

DECLARATION

**IMPLICATIONS OF RETIREMENT BENEFITS ACT (1997) ON
INVESTMENT PERFORMANCE OF PROVIDENT PENSION
FUNDS IN KENYA**

This Project is my original work and has not been presented for a degree in
any other University.

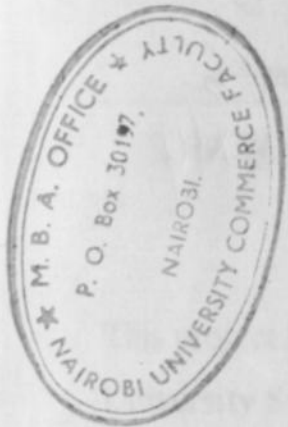
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14/1/2003

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DATE



A Management Research Project submitted in partial fulfillment of the requirements for the award of a Masters Degree in Business Administration (MBA), Faculty of Commerce, University of Nairobi.

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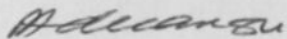
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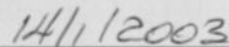
DECLARATION DEDICATION

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This Research Project is dedicated to my whole family in my deep appreciation of their many sacrifices that they have made during my period of study.

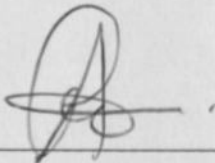


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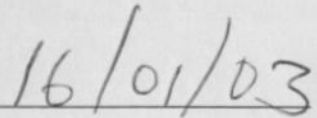


DATE

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



ANGELA KITHINJI



DATE

ACKNOWLEDGEMENT

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I would also like to acknowledge the assistance accorded to me by my colleagues in the office especially Janet Nyabuti and Carolyn Oyomba who have put a lot of time in the typing of my work in the period of my study.

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Last but not least I register acknowledgement to my entire family for their encouragement and moral support including their prayers and words of comfort.

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ACKNOWLEDGEMENT

I sincerely wish to thank my Supervisor, Mrs A. Kithinji for availing herself and her continuous guidance in this study.

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ABSTRACT

ABBREVIATIONS:

This study was conducted with the objective of determining the possible implications of Retirement Benefit Authority (RBA) on the investment performance of provident pension funds in Kenya. Data used in the study was for the period 1992 to 2001.

- RBA - Retirement Benefit Authority
- DB - Defined Benefit
- DC - Defined Contributions
- GM - General Motors investment guidelines which became effective in 2001
- ERISA - Employee Retirement Income Security Act
- NSSF - National Social Security Fund

General Motors' investment guidelines which became effective in 2001 classifies investment assets as cash and demand deposits, fixed deposits and time deposits, commercial paper and corporate bonds, shares of quoted companies, immovable properties, guaranteed funds and offshore investments in bank deposits and government securities. These guidelines also stipulate the maximum percentage terms that provident pension funds should invest in each of the specified assets.

Though investment guidelines became effective from 2001, provident funds did not manage to adjust their investment portfolios due to various technicalities which included appointment of fund managers, custodians, trustees and an actuary. Nevertheless, the study findings reveal that investment performance before application of RBA guidelines are better than after RBA applied performance. However, with the application of RBA guidelines, provident pension schemes have experienced reduced risk, decreased reported investment performance and drastic reduction of variability in returns from year to year, an indication of more stable earnings.

ABSTRACT

This study was conducted with the objective of determining the possible implications of Retirement Benefit Act (1997) on the investments performance of provident pension funds in Kenya. Data used in the study was for the period 1992 to 2001.

The Retirement Benefit Authority investment guidelines which became effective in 2001 classifies investment assets as cash and demand deposits, fixed deposits and time deposits, commercial paper and corporate bonds, government securities, preference and ordinary shares of quoted companies, immovable properties, guaranteed funds and offshore investments in bank deposits and government securities. These guidelines also stipulate the maximum in percentage terms that provident pension funds should invest in each of the specified assets.

Though investment guidelines became effective from 2001, provident funds did not manage to adjust their investment portfolios due to various technicalities which included appointment of fund managers, custodians, trustees and an actuary. Nevertheless, the study findings reveal that investment performance before application of RBA guidelines are better than after RBA applied performance. However, with the application of RBA guidelines, provident pension schemes have experienced reduced risk, decreased reported investment performance and drastic reduction of variability in returns from year to year, an indication of more stable earnings.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

In the early times before the 15th century when families and tribes wandered around the world with their flocks or created tribal settlements to live in; nobody needed a pension. Everybody worked and each member helped to provide food, shelter and clothing not only for himself but also for non producers (babies, sick and the aged).

With industrial revolution all this changed as workers left the fields and sought employment in towns. Factory owners employed them, paid them wages and left them to make use of the money. When old age or health reduced a worker's effectiveness, he would be sacked and replaced with a younger fitter man. Employers felt no responsibility for his welfare after the employment ceased, he had paid him for the work he had done (Toulson, 1982).

However, during this period, many old people were in receipt of industrial superannuation allowances which were often given as acknowledgement and recognition of past services (Pilch, 1960). Thus in the 19th century, the view of the pension was that of charity on the part of the employer to his old servants.

The fact remained that the only security for a servant's pension was the continued bounty of his master. This type of pension had many shortcomings since it could render an old servant destitute due to the untimely death of the employer.

By the beginning of the twentieth century the disadvantages of a system resting on charity had been recognized by a number of employers, and continuing development took place until the beginning of the 1st world war when trust funds, schemes under which contributions were invested in insurance policies, and provident funds. Provident funds were usually financed by joint contributions and the benefits were in the form of lump sum payments on death, incapacity or retirement (Pilch, 1960).

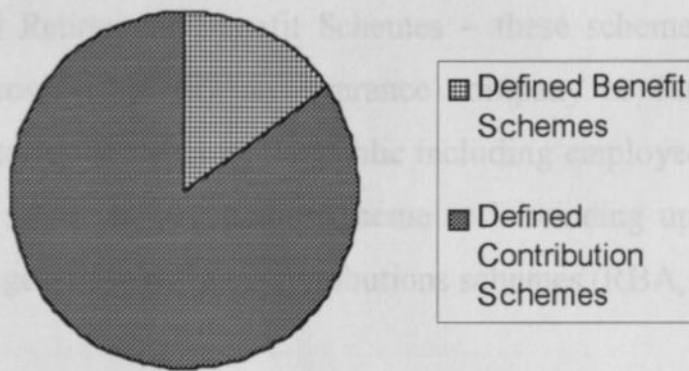
1.1.1 Types of Pension Schemes

There are two alternatives of retirement pension schemes; the Occupational Retirement and Individual Retirement Benefit Schemes.

Occupational Retirement Benefit Schemes are arranged by employers for their employees. The two main types are the Pension Schemes and the Provident Funds.

- Pension Schemes pay period payments to the members upon retirement at intervals stipulated in the scheme rules, usually monthly. An actuarially determined lumpsum amount which should not exceed $\frac{1}{3}$ (one third) of the Pension where a member has been contributing to the scheme or one quarter ($\frac{1}{4}$) where only the employer has been contributing to the scheme may be paid on retirement (RBA, 2002).
- Provident funds are schemes where members' contributions and those of the employer are invested and the total accumulated in his account is paid to him in a cash lumpsum at retirement (RBA, 2002).

