FACTORS AFFECTING THE EQUITY ALLOCATION DECISIONS MADE BY TRUSTEES AND FUND MANAGERS OF PENSION SCHEME PORTFOLIOS IN KENYA

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DECLARATION

THIS RESEARCH PROJECT IS MY ORIGINAL WORK AND HAS NOT BEEN PRESENTED FOR A DEGREE IN ANY OTHER UNIVERSITY

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DEDICATION

To my parents, Cecilia and Bethuel Gitu.

ABSTRACT

This study sought to investigate factors influencing investments in equities by pension schemes in Kenya, from the perspective of trustees and fund managers, these being the two main groups responsible for the formulation and implementation of pension scheme investment policies.

A survey of trustees and CEOs in fund management organizations was carried out with a view to determining, in the first place, their general attitudes towards equities as an asset category. Specifically, the survey sought the cognitive, emotional and behavioural reactions of the said respondents, as the three main attitudinal elements in psychology. Secondly, the study sought the main factor considerations shaping the attitudes of the trustees and fund managers in Kenya towards equity. A third objective was the determination of the past performance of pension scheme equity investments, in terms of risks and returns, as a likely determinant of current equity investment policies of pension schemes. For this objective, the returns and risks on selected stocks quoted on the Nairobi Stock Exchange for a period of seven years (1996 – 2002) were analyzed as a proxy.

The respondents were overly concerned with the perceived excessive risks in equity relative to other alternative investments including Government securities, corporate bonds and real estate.

The most important corporate considerations made in contemplating equity investments were given as company profitability and the historical dividend payout ratio. The least important factors were found to be the level of industrial maturity and the size of the industry in which the investee company operates.

The annual average gains on the individual selected stocks over the period studied were actually -2.03%.The average risk per stock (computed as the standard deviation of returns) was quite high, 44.89% .This finding was consistent with the respondents' belief that equity investments are highly risky relative to their returns.

This is an area on which there are few studies, making this a further contribution to studies on pension scheme portfolios in Kenya.

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LIST OF ABBREVIATIONS

AIMS	Alternative Investment Market Segment
CMA	Capital Markets Authority
C&S	Commercial and Services Segment
EADB	East African Development Bank
ERISA	Employee Retirement Income Security Act
F&I	Finance and Investment Segment
I&A	Industrial and Allied Segment
MIMS	Main Investment Market Segment
MRM	Mabati Rolling Mills
NAV	Net Asset Value
NSE	Nairobi Stock Exchange
NSSF	National Social Security Fund
OECD	Organization for Economic Cooperation and Development
PAYGO	Pay - As - You - Go
RBA	Retirement Benefits Authority

1.0 CHAPTER 1:INTRODUCTION

1.1 Pension Shemes : A Background :

Pension schemes are in today's world primary vehicles for retirement savings for billions of people internationally. They serve several main purposes, *inter alia,* to compensate the beneficiaries (workers) for the loss of regular income; as benefits for service given during working life; and, in addition, as general social security.

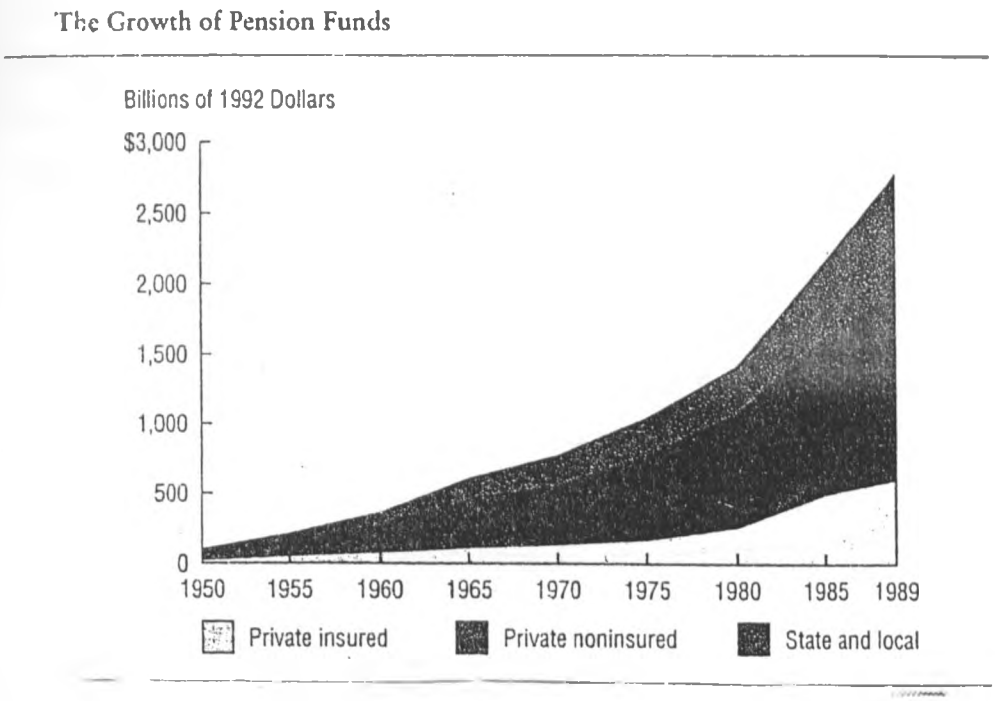
The establishment of pension schemes by employers, both public and private, mainly seeks to address a triple requirement: firstly, the need to retire employees in due time while continuing to motivate those who remain in service, which is what is known as *the retirement problem*; secondly, there is the need to attract and retain staff in those employment categories which community practice treats as occupationally pensionable; finally, employers use pensions as a way of rewarding loyalty (Escolme, et al. 1990).

As a concept, pensions date back many centuries to the days of the Roman Empire where retired soldiers (legionnaires) would be granted freehold land to live off in their old age (Kohn, 1994). Formal pension schemes though, both public and private, were mooted in the latter half of the nineteenth century. Prussian Chancellor Bismarck devised the earliest public pension scheme in the 1880s for retired civil servants. The earliest private (corporate) pension scheme was set up by the American Express Company, whose business was rail transportation, in 1875. For these pioneer schemes, benefits due were paid from the resources of the scheme sponsor. As time went by and the number of retirees went up, pension payments increased, and sponsors found it financially prudent to appropriate, in advance, funds earmarked specifically for the payment of retirement benefits when these fell due. This marked the advent of pension funds as known today.

In the United States, for instance, pension funds collectively owned assets worth less than $500M in 1929 (Kohn, 1994). Since then, the assets of pension funds have continued to

grow rapidly. By the year 2001, the collective assets held by pension schemes in the US were estimated at $4.6 Trillion (Watson Wyatt, 2001). Growth has come from increasing contributions rather than from increasing coverage. From a total asset base of about $100Bn in 1950, the assets of US pensions funds grew at an estimated annual rate of 10% over the second half of the twentieth Century to surpass the $ 4.5 Trillion mark in year 2000(Kohn, 1994). The chart below shows this trend in pension fund asset growth in the US over the latter half of the twentieth century.

Figure 1: The Growth of Pension Fund Assets in the US



Source: *Trends in Pensions, (1992)*

Adapted from Kohn, (1994)

Tremendous growth has also been recorded by pension funds in other parts of the world. Pension funds in Western Europe and Asia have expanded quite a bit over the years Vittas (1996). In terms of sheer size, however, US pension funds dominate the global scene .By the end of 2001, pension funds worldwide held assets valued at an estimated

US$8 Trillion, with more than 50% of this amount being owned by US funds (Watson Wyatt, 2003). US funds accounted, at the end of 2001,for an impressive 63% of total assets, and nearly 70% of the top 50 funds in terms of asset holdings (15 of the top 20 funds are US based). The huge growth in pension funds has been attributed to various factors, among them being the globalization of securities markets, favourable tax treatment of pension funds, stability of contributions, stability of investment returns and actuarial changes in population structure, according to Maxwell (1994)

1.2 Pension schemes in Kenya: A Historical Perspective

1.2.1 Government Pension Schemes

The earliest pension schemes in Kenya were set up by the colonial Administration when Kenya was a British Protectorate. Government schemes were then administered by the Department of Pensions under the office of the Governor, who headed the local administration of the colony.

