THE IMPACT OF SHIFTING FROM DEFINED BENEFITS TO DEFINED CONTRIBUTIONS RETIREMENT PLAN ON RETIREMENT SCHEMES IN KENYA

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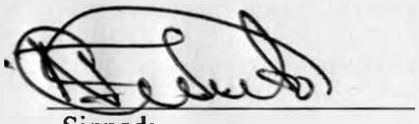
Declaration

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than The University of Nairobi for academic credit. I further declare that I followed all the applicable ethical guidelines in the conduct of the research.

Josphat N. Muriuki **D61 / 62868 / 2010**



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DEDICATION

This project is dedicated to my wife for all your support and encouragement towards making this research project a success.

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First and foremost, I acknowledge God for giving me this opportunity to live to see the completion of my project.

I also acknowledge the tireless effort of my supervisor Mr. Herrick O. Ondigo who instructed me and directed throughout the project.

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ABSTRACT

The retirement benefits structure (RBS) are amongst the major source of income at old age, better put, retirement age for vast of world population. As well, RBS funds contribute to the gross domestic product (GDP) of many countries, developed and developing alike. RBS returns accounts for well over 68% of the total income of retirees in Kenya, further RBS assets account for 30% of Kenya's GDP. Hence, it is important to identify if indeed the structure and thus structure choice would make a difference, either to the retiree, or the government or sponsors in case of a DC. This research will seek to investigate the impacts of shifting from a DB scheme to a DC retirement Scheme.

The research involved an investigation of two thousand and ten retirement schemes under the administration of Liaison Financial Services Ltd covering schemes of all design; DB, DC and Hybrid. The retirement schemes were invested by various fund managers some being under guaranteed and other segregated investment vehicle. Other data was as provided by RBA on all the retirement schemes. The investigation involved the analysis of fund values, number of schemes and administrative expenses. Further the analysis looked at the influence of Equity Performance, Income per Capita and Risk Free Rate on scheme fund value.

The research finding shows that DB schemes have continued to reduce on expense of DC Schemes. At the same time the administrative expenses in DB schemes have remained static as the number of DB schemes decrease. On the administrative expenses of DC Schemes, the number of scheme continued to increase as the administrative expenses remained constant. This shows the expenses in DC schemes being well managed which has a positive effects to members' retirement package. At the same time, most of the scheme where the employer shoulders the schemes expenses will be willing to shift to a DC scheme which in long time manages to reduce the administrative expenses thus reduction of company expenses.

In summary the both DB and DC schemes combined assets, the investor/members are more risk takers/seeker. The investor has continued over year to move from more conservative investment to more active investment like government securities and quoted equities. From the regression models, it's predictably, the most significant and the most predictive variable relates to equity performance. Further, signs of coefficient for Equity support the intuition: growth in defined contribution assets accelerates with higher equity valuations but dampened by the volatility in equity markets. The model also suggests that defined contribution saving decreased as the per capita income rose.

The shift from DB to DC plans is resulting in delayed and less predictable retirements for today's DC participants. While negatively or positively impacting individuals, this trend also has the potential to affect employers by making it harder to forecast and manage staffing needs, increasing workforce costs, and reducing employee engagement. From the study its evident the conversion from DB to DC shift all risks to the member but interesting the for the best performing DC schemes members end up taking home more than they would have do if they had remain in DC schemes.

The DC schemes aptly suited a generation much less prone to work with a single employer for the career. However, another very important factor behind the conversion of DB to DC is to enable members' control it offered to individual over destination of their investments. The attractiveness was the control increased as equity markets witnessed long bull runs and superior returns. Further research need to be undertaken for a longer period under study to enable one cover period when most of the schemes were established or founded. Also Scheme Members, Sponsors and Trustees need to be involved in the study so that they can give their feeling/views on the shift.

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ABBREVIATIONS

AVC	-	Additional Voluntary Contribution
DB	-	Defined Benefit
DC	-	Defined Contribution
PF	-	Provident Fund
PS	-	Pension Scheme
RBA	-	Retirement Benefit Authority
RBS	-	Retirement Benefit Scheme

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Traditional DB pension plans are gradually losing their dominance in the occupational pension systems of many countries; over the past few decades there has been a gradual shift towards DC pensions and, in some countries, DC plans now account for the majority of invested assets in private sector occupational pension plans. It is widely anticipated that recent and prospective regulatory and accounting reforms in the pension sectors of a number of countries will accelerate the ongoing shift from DB to DC plans. The transition from DB to DC plans in private sector pensions is shifting investment risk from the corporate sector to households.

1.1.1 Defined Contribution Plans

The DC arrangement is the conceptually simpler retirement plan. The employer, and sometimes also the employee, makes regular contributions into the employee's retirement account. The contributions are usually specified as a predetermined fraction of salary, although that fraction need not be constant over the course of a career. Contributions from both parties are tax-deductible and investment income accrues tax-free up to a certain limit. Often the employee is given a choice as to how his account is to be invested. In principle, contributions may be invested in any security, although in practice most plans limit investment options to various bond, stock, and money-market funds. At retirement, the employee either receives a lump sum or an annuity, the size of which depends upon the accumulated value of the funds in the retirement account. The employee thus bears all of the investment risk; the retirement account is by definition fully funded, and the firm has no obligation beyond making its periodic contribution.

Valuation of the DC plan is straightforward: simply measure the market value of the assets held in the retirement account. However, as a guide for personal financial planning, the DC plan sponsor often provides workers with the indicated size of a life annuity starting at retirement age that could be purchased now with the accumulation in their account under different scenarios. The actual size of the retirement annuity will, of course, depend upon the realized investment performance of the retirement fund, the interest rate at retirement, and the ultimate wage path of the employee.

1.1.2 Defined Benefit Plans

Whereas the DC framework focuses on the value of the assets currently endowing a retirement account, the DB plan focuses on the flow of benefits which the individual will receive upon retirement. A typical DB plan determines the employee's benefit as a function of both years of service and wage history. As a representative plan, consider one in which the employee receives 1 percent of average salary times the number of years of service. The actuarially expected life span at retirement is 80 years. Assuming the worker is fully vested, at any point in time his claim is a deferred nominal life annuity, insured up to certain limits by the Pension Benefit Guarantee Corporation. It is a deferred annuity because the employee cannot start receiving benefits until he reaches age the stated retirement age. It is nominal because the retirement benefit, which the employer is contractually bound to pay the employee, is fixed in dollar amount at any point in time up to and including retirement age. Retirement income in a DB plan is *independent* of market performance *and* usually adjusted for inflation and its relatively high (up to 70%) for the amount of contribution the employee makes. The higher income years prior to retirement really works to the employee's advantage.

The DB pensions are extremely expensive on the employer which is why most companies are, or have switched, to a defined contribution plan instead. The biggest risk with having a *non-government* defined benefit plan is that there's the possibility of the pension not being funded properly. Another disadvantage is that *some* DBP's only allow a portion of the pension to be transferred to a spouse if the beneficiary passes away.

1.1.3 Impacts of Shifting from DB to DC

It's also evident that accrued benefits in defined benefit plans do not depend on financial market returns, except in extreme circumstances that correspond to an insolvent DB plan. Yet benefits in DC plans are tied directly to financial market returns. Some analysts have suggested that DC plans expose prospective retirees to greater risk than DB plans precisely because of this financial market link. Several studies have examined the financial market risk in DC plans and the role of asset allocation choices in controlling this risk. Shiller (2005) examines a variety of asset allocation rules in the context of studying a private accounts Social Security system. Poterba, Rauh, Venti, and Wise (2005a) examine how age-related adjustments in asset allocation such as those that "lifecycle" mutual funds affect the distribution of DC plan balances at retirement. These studies, and others, highlight the importance of net-of-expense asset returns over the course of a DC plan participant's working life, asset allocation, and the participant's contribution rate in determining the plan balance at retirement. They also demonstrate the potential dispersion in DC plan values at retirement that can be attributed to financial market returns.

Just because a participant's accumulation in a DC plan is risky, however, does not imply that typical DC plan is riskier than a typical DB plan. Research on DB plans has long recognized that retirement accumulations in these plans are uncertain from the participant's perspective, but relatively few studies have tried to compare the risks of DC and DB plans. Balcer and Sahin (1979) use a lifetime perspective to make such comparisons, recognizing that earnings uncertainty and job transitions have an important effect on the accumulated wealth of DB plan participants. Bodie, Marcus, and Merton (1988) observe that DB and DC plans entail different risks from the standpoint of participants, but they emphasize that both plan types are risky. While DC plan participants face asset market risk, DB plan participants largely avoid such risk. Benefits are a liability of the sponsoring firm and they are not affected by the rate of return on plan assets except when the plan closes or the firm goes bankrupt because of prospective liabilities. Nevertheless, shocks to earnings, job changes, and early retirement can all

affect the value of DB plan accruals. So can the variation across employers in specific DB plan provisions, which affect post-retirement benefits.

The complex interaction between pension plan accruals in DB and DC plans, financial market returns, and worker employment experience makes it difficult to compare the relative risks of these plans in a systematic fashion. Samwick and Skinner (2004) did a study for data from the 1983 and 1989 Survey of Consumer Finances and Pension Provider Supplement (PPS) to summarize the set of DC and DB plans in the workplace. They found that for many workers the accumulation of assets in DC plans is likely to exceed the actuarial present value of the benefit entitlements that they would accrue in a DB plan. The findings suggested important differences between DB and DC plans. However, the underlying data were collected early in the expansion of the DC sector, so they may not describe current pension offerings.

The shift towards DC pensions does have some positive aspects, both for employees and for sponsor companies. Among them, it favors labour market mobility because it decreases so-called "accrual risk", ie the fact that pension benefits in DB plans tend to be back loaded, so that workers who change employers can lose a great portion of expected benefits if these are not transferable from one employer to another. However, such a shift also reallocates investment risk within the financial system from the corporate to the household sector, which may have implications for financial stability.

1.1.4 Pension Industry in Kenya

In Kenya the retirement benefits industry is composed of the civil service scheme, the National Social Security Fund (NSSF), occupational schemes and the individual pension schemes. The coverage of the pension schemes is currently estimated at less than 15% of the total labour force. The distribution of membership in the schemes as a proportion of the total membership in retirement benefits schemes in the country as below. The NSSF has the highest proportion of membership at 67% with estimated membership of 800,000 followed by the civil service pension scheme at 22%. The occupational retirement

benefits schemes and individual retirement benefits schemes, which are currently about 1350, account for about 11% of total scheme membership in the country, RBA Quarterly Report (2009).

Prior to 1997, the retirement benefits industry was largely unregulated. The only regulations governing the sector was those inscribed in the Income Tax Act and Trust Laws and these tended to be broad regulations which did not encompass developmental objectives. Some of the problems that the pension industry faced before a clear regulatory framework were put in place and which led to the enactment of the Retirement Benefits Act in 1997.

