INVESTIGATION ON CONSISTENCY OF BOND VALUATION MODELS USED BY FUND MANAGERS OF PENSION SCHEME TO INTERNATIONAL ACCOUNTING STANDARD 39.

BY: JOSEPH KIPKOECH RONO

REG NO: D61/9128/2005

A MANAGEMENT RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF MASTER OF BUSINESS ADMINISTRATION DEGREE (MBA)

UNIVERSITY OF NAIROBI.

SEPTEMBER 2009

DECLARATION

This management project paper is my original work and has not been presented for a degree in another university

Signed.....

Joseph Kipkoech Rono

D61/9128/2005

Date 21/11/2009

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

Signed.....

Mr Mohamed N Mwachiti

Date 21/11/09.

DEDICATION

To my late father who instilled a lot of discipline and culture of hard work in me may your soul rest in eternal peace.

ACKNOWLEDGEMENTS

My sincere appreciation goes to people who assisted me tirelessly when writing this project.

Firstly, I am greatly indebted to my supervisor Mr. Mohammed Mwachiti who devoted his time going through my work and providing excellent ideas to successful progress and completion of the research project. His salient contributions are greatly appreciated.

I am highly indebted to my wife, Joyce and my sons Kelvin, Delvin and Melvin for their moral support, patience and understanding my absence while attending to my studies.

Thanks to my Mom, brothers and sisters for their tireless effort, support and prayers throughout my academic journey.

Special thanks to management and staff of Octagon Pension Services for giving me all the time to undertake this research.

Last but not least, I thank my MBA (2008) colleagues, friends, Lecturers of school of business and fund managers who worked tirelessly so that I could obtain the relevant data for my research work. Their encouragement made me stronger in pursuit of studies which have made me live my dreams.

ABSTRACT

The research involves an investigation on consistency of bond valuation models used by fund managers of pension scheme to international accounting standard 39.

The data analyzed was obtained from fund managers using a data collection form.

The results show that most fund managers use models which differs with the recommendation of IAS 39 albeit their valuation do not differ significantly from values obtained by use of recommendations of IAS 39.

The results also indicate the biggest challenge in obtaining market prices from NSE is because of the low activity on the bond market making some bonds to be designated with dormant historical prices.

Fund managers however agree that IAS 39 should be the benchmark valuation method adopted in bond pricing.

LIST OF ABBREVIATIONS

AG	-	Accounting Guideline
AIMS	-	Alternative Investments Market Segment
DB	-	Defined Benefits
DFV	-	Designated Fair Value
FASB	-	Financial Accounting Standards Board
FISMS	-	Fixed Income Securities Market Segment
HFT	-	Held For Trading
HFV	-	Held at Fair Value
HTM	-	Held To Maturity
IAS	-	International Accounting Standards
IFRS	-	International Financial Reporting Standards
IRR	-	Internal Rate of Return
MIMS	-	Main Investments Market Segment
NSE	-	Nairobi Stock Exchange
RBA	-	Retirement Benefits Authority
YTM	-	Yield to Maturity

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

International accounting standard 39 is an accounting standard published by IAS board that deals mainly with financial instruments both recognition and measurement. These standards have been adopted by many countries in the world and the driving force behind this was to make reporting consistent across board. Kenya adopted International accounting standards as the local standard on 1st January 1999 this brought to an end the Kenya accounting standards that was in force before then. Recent market statistics as per RBA news (2008) Vol. 3 No. 3, indicate that the biggest investors of bonds are indeed the pension schemes. IAS Board recognizes IAS 39 as a benchmark and authoritative standard that should guide bondholders in valuing the bonds. In this research the researcher demystified bond valuation while at the same time investigated whether bond valuation models used by fund managers of pension schemes is consistent with the provisions of International accounting standard 39.

Gitman and Joehnk, (2001) defined a bond as a negotiable long term debt instrument that carries certain obligations (including the payment of interest and the repayment of principal) on the part of the issuer. According to Moorad, (2002) a bond is a debt capital market instrument issued by a borrower who is then required to repay to the lender or investor the amount borrowed plus interest over a specific period of time. Edwin and Martin, (1997) on the other hand defined bond as a fixed income security with specific payment schedule. The also cited that most traditional bonds promise to pay specific amounts at specific times. Andrew et al, (1995) defined bonds are loans which may be bought or sold before they are repaid and purchaser of a bond receives a certificate which stipulates the rate of interest to be paid and the amount to be repaid at the end of the loan. Andrew et al, (1995) identified the key features of a bond as: Type of issue; the nature of the issue will affect the way the bond is viewed in the market. The main issues include; sovereign governments and their agencies, local government authorities, supranational bodies such as World Bank and corporations. Within corporate bond market there is wide range of issuers each with differing abilities to satisfy their contractual obligations to lenders. However, the largest bond market is those from sovereign borrowers, the government bonds market. In UK government issues bond known as gilts. In US government bonds are known as treasury notes and bonds. In Kenya, government issues treasury bonds and stocks while companies issues corporate bonds. The second feature of bond is term to Maturity; this is the number of years after

which the issuer will repay the obligation. During the term of issue the issuer will also make periodic interest payments on the debt. The maturity of a bond refers the date that the debt will cease to exist, at which time the issuer will redeem the bond by paying the principal. The third feature of bond is the principal and coupon rate; Principal of a bond is the amount that the issuer agrees to repay the bondholder on the maturity date. Amount is also referred to as the redemption value, maturity value, par value, nominal value or face mount or simply par. The coupon rate or nominal rate on the other hand is the interest rate that the issuer agrees to pay each year during the term of the bond. The annual amount of the interest payments made is referred as the coupon. Finally the last feature of a bond is the currency; this is the currency under which the bond is issued. The largest volume of bonds in the global markets are dominated in the US dollars, other major bond market are dominated in euros, Japanese yen and sterling pounds. Where a bond is aimed solely at the country's domestic investors it is more likely that the borrower will issue in the home currency (Moorad, 2002). The major bonds traded at NSE are governments' treasury bonds and corporate bonds issued mainly by the companies. This study was focused on treasury bonds issued by the government of Kenya.

Edwin and Martin (1997), classified bonds based on the issuer bonds and identified them as follows; Treasury notes and bonds; the federal government of USA issues fixed income securities over a broad range of maturity spectrum. Debt instruments from one to ten years in maturity are called treasury notes while those of maturity period beyond ten years are known as treasury bonds. Both notes and bonds pay interest semi-annually and repay principal on maturity. Treasury notes are traded in an active secondary market made by a dealer in US government securities. Unlike treasury notes, some treasury bonds issues have call provisions that allow them to be called during a specific period usually the period begins five to ten years before maturity and ends at the maturity date. At any scheduled coupon payments date during this period, the treasury has the right to force the investor to sell the bonds back to the government at par value (Sharpe et al, 1997). Municipal Bonds; Are debt instruments sold by political entities such as states, countries, cities, local authorities, airport authorities, school and other than the federal government or its agencies. The principal type of municipal bonds are general obligations bonds, which are backed by the full faith and credit (taxing power) of the issuer, and revenue bonds, which are backed either by revenue of a particular (e.g. a toll road) municipal agencies operating the project (Edwin and Martin, 1997). Corporate bonds on the other hand are similar to other kinds of fixed income securities in that they promise to make specific payments at specific times and provide legal remedies in the event of default (Sharpe et al, 1997). According to Martin and

Edwin (1997), the major difference is that these bonds are issued by business entities and thus have a risk of default. Secondly, bonds have specific collateral backing them in the event of bankruptcy, whereas unsecured corporate bonds called debentures do not. Another feature of corporate bonds is that they are most often callable, which means that corporations can force the holder of the bond to surrender them at a fixed price usually above the price at which the bonds were initially sold during a set period of time. This study concentrated on bonds issued in Kenya and purchased by the pension's schemes which are mainly treasury bonds. Municipal bonds are not common in the Kenyan market and any issue done by the local authorities in the past has not attracted major investors. This is mostly because of the credibility which the public do not have about the local authorities.

1.2STATEMENT OF THE PROBLEM

Pension fund trustees are required by retirement benefits Act 1997 to keep proper books of accounts and in accordance to requirements of International Financial Reporting Standards (IFRS), International Accounting Standards (IAS) and Companies Act Cap 486. For accounts to comply with IAS and IFRS trustees are required to interpret the standards and make sure that all the provisions are factored in the accounts. In most pension schemes trustees meetings, trustees have had challenges in establishing the true value of bonds since custodians, fund managers and a numbers of accountants each disclose different valuation of the same bonds. Bond market at NSE is not very vibrant hence difficulty in obtaining updated bond prices at a given reporting date making even bond valuation further complicated. This therefore formed the research problem which the researcher was investigating. The researcher established the provisions of IAS 39 on bond valuation and subsequently evaluate if pension schemes complies with this requirement.

A number of insurance companies that have gone under in the past have subsequently failed to pay pensioners their obligations owing to overestimating the true realizable value of its assets; a case example in the Kenyan market is Kenya National Assurance Company (KNAC) which went under in 1998 and subsequently became unable to pay pension dues because the assets were grossly overvalued (KNAC taskforce report, 1998).

From the studies done by Ngene 2002, it comes out clearly that valuation of bonds still remains a challenge this makes it possible at times to have two bonds of the same characteristics being given different valuation on different pension schemes. Ndirangu 2003 noted that bonds lacks benchmark in pricing unlike shares where the prices published by NSE is adopted across board

because of its frequency of trading. From studies done by Klaassen 1998, bond valuation in most stock exchanges continue to give inaccurate historical prices failing to take into consideration additional income that the bonds have accrued from the last trading date.

From RBA news 2008 bonds now constitute 40% of the entire pension assets hence failure to accurately value bonds can be detrimental to the pension schemes in terms of meeting the pension obligations as the fall due. The study therefore interested the researcher with an aim of coming up with a consistent model which can help fund managers become compliant with IAS 39 requirements.

1.3OBJECTIVE OF THE STUDY

The objective of this study was to investigate whether the bond valuation model used by fund managers of pension schemes is consistent to provisions of International Accounting Standard number 39 on valuation of Bonds.

1.4IMPORTANCE OF THE STUDY

Companies Act cap 486 requires that the financial information disseminated to the public should be prepared in accordance with the provisions of international accounting standards. Although companies utilize a wide variety of media to disseminate information to the investment community such as in-person briefing, interim publication and the internet, financial reports have historically been the primary vehicle by which the public companies communicate with the shareholders, customers and a host of other stakeholders. Since the financial reports supplement historical financial details with information about a company's strategy, its management, current position and future prospects, it is not surprising that it should be relied on so heavily by investment and analysts and to assess value (Glautier and Underdown, 2001). According to Gibson, (2007) users use financial reports to make decisions. For example, potential investors use financial reports as an aid in deciding whether to buy or sell merchandise to a company on credit. Labour unions use financial reports to help determine their demands when they negotiate for employees. It is therefore imperative that financial information be presented accurately on all aspects.

The findings from this research will be of benefit to the following stakeholders;
Trustees of Pension schemes; Trustees of pension schemes will accrue a lot of benefits from this research in satisfying themselves that the bond portfolio which makes up the largest single

holding of their assets is properly valued according to the generally accepted valuation techniques which is IAS 39. Proper valuation will also help trustees gauge the performance of fund managers.

Fund Managers; The fund managers will accrue benefits from the valuation model developed in this study since the model is compliant to the International accounting standards.

Financial Institutions; Recent market reports indicate that the biggest investors in bonds are financial institutions such as banks and other microfinance institutions. It is therefore imperative that in the process of buying such bonds financial institutions will require to satisfy themselves that the bonds they are buying are accurately valued. Financial institutions would also on routine basis be required to value their bond portfolio and report the same in their financial reports.

Nairobi Sock Exchange; NSE normally publish bond prices on routine basis. Apparently because the bonds are not traded frequently the prices they publish are normally historical in nature and become difficult to the public to rely on such prices in making decision on whether to buy or sell the bonds. Findings from this study has therefore help NSE calculate and publish the correct bond values to the public.

CHAPTER TWO

LITERATURE REVIEW

In this chapter the researcher demystifies bonds, bond valuation as well as provisions of International accounting standards especially one dealing with measurement of financial instruments which is IAS 39. The researcher has also covered other studies that have been done on pension scheme with a view of finding out whether bond valuation has been an issue and also a review on theories on bond pricing.