Contributions to provident funds made by employers are tax deductible while contributions by members are not (Finance Bill, 2002). Pension Schemes and Provident Funds may be classified into Defined Benefits (DB) or Defined Contribution (DC) Schemes. The proportion of the defined benefits versus defined contribution schemes as a percentage of the total are indicated in the diagram below: -



Source: Retirement Benefit Authority

November 30th 2001

Defined benefits pay a pension that is determined at the outset based on the period the member has worked. That is, the employers undertake to pay members a pension in relation to current earnings such as predetermined percentage of final or average salary subject to years of service irrespective of the amount of funds set aside to provide for the benefits (Davis, 1993). By law an employer with a defined benefit plan must fund the scheme on a current basis and make additional contributions if the investment return on the funds are poor. Hence, the employer bears the risk of the investment. This makes defined benefit appear to offer better employee retirement insurance and actually restrict labour mobility (Thygerson 1995).

Defined contribution schemes do not provide a fixed benefit but rather establish a contractual amount of contribution, typically a specified percentage (such as 10%) of employee income. These contributions and those of the employer are invested and the employee benefits depend on investment performance. Hence, the employee bears much of the risk because the employer liability is limited to the initial contributions made (Thygeson 1995).

Individual Retirement Benefit Schemes – these schemes are managed by a service provider usually an insurance company or fund manager and are available to any member of the public including employees whose employer is unable to set up an occupation scheme or is winding up an existing scheme. These are generally defined contributions schemes (RBA, 2000).

1.1.2 Investment Policies

Provident funds benefit from regular inflows of funds on a contractual basis and have no premature withdrawals of funds, which together imply little liquidity risk. In general after the collection of contributions and before the payment of benefits, there arises a long period, and decisions must be made on how to invest the resulting substantial monies held in the scheme (Escolme, 1991).

Various investment policies – long, medium or short term – are adopted depending on whether investments are safe, profitable and capable of being realized when cash is required to pay benefits; that is, if investment policies are in such a way that appropriate amounts of investments due for redemption

when deaths and retirements are likely to occur, then investments are seen to match their liabilities (Toulson, 1982).

However, it is difficult to determine precisely when members will die, it may not even be precise when members will retire; some may retire early and others may stay on for a while after their normal retirement dates. This implies that investment policies should be balanced so that funds are available to pay retirement benefits when required. In Kenya many investments have been made disproportionately in land and property holdings not because of the economic value of the investments but rather because of the quick gains accruing to the sellers of the properties (RBA News, 2001). As a result many schemes have found themselves saddled with property and other investments that do not yield meaningful returns to the scheme at the expense of the eventual benefits paid to the individual members.

To regulate investment policies in Kenya, Retirement Benefit Authority (RBA) published Retirement Benefit regulations in October, 2000 which became effective in October, 2001. In between the two dates, the schemes were expected to amend their scheme rules to conform to the RBA regulations. These regulations stated that investment policy must cover, the kinds of investments to be held, risk and the realization of investments.

The guidelines given were that, a scheme should not exceed the maximum percentages of aggregate market value of Total Assets in any of its investments (RBA Regulations, 2000); where such excess occurs either due to increase in market price of assets, bonus issues or transfer of investments from one class

of assets to another, it should not continue for a period of more than ninety days.

1.2 STATEMENT OF THE PROBLEM

The design of provident pension funds is such that it provides retirement benefits to its members once on retirement. This means that contributions have to be properly invested and well managed in order to produce large profits which will see the pensioner through the remainder of his remaining life. Since there exist a long period between the time collections of contributions are made and before payment of benefits are made, sound decisions must be made to invest the substantial monies held in the scheme.

Many organizations in the country are known to have been operating their own provident pension funds but the investments of the accumulated monies was by intuition and rule of thumb. There were frequent cases of misappropriation of funds, poor investments in addition to delays in the payment of benefits to members. Keeping of investment records of provident pension funds and accountability of returns from investments were being done haphazardly resulting in losses to individual pensioners. As a result, the government decided to establish an umbrella body to oversee the activities and operations of all pension schemes.

Thus in 1997, an Act of Parliament was enacted to establish a Retirement Benefits Authority (RBA) with the mandate to regulate, supervise and promote retirement benefit schemes. On establishment, Retirement Benefit Authority

came up with rules and regulations and investment guidelines in 2001 which specified the class types of assets to be invested into. With RBA investment guidelines, accumulated funds can now be invested both in fixed assets as well as in current assets, and each of these assets will have different implications on investment performance.

Hence, these implications on investment performance warrant investigations for the benefit of the members as well as the fund managers. This is because, it is not yet clear how RBA investment guidelines are likely to impact on the performance of provident pension funds. This study, therefore, investigates on the likely impact of RBA Act on provident pension funds as well as the effects of investment guidelines on the performance of investments in relation to the level of risk and the realised returns in Kenya.

1.3 OBJECTIVE OF STUDY:

The objective of the study is:

To determine the possible impact of RBA Act on investment performance of provident pension funds in Kenya.

1.4 IMPORTANCE OF STUDY

Every Country requires vibrant, functioning and efficient provident pension schemes which meet the needs of former employees on retirement. This is because lives of people depend on what one takes home.

The environment on which the provident fund schemes operate in Kenya is putting challenges to the industry. This means that provident funds in Kenya have to look at their investment policies if they have to attract and retain key personnel and compete in the global village.

2.1 Background

The result of this study would benefit:

- The provident pension industry as it would help them identify trends of change in the adoption and implementation of various investments policies, which are measurable in terms of the level and stability of profitability.,
- Assist the investment managers to get an indication of the trend of change in the pension industry in relation to the changes occurring globally,
- Regulators since well established provident fund schemes are of great interest to everyone. This is because regulators will ensure that performance standards are observed, and
- Scholars who wish to do further research in the area of provident pension funds eventual effect on the pensioners.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Background

Pioneer pension scheme started by providing very small and simple pensions. They were usually pensions of fixed amount, regardless of whether the pensioner had previously enjoyed high or low earnings. These pensions were intended to enable the pensioner live at a subsistence level and no more (Toulson, 1982). Realizing the smallness of the state pension, some employers arranged to increase the pensions from time to time, to take account of the fall in the purchasing power of money.

In America, employee pension schemes go back to late 19th century. By 1950, there were some 2,000 provident pension funds in operation and by 1976, there were about 50,000 or so pension plans in existence (Drucker, 1976). This tremendous growth in pension schemes was as a result of the innovative establishment of General Motors (GM) pension scheme in 1950 which entrusted all its funds to professional asset managers and the enactment of Employee Retirement Income Security Act (ERISA) in 1974. Thus the GM plan was to be an investment trust which would invest in the capital market and especially in equities; while ERISA would protect employee interests once a pension plan has been established and benefits defined. Earlier plans had been annuity plans invested in standard life-insurance investments such as government bonds, mortgages and other fixed-interest-bearing instruments (Drucker, 1976).

In early nineteenth century, Britain passed superannuation Act in 1834, which gave definition to non-contributory pension scheme for male civil servants. It provided a pension from the age of sixty five of two-thirds of salary after forty five years. In 1859, this basis was altered to provide a pension equal to $\frac{1}{60}$ th of salary for each year of service with a maximum of $\frac{40}{60}$ ^{ths}. The retirement age was then reduced to sixty years. By the end of nineteenth century, there has also been established several schemes for industrial employers on a trust fund bases; prominent being those for some of the railway companies (Pilch, 1960).

A trust fund is one which is held by people called trustees; as legal owners of the fund but on behalf of people who are to benefit from the fund in given circumstances. A trust is a British invention and it dates back several centuries. Originally it was designed, not for pension schemes, but to safeguard the succession to private property on the death of an owner. However, in the twentieth century, it has proved to be a most useful facility for safeguard the benefits of members of a pension scheme (Toulson, 1982).

In Austria and Sweden, the early pension plans which go back into eighteenth century were only for government employees but did not provide retirement pension at all. There were plans to take care of the surviving widow and young children of the deceased civil servant. Those few government employees who did survive to sixty years or above could petition for a pension. But this was so rare that by early twentieth century, Austria with one of the world's biggest and most swollen bureaucracies did not need even one full-time clerk to process the petitions for retirement pensions for the survivors (Drucker, 1976).

