the Nairobi Stock Exchange which is a first in the Horn of Africa.

As we have seen earlier, pension fund investment in most EMEs has been directed primarily at government debt and instruments issued by the banking sector. This is true in developing countries such as Kenya. These markets have benefited the most from the stability of pension fund investment. In Kenya in 2005, 43 percent of the total investment by pension schemes registered with the Retirement Benefits Authority was in government securities. In the EMEs Pension fund contribution to the corporate bond and stock market has been rather muted. Pension funds invest less than 20 percent of their assets in such assets. This compares with almost 30 percent in Kenya as at the end of 2005.

In some EMEs of Latin America the introduction of individual choice in pension fund investment and the liberalization of their voluntary retirement saving systems will make the capital markets look different in the future. This is especially the case in Chile. Kenya's pension system also gives individual choice in pension fund investment. These changes are likely to create more diversity in preferences and choice of investment and may therefore help revitalize capital markets.

In most EMEs where, pension funds invest in corporate securities it is mostly those of large blue chip companies. There is therefore a challenge for policy makers to promote investment in small companies and, where this is practicable, in infrastructure projects while balancing this goal with prudential and liquidity concerns. In South Korea, for example, the National Pension Scheme (NPS) invests in public infrastructure projects. It may not be advisable in developing countries like Kenya to invest pension funds in infrastructure projects like roads, bridges and hydro power plants because of the rampant corruption in public projects. It is noteworthy that in emerging market economies pension funds invest in companies that are in least need of financing because they can tap the international capital markets. The really needy companies are normally viewed as being too risky. For example in Kenya, as at March 2004 out of the Ksh21 billion invested in quoted equities by pension schemes Ksh13 billion (i.e. 62%) was invested in five big companies, namely: East African Breweries - Ksh 4.2 billion; Barclays Bank of Kenya - Ksh 2.7billion; Standard Chartered Bank - Ksh2.7billion; British American Tobacco - Ksh 2 billion; and Bamburi Cement - Ksh 1.7 billion (RBA News 2004). This is in spite of the fact that empirical evidence has shown that small cap companies have the highest

returns. Expert risk-return portfolio balancing can enable pension funds to improve their returns by investing in small but highly profitable companies.

3.1 Research Design

This study is a survey to find out how pension schemes have been investing in the various types of securities after the promulgation of the Retirement Benefit Act, 1997.

3.2 The Population

The population is made up of all the retirement benefit schemes that are registered with the Retirement Benefits Authority as at 31 December 2006. Data for the period 2001 – 2006 was collected. This period was chosen because that is the period when some reasonable amount of data on pension schemes relevant to the study is available. Also the Retirement Benefits Authority started compiling data on the investment portfolios of pension funds in 2004. For the purpose of this survey, portfolios were constituted of the various types of asset classes such as fixed deposits, corporate bonds, government securities, equity, and real estate. Kenya has over three thousand retirement benefits schemes but as at December 2005 only 937 schemes had registered with the RBA (RBA News, March 2006).

3.3 Data Collection

The following data will was required for the study:

- (i) The amount of funds invested by retirement benefits schemes in the different asset classes (portfolios) per year.
- (ii) The total amount of funds invested by pension funds per year.
- (iii) The equity, bond, and total market capitalization per year.
- (iv) The amount of market equity turnover and bond turnover, and the total market turnover per year.

3. CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Research Design

This study is a survey to find out how pension schemes have been investing in the various types of securities after the promulgation of the Retirement Benefit Act, 1997.

3.2 The Population

The population is made up of all the retirement benefit schemes that are registered with the Retirement Benefits Authority as at 31 December 2006. Data for the period 2001 – 2006 was collected. This period was chosen because that is the period when some reasonable amount of data on pension schemes relevant to the study is available. Also the Retirement Benefits Authority started compiling data on the investment portfolios of pension funds in 2001. For the purpose of this survey, portfolios were constituted of the various types of asset classes such as fixed deposits, corporate bonds, government securities, equity, and real estate. Kenya has over three thousand retirement benefits schemes but as at December 2005 only 997 schemes had registered with the RBA (RBA News, March 2006).

3.3 Data Collection

The following data will be required for the study:

- i) The amount of funds invested by retirement benefits schemes in the different asset classes (portfolios) per year;
- ii) The total amount of funds invested by pension funds per year;
- iii) The equity, bond, and total market capitalization per year.
- iv) The amount of market equity turnover and bond turnover, and the total market turnover per year;

The data was obtained from various reports of the Retirement Benefits Authority and directly from the selected pension schemes. Data was also obtained from the Nairobi Stock Exchange Limited annual reports and financial statements for the years 2001 to 2006.

3.4 Data Analysis Method

Regression analysis was used to analyze the data. Often, on the basis of sample data, we wish to estimate the value of a variable Y corresponding to a given value of a variable X. This was achieved by estimating the value of Y from a least squares curve that fits the data. The resulting line is called a regression curve of Y on X because Y is estimated from X. In this survey, the independent variable X is time. Since the independent variable X is time the data shows the values of Y at various times. The regression line or curve of Y on X in this case is often called trend line or trend curve and is often used for purposes of estimation, prediction, or forecasting (Spiegel et al 1999). In this survey, the Y axis will be represented by the percent of pension schemes funds invested in each asset class and the X axis by time.

The regression analysis analyzed the progression of investment in each asset type to see if, over the years, pension schemes have progressively changed their investment in the various asset categories so as to align their investment in line with the requirements of the Retirement Benefits Act, 1997.