Of the more than ten schemes currently run on behalf of the civil service by the Kenya Government, all are unfunded (i.e. no predetermined financial contributions are set aside in advance towards the payment of promised benefits), and are financed wholly from the Consolidated Fund. However, a handful of schemes set up prior to independence in 1963, and which are no longer open to new entrants, have their funds invested commercially.

The funds are invested in Government securities and unquoted equity, according to the Ministry of Finance's Department of Pensions, which handles all investment matters pertaining to these schemes. The investment is worth slightly more than Kshs.120m according to the latest valuation which was carried out on June 30, 2001. Between 1981 and 2001, the investment yielded average annual returns measured at 11% on Government securities. No reliable figures are available yet on returns from unquoted equity.

1.2.2 Corporate Pension Schemes

Pioneer corporate (occupational) schemes were set-up by corporations that began operations in Kenya during colonial times e.g. Gailey & Roberts (1925). Barclays (1916), Unilever (the 1930's) Coca-Cola (1948) etc.

Until year 2000 when regulatory requirements took effect{ in enforcement of the RBA Act (1997)}, there were no regulatory requirements for private pension schemes to report on their activities or to make returns of any sort to authorities.Consequently, there is no published data on pension scheme activities in Kenya prior to year 2001. For this reason, any historical trend analysis of the growth of scheme membership, portfolio structure and performance, or other relevant variable is heavily constrained by the lack of published data.

1.3 Classification of Pension Schemes

Pension schemes maybe classified using several bases. These include,firstly the relationship between scheme sponsors and their beneficiaries;secondly the basis upon which promised benefits accumulate, and, finally, the insurance status of the scheme. On the basis of the relationship between scheme sponsors and their beneficiaries, schemes may be classified as Public/State pension schemes, Occupational pension schemes or Individual pension schemes.

Public/State Pension Schemes are set-up and run by governments on behalf of their employees and or citizens (where they are entitled to welfare benefits). Public schemes, being unfunded (meaning no advance contributions are made toward payment of the benefits due) are usually operated on a pay-as-you-go (PAYGO) basis, meaning current benefits are paid out of current income (earned from current member contributions). Examples of public/state schemes are Social Security in the US and European countries, civil service pension scheme run by the Kenya Governments and National Social Security Fund (NSSF). *Occupational Pension Schemes* are set up by organizations in a private

capacity, on behalf of their employees. Occupational schemes may be further divided into two subcategories: they may be *contributory* (i.e. where both the employer and employee make predetermined financial contributions towards the employee's retirement benefits) or *non-contributory* (where the employer alone makes the contributions). In most modern economies,occupational pension schemes dominate. *Individual Pension Schemes* are set up by eligible persons for purposes of enabling oneself to save in order to receive retirement benefits within the provisions of the scheme rules. These schemes may be used by self-employed persons or persons working in firms that do not offer occupational pension schemes.

Secondly,pension schemes can also be classified on the basis on which promised benefits accumulate. Under this basis of classification schemes maybe categorized as either *Defined Benefit* or *Defined Contribution*. *Defined Benefit Schemes* promise specified benefits as some proportion of income. The sponsor (employer) promises participants a certain level of benefits on retirement. That level typically depends on the number of years they have spent on the job and on their final salary. The objective of funding (the making, in advance, of predetermined financial contributions towards the employees' retirement benefits) under this approach is to ensure that the funds in the scheme will be adequate to meet promised benefits where these ultimately fall due. Where the accumulated funds(assets) equal the level of benefits promised(liabilities), the fund is said to be *fully funded.*On the other hand where value of the assets exceeds the present value of the estimated obligation(liabilities) less the value of future contributions, the scheme is said to be *overfunded*. The scheme is described as *underfunded* if the value of the assets falls short of the present value of the estimated obligation less the present value of future contributions.

The second category of schemes based on the manner in which the promised benefits accumulate is the *Defined Contribution Scheme*. This kind of scheme allocates participants individual accounts to which specified contributions and earnings from scheme investments are credited. The ultimate benefits due depend upon the level of contributions to the account, investment returns, operational expenses and any forfeitures

made. On retirement the amount accumulated in an individual account is paid out to the beneficiary either as a lump sum, an annuity, or part lump sum and part annuity. In Kenya, defined contribution schemes are the dominant type, comprising 85% of all registered schemes, the remainder being defined benefit. Together, both types of schemes covered more than 240,000 workers at the end of year 2001(RBA Newsletter, September 2001).

In another part of the world, the US, that is, defined contribution schemes dominate there as well, these making up over 90% of all operational schemes as at 1998, covering 68.6% of all participants and owning more than 50% of all pension assets (EBRI Factsheet, Jan 2003).

The third and final basis on which schemes may be classified is the *insurance status of the scheme*. Schemes may be insured or uninsured. *Insured* schemes have their assets and liabilities under the management of insurance companies who guarantee the payment of benefits under the schemes in return for specified periodic premiums. *Uninsured* Schemes, on the other hand,are managed in-house.

1.4 The Regulation Of Pension Schemes

In Kenya, the law governing pension schemes is the Retirement Benefits Act (1997), as supplemented by the Retirement Benefits Rules and Regulations (2000).

Among its main provisions, the RBA Act (1997) put in place a time limit for the vesting of accrued benefits (5 years), an 80% minimum funding level(MFL) requirement, reporting standards, disclosure requirements and investment guidelines. The Act puts in

place *draconian* rules by setting limits on the portion of a fund that can be invested in particular assets or asset classes. A 70% limit is imposed, for instance, on equity as a proportion of the overall portfolio. At this point it is worth noting that in some parts of the world some writers who claim that they(the rules, that is) have an adverse effect on overall portfolio performance have criticized such rules. Srinivas and Yermo (1999), for instance, in a study of the effect of draconian rules on the overall performance of pension funds in Latin America, found this effect to be real in the funds sampled.

On the management of pension schemes, the Act puts in place a mandatory three-tier dispensation of trustees, asset managers, and custodians. Scheme trustees are required to administer the scheme in accordance with the provisions of the Act, the regulations and the scheme rules. The duties of the trustees include setting general investment guidelines: guidelines for risk, return and asset allocation. Managers make the day-to-day decisions of buying and selling specific assets while custodians hold scheme assets (cash, ownership rights certificates, etc) on behalf of the scheme's participants.

In other parts of the world, many countries have their own laws governing pension schemes. In the USA, for instance, pension schemes (or plans, as they call them there) are regulated by the Employee Retirement Income Security Act, commonly known by its acronym, ERISA. .

1.5 The Financial Objectives of Pension Schemes

The primary goal of pension schemes is to pay accrued benefits to participants as and when they fall due. Schemes therefore need to have adequate funds with which benefit obligations may be met.

For funds to be solvent, they have to be managed prudently. The focus, therefore, is on the returns earned and risk assumed on pension scheme assets. These two variables, consequently, are the principal financial concerns of pension fund managers.

1.5.1 The Return Objective

The Return Objective pertains to the overall profitability of a pension scheme's portfolio. Performance evaluation mainly focuses on the gap, if any, positive or negative, between target returns and the actual returns realized. Performance may also be benchmarked either relative to other pension funds (peer benchmarking) or relative to various market indices (market benchmarking). Historically, real pension fund returns (and risks, as measured by the standard deviation of returns) worldwide for the period between 1966 and 1990 have been as given in table 1-1.