In Kenya pension schemes were started by white settlers in early twentieth century under the United Kingdom superannuation scheme to provide pension and gratuities services to their dependants on a contributory basis for overseas research and allied workers (Cap 189).

The government offers non-contributory pension scheme for some of its employees, as well as a contributory widows' and children's pension scheme (Cap 195) which allows beneficiaries of a former pensioner to enjoy pension benefits for five years at the rate that would be enjoyed by the late pensioners. After independence, the government established a compulsory National Provident Fund (N.S.S.F) with effect from 23rd November, 1965 to cater for employees of registered employers in the private and public sectors who are not covered under any established occupational pension scheme.

The issue of how to organize pension provision in the developing world acquired a higher profile with the publication of the World Bank's 1994 report. This report recommended that developing countries adopt multi-pillar pension systems, with a tax-financed safety net pension as the first pillar; contributory work based pension plans as the second pillar and voluntary savings as the third pillar (World Bank, 1994).

As a result of this report, the Kenya government established Retirement Benefit Authority on 29th August, 1997 through the Act of Parliament to foresee the regulations, supervision and promotion of retirement benefit schemes as well as the development of the retirement benefits sector (RBA Act, 1997).

2.2 Investment Policies

The sound way of investment is to ensure that income exceeds expenditure. This way benefits are paid out of income and there would be no need to sell investments to pay claims (Toulson, 1982). Matching income and expenditure or income exceeding expenditure depend on the investment policies adopted by the management of provident funds. Considering the long term period between collection of contributions and payment of benefits, it would then be appropriate for the fund managers to consider whether to adopt a long or short-term investment policy in order to minimize the risk of being unable to pay pensioners on retirement as well as the current obligations (Weston, 1978).

Investments in short or long-term assets depend on the expected rate of return and the fund managers' preferences. If the fund managers prefer liquidity due to uncertainty in future, they will invest in short-term assets because they are more liquid and can be converted into cash without any danger of loss of Principal. However, if the short-term rates are expected to remain unchanged in the future, then pure expectation theory predicts that short and long-term investments would have equal yields. Thus, in aggregate investors are indifferent between long and short-term investments except for any expected yield differentials between the types of securities.

On the other hand, market segmentation theory admits the liquidity preference as a good description of the behavior of fund managers with short horizon who regard certainty of principal as more important than certainty of income. Other fund managers would prefer high income through investment in long-term assets given the nature of the retirement benefits (Weston, 1978).

Retirement Benefit Authority came up with investment policy guidelines on the investments of pension funds so as to maintain the capital funds of the pension schemes and to secure market rates of return on the investment of such funds.

Thus, investment policy of a scheme shall be implemented subject to the provisions of any regulations by the Minister of Finance in consultation with Retirement Benefit Authority. Investment policies adopted by any scheme are to ensure that scheme funds are not –

- Used to make direct or indirect loans to any person
- Invested with a bank, non-banking financial institution, insurance company, building society or other similar institutions with a view to securing loans, including mortgages, at a preferential rate of interest or for any other consideration to the sponsor, trustee, members or the managers of such scheme (Retirement Benefit Authority Act, 2000).

2.3 Investment of Provident Pension Funds

Investment of provident funds is determined by the policies adopted and the relationships among the different classes of securities. Short-term investment may be in form of cash and demand deposits, time deposits, certificate of deposits, fixed deposits, commercial paper and Kenya government securities. On the other hand long term investments could be in corporate bonds, mortgage bonds, loan stocks, equity shares and immovable property. Investment assets are given in Appendix 1.

In America around 70% of the pension total funds are invested in equity capital of listed publicly-owned American companies. In Denmark, Germany, Japan and Switzerland, investment in equity shares is restricted to between 30% to 40% of total assets; while in Latin American countries, only 40% of total pensions is invested in equity shares. Other funds are put in corporate bonds, mortgage-backed securities, and fixed-term deposits. The reasoning of the mix is diversification and to prevent governments from appropriating pension funds to finance deficit spending (World Bank Pension Reform Primer: www.worldbank.org/pensions).

Locally, before Retirement Benefit Authority came into being in 1997, investments of pension funds were not streamlined. Each scheme invested in a way it deemed fit. Some pension schemes put the funds in fixed deposits, others in treasury bills for quick gains while others invested the funds back into the business. However, with the coming of Retirement Benefit Authority investment guidelines were issued (Appendix I). The guidelines prescribed that schemes should consider written advice of a professional investment advisor whenever making any investment. In addition, schemes are allowed to invest only in an asset class referred to in column I of form IG (Appendix I); to the extent to which the market value of the investment in the class expressed as a percentage of the total asset of the scheme does not exceed the percentage listed in column 2 of form IG in the same appendix. Thus, according to the Retirement Benefit Authority investment guidelines (Form IG), pension funds are expected to invest to a maximum of 70% of their aggregate market value of total assets of the scheme in either government securities and collective investment schemes or in equity shares of companies quoted in stock exchange in Kenya, Uganda or Tanzania.

2.4 Prediction Models

In order to assess the impact of the RBA investment guidelines (2001) on provident pension funds, it is necessary to predict the future income from investments with effect from year 2001 when the guidelines became effective. In this respect, historical data from annual reports and accounts of the selected provident pension funds were used. Sharma (1999) suggested that historical data to be used must be accurate, model be simple and easily understandable, economical, and be able to produce meaningful results quickly. Levin (1992) indicated that when faced with uncertainty concerning the future, provident pension funds management could only look into the past behaviour of their investments as an indicator of what is to come.

2.5 Measures of Investment Performance of Provident Funds

Levin at el (1992) therefore, suggested various prediction models which includes: -

- Moving averages,
- Simple exponential smoothing,
- Trend – adjusted exponential smoothing,
- Time series regression, and
- The decomposition of the seasonal data.

Copeland (1988) on the other hand suggested a liner relationship regression analysis as having the virtue that are simple and robust towards explaining the distribution of income for the Provident Pension Funds given investments in various Assets. Thus,

Using this performance ratio, the manager and benefit recipients can determine whether a pension fund is under funded or over funded.

$$y_t = a + b_1x_t + E_t$$

where:

y = Total income in year t

a = Intercept or the point at which the trend line intercepts the y axis

b = Slope of the trend-line or the rate of change in income

x = Independent variable

E = Error term

t = Time

2.5 Measures of Investment Performance of Provident Funds

The value of provident pension funds depends critically on the funds investment performance. Performance measures must be developed for purposes of analyzing past performance and for projecting future returns.

First it is necessary to compute an annualized rate of return. But this creates a problem which is made a bit difficult by the fact that funds are added and deducted periodically. Therefore, it is necessary to separate performance of the provident pension fund portfolio from the impact of additions and withdrawals of funds (Yeager, 1989).

According to Thygeson (1995), the primary financial ratio of concern to the provident pension fund manager is the relationship between the fund's market value of assets and its actuarially determined liabilities.

Using this performance ratio, the manager and benefit recipients can determine whether a provident pension fund is under funded or over funded.

$$\text{ratio (Rate)} = \frac{\text{fair value of Investment Assets} - \text{Pension Benefit obligations}}{\text{Pension Benefit Obligations}}$$

3.1 Population of Study

Another measure of performance as given by Yeager et al (1989) is the geometric mean (time – weighted) rate of return used to put returns on a comparable basis. This measure is used on the assumption that all earnings are re-invested and its formulae is

$$GR = \sqrt[n]{(1 + r_1) (1 + r_2) \dots (1 + r_n) - 1}$$

- Where:
- GR = Geometric mean rate of the portfolio
 - r = Weighted rate of return during the period
 - n = Total number of periods over which evaluations occur

The geometric mean return not being affected by timing of contributions, is the same for each portfolio. Thus, it measures the performance of the portfolio investments and not the effects of contributions and withdrawal timing (Yeager, 1989).