4.0 CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

4.1 Introduction

There are about three thousand retirement benefit schemes in Kenya today but only about one thousand are registered with the Retirement Benefits Authority, seven years after the Authority came into being, and six years after it started to enforce compliance with the Retirement Benefits Act 1997. This study is a survey to investigate the impact of the Act on pension funds in terms of their compliance with its investment requirements. In what manner has the Act impacted on the investment portfolio of pension funds? In this study a portfolio is made up of the various asset categories as contained in the Act. The Retirement Benefits Authority started its enforcement work in 2001 and therefore data for the year 2001 will be taken as the baseline data. The sample for the study is the entire number of pension funds that are registered at the end of every year, from 2001 to 2006.

The following data were collected for the study:

- I. The amount of funds invested by retirement benefits schemes in the different asset classes (portfolios) per year;
- II. The total amount of funds invested by pension funds per year;

4.2 Summary Statistics

The results in table 2 below show the summary statistics of each of the investment portfolios. In table 2 a look at the proportions of investment in the various asset types by all the 422 pension schemes show that they were within the RBA ceilings. For example investment in cash, fixed deposits, fixed income, government securities, quoted securities, immovable property and guaranteed funds was 2.1%, 11.5%, 5.2%, 49.6%, 9.2%, 7.3% and 6.4% respectively versus the RBA ceilings of 5%, 30%, 30%, 70%, 70%, 30% and 100% respectively. Over the six year period of the survey, it appears as if pension schemes realigned their investment as shown in table 2, with the most significant changes in investment percentages taking place in government securities and quoted equity. In 2001 and 2006 investment in government securities was 49.6% and 38.8% showing a reduction of almost 11%. Investment in quoted equity on the other hand grew

progressively over the years from 9.2% in 2001 to 31% in 2006, an increase of 22%. Another significant change in investment proportion was in fixed deposits which moved progressively from a high of 11.5% in 2001 to a paltry 2.4% in 2006. During this period interest rates were not very high and the requirement of the Act that pension schemes should maintain the capital fund of the schemes (sec. 37) must have forced them to reduce investments in this asset to the bare minimum. Investment in government securities (treasury bills and bonds) also reduced progressively from about 50% in 2001 to 39%. Even so, investment in government securities remained the biggest single investment asset over the entire six year period. This can be attributed to the fact that government securities are the safest of all the asset categories and pension funds were balancing these investments with their increased investment in quoted equity which even though highly profitable is very risky. It is noteworthy that the biggest increase in investment assets by the pension funds was in quoted equity or shares. Prior to the enactment of the Retirement Benefits Act, 1997 investment in shares was viewed as too risk, hence the low level of investment in that security. The Act announced loudly that pension schemes could actually invest up to 70% of their funds in shares. Pension schemes therefore took full advantage of the Act during that period which was also characterized by many IPO's. Investment in shares stood at 31% in 2006 compared to 9.2% in 2001. Table 2 shows, contrary to popular belief, that pension schemes investment in immovable property such real estate was modest over the entire period, moving from 7.3% in 2001 to 5.8% in 2006. The popularly held view has been that pension funds were holding inordinately huge amounts of their funds in real estate. Over the period investment in real estate went down marginally by 1.5%

Asset Category	2001 (%)	2006 (%)
Quoted Equity	9.2	31.0
Fixed Deposits	11.5	2.4
Government Securities	50.0	39.0
Immovable Property	7.3	5.8
Other Assets	1.0	2.4
TOTAL	100.0	100.0

Source: PFA News (March 2007)

Table 2 Investment Portfolio of Retirement Benefits Schemes by Type of Investments (Ksh Millions)

ASSET TYPE	2,006	%	2005	%	2004	%	2003	%	2002	%	2001	%	RBA Ceilings %
Cash	2,831.0	1.8	1,743.1	1.4	1,611.9	1.6	1,223.3	1.3	2,512.6	3.7	937.4	2.1	5.0
Fixed Deposits	3,835.9	2.4	3,873.9	3.2	5,629.6	5.6	3,669.4	3.9	3,811.1	5.7	5,135.5	11.5	30.0
Fixed Income	5,370.9	3.3	5,904.9	4.8	3,869.6	3.9	3,727.8	4.0	4,030.0	6.0	2,315.6	5.2	30.0
Government Securities	62,289.5	38.8	52,604.8	43.0	45,228.8	45.2	38,250.2	41.0	32,815.9	48.7	22,153.5	49.6	70.0
Quoted Equity	49,692.8	31.0	28,868.2	23.6	19,586.5	19.6	22,457.5	24.1	6,225.4	9.2	4,090.5	9.2	70.0
Unquoted Equity	440.9	0.3	613.7	0.5	447.0	0.4	591.5	0.6	689.2	1.0	346.1	0.8	5.0
Off shore	8,885.9	5.5	6,818.2	5.6	4,667.0	4.7	4,739.2	5.1	2,875.3	4.3	3,353.7	7.5	5.0
Immovable Property	9,245.7	5.8	7,074.3	5.8	6,142.4	6.1	7,099.6	7.6	5,271.6	7.8	3,273.1	7.3	30.0
Guaranteed Funds	17,517.2	10.9	14,743.8	12.1	12,846.2	12.8	11,332.2	12.2	9,152.9	13.6	2,862.3	6.4	100.0
Other	248.0	0.2	17.9	0.0	48.4	0.0	135.3	0.1	4.6	0.0	236.2	0.5	5.0
TOTAL	160,357.8	100.0	122,262.8	100.0	100,077.4	100.0	93,226.0	100.0	67,388.6	100.0	44,703.9	100.0	
No. of Schemes	994.0		997		929		869		778		422		
Average Investment /Scheme (Ksh.)	161,325,765		122,630,692		107,725,942		107,279,632		86,617,738		105,933,412		

Source: RBA News (March 2002, March 2003, March 2004, March 2005, March 2006, March 2007) and own calculations.