Table 1-1: Real Pension Fund Returns and Risks

(Standard Deviations in Brackets)

(Figures in %)

	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1966-1990
Returns	0.3	-1.0	0.6	8.9	6.5	3.1
(SD)	(5.4)	(10.0)	(5.2)	(7.9)	(8.6)	9.0

Source:Davis (1993): *(Countries included in the study were Canada, Denmark, Germany, Japan, Netherlands, Sweden, Switzerland, UK, US)*

1.5.2 The Risk Management Objective

The risk management objective entails influencing the variations between actual portfolio returns and expectations over time. In carrying out their investment function pension funds, like other investors, face the two broad risk types identified in financial management: *Unsystematic (Unique)* risk and S*ystematic (Market)* risk. As Sharp (1964) and Lintner (1965) have defined it, unsystematic risk arises from the uncertainties, which

are particular to individual assets and can be eliminated through diversification. Srinivas and Yermo(1999) state that for pension funds, unsystematic risk can be split into two: *systemic* and *agency* risk. *Systemic* risk arises from asymmetric information problems that make financial systems fragile, threatening pension funds, which are part of financial systems, with bankruptcy. *Agency* risks, on the other hand, arise from the moral hazard problems such as fund mismanagement that may occur since financial market dealings involve parties with different information.

Systematic risk arises on account of economy wide uncertainties and the tendency of individual assets to move in tandem with market changes. This risk cannot be diversified away.

The particular business risks pertaining to pension schemes are several:

1.5.2.1 Actuarial/Default Risk

This is the likelihood that the value of the scheme's assets will, at any time be insufficient to meet promised benefits as they fall due, hence impairing the sponsor's ability to honour its benefits promises. This risk is ran mainly by defined benefits schemes, which are committed to paying specified benefits.

Actuarial risk is managed through regular actuarial evaluation to determine the scheme's funding status. Any prospective underfunding should be addressed immediately either through boosting contributions or delaying retirement.

1.5.2.2 Price Risk

This refers to the likelihood that unfavourable changes may occur in the market (realizable) values of a scheme's assets, hence impairing the scheme's solvency, and adversely affecting its ability to pay promised benefits as and when they fall due.

1.5.2.3 Reinvestment Risk

This is the likelihood that a scheme, in seeking to replace its realized investments, may not obtain investments offering the required yields, or yields equivalent to those earned on the assets being replaced

1.5.2.4 Liquidity Risk

Liquidity risk is the possibility that a scheme may experience cash flow difficulties impairing its capacity to meet it's benefit obligations as and when they fall due. Pension schemes are mainly concerned with long-term liquidity owing to the long-term nature of their liabilities (Olson, 2001). Since cash flows in and out of schemes are steady and predictable, long-run liquidity can be conveniently managed

1.5.2.5 Interest Rate Risk

This refers to a scheme's exposure to fluctuations in the prevailing levels of market interest rates on the pension fund's financial position and cashflow. It is managed through balance sheet restructuring or interest-rate derivatives such as swaps and futures.

1.5.2.6 Currency Risk

This refers to the vulnerability of the pension scheme to effects of
fluctuations in the rate of exchange between its home (operating) currency and the foreign currencies in which part of its portfolio or obligations may be denominated. This risk pertains only to those funds that have offshore assets and/or liabilities.

1.5.2.7 Credit Risk

Credit risk is the likelihood that issuers of debt instruments (bonds, notes, commercial paper etc) acquired by the scheme will default on interest payments and/or principal repayment, hence occasioning financial loss to the scheme, and impairing its ability to honour its benefit obligations. Credit risk is managed through proper screening of

potential debt investments and continuous vigilance to ensure bond issuers abide by the terms of bond indentures.

1.6 Pension Scheme Asset Structure: A Brief Overview

The nature of pension schemes assets depends on the nature of their benefits obligations. Since the greater part of pension schemes liabilities are long-term in nature, pension schemes invest largely in long-term assets. Thus the portfolios of schemes worldwide basically include equities, bonds (both Government and corporate), real estate and money market securities such as treasury bills, among others.

1.7 Equity Investments of Pension Schemes

Equity (common stock) is one of the most suitable assets used by pension schemes the world over to match long-term benefit obligations. Equity investments are essentially long term in nature while at the same time retaining their liquidity characteristic.

Pension schemes that fail to invest adequately in equity lack an appropriate vehicle through which their long-term liabilities can be matched sufficiently. By ignoring equity and opting for shorter-term investments, whose maturity durations are shorter than those of promised benefits, a clear mismatch between asset/liability profiles arises. This mismatch occasions high reinvestment risk arising by creating the need for schemes to find suitable investments with which to replace those that are realized. Reinvestment risk persists as long as the scheme's liabilities remain outstanding and hence jeopardizes the scheme's capacity to pay promised benefits as they fall due.

Pension schemes in Kenya, apparently, have largely shunned equity (RBA, 2002). The average equity holdings by pension schemes in the local market, the Nairobi Stock Exchange (NSE) are minuscule and comprise about 1.97% of the total issued equity that is available on the market. Further, equity comprised only 7.32% of the total assets owned by pension schemes as at the end of year 2002,compared to 66.63% investment in debt instruments (both Government and corporate). With the mean equity holding per

company being less than 3% of issued company stock, schemes can hardly earn meaningful dividends or exercise any significant influence over the affairs of investee companies. It also means that schemes in Kenya run quite a high reinvestment risk on their asset portfolio.

Collectively, the 7% of scheme portfolios is allocated to equity is far below the legally allowed limit of 70% that is laid down in the RBA's investment guidelines. This poor utilization of allowed limits in equity allocation is far behind what it is in other comparable parts of the world: funds in Latin America allocate over 20%, South East Asian funds allocate almost 20%. As for the developed countries e.g. the U.K, allocation rates are over 70%.

1.8 Pension Fund Manager/Trustee Attitudes: A Background

Decisions by pension funds managers on whether or not to invest in equities are greatly influenced by among other factors, the ATTITUDES held by those fund managers and scheme trustees, in their capacity as investment managers, towards equities as investment vehicles. Social psychology maintains that attitudes are some of the most important determinants of human actions and this is of relevance to the field of investment owing to the fact that investment managers are, first and foremost, human beings.

An *ATTITUDE* is a characteristic and relatively permanent way of thinking, feeling and acting towards something (McConnell 1978). It is an evaluation containing *cognitive, emotional* and *behavioural* components of an idea, event, object or person {Sdorow (1993), Breckler (1984)}. Attitudes of pension fund managers and trustees, in Kenya, towards equities can thus be broken down into the aforementioned elements. The *Cognitive* component of a given attitude entails the thoughts brought to mind by the object of the attitude (equities, in this case). The cognitive component response of a pension fund manager towards equity may, for example, be, " Equities are better than real estate," or "Equities are not as good as bonds". The *emotional* component, which refers to the feelings aroused in the subject (the manager) by the object (equities), may be

determined from the manager's perception of investment prospects, risks and expected performance, such as "I find equity returns quite promising in the long run", and/or "Equities are too risky" etc.

The *behavioural* component entails the action that the subject would be likely to take in regard to the object. A pension fund manager / trustee may reject or accept an equity investment opportunity when given a choice. Such rejection or acceptance constitutes the manager/ trustee's behaviour (action) towards equity as an asset class.

1.9 Problem Statement

A greater presence of pension funds in the equity market would be advantageous by helping to provide price stability for instance, as pension funds take a longer-term approach to investment and are more likely and able to absorb temporary market shocks. By purchasing more equity, pension funds would also infuse substantial capital in the market, which would go a long way in boosting the stock market, making it more vibrant. Substantial equity stakes could also give funds more influence as shareholders, enabling them to play a greater role in corporate governance.