3.2 Sampling Plan

Registered provident pension funds were categorized into the six categories as indicated above and systematically, a representative sample of sixty provident

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Population of Study

The population constitutes of two hundred and ninety (290) provident pension funds registered by RBA. These provident funds are classified into six categories which include:

- Church Provident Funds,
- Banks Provident Funds,
- Oil Companies Provident Funds,
- Corporation Provident Funds,
- Savings and Credit Societies, and
- Schools Provident Funds

These categories are based on the stability of the provident pension funds and the level of mobility of pensioners as indicated by the classification of corporations provident funds in relation to oil companies' provident funds which are saddled with frequent withdrawals of pensions and high pensioner mobility.

3.2 Sampling Plan

Registered provident pension funds were categorized into the six categories as indicated above and systematically, a representative sample of sixty provident

pension funds were selected for analysis. Since all the provident pension funds that make the population are homogeneous, the sample of the sixty selected provident funds is highly representative of the population.

3.3 Data Collection

Data regarding the provident pension funds was obtained mainly from secondary sources. These sources include provident pension fund's audited financial statements, end of period reports and annual reports from Retirement Benefit Authority.

3.4 Data Analysis

The main investments of provident pension funds in Kenya include investments in real estates, government securities, quoted and unquoted shares, fixed deposits and cash and cash deposits (RBA Regulations 2000). To analyse the data in respect to the above, use of geometric mean rate of return was involved in the determination of weighted rate of return (r) for each period, and estimation of time weighted rate of return for the portfolio for the whole period to enable comparison among the various provident pension schemes.

Using the given formulae, r was estimated as a weighted average of the returns of individual investments, thus;

$$GR = \sqrt[n]{(1 + r_1) (1 + r_2) \dots (1 + r_n)} - 1$$

Where: difference of means was conducted, given by: -

GR = Geometric (time-weighted) mean rate of return of the portfolio

\bar{r} = Weighted rate of return during the period

n = total number of periods over which evaluations occur

The estimated standard error of the mean S_x is given as:

For example, Rate of Return on Real Estate (r_e); Rate of Return on Shares (r_s), and Government Stocks (r_g) was estimated as:

$$r_e = \frac{\text{Actual Income on Real Estate}}{\text{Value of Real Estates}}$$

Where:

$$r_s = \frac{\text{Returns from Dividends}}{\text{Received plus Capital gains}}$$

$$r_g = \frac{\text{Interest Income}}{\text{Market Value of Stocks}}$$

Tests of significance were estimated to determine whether there is a significance difference in investment performance of actual investment income for the period 1992 to 2001 and RBA Investment Guidelines applied retrospectively for the same period.

Data has been presented in form of percentages, means, tables and charts to

Thus, the Z statistics was tested at 95% confidence interval to test hypotheses;

returns and Retirement Benefit Authority applied returns in the same period

H_0 : The differences in means are not significant

H_1 : The differences in means are significant.

Tests of difference of means was conducted, given by: -

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{S_{\text{Difference}}} = \frac{\bar{X}_1 - \bar{X}_2}{S(\bar{x}_1 - \bar{x}_2)}$$

4.1 Introduction

The estimated standard error of the mean S_x is given as:

$$S_{\bar{x}_1} = \frac{S_\delta}{\sqrt{n}}$$

Where:

S_{x_1} = Estimated Standard Error of the mean

S_δ = Standard Deviation of the Data Set samples

n = Number of observations in the sample

$$S_{\text{difference}} = \sqrt{[(S_{\bar{x}_1})^2 + (S_{\bar{x}_2})^2]}$$

$$Z = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{[(S_{\bar{x}_1})^2 + (S_{\bar{x}_2})^2]}}$$

Data has been presented in form of percentages, means, tables and charts to enable comparison in investment performance between actual investment returns and Retirement Benefit Authority applied returns in the same period.

4.2 Investment Performance and Comparisons

From the collected data it has been established that provident funds did not adjust their provident funds portfolios as per the RBA investment guidelines

CHAPTER FOUR

4.0 DATA ANALYSIS

4.1 Introduction

This chapter presents observations of the analysis of the historical data collected from the targeted institutions which operate provident funds. The data collected is largely descriptive in nature in that percentages, means, tables and charts are used to bring out the actual investment performance of the targeted provident funds. Comparisons of investment performance are also included to bring out the variability of performance in each category of the selected provident funds.

The analysis involves carrying out tests of significance on the two data samples in percentages before RBA came into effect and with RBA applied retrospectively to determine whether there is significant difference in investment performance of provident funds in Kenya.

The results of this study, however, show that all the analyzed institutions operate in the similar environment whereby they are affected by the same economic factors across the board. Thus, the variability in investment performance in each specified category of provident funds is minimal.

4.2 Investment Performance and Comparisons

From the collected data it has been established that provident funds did not adjust their provident funds portfolios as per the RBA investment guidelines

(2001) due to the various requirements which included appointment of trustees, fund managers, custodians and the involvement of an actuary who would be expected to evaluate the provident funds assets before the completion of annual accounts. RBA regulations (2000) recommended that an actuarial valuation report be done after every three years which most funds found to be out of reach and very expensive especially the young and small provident fund firms.

However, from the collected historical data, investment performance of all provident funds as analysed indicate that annual average returns range from a low of 4.9% in oil companies to a high of 21% in schools provident funds without the effect of RBA investment guidelines. On the other hand, using the geometric mean rate of return model, average returns range between 10.2% in savings and credit societies' provident funds to a high of 15.4% in corporations provident funds as indicated in the table below: -

Table 1: Investment Performance – Geometric mean rates (%)

Funds	Before RBA	With RBA Applied
Churches' Provident Funds	12.2	10.4
Banks Provident Funds	13.3	12.2
Oil Companies	10.9	9.8
Other Corporations Provident Funds	15.4	13.8
Savings & Credit Societies	10.2	8.3
Schools' Provident Funds	13.4	12.3

Source: Research Data

When RBA investment guidelines are applied retrospectively the indication is that risk is reduced and the rates range from a low of 8.3% still with savings and credit societies' provident funds to a high of 13.8% in corporations' provident funds.

When Retirement Benefit Authority guidelines are applied, the annual average returns range between a low of 6.15% in oil companies provident funds which are affected by staff mobility to a high of 19.6% in other corporations' provident funds. The other specified categories rates are in between the two rates. With the geometric weighted mean rate of return model, average rates fall between 8.3% in savings and credit societies provident funds to a high of 13.8% in corporations. It is however apparent that the investment performance on the provident pension schemes is higher when the RBA rules were not in effect. Thus, whereas RBA guidelines are likely to lead to reduced risk as given by variability, the investment performance of the funds is likely to drop significantly. Fund managers face the challenge of maintaining the income at the level that existed before implementation of RBA Act or even earn higher income.

In church provident funds the two data sets have very low variability but have an erratic pattern both before and after subjecting the data to RBA investment guidelines. However, investment performance before RBA application is better than after RBA applied. The two data sets appear to move in the same direction in the same pattern.