In table 3 the average amount of funds invested by pension in each asset per year has been computed. For example, the total amount of funds invested in cash by pension funds in 2006 is Ksh 2,831,000,000. If this amount is divided by the 994 registered pension schemes, we get an average of about Ksh 2.85 million. This average is compared with that of the year 2001 and the growth rate computed. It can be seen from the last column of table 3 that investment in cash grew by 4.2% per year for the 6 years surveyed. The growth rates for the other assets are similarly shown. It can be seen from table 3 that fixed deposits declined in the period by -17.4% per year. The biggest growth rate in invested funds was in shares at 31% and in guaranteed funds at 17.3%

Table 3 Investments Portfolio Showing Average per Scheme and Growth Rate per Asset Type

ASSET TYPE	2,006	Avg per scheme	2005	Avg per Scheme	2004	Avg per Scheme	2003	Avg per Scheme	2002	Avg per Scheme	2001	Avg per Scheme	Growth Rate Per Scheme
Cash	2,831.0	2.85	1,743.1	1.75	1,611.9	1.74	1,223.3	1.41	2,512.6	3.23	937.4	2.22	4.2
Fixed Deposits	3,835.9	3.86	3,873.9	3.89	5,629.6	6.06	3,669.4	4.22	3,811.1	4.90	5,135.5	12.17	-17.4
Fixed Income	5,370.9	5.40	5,904.9	5.92	3,869.6	4.17	3,727.8	4.29	4,030.0	5.18	2,315.6	5.49	0.3
Government Securities	62,289.5	62.67	52,604.8	52.76	45,228.8	48.69	38,250.2	44.02	32,815.9	42.18	22,153.5	52.50	2.9
Quoted Equity	49,692.8	49.99	28,868.2	28.96	19,586.5	21.08	22,457.5	25.84	6,225.4	8.00	4,090.5	9.69	31.4
Unquoted Equity	440.9	0.44	613.7	0.62	447.0	0.48	591.5	0.68	689.2	0.89	346.1	0.82	-9.8
Off shore	8,885.9	8.94	6,818.2	6.84	4,667.0	5.02	4,739.2	5.45	2,875.3	3.70	3,353.7	7.95	2.0
Immovable property	9,245.7	9.30	7,074.3	7.10	6,142.4	6.61	7,099.6	8.17	5,271.6	6.78	3,273.1	7.76	3.1
Guaranteed funds	17,517.2	17.62	14,743.8	14.79	12,846.2	13.83	11,332.2	13.04	9,152.9	11.76	2,862.3	6.78	17.3
Other	248.0	0.25	17.9	0.02	48.4	0.05	135.3	0.16	4.6	0.01	236.2	0.56	-12.6
TOTAL	160,357.8	161.33	122,262.8	122.63	100,077.4	107.73	93,226.0	107.28	67,388.6	86.62	44,703.9	105.93	
No. of Schemes	994.0		997		929		869		778		422		
Average investment Scheme (Ksh.)	<u>161,325,765</u>		<u>122,630,692</u>		<u>107,725,942</u>		<u>107,279,632</u>		<u>86,617,738</u>		<u>105,933,412</u>		7.3

Source: RBA News (March 2002, March 2003, March 2004, March 2005, March 2006, March 2007) and own calculations.

It is noteworthy that in the period 2001 to 2006 average investment per scheme grew by 7.3%. This compares with 31% for shares and 17% for guaranteed funds.

Figure 2 below depicts the growth rates shown in table 3 above.

Figure 2 Annual Growth Rate of Investment Portfolios (2001-2006)

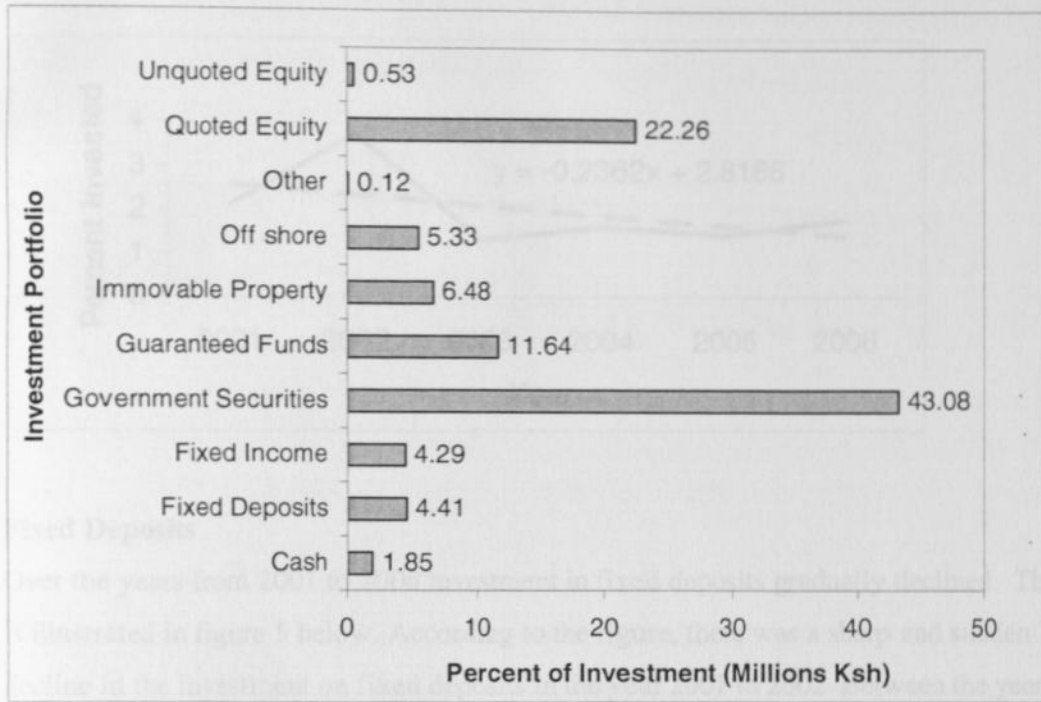
Table 4 below shows the standard deviation of the amounts of funds invested by pension schemes over the six year period, as can be seen was in quoted equity and government securities. These two securities had the biggest changes in the amounts invested in each one of them by pension schemes.