In the absence of a regulatory framework the industry was characterized by lack of protection of the interests of members and dominance of sponsors (employers) in DB scheme affairs. In addition, many schemes were run through insurance companies that tended to operate in a non-transparent manner. As a result investment decisions were in many cases made in the best interest of vested parties and not in the interest of members or of the economy as a whole.

The Retirement Benefit Act was enacted to provide a regulatory framework for the retirement benefits industry. This regulatory framework was needed to streamline the industry and gain the required confidence from stakeholders and employees to enable them save more for retirement and contribute towards the national effort of raising the domestic savings rate. The Act created the Retirement Benefits Authority to oversee the industry's management and development in a prudent and appropriate manner.

However several changes have been taking place in the Kenya pension industry with schemes Trustees being forced to appoint various new service providers, members opting either to transform their schemes from DB to DC and vice versa, PS to PF and vice versa and others opting to move from occupational schemes to individual pension plan. The government also through the Ministry of finance came up with a directive compelling all government sponsored DB scheme to transform to DC hence easing the government burden in funding the scheme each every time an actuarial valuation was undertaken. By

the government setting the precedent, it has become an interesting agenda where even the private sponsored DB schemes have opted for a conversion. As the mentioned above by different scholars the conversion ease the transfer the various risk for the employer to the member. The topic become an interesting are of research since the conversion in Kenya at the moment focus mostly on the benefits that accrue to the employer after conversion without much interest on the member benefits. Most employer after conversion enjoy the benefits of risk transfer, contribution holidays and also ease the administration jobs to the human recourses departments. On the other hand the risk is transferred to the scheme members without their consent. Their balances are sometime reduced to the benefits of the scheme sponsor for the actuary on the interest of sponsor to the scheme fully funded after valuation. This research will try to unearth the above in Kenya scheme conversion and try to see if the benefits stated are real. Administrative/Investment cost is another issue that this research proposes to study since this affect the scheme fund directly after the conversion.

1.2 Research Problem

The original belief was that defined contribution plans would necessarily dominate defined benefit plans because of the flexibility of DC plan design. We would have guessed that anything that could be accomplished with a DB plan could be replicated in a cleverly constructed DC plan. However, this belief is not borne out. DB plans create implicit securities that can be welfare improving and that are neither currently available in capital markets, nor likely to be created in capital markets in the future. Some examples of these "securities" are factor-share claims; price indexed claims, and perhaps deferred life annuities at fair interest rates. Moreover, some of the "real-world' complications in plan design, such as incentive effects, tend to favor DB over DC plans. Thus, the optimal plan design is likely to be firm specific.

The trend toward defined contribution plans and the results of these studies, it is important to have a basic understanding of the underlying economic reasons commonly cited in the literature that contribute to an explanation of this transition. Gustman and Steinmeier (1992) claim that at least half of the movement away from defined benefit

plans is due simply to shifts in employment. They noticed an increase in workers in smaller, nonunion firms in the service sector – featuring lower defined benefit plan coverage – and a corresponding decrease in large, unionized firms in the manufacturing sector – featuring higher defined benefit plan coverage (also noted by Ippolito 1995). This point is particularly interesting because it focuses on the employees as a significant cause of this change in pension coverage, since the employer obviously cannot readily alter its industrial classification, size, or unionization. As a consequence of the amount of this employment shift, Gustman and Steinmeier (1992) argue that no more than half of the trend is attributable to firms changing from defined benefit to defined contribution pensions.

As noted by previous studies in this topic there exists wealth of literature on this subject but very little on Kenya. Pension trustees are in a dilemma as to which way to go in investing pension funds to optimize returns without taking much risk after the conversion since the risk is automatically transferred to member against the previous arrangement where the employer bow all the risk . The question then frequently asked by trustees, fund managers, government, scheme members and other industry players is whether it is better to remain in DB or to shift a DC scheme. It is therefore vital to extensively study, analyze the present gaps in benefits and liability in order to assist pension fund players and the government of Kenya to realize better benefits for scheme members as guaranteed in the RBA rule and also as authorized to the scheme Trustees to safeguard members' interest. The conversion of DB to DC has been taking place for a period of more than two decades. Kenya has not been left behind and the government has taken a measure to make sure all Parastatal are financial sound and they are able to generate their own revenue. To enforce this financial viability treasury issued a directive that all of their institution that operates DB should convert their scheme by 31st December, 2011.
This study has addressed the impacts of shifting converting from a DBS to DCS. How the shift has impacted on Pension Scheme Capital Market Variables, Administrative Cost Scheme Investment Performance and Retirement Scheme Member Funds?

1.3 Objectives

The main objective of the study was to investigate the impacts of converting a defined benefits scheme to a defined contributions plan.

1.3.1 Specific Objectives

1. To investigate whether shift from DB to DC has any effects to the administrative cost of a retirement benefits scheme.
2. To find out if the shift from DB to DC has effect on the investment performance of a Fund?
3. To establish factors influencing individuals' choice of defined contribution plans against Defined Benefits scheme insofar as it is driven by scheme assets allocation in determining member retirement/withdrawal package?
4. To investigate retirement benefits/liabilities in both a DB and DC Plans and find out whether the shift from either has effect to the scheme sponsor and the members.

1.4 Value of the Study

A number of explanations have been offered for the shift from DB to DC pension plans. From a long-term perspective, factors such as increased workforce mobility associated with demographic and industrial change appear to have been important drivers of the shift away from DB pension plans, which has been particularly pronounced in the U.S. All else being equal, mobile workers have less of a preference for DB pensions because traditional benefit formulas are "backloaded", favouring long-tenured employees, and because DB benefits are not portable from one employer to another. The recent acceleration of the trend towards DC plans appears to be linked to a confluence of factors (e.g., pension under-funding and its persistence due to a decline in long-term interest rates, the move to more market based accounting, increasing regulatory burden and

uncertainty and recognition of the effects of increased longevity on plan costs) that has prompted plan sponsors to improve their management of the financial risks in DB plans. The shift towards DC pensions does have some positive aspects, both for employees and for sponsor companies.

The employers on the side will benefits by gaining an understanding of the conversion process and a piece of knowledge/information as practiced from other countries. The study sought to gain understanding of the benefits to the employer by running the various types of schemes. During the conversion period, most of the schemes after actuarial valuation are underfunded, we sought to explore this financial risk to the employer and how to have the scheme fully funded (100%) as per the regulation.

There is a large body of knowledge on the effects of converting a DB Plan to DC Plan but the same have narrowly concentrated on First World Countries and very little has been discussed on these issues in Africa and to be particular Kenya. This research has come up with a body of knowledge discussing the conversion and it's affected to various retirement schemes the retirement industry as a whole in the Kenyan Market. This study has provided a reference point on scheme conversion to all the Kenya industry players as very little has been studied on the topic. At the same time this study comes at a special time when the regulator (RBA) trying to come up with a practice note for scheme conversion for the pension industry and hence it was also act as a pivot/reference point for the upcoming practice note.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In this section we have reviewed prior studies based on the shift away from DB schemes to DC schemes. Different research have tried to study both the DB and DC scheme and the reasons that make one attractive than the other. Researches have been done on cost, structure, benefits, governance and the regulatory framework of each and every type of scheme. This chapter compares different studies that are remarkable in the shift from DB schemes analyzed from different levels. This adds value to the research when considering all these theories as complements. We have also looked at the various empirical evidences as exhibited by various researches and their conclusion thereby.

2.2 Theoretical Review

In this section we have reviewed prior studies theories based on the shift away from DB schemes to DC schemes. To offer more insight in the possible reasons of the shift the macro-economic factors described by Otaszewski (2001) and Brown and Liu (2003) and micro-economic factors used by Klumpes et al. (2001) and Swinkels (2006) are discussed. When comparing these different studies it is remarkable that the shift away from DB schemes can be analyzed from different levels.

2.2.1 The New Economic Theory

New Economy theory takes into consideration the changes in the economic order such as growth in the service sector which employ small scale workforce unlike the manufacturing companies that employed large workforce where the per unit cost is low. DBS work well with large workforce. The young workforce is perceived to be more mobile and in need of a new kind of pension plans that suit them. The nature of DCS allow for easy mobility. Other reasons cited include peer pressure as a result of wide

publicity on scheme conversions; increased longevity of pensioners that have resulted in increased costs of funding pensioners. Age increases in retirement said to be dramatic. Joyce Brennan of Mercer International said: "In the 1970s when many defined benefit pension schemes were established, the expectation was that a pension would be paid for 13 years for a man who retired at age 65. The expectation now for a man in his 20s is that he will receive pension for double that period of time."

2.2.2 The Risk Averse Employers Theory

The Risk Averse Theory points out how the employers with better understanding of the risks associated with the running of retirement benefits schemes given an opportunity transfer the risks to other entities or avoid all together. As mentioned earlier, the risks and associated costs of DBS are fully shouldered by employers. Employers have to make good the promise to pay accrued benefits regardless of the prevailing business and investment environments which are inversely related. DBS thrive well under favorable investment and business conditions. A study by Bikker et al, showed that asset allocation by pension funds in equity followed the performance of the stock market. During the 1990s pension funds in Dutch invested heavily in the equity market to tap abundant equity returns of the stock market. This led to premium reductions and even contribution holidays for pension plan sponsors. However, the risks of equity holdings surfaced after the collapse of the stock market in 2000–02, which resulted in large losses for pension funds. In reaction, pension benefits were curtailed and contributions steeply increased. The impact of investment risks during volatile capital markets and especially the equity market in the late 1990's into 2000 accelerated conversion from DBS to DCS. (Ross et al). Mercer, the pension and investment experts, at their annual Defined Benefit Conference launched their 2010 survey which revealed that 80% of defined benefit pension plans fail to meet the statutory funding standard and half of them must submit a recovery plan to the Pensions Board by 30th June.

2.2.3 The Excessive Regulation Theory

The Excessive Regulation Theory, described by Ostaszewski (2001) suggests that the government intervention has reduced the attractiveness of DB plans. Governments have approved regulations in order to attempt and guarantee that contributions made to pension schemes by employees are protected. To protect the employees there was need for stricter legal, funding and solvency laws as well as regulations about what kind of assets can be included in a pension scheme. These regulations are made more complicated by tax laws regarding deductibility of employer's contributions in pension schemes. The higher regulatory requirements lead to higher legal expenses.