	1997	1998	1999	2000	2001	Geometric Mean rate
Before	16.1	16.1	12.7	12.2	9.5	13.3
RBA Applied	12.5	12.1	12.1	12.1	12.1	12.2

Source: Research Data

Table 2: Investment performance of Church Provident Funds

Year	1993	1994	1995	1996	1997	1998	1999	2000	2002	Geometric Mean rate
Before	11.6	12.1	15.9	10.0	18.4	14.9	10.3	8.2	8.8	12.1
RBA Applied	8.7	6.4	13.6	10.9	14.5	10.9	11.1	8.4	9.0	10.4

Source: Research Data

Their annual returns before effect of RBA vary from 8.2% to a high of 18.4%. On the hand, when RBA guidelines are applied, the annual rates vary from 6.4% to 14.5%. This indicates that with or without RBA guidelines the provident funds investment performance operated and managed by churches will not be adversely affected with other variables held constant as portrayed in Chart I of Appendix III.

Banks provident funds – are operated by small banks which have a handful of employees. Banks which provided data and have been operating provident funds for about five years were eight in number while other four visited have operated provident funds for a year or less. These provident funds invest their funds through insurance companies. The investment performance is almost the same with or without effect of RBA guidelines:

Table 3: Investment Performance of Bank Provident Funds

Year	1997	1998	1999	2000	2001	Geometric Mean rate
Before	16.1	16.1	12.7	12.2	9.5	13.3
RBA Applied	12.5	12.1	12.1	12.1	12.1	12.2

Source: Research Data

Thus before effect of RBA guidelines, the annual rates of return vary between 16.1% to 9.5%. This indicates the downward effect of the economy. On the other hand, when RBA guidelines are applied the rates are almost the same throughout the period; that is 12.5% to 12.1% in 2001. The trend is clearly indicated in Chart II. In addition, their geometric mean rate is stable at between 13.3% before effect of RBA guidelines and 12.2% when RBA guidelines are applied. Thus, investment performance before application of RBA guidelines were better than after RBA applied rules. However, returns with the application of RBA guidelines are steady with minimal variance.

Oil companies, are affected by high staff mobility and thus suffer from premature withdrawals of funds. However, the rates of return show a similar pattern to that of other companies. Their annual rates start at a low of 4.9% in 1995 and rose to 15.6% and then dropped a bit to 10.5% in 2001. If RBA rules were applied retrospectively, the returns varied between 6.15% to 12.9%. The returns before effect and with RBA applied together with their geometric means rates are as below:

Table 4: Investment Performance of Oil Companies Provident Funds

Year	1995	1996	1997	1998	1999	2000	2001	Geometric Mean rate
Before	4.9	10.6	11.6	15.6	11.4	12.4	10.5	10.9
RBA Applied	6.15	8.2	12.9	12.2	9.7	8.9	10.3	9.8

Source: Research Data

The trend is the same as indicated in Chart III. That is investment performance before and after application of RBA is moving in the same direction.

The corporation provident funds have a similar pattern. The trend before application of RBA guidelines is erratic but with Retirement Benefit Authority rules applied the trend starts at a high return of 19.6%, then reduces downwards slowly until it steadies to a level ranging between 13.8% to 10.9%.

Before 8.9 12.7 8.6 10.2 13.1 7.7 10.5 8.0 10.2

Table 5: Investment Performance of Corporate Provident Funds

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	Geometric Mean rate
Before	14.1	13.8	19.8	17.7	11.7	17.2	20.3	12.8	11.4	14.1	15.4
RBA Applied	16.9	17.7	19.6	13.5	11.4	12.5	13.0	12.0	11.2	10.9	13.8

Source: Research Data

The lowest rate without application of RBA guidelines is 11.4% while the highest is 20.3%. When RBA guidelines are applied, the rates vary between 11.2% to a high 19.6%. Thus trend in changes in returns is the same as indicated in Chart IV in Appendix III. However, the returns estimated if RBA rules were present are more stable and comparable to those calculated using the geometric mean rate model.

Savings and Credit Society provident funds appear to have an erratic pattern before RBA guidelines were applied; ranging from a low of 7.7% to a high of 15.1%:

Table 7:

Investment Performance of Schools Provident Funds

Table 6:

Investment Performance of Savings and Credit Society Provident Funds

Year	1994	1995	1996	1997	1998	1999	2000	2001	Geometric mean Rate
Before	8.9	12.7	8.6	10.2	15.1	7.7	10.5	8.0	10.2
RBA Applied	8.3	8.3	6.5	6.9	7.6	9.9	9.1	9.7	8.3

Source: Research Data

When RBA guidelines were applied retrospectively, the pattern appears to smoothen out with rates of return varying from 6.5% to 9.9%. This is shown on Chart V in Appendix III as well as in geometric mean rates which vary between a low of 8.3% with application of RBA to a high of 10.2% before investment guidelines were applied.

The schools provident funds seem to have started at high rates but have been dropping slowly as the years progressed. The trend is not erratic and the differences before and after application of Retirement Benefit Authority guidelines is minimal. However, with the application of RBA guidelines, investments performance though on a downward trend, has smoothened out and risk appear to have been reduced drastically as indicated by the geometric mean rate of 10.4%.

Table 7: Investment Performance of Schools Provident Funds

Years	1993	1994	1995	1996	1997	1998	1999	2000	2001	Geometric Mean rate
Before	21.0	18.5	18.1	13.1	11.6	12.8	7.7	8.8	9.6	13.4
RBA Applied	15.4	15.5	15.5	11.7	10.7	11.1	10.4	10.0	10.4	10.4

Source: Research Data

The funds have a downwards sloping pattern as indicated in Chart VI of Appendix III. Before effects of RBA guidelines, the rates varied between a high of 21% to a low of 7.7%. When RBA guidelines were applied, the average returns varied from a high of 15.4% to a low of 10%. Thus the specified provident funds operate in an economy which is not expanding sending a signal that the investment performance is declining unless the economy becomes vibrant. In all provident funds, there is non that seem to be growing, their trends is downwards sloping as indicated by Chart VI in Appendix III.

4.3 Tests of Significance

Tests of significance have been carried out using the two data sets: data before effect of RBA guidelines and data adjusted by RBA guidelines retrospectively. This was meant to determine whether investment performance is significantly different before and after subjecting the data to RBA guidelines. Overall performance was measured by the use of Z distribution at a 95% confidence interval. Using the two data sets, the variables calculated include \bar{x} , δ , S \bar{x} and Z values of each targeted category where:

\bar{x}	=	Average rate of returns of each data set
δ	=	Standard deviation of each data sample
$S_{\bar{x}}$	=	Estimated standard error of the mean of each data set

The values of each of these variables are given in Appendix II for each category. At 5% significance level for a two tail test, $Z = \pm 1.96$. The analysis using the Z statistics was meant to lead to a rejection of the null hypothesis that the differences in means are not significant and take the alternative hypothesis that the differences in means of the two data sets is significant.

However, the calculated Z value for each category, though different from each other ranged between a low of 0.2199 with schools provident funds to a high of 0.7169 in savings and credit societies provident funds. These calculated Z values are within the two tail test at 95% confidence level. Therefore, there is nothing to suggest that there is any difference between the two means. The null hypothesis (H_0) would be accepted. That is, there is insufficient evidence to reject the null hypothesis and the conclusion is that 95% times of the sample lies within one standard error of estimate at 5% significance level. Thus, the selected sample is a good representative of the population and that the implications of Retirement Benefits Act (1997) on investment performance of provident pension funds in Kenya is reduced risk as well as improved investment performance.

CHAPTER FIVE

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

5.1 Summary and Conclusions:

The objective of the study was to determine the impact of the Retirement Benefit Authority (RBA) Act (1997) on investment performance of provident funds in Kenya during the period 1992 – 2001; determining whether investment performance before RBA investment guidelines became effective in 2001 was significantly different from performance with RBA investment guidelines applied retrospectively. The study establishes that provident funds had not adjusted their portfolios as per the RBA investment guidelines (2001) because the funds were still in the process of adhering to the requirements which included appointment of trustees, fund managers, custodians and involvement of an actuary.