Table 4 Summary Statistics for the Investment Portfolios

Asset Type	Year						Mean	Standard Deviation
	2001	2002	2003	2004	2005	2006		
Cash	937	2513	1223	1612	1743	2831	1810	733
Fixed Deposits	5136	3811	3669	5630	3874	3836	4326	836
Fixed Income	2316	4030	3728	3870	5905	5371	4203	1280
Government Securities	22154	32816	38250	45229	52605	62290	42224	14329
Guaranteed Funds	2862	9153	11332	12846	14744	17517	11409	5072
Immovable Property	3273	5272	7100	6142	7074	9246	6351	2007
Off shore	3354	2875	4739	4667	6818	8886	5223	2259
Other	236	5	135	48	18	248	115	108
Quoted Equity	4091	6225	22458	19587	28868	49693	21820	16670
Unquoted Equity	346	689	592	447	614	441	521	130

Figure 3 below shows the percentage investment by portfolio. It shows that most investment is in Government Securities (43.08%) followed by quoted equity (22.26%) and guaranteed funds (11.64%).

Figure 3 Percent of Investment per Portfolio (2001-2006)



4.3 Trend Analysis

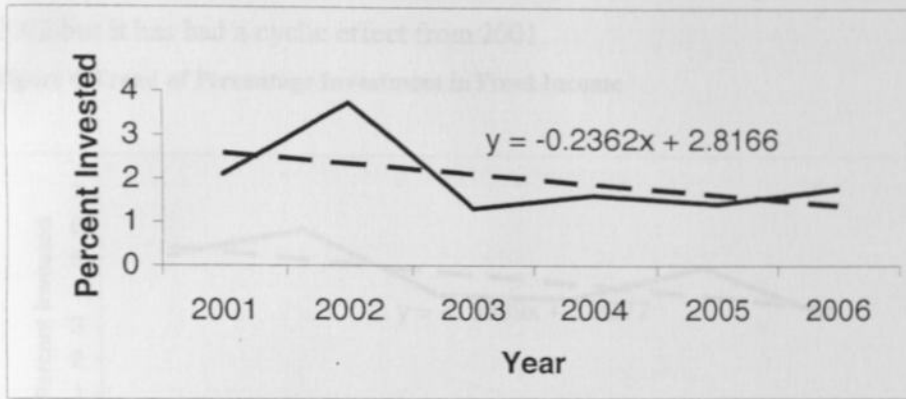
Cash

The trend analysis of the cash investment shows a gradual decline over the years.

Figure 4 below shows a sharp upward increase from 2001 followed by the decline up to 2006.

Since there was no floor limit in the Act it was safe for pension funds to keep cash to a bare minimum enough to meet current benefit obligations.

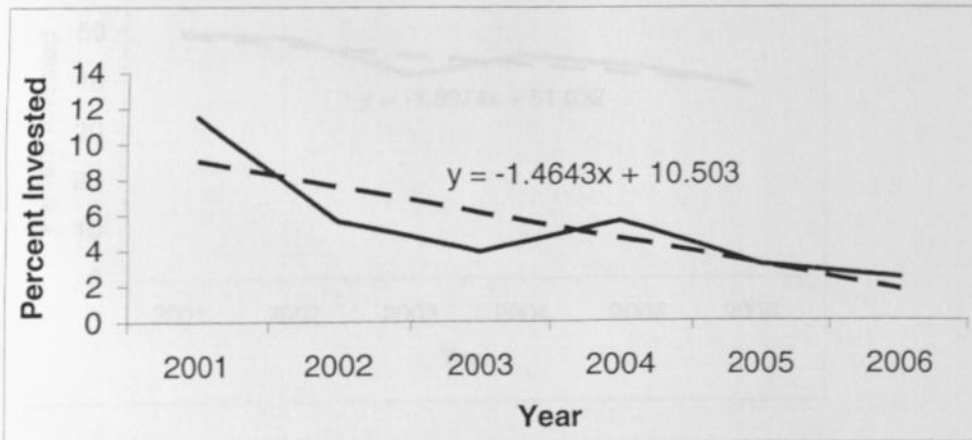
Figure 4 Trend of Percentage Investments on Cash



Fixed Deposits

Over the years from 2001 to 2006 investment in fixed deposits gradually declined. This is illustrated in figure 5 below. According to the figure, there was a sharp and sudden decline in the investment on fixed deposits in the year 2001 to 2002. Between the years 2003 and 2004, there was a slight increase in the investment on fixed deposits. This again dropped in 2005 and 2006.

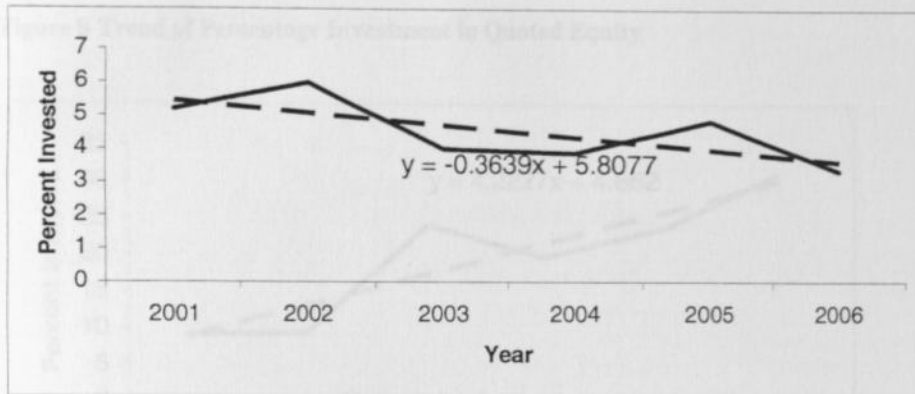
Figure 5 Trend of Percentage Investment on Fixed Deposits



Fixed Income

Investment in fixed income has been almost constant over the years. It was highest in 2002 but it has had a cyclic effect from 2001.