2.1 THEORETICAL LITERATURE REVIEW

2.1.1 SHARPE BOND VALUATION THEORIES

Bond valuation theories according to Sharpe, (1999) deal with how bond process move in response to changes in the bonds' yield to maturity. In his studies Sharpe noted that if a bond has market price that is equal to its par value, then its yield to maturity will be equal to its coupon rate. However, if the market price is less that par value then bond will have a yield to maturity that is greater than the coupon rate. Conversely, if the market price is greater than par value then the bond will have a yield to maturity that is less than coupon rate. In short:

Par: Market Price = Par Value; Yield to Maturity = Coupon rate

Discount: Market Price < Par Value; Yield to Maturity > Coupon rate

Premium: Market Price > Par Value; Yield to Maturity < Coupon rate

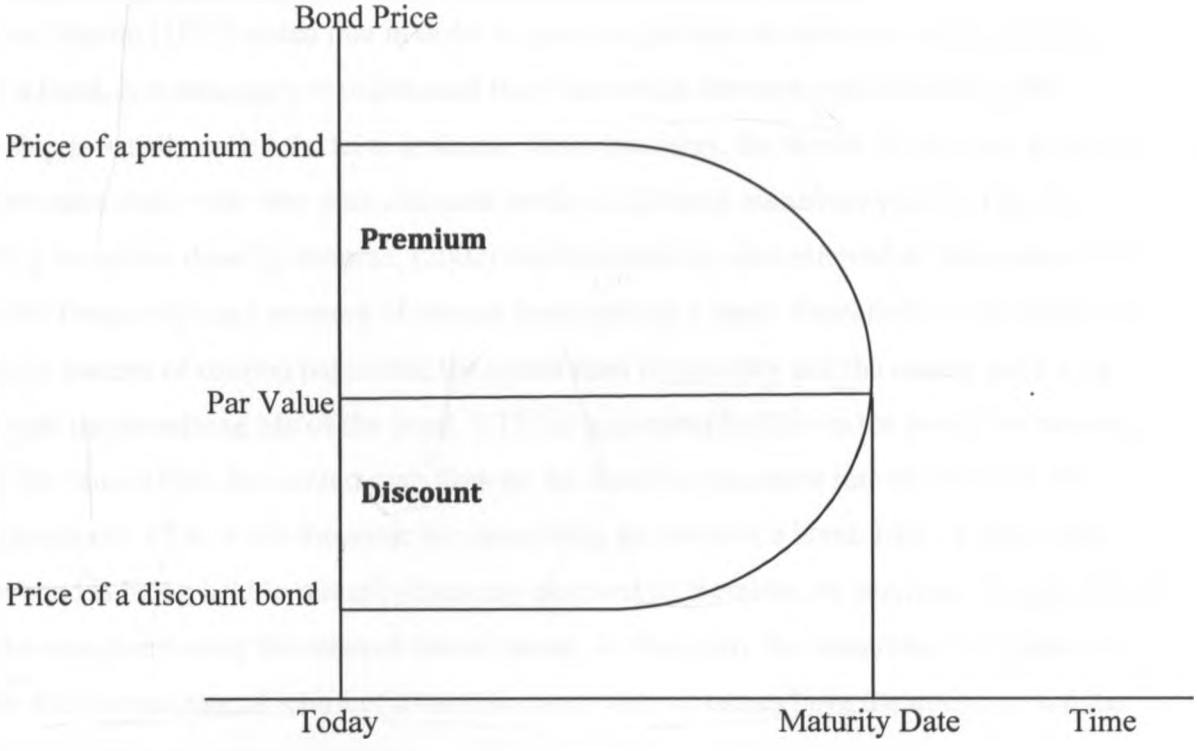
On the basis of the relations above Sharpe et al, (1999) identified five theorems that deal with bond pricing as follows;

The first theory stated that if a bond market price increases, then its yield decreases; conversely if a bonds market price decreases, then its yield must increase. Sharpe illustrated this using an example of Bond A which has a life of 5 years, a par value of $1000, and pays a coupon of $80 annually. Its yield is 8% because it is currently selling for $1000. However, if its price increases to $1100 then its yield will fall to 5.76%. Conversely if its price falls to $900, then its yield will rise to 10.68%.

The second theory states that if a bonds' yield does not change over its life, then the size of its discount or premium will decrease as its life gets shorter. Sharpe explained this relation through figure 1 below. Sharpe noted that price of a bond that is selling at either premium or discount today will converge over time to its par value. Ultimately the premium or discount will

completely disappear at the maturity date. An equivalent interpretation according to Sharpe on this theorem is that if two bonds have the same coupon rate, par value and yield, then the one with shorter life will sell for a smaller discount or premium. Sharpe further explained this using an example of two bonds, one with a life of five years and the other with life of four years. Both bonds have a par value of $1000 pay coupon of 60 and yield 9%. In this situation the bond with five year life has a smaller discount of $116.69, whereas the bond with a four year life has a smaller discount of $97.19

FIGURE 1.1 CHANGES IN A BOND PRICE OVER ITS LIFE



Changes in a bond price over its life. ***(Source, Sharpe, 1997)***

The third theorem according to Sharpe is that if a bond yield does not change over its life, then the size of its discount or premium will decrease at an increasing rate as its life gets shorter. Using figure 1 above Sharpe noted that the size of the premium or discount does not change much more notably as time passes just before maturity date.

The fourth theory according to Sharpe is that a decrease in bonds yield will raise the bonds price by an amount that is greater in size than the corresponding fall in the bonds price that would occur if there were an equal sized increase in the bonds yield. In elaborating this theory Sharpe used an example of Bond C, which has a life of five years and a coupon rate of 7%. If its yield rises by 1% to 8%, then it will be selling for $960.07 a change of $39.93. Alternatively, if its

yield falls by 1% to 6% then it will be selling for $1042.12 a change of $42.12 which is of greater magnitude than the $39.93 associated with the 1% rise in the bonds yield.

In the fifth theorem Sharpe stated that the percentage change in a bonds price owing to a change in its yield will be smaller if its coupon rate is higher. Sharpe however noted that this theorem assumes that there is at least one coupon payment besides the one at maturity remaining to be paid. This however does not apply to bonds with a life of one year or to bonds that have no maturity date known as consol.

2.1.2 YIELD TO MATURITY AND TERM STRUCTURE THEORY

Edwin and Martin (1997) stated that in order to gain insight into the maturity on the yield or price of a bond, it is necessary to understand the relationship between yield and time, this relationship is usually called the term structure. More precisely, the theory of the term structure of interest rates deals with why pure discount bonds of different maturities yield to maturity. According to studies done by Moorad, (2002) yield to maturity also referred as redemption yield is the most frequently used measure of returns from holding a bond. Essentially YTM takes into account the pattern of coupon payments, the bonds term to maturity and the capital gain/ loss arising over the remaining life of the bond. YTM is equivalent to IRR on the bond, the rate that equates the value of the discounted cash flow on the bond to its current rate of return on the bond. Essentially YTM is the formulae for calculating the price of a bond. IAS 39 states that where a bond is being held to maturity then any discount or premium on purchase of such a bond should be amortized using the internal rate of return. In this study the researcher will therefore establish the internal rate of return of a bond in cases where trustees have the intention and the capability of holding bonds to maturity.

2.1.3 BOND VALUATION METHODOLOGIES

The value of a bond is a function of its coupon, its maturity and the movement of market interest rates. There is therefore an inverse relationship between bond prices and the market rates; lower rates lead to higher bond prices. A premium bond is one that sells more than its par value. A premium results whenever market interest rates drops below the bonds coupon rate. A discount bond, in contrast sells for less that par, discount is the result of market rates being greater than the issued coupon rate (Lawrence and Joehnk, 2001).

According to Moorad (2002), price of any financial instrument is equal to the NPV today of all the future cash flows from the instrument. For a bond the price is expressed as per 100 nominal of the bond is quoted as '98.00' this means that every $100 nominal of the bond a buyer pays $98.00. Where a bond is purchased between interest payments date, the total price paid by the investor include accrued interest. Accrued interest is the amount of interest that would have been paid between the last interest payments dates to the settlement date, if interest were paid on a daily basis. Although accrued interest is included in the total price by investor, it is not generally included in the quoted market price. Prices which do not include accrued interest is called clean price while those that include is dirty prices (Andrew et al, 1995).

According to Moorad (2002), different types of bonds have different methodologies of pricing. The Price of a conventional bond that pays annual coupons is given as the present value of annual coupon added together with the present value of the maturity value. The Price of Undated bond also referred as perpetual or irredeemable bonds/ Consol according to (Ross et al, 1990) is the annual coupon divided by yield rate.Rose et al, (1990) noted that not all bonds have a final maturity or redemption date hence interest in this case is paid indefinitely. Most undated bonds date from a long time in the past and it is unusual to see them today. In structure the cash flow from an undated bond can be viewed as a continuous annuity. Moorad, (2002) noted that price of a zero-coupon bond that do not pay coupon during life of these bonds is determined by modifying to allow for the fact that cost is equal to zero hence the only cash flow anticipated is the maturity payments, price would therefore be set as the present value of the maturity value.
In this research the researcher was only focused on the bonds available in the Kenyan market which is conventional bonds and zero-coupon bonds.

2.1.4 PENSION FUNDS

A pension fund is a pool of assets forming an independent legal entity that are bought with the contributions to a pension plan for the exclusive purpose of financing pension plan benefits. According to Michael (1996), pension is an income payable after a worker retires, usually at an age of 60 or above in USA, depending on the provisions of the particular retirement plane. Pensions can also be paid out earlier if a worker becomes disabled or to the survivor of a worker who dies. The primary objective of a pension plan is to provide income to employees in their retirement (Howard, 1977). About 90% of all US workers are covered for retirement and disability under Social Security. Most of the others are members of some public employee

retirement system. Perhaps most of all workers in private sector are covered by some form of private pensions or profits sharing plans (Michael, 1996).

In Kenya all employee in formal employment are required by law to remit contribution both employee portion deducted from employee salary and employer portions contributed by employer and the amounts remitted to National Social Security Fund (NSSF). Modern Retirement plans come in two general forms. In a defined-benefit plan the amount of pensions is specified by some formulae recognizing the workers length of service and earnings history; then the contributions (from employee and employer) needed to provide pensions are determined. A defined contributory plan indicates how the contributions are to be determined on behalf of each employee and accumulates these contributions in an interest-earning fund. At retirement age, the accumulated fund is applied to provide whenever pension it will. Retirement plans can be classified in terms of the entity that sponsors the plan. When the sponsoring agency is some part of government, the plan is considered to be in the public sector. When the plan is sponsored by an employer and is arising out of the collective bargaining process or when it is arranged on an individual basis by the worker, it is said to be in the private sector. Nearly all employers (and the government by virtue of the tax exemptions on the investment activities which it gives) recognize that a more secure base for the payments of pensions can be achieved by setting aside moneys in a trust fund and investing them in variety of stock exchange and other securities. Such a trust fund will consist of contributions of the employer, the contributions of the employee (In the case of a contributory fund) and the investment income from previously acquired investment and those assets themselves. The management of the trust fund will be carried out by the trustees who are normally appointed by the employer but increasingly from names put forward for appointment by an elective process carried out in conjunction with trade unions and other employee representative bodies. The manner in which trustees carry out their investment responsibilities will be governed by the trust deed or other investment under which the pension scheme is constituted, most if not all, modern trust deed will have specific investment clause which will permit the trustees to invest over a wide range which enables them take full advantage of various investments outlets available to them (Michael, 1996).

Personal pension plans offer a further alternative means of both investment and protection. The growth of the market for personal pension plans have been assisted by government policy which has encouraged people to leave state earning related pensions schemes by using personal pensions to contract out. In additions it has enabled employee to opt out of an occupational scheme to make their own arrangements for retirement (Julia and William, 2002). Pension

Industry in Kenya has grown over the years into a multi-billion industry with asset value as of December 2008 standing at Kshs 182.38Bn. The assets of Pension funds are invested across asset different categories being; Fixed and Call deposits, Government securities Treasury bills, bonds and stocks), Quoted equities, Unquoted equities, Offshore investments, Immovable properties, Guaranteed funds among others (RBA News quarterly newsletter volume 7 for March 2008). Retirement benefits authority (RBA) is a regulatory body under the ministry of Finance, established by Act of parliament, that is, the retirement benefits Act. The authority became fully operational in October, 2000 when the act was fully commenced and the Retirement Benefits Regulations were gazetted by the ministry for finance.