The registered provident funds were categorized into six related groups which include savings and credit societies, banks, churches, schools, corporations and oil companies. On the analysis of data using the average geometric weighted rate of return model, the study revealed that the investment performance of the provident funds are likely to decrease with the application of the RBA guidelines.

An interesting observation is that earnings were more stable when RBA rules and regulations were applied implying that returns are expected to be more stable now that the rules and regulations are in force. This is an indication that risk has been significantly reduced through introduction of RBA Act (1997).

5.2 **Limitations:**

- In carrying out the study, secondary data on provident funds was collected from annual financial statements and end of period reports. Since these reports were being prepared under the direction of management, then this is a limitation in that data was liable to manipulation.
- The inability to obtain data for the period 1992 – 1996 especially for some corporations, oil companies and churches provident funds which were non-existent in that period and other institutions such as savings and credit societies, banks and schools – which were in existent for a shorter period of less than ten years, is a limitation in that longer duration of the required ten years data in all categories would have enabled a richer analysis of the provident funds' investment performance and comparison.
- Also due to time constraints to explore all the aspects of provident funds' investment performance, their management and regulators, it was not possible to have an inclusive picture of the whole industry.

5.3 **Recommendations:**

From the results of this study, it is clear that risk in investment of provident funds is drastically reduced with the application of RBA investment guidelines.

Thus: -

- Provident pension funds are recommended to hasten in the appointment of trustees, fund managers and custodians in order to ensure a proper flow of their investments portfolios as per the RBA investment guidelines. The funds are also encouraged to have actuarial valuation of their assets done in time as per the RBA requirements.
- Fund managers should be thorough in assessing the trends of change in the economy so as to ensure that the returns from investment portfolios increase despite the changes in the economy.
- The Retirement Benefit Authority (RBA) should exercise its role as a regulator and supervisor of provident pension funds to ensure that pensioners are well-off as the end recipient of the funds.

5.4 Suggestions for Further Research:

- Further research could be conducted to study the provident funds market in entirety which encompasses investments, earnings and related charges thereto and the market players including trustees, fund managers, custodians and regulators. The quality of management in the related institutions affect provident funds investment performance, thus the relationship between trustees, fund managers and the custodians should clearly be spelt out to avoid conflict of interest.

- It would be important to evaluate the factors considered by provident fund firms management in deciding the appointment and dismissal of fund managers and custodians and their limitations in the enhancement of provident funds investment performance.
- Further research would also be necessary in specific considerations that influence provident funds management in their decisions to start provident funds as opposed to alternative schemes.

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Appendix I

Form 1G – 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 of the Republic of Kenya	5%
2	Fixed Deposits, Time Deposits and Certificates of Deposits in institutions licensed under the Banking Act of the Republic of Kenya	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	15%
4	Kenya Government Securities and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	70%
5	Preference shares 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%
6	Unquoted shares of companies incorporated in Kenya and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	5%
7	Offshore investments in bank deposits, government securities, quoted equities and rated Corporate Bonds and offshore collective investment schemes reflecting these assets	15%
8	Immovable property in Kenya and units in property Unit Trust Schemes incorporated in Kenya and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority reflecting this category	30%
9	Guaranteed Funds	100%
10	Any other assets	5%

Source: Kenya Subsidiary Legislation 2000

Appendix II

Tables:

n	=	Number of years (observations)
\bar{x}_1	=	Average return before RBA came into effect in percentages
\bar{x}_2	=	Average return with RBA applied retrospectively in percentages
A & B	=	Refers to the two sets of data; before RBA came into effect (A) and with RBA applied retrospectively (B)
δ_1 & δ_2	=	Standard deviation of data sample A and B
S_{x1} & S_{x2}	=	Estimated standard error of the mean A and B

Table I – Churches Provident Funds:

	<u>A</u>	<u>B</u>
n	9	9
\bar{x}	12.2	10.4
δ	9.79028	7.26223
$S \bar{x}$	3.26333	2.42074
Z value	0.4433497	

Table II – Banks Provident Funds

	<u>A</u>	<u>B</u>
n	5	5
\bar{x}	13.3	12.2
δ	5.6293872	0.3605551
$S \bar{x}$	2.5133929	0.1611607
Z value	0.4368546	

Table III – Oil Companies

n	$\frac{A}{7}$	$\frac{B}{7}$
\bar{x}	10.9	9.8
δ	0.0783134	0.0572228
$S \bar{x}$	0.029659	0.0216261
Z value	0.3005464	

Table IV – Corporations

n	$\frac{A}{10}$	$\frac{B}{10}$
\bar{x}	15.4	13.8
δ	6.7316046	3.2939338
$S \bar{x}$	2.3797737	1.1669024
Z value	0.3818615	

Table V – Savings and Credit Societies

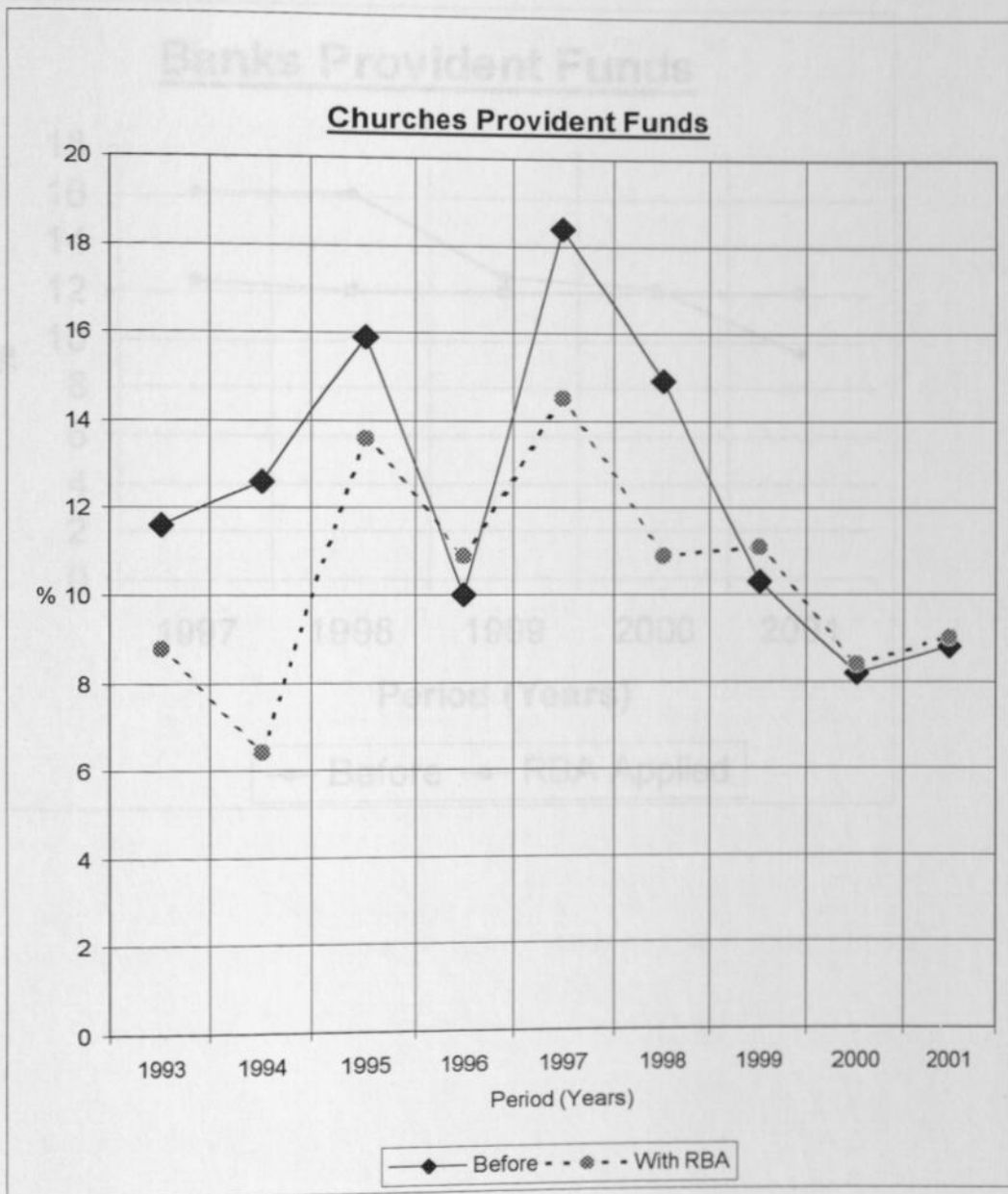
n	$\frac{A}{8}$	$\frac{B}{8}$
\bar{x}	10.2	8.3
δ	6.7316046	3.2939338
$S \bar{x}$	2.3797737	1.1669024
Z value	0.7169811	