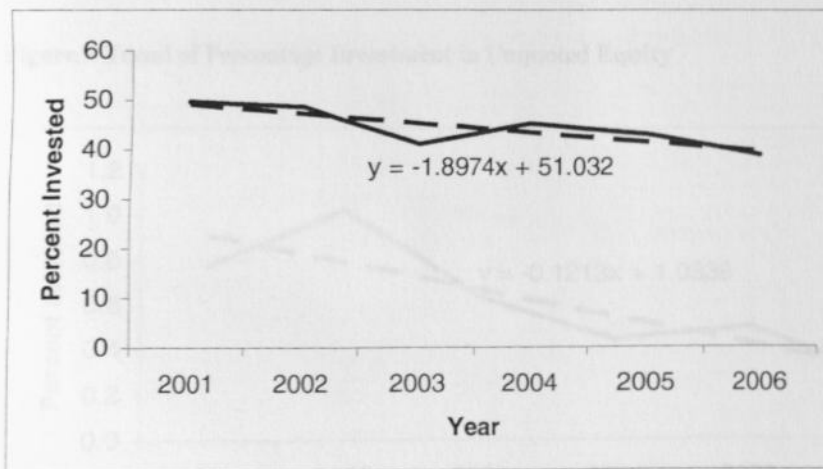
Figure 6 Trend of Percentage Investment in Fixed Income



Government Securities

This was the highest ever made investment. Apparently it appeared somewhat constant over the years from the year 2001. See figure 7 below.

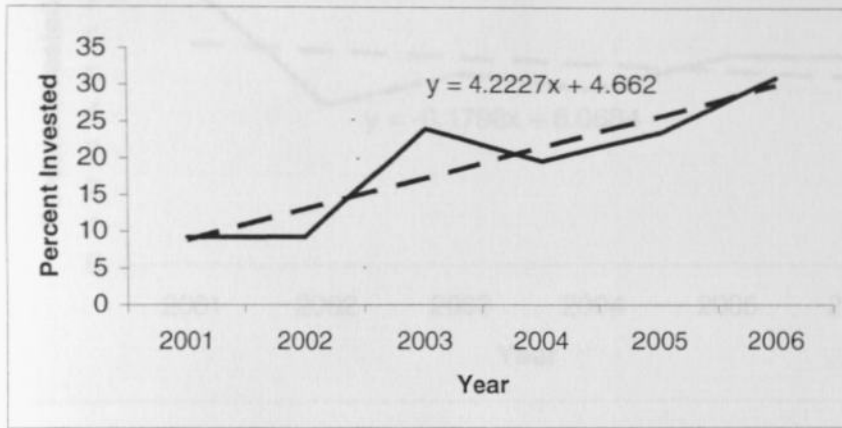
Figure 7 Trend of Percentage Investment in Government Securities



Quoted Equity

Investment in quoted equity has been steadily increasing over the years from 2001. It had a markedly sudden rise in 2003 from 2002 but slightly dropped to continue with its upward trend in 2004. This is shown in figure 8 below.

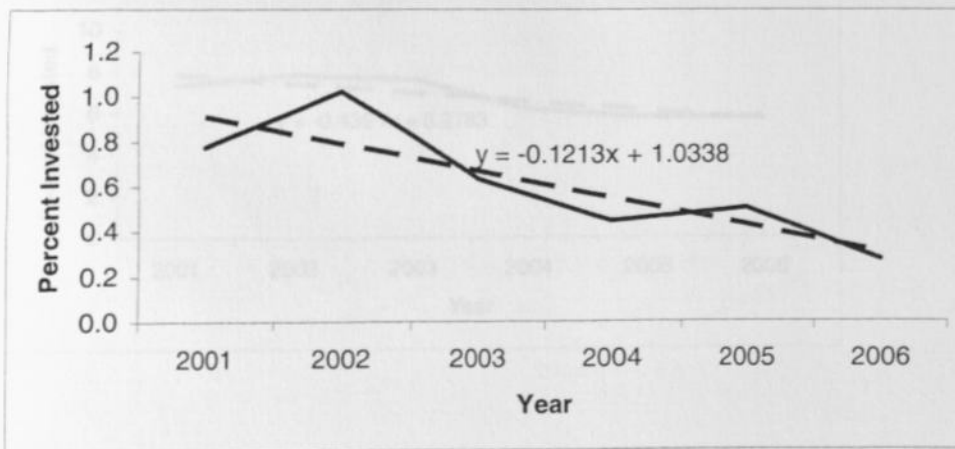
Figure 8 Trend of Percentage Investment in Quoted Equity



Unquoted Equity

Investment in unquoted equity, however, has been declining over time from the year 2001. It has had its lowest mark in the year 2006. See figure 7 below.