2.2.4 The Rational Worker Theory

The fourth theory, the Rational Worker Theory, used by Ostaszweski (2001) to investigate the decline in DB schemes suggests that the shift in the way relative returns to macro-economic factors like capital and labour are allocated in the national economy have caused the shift to DC schemes. This theory is based on the rational choice theory. When considering, both DB scheme participation and DC scheme participation as a security, DC is a perfect conduit of underlying asset performance, while DB participation is a derivative security creating wage dependant cash flows out of the underlying assets mix (Ostaszweski, 2001). So, according to the rational choice theory in a world with both a weak wage growth and a prosperous capital market, rational economic decision makers would choose for DC schemes instead of DB schemes.

2.2.5 The Integration Theory

The integration theory states that the assets of the pension scheme are inseparable from the assets of the firm, which is sponsoring the defined benefit scheme. This theory is consistent with the corporate finance perspective, which implies that the firm effectively owes the pension plan. According to this integrated balance sheet approach, the firm's pension benefit obligations are money-fixed liabilities of shareholders. When assuming that a sponsor company has the possibility of rearranging pension related debts, than it

can be predicted that the termination decisions by UK companies are basically explained by the need to curtail unfunded obligations in order to improve the financial health of the company (Klumpes et al. 2003). So, the shift away from DB schemes may be explained by firm-specific characteristics.

2.2.6 The Separation Theory

The separation theory argues that the assets of the pension scheme are separated from the assets of the sponsoring company. The rationale for the separation theory is derived from the labour economics literature, which implies that sponsor companies have implicit long term contracts with their employees (Klumpes, 2001). This theory assumes that workers have partly funded their own pensions through acceptance of lower current wage in exchange for future pension benefits. This implies that employer companies and sponsored pension funds are separate entities, consistent with the fact that sponsoring firms and pension funds are legally required to be managed separately. So, the assets surpluses and deficits are belonging to the employees (Klumpes et al., 2007). Therefore, the company is assumed to provide an under-funded pension scheme. The reason for this is that the sponsor company cannot use the assets placed in a pension scheme for other purposes (Klumpes et al. 2003). So, the switch away from DB schemes may be explained by the pension scheme-specific characteristics.

2.2.7 The Insurance Theory

An alternative on the integration theory is the insurance theory. The insurance theory shares the view that pension scheme assets and liabilities lie completely with the sponsoring company, but additionally pretends that employees may share the ownership of any pension scheme deficit or surplus with the shareholders of the sponsoring company in the form of respectively put or call options. Consequently, companies switch decisions represent their exercise of a 'default' option (Klumpes et al., 2003). Klumpes et al. (2003) refers to Bodie (1990a) who views pensions offered under DB schemes as an insurance company subsidiary. The pensions offered under these schemes are thus

viewed as participating annuities that offer a guaranteed minimum nominal benefit determined by the scheme's benefit formula. This guaranteed benefit is permanently augmented from time to time, at the discretion of management, depending on the financial condition of the plan sponsor, the increase in the living cost of retirees, and the performance of the plan assets (Klumpes et al. 2003). Therefore, even after controlling for financial characteristics of the company as identified by the integration theory, sponsor companies have the option to default on the part of the pension liabilities which is not covered by the pension fund's collateral (Klumpes et al., 2003). So, the switch decisions, based on the insurance theory, are associated with the tendency to default on their pension liabilities by pension scheme sponsors.

2.3 Historical Development of DB Schemes

The rationales for setting up retirement benefits arrangement are similar to both the government and private sector employers. Governments set up schemes to secure the independence of public servants; make career in public service attractive against the back drop that the private sector pay higher remuneration; shift the cost of remunerating public servants into the future; and retiring older civil servants in a politically and socially acceptable way (Robert Palacios et al, 2006).

Similarly the intention of the sponsors of occupational private sector schemes even to the current time is to attract and retain talent and skilled workers. In a survey conducted in the UK where 251 executives were interviewed showed that by establishing retirement benefits plans made them remain competitive with other companies in their sector. A generous, well-run pension scheme is a source of differentiation and a tool for recruitment and retention. Companies do also recognize that they have a duty to provide for their employees in retirement.

Retirement Benefits schemes are designed as Defined Benefits Schemes (DBS) or Defined Contributions Schemes (DCS) or more recently Hybrid Schemes (HS) which have both features of DB and DC schemes in varying degrees. However more often than

not, Hybrid schemes are classified as DBS because of the guarantee component. The main differentiator is that a DBS sponsor shoulders all the risks associated with the scheme and in the DCS it the individual employees who bear all the risks. The choice on the scheme design vests with the sponsors of retirement benefits schemes in many instances with the professional advice of actuaries. Sponsors include employers, government, institutions such as insurance companies and associations or organized groups. Generally a sponsor is the legal entity that sets up a scheme.

The origin of Defined Benefit Schemes (DBS) can be traced way back when the US government promised to provide retirement benefits to veterans who had served in the Revolutionary War (Investopedia). The military was typically the first to receive pension coverage, especially with regard to disability and survivor benefits. Governments extended pension coverage to other government workers through the establishment of government sponsored Civil Service Pension schemes which were designed as DBS. Government's choice of scheme at that time influenced the scheme design in the private sector.

Later in the 1980's to the present, for the reason that not all employers established own schemes for their employees, governments gave more recognition through tax incentives favored the establishment of DCS. Governments encouraged the establishment of Individual Pension Plans designed as defined contribution schemes (DCS) such as 401K in the United States, Stakeholder Pension Plans in the United Kingdom and Superannuation Schemes in Australia where employers with no schemes were mandated to enjoin their employees. Employers with DBS started DCS as supplementary channels for their employees to save additional income for retirement. Over time, new and particularly small scale employers joining the market began establishing DCS schemes for their employees as the primary scheme as opposed to the DBS.

The growth of DCS escalated with closures and conversions of DBS to DCS. Among the first conversions of DBS to DCS were in the United States of American and Australia. Conversion spread to the rest of the European countries and now in Africa- South African

and Kenya among others. In the United States for example, it is estimated that the DCS grew 600 percent between 1987 and 2002 (Ross et all, 2002). The United Kingdom (UK) is known to have experienced significant conversion from DBS to DCS in the 2000's. The Association of Consulting Actuaries ACA Pension trends survey 2009, for the United Kingdom, concluded that 87 per cent of defined benefits schemes had closed to new members an increase of 6 percent two years back and that the trend of closures was expected to continue. Of the 87, 18 per cent was closed to future accruals. 33 percent were under review some of which would result to closures and the rest 39 per cent were considering changes to future accrual.

From the 1990's and to the present governments too began converting their sponsored DBS to DCS. In the mid 1990's conversions from DBS to DCS occurred across government units at the state and local levels. India succeeded in introducing a new DCS pension scheme for new employees joining the Central Government in 2004 closing the Public Scheme to new employees. Kenya unsuccessfully attempted to have its Civil Service Pension Scheme convert to DCS from DBS in 2008. The government is still pursuing the matter. In Britain, employees and pensioners in the private sector are petulant about the Public Schemes funded by the tax payers' money being more generous than the private sector based schemes which threatens the very existence of the Public DBS. Combining all these together, there is notable decline of DBS in favour of DCS world over.

2.4 Reasons of Shifts from DB Pension Schemes to Other Pension Schemes

There are several studies that investigated the Ostaszewski (2001) provides four theories as possible reasons for the decline in DB pension plans in the US. These theories are described above. Ostaszewski (2001) investigates the correlation of returns to labour (in the form of wages) versus the participation rate in DB plans. He tests the causal relationship between the falling relative importance of wages in national income and the falling relative importance of DB schemes in pensions. Ostaszewski (2001) argues that

the shift to a DC scheme is a movement to a superior security when considering that a DC scheme faces higher returns with the same or lower risk as the DB scheme.

Ostaszewski (2001) finds a significant correlation between the shift away from DB pension schemes and shift away from compensation labour in the form of wages. Ostaszewski (2001) argues that as the emerging forms of compensation do not lend themselves easily to be the basis for deriving the benefit in a DB scheme; it would seem likely that different forms of pensions serve the workers who obtain their compensation in a different form. He concludes finally that the most important reason for the shift from DB schemes to DC schemes is caused by the macroeconomic reward systems in the use of DB versus DC schemes.

Another research, as reaction on Ostaszewski (2001), based on the decline in DB schemes is done by Brown and Liu (2001) based on Canadian data. They used the Rational Worker Theory described by Ostaszewski (2001). The causal relationship between the shift away from DB pension schemes and shift away from compensation labour in the form of wages found by Ostaszewski (2001) does not appear for Canada. Instead, Brown and Liu (2001) are arguing that pension and tax legislation, with the goal to protect the economic security of beneficiaries, encouraging retirement savings, and safeguarding against discrimination plays an important role in the shift from DB schemes to DC schemes. They argue that the differences in pension legislation and tax laws between Canada and US have influenced employers in considering pension costs and risks. Brown and Liu (2001) mention also the differences in union participations, the investment climate, and the mentality and character of Canada versus US as the reason for the more rapid decrease of DB schemes in US than in Canada.

Klumpes et al. (2003) have tested different hypothesis to explain the UK firms' DB pension schemes termination decisions. The test period is from 1994 to 2001, and they mention this period as an extended time period when defined benefit pension funding was subject to considerable regulatory uncertainty, political investigation and controversial changes in accounting for pensions. They used the integration, separation and insurance

theories described in section. These theories are referring to alternative theoretical perspectives that bear important implications on pension accounting theory introduced by Klumpes (2001). These hypotheses are offering different explanations about the economic incentives according to pension plan rearrangement decisions and their relation with prior accounting policy choices. Besides, in their research Klumpes et al. (2003) investigate whether there is a relationship between UK companies' shift decision and their prior managerial discretion to switch towards a market based actuarial valuation method. They argue that companies that change their actuarial method are likely to be able to afford the balance sheet volatility by the adoption of market-based accounting methods. These market-based accounting methods are actuarial methods for the computation of asset value and the future value of liabilities using market rates.

Therefore, they predict companies that switched towards market-based accounting regime in the past are less likely to switch away from DB schemes than companies that not changed their actuarial methods. Klumpes et al. (2003) based their research on a sample of 80 UK sponsoring companies. This sample is divided into 40 companies which shifted away from DB schemes and 40 companies which did not shift away from DB schemes. To test the implications of the integration, separation and insurance hypotheses they employed three company-specific characteristics: stock funding ratio, leverage and discount rate. And two pension fund-specific characteristics: flow funding ratio, and fund maturity. And at last, they construct a variable to proxy for companies' option to default on its pension liabilities to test the insurance hypothesis. They suggest that companies switch away from DB schemes because of the need to curtail unfunded pension liabilities and to exploit option value via default their pension promises to workers. In addition, they find evidence that a company's switch decision is conditional upon company's prior voluntary accounting choice, i.e. the actuarial valuation method switch (Klumpes et al., 2003).