Table VI – Schools

n	$\frac{A}{9}$	$\frac{B}{9}$
\bar{x}	13.4	12.3
δ	13.328166	6.8985506
$S \bar{x}$	4.4426667	2.299333
Z value	0.219868	

Appendix III

CHART II
CHART I



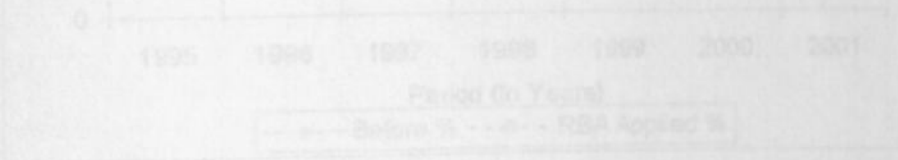
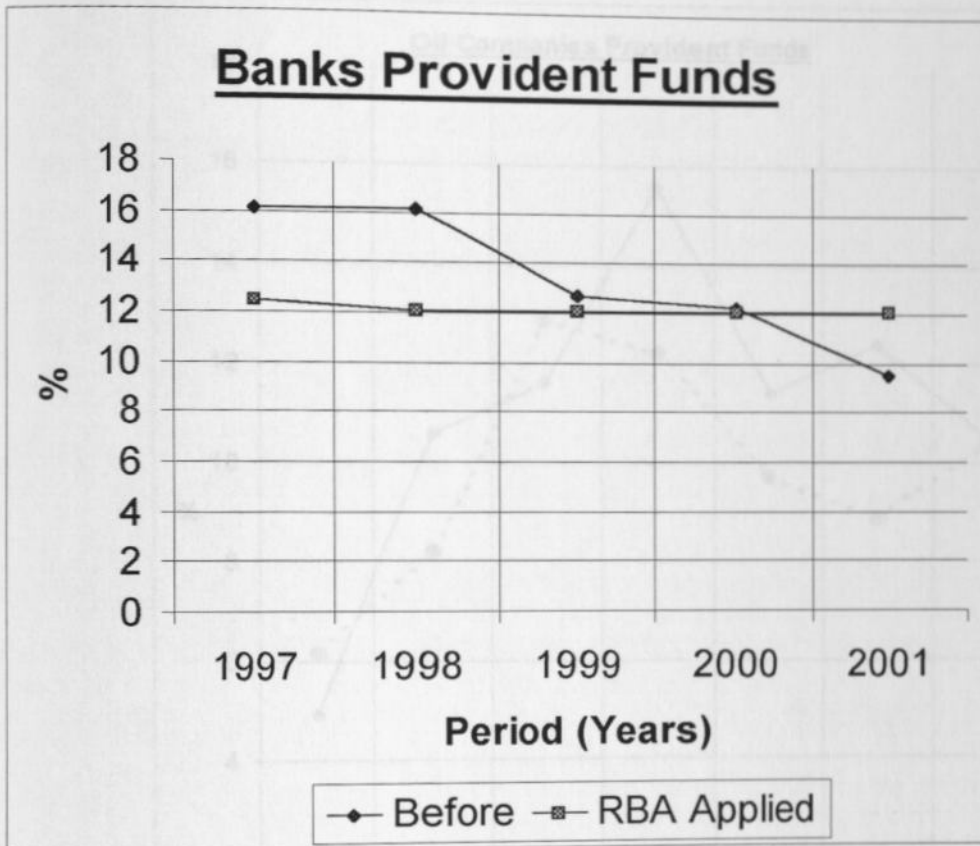