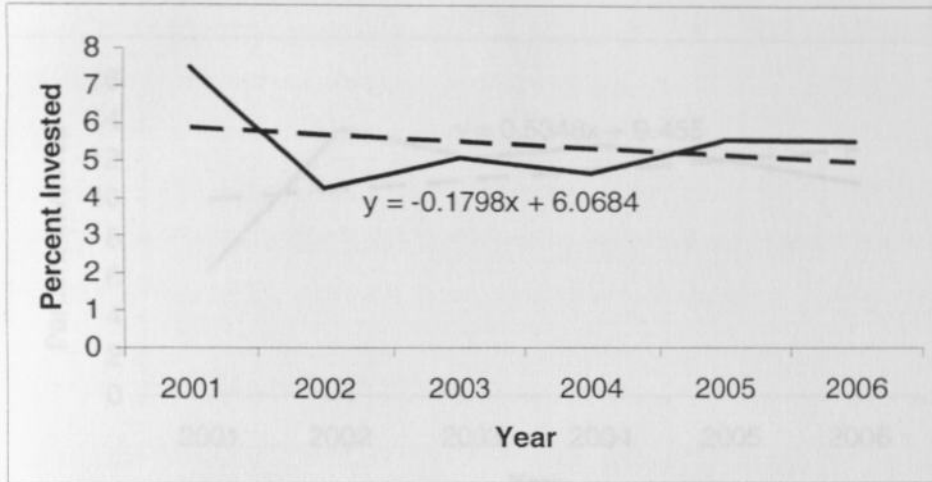
Figure 9 Trend of Percentage Investment in Unquoted Equity



Offshore

Figure 10 below shows the investment in offshore over time. According to the figure, there was a sudden drop in the investment from 2001 to 2002. It then gradually rose in 2003. It appears though that the investment is somewhat decreasing over time.

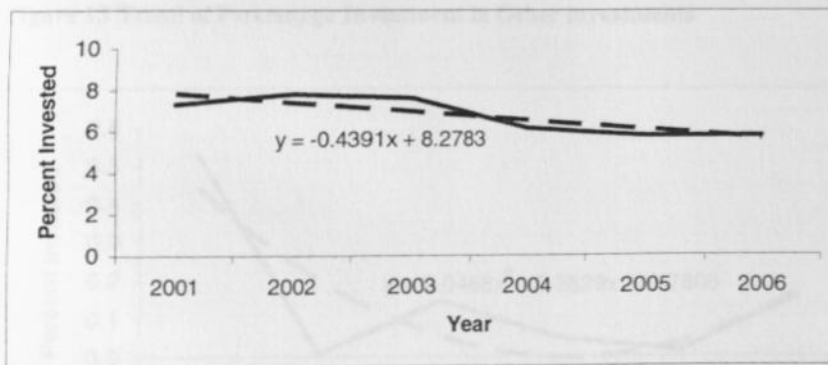
Figure 10 Trend of Percentage Investment in Offshore



Immovable Property

Investment in immovable property has also been declining gradually over time from 2001. See figure 11 below.

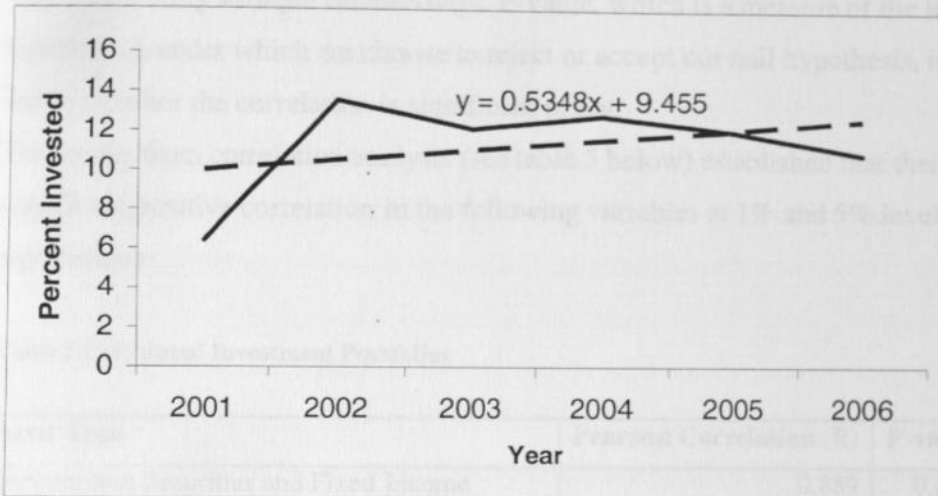
Figure 11 Trend of Percentage Investment in Immovable Property



Guaranteed Funds

Investment in guaranteed funds has slightly been increasing over time from 2001 as illustrated in figure 10 below.

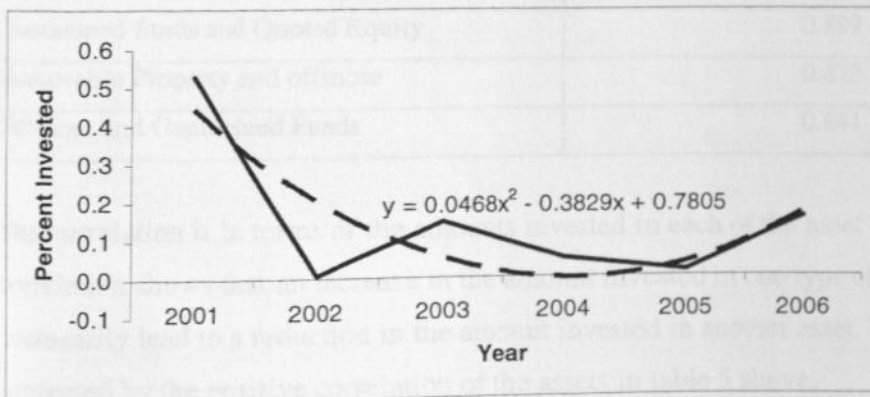
Figure 12 Trend of Percentage Investment in Guaranteed Funds



Other Investments

Other investments have had a polynomial kind of trend of order two from the year 2001. See figure 11 below.