But pension schemes in Kenya do not currently own significantly large equity holdings. This contrasts sharply with other countries including third world countries where investments in equity by pension schemes is at least three times that of Kenya's. Although equity investments may be risky, they have historically generated the highest returns when compared to other available assets. Yet, investment by pension schemes in equities remains low. . This study will attempt to describe the factors governing the level of investment in equities by pension schemes in Kenya, from the perspective of individual fund managers and trustees of those schemes. Among the main factors to be considered as being responsible for the current state of affairs, will be manager/trustee attitudes i.e., the cognitive, emotional and behavioural components of fund manager/trustee attitudes towards equities as investment vehicles. Other considerations

will be the past performance of quoted equity on the local stock market, the Nairobi Stock Exchange.

1.10 Objectives of the Study

The study's overall objective was to establish the general attitudes of pension fund managers and trustees in Kenya towards equity and to determine the attributes of equity most responsible for the prevalent attitudes. Specifically, this entailed the following:

(i) To determine the general attitudes held by pension fund managers and trustees in Kenya towards local equity as an investment category.

(ii) To determine the attained levels of returns and risks on equities quoted on the Nairobi Stock Exchange.

(iii) To determine, from the perspective of fund managers and trustees, any other factors besides returns and risks governing the level of investment in equities by pension schemes.

1.11 Importance of the Study

The knowledge of manager/trustee attitudes towards equity investments can be of use to several parties. Corporate managers may use it to understand the investment expectations and requirements of pension schemes, thereby being able to align their decisions with the preferences of this class of institutional investors so as to attract the much needed capital held by the latter.

Regulators [such as The Capital Markets Authority (CMA) and The Retirement Benefits Authority (RBA)] may use the results in this study to formulate strategies that will encourage greater pension scheme involvement in the stock market, hence boosting market activity and performance.

Investment advisors and financial research institutions may use the results, of this study to better understand the needs of schemes as investors, thereby being better placed to provide more relevant and appropriate counsel to their clients.

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 The Formation of Manager/Trustees Attitudes Towards Equities

How do investment managers form attitudes towards equity? Some are formed through CLASSICAL CONDITIONING by the *pairing* of desirable (good investment performance) outcomes or undesirable (poor investment performance) outcomes with equities. If equities do well on the one hand, fund managers will associate financial success with equities and develop a positive attitude towards them. On the other hand, poor performance of equity investments will create, in the managers/trustees affected, a negative attitude towards equities.

Investor attitudes may also be formed through OPERANT CONDITIONING. This refers to behavioural reinforcement in investors, who learn the association between actions (investment decisions) and their consequences (investment outcomes). Operant conditioning occurs through the provision of positive or negative reinforcement of particular investment decisions. For instance, if a pension fund manager's / trustee's equity portfolio consistently yields the expected/required rate of return over several consecutive time periods, then the manager's /trustee's decision to invest in equity would be positively reinforced by the good outcomes, creating a positive attitude towards equities in the manager concerned. Conversely, persistent underperformance of the equity portfolio (where equity returns continually fall below expectations) would negatively reinforce the manager's decision to invest in equity, hence creating a negative attitude towards equities in the manager/ trustee concerned.

A third way in which investor attitudes may be formed is through LEARNING (Sdorrow, 1993). The *(social) learning theory* argues that behaviour may be learnt through observing others being punished or rewarded for acting in a particular way. As per this theory, an investment manager may *learn* to invest, or refrain from investing, in equities

by observing the experiences of fellow managers (peers) who undertake equity investments. Those peers whose equity portfolios do well (i.e which consistently meet expectations) encourage the observing manager to put his (scheme's) money in equities, while those peers who lose money in equities (i.e whose equities consistently fail to meet expectations) may discourage the observing manager from venturing into the stock market.

Investor attitudes towards any asset are mainly shaped by the expectations held by the investors on the asset's future prospects. And so it is with equities as an asset class. The expectations of fund managers/trustees derive from actual equity performance over time. Equity performance entails the levels of two main variables: RETURNS and RISKS. In this chapter, we begin by examining the literature on overall asset allocation by pension funds in selected countries around the world. We then compare equity allocation levels in the countries reviewed, followed by a look at the RETURNS and RISKS attained in the past by pension fund equity holdings internationally. These two, as mentioned earlier, are the two major influences on the attitudes held by investors (such as pension funds) regarding equities. We then examine literature on the Kenyan scenario - the performance of the equity market as compared to the competing bond market, and the implications that the findings of this comparison might have had on the level of investment in equities by pension funds as part of the wider investment community.

2.2 Asset Allocation by Pension Funds Worldwide

Although the main focus of this paper will be on the equity investments of pension schemes, it is important to put matters in the right perspective by first examining scheme investments around the world, before looking specifically at equities.

2.2.1 Overall Asset Allocation

Beginning with the US, the aggregate assets held by pension funds are estimated as being in excess of $4.6 Trillion in market capitalization (Watson Wyatt, 2003)

Equities are the largest investment in the aggregate portfolio of US pension funds [(Watson Wyatt(ibid) ,Sarney(2000)] both public and private. They took up, by the end of year 2001, over 70% of the aggregate market capitalization of pension assets.

The asset allocation of US private and public pension funds as at the year 2000 were generally as follows:-

Table 2.2.1: US Private and Public Scheme Average Asset Distribution

Asset Class	*% in Overall Portfolio*		
	Private	*Public**	*Combined*
Equity	74	68	71
Bonds	8	26	17
Money market Investments	4	2.4	3.2
Real Estate and other	14	3.6	8.8
	100	**100**	**100**

Source: *Watson Wyatt (2003): Corporate Fund Asset Mix; Plans $1 - $5 billion, 2000*
**Sarney(2000)*

Moving on to the UK, pension schemes invest in more or less the same basic asset classes as those in the US. Russell/Mellon (2001) give the following figures on the overall asset mix of UK pension funds.

Table 2.2.2: UK Fund Average Asset Distribution

Asset Class	*As at 31.12.2000* %	*As at 31.12.*2001 %
Equities Domestic	51.0	47.4
Overseas (foreign)	22.5	25.0
	73.5	72.4
Bonds	16.5	17.7
Real Estate	1.7	1.8
Money Market Funds	5.0	5.7
Cash and other	4.3	2.4
	100	100

Source: *Russell /Mellon. CAPS (2001)*

As in the US, equity is the single largest component in the aggregate portfolio of pension schemes in the UK, with bonds coming a distant second.

In Continental European countries, the asset mix is more evenly distributed than in the UK with equity investments comprising 47% of the total assets at the end of 2002. Figures from Watson Wyatt (2003) below amply demonstrate this.

Table 2.2.3: Continental European Fund Asset Allocation as at

Asset Class	*31.12.2000* %	*31.12.2002* %
Equities : Domestic	8	7
Foreign & Euro	31	40
Total Equities	39	47
Bonds: Domestic	17	11
Foreign & Euro	32	30
	49	41
Real Estate	7	9
Money market + other	5	3
	100	**100**

Source: *Watson Wyatt (2003)*

Coming to Asia, Watson Wyatt (2003) give equity allocation for Hong Kong and Japanese funds as being 40% and 50% respectively. In a past study by Asher (1995) of the asset mix of Malaysia's occupational scheme, which may be considered as being representative of other South East Asian countries, the portfolio structure comprised 10.2% equity investments in 1994 was given as follows:

Table 2.2.4: Malaysia: Employees Provident Fund Investment Portfolio Mix(1994)

Asset Class	*Shares* %
Equity	10.2
Govt. Securities and Money Market securities	75.1
Bonds (see note a)	14.6
Others (see note b)	0.1
	100.0

a) Indicates promissory notes, debenture loan and corporate bonds

b) Indicates bank deposits and other securities

Source: *Asher, 1995*

2.2.2 Focus on Fund Equity Allocations World Wide

As the data presented above indicates, the levels of equity allocation by pension funds worldwide vary a great deal from one country to another but appear to be influenced by the level of economic development for example in the US and UK average equity allocation is more than 70% while in Malaysia as the level, as shown above is around 10%. By way of a recap, a summary of equity allocation percentages for specific countries worldwide now follows:

Table 2.2.5: *Region/Country*		*Percentage Equity Allocation as at the end of 2001*
1.	North America	
	a) USA	74
	b) Canada	43