2.1.5 INTERNATIONAL ACCOUNTING STANDARD 39 (IAS 39)

Kenya adopted the International Accounting Standards (IAS) as the local Accounting Standards with effect from January I, 1999 (NSE fact file, 2008). IAS 39 was first drafted by the IAS board in October 1984 and first known as accounting for investments. Over the years it has been modified the last amendment done was in 17th December 2004 and became effective on 1st January 2005. The objective of this standard was to establish principles for recognizing and measuring financial assets and liabilities and some contracts to buy or sell non-financial items (IAS Board, 2003). According to the IAS board financial asset is any asset that is; Cash, Equity instrument of another entity, Contractual right to receive cash or another financial asset from another entity or to exchange financial assets with another entity under conditions that are potentially favorable to the entity. As per IAS 39 when a financial asset is recognized initially the entity shall measure it at its fair value plus, if financial asset not at fair value then transaction cost that are directly attributable to the acquisition costs or issue of the financial assets. Subsequently for the purpose of measuring financial assets after initial recognition, IAS 39 classifies financial assets into the following four categories.

2.1.5.1 Financial assets at fair value through profit or loss;

These includes financial assets that the entity either holds for trading purposes or upon initial recognition it designates as at fair value through profit or loss. Financial asset is held for trading if the entity acquired it for the purpose of selling it in the near future or is part of a portfolio of financial assets subject to trading (Graham, 2008). Fair value is the amount for which an asset could be exchanged between knowledgeable, willing parties in an arms length transaction. Quoted market prices in an active market are the best evidence of fair value and should be used, where they exist to measure the financial instrument (IAS board 2003). If the market for a

financial instrument is not active, an entity establishes fair value by using a valuation technique that makes maximum use of the market inputs and includes recent arms length market transactions reference to the current fair value of another instrument that is substantially the same, discount cash flows analysis, and option pricing models. An acceptable valuation technique incorporates all factors that market participants would consider in setting a price and is consistent with acceptable economic methodologies for pricing financial instruments. If there is no active market for equity instruments and range of reasonable fair values Is significant and these estimates cannot be made reliably then an entity must measure the equity instruments at cost less impairment.

2.1.5.2 Held to maturity investments;

These are non-derivative financial assets with fixed or determinable payments that an entity intends and is able to hold to maturity and that do not meet the definition of loans and receivables and are not designated on initial recognition as assets at fair value through profit and loss or as available for sale. Held to Maturity investments are measured at amortized cost. If an entity sells a held to maturity investment other than in insignificant amounts or as a consequences of a non-recurring, isolated event beyond its control that could not be anticipated, all of its other held-to-maturity investments must be reclassified as available-for-sale for the current and next to financial reporting years (IAS 39 AG 46b). Amortized cost is the cost of an asset adjusted to achieve a constant effective interest rate over the life of the asset or liability. An entity must therefore apply the effective interest rate method in the measurement of the amortized cost. The effective interest rate method determines how much interest income should be reported in profit and loss (Graham, 2008).

2.1.5.3 Available for sale financial assets (AFS);

AFS are any non-financial assets designated on initial recognition as available for sale. Financial assets available for sale are always classified as financial assets at fair value at fair value through profit or loss. A financial asset is available for sale if the entity acquired it for the purpose of selling it in the near future or is part of a portfolio of financial assets subject to trading. Derivatives are always held for trading unless they are effective hedging instruments. Financial assets at fair value through profit and loss are re-measured to fair value at each subsequent balance sheet date until the assets are de-recognized. The gains and losses arising from changes in fair value are included in the income statement in the period in which they occur. Gain and losses will include both realized gain and losses arising on the disposal of these financial assets

and unrealized gains and losses arising from changes in the fair value of the assets still held (Graham, 2008).

2.1.5.4 Loans and Receivables;

Are non-derivative financial assets with fixed or determinable payments, originated or acquired, that are not quoted in an active market, not held for trading, and not designated on initial recognition as assets at fair value through profit or loss or as available-for-sale. Loans and receivables, for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, should be classified as available-for-sale. Loans and receivables are measured at amortized cost (IAS 39 AG46a). Financial assets with quoted price in an active market and financial assets that are held for trading, including derivatives, cannot be classified as loans and receivables (Graham, 2008). As per the provisions of IAS 39 in computing the amortized value of a financial asset the cash flows should be discounted using internal rate of return (IRR). IRR is the effective rate that equates the value of the bond with the present value of future cash flows.

For floating rate financial assets periodic re-estimation of cash flows to reflect movements in market rates of interest alters the effective interest rates. If floating rate financial asset is recognized initially at an amount equal to the principal receivable or payable on maturity, re-estimating the future interest payments normally has no significant effect on the carrying amount of the asset (IAS 39, AG 7). For the purpose of this study fair value of bonds will be derived from an active market which is the Nairobi stock exchange. Since the market is not very active on trading on bonds appropriate techniques defined under fair value will be used in arriving at the fairest value of such bonds. The fund managers will be required to segregate bonds according to the four categories of the subsequent measurement of a financial asset.

2.1.6 FUND MANAGERS

Fund manager are in the business of safeguarding and growing their portfolio through conscious astute investments of the funds entrusted with them by their shareholders. They are professional practitioners whose advice and investment tactics and practices are relevant not just to them but also to the whole business community. 'Investment' is a term defined as 'any medium by which placement of funds generally occurs with the expectation of preserving value earning a positive return' (AIMR, 1999). Reilly & Brown (2006), defined investment as '...the current commitment of dollars for a period of time in order to derive future payments that will

compensate the investor; for time funds are committed, expected rate of inflation and uncertainty of future returns'. Professional asset management firms are organized into two ways; in arguably the most straightforward structure, individuals as well as institutional investors, such as the sponsors of pensions and endowment funds, make contacts directly with a management and advisory firm for its services. These services can range from providing standard banking services/ Transactions to advising clients on structuring their own portfolios to actually managing the investment funds themselves. A second general approach to asset management involves commingling of investments from several clients. The investment company then invests a pool of funds belonging to many individuals in a single portfolio of securities. In exchange for this commitment of capital, the investment company issues to each investor new shares representing his/her proportionate ownership of the mutually held securities portfolio, commonly known as funds. The business of fund management has grown in Kenya especially after enactment of RBA Act, 2000 which made it mandatory for trustees of pension schemes to appoint a fund manager. RBA news Volume 7 issue number 4 of June 2008 indicates that there were thirteen registered fund managers by RBA to undertake provision of investment services to pension schemes in Kenya. The responsibilities of fund managers as per RBA Act include; advising trustees on available investment vehicles and expected risk and return for each vehicle, making tactical asset allocation decision based on the strategic asset contained in the investment policy, undertaking of research at company, sector and country level, management of portfolios so as to ensure liquidity is available to meet the pensions schemes needs, provide accurate and timely periodic reports to the trustees and the authority on holdings and transactions.

RBA has also developed investment Caps that serves as guidelines for fund managers. According to guidelines maximum investment that fund manager can take is; 5% of funds in cash, 30% of funds in Deposits, 15% of funds in Commercial papers and Bonds, 70% of funds in Government paper and Quoted securities, 5% of funds in unquoted shares, 15% of funds in offshore securities, 30% of funds in Real Property and 100% of funds in guaranteed investments. Fund managers may temporarily violate these maximum limits in case of asset revaluation, appreciation in market price, bonus issue and transfer between classes. This study will be centered Commercial bond and Governments treasury bonds where its pricing is required to comply with IAS 39. Appendix V shows a list of registered fund managers by RBA. The researcher used the data originating from these fund managers.

2.1.7 HISTORY OF BOND TRADING AT NAIROBI STOCK EXCHANGE

The Stock Exchange is a market that deals in the exchange of securities issued by publicly quoted companies and the Government. Nairobi Stock Exchange has the following Three market Segments namely; Main Investments Market Segment (MIMS), Alternative Investments Market Segment (AIMS), Fixed Income Securities Market Segment (FISMS). Fixed income security market segment mainly deals with both Government securities and Commercial securities i.e. Treasury bonds, Bills and Government stock and corporate bonds and Commercial papers. IAS 39 defines fair value of bonds as the price of bond traded in an active market. For the purpose of this study active market would be defined as market price of securities published at the Nairobi stock exchange (NSE) where bonds are traded under the fixed income securities market segment (FIMS). The first bond was listed at NSE in November 2000 when the Company for Habitat and Housing in Africa, "Shelter-Afrique" issued the first tranche of a medium term floating rate note worth Kshs. 350.00 million. The net proceeds were used to fund the issuer's investment in housing development projects in Kenya. The issue had a minimum maturity of 18 months and a maximum maturity of 36 months. The coupon was linked to the 91-day Treasury bill rate plus a 0.75% premium. On July 11, 2001, the East African Development Bank listed a Kshs. 2.0 billion, floating rate, medium term note. The paper had a maturity period of 5 years and a coupon rate linked to Government of Kenya 91-day Treasury bill rate plus a 0.75% premium. (NSE fact file, 2008). Over the years other companies have issued corporate bonds and commercial papers and listed them at the Nairobi stock exchange. Key among them is Mabati Rolling Mills Ltd. Kshs. 1.0 billion floating rate bond Issued on 23 October 2002 with a tenor of 5years, Africa Development Bank Kshs. 800.0 million bonds with a fixed interest rate of 7.5% and a tenor of 7 years. Besides being the only non Government of Kenya bond with a fixed coupon, at the time of its listing, it had the longest maturity of a non Government of Kenya bond listed on the Exchange. All the treasury bonds that have been issued by Kenyan government are also trading at the NSE.

2.2 EMPIRICAL LITERATURE REVIEW

2.2.1 Studies done on Pension funds

Different scholars have studied different aspects of pension schemes. Local studies done on pension schemes include;

Muigai (1996) did an evaluation Pension schemes and Provident funds investment portfolios in Kenya. His main objectives were to identify investment portfolios of Kenya Pension plans and Provident funds, determine rates of return on investment portfolios, Assess the adequacy of

pension schemes and provident funds in terms of the level of funding, remitting of contributions and ability to meet obligations. Muigai identified that 20% of asset allocation was in equities, 58% in money market securities such as government and corporate bonds and 22% in properties. From his findings its evident that pension schemes are heavily invested on bonds therefore giving the researcher a reason to evaluate of the heavy weighting on bonds are properly priced.

Magera (1999), studied about planning for retirement with a case study of University of Nairobi staff. The specific objectives of his study were to find out whether employees plan for their retirement, determine how they plan for their life after retirement and handicaps they face in planning for retirement. His findings indicated that 88.6% of interviewed people indicated importance of planning for retirement, respondents in his study also indicated that the best time to begin planning for retirement was immediately after employment. Researcher however noted that despite this less than half of them started immediately after they were employed.

Wanyama (2002) studied the implications of investment guidelines under retirement benefits Act (1997) and regulations 2000 on the pension schemes and Provident funds investment portfolios in Kenya. Objective of his study was to identify the current investment portfolio composition of pension scheme and provident funds and determine the changes that they will have to make on their investment portfolios so as to conform to the investment guidelines as stipulated in the retirement benefits regulations 2000 that became effective on 8th October 2001. Wanyama also assessed the problems that pension schemes and provident fund encountered in their effort to conform to the investment guidelines as stipulated in the retirement benefits regulations 2000. In his findings he noted that 5% of pension portfolios were held in cash and demand deposits, 45% in both government and corporate bonds 15% in equities and 35% in properties. His findings indicated that pension scheme assets were increasingly getting weighted on properties and he attributed this to desperate efforts by sponsors to trade off accumulated contributions with properties hence cleaning the balance sheet of pension schemes. Wanyama noted that some of the problems encountered by trustees in conforming to the investment guidelines included; Depressed property market where the pension schemes who wish to offload holdings in properties found it difficult to get a ready buyer, the other problem was the illiquidity of the equity market, accumulated unremitted contributions running into millions required such contributions to be paid so as to realign the portfolio, Wanyama also noted that the time window that had been given out to comply was too short. In general Wanyamas' research falls short of evaluating whether the values disclosed on the portfolio were accurately valued which forms a

gap in his study that the researcher intends to fill. Wanyama has relied so heavily on the values given to him to come up with his findings. Using mispriced asset values to evaluate portfolio holding will definitely lead to an incorrect conclusion. For this reason the researcher finds it prudent to evaluate whether bond valuation models adopted on pension schemes conforms to the provisions of IAS 39.