Figure 13 Trend of Percentage Investment in Other investments



Correlation Matrix

The Pearson correlation coefficient (R) is a measure of the linear association between two variables. The values of the correlation coefficient range from -1 to +1. The sign of the coefficient indicates the direction of the relationship (positive or negative). The absolute values of the correlation coefficient indicate the strength, with larger absolute values indicating stronger relationships. P-value, which is a measure of the level of significance under which we choose to reject or accept our null hypothesis, in this case shows whether the correlation is significant or not.

The results from correlation analysis (see table 5 below) established that there existed a significant positive correlation in the following variables at 1% and 5% level of significance:

Table 5 Correlated Investment Portfolios

Asset Type	Pearson Correlation (R)	P-value
Government Securities and Fixed Income	0.889	0.018
Guaranteed Funds and Fixed Income	0.890	0.017
Government Securities and Quoted Equity	0.943	0.005
Government Securities and offshore	0.926	0.008
Government Securities and Immovable Property	0.931	0.007
Government Securities and Guaranteed funds	0.976	0.001
Offshore and Quoted Equity	0.977	0.001
Immovable Property and Quoted Equity	0.945	0.004
Guaranteed funds and Quoted Equity	0.892	0.017
Immovable Property and offshore	0.873	0.023
Offshore and Guaranteed Funds	0.841	0.036

The correlation is in terms of the amounts invested in each of the asset types. The correlation shows that an increase in the amount invested in one type of asset does not necessarily lead to a reduction in the amount invested in another asset. This is supported by the positive correlation of the assets in table 5 above.

5.0 CHAPTER 5: SUMMARY OF FINDINGS AND CONCLUSIONS, RECOMMENDATIONS, LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH

5.1 Summary of Findings and Conclusions

The study of the investments by pension schemes in the various asset types given by the Retirement Benefits Act, 1997 has shown that the pension schemes have by and large done so within the limits provided for by the Act. This can be attributed to the fact that the ceilings given are high enough for each asset type. However, within the bounds provided for by the Act, there has been a big increase in investments in certain types of assets. These include investment in quoted equity, which grew from an average of Ksh 9.69 million per scheme in 2001 to Ksh 50 million per scheme in 2006 which is a massive increase indeed. Another big increase in investment was in guaranteed funds which rose from an average of ksh 6.78 million per scheme to Ksh 17.62 million. In percentage terms, pension plans invested 9.2% of their total funds in quoted equity in 2001 and 31% in 2006. This was a great shift in investment in this type of asset which had hitherto been viewed as being too risky. Again, in percentage terms there was a marked increase in investment in guaranteed funds, rising from 6.4% in 2001 to 11% in 2006, an increase of about 5%. It is interesting to note that investment in fixed deposits decreased markedly from 11.5% in 2001 to 2.4 % in 2006.

The trend analysis provides room for prediction of the future trends in investments in the various types of assets. For example, unless there is a major bubble, investment in shares by pension schemes can be predicted to increase in the foreseeable future. This will be balanced with the less risky guaranteed funds and government long term securities. The analysis has also shown that in terms of the amounts invested in the various asset types, a number of assets are strongly positively correlated at the 5% and 1% level of significance.

In conclusion it can be said that the Retirement Benefit Act, 1997 has impacted on the investment portfolios of pension schemes. The ceilings provided by the Act are big enough to allow pension schemes to align their investments to balance the risky but profitable securities such as equity traded at the Nairobi Stock Exchange with guaranteed funds and government securities. In many Emerging Markets where pension reforms have taken place, investment in shares has been highly regulated, with the percentages of funds that can be invested in equity starting from low figures and the being increased progressively every year. Kenya's ceiling of 70% for investment in shares can therefore be considered as very bold indeed.

5.2 Limitations of the Study

The study considered the year 2001 as the base year, because this is the year in which the Retirement Benefits Authority started enforcing compliance with the Act. Data for the year 2001 was therefore taken as the baseline data. Compliance was expected to take place from that year onwards. It may be of interest to consider the investment patterns for the years prior to 2001. The assumption in this study was that the investment pattern of the years prior to 2001 would not have been significantly different.

The study considered only the pension schemes registered with the Retirement Benefits Authority. These are about 1/3 (or 1000 in number) of the total pension schemes in the country. The other 2000 schemes not registered were not studied. One may argue that one of the reasons these are not registered is because of their inability to comply with the requirements of the Act.

5.3 Recommendations

The Retirement Benefits Authority should register all the retirement benefits schemes operating in Kenya. It is unfortunate that the Authority has registered only one third of the 3000 pension schemes seven years after it came into existence. Registration with the Authority by all pension schemes is one of the requirements of the Act. As it is, the 2000 schemes not registered are illegal entities. This is one of the reason it is very difficult, if

not impossible, to collect any information from the schemes not registered. This state of affairs cannot continue as it puts at risk the contributions made by employees into these pension schemes. The impact of the pension funds investment on the stock exchange would have been bigger if the pension coverage had been higher. Only 15% of Kenyans are covered by pension schemes. The Retirement Benefits Authority must come up with a program of progressively increasing the coverage as it has been done in other countries such as South Korea.

5.4 Suggestions for Further Research

There is need to investigate how the pension schemes that were registered in the years 2001 to 2006 used to invest in the various types of assets prior to the year 2001. The investment portfolios of those prior years can then be compared with the portfolios after the schemes were registered.