2.	Europe		
	a)	UK	72
	b)	Spain*	20
	c)	Sweden*	25
	d)	Belgium	55
	e)	Germany	34
	f)	Netherlands	43
	g)	Portugal	30
	h)	Switzerland	39
	i)	Ireland*	17
3.	Australia		32
4.	Asia		
	a)	Hong Kong	40
	b)	Japan	50
5.	Africa		
	a)	Egypt	37
	b)	South Africa	53
6.	Latin America		
	a)	Peru	40
	b)	Chile	23
	c)	Argentina	17
	d)	Mexico	10

*Figure given is only for domestic equity investments

Source: Nos 1-5 : *Watson Wyatt (2003)*

No 6: *Srinivas & Yermo (1999)*

2.3 Asset Allocation by Pension Funds in Kenya

2.3.1 Overall Asset Allocation

In the survey mentioned earlier, done in 2002 by the RBA, of the asset holdings of pension schemes in Kenya, the general asset allocation details were given as stated here below: -

Table 2.3.1: Average Portfolio Structure of Pension Schemes in Kenya

Assets Class		%
Equity: Offshore	0.52	
Domestic	6.80	7.32
Bonds: Corporate	5.28	
Govt.	39.16	44.44
Real Estate		6.06
Money Market Securities: T-bills	12.36	
Corporate	9.83	22.19
Others		18.99
		100.00

Source: *RBA Newsletter: September 2002*

2.3.2 Equity Allocation by Pension Funds in Kenya

The data above shows clearly that equities are some of the least popular assets among pension schemes in Kenya with funds allocating a meagre of portion of their portfolio to equity. The most popular are T-bonds (39%), followed by money market securities (22%). As the table below shows, pension schemes own less than 2% of the local equity market, which only vindicates the unpopularity of equities among funds in Kenya.

Table 2.3.2: Average Equity Allocation by Pension Funds in Kenya

Market Segment	*Average Equity holding by scheme per company (% of issued capital as at 31 Dec)*	
	2002	*1997*
	%	*%*
1. Main Investment Market Segment		
(i) Agricultural Sector	1.21	1.08
(ii) Commercial & Services Sector	1.79	1.43
(iii) Finance and Investment Sector	3.24	2.79
(iv) Industrial and Allied Sector	5.55	4.21
2. Alternative Investment Market Segment	1.98	1.74
3. Percentage of equity market owned (Collectively)	1.97	1.84

Source: *Research Data*

Mugo (1999) conducted a study of the main considerations made by institutional investors in contemplating investments in equities quoted on the NSE. For retirement benefits schemes, she gives the factors considered as the caliber of management of the issuing company, trends in capital investments, safety of capital (risk?), returns on the shares, growth in sales, net profit margin, earnings per share and share price movements. Later in our analysis we examined whether, down the line, any of these factors may have changed in importance, and/ or whether there are any others that might have gained primacy lately.

2.4 The Historical Performance of Pension Fund Equity Holdings Vs Other Assets

Davis (1995), in a study of real returns and risks by asset types in various OECD countries from 1967-90, shows that equities have been the best performing but also the most volatile. The findings of the study by Davis were as summarized in the table below:

Table 2.4.1: Returns and Risks of Pension Schemes in Various OECD Countries (1967-1990) by Asset Type

	Country			
	UK	US	Germany	Japan
Equities	8.1 (20.3)	4.7 (14.4)	9.5 (20.3)	10.9 (19.4)
Bonds	-0.5(13.0)	-0.5 (14.3)	2.7(14.9)	0.2 (12.8)
Real Estate	6.7(11.4)	3.4(6.4)	4.5(2.9)	7.2(6.8)

	Canada	Switzerland	Average
Equities	4.5(16.5)	6.2(22.3)	5.93 (18.87)
Bonds	0.0 (12.1)	-2.2(17.6)	0.05 (14.12)
Real Estate	4.6 (6.2)	3.7(8.9)	5.02 (7.1)

NB: *( ) – Standard Deviations*

Source: Davis, 1995 (p.133)

Table 2.4.2: Asset Class Risks / Return Ranking for Schemes in OECD Countries

	Ranking	
Asset Class	By Returns	By Risks
Equities	1	1
Bonds	3	2
Real Estate	2	3

As can be seen from the above figures in the UK to begin with, during the period reviewed from "67-90, domestic equities yielded 8.1% returns against –0.5% for domestic bonds and 6.7% for real estate. Equity volatility (as measured by the standard deviation of returns) averaged 20.3%against 13% for domestic bonds and 11.4% for real estate. Foreign equities also did better than foreign bonds; they yielded 8.1% return while bonds yielded – 0.1%. Risk on foreign equity was 16.2% against 15.0% for foreign bonds.

In the US, domestic equities yielded 4.7% annual returns over the 1967-1990 period compared to –0.5% and 2.4% for domestic bonds and real estate respectively. The volatility of domestic equities was 14.4% against 14.3% on bonds and 6.4% on real estate. Foreign equities returned 9.9% at 17.2% volatility, which exceeded by far the 1.6% earned on foreign bonds at 11.2% volatility.

In Germany, according to the same study, domestic equities returned 9.5% annually with a 20.3% volatility. Domestic bonds yielded 2.7% with a 14.9% risk level, while real estate earned 4.5% with a 2.9% standard deviation. 10.4% return from foreign equities beat 3.4% from foreign bonds hands down.

In the Far East, Japanese pension funds earned 10.9% on domestic equities, with volatility measured at 19.4%. Domestic bonds, on the other hand, earned much less; 0.2% at a 12.8% risk level. Real estate brought in 7.2% at a 6.8% risk level. 7.8% returns from foreign equities for surpassed the 1.3% that was earned by foreign bonds.

In all countries examined in the above study, equities were shown to be the most risky of the various asset types, having the greatest yield prospects, both positive and negative.

Vittas (1996) points out that in most periods, equity returns, as compared to returns from other assets, are usually above the overall portfolio returns. As per Vittas (ibid), equities almost always contribute to average fund returns or risks (i.e. equity returns/risks are a most occasions on the higher side of average portfolio returns/risks). The study by Davis (ibid) reviewed here vindicates this observation. The following is a an analysis of deviation of asset returns and risks from those of the overall fund. Overall fund returns and risks are assigned zero value for purposes of comparison:-

Table 2.4.3: Portfolio/ Single Asset Performance Comparison for Selected Countries

Real Returns and Risks (%) (1967 - 1990)	**US**	**UK**	**Japan**	**Switzerland**
Fund (Overall)	0.0(0.0)	00(0.0)	0.0(0.0)	0.0(0.0)
Equity	+2.5(+3.7)	+2.4(+8.9)	+6.4(+12.6)	+4.8(+16.7)
Bonds	-2.7(+3.6)	-6.2(+1.6)	-4.3(-4.0)	-3.6 (+12.0)
Real Estate	+1.2(-4.3)	+1.0(0.0)	+2.7 (0.0)	+2.3(+3.3)

NB: Returns are simple weighted averages. The figures in parentheses are deviations in asset volatility from overall fund volatility.

Source: Davis (1995)

During the 1990's, in the case pension schemes in the US, fund equity returns averaged 15.5% for the ten years to September 30, 1998, according to a study conducted by Wilshire Associates in 1999. Equity risk, according to the same study, was less than 10%, which was higher than what was posted by both bonds and real estate.

The downside risk of equities arises from its changing fortunes over time. After posting positive returns over the 1990s, the year 2001 for instance was disappointing due to the negative returns that were recorded by funds equity portfolios. Russell/Mellon (2002) in reviewing pension fund performance worldwide for the year 2001, reported negative returns for most equity indices worldwide i.e. in most major markets. Russell/Mellon (ibid) remark that this experience further vindicates the long-held view of equities as being of a very volatile nature.