Another important point of interest in the study of Klumpes et al. (2003) is the control that they use for other explanations for clarifying managerial motives to shift away from DB schemes. Based on the research of Tepper and Affleck (1974), Klumpes et al. (2003)

expect a negative association between pension scheme termination decisions and companies' investment opportunities, implied by a significant pension deficits, rather than surpluses. This is because Tepper and Affleck are assuming that firms with restricted financial resources might not want to fully fund their assets. Therefore, Klumpes et al. (2003) want to control shifting firms for new investments. The control variable has a negative sign especially for firms that had not switched their actuarial valuation methods.

Klumpes et al. (2003) explain that their control variable might have served as a proxy for financial distress, which puts the company's future interest and principal payment at risk. This means that motives of shifting companies would be more consistent with the separation hypothesis, which implies that the shift away from DB schemes represents transferring the pension risk from employers to employees.

2.5 Defined Benefit versus Defined Contribution

Before discussing the previous techniques used to analyze this trend toward defined contribution plans and the results of these studies, it is important to have a basic understanding of the underlying economic reasons commonly cited in the literature that contribute to an explanation of this transition. Gustman and Steinmeier (1992) claim that at least half of the movement away from defined benefit plans is due simply to shifts in employment. They noticed an increase in workers in smaller, nonunion firms in the service sector – featuring lower defined benefit plan coverage – and a corresponding decrease in large, unionized firms in the manufacturing sector – featuring higher defined benefit plan coverage (also noted by Ippolito 1995). This point is particularly interesting because it focuses on the employees as a significant cause of this change in pension coverage, since the employer obviously cannot readily alter its industrial classification, size, or unionization.

As a consequence of the amount of this employment shift, Gustman and Steinmeier (1992) argue that no more than half of the trend is attributable to firms changing from defined benefit to defined contribution pensions. Kruse (1995) confirms this finding and

takes it one step further. He believes that the decrease of plan participants in companies featuring defined benefit plans is the *primary* cause of declining defined benefit pension coverage. Again, the logical result of this argument is that not much of the growth in defined contribution pension coverage is the result of firms terminating their defined benefit plans.

Salome Chirchir (2010) in her study conversion of DB to DC Schemes procedure concluded that the regulator needed to provide legislation guidelines and standard of scheme conversion, she also emphasize that the regulator needed to keep and maintain data on industry conversion since that didn't exist and proper alternative option for conversion needed to be provided like members moving to individual schemes and by cost sharing model to have the members' benefits continue accruing with sponsor and employee contributions.

There are three main advantages of defined contribution plans over defined benefit plans that Kruse (1995) notes.

1. Defined contribution plans by design have lower administrative costs.
2. Feature favoring defined contribution pensions that Kruse cites is plan flexibility. Under a defined contribution scheme, pension contributions can be based on employee performance rather than on a scheduled formula.
3. Kruse points out that defined contribution plans can allow for more than 10 percent of pension assets to be invested in or loaned to the plan sponsor. In this way, firms choosing to offer defined contribution pensions have a potential source of capital that is less costly and would not be available if they had defined benefit plans. Other studies support this point by finding that financial factors do contribute heavily to a firm's decision to terminate overfunded defined benefit plans Peterson (1989) and Hamdallah and Ruland (1986).

2.6 Empirical Evidence

Keizi (2008) of the RBA R&D department did a research whether the design of Pension Schemes really matter looking at only two nodes that attribute to the RBS Structures, namely DB and an DC . In his research that involved collection data from the existing RBS's the researcher looked at how the structure of a Pension Scheme matters where the researcher looked at the costs and benefits of DB and DC. On the other hand Keizi (2008) identified that DC schemes have the advantage of complete portability when changing jobs but notes that individual DC schemes (such as personal pension schemes) tend to have much higher operating costs than occupational DB schemes; and further identifies that occupational DC schemes have lower operating costs than occupational DB schemes on account of their much simpler structure.

In addition Keizi (2008) identified that, although individual DC schemes are portable between jobs, they are not fully portable between scheme providers or even between different investment funds operated by the same provider Transfers between personal pension scheme providers, for example, can incur charges of between 25 and 33% of the value of the assets transferred (Keizi, 2008). Further, even if a worker changes jobs only once in mid-career and moves out of a DB scheme, he would receive a reduced pension of: 71-79% of the full service pension if he moved to an employer-run DC pension (with the same total contribution rate as the DB scheme and no extra charges), 61-68% if he moved to a personal pension scheme (where the employer also contributes), and only 37 - 44% if he moved to a personal pension scheme (without employer contributions) (Keizi, 2008).

Chatterton et al (2010) in the summary report presents findings from research into the operating costs of trust-based occupational pension schemes in which on *Levies* identified as below. The researchers on asking the respondent how much was spent on levies in 2008 identified that the most costly levy was the Pension Protection Fund (PPF) levy, with trustee boards paying a mean of £316,817

Further Chatterton et al (2010) reported that Both DB and DC schemes are eligible to pay the General levy. Responding trustee boards with only DB schemes paid more, on average, than those with only DC schemes (a mean of £12,647 compared to £794). The average amount paid increased with size (in terms of the number of members in the schemes managed by the trustee board) (Chatterton et al 2010).

In addition Chatterton et al (2010) reports that when those with at least one DB scheme were asked about expenditure for the Fraud Compensation levy, 35 per cent of responding schemes said that they had spent nothing, and 63 per cent said 'don't know'. As only two per cent of responding schemes reported a figure we have not reported an expenditure figure for the Fraud Compensation levy.

Franzen (2010), in their paper inquired into the forces that drive the practice of risk management at defined benefit (DB) pension funds in Germany, Netherlands, United Kingdom and the United States in the aftermath of the perfect pension storm.

Franzen (2010), identified that the UK pension fund market is the largest in the European Union with GBP1trr assets under management in 2007. And further, that the number of pension funds providing DB pensions to employees in the private sector is estimated at 8.490, thereof nearly 70% with less than 100 members. Over 60 percent of active employee members are concentrated in a small number of very large pension funds with more than 10,000 members.

Thus the Empirical evidence for this study major looks at the results for United Kingdom for the Pension Plans Designs and the Risks and Risk Management. As for Pension Plan Designs Franzen (2010) identified that the majority of pension plans in the United Kingdom are final salary plans, where the pension at normal retirement age is related to pension earnings at the time of leaving service or shortly before. Further, the typical rate of accrual at private sector funds is 1/60th of annual salary.

According to Franzen (2010), Investment and longevity risk are usually borne by the employer only. Occupational pension schemes in the United Kingdom have employed different variants in negotiating changes to plan design to re-distribute risk between the stakeholders. That is; Pension deals at companies' pension funds mostly included burden sharing in the sense that early retirement options became less onerous or that employees' contributions were being increased in exchange for the willingness of the plan sponsor to keep the pension plan open for new accruals, but investment and longevity risk mostly stayed with the company.

Over the last years, also average-salary plans have become more wide-spread Sutcliffe (2007). With the rapid closure of DB schemes the market structure will change accordingly. As DB plans are mostly replaced by a DC plan, DC pension plans spread rapidly in the United Kingdom over the last years. Whereas public pension plans remained DB, already 25% of the employees in the private sector were in 2007 covered by a DC plan Franzen (2010)

On *Risk Management* Franzen (2010) reported that in general, reservations in the United Kingdom towards asset-liability modeling which were also formulated in the Myners report still persist. The Pensions Regulator's Code of Practice on Funding Defined Benefits reiterates Myners' criticism that the results of the ALM (Asset – Liability Management) depend decisively on the assumptions made and explicitly warns trustees that ALM may not be mistaken as a forecasting tool rather they are illustrative of possible outcomes'and should not take on a credibility in the eyes of trustees and others which is unwarranted'

In addition Franzen (2010) in the report points out that also some interviewees expressed concern against the currently available quantitative risk management tools, which they say apply risk definitions and risk management approaches that are not suitable for the needs of pension funds. This criticism refers to the treatment of market risk and the definition of the investment horizon. Especially industry-wide pension funds who are not concerned with the sponsor's covenant tend to ignore the risk management systems

derived from the bank's trading departments conceptualizing themselves as the classical long term investor.

2.9 Conclusion

From various authors/researchers have come up with various reasons why various schemes have opted for a DC scheme than a DB and also why others have converted their DB schemes to DC Plans. Among the reasons featured by different authors are Funding Level, Wage variation, employers tendency to shift the risk to their employees, high administrative cost in DB schemes, Regulatory and Political interference in DB schemes, different ways of actuarial valuation in DB plans making employers run from unfunded schemes, employment simplicity and investment opportunities that come with DC plans and employees feeling disadvantaged by having few Trustees in DB schemes.

As noted above, the same reasons and experiences elsewhere are expected to be facing schemes in Kenya, however very little have been studied in the country to explain or confirm the reason behind the shift. Most of the DB schemes in Kenya are government sponsored contrary to other countries where the private sector also holds a good number of DB schemes. The government through treasury issued a directive for all the DB schemes to be transferred to DC making this a more interesting topic to study at the same time exploring the various reasons warranting this directive. It has been appropriate to study the shift of DB to DC in the country and try to compare the reasons behind the shift as compared to other countries in the world. The study has established the effects of the shift both to the employees/members and employers/sponsor.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the methods used to answer research questions related to the objective of determining the impacts of converting a DB plan to DC plan. It specifically describes the research design, population and sampling, instrument, data collection procedures and data analysis.

3.2 The Research Design

This study was conducted using causal-comparative research design. According to Mugenda and Mugenda (2003), causal research explores the relationship between variables, that is, the effect of one thing on another and more specifically, the effect of one variable on another. Mugenda and Mugenda contends that causal-comparative research has the advantage of being relatively cheap and it was considered for the study so as to establish the impacts of shifting from a DB scheme to a DC scheme to employees, employer/sponsor, pension scheme regulator and various other players in the industry. The research by Ostaszewski (2001) also investigated the shift from DB to DC in Canada, in particular the investigating the casual relationship between the shift from DB pensions schemes and shift away from compensation labour in form of the wages. This research was of more interest for this study and since the study a casual-comparative research was used in the investigation, then this research design is replicated on this study due to the two studies similarities.

3.3 Population

The population for the study consisted of 2010 pension funds in the RBA register by 31st December 2011. The study sought to analyze the effects of scheme design shift for the period 2001 to 2011 since this is the period and the pension industry has been under regulations making data available and more moderated. Taking into consideration the issues of regulations and the availability of data narrows the population of interest down to 749 pension funds.

3.4 Sample Selection

A sample refers to section of the population that was selected for observation and measures to be obtained; data to be used in making inferences about the targeted population sampling is the process of selecting a sample.