Gitu (2003) studied factors affecting the equity allocation decisions made by trustees and Fund managers of pension schemes in Kenya. The overall objective of his study was to establish general attributes of pension fund managers and trustees in Kenya towards equity as an investment category. He also determined from the perspective of fund managers and trustees any other factor besides returns and risk governing the level of investment in equities of pension schemes. Gitu in his findings pointed out the factors given as the most important governors of pension fund equity commitment as; Company profitability and historical dividend payout ratios.

Omonyo (2003) did a survey of investment practices of pension fund managers in Kenya. The main objective of his study was to identify factors fund managers in Kenya consider in allocating the fund to assets within the recommended portfolio. In his findings Omonyo noted that the main considerations by fund managers include; Risk and return involved, asset diversification needs and cost consciousness. To achieve this fund managers together with trustees design an investment policy or strategy that takes into cognizant liquidity needs, investment horizon, legal and regulatory constraints. Omonyo was however uncomfortable with 70% cap for equity allocation since its only advisable to use stocks when the investors time horizon is long enough as to do away with stock market volatility.

Ndirangu (2002) evaluated the implications of retirement benefits Act (1997) on investment performance of provident fund. Her period of study covered the years between 1992 and 2001 and the main objective of her study was to determine the possible impact of RBA act on investment performance of provident funds and pension schemes in Kenya. In her findings she established that most provident funds were still in the process of adhering to the requirements which included appointment of trustees, fund managers, custodians and involvement of an actuary. She also noted that pension fund earnings were more stable when RBA rules and regulations were applied implying that returns are expected to be more stable now that rules and regulations are in force. This also indicated that risk had been significantly reduced through introduction of RBA Act (1997).

Ngene (2002) did an empirical investigation into the portfolio performance measures by pension fund managers and the challenges they face in portfolio management in Kenya. His main objectives of the study were to; Establish whether pension managers in Kenya are aware of the various portfolio performance measures and which measures they use in evaluating their performance, Establish the benchmarks used by pension fund managers against which their performance is evaluated, Identify the challenges faced by pension fund managers in Kenya in portfolio management. In his study he noted that some of the challenges facing fund managers include; Valuations of assets, measurement of portfolio risks and having appropriate benchmarks to measure performance. Ngene noted that valuation of assets especially bonds vary from one fund manager to the other makings measurements of their performance very difficult. In his recommendations he noted that a consistent pricing mechanism should be adopted on bonds like is the case on equities so that performance measurement on fund managers can be evaluated. It is from this study therefore that the researcher has identified the knowledge gap which can be bridged by developing a pricing mechanism that can be adopted across board.

Kihunya (2005) investigated the effect of RBA Act 2000 on the risk of investments held by pension funds in Kenya which was his main objective. His findings concurred with those of Ndirangu 2003 where he noted that pension fund was yet to comply on having the portfolio comply with RBA investment guidelines 2001. He however noted that earnings were now more stable and less risky as opposed to before the regulations came into effect. Kihunya elucidated that with the applications of RBA Act liquidity of the pension funds have improved by investing more on fixed income marketable securities. He also noted that the risks of variability of returns have been reduced and the income is more stable than before due to the professional advice. Finally, he congratulated RBA having stabilized the pension sector and made it more attractive to more players.

2.3 SUMMARY AND FINDINGS ON EMPIRICAL STUDIES

From the studies done by Ngene 2002 it's evident that valuation of bonds remains an issue today. Every fund manager values bonds their own way which makes it very difficult to measure their performance. From the studies done by Muigai 1996, Wanyama 2002 and Ndirangu 2003 its evident that fund managers have increasingly enhanced investments on bond portfolio because they find it to be relatively stable and a good option to counter poor performance on the equity in the portfolio. This therefore makes the researcher very interested in making sure that

the values of bonds are not exaggerated to counter poor performance on equity portfolio. In these previous studies it's widely noted that bond valuation still remains a challenge yet none of them have taken any steps to investigate the appropriate valuation model of pension assets that is in cognizant with provisions of IAS. From RBA news of June 2008 bond portfolio exceeds 40% of the entire pension assets and any misevaluation will not only affect the value of assets in a pension scheme but also induce sizeable valuation errors in the stock of many companies running DB pension arrangement. Because of the weighty nature of bond valuation the researcher finds it fundamental to investigate if the current valuation adopted on bonds complies with authoritative benchmark valuation which is IAS 39.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1INTRODUCTION

The chapter outlines the research design and methodology used in conducting this study. It describes the process that the researcher used to obtain the sample from the population, as well as the data collection methods and analysis.

3.2RESEARCH DESIGN

Research design according to Babbie et al, (1989) is a plan of scientific investigation. It is a plan of action of finding something. In research designing, the researcher is concerned with the purpose of study; type of investigation, extent of research is concerned with the purpose of study, type of investigation, extent of research interference, study setting, and unit of analysis and time horizon. According to Sekaran (2000), a study can be exploratory taken to comprehend nature of the problem or descriptive study undertaken to describe certain characteristics of the variable of interest or hypothesis. The research design that the researcher adopted was survey research. According to Mbwesa,(2006) survey research involves the collection of data from a population in order to determine the current status of that population with respect to one or more variables. The researcher found this research design appropriate for this study because it will involved collecting pension scheme bond data from fund managers out of which bond pricing model adopted will be evaluated if it complies with requirements of IAS 39. Mbwesa, (2006) also noted that the main instrument used for data collection in a survey research is a self administered questionnaire or interview. The researcher in this study designed a data collection form shown in appendix II. The period of the study focused on pension schemes registered by RBA on 31 December 2008.

3.3POPULATION

According to (John Freund, 1988) population is a set of data consisting of all conceivably possible (or hypothetically possible) observations of a given phenomenon. Conceptually the population of interest is the entire list of registered Pension Schemes by the Retirement Benefits Authority under a segregated arrangement. The population of this study was therefore 13 registered fund managers by RBA as at 31 December 2008.

3.4SAMPLE DESIGN AND SIZE

Sample is a portion of a population selected for analysis (Levine et al, 2008). While according to Richard (2008), sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the larger group from which they were selected. The sampling method that was used by the researcher is purposive sampling. According to (Richard, 2008) purposive sampling is a process whereby the researcher selects a sample based on experience or knowledge of the group to be sampled while according to Mbwesa,(2006) purposive sampling is a non-probabilistic sampling technique that conforms to certain criteria set by the researcher. The elements to be included in the sample are processed on the basis of researchers' judgment for their typicality. The purposive sampling method that was adopted is judgment sampling. Mbwesa (2006) states that judgement sampling is used when limited category of people have the information that is being sought. The researcher found judgment sampling to be the most appropriate method of getting the sample because the bond information he was seeking is held by the fund managers.

In this research the researcher picked a sample of fund managers managing funds on a segregated arrangement. The fund managers who manage pension assets as a unit fell outside the researcher's data. According to (RBA news volume 7, No 3) the fund managers managing pension funds on a segregated arrangement include; Old Mutual Asset Managers (Kenya), AIG (EA) Ltd, Genesis Kenya, Co-op Trust Investment Services Ltd, Stanbic Investment Management Services, Sanlam Investment Services Ltd. The sample was therefore reduced to 6 fund managers.

3.5DATA SPECIFICATION AND COLLECTION

The study collected the following data from sampled pension schemes managed by the sampled fund managers. The data collected included the following bond details; Classification of Bond whether conventional, consol or zero coupon bonds; Bond prices and the methodology of arriving at the bond prices; Face value of the bonds; Coupon rate of the bonds; Frequency of coupon payments; Cost of the bond on initial purchase; Placement date of the bond; Maturity date of the bond; Investment policy of the pension fund; whether bonds are held to maturity (HTM), held for trading (HFT) or held at fair value (HFV). The data collected was captured in Microsoft Excel where it was easy to do independent computation of bond prices. Data analyzed included both bonds issued in the primary market and those traded in the secondary market. Market price of bonds was collected from NSE. The detailed features of bonds as shown in Appendix II were sourced from CBK and RBA registered fund managers in the Kenyan Market.

3.6DATA ANALYSIS

Data collected was used to calculate the value of bonds as at 31 December 2008 using both SPSS software and Ms Excel. In order to investigate whether the bond valuation model adopted by fund managers complies with IAS 39 requirement, the researcher developed his own IAS 39 compliant model thereafter used the model to independently value the bonds. Comparison was made between researcher's bond values and those of the fund managers. In order to compute the value of Bonds, IAS 39 classifies bonds into three categories as follows based on the policy of the scheme;

If the policy of the scheme is holding bonds for trading (HFT) then the value of the bond will be the fair market value of that bond at NSE as at 31 December 2008. If the bond did not trade on that date then the market value would be computed by picking the value last traded and factoring in the accrued interest up to 31 December 2008 also called the dirty price of a bond as at that date. The applicable valuation model for this case is as follows;

Bond Price at 31-Dec-2008$_{(\text{Where bond is HFT})}$ = (NSE Bond Price traded on 31-Dec-2008 or NSE Bond Price of Similar bond traded on 31-Dec-2008 or (NSE Bond Price last traded + Accrued interest from Last trading date to 31-Dec-2008))

Where the policy of the scheme is to hold assets to maturity (HTM) the value of bonds will be the amortized cost. To compute amortized cost the first step will be to calculate the effective interest rate also known as internal rate of return (IRR). The aim of amortized cost is to achieve constant effective interest rates over the life of the bond. Difference between the interest arising from applying IRR and coupon rate on the face value of the bond is added to the cost of the bond result being referred as the amortized cost of the bond. The applicable valuation model for this case is as follows;

Bond Price at 31-Dec-2008$_{(\text{Where bond is HTM})}$ = (Amortized cost as at 31-Dec-2008 achieved by discounting future cash flows using IRR as discount factor)

If the policy of the scheme on the other hand is to designate bonds at fair value (DFV) then the existence of published price at NSE would be the best evidence of fair value of the bond. For bonds not quoted or actively traded on the NSE then fair value in this study would be determined using discounted cash flow technique. Under discounted cash flow technique the researcher will compute the present value of all future cash flow of a bond as at 31 December 2008. The applicable valuation model for this case is as follows;

Bond Price at 31-Dec-2008$_{(\text{Where bond is DFV})}$ = (NSE Bond Price traded on 31-Dec-2008 or NSE Bond Price of Similar bond traded on 31-Dec-2008 or Present value of all future cash flows where bond was not trading at NSE on 31-Dec-2008)

Depending on the category the bonds fell among the above mentioned valuation concepts comparison was done between the price computed above as per IAS 39 and the value disclosed by the fund managers. The statistical technique which the researcher adopted was descriptive statistics. To evaluate if the bonds are properly priced according to IAS 39 the researcher measured variability by use of Variance. According to (Ngau, 2004) variance is the sum of squares of deviation from the mean divided by the degree of freedom. If the value is small it implies that the variance is small and hence proper pricing. Materiality threshold of the variance between the two prices was 0.5% in this study. So where valuation difference between the two prices was more than 0.5% then it was conclusive that pricing model adopted by fund managers was not in compliance with IAS39.

CHAPTER FOUR

4.0 DATA ANALYSIS

For the purpose of data analysis the six fund managers will be abbreviated as follows;

AIG Global Investment Company (EA) Ltd - AIG

Old Mutual Asset Mangers (K) Ltd - OMAM

Genesis Kenya Investment Management Ltd - GEN

Stanbic Investment Management Services Ltd - SIMS

Co-op Trust Investment Services Ltd - COOP

Sanlam Investment Services Ltd - SANL

4.1 BOND VALUATION MODEL USED BY AIG

In analyzing if the valuation model used by AIG complies with IAS 39 the researcher obtained data from AIG where the pension scheme was holding bonds to Maturity. The researcher established that fund manager amortized the bond using straight line basis. IAS 39 stipulates that the bond should be amortized using internal rate of return.