Table 2.4.4: Index Returns (2001) for Various Assets in Pension Fund Portfolios Worldwide

	%
Real Estate (International)	5.6
International Bonds	1.8
Equity:	
Emerging Market	0
Far East (Ex Japan)	-6.9
Japanese	-27.5
US	-10.7
UK	-13.3
Continental European	-20.3

Source: Russell / Mellon . CAPS; Pension Fund Results 2001

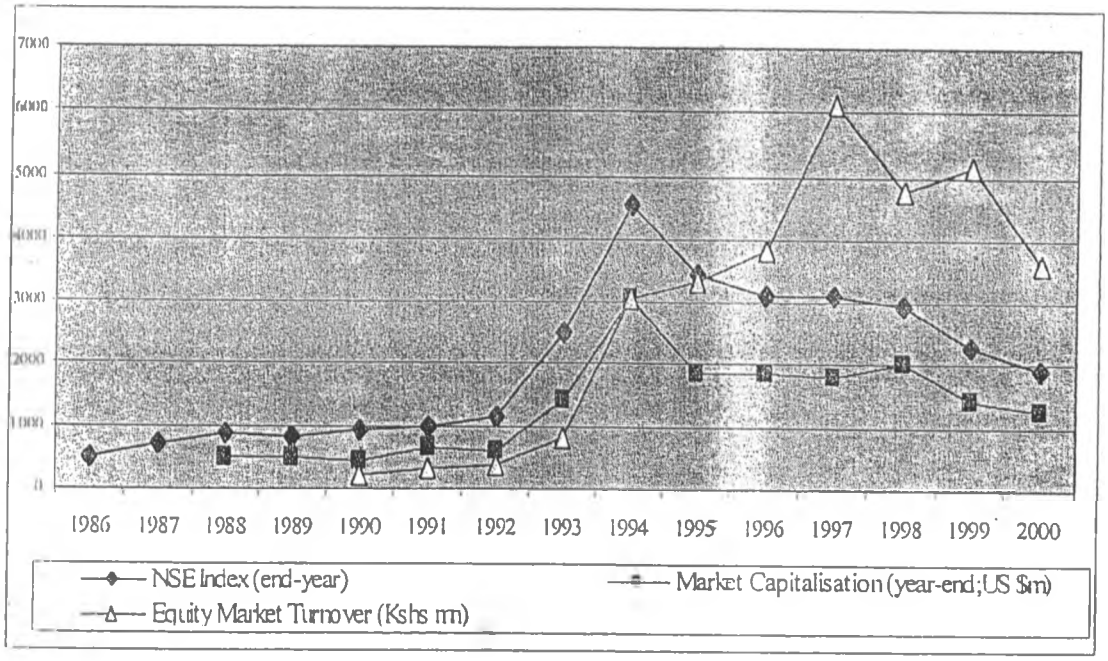
2.5 Pension Schemes and the Kenya Equity Market

As the stock market in Kenya is a relatively nascent and developing institution, and owing to the fact that there have been no reporting requirements historically for pension schemes in Kenya, the performance of scheme equity investments in the past has not been well-documented. Therefore, there is little data on the subject, making a historical analysis extremely difficult.

However, we may attempt to deduce investor experience from the general trends in the relevant equity market indicators. These indicators show that the market had its high in the early to mid-nineties from whence its been declining ever since (See Figure 2).

Equity market turnover peaked in 1997 and moved downhill till 2001 when it finally picked up. The NSE 20 index saw its highest level in 1994 and it too has been in descent to date. Equity market capitalization was at its highest point in 1994. Ever since, its been declining. The trends are illustrated in the chart below: -

Figure 2: Equity Market Indicators



Source: Kibuga Kareithi (2002)

Reproduced from the Point: Bulletin of the Institute of Economic Affairs; issue No. 52, March, 2002.

The gradual slump in the local equity market has occasioned a drastic decline in share prices leading to substantial holding losses for investors over the late 1990s. This state of

affairs in the local equity market is in stark contrast to that in the competing segment, bonds.

The bond market in Kenya appears to be doing relatively better than its equity counterpart, at least as far as pension schemes are concerned. The bond market comprises two sub-segments: Corporate bonds and Government bonds (T-bonds). The T-bond market, to which pension funds allocate the largest part of their portfolio, is more liquid and thriving than the corporate bonds market. The T-bonds vary in maturities from one-year T-bonds to seven-year bonds.

T-bonds may be more popular among pension funds owing to their lower risk as perceived by investors. With T-bonds, there is no default risk, backed as they are by the 'full faith and credit' of the Treasury. This may point to the possible risk-averse attitude of many fund managers in Kenya. The high liquidity in Government bonds also makes it easier for investors to acquire and dispose the bonds as the need arises.

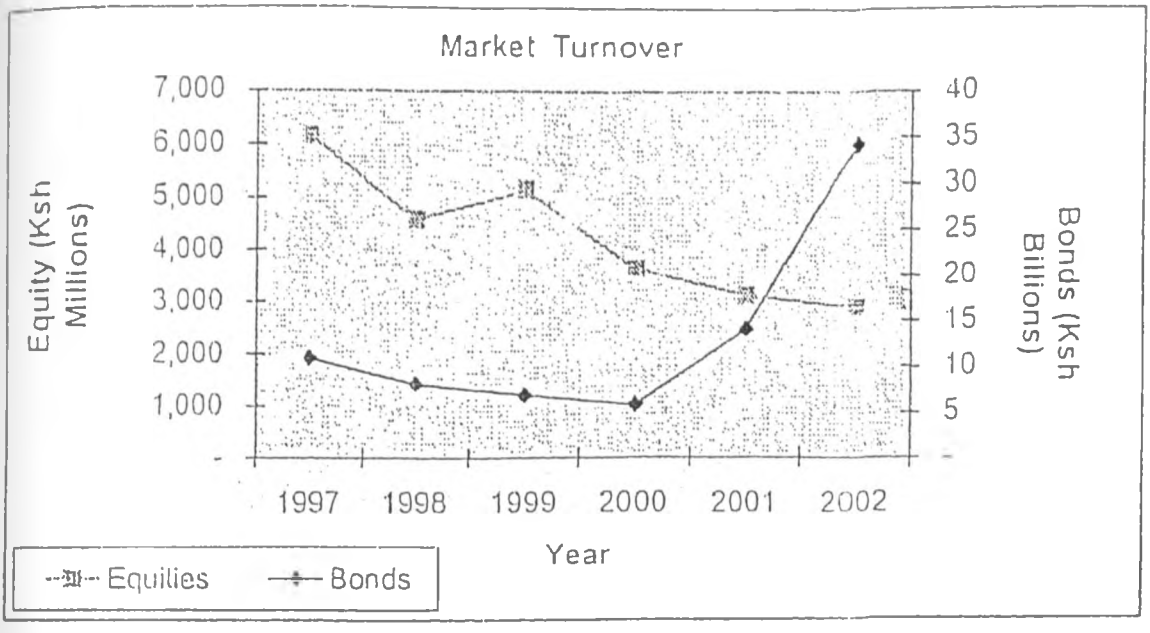
Median annual returns i.e. the yields to maturity on T-bonds from 1997 to the end of 2002 were 14%, according to trading data for the period. The most liquid bond yielded a high of 27% (1997) and a low of 9% (2002) (NSE Bulletin).

The corporate bond segment comprises only four issues, with each issue having a maturity of more than 5 years. Corporate bonds, unlike Government bonds, are highly illiquid, as they do not change hands often. Therefore, yields to maturity for corporate bonds on the NSE are difficult to determine reliably. Two of the bonds, however{i.e. Mabati Rolling Mills [MRM (2007)], and East African Development Bank [EADB (2006)]}, have their interest rates pegged to the prevailing rates on T-bills.