3.4.1 Sampling Procedure & Techniques

Secondary data was used for the research where data was as per various registered retirement schemes as per RBA register. To get the sample size, the population was reduced to 50 schemes under the administration of Liaison Financial Services Ltd giving a diversification of various the schemes under different investment vehicles invested by various fund managers (Jubilee Financial Services, ICEA Lion Asset Manager, BRITAK Asset Managers, Kenindia Assurance Asset Managers, CFC-Stanbic Fund Managers, Old Mutual Fund Management and Genesis Kenya Ltd).

As discussed in the research design the sample for this study was divided in three categories. The first category consisted of companies that have resisted the change and have remained as a DB scheme. The second category consists of companies that have shifted away from a DB scheme to DC plan. The third consisted of companies that have

remained Defined Contribution schemes from inception. The method of analysis used was quantitative.

3.5 Data Collection

Data was collected as per the records of RBA, Scheme Administrators, Fund Managers, Scheme Custodian and Audited books of accounts. The data on Cost, Performance, Returns and Employees mobility is available already published Audit reports, Quarterly reports on Investment, Administration and Custody for the respective schemes.

Data on employee's mobility was as per the administrator's quarterly reports, annual audited accounts members' movement schedule and quarterly reports filled with RBA. Data on scheme cost was as per the annual audited accounts and fund manager's quarterly report as filled with the industry regulator. Data on scheme performance/return on investment was as availed in the audited accounts and fund managers scheme card. Since the study also sought to analyze the conversion procedure then the schemes actuarial reports were studied in combination with the Draft April, 2012 Conversion practice note on conversion as release by RBA.

Financial digits were analyzed, that is, figures in the books of accounts and member balance at different periods. The schemes administrator was ready to avail to said data for study and analysis as long as the information on member's names was withheld.

3.6 Data Analysis

The type of data collected was quantitative. Descriptive statistics was used in the analysis of data. This included the use of tables. Regression analysis was used to measure the effects of Equity returns, Income Per Capita and Risk Free Rate to the growth of either DB or DC scheme assets. On the regression equation, the independent variable was Equity Return, Income per Capita and Risk Free Rate whereas the dependent variable

was the percentage growth of the scheme assets either for DB or DC scheme bur separately.

3.6.1 Analytical Model

To understand the factors influencing emergence of defined contribution plans and to test aforementioned hypotheses, we developed a statistical model. Because linear models are easy to interpret and are likely to give good estimates of the average effects, we focus on linear regression. The model takes as inputs: the performance of stock market returns, indicator of per capita income and a proxy for risk free interest rates. The data has been taken from the RBA, Liaison Financial Services and Nairobi Securities Exchange. The database separates amounts for defined contribution and defined benefit plan assets in their quarterly reports. Correspondingly, the period 2001- 2011 has been used for our analysis.

Model definition

DC = b0 + b1*EQTY + b2*INCM + b3*RATE

DB = b0 + b1*EQTY + b2*INCM + b3*RATE

Variable Definition:

DC = Growth in Defined Contribution plan assets, in %

DB = Growth in Defined Benefits plan assets, in %

EQTY = Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %

INCM = Per capita income, growth in current KES per capita disposable personal income in %

RATE = Risk free interest rate, represented by 91 Days Treasury Bill in %

The measure DC which is the growth in DC plan assets enabled us to know if the shift from DB to DC has any impact to member benefits as attributed. The RBA guidelines on investment speculate the proportion of scheme fund that can be investment on any type of investment vehicle Equity-70%, Bond-70%, Assets-30% and Deposit-30% and Guaranteed Fund-100% RBA Act (2000). This was a good guidance in the model since any scheme registered with RBA is expected to follow the guideline. The above data was collected from various fund managers in the pension business. From the above investment guideline, any effect on the fund invested in the equity market, it directly effect on the return on the pension fund which had a direct relation with the size of the fund. This model was enabled us to investigate if the shift from DB to DC had any effect on the individual member benefits. For DB schemes, the increase or decrease of the scheme assets does not directly affect what member goes home with, but the model was necessary since the same affect scheme level of funding. It was determined if the scheme is overfunded, fully funded or underfunded. The funding level of the scheme determines if the employer is either adding more funds to the scheme (underfunded) or going on contributions holiday (overfunded).

On the other hand the analysis of Data collected pertaining to Investment Performance, Administration Cost; Benefit Liability Employee Mobility was analyzed using Descriptive Data analysis, preferably looking at the mode of particular metric of study in reference to particular structure of the scheme. SPSS was used in performing the calculation and presenting results in a way easy to understand. The results have then been interpreted in order to draw conclusions and the presentations has been in terms of Cross-Tabulations, various charts, and frequency tables, upon which inferences was made accordingly for the purpose of the study report writing.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter shows findings of the study and discusses these findings in length. The study targeted retirement schemes in Kenya and to some extent the study zeroed to retirement schemes under the administration of Liaison Financial Services Ltd with their funds invested with various investment vehicles. Section 4.2 gives the descriptive analysis, Section 4.3 provides the quantitative analysis while Section 4.4 is the interpretation of the findings.

4.2 Descriptive Analysis

Table 4.1 descriptive statistics for all retirement schemes in Kenya for ten years from 2001 to 2011 as provided by RBA 2009 to 2011. The percentage growth of the numbers of DC schemes at 102.12% is greater that the growth of DB schemes at 98.21%. The mean value of growth of DB total assets, and standard deviation is 9.5%. It means that the administrative expenses for DB have been increasing while at the same time the numbers of schemes have been decreasing. However the DC scheme have been increasing in both number, fund value and administrative expenses meaning on prorate basis the administrative expenses in DC are manageable.

Table 4.1 Descriptive Statistics

	N	Range	Minimum	Maximum	Sum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Number_DB	11	18.02	91.18	109.20	1080.28	98.2073	1.80621	5.99052	35.886
Number_DC	11	6.63	100.22	106.85	1123.34	102.1218	.60956	2.02167	4.087
DB_Fund_Value	11	29.27	101.43	130.70	1263.94	114.9036	2.89405	9.59847	92.131
DC_Fund_Value	11	144.72	76.28	221.00	1435.01	130.4555	11.69195	38.77781	1503.719
DB_Admin	11	97.60	73.01	170.61	1241.15	112.8318	7.64590	25.35859	643.058
DC_Admin	11	207.73	28.05	235.78	1363.61	123.9645	15.03226	49.85637	2485.658
Valid N (listwise)	11								

Source: Research Findings

DB Schemes as per asset allocation comparing year 2001 and 2011

Table 4.2 Retirement Funds Investment Distribution

Asset category	2001	2011		Difference
	Percent			Percentage
Property	4.42	46.84		-42.41
Government Securities	43.75	22.49		21.25
Quoted Equity	3.71	11.14		-7.43
Commercial Paper & Fixed Deposit	22.87	8.42		14.45
Guaranteed Fund	14.99	9.71		5.28
Other Investment	10.26	1.39		8.87

Source: Research Findings

From Table 4.2 the DB schemes have been increasing their assets holding in property by a rate of 42. 41% while decreasing their holding in both Government Securities and Commercial Papers.

DC Schemes as per asset allocation comparing year 2001 and 2011

Table 4.3 Share of Total Assets

Asset category	2001	2011		Difference
	Percent			Percentage
Property	36.76	13.95		22.81
Government Securities	12.18	30.84		-18.67
Quoted Equity	7.58	20.45		-12.87
Commercial Paper & Fixed Deposit	13.67	13.63		0.039
Guaranteed Fund	16.09	15.24		0.85
Other Investment	11.35	5.86		5.49

Source: Research Findings

From Table 4.3 it's a clear that members are more proactive in DC schemes. By increasing their holdings in both Government Securities and Quoted Equities while reducing their holding in Property and Guaranteed Fund.

Table 4.4 DB/DC All Assets Class Combined

	Share of total assets in:			
Asset category	**2001**	**2011**		**Difference**
	Percent	**Percent**		**Percentage**
Property	41.19	60.80		-19.61
Government Securities	55.93	53.34		2.58
Quoted Equity	11.29	31.59		-20.30
Commercial Paper & Fixed Deposit	36.54	22.05		14.49
Guaranteed Fund	31.08	24.96		6.12
Other Investment	21.61	7.25		14.36

Source: Research Findings

The key points to be noted with regard to the change in asset allocations in each type of plan (2001 - 2011) are as follows:

· *Small decline (5.28percentage points, "DB") in the share of assets held in guaranteed funds.* From 2001 to 2011, the share of assets held in these instruments fell in both DB plans (from 14.99 percent to 9.71 percent) and DC plans (from 16.09 percent to 15.24 percent). Moreover, the share of assets in these instruments remained slightly higher in DC plans than in DB

plans over this time period.

· *Decrease (14 %) in the share of assets held directly in credit market instruments (primarily Commercial papers & Fixed Deposit).* A small portion of this aggregate portfolio shift can be accounted for by the shift toward DC pension coverage. Since 2001, DC accounts have consistently tended to hold a smaller share of assets as bonds – in 2011, the share was 13.67 percent in DC plans compared with 8.42 percent in DB plans. That said, the more important factor for the aggregate shift would be that assets in both DB plans and DC plans have shifted out of commercial papers since 2001. As mentioned above, assets in both types of plans have shifted significantly toward long-term mutual funds and DB plans have shifted a lot of assets from commercial papers to directly held corporate equity.

· *Large increase (20.3%) in the share of pension assets held directly in corporate equity.* This shift has occurred despite the move from coverage in DB plans to DC plans. In 2001, DB plans and DC plans had the slightly different asset allocation for directly held

corporate equity about 5 percent. However, by 2011, this allocation had edged *up* to 20.45 percent for assets held in DC plans, which should have exerted upward pressure on the aggregate portfolio share.

In comparing the aggregate asset mix of each type of plan in the most recent period (2011) it can be noted that the principal difference is that DC plans tend to hold a larger share of assets in government securities than DB plans, while DB plans tend to have a larger share of assets in properties. This show that government securities account for about one thirds of assets in DC plans .Relative to DB plans, DC plans tend to hold a smaller share of property and a larger share of cash and the guaranteed insurance contract category (GICs), which includes other "stable value" products offered by insurance companies.

The above summary chart shows a move where retirement scheme reduces their holding in immovable property at the same time increasing their holding in Quoted Equities an indication of a more aggressive and more risk seeker. This is attributed to the movement from DB to DC where the employees now shoulder all the investment risk.

4.3 Quantitative Analysis

4.3.1 Correlation Analysis

Pearson correlation analysis was conducted to determine the nature of the relationship between fund value/number of schemes; number of schemes/administrative expenses; and fund value/administrative expenses for both DB and DC schemes.

DB Scheme

Table 4.5 Correlations Analysis (Number of Schemes, Administrative Expenses and Fund Values for DB Schemes)

From table 4.5 below, the study established a Pearson's correlation value of -0.811 indicating that there is strong relationship between fund value and number of schemes with a 99% significance level. There is a very strong and significant relationship between

fund value and administrative expenses. There is also a strong relationship between administrative expenses and number of schemes with a Pearson correlation of -0.807 at 99% significance level.