TABLE 4.1 BOND VALUATION BETWEEN IAS 39 AND AIG MODEL AS AT 31 DEC 2008

Bond Issue No	Issue Date	Maturity Date	Computed IRR	Coupon Rate	Face Value	Bond Value Per IAS 39	Bond Value Per Fund Manager
FXD2/08/2	29-Aug-08	24-Nov-10	4.162%	8.75%	14,000,000	14,206,584	13,961,712
FXD1/05/4	23-May-05	18-May-09	6.500%	12.25%	10,000,000	10,110,088	10,129,389
FXD1/05/4	23-May-05	18-May-09	6.375%	12.25%	60,000,000	60,715,365	60,819,156
FXD1/07/5	29-Jan-07	23-Jan-12	6.125%	11.25%	45,000,000	45,332,527	46,166,393
FXD4/08/5	27-Oct-08	21-Oct-13	5.775%	9.50%	5,000,000	4,680,979	4,722,596
FXD4/08/5	27-Oct-08	21-Oct-13	5.750%	9.50%	5,000,000	4,689,564	4,722,596
FXD1/03/6	23-Dec-02	12-Jan-09	7.022%	14.00%	10,000,000	10,609,547	10,655,794
FXD1/05/6	26-Dec-05	19-Dec-11	6.000%	13.00%	104,200,000	107,043,954	106,737,155
FXD2/04/6	26-Jul-04	19-Jul-10	3.525%	6.75%	70,000,000	71,553,330	71,860,744
FXD2/07/15	25-Jun-07	6-Jun-22	6.210%	13.50%	35,000,000	37,498,675	36,326,416
FXD3/07/15	26-Nov-07	7-Nov-22	6.602%	12.50%	30,000,000	28,757,832	29,126,124
FXD2/08/20	30-Jun-08	5-Jun-28	6.096%	13.75%	10,000,000	11,157,556	9,394,105
Total					**398,200,000**	**406,356,001**	**404,622,180**

4.2 MEASURE OF VARIANCE-AIG AND IAS 39 VALUATION

TABLE 4.2 MEASURE OF VARIANCE IN BOND VALUATION BETWEEN AIG AND IAS 39

Bond Issue No	Bond Value Per IAS 39	Bond Value Per Fund Manager	Percentage Variance
FXD2/08/2	14,206,584	13,961,712	1.72%
FXD1/05/4	10,110,088	10,129,389	0.19%
FXD1/05/4	60,715,365	60,819,156	0.17%
FXD1/07/5	45,332,527	46,166,393	1.84%
FXD4/08/5	4,680,979	4,722,596	0.89%
FXD4/08/5	4,689,564	4,722,596	0.70%
FXD1/03/6	10,609,547	10,655,794	0.44%
FXD1/05/6	107,043,954	106,737,155	0.29%
FXD2/04/6	71,553,330	71,860,744	0.43%
FXD2/07/15	37,498,675	36,326,416	3.13%
FXD3/07/15	28,757,832	29,126,124	1.28%
FXD2/08/20	11,157,556	9,394,105	15.80%

Using IAS 39 Computation the variance between values disclosed by AIG differed significantly from values as per IAS 39 computation. 58.3% of the bonds had a variance of more than 0.5% which was the significance threshold in this study.

4.3 BOND VALUATION MODEL USED BY OMAM

In analyzing if the valuation model used by OMAM complies with IAS 39 the researcher obtained pension data from OMAM where the pension scheme was holding bonds to Maturity. The researcher established that fund manager amortized the bond though could not establish the basis of amortization because OMAM considered the amortization technique very confidential. The researcher however, computed the bond values based on IAS 39 requirement and compared the valuation with that disclosed by OMAM and summarized the results in table 4.3 below

TABLE 4.3 BOND VALUATION BETWEEN IAS 39 AND OMAM MODEL AS AT 31-DEC-2008

Bond Issue No	Issue Date	Maturity Date	Computed IRR	Coupon Rate	Face Value	Bond Value Per IAS 39	Bond Value Per Fund Manager
FXD1/07/2	29-Jan-07	26-Jan-09	5.250%	9.50%	300,000	311,360	311,907
FXD3/08/2	28-Aug-08	23-Aug-10	4.973%	8.75%	8,000,000	8,062,085	8,097,851
FXD4/08/2	29-Dec-08	27-Dec-10	5.245%	8.75%	10,000,000	9,702,437	9,698,943
FXD2/06/3	25-Aug-06	24-Aug-09	12.236%	8.50%	3,400,000	3,171,984	3,497,675
FXD1/06/3	24-Feb-06	23-Feb-09	4.720%	11.00%	2,700,000	2,805,208	2,811,570
FXD2/06/3	25-Aug-06	24-Aug-09	4.300%	8.50%	4,800,000	4,928,770	4,940,669
FXD2/06/3	25-Aug-06	24-Aug-09	4.325%	8.50%	3,400,000	3,490,121	3,498,659
FXD1/06/3	24-Feb-06	23-Feb-09	4.715%	11.00%	4,000,000	4,155,929	4,165,280
FXD1/05/4	19-May-05	18-May-09	5.157%	12.25%	1,000,000	1,020,938	1,024,397
FXD1/07/5	19-Sep-07	23-Jan-12	4.608%	11.25%	2,000,000	2,178,032	2,177,910
FXD3/07/5	24-Sep-07	17-Sep-12	4.992%	9.50%	7,000,000	7,023,722	7,083,336

FXD3/07/5	24-Sep-07	17-Sep-12	5.063%	9.50%	3,900,000	3,896,405	3,931,879
FXD3/07/5	14-Dec-07	17-Sep-12	4.811%	9.50%	1,000,000	1,014,694	1,005,940
FXD1/08/5	28-Jan-08	21-Jan-13	5.750%	9.50%	8,500,000	8,174,517	8,423,487
FXD1/08/5	28-Jan-08	21-Jan-13	5.500%	9.50%	8,500,000	8,309,924	8,299,247
FXD2/08/5	28-Apr-08	22-Apr-13	5.250%	9.50%	1,000,000	977,272	1,031,496
FXD3/08/5	28-Aug-08	19-Aug-13	5.364%	9.50%	6,350,000	6,200,209	6,289,422
FXD4/08/5	27-Oct-08	21-Oct-13	5.870%	9.50%	5,850,000	5,437,951	5,480,819
FXD2/03/6	20-May-03	18-May-09	5.489%	11.50%	6,000,000	6,089,458	6,091,440
FXD1/07/6	17-Sep-07	22-Apr-13	4.476%	11.50%	3,000,000	3,312,141	3,263,942
FXD1/04/7	19-Jan-04	17-Jan-11	3.817%	6.75%	5,200,000	5,246,042	5,272,428
FXD1/03/8	20-Apr-03	18-Apr-11	6.245%	12.50%	990,000	1,008,518	1,014,423
FXD2/03/8	21-Sep-03	19-Sep-11	3.562%	7.00%	1,000,000	1,012,851	1,015,811
FXD2/03/9	19-Jul-03	16-Jul-12	3.870%	9.50%	2,000,000	2,171,325	2,167,616
FXD1/07/10	24-Sep-08	16-Oct-17	5.317%	10.75%	2,000,000	2,029,950	2,051,249
FXD3/07/15	24-Jul-08	7-Nov-22	6.727%	12.50%	6,400,000	6,038,756	6,901,362
Total					**50,500,000**	**50,746,992**	**51,240,074**

4.4 MEASURE OF VARIANCE-OMAM AND IAS 39 VALUATION

TABLE 4.4 MEASURE OF VARIANCE IN BOND VALUATION BETWEEN OMAM AND IAS 39

Bond Issue No	Bond Value Per IAS 39	Bond Value Per Fund Manager	Percentage Variance
FXD1/07/2	311,360	311,907	0.18%
FXD3/08/2	8,062,085	8,097,851	0.44%
FXD4/08/2	9,702,437	9,698,943	0.04%
FXD2/06/3	3,171,984	3,497,675	10.27%
FXD1/06/3	2,805,208	2,811,570	0.23%
FXD2/06/3	4,928,770	4,940,669	0.24%
FXD2/06/3	3,490,121	3,498,659	0.24%
FXD1/06/3	4,155,929	4,165,280	0.23%
FXD1/05/4	1,020,938	1,024,397	0.34%
FXD1/07/5	2,178,032	2,177,910	0.01%
FXD3/07/5	7,023,722	7,083,336	0.85%
FXD3/07/5	3,896,405	3,931,879	0.91%
FXD3/07/5	1,014,694	1,005,940	0.86%
FXD1/08/5	8,174,517	8,423,487	3.05%
FXD1/08/5	8,309,924	8,299,247	0.13%
FXD2/08/5	977,272	1,031,496	5.55%
FXD3/08/5	6,200,209	6,289,422	1.44%
FXD4/08/5	5,437,951	5,480,819	0.79%
FXD2/03/6	6,089,458	6,091,440	0.03%
FXD1/07/6	3,312,141	3,263,942	1.46%
FXD1/04/7	5,246,042	5,272,428	0.50%
FXD1/03/8	1,008,518	1,014,423	0.59%
FXD2/03/8	1,012,851	1,015,811	0.29%
FXD2/03/9	2,171,325	2,167,616	0.17%
FXD1/07/10	2,029,950	2,051,249	1.05%
FXD3/07/15	6,038,756	6,901,362	14.28%

The researcher found out that 50% of the bonds were mispriced having a variance of more than 0.5% between values disclosed by OMAM and those ones of IAS 39.

4.5 BOND VALUATION MODEL USED BY GENESIS

In analyzing if the valuation model used by GEN complies with IAS 39 the researcher obtained pension data from GEN where the bonds were being marked to market. The researcher established that fund manager was not using the NSE market prices. The source of the prices could not however be established by the researcher. IAS 39 define fair market price of financial assets as those published by an active stock market which for the case the researcher considered the active market to be Nairobi Stock Exchange. Table 4.5 below shows the bonds held by one of the pension scheme managers by GEN. Also contained in the table are Bond prices published by NSE on 31-December-2008 and the IAS 39 value thereof of the bonds.

TABLE 4.5 BOND VALUATION BETWEEN IAS 39 AND GEN MODEL AS AT 31-DEC-2008

Issue Number	Issue Date	Maturity Date	Purchase Price	Face Value	NSE Bond Market Price	Bond Value Per IAS 39	GENESIS Bond-Valu
ZC2/2008/1	28-Jul-08	27-Jul-09	8,645,285	9,500,000	94.969	9,022,037	8,971,772
FXD3/2007/2	24-Dec-07	21-Dec-09	1,975,300	2,000,000	98.847	1,976,949	1,978,690
FXD4/2008/2	29-Dec-08	27-Dec-10	9,662,200	10,000,000	96.636	9,663,645	9,663,128
FXD2/2006/5	31-Jul-06	25-Jul-11	10,182,300	10,000,000	100.960	10,095,975	9,996,710
FXD1/2007/5	29-Jan-07	23-Jan-12	9,786,400	10,000,000	100.927	10,092,742	10,025,000
FXD3/2007/5	24-Sep-07	17-Sep-12	9,790,600	10,000,000	95.648	9,564,842	9,468,340
FXD1/2008/5	28-Jan-08	21-Jan-13	1,923,720	2,000,000	95.265	1,905,295	1,902,466
FXD1/2008/5	28-Jan-08	21-Jan-13	9,510,600	10,000,000	95.265	9,526,475	9,512,330
FXD3/2008/5	25-Aug-09	19-Aug-13	1,422,855	1,500,000	94.597	1,418,958	1,418,760
FXD4/2008/5	27-Oct-08	21-Oct-13	6,466,460	7,000,000	93.620	6,553,371	6,480,985
FXD2/2003/6	30-Jun-04	18-May-09	2,415,122	2,000,000	100.929	2,018,588	2,018,944
FXD1/2004/6	23-Feb-04	15-Feb-10	1,640,517	1,700,000	96.163	1,634,778	1,639,194
FXD3/2003/6	24-Nov-03	16-Nov-09	3,905,800	4,000,000	96.800	3,872,003	3,873,436
FXD1/2005/6	27-Dec-05	19-Dec-11	4,930,700	5,000,000	105.279	5,263,960	5,236,440
FXD1/2006/6	26-Jun-06	18-Jun-12	2,992,800	3,000,000	102.319	3,069,568	3,064,272
FXD2/2006/6	27-Nov-06	19-Nov-12	9,871,900	10,000,000	101.640	10,163,962	10,331,530
FXD1/2007/6	30-Apr-07	22-Apr-13	10,090,600	10,000,000	101.672	10,167,183	10,119,300
FXD1/2003/7	24-Mar-03	15-Mar-10	9,433,236	8,700,000	103.826	9,032,873	9,326,148
FXD1/2004/7	26-Jan-04	17-Jan-11	7,703,840	8,000,000	92.937	7,434,935	7,411,584
FXD2/2006/7	23-Jan-07	16-Dec-13	4,887,656	5,000,000	103.607	5,180,371	5,074,045
FXD2/2006/7	25-Dec-06	16-Dec-13	8,292,855	8,500,000	103.607	8,806,630	8,625,877
FXD1/2004/8	22-Mar-04	12-Mar-12	1,414,200	1,500,000	91.008	1,365,118	1,367,537
FXD1/2007/8	26-Feb-07	16-Feb-15	4,949,850	5,000,000	107.223	5,361,156	5,635,515
FXD2/2003/9	28-Jul-03	16-Jul-12	7,381,790	6,500,000	95.879	6,232,132	6,231,173
FXD1/2003/9	26-May-03	14-May-12	7,090,370	7,000,000	105.031	7,352,172	7,306,712
FXD1/2003/10	23-Jun-03	10-Jun-13	3,781,437	3,300,000	107.725	3,554,932	3,567,953
FXD2/2006/10	12-Sep-06	16-May-16	11,443,428	11,000,000	114.179	12,559,667	12,174,525
FXD2/2006/10	29-May-06	16-May-16	3,035,580	3,000,000	114.179	3,425,364	3,320,325
FXD1/2007/10	29-Oct-07	16-Oct-17	1,933,240	2,000,000	97.727	1,954,547	1,922,914