CHART III

CHART IV

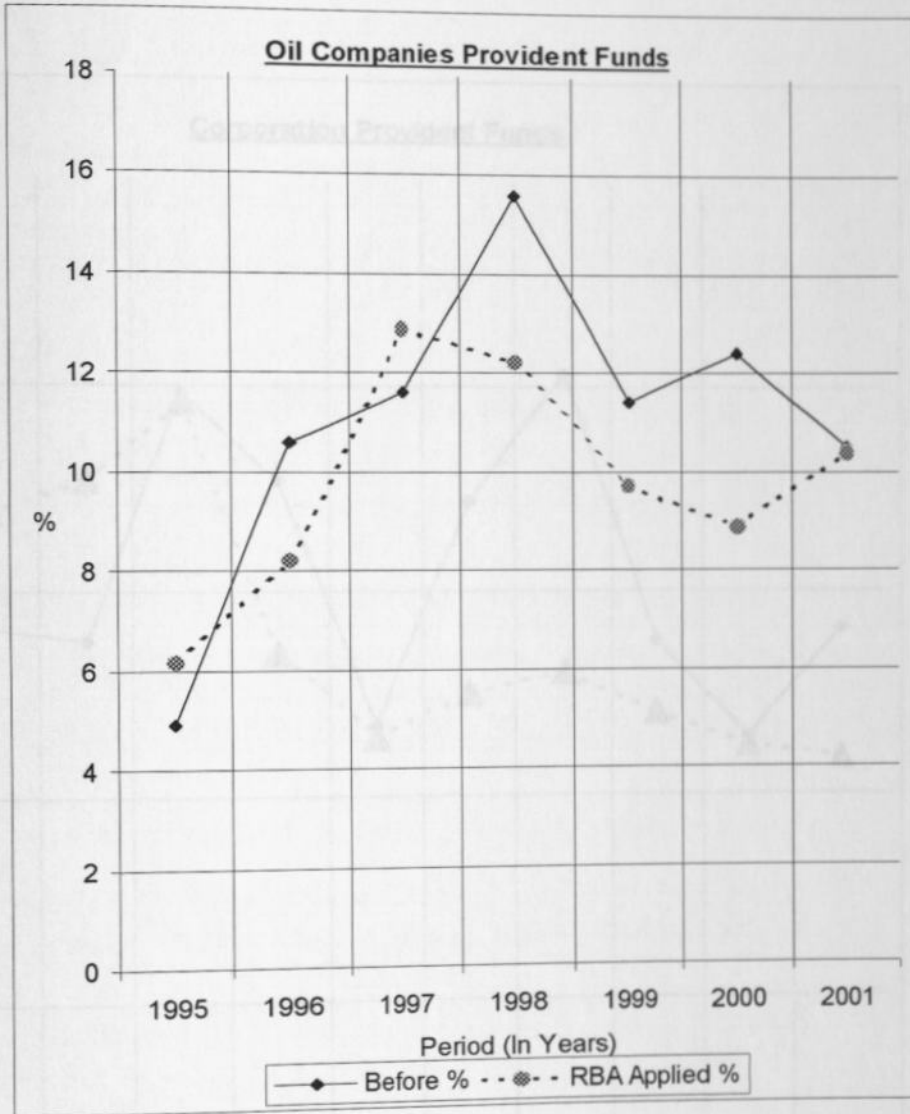


CHART IV

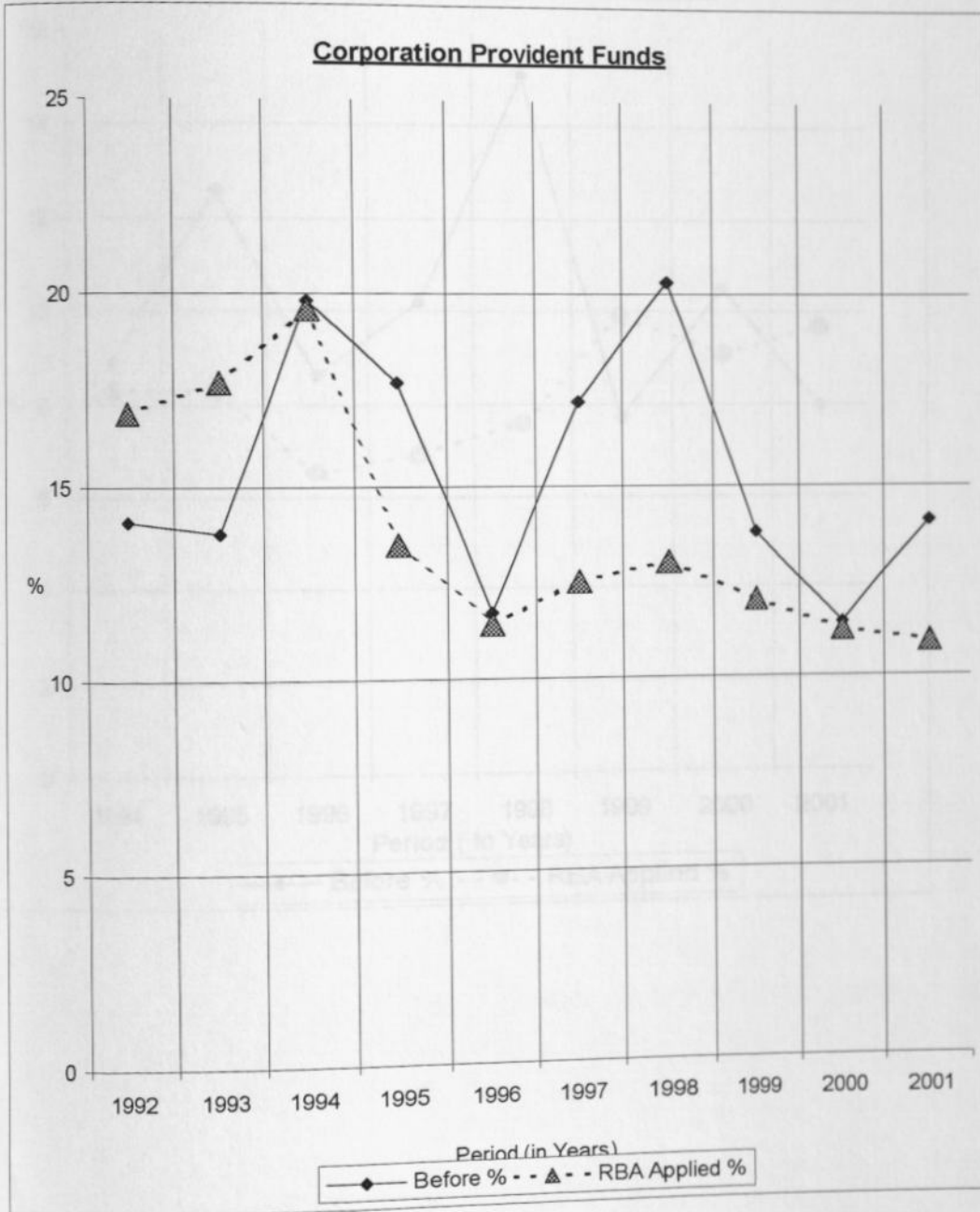


CHART V

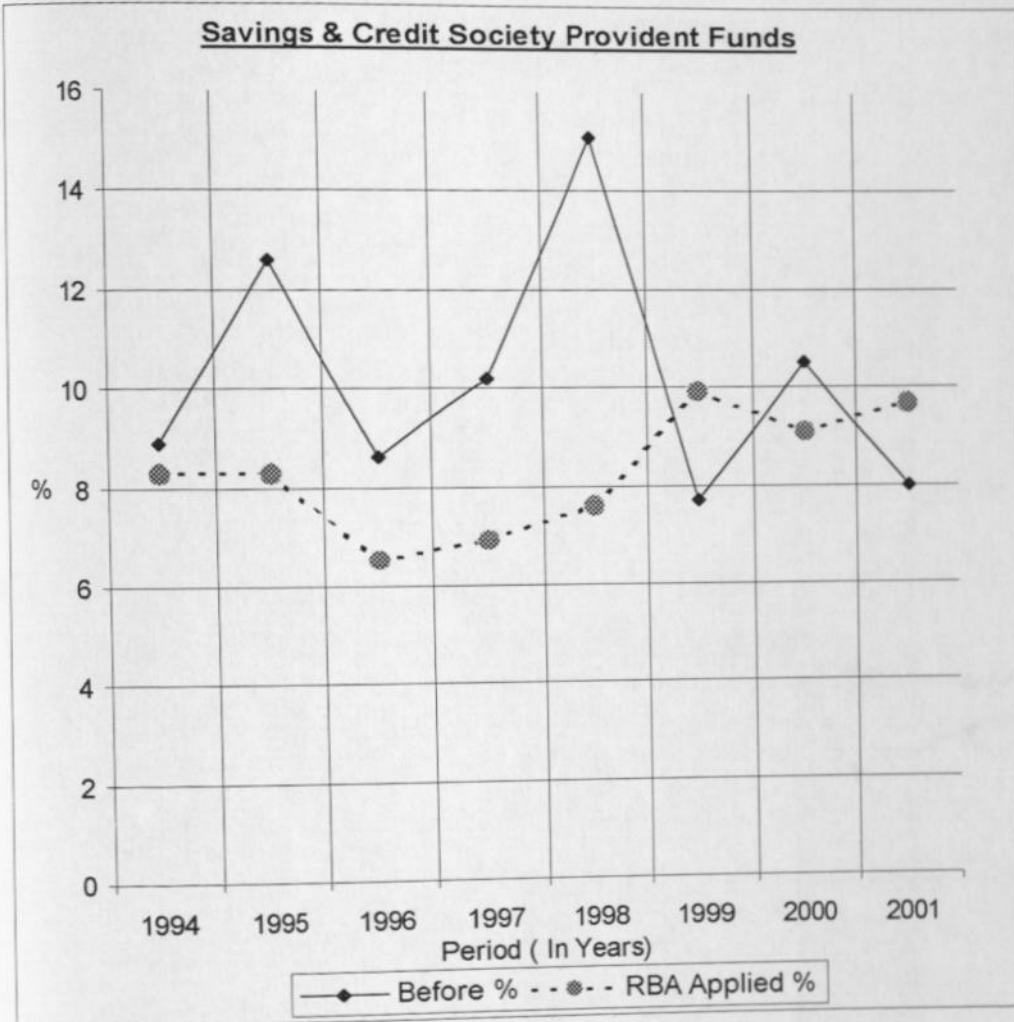


CHART VI