		No. of Schemes-DB	Fund Value-DB	Admin Exp DB
No. of Schemes-DB	Pearson Correlation	1	-.811(**)	-.807(**)
	Sig. (2-tailed)		.002	.003
	N	11	11	11
Fund Value-DB	Pearson Correlation	-.811(**)	1	.918(**)
	Sig. (2-tailed)	.002		.000
	N	11	11	11
Admin Exp _DB	Pearson Correlation	-.807(**)	.918(**)	1
	Sig. (2-tailed)	.003	.000	
	N	11	11	11

** Correlation is significant at the 0.01 level (2-tailed).

Source: Research Findings

DC Scheme

Table 4.6 Correlations Analysis (Number of Schemes, Administrative Expenses and Fund Values for DC Schemes)

		No. of Schemes-DC	Fund Value-DC	Admin Exp_DC
No. of Schemes-DC	Pearson Correlation	1	.663(*)	.122
	Sig. (2-tailed)		.026	.722
	N	11	11	11
Fund Value-DC	Pearson Correlation	.663(*)	1	.571
	Sig. (2-tailed)	.026		.066
	N	11	11	11
Admin Exp_DC	Pearson Correlation	.122	.571	1
	Sig. (2-tailed)	.722	.066	
	N	11	11	11

* Correlation is significant at the 0.05 level (2-tailed).

Source: Research Findings

From table 4.6 with the DC Scheme, the study established a Pearson's correlation value of 0.663 indicating that there is fairly strong relationship between fund value and number of schemes with a 95% significance level. There is an above average relationship between fund value and administrative expenses significant at 93.4% significant level. There is also a very small insignificant relationship between administrative expenses and number of schemes with a Pearson correlation of 0.122.

4.5 Regression Models

4.5.1 Model 1: DC = b0 + b1*EQTY + b2*INCM + b3*RATE

Variable Definition:

DC = Growth in Defined Contribution plan assets, in %

DB = Growth in Defined Benefits plan assets, in %

EQTY = Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %

INCM = Per capita income, growth in current KES per capita disposable personal income in %

RATE = Risk free interest rate, represented by 91 Days Treasury Bill in %

4.5.1.1 Model Summary (Measure of Fitness)

Table 4.7 Regression Equation Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972(a)	.944	.888	6.81025

a) Predictors: (Constant), Risk free interest rate, represented by 91 Days Treasury Bill in %, Per capita income, growth in current KES per capita disposable personal income in %, Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %

b) Dependent Variable: Growth in Defined Contribution plan assets, in %

Source: Research Findings

The model statistics show that when the independent variables (Equity returns, Per capita income and Risk free interest rate) and dependent variable interact, the model has a Pearson's correlation coefficient (R) of 0.972 and coefficient of determination (R Square) of 0.944 signifying a strong positive association between the two.

4.5.1.2 Analysis of Variance (ANOVA)

Table 4.8 A Summary of Analysis of Regression Variables

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2337.647	3	779.216	16.801	.022(a)
	Residual	139.139	3	46.380		
	Total	2476.786	6			

a) Predictors: (Constant), Risk free interest rate, represented by 91 Days Treasury Bill in %, Per capita income, growth in current KES per capita disposable personal income in %, Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %

b) Dependent Variable: Growth in Defined Contribution plan assets, in %

Source: Research Findings

The Analysis of Variance (ANOVA) was used to test the significance of the regression model as pertains to significance in the differences in the means of the dependent and independent variables. The ANOVA test produced an f-value of 16.801 at 0.022 significance level ($p<0.05$) signifying significant relationship between the two independent and dependent variables.

4.5.1.3 Regression Coefficients

Table 4.9 A Summary of Regression Equation Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	-20.735	13.146		-1.577	.213
	Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %	.771	1.426	.092	.540	.627
	Per capita income, growth in current KES per capita disposable personal income in %	-4.192	1.350	-.529	-3.105	.053
	Risk free interest rate, represented by 91 Days Treasury Bill in %	8.863	1.356	.907	6.537	.007

Coefficients

a) Dependent Variable: Growth in Defined Contribution plan assets, in %

Source: Research Findings

From the table the established regression equation is:

DC = - 20.735 + 0.771*EQTY – 4.192*INCM + 8.863*RATE

In the model, it can be seen that taking the independents variables' value at zero, the Growth in Defined Contribution would be -20.735. A unit increase in equity returns would lead to a 0.771 increase in DC, a unit increase in per capita income would lead to a 4.192 decrease in DC and a unit increase in risk free interest rate would lead to a 8.863 increase in DC.

4.5.2 Model 2: DB = b0 + b1*EQTY + b2*INCM + b3*RATE

Where the variables definition remains as in the DC model

4.5.2.1 Model Summary

Table 4.10 Regression Equation Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.266(a)	.071	-.858	11.38259	2.434

a) Predictors: (Constant), Risk free interest rate, represented by 91 Days Treasury Bill in %, Per capita income, growth in current KES per capita disposable personal income in %, Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %

b) Dependent Variable: Growth in Defined Benefits plan assets, in %

Source: Research Findings

As in the table above, the model established that the dependent variable growth in defined benefits and the independent variables (Equity returns, Per capita income and Risk free interest rate). The model has a Pearson's correlation coefficient (R) of 0.266 and coefficient of determination (R Square) of 0.071 signifying a positive but a weak association between the dependent and independent variables.

4.5.2.2 Analysis of Variance (ANOVA)

Table 4.11 A Summary of Analysis of Regression Equation Variables

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.625	3	9.875	.076	.969(a)
	Residual	388.690	3	129.563		
	Total	418.315	6			

a) Predictors: (Constant), Risk free interest rate, represented by 91 Days Treasury Bill in %, Per capita income, growth in current KES per capita disposable personal income in %, Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %

b) Dependent Variable: Growth in Defined Benefits plan assets, in %

Source: Research Findings

The Analysis of Variance (ANOVA) shows that the association between dependent and the independent variables, the f-value assumes 0.076 at 0.969 significance level ($p>0.05$) signifying no significant relationship between the two. Nevertheless, this still suggest that the relationship between the two (independent and dependent variables) to be out of chance.

4.5.2.3 Coefficients

Table 4.12 A Summary of Regression Equation Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	24.046	21.973		1.094	.354
	Equity returns, represented by continuously compounded annual returns from NSE 20 Share Index, in %	.416	2.384	.121	.175	.872
	Per capita income, growth in current KES per capita disposable personal income in %	-.193	2.257	-.059	-.086	.937
	Risk free interest rate, represented by 91 Days Treasury Bill in %	-1.036	2.266	-.258	-.457	.679

a Dependent Variable: Growth in Defined Benefits plan assets, in %

Source: Research Findings

From the table the established regression equation is:

DB = 24.046 + 0.416*EQTY – 0.193*INCM – 1.036*RATE

From the above regression model, when Equity returns, Per capita income and Risk free interest rate have null value, Growth in defined benefit plan would be 24.046 %. Holding other factors constant, a unit increase in equity returns would lead to a 0.416 % growth in DB. A unit increase in per capita income would lead to a 0.193 decrease in DB and a unit increase in Risk free interest rate leads to a 1.036 decrease in DB.

The findings of this study show that DB scheme have continued to reduce on expense of DC Schemes. At the same time the administrative expenses in of DB schemes in Kenya have remained static as the number of DB schemes decrease. On the issue of the administrative expenses of DC Schemes the scheme number continue to increase while the administrative expenses have remained constant. This show the expenses in DC schemes have been well managed which has a positive effects to members' retirement package. At the same time, most of the scheme where the employer shoulders the schemes expenses will be will to shift to a DC scheme which in long time manages to reduce the administrative expenses thus reduction of company expenses.

The research also shows that in summary the both DB and DC schemes combined assets, the investor/members are more risk takers/seeker. The investor has continued over year to move from more conservative investment to more active investment like government securities and quoted equities. When we look at the result of asset allocation for the scheme separately, it is evident that DB schemes are becoming more conservative over time. The DB scheme have increased their assets allocation to less risk exposed investment like property and guaranteed funds. To the contrary, the DC schemes have continues to reduce their investment on conservative assets to more risky assets like quotes equities and government securities. This means that movement from DB to DC exposes the member retirement fund to more risk while at the same time enjoying good returns in good year. This means after conversion the member is likely to take home a higher retirement package than if he remained in a DB schemes.

From the regression models, it's predictably, the most significant and the most predictive variable relates to equity performance. Further, signs of coefficient for Equity support the intuition: growth in defined contribution assets accelerates with higher equity valuations but dampened by the volatility in equity markets. The model also suggests that defined contribution saving decreased as the per capita income rose. This is related in part to prolonged economic boom periods witnessed during the years under observation. Thus, whereas capital markets variables are less potent in predicting annual flows into DB/DC schemes, these variable have a significant relation with the overall level and level and growth of the scheme assets. This is understandable, since the level of pension plan assets depends on both the net new inflow of money and the performance of existing scheme assets. The latter is much highly correlated with equity market performance, given the increasing concentration of pension assets into quoted equities.

4.6 Interpretation of the Findings

The following were the findings of the research study clearly established according to the set objectives. The study focused on understanding the impacts of shifting from a DB to DC scheme in Kenya. From the findings of the research objectives the following were found out:

4.6.1 Impacts on the Administrative Cost

Administrative related costs refer to the overall costs involved in administering the accounts of the member. With respect to defined benefit plans, these costs typically consist of the various salaries, RBA levy and overhead related to the administration, accounting, recordkeeping, custody services, information processing, education and information dissemination that is required to collect, account and pay the various benefits. These costs can be paid for either from the investment assets or from a separate appropriation. For the most of schemes under study, these costs are paid from the scheme assets.

With respect to defined contribution plans, these costs also typically consist of the various salaries, rent and overhead related to the administration, accounting, record keeping, custody services, information processing, education and information

dissemination that is required to collect, account for and pay the various benefits. These costs can be paid either from the assets or from a separate appropriation. For defined contribution plans, the services related to these costs are typically outsourced and performed by private employees. Offering individual investment choices necessitates the maintenance of individual accounts that are usually updated daily and made accessible to the participant.

Combined investment and administrative fees paid by participants in defined contribution plans have been increasing at an average rate of 123.96% and have a direct and substantial impact on the assets available to the participant. Table 4.1 above demonstrates the growth of assets and compared to the growth on the number of schemes. In general, it is reasonable to estimate that large defined benefit plans have aggregate costs are higher as compare to defined benefits plans, resulting in an asset base available for retirement that, assuming similar returns would be approximately smaller for defined contribution plans than for defined benefit plans. This reduction estimate only takes into consideration the typically higher investment and administrative cost structures of defined contribution plans, and does not take into account the lower investment returns typically achieved by defined contribution plans.