FXD1/2008/10	25-Feb-08	12-Feb-18	9,695,100	10,000,000	97.689	9,768,887	9,495,680
FXD2/2008/10	28-Jul-08	16-Jul-18	9,126,175	9,500,000	97.572	9,269,322	9,142,196
FXD3/2008/10	29-Sep-08	17-Sep-18	5,212,020	5,500,000	91.683	5,042,570	5,064,417
FXD3/2008/10	29-Sep-08	17-Sep-18	9,416,200	10,000,000	91.683	9,168,309	9,208,030
FXD1/2006/11	27-Mar-07	11-Sep-17	5,141,608	5,000,000	114.210	5,710,491	5,164,930
FXD1/2006/11	25-Sep-06	11-Sep-17	7,756,240	8,000,000	114.210	9,136,786	8,263,888
FXD1/2006/12	28-Aug-06	13-Aug-18	9,799,600	10,000,000	116.397	11,639,652	11,490,81
FXD1/2007/12	28-May-07	13-May-19	3,082,980	3,000,000	110.976	3,329,265	3,220,992
FXD1/2007/15	23-May-07	07-Mar-22	5,251,349	5,000,000	110.301	5,515,053	5,499,105
FXD2/2007/15	25-Jun-07	06-Jun-22	4,139,160	4,000,000	103.710	4,148,396	4,184,168
FXD2/2007/15	29-Jul-08	06-Jun-22	9,881,419	9,750,000	103.710	10,111,715	10,198,91
FXD3/2007/15	26-Nov-07	07-Nov-22	4,738,850	5,000,000	96.785	4,839,248	5,203,160
FXD1/2008/15	28-May-08	13-Mar-23	3,862,470	4,000,000	95.488	3,819,500	3,820,084
FXD1/2008/20	30-Jun-08	05-Jun-28	9,366,800	10,000,000	98.527	9,852,680	9,638,430
Totals			**273,030,612**	**275,950,000**		**279,622,103**	**277,260,40**

4.6 MEASURE OF VARIANCE-GEN AND IAS 39 VALUATION

TABLE 4.6 MEASURE OF VARIANCE IN BOND VALUATION BETWEEN GEN AND IAS 39

Bond Issue No	Bond Value Per IAS 39	Bond Value Per Fund Manager	Difference in Pricing	Percentage Variance
ZC2/2008/1	9,022,037	8,971,772	50,266	0.557%
FXD3/2007/2	1,976,949	1,978,690	(1,741)	0.088%
FXD4/2008/2	9,663,645	9,663,128	517	0.005%
FXD2/2006/5	10,095,975	9,996,710	99,265	0.983%
FXD1/2007/5	10,092,742	10,025,000	67,742	0.671%
FXD3/2007/5	9,564,842	9,468,340	96,502	1.009%
FXD1/2008/5	1,905,295	1,902,466	2,829	0.148%
FXD1/2008/5	9,526,475	9,512,330	14,145	0.148%
FXD3/2008/5	1,418,958	1,418,760	198	0.014%
FXD4/2008/5	6,553,371	6,480,985	72,386	1.105%
FXD2/2003/6	2,018,588	2,018,944	(356)	0.018%
FXD1/2004/6	1,634,778	1,639,194	(4,417)	0.270%
FXD3/2003/6	3,872,003	3,873,436	(1,433)	0.037%
FXD1/2005/6	5,263,960	5,236,440	27,520	0.523%
FXD1/2006/6	3,069,568	3,064,272	5,296	0.173%
FXD2/2006/6	10,163,962	10,331,530	(167,568)	1.649%
FXD1/2007/6	10,167,183	10,119,300	47,883	0.471%
FXD1/2003/7	9,032,873	9,326,148	(293,275)	3.247%
FXD1/2004/7	7,434,935	7,411,584	23,351	0.314%
FXD2/2006/7	5,180,371	5,074,045	106,326	2.052%
FXD2/2006/7	8,806,630	8,625,877	180,754	2.052%
FXD1/2004/8	1,365,118	1,367,537	(2,419)	0.177%
FXD1/2007/8	5,361,156	5,635,515	(274,359)	5.118%
FXD2/2003/9	6,232,132	6,231,173	959	0.015%
FXD1/2003/9	7,352,172	7,306,712	45,460	0.618%
FXD1/2003/10	3,554,932	3,567,953	(13,021)	0.366%
FXD2/2006/10	12,559,667	12,174,525	385,142	3.067%
FXD2/2006/10	3,425,364	3,320,325	105,039	3.067%
FXD1/2007/10	1,954,547	1,922,914	31,633	1.618%
FXD1/2008/10	9,768,887	9,495,680	273,207	2.797%

FXD2/2008/10	9,269,322	9,142,196	127,126	1.371%
FXD3/2008/10	5,042,570	5,064,417	(21,847)	0.433%
FXD3/2008/10	9,168,309	9,208,030	(39,721)	0.433%
FXD1/2006/11	5,710,491	5,164,930	545,561	9.554%
FXD1/2006/11	9,136,786	8,263,888	872,898	9.554%
FXD1/2006/12	11,639,652	11,490,810	148,842	1.279%
FXD1/2007/12	3,329,265	3,220,992	108,273	3.252%
FXD1/2007/15	5,515,053	5,499,105	15,948	0.289%
FXD2/2007/15	4,148,396	4,184,168	(35,772)	0.862%
FXD2/2007/15	10,111,715	10,198,910	(87,195)	0.862%
FXD3/2007/15	4,839,248	5,203,160	(363,912)	7.520%
FXD1/2008/15	3,819,500	3,820,084	(584)	0.015%
FXD1/2008/20	9,852,680	9,638,430	214,250	2.175%
Totals	**279,622,103**	**277,260,403**	**2,361,701**	

The researcher found out that 58.1% of the bonds were mispriced having a variance of more than 0.5% between IAS 39 Valuation and valuation done by GEN.

4.7 BOND VALUATION MODEL USED BY SIMS

In analyzing if the valuation model used by SIMS complies with IAS 39 the researcher obtained pension data from SIMS. SIMS values their entire bonds portfolio on mark to market basis. The researcher established that fund manager was not using the NSE market prices. The source of the prices could not however be established by the researcher. IAS 39 define fair market price of financial assets as those published by an active stock market which for the case the researcher considered the active market to be Nairobi Stock Exchange. Table 4.6 below shows the bonds held by one of the pension scheme managers by SIMS. Also contained in the table are Bond prices published by NSE on 31-December-2008 and the IAS 39 value thereof of the bonds.

TABLE 4.7 BOND VALUATION BETWEEN IAS 39 AND SIMS MODEL AS AT 31 DECEMBER 2008

Issue Number	Issue Date	Maturity Date	Purchase Price	Face Value	NSE Bond Market Price	Bond Value Per IAS 39	SIMS Bond Value
XD1/2004/5	26-Apr-04	20-Mar-09	1,144,044	1,200,000	99.176	1,190,112	1,188,155
FXD1/2008/5	28-Jan-08	21-Jan-13	476,305	500,000	95.265	476,324	475,617
XD1/2008/5	28-Jan-08	21-Jan-13	480,930	500,000	95.265	476,324	475,617
XD1/2008/5	28-Jan-08	21-Jan-13	874,098	900,000	95.265	857,383	871,312
XD1/2008/5	21-Feb-08	21-Jan-13	191,477	200,000	95.265	190,529	190,247
XD3/2008/5	25-Aug-08	19-Aug-13	95,722	100,000	94.597	94,597	95,123
XD3/2008/5	25-Aug-08	19-Aug-13	192,372	200,000	94.597	189,194	190,247
XD3/2008/5	09-Sep-08	19-Aug-13	570,757	600,000	94.597	567,583	570,740
XD2/2006/7	9-Jul-07	7-Jul-13	109,805	100,000	103.607	103,607	101,481
XD1/2007/7	30-Jul-07	21-Jul-14	571,002	600,000	94.646	567,873	558,359
XD1/2007/7	30-Jul-07	21-Jul-14	867,123	900,000	94.646	851,810	837,538
FXD2/2006/7	25-Dec-06	23-Dec-13	829,286	850,000	103.607	880,663	862,588
FXD1/2007/8	11-Jul-07	16-Feb-15	463,025	400,000	107.223	428,892	450,841

FXD1/2007/8	6-Jul-07	16-Feb-15	933,642	800,000	107.223	857,785	901,682
FXD1/2004/8	22-Mar-04	12-Mar-12	2,357,000	2,500,000	91.008	2,275,197	2,103,868
FXD1/2003/9	25-Jan-08	14-May-12	1,097,875	1,000,000	105.031	1,050,310	1,043,816
FXD1/2006/10	20-Jun-07	14-Mar-16	866,015	850,000	113.973	968,769	939,140
FXD1/2007/10	29-Oct-07	16-Oct-17	97,771	100,000	97.727	97,727	96,141
FXD1/2007/10	17-Dec-07	16-Oct-17	292,878	300,000	97.727	293,182	288,422
FXD1/2007/10	25-Feb-08	16-Oct-17	4,564,425	4,800,000	97.727	4,690,912	4,614,754
FXD1/2007/10	27-Aug-08	16-Oct-17	192,635	200,000	97.727	195,455	192,281
FXD3/2008/10	29-Sep-08	17-Sep-18	471,030	500,000	91.683	458,415	470,810
FXD3/2008/10	29-Sep-08	17-Sep-18	478,050	500,000	91.683	458,415	470,810
FXD3/2008/10	29-Sep-08	17-Sep-18	481,615	500,000	91.683	458,415	470,810
FXD3/2007/15	7-Mar-08	7-Nov-22	965,207	1,000,000	96.785	967,850	1,040,632
FXD1/2008/15	1-Apr-08	13-Mar-23	849,564	900,000	95.488	859,388	859,519
FXD1/2008/15	1-Apr-08	13-Mar-23	870,615	900,000	95.488	859,388	859,519
FXD1/2008/15	1-Apr-08	13-Mar-23	1,151,340	1,200,000	95.488	1,145,850	1,146,025
FXD1/2008/15	9-Apr-08	13-Mar-23	2,386,705	2,500,000	95.488	2,387,188	2,387,553
Totals			**24,922,312**	**25,600,000**		**24,899,139**	**24,753,643**

4.8 MEASURE OF VARIANCE-SIMS AND IAS 39 VALUATION

TABLE 4.8 MEASURE OF VARIANCE IN BOND VALUATION BETWEEN SIMS AND IAS 39

Bond Issue No	Bond Value Per IAS 39	Bond Value Per Fund Manager	Difference in Pricing	Percentage Variance
FXD1/2004/5	1,190,112	1,188,155	1,957	0.164%
FXD1/2008/5	476,324	475,617	707	0.148%
FXD1/2008/5	476,324	475,617	707	0.148%
FXD1/2008/5	857,383	871,312	(13,929)	1.625%
FXD1/2008/5	190,529	190,247	283	0.148%
FXD3/2008/5	94,597	95,123	(526)	0.556%
FXD3/2008/5	189,194	190,247	(1,052)	0.556%
FXD3/2008/5	567,583	570,740	(3,157)	0.556%
FXD2/2006/7	103,607	101,481	2,127	2.052%
FXD1/2007/7	567,873	558,359	9,514	1.675%
FXD1/2007/7	851,810	837,538	14,272	1.675%
FXD2/2006/7	880,663	862,588	18,075	2.052%
FXD1/2007/8	428,892	450,841	(21,949)	5.118%
FXD1/2007/8	857,785	901,682	(43,898)	5.118%
FXD1/2004/8	2,275,197	2,103,868	171,329	7.530%
FXD1/2003/9	1,050,310	1,043,816	6,494	0.618%
FXD1/2006/10	968,769	939,140	29,630	3.059%
FXD1/2007/10	97,727	96,141	1,587	1.624%
FXD1/2007/10	293,182	288,422	4,760	1.624%
FXD1/2007/10	4,690,912	4,614,754	76,159	1.624%
FXD1/2007/10	195,455	192,281	3,173	1.624%
FXD3/2008/10	458,415	470,810	(12,395)	2.704%
FXD3/2008/10	458,415	470,810	(12,395)	2.704%
FXD3/2008/10	458,415	470,810	(12,395)	2.704%
FXD3/2007/15	967,850	1,040,632	(72,782)	7.520%

FXD1/2008/15	859,388	859,519	(131)	0.015%
FXD1/2008/15	859,388	859,519	(131)	0.015%
FXD1/2008/15	1,145,850	1,146,025	(175)	0.015%
FXD1/2008/15	2,387,188	2,387,553	(365)	0.015%
Totals	**24,899,139**	**24,753,643**	**145,496**	

The researcher found out that 72.4% of the bonds were mispriced having a variance of more than 0.5% between IAS 39 Valuation and valuation done by GEN.