References

- Bong – min Yang, (2001), *The National Pension Scheme Of The Republic Of South Korea*; The International Bank for Reconstruction and Development, The World Bank, Washington DC.
- Brigham, Eugene F. and Phillip R. Daves (2004); *Intermediate Financial Management*, 8th Edition.
- Davis, Philip E. (2005), "The Development of Pension Funds in Emerging Markets", *Emerging Markets Paper No. 04-23*, Brunel University.
- Brigham, Eugene F., Louis C. Gapenski, and Michael C. Ehrhardt, (1999) *Financial Management, Theory and Practice*, 9th Edition.
- Catalan, M., Impavido, G. and Musalem, A.R. (2000), *Contractual Savings or Stock Market Development: Which Leads?* Pension Primer Paper, the World Bank, Washington, D.C.
- Helmuth R. (1997) *Pension Funds: Financial Instruments and Investment Strategies*, John Wiley & Sons, New York.
- Chan – Lau, Jorge A, 2004 *Pension Funds and Emerging Markets*. IMF Working Paper WP/04/181, IMF, Washington DC.
- Helmuth R., (1999) *The World Stock Exchange: A History of Growth and Decline*, John Wiley & Sons, New York.
- Clark, Gordon L. and Tessa Hebb; *Understanding Pension Fund Corporate Engagement in a Global Arena*; School of Geography and the Environment, University of Oxford, February 27, 2003
- Helmuth R., (2000), "Can Investment in Emerging Markets be Profitable?", *Emerging Markets Paper No. 04-23*, Brunel University.
- Davis, Philip E., 2005, *The Role of Pension Funds as Institutional Investors in Emerging Markets*; Paper presented at the Korean Development Institute conference, "Population Aging in Korea: Economic Impacts and Policy Issues" Seoul, March 2005.
- Davis, Philip E. and Hu Y (2004) "Is There Any Link Between Pension Fund Assets and Economic Growth? – A Cross-country Study", *Economics And Finance Working Paper No. 04 – 23*, Brunel University.

Demirguc – Kunt A. and Levine R., Bank-based and Market-based Financial Systems; Cross-country Comparisons; Paper Presented at the World Bank Conference on Financial Structure and Economic Development, 10 – 11 February 2000.

Davis, Philip E., 2001, "Portfolio Regulation of Life Insurance Companies and Pension Funds," Discussion Paper PI-0101 (London: The Pensions Institute, Birbeck College, London).

Davis, Philip E., (1993), "The Development of Pension Funds, A Forthcoming Financial Revolution for Continental Europe", in ed R O'Brien, "Finance and the International Economy 7, the Amex Essay Awards 1993", Oxford University Press.

Fabozzi, Frank J; Franco Modigliani; Frank J. Jones; and Michael G. Ferri 2002 Foundations of Financial Markets and Institutions, 3rd Edition.

Holzman R., (1997) Pension Reform, Financial Market Development and Economic Growth, Preliminary Evidence from Chile; IMF Staff Papers: June; IMF, Washington.

Holzman R., (1999) The World Bank Approach to Pension Reform; Revised And Final Version, September 10, 1999; For Publication in the International Social Security Review.

Holzman R., (2000), "Can investment in emerging markets help to solve the ageing problem?" Social Protection Discussion Paper No. 0010, The World Bank.

IMF, 2002, *Global Financial Stability Report*, September (Washington).

IMF 2003a, *Global Financial Stability Report*, March (Washington).

Iglesias, A. (1998) "The Impact of Pension Reform on Capital Markets: the Chilean Experience". Presented at the Conference on Capital Markets Development in Emerging and Transition Economies: Trends and Challenges, Washington, DC: USA.

Laporta, R. , Lopez – de – Silanes, F., Shleifer, A. and Vishny, R.W. (1998); Law and Finance, in *Journal of Political Economy* 106(6).

Lefort, F. and Walker, E. (2000a), “Pension Reform and Capital Markets: Are there Any (Hard) Links?”, Working Paper, Universidad Catolica de Chile.

Levine, R. and S. Zervos, (1998), Stock Markets, Banks, and Economic Growth; *American Economic Review*, June.

Odundo, Edward (2003), “The Perspective Of The Retirement Benefits Authority”, A Presentation by Edward Odundo, Chief Executive Officer, Retirement Benefits Authority, Kenya to the Pensions Reform: An Agenda for Sub – Saharan Africa Seminar, World Bank Headquarters, Washington DC, May 1, 2003.

Odundo, Edward (2005), “Supervision of Public Pensions in Kenya”, A Presentation by Edward Odundo, CEO, Retirement Benefits Authority, Kenya; South – South Cooperation Experience, San Jose Costa Rica, May 10, 2005.

RBA News March, 2006.

Rybczynski T (1997) “A New Look at the Evolution of the Financial System” in ed. J Revell “The Recent Evolution of Financial Systems”, MacMillan, London.

Reilly, Frank K. and Brown, Keith C., Investment Analysis and Portfolio Management; 8th ed. South Western College Publishers, 2006.

Sharpe, William F., Gordon J. Alexander and Jeffrey V. Bailey 1999 Investments, 6th edition.

Spiegel, Murray R. and Stephens, Larry J., Theory and Problems of STATISTICS, Third Edition, McGraw – HILL.

Urthoff, A. (1998), Pension Funds, the Financing of Transition Costs and Financial Markets Development: Lessons from the Chilean Privatization Reform, ECLAC, 26 June 1998.

Walter, E. and F. Lefort, (2002), Pension Reform And Capital Markets: Are There Any (Hard) Links? Social Security Discussion Paper No. 0201; January; The World Bank.

Walter, Ingo, 1999, "The Global asset Management Industry: Competitive Structure and Performance", *Financial Markets, Institutions, and Instruments*, Vol. 8 pp. 1 – 78.

Welsch, Glenn A, Charles T Zlatkovich and Walter T Harrison 1979: Intermediate Accounting, 5th Edition.

Yeager, Fred C. and Neil E. Seitz (1989), Financial Institution Management: Text and Cases; 3rd Ed., Reston Va.

Yermo, Juan, 2004 "Pension Reform and Capital Market Development", (Paris: OECD).
Background Paper For Regional Study on Social Security Reform.