4.6.2 Effects on Retirement Scheme/Investment Performance

Defined benefit plans require the sponsor or an engaged third party to make the most critical investment decisions – referred to as asset allocation decisions – whereas in a defined contribution plan the individual participant is typically required to make the asset allocation decisions. Specifically, in defined benefit plans, the sponsor will engage a series of experts to determine an appropriate asset allocation – utilizing a combination of quantitative, empirical, and theoretical analysis – that is expected to achieve the greatest unit of return per unit of risk. Defined contribution plans require participants to self direct an investment strategy, usually utilizing a variety of mutual funds or possibly individual securities through what is known as a brokerage window. In order to partially mitigate

participant risks inherent in defined contribution plans in this area, many defined contribution plans now provide a series of specific investment options called lifestyle funds that are intended to make these critical asset allocation decisions for the participant. This mitigates the potential risk to the participant; however the participant must still actively choose to outsource the asset allocation decision to the particular vendor in order to achieve this risk mitigating benefit.

As a result of the asset allocation decision making process described above, the individual participant in a defined contribution plan assumes the largest and most critical risk for producing a return on his account sufficient to fund his retirement benefits, often utilizing a personal non-expert skill set. Participants who excel at investment management may directly benefit from returns that exceed market averages, whereas participants who do not excel at investment management and do not utilize a risk appropriate lifestyle fund may be directly harmed from returns below market averages

4.6.3 Shift Effects on the Member and the Sponsor

On members defined benefit plans enable members to transfer the full accumulated account balances when they move from employer to employer, but these account balances do not typically reflect the full value of employer contributions. Defined contribution plans enable participants to transfer the full accumulated account balances when they move from employer to employer, which includes the full value of both employee and employer contributions. As a result, defined contribution plans typically allow a larger percentage of the available money to move with employees as they move from employer to employer, potentially increasing the balances available to the more mobile employees upon retirement. Defined benefit plans operate virtually independently of the employees financial decisions, whereas the success of defined contribution plans substantially depends on active participation and engagement of employees. Consequently, employees of defined contribution plans may feel a greater sense of

empowerment with their ability to affect their future financial security. It should be noted, however, that this sense of financial empowerment has a significant risk for the employee, in that even if they properly plan, save, and invest, they may have an insecure retirement future.

Contribution rates to a defined benefit plan are based on actuarial valuations and as a result the rates will fluctuate from year to year as a result of such factors as investment returns and plan experience being different from actuarial projections. The periodic change in rates can reasonably be expected to be difficult for both employees as well as employers to plan and budget for. Defined benefit plans can mitigate contribution rate fluctuations by utilizing various approaches including: careful management of asset allocations, smoothing investment returns, utilizing forward looking actuarial assumptions, managing benefit administration and utilizing less period-sensitive actuarial methodologies. Contributions rates to a defined contribution plan are determined in the plan document and once set are constant unless the document is changed. The mandatory employer contributions to a defined contribution plan must be made without regard to the financial condition of the employer, but are known in advance and not dependent upon investment returns or actuarial assumptions. Contributions to defined contribution plans have the advantage of being both stable and known, whereas contributions to defined benefit plans will almost certainly fluctuate through time, often quite significantly.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives a conclusion of the study, limitations and recommendations for further research.

5.2 Summary

As the traditional DB schemes disappear and the DC Schemes dominate the current retirement setup. From the research it is evident that the shift has direct and indirect effects to Employees, Sponsors, Trustees and various scheme service providers. On the employees, the shift transfers the risk to the members from the sponsor whereas at the same time it increase or allows flexibility of moving from on scheme to another without losing one retirement benefits. Expenses like administrative expenses are met by the scheme since the employers no longer cater for the same. The research also shows that in DC schemes the performance on equity has a direct effect on the scheme fund value. Whether the effects are positive or negative the same has direct impact on member retirement package.

Statistically, the research establish that there was a shift on the conversional assets allocation where most of the DC schemes assets are more of active equity and interest bearing assets like government securities. Where the DB schemes tends to increase their holding in immovable property which are believed to be risk free, DC schemes are increasing their holding on risky assets which from the research gives the scheme better investment income as compared to immovable property. The research regression model clears shows that in DC schemes the income per capita directly determines the member retirement package since in DC schemes the scheme retirement package is determined by the scheme contributions rate on the salary. On the DB schemes the retirement package is determined by an actuarial factor, pensionable service and member last annual salary before retirement. It is thus important for all the players in the retirement scheme to think of these impacts before the conversion any scheme.

5.3 Conclusions

The research has demonstrated that the retirement landscape is changing. Traditional DB pension plans are gradually losing their dominance in the occupational pension systems of many countries. In principle, the shift from DB to DC pension plans offers many advantages to employees, particularly those who expect to change jobs several times during their career or those who take temporary but extended leaves from the workforce. Since DC plans are portable, the accrual risk associated with DB plans is not an issue, nor is risk of employer insolvency, once plan contributions have been vested. DC plans can also provide employees with much more control, choice and flexibility in terms of how they manage their retirement savings and investment, and indeed how they manage their financial assets over their lifecycle.

The shift from DB to DC plans is resulting in delayed and less predictable retirements for today's DC participants. While negatively or positively impacting individuals, this trend also has the potential to affect employers by making it harder to forecast and manage staffing needs, increasing workforce costs, and reducing employee engagement. From the study its evident the conversion from DB to DC shift all risks to the member but interesting the for the best performing DC schemes members end up taking home more than they would have do if they had remain in DC schemes. The DC schemes aptly suited a generation much less prone to work with a single employer for the career. However, another very important factor behind the conversion of DB to DC is to enable members' control it offered to individual over destination of their investments. The attractiveness was the control increased as equity markets witnessed long bull runs and superior returns.

At the same time, however, the shift towards DC plans is presenting employees with many challenges that they did not face in DB plans. They continue to be exposed to inflation risk while assuming additional risks, most notably, market, longevity and market timing risk, formerly borne by the DB plan sponsor. And, as research has repeatedly shown, employees have not done so well at managing their new responsibilities. Many

employees do not participate in their DC pension plan even if it means giving up the employer's match, contributions rates appear to be low, employees are not making optimum asset allocations, and in retirement, they may not be making use of available financial products to manage longevity risk. As previously argued there is a role for financial intermediaries in providing simplified products that provide individuals with a guaranteed income.

Statistical analysis of the shift from DB to DC confirms the above intuition, suggesting that investment returns directly affected by the shift suggesting that investment returns are important determinant for the popularity of DC plans. While the impacts of the conversion was held true during the bull markets, rising equity returns leading to rising DC plans assets, it remain to be seen how the relationship holds should the stock market and government securities returns remain less than the spectacular for a somewhat prolonged period. The research also confirms the intuition that administrative expenses vary depending on the scheme design. It evident that as scheme trustees became more aggressive on the management of the administrative expenses as they more to DC schemes then the expenses are reduced. The investment performance, administrative expenses, asset allocation has a direct impact on the member balances in DC plans where member retirement package is determined by employees contributions, employers contributions and investment income less the scheme administrative expenses. Whereas the above has direct impact on member balances in DC the inverse happens in DB plans. The employer carries all the risk in the DB plan and the member retirement package is determined by an actuarial factor. The research then answers the question why DB scheme sponsors are very fast to heed to government directive of coverting DB to DC.

5.4 Recommendations for Policy

Employers should actively evaluate whether such a solution is appropriate for their DC plan because solutions like this can dramatically improve the effectiveness of a DC plan, support employees in achieving their retirement goals, and address the workforce management challenges arising from the shift from DB to DC.

From a retirement security perspective the challenge for employers and policy makers is to design pension system and DC pension plans that support a high level of retirement savings by 1) providing enough choice and flexibility to permit employees with the inclination, knowledge and skills to effectively manage their retirement savings and investments and 2) provide support to other employees to ensure that they are able to make the appropriate savings and investment decisions. In terms of financial market efficiency there is a role for policy makers and regulators to ensure that there is sufficient market transparency and a lack of regulatory barriers to encourage an efficient DC pension market. There may be a further role for governments to play in strengthening the annuities market in ways that support the efficiency of both the annuities market and the DC pension market.

5.4 Limitations of the Study

Though this study addresses the impacts of shift from DB schemes to DC schemes for retirement schemes in Kenya, the sample size and the kind of the data considered for the study should be considered in light of the following limitations:

First the study sample size concentrated only on retirement schemes under the administration of Liaison Financial Services Ltd for 50 schemes under their administration as compare to a big population of 2010 schemes registered by RBA. Secondly, some of the data relied on was provided the RBA, the data was as keyed in by the authority staff which may lead to inconsistency on some instances. Thirdly, getting the said data was a struggle due to confidentiality of the data and competition within the pension scheme industry players. Four, the period for study should be is very short , that is one decade which does not allow one to review a period during the registration of most of existing DB schemes in Kenya.

5.5 Suggestions for Further Research

The study has served as a foundation for further research on the retirement schemes design in details member balances, investment performance, assets allocations and contributions rate. The study combined the assets for both segregated and guaranteed funds, it would of interest of members and sponsor if a detailed study is conducted segregating the assets for scheme invested in guaranteed and segregated options and compare the result of both as far as effects of shift from DB to DC plan is concerned.

A further study can be conducted for more than one decade covering a period which most of DB schemes were established before their conversion started. This will give the researcher an ample time to investigate whether the schemes has fulfilled their initial agenda before the conversion. This will also give the research better period to review about seven actuarial reports per any DB scheme.

A qualitative analysis need to be undertaken where the researcher uses primary data. In this case a questionnaire will be appropriate to enable the researcher get first hand information from the Sponsors, Trustees and Members on take toward the conversion. The researcher needs to investigate if the parties involved really understand the process or they are just converting to fulfill the government directive. The questionnaire will also allow the researcher to establish if the members really understand the design of the scheme they are in and the kind of the benefits offered.

REFERENCES

Ahmed El-Sayed Hamdallah and William Ruland (1986), The Decision to Terminate Overfunded Pension Plans

Balcer, Yves, and Izzet Sahin, (1979), "A Study of Private Pensions in Ontario," Institute for Research on Poverty Discussion Paper, University of Wisconsin – Madison.

Besley, T. & Prat, A. (2003), Pension fund governance and choice between defined benefit and defined contribution plans. Center for Economic Policy Research. Discussion Paper.

Bodie, Z. (1990), "*Pensions as Retirement Income Insurance*", Journal of Economic Literature.

Bodie, Zvi, Alan Marcus, and Robert Merton, (1988), "Defined Benefit vs. Defined Contribution Pension Plans: What are the Real Trade-Offs?," in Z. Bodie, J. Shoven, and D. Wise, eds., Pensions in the U.S. Economy (Chicago: University of Chicago Press).