4.9 VARIATION OF PRICING ON THE SAME BONDS BEING MARKED TO MARKET

TABLE 4.9 COMPARISON OF BOND PRICES OF THE SAME BONDS BETWEEN FUND MANAGERS MAKING BONDS TO MARKET

Issue Number	Maturity Date	Face Value	SIMS Bond Value	GENESIS Bond Value	Bond Value Per IAS 39
FXD3/2008/5	21-Jan-13	1,000,000	951,233	945,840	945,972
FXD1/2004/8	12-Mar-12	1,000,000	841,547	911,691	910,079
FXD3/2008/10	17-Sep-18	1,000,000	941,620	920,803	916,831

Both Genesis and SIMS mark their bonds to market therefore under normal circumstances we would expect the bond prices they were using as at 31-December-2008 to be the same. Table 4.7 above shows different prices given to the same bonds.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.1 SUMMARY

The results analyzed relates to four fund managers out of a sample of six fund managers qualifying into the sample earlier taken. The six fund managers manage 91.7% of pension assets under segregated arrangement as per RBA News Vol 7 No 3. The four fund managers who provided data manages 87.8% of the pension schemes while the two fund managers who did not respond managers 12.2%. The data analyzed was therefore based on four fund managers managing 87.8% of the pension assets under segregated arrangement.

For the fund managers who mark bonds to market do not use the prices published by Nairobi Stock exchange hence making the pricing inconsistent to provision of IAS 39. The fund managers who managers bond data which are held to maturity do not amortize the bonds using the internal rate of return as recommended by IAS 39.

The researchers' threshold on mispriced asset was a variance of 0.5%. From the data analyzed; AIG have 58.3% of the bond assets mispriced beyond 0.5% materiality threshold. OMAM had 50% of the bond assets mispriced. Genesis had 58.1% of their bond assets mispriced and finally SIMS had 72.4% of their bonds mispriced beyond the materiality threshold.

5.2 CONCLUSIONS

RBA needs to issue more guidelines associated with bond pricing of pension financial assets. In particular there is need to have a common price list of bonds from NSE adopted by all the fund managers where bonds are being marked to market.

There is also need for fund managers who manages bonds that are held to maturity to amortize the bonds using internal rate of return.

Consistency in pricing would help in gauging the performance of the fund managers while at the same time reduce chances of artificially under or overvaluing the bonds.

5.3 LIMITATIONS OF THE STUDY

The research was constrained by data accessibility, undeveloped bond market and time resources. Under data accessibility it was difficult to gather all the relevant information from all the fund managers. Two fund managers enlisted in the sample by the researcher did not provide the required information at all. In relation to underdeveloped bond market the researcher noted that most bond trading takes place outside the radar of NSE which basically means bond information provided by them exclude information from other players such as banks. Bond pricing is relatively a new concept both to fund managers and NSE. IAS 39 provision is equally a new phenomenon which fund managers have challenges in the interpretation.

Time resources were also constrained especially due to the long time the fund managers took to return the data collection form. This however, did not compromise on the analysis of data. The financial requirement of preparing the entire project was also relatively high.

5.3 SUGGESTIONS FOR FURTHER RESEARCH

The research finding gives a leeway for further research on financial assets pricing. Individuals may want to know the models adopted by other players such as Custodians. Further research can also be done on pricing models adopted by financial institutions such as banks who are also normally the biggest investors of bonds. The biggest question however is whether organizations are having challenges in complying with the requirements of IAS 39.

REFERENCES

Ahmed, A. Ezra, D. (2002), "*The Role of Accounting Conservatism in Mitigating Bondholder-Shareholder Conflicts over Dividend Policy and in Reducing Debt Costs".* The Accounting Review Vol 77, Pages 867-890.

Andrew, C. Rilley, K. Brown, C. (1995), Investment Mathematics and Statistics.

Babbie, E. Odore, C. (1989), The Practice of Social Research, 5th Edition, USA Wadsworth publishing company.

Barth, M.E. (1994), "Fair Value Accounting: Evidence from Investment Securities and the Market Valuation of Banks". The Accounting Review, Vol 69, No 1(Jan., 1994), Pages 1-25.

Chava, F. Nachmias, D. (1996), Research Methods in the Social Sciences 5th edition.

Cochrane, J. (1992), "Asset Pricing Explorations for Microeconomics" Journal of Finance, Vol 7, Pages 115-165.

David, B. (1999), "Arbitrage Pricing by Arbitrage-Free Models of Bond Pricing" The Journal of business and Economics statistics, Vol 16, No 1 (Jan 1999), Pages 13-16.

Edwin, E. Gruber, M. (1997), "Modern portfolio theory and investment analysis 5th Edition".

Freund, J. (1988), Modern Elementary Statistics.

Gitu, M. (2003), "Factors affecting the equity allocation decisions made by trustees and fund managers of pension schemes in Kenya" Unpublished MBA Thesis, University of Nairobi.

Gitman, L. Joehnk, M. (2001), Fundamentals of Investing 8th Edition.

Glautier, M. Underdown, B. (2001), Accounting Theory and Practices 7th edition.

Graham, H. 2008, IAS 39 Financial Instruments;
Http://www.accaglobal.com/members/publications/accounting_business/

Guchara, M. (1994), Employees View on the Factors Considered Important for a Planned Retirement, Unpublished MBA Thesis, University of Nairobi.

Ho,Y. Helwege, J. Zhi, J. (2001), "Structural Models of Corporate Bond Pricing" Oxford Journals.

Holyake, J. Weipers, W. (2002), Insurance, 5th Edition.

Howard, E. (1977), Pension Mathematics with Numerical Illustrations.

IAS Board (2003), International Financial Reporting Standards (IFRSs) and International Accounting Standards (IASs) Including Interpretation as at 1 January 2002.

Kihanya, P. (2005), "Effect of RBA Act on the Risk of Investments Held by Pension Funds in Kenya" Unpublished MBA Thesis, University of Nairobi.

Klaassen, P. (1998),"Financial Asset pricing theory and stochastic programming models for assets/liability management". Journal of Management Science, Vol 44, 1998 pages 31-48.

Lokesh, K. (1997), Methodology of Educational Research.

Magera, M. (1999), "Planning for Retirement with Case Study of University of Nairobi Staff" Unpublished MBA Thesis, University of Nairobi.

Mayshar, J. (1981), "Transaction Costs and the Pricing of Assets", The Journal of Finance Vol 36 No.3, 1981, Page 583-597.

Mbwesa, J. (2006), Introduction to Management Research, a Students handbook.

Moorad, C. (2002), "The Bond and Money Markets: Strategy, Trading, Analysis".

Muigai, P. (1996), "An Evaluation of Fund Investment Portfolio of Provident Fund in Kenya" Unpublished MBA Thesis, University of Nairobi.

Ndirangu, M. (2002), "Implications of Retirement Benefits act (1997) on Investment Performance of Provident Fund", Unpublished MBA Thesis, University of Nairobi.

Ngau, P. Kumssa, A. (2004), Research Design, Data collection and Analysis. A Training Manual for United Nations Centre for Regional Development Africa Office.

Ngene, G. (2002), "Empirical Investigation into the Portfolio Performance Measures by Pension Fund Managers and Challenges they Face in Portfolio Management in Kenya" Unpublished MBA Thesis. University of Nairobi.

Omonyo, B (2003), "Survey of Investment Practices of Pension Fund Management in Kenya" Unpublished MBA Thesis. University of Nairobi.

RBA News, (2004), Quarterly Newsletter Vol. 3, No 3 for March 2004.

RBA News, (2005), Quarterly Newsletter Vol. 5, No 1 for September 2005.

RBA News, (2005), Quarterly Newsletter Vol. 5, No 2 for December 2005.

RBA News, (2008), Quarterly Newsletter Vol 7., No 3 for March 2008.

Reilly, F. Brown, K. (2000), Investment Analysis and Portfolio Management 8th Edition, International Students Edition.

Roll, R. (2008), Education Research, Sampling and Population USA.

Ross, S. (1990), Corporate Finance 2nd Edition.

Sekaran, U. (2000), Research Methods for Business- A Skill Building Approach, USA.

Sharpe, F.W. Gordon, J.A. Jeffrey, B.V. (1999) "Investments" Prentice Hall, Upper Saddle New Jersey, 6th Ed. 1999.

Sueyed, M. (1996), Fundamental of Insurance, 2nd edition.

Wanjiku, M. (2004), "Effects of RBA Act (No 3 of 1997) on the Management of Insured Retirement Benefits Scheme in Kenya" Unpublished MBA Thesis. University of Nairobi.

Wanyama, R. (2002), "Implications of Investment Guidelines under Retirement Benefits Act (1997) and Regulations (2000) on the Pension Schemes and Provident Funds Investment Portfolios in Kenya", Unpublished MBA Thesis, University of Nairobi.

Zipkins, P. (1990), "The Structure of Structured Bond Portfolio Models", Operational research, Vol. 40, Supplement 1: Optimization (Jan.-Feb., 1992), Pages S157-S169.

APPENDIX I: Letter of Introduction

Dear Sir/Madam,

RE: Research Information

I am a postgraduate student in the school of business, University of Nairobi. As part of my MBA (Finance) course requirement I am undertaking a research project that seeks to establish "Compliance of bond prices issued by pension funds to the provisions of IAS 39".

To fulfill information for my study I intend to collect bond data from your institution. The information is needed purely for academic purpose and will be treated in strict confidence and will not be used for any other purpose other than for my research.

I would be most grateful if you can allow me access to all the relevant information pertinent for this research. Any additional information you might consider necessary for this study is most welcome. I appreciate your assistance in assessing the much needed information.

Thank you in advance.

Yours Sincerely

Joseph Rono

Supervisor

Mohammed Mwachiti

APPENDIX II: Data Collection Form

1. Fund Managers Name .....
2. What is the name of the Pension Scheme Name? (Optional) .....
3. What is the schemes policy of investing in bonds? (Tick the appropriate box)

   ☐ HTM ☐ HFT ☐ DFV

   Key: HTM- Bonds are held to Maturity.

   HFT-Bonds are held for trading.

   DFV-Bonds are designated at fair value.