Activity on the bond market has increased steadily (as from the year 2000) as bonds become more popular among investors in Kenya, to the extent that bond market turnover surpassed equity market turnover in year 2001 (see Figure 3). This possibly goes to show that investors expect bonds to perform better than equities in the foreseeable future, hence their greater interest in bonds making their attitudes towards bonds seem more positive than they look towards equities. Along with turnover, bond market capitalization

also surpassed that of the equity market. (see Figure 4). This data has important implications on the risks and returns of both bond and equity markets as perceived by investors in general, and pension funds in particular.

Figure 3: Equity Vs Bond Market Turnover.



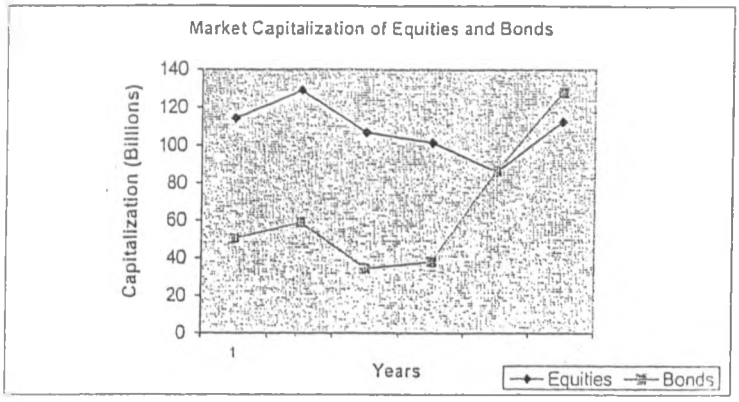
Source: NSE Bulletin: December 2002

Figure 4: Market Capitalization: Bonds Vs Equities

MARKET CAPITALIZATION

Market Capitalization of Equities at the end of December

Year	1997	1998	1999	2000	2001	2002
Equities(Shs.billion)	114.31	129.02	106.74	101.42	86 10	112.59
Bonds(Shs.billion)	50.43	58.98	34.51	38.13	86.58	128:03
GDP(Kshs'Billions')	536.20	593.43	639.03	686.18	772.89	895
Equity Mkt Cap. Ratio of GDP(%)	21.32	21.74	16.70	14.78	11.14	12.58
Bond Mkt Cap. Ratio of GDP(%)	9.41	9.94	5.40	5.56	11 20	14.31



Source: *NSE Bulletin: December 2002*

2.6 The Pros and Cons of Equity Investments from the Perspective of Pension Funds

Equities confer a multiplicity of benefits that pension schemes would be well advised to avail themselves of.

Firstly, being a variable income asset, equities offer the highest prospective returns compared to the other basic corporate securities.

Secondly, equities hold the largest potential for capital gains which, in Kenya are not taxed unlike income from bonds which is taxed (at 28% in Kenya). This means equity holdings have the potential to grow at a faster rate than can assets that are more highly taxed.

A third advantage of equities, and one very important in the case of pension schemes is that equities are a good hedge against inflation [Escolme, et al (1990), Logue & Rader (1998)]. Escolme et al (1990) argue that since pension schemes are meant to provide retirement income, in times of inflation pensioners would like to receive income which keeps up with price levels. To be able to provide such income, schemes need investments whose cashflows have the potential to grow in line with prices and with the growth in vested benefits. Escolme et al (ibid) maintain that although not offering a direct one-to-one link, a good package of equities spread across several sectors and geographical locations can yield such cashflows.

Logue & Rader (1998) argue that over long periods of time, even modest inflation rates can destroy significant real value. However, the equity risk premium associated with stocks has historically been an effective counter to inflationary effects. This however doesn't mean that stocks do well in times of unanticipated hyperinflation. They often do not (few investments do, anyway). But on the whole, the equity risk premium accrued from exposure to stocks has historically been sufficient to offset the effects of inflation and still provide a real rate of return.

A fourth advantage of equities to pension schemes is that they enable schemes to play a significant role in corporate governance.(Logue & Rader, ibid). But, this role can only be effectively played if pension schemes hold substantial shareholdings which, as per Logue & Rader (ibid) would enable the schemes to influence decisions in general meetings, influence appointments to managerial positions in the firm and also influence matters outside general meetings. The latter is a more subtle approach that tries to improve relations between shareholders and management. It is also known as relationship investing.

The main disadvantage of equities, as we've seen earlier, is their high risk, whose downside involves the likelihood that investors may lose their entire stock portfolio. For this reason pension funds need to focus on long-term rather than short-term prospects of equity investments. As noted earlier, the average duration of the benefit obligations of a traditional pension fund ranges from 10 to 15 years; scheme managers should not have to

worry very much about the ups and downs in between. A pension fund, in making and evaluating its investments, should thus focus on expected performance intervals of 10 or 20 years (Olson, 2001).

A thorough evaluation of prospective equity holdings is therefore called for prior to acquisition. Goff (1971) says that a firm's financial data should be studied on a year by year basis and comparisons made between the various annual data sets. This would serve to bring out any (in)consistencies in performance over time. Goff (ibid) adds that the relevant variables to consider include pre-tax earnings, gearing levels, trends in reserves and management caliber.

Graham et al (1962) give the factors relevant in the valuation of common stocks as the expected future earnings per share, expected dividends per share and annual growth rate in those dividends, the firm's earnings capitalization rate as compared to the fund's, and the firm's net worth i.e. the net asset value(NAV) per share of the prospective investee. The NAV would be compared to the share's offer price to determine if the latter is justified or not.

Badger et al (1969) concur with Graham et al and add one more factor: the quality of the firm' earnings. They define this as the volality of earnings and the extent to which they derive from the core business of the prospective investee.

3.0 RESEARCH METHODOLOGY

3.1 The Population

The study's population originally comprised of two sub-populations. The first sub-population consisted of Trustees in the 1,300 odd occupational pension schemes registered in Kenya. The second group was made up of Chief Executive Officers (CEOs) in all eleven asset management firms registered with the RBA to manage pensions funds in Kenya as at 31st December 2002.

3.2 Method of Sample Selection

The Trustees' sample was drawn using non-probability sampling techniques. Specifically, the sample of trustees was drawn from schemes in various sectors namely education, agriculture, banking and finance, industrial / manufacturing, telecommunication and the commercial and services sectors.

A list of all registered schemes (numbering more than 1,300) was obtained from the RBA and classified as per the aforementioned sectors. Within each sector 10 schemes were selected on the basis of convenience (details on the actual membership and asset structure of individual schemes were not available, either from the RBA or the schemes themselves as they were deemed 'confidential'). Hence, convenience sampling was the only way to build up the sample. By contacting various registered schemes, I came up with a list of 10 individual trustees in each sector who were willing to fill in my questionnaire. Thus, overall, questionnaires were administered issued to 60 trustees. Of these, though, only 32. responded, making the population's response rate slightly above 50%. No response came from schemes sampled in the educational, agricultural and telecommunication sectors.

Of the 11 CEOs in fund management organizations covered, 9 responded, making this population's response rate slightly over 90%.

The individual stocks chosen for the computation of past returns and risks on listed equities were those that were quoted as from the 1st January 1994 through to the 31st December, 2002.

However, the appreciations in price, and variations in the same were computed for the years beginning 1996, owing to the fact that in the years 1994 and 1995 the Kenyan economy was recovering from hyperinflation which had begun in the year 1993. Hyperinflationary forces then pushed stock market prices upwards in the years mentioned and by so doing, most stocks more than trebled in price overnight. For this reason the years 1994 and 1995 are rendered 'abnormal' for purposes of this study, and will therefore not be considered.

3.3 Data Collection

Data was obtained using two principal approaches: Data relating to respondent attitudes was obtained by means of self-administered questionnaires issued to trustees and staff in fund management organizations. Data on the relevant prices and dividends paid on the selected stocks was obtained from records of the Nairobi Stock Exchange(NSE).