Brown, R.L. and Liu J. (2001), "*The Shift to Defined Contribution Pension Plans: Why Did It Not Happen in Canada?*" North American Actuarial Journal,

Chatterton *et al* (2010), Pension scheme administration costs, Department for Work and Pension. Working Paper No.91

Franzen, D. (2010), Managing Investment Risk in Defined Benefit Pension Funds, OECD Working Papers on Insurance and Private Pensions, No. 38, OECD Publishing

Gitundu E. W. (2010), Assessment of Asset Selection and Performance Evaluation: A Case of Pension Funds in Kenya, Un-published MBA project, Faculty of Commerce, University of Egerton

Guariglia, A. & Sheri-Markose (2005), Voluntary Contributions to Personal Pension Plans: Evidence from the British Household Panel Survey.

Gustman, Alan L., Olivia S. Mitchell, Andrew A. Samwick, and Thomas L. Steinmeier, (1992), "Evaluating Pension Entitlements," in Olivia S. Mitchell, P. Brett Hammond, and Anna M. Rappaport, eds., Forecasting Retirement Needs and Retirement Wealth (Philadelphia: University of Pennsylvania Press),

Kakwani, N., Sun, H. & Hinz, R. (2006), Old-Age Poverty and Social Pensions in Kenya,

Keizi K Lazarus (2008), Does the Design of a Scheme Matter. Research and Development department, RBA

Kirdar, Murat G., (2010), "Estimating the Impact of Immigrants on the Host Country Social Security System When Return Migration is an Endogenous Choice," IZA Discussion Papers 4894, Institute for the Study of Labor (IZA)

Klumpes P, Fenn P, Diacon S, O'Brien C, Yildirim C (2007), European insurance markets: recent trends and future regulatory developments, in Cummins JD, Venard B, eds., Handbook of international insurance.

Lawrence a. Frolik & Kathryn l. Moore (2004), Law of Employee Pension and Welfare Benefits

Lindert, PH (1994), 'The Rise of Social Spending, 1880 – 1930,' Explorations in Economic History.

Mugenda, O. M. and Mugenda A. G. (1999), Research Methods: Quantitative and Qualitative Approaches.

Musalem, Alberto R., and Robert Palacios, eds. (2004), Public Pension Fund Management: Governance, Accountability, and Investment Policies. Washington, DC: World Bank.

O'Neill, L. (2007), Regulating Pension Fund Disclosure of Environmental, Social and Governance Practices. Submission to the Ontario Expert Commission on Pensions. Shareholder Association for Research and Education. Ontario.

Ostaszewski, K.M. (2001), "Macroeconomic aspects of private retirement programs" North American Actuarial Journal.

Poterba, James, Joshua Rauh, Steven Venti, and David Wise, 2005a, "Lifecycle Asset Allocation Strategies and the Distribution of 401(k) Retirement Wealth." NBER Working Paper

RBA ACT, 2000, Government Printers. Nairobi.

RBA Quarterly Reports 2006, 2007, 2008, and 2009. Available: http://www.rba. go.ke (Retrieved: 25th March 2012)

Rono Lucy Jepchoge, Bitok Julius Kibet, Asamoah Gordon N (2010), *Impact Of Retirement Benefit Act (RBA) On Investment Returns To Pension Funds In Kenya* International Business & Economics Research Journal Volume 9, Number 4

Salome Chirchir, (2010), "Conversion of Defined Benefits Schemes to Defined Contributions Schemes" RBA Scheme Conversion review report

Shiller, Robert, (2005), "The Life Cycle Personal Accounts Proposal for Social Security: A Review,"NBER Working Paper

Stewart, F. (2005), "Developments in Pension Fund Risk Management in Selected OECD and Asian Countries." OECD Working Paper on Insurance and Private Pensions

Swinkels, L. (2006), "Have Pension Plans Changed After the Introduction of IFRS?", Working Paper, Erasmus University Rotterdam, Department of Finance.

APPENDICES

Appendix 1 - LIST OF RETIREMENT SCHEMES TO BE STUDIED

	SCHEME NAME
1	African Diatomite Industries Limited Staff Retirement Benefit Scheme
2	Baringo Teachers Staff Retirement Benefit Scheme
3	Chai Sacco Society Provident Fund
4	Coast Development Authority Staff Retirement Benefit Scheme
5	Co-op Trust Investment Provident Fund
6	Co-operative Bank SACCO Staff Retirement Benefits Scheme
7	Deliverance Church Kasarani Staff Retirement Benefit Scheme
8	Deliverance Church Umoja Staff Retirement Benefit Scheme
9	Development Bank of Kenya Staff Provident Fund
10	ETC East Africa Staff Retirement Benefit Scheme
11	G4S Security Services Kenya Limited Staff Retirement Benefit Scheme "B"
12	Geothermal Development Company Staff Retirement Benefit Scheme
13	Gulf African Bank Staff Retirement Benefit Scheme
14	Kenya Bixa Limited Staff Retirement Benefit Scheme
15	Kenya College of Accountancy Staff Retirement Benefit Scheme
16	Kenya Industrial Research Development Institute Staff Retirement Benefit Scheme
17	Kenya National Library Service Staff Retirement Benefit Scheme
18	Kilifi Teachers Staff Provident Fund
19	Kirinyaga Co-operative Union Staff Retirement Benefits Scheme
20	Liaison Group (IB) Staff Pension Scheme
21	Maua Methodist SACCO Staff Provident Fund
22	Machakos Co-operative Union Staff Provident Fund
23	Marryat and Scotts (Kenya)Limited Staff Pension Scheme
24	Mombasa Pentecostal Church Staff Retirement Benefit Scheme
25	Mombasa Teachers SACCO Staff Provident Fund
26	Mwito SACCO Society Staff Retirement Benefits Scheme
27	Nairobi Baptist Church Staff Provident Fund
28	Nairobi Java House Staff Retirement Benefit Scheme
29	National Museums Staff Retirement Benefit Scheme
30	Nithi Tea Growers Staff Retirement Benefits Scheme
31	Nyambene Arimi Farmers Staff Retirement Scheme
32	Rural Electrical Authority Staff Retirement Benefit Scheme
33	Schindler Limited Staff Retirement Benefit Scheme
34	Seven Four Eight Air Services Kenya Limited Staff Provident Fund
35	Sian Agriflora Limited Staff Pension Scheme
36	Sollatek Electronics Kenya Staff Pension Scheme
37	Southern Cross Safaris Staff Retirement Benefit Scheme

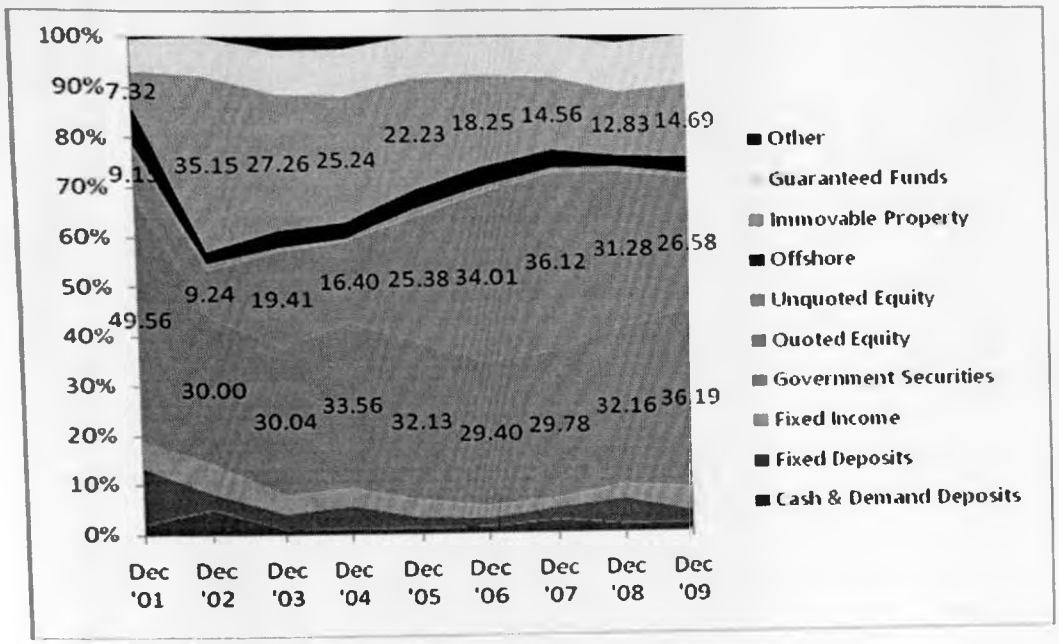
38	Southern Sky Safaris Staff Retirement Benefit Scheme
39	Sovereign Group Staff Retirement Benefit Scheme
40	Standard Limited Staff Pension Scheme
41	Taita Taveta Teachers Sacco Staff Provident Fund
42	Tea Hotel Staff Retirement Benefits Scheme
43	Trans National Bank Staff Pension Scheme
44	Tropical Farm Management Staff Provident Fund
45	Undugu Society Staff Pension Scheme
46	Utalii College Staff Pension Scheme
47	United Nations Sacco Society Staff Provident Fund
48	Venus Tea Brokers Limited Staff Provident Fund
49	Wananyumba SACCO Ltd Staff Provident Fund
50	W.E.C Lines(Kenya) Limited Staff Provident Fund

Appendix 2 – Assets Allocations from 2001 to 2009 as provided by RBA

Year	Dec '01	Dec '02	Dec '03	Dec '04	Dec '05	Dec '06	Dec '07	Dec '08	Dec '09
Cash & Demand Deposits	2.10	5.10	0.92	1.15	0.99	1.26	2.53	1.54	1.63
Fixed Deposits	11.49	3.24	3.35	4.59	2.38	1.81	2.66	5.20	2.49
Fixed Income	5.18	5.94	3.64	3.56	3.34	2.40	1.73	2.75	4.62
Government Securities	49.56	30.00	30.04	33.56	32.13	29.40	29.78	32.16	36.19
Quoted Equity	9.15	9.24	19.41	16.40	25.38	34.01	36.12	31.28	26.58
Unquoted Equity	0.77	1.09	0.45	0.32	1.34	0.98	0.63	0.65	0.63
Offshore	7.50	2.45	3.57	3.34	3.86	3.97	3.68	2.25	3.41
Immovable Property	7.32	35.15	27.26	25.24	22.23	18.25	14.56	12.83	14.69
Guaranteed Funds	6.40	7.79	8.54	9.20	8.34	7.82	8.16	9.70	9.76
Other	0.53	0.00	2.83	2.63	0.01	0.11	0.15	1.64	0.00
Totals	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Research Findings

Chart 4.1 Summary of Asset Class allocation from 2001 to 2009



Source: Research Findings