4. Provide bond details of the schemes in tabular form provided below.

Section A

Treasury Bonds								
Issue Number	Cost	Face Value	Placement Date	Maturity Date	Accrued Interest as at 31/12/08	Bond Value	Date of Last Coupon Paid	Frequency of Coupon Payment

APPENDIX III: List of Government Bonds listed at Nairobi Stock Exchange on 31 December 2008

vernment of Kenya Fixed Rate Bonds Listed at the NSE

Issue No.	Issue Date	Last Coupon Payment Date	Next Coupon Payment Date	Tenor to Maturity (Years)	Maturity Date	CBK Maturity Mn Kshs.	Fixed Coupon Rate	Implied Yield To Maturity	Clean Price Per 100	Accrued Interest Per 100	Dirty/Full Price Per 100
XD1/2003/6	20-Jan-03	14-Jul-08	12-Jan-09	0.03	12-Jan-09	1,425	14.00%	8.43%	100.12	6.60	106.71
XD1/2007/2	29-Jan-07	28-Jul-08	26-Jan-09	0.06	26-Jan-09	3,286	9.50%	8.49%	100.04	4.11	104.15
XD1/2006/3	27-Feb-06	25-Aug-08	23-Feb-09	0.14	23-Feb-09	5,731	11.00%	8.52%	100.29	3.92	104.21
C1/2008/1	25-Feb-08	-	-	0.14	23-Feb-09	4,467	0.00%	8.52%	98.83	-	98.83
XD2/2007/2	26-Mar-07	22-Aug-08	20-Feb-09	0.22	23-Mar-09	4,418	9.50%	8.53%	100.16	3.46	103.62
XD1/2004/5	26-Apr-04	20-Oct-08	20-Apr-09	0.29	20-Apr-09	1,521	6.00%	8.69%	99.19	1.22	100.41
XD2/2003/6	26-May-03	17-Nov-08	18-May-09	0.37	18-May-09	5,396	11.50%	8.87%	100.91	1.45	102.36
XD1/2005/4	23-May-05	19-Jun-08	18-Dec-08	0.37	18-May-09	3,621	12.25%	8.87%	101.18	6.61	107.80
C2/2008/1	28-Jul-05	-	-	0.56	27-Jul-09	8,000	0.00%	9.27%	95.02	-	95.02
XD2/2006/3	28-Aug-06	25-Aug-08	23-Feb-09	0.64	24-Aug-09	3,187	8.50%	9.48%	99.39	3.03	102.41
XD3/2006/3	25-Sep-06	22-Sep-08	23-Mar-09	0.72	21-Sep-09	3,832	8.25%	9.64%	99.03	2.31	101.34
XD3/2005/4	31-Oct-05	27-Oct-08	27-Apr-09	0.81	26-Oct-09	5,607	12.25%	9.80%	101.84	2.25	104.08
XD3/2003/6	24-Nov-03	17-Nov-08	18-May-09	0.87	16-Nov-09	1,694	6.00%	9.88%	96.82	0.76	97.57
C2/2008/1	25-Nov-08	-	-	0.89	23-Nov-09	5,535	0.00%	9.91%	91.75	-	91.75
XD3/2007/2	24-Dec-07	23-Jun-08	22-Dec-08	0.97	21-Dec-09	7,088	8.75%	10.02%	98.85	4.63	103.48
XD1/2004/6	23-Feb-04	18-Aug-08	16-Feb-09	1.12	15-Feb-10	4,416	6.50%	10.19%	96.18	2.44	98.62
XD1/2003/7	24-Mar-03	15-Sep-08	16-Mar-09	1.20	15-Mar-10	2,801	13.75%	10.26%	103.81	4.11	107.92
XD1/2006/4	24-Apr-06	27-Oct-08	27-Apr-09	1.29	19-Apr-10	3,595	11.25%	10.34%	101.04	2.07	103.11
XD1/2008/2	28-Apr-08	27-Oct-08	27-Apr-09	1.31	26-Apr-10	3,248	8.75%	10.35%	98.05	1.61	99.66
XD2/2008/2	26-May-08	26-Jun-08	25-Dec-08	1.39	24-May-10	6,848	8.75%	10.40%	97.89	4.55	102.44
XD1/2005/5	20-Jun-05	16-Jun-08	15-Dec-08	1.45	14-Jun-10	1,827	12.50%	10.44%	102.69	6.85	109.54
XD2/2004/6	26-Jul-04	21-Jul-08	19-Jan-09	1.54	19-Jul-10	2,525	6.75%	10.49%	94.79	3.05	97.84
XD2/2003/7	27-Oct-03	20-Oct-08	20-Apr-09	1.79	18-Oct-10	3,095	6.50%	10.60%	93.44	1.32	94.76
XD2/2005/5	28-Nov-05	24-Nov-08	25-May-09	1.89	22-Nov-10	5,947	13.00%	10.64%	103.92	1.39	105.30
XD4/2008/2	29-Dec-08	26-Dec-08	26-Jun-09	1.98	27-Dec-10	3,090	8.75%	10.67%	96.64	0.17	96.81
XD1/2004/7	26-Jan-04	21-Jul-08	19-Jan-09	2.04	17-Jan-11	2,661	6.75%	10.69%	92.95	3.05	96.01
XD1/2007/4	26-Feb-07	25-Aug-08	23-Feb-09	2.14	21-Feb-11	3,381	11.00%	10.71%	100.51	3.92	104.42
XD1/2003/8	28-Apr-03	20-Oct-08	20-Apr-09	2.29	18-Apr-11	3,907	12.50%	10.75%	103.43	2.53	105.97
XD1/2006/5	29-May-06	24-Nov-08	25-May-09	2.38	23-May-11	1,896	11.75%	10.77%	101.99	1.26	103.25
XD2/2006/5	31-Jul-06	28-Jul-08	26-Jan-09	2.56	25-Jul-11	2,594	11.25%	10.80%	100.96	4.87	105.83
XD2/2004/7	23-Aug-04	18-Aug-08	16-Feb-09	2.61	15-Aug-11	1,773	7.00%	10.81%	91.49	2.63	94.12
XD2/2003/8	29-Sep-03	22-Sep-08	23-Mar-09	2.71	19-Sep-11	5,023	7.00%	10.83%	91.18	1.96	93.13
XD1/2005/6	26-Dec-05	23-Jun-08	22-Dec-08	2.96	19-Dec-11	7,412	13.00%	10.87%	105.27	6.87	112.14
XD1/2007/5	29-Jan-07	28-Jul-08	26-Jan-09	3.06	23-Jan-12	2,813	11.25%	10.88%	100.93	4.87	105.80
XD1/2004/8	22-Mar-04	15-Sep-08	16-Mar-09	3.19	12-Mar-12	3,038	7.50%	10.90%	91.02	2.24	93.26
XD1/2003/9	26-May-03	17-Nov-08	18-May-09	3.36	14-May-12	2,368	12.75%	10.91%	105.02	1.61	106.63
XD1/2006/6	26-Jun-06	23-Jun-08	22-Dec-08	3.46	18-Jun-12	6,014	11.75%	10.92%	102.31	6.21	108.53
XD2/2003/9	28-Jul-03	21-Jul-08	19-Jan-09	3.54	16-Jul-12	7,187	9.50%	10.93%	95.89	4.29	100.18
XD2/2007/5	27-Aug-07	25-Aug-08	23-Feb-09	3.63	20-Aug-12	4,576	9.50%	10.94%	95.75	3.38	99.14
XD3/2007/5	24-Sep-07	22-Sep-08	23-Mar-09	3.71	17-Sep-12	9,192	9.50%	10.95%	95.65	2.65	98.31
XD2/2006/6	27-Nov-06	24-Nov-08	25-May-09	3.88	19-Nov-12	5,770	11.50%	10.96%	101.64	1.23	102.87
XD1/2006/7	30-Jan-06	28-Jul-08	26-Jan-09	4.05	21-Jan-13	3,236	13.25%	10.97%	107.26	5.74	113.00
XD1/2008/5	28-Jan-08	28-Jul-08	26-Jan-09	4.05	21-Jan-13	5,533	9.50%	10.97%	95.27	4.11	99.38
XD1/2007/6	30-Apr-07	27-Oct-08	27-Apr-09	4.30	22-Apr-13	5,946	11.50%	10.99%	101.67	2.11	103.78
XD2/2008/5	28-Apr-08	27-Oct-08	27-Apr-09	4.30	22-Apr-13	4,097	9.50%	10.99%	94.96	1.74	96.71
XD1/2003/10	23-Jun-03	16-Jun-08	15-Dec-08	4.44	10-Jun-13	2,705	13.25%	11.00%	107.72	7.26	114.98
XD2/2003/10	25-Aug-03	18-Aug-08	16-Feb-09	4.61	12-Aug-13	5,929	8.50%	11.01%	91.09	3.19	94.28
XD3/2008/5	25-Aug-08	19-Aug-08	17-Feb-09	4.63	19-Aug-13	4,128	9.50%	11.01%	94.60	3.54	98.14
XD2/2006/7	25-Dec-06	23-Jun-08	22-Dec-08	4.95	16-Dec-13	2,318	12.00%	11.03%	103.60	6.35	109.95
XD1/2006/8	27-Feb-06	25-Aug-08	23-Feb-09	5.13	17-Feb-14	3,322	13.25%	11.04%	108.43	4.72	113.15
XD1/2007/7	30-Jul-07	28-Jul-08	26-Jan-09	5.55	21-Jul-14	8,271	9.75%	11.06%	94.65	4.22	98.87

KD1/2007/8	26-Feb-07	25-Aug-08	23-Feb-09	6.12	16-Feb-15	2,642	12.75%	11.09%	107.22	4.54	111.76
KD1/2006/9	24-Apr-06	20-Oct-08	20-Apr-09	6 28	13-Apr-15	6,000	13.50%	11.09%	110.64	2.74	113.38
D1/2006/10	27-Mar-06	22-Sep-08	23-Mar-09	7.20	14-Mar-16	3,345	14.00%	11.12%	113.97	3.91	117 88
D2/2006/10	29-May-06	24-Nov-08	25-May-09	7.37	16-May-16	5,033	14.00%	11.13%	114.17	1.50	115.67
D1/2006/11	25-Sep-06	22-Oct-08	22-Apr-09	8 69	11-Sep-17	4,033	13.75%	11.15%	114.20	2.71	116.92
D1/2007/10	29-Oct-07	27-Oct-08	27-Apr-09	8.79	16-Oct-17	9,311	10.75%	11.16%	97.73	1.97	99.70
D1/2008/10	25-Feb-08	25-Aug-08	23-Feb-09	9.12	12-Feb-18	2,995	10.75%	11.16%	97.69	3.83	101.52
D2/2008/10	28-Jul-08	26-Jul-08	24-Jan-09	9 54	16-Jul-18	847	10.75%	11.17%	97.57	4.71	102.29
D1/2006/12	28-Aug-06	25-Aug-08	23-Feb-09	9.61	13-Aug-18	3,902	14.00%	11.17%	116.39	4.99	121.38
D1/2007/12	28-May-07	24-Nov-08	25-May-09	10.36	13-May-19	4,865	13.00%	11.18%	110.97	1.39	112.36
D3/2008/10	29-Sep-07	04-Jun-08	03-Dec-08	10.74	28-Sep-19	3,911	10.75%	12.15%	91.69	6.24	
D1/2007/15	26-Mar-07	22-Sep-08	23-Mar-09	13.18	07-Mar-22	3,657	14.50%	12.85%	110.30	4.05	114.35
D2/2007/15	25-Jun-07	23-Jun-08	22-Dec-08	13.43	06-Jun-22	7,248	13.50%	12.91%	103.71	7.14	110.85
D3/2007/15	26-Nov-07	24-Nov-08	25-May-09	13.85	07-Nov-22	7,812	12.50%	13.00%	96.78	1.34	98.12
D1/2008/15	31-Mar-08	29-Sep-08	30-Mar-09	14.20	13-Mar-23	7,384	12.50%	13.20%	95.49	3.25	98.74
D1/2008/20	30-Jun-08	27-Jun-08	26-Dec-08	19.43	05-Jun-28	7,548	13.75%	14.50%	98.53	2.00	97.07

APPENDIX IV: List of Registered Fund Managers in Kenya

Fund Manager
African Alliance Kenya Ltd
AIG Global (EA) Investment Company Ltd
Amana Capital Ltd
British American Asset Managers Ltd
CFC Financials Services Ltd
Co-op Trust Investment Services Ltd
Genesis Kenya Investment Management Ltd
ICEA Asset Management Ltd
Old Mutual Asset Managers (EA) Ltd
Old Mutual Asset Managers (K) Ltd
Sanlam Investment Management Kenya Ltd
Stanbic Investment Management Services(EA) Ltd
Zimele Asset Managers Ltd

Source; RBA News, June 2008