3.4 Data Analysis

Respondents' answers were collated and used to draw conclusions on objective (i) and (iii) (see chapter 1 pg 14)

Differences between the closing and opening stock prices within a given year, together with cash dividends paid on those stocks, were used to compute the annual returns earned on the selected stocks for the years under consideration. Capital gains on individual stocks were computed by obtaining the difference between the end-year price quoted on the stock in the year under consideration, and the stock's price at the beginning of that year. This was added to the cash dividends paid on the stock, the sum being divided by the year's opening price.

The simple return model used was;

$$r_t = \frac{D_t + (P_t - P_{t-1})}{P_{t-1}} \times 100$$

Where r_t = annual (percentage) rate of return on the stock in year t.

D_t = cash dividends paid on the stock in year t

P_t = the stock's market price at the end of the year t

P_{t-1} = the stock's opening market price at the start of year t.

Here, the objective was to compute the possible returns that holders of the selected stocks would have made in each of the years considered, had they acquired the stocks at the start of the year, and disposed them at the year's end.

The annual risks on individual stocks were estimated using the standard deviation of returns.

The findings made have been duly reported and most of the data tabulated for presentation purposes.

CHAPTER 4

4.0 DATA REPORTING AND ANALYSIS

4.1 Investment Preferences of Pension Funds: Perceived Returns

To most of the respondents, equities did not rank highly as far as returns are concerned. Among an asset spectrum which also included Treasury bonds, Treasury bills, Corporate bonds, Commercial paper and real estate, 78% of trustees ranked equities fifth, 13% third, 6% second and 3% fourth.

67% of respondent fund managers ranked equities third, with 11% assigning stocks of the ranks second, fourth and fifth respectively.
The order of preference is, in summary, tabulated below:

Table 4.1
Respondent Ranking of Equities among Other Asset Categories

Asset	Modal Ranking Assigned		
	Fund Managers	Trustees	Combined Ranking
T. Bonds	1	1	1
T. Bonds	5	4	5
Corporate Bonds	2	2	2
Commercial Paper	6	6	6
Real Estate	4	3	3
Equities	3	5	4

Given the above responses, the tentative deduction may be made that trustees and fund managers view equities adversely, with T-bonds, T-bills and real estate taking precedence (on the basis of return on capital)

4.2 Equity Risk Perception

78% of fund managers felt that common stocks are relatively risky securities whose use by pension schemes should by limited. 11% felt that equities, though risky, should have a place in pension scheme portfolios while a further 11% felt that stocks are actually very attractive and should occupy a dominant position in pension scheme portfolios.

As for trustees, 66% were of the opinion that common stocks are relatively risky and their use in pension scheme portfolios should be limited. 12% felt that equities ought to have a place in scheme portfolios while 22% were undecided. The details appear in summary in table 4.2 (a) below.

Table 4.2 (a)

Respondents Views on Equities and the Extent of their Use in Pension Scheme Portfolios

Response	Response Frequency (In Percentage)		
	Fund Managers	**Trustees**	**Combined**
(i) Equities are attractive and should dominate scheme portfolios	11%	0%	5.5%
(ii) Equities ought to have a place in scheme portfolios	11%	12%	11.5
(iii)Equities are relatively risky and should be limited in scheme portfolios	78%	66%	72%
(iv) Schemes should use stocks sparingly, if at all	0%	0%	0%
(v) Undecided	0%	0%	0%
	100%	**100%**	**100%**

Regarding their outlook for the local equity market over the next five years, 78% of fund managers described it as 'somewhat negative' while 22% gave theirs as 'somewhat positive'.

In the view of trustees, 81% maintained that as they saw it, market prospects were 'somewhat negative', 13% 'somewhat positive' while 3% held no particular viewpoint. [See table 4.2 (b) below]

Table 4.2 (b)

Respondent Views on Five Year Equity Market Outlook

Response	Response Frequencies (Percentage)		
	Fund Managers	**Trustees**	**Combined**
(i) Very Positive	0%	0%	0%
(ii) Somewhat Positive	22%	13%	17.5%
(iii) Neither Positive nor Negative	0%	0%	0%
(iv) Somewhat Negative	78%	87%	79.5%
(v) Very Negative	0%	0%	0%
(vi) No response	0%	6%	3%
	100%	**100%**	**100%**

The relevant surmise from the foregoing is that equities appear to evoke negative sentiments in both pension fund managers and scheme trustees. The predominant view among both groups is that since equity risk is high, its proportion in pension scheme portfolios should be limited. It may well be the reason behind the greater preference for debt over equity securities among local investors in general, and pension funds in particular.

4.3 The Equity – Allocation Preferences of Respondents

67% of fund managers stated that the highest proportion of equities they would accept in pension scheme portfolios, even under the brightest market prospects, would be 40%. 22% said they would go up to 60%. 11% did not respond.

As for the trustees, 59% gave 10% as their upper limit on equity allocation, 16% gave 20%, 9% gave 40% while the remaining 16% admitted they really didn't know. (See table 4.3(a) below)

Table 4.3(a)

Equity Allocation Preferences of Respondents (As Overall Portfolio Percentages)

Proportional Upper Limits (%)	Response Frequencies (In Percentage)		
	Fund Managers	**Trustees**	**Combined**
5	0%	0%	0%
10	0%	59%	29.5%
20	0%	16%	8%
40	67%	9%	38%
60	22%	0%	11%
80	0%	0%	0%
100%	0%	0%	0%
Do not Know	0%	16%	8%
No response	11%	0%	5.5%
	100%	**100%**	**100%**

The foregoing findings reveal that both fund managers and trustees maintain a strong aversion to common stocks, an aversion deductible from the low proportion of equity that's preferred especially by trustees. Among the latter, there also appears to be some ignorance regarding matters on equity allocation. Those trustees falling in this category have apparently left it all to their schemes,

fund managers, hence being, if you like, 'not in the picture'. For the rest, the predominant attitude is that schemes should not heavily commit themselves in common stocks regardless of market prospects [the highest preferred cap on equities given by the trustees in this case, 40%, is far below the allowed regulatory maximum laid down in the RBA investment guidelines, 70%, leaving almost half the equity allowance unutilized]. This in all probability points to a strong aversion to equity among this group of respondents surveyed i.e. scheme trustees.

The above deduction is further reinforced by respondents' answers when asked if they would be willing to run a higher risk, by increasing the equity portion of the portfolio in a bid to increase returns. To this query 44% of fund managers answered in the affirmative, while 56% answered in the negative. 74% of trustees answered in the negative, and 26% in the affirmative.

So, in both sub-populations, majority were those unwilling to raise equity commitments even with the possibility of eg more [See Summary in Table 4.3 (b) below].

Table 4.3 (b)

Respondents Willingness to Increase Equity Proportions In Scheme Portfolios

Responses	Response Frequencies (Percentage)		
	Fund Managers	**Trustees**	**Combined**
Yes	44%	26	35%
No	56%	74%	65%
	100%	**100%**	**100%**

4.4 Evaluation of the Performance of Equity Holdings

4.41 The Nature of Scheme Investment Objectives

Majority of the respondents aver that the main emphasis in investing scheme funds is on capital growth but with income concerns.

78% of respondents fund managers described the investment objectives of their pension funds as 'growth with income' 22% described theirs as plainly growth (i.e. capital gains)

84% of the trustees described their scheme investments objectives as 'growth with income', 9% plain growth, and the remaining 7% giving 'income' [See Table 4.4(a)]

Going by the responses obtained, the deduction may be made that both capital gains and cash flows are of equal importance to schemes. The importance of growth is in line with the long-term investment orientation of pension schemes, while regular income is necessary to meet current scheme obligations. This way, schemes are able to honour prior commitments while maintaining the capital stock from which to generate future income

Table 4.4 (a)

The Nature of Scheme Investment Objectives

Prime Objectives	Percentage Frequencies		
	Fund Managers	**Trustees**	**Combined**
Growth only	22%	9%	15.5%
Growth with Income	78%	84%	81%
Income only	0%	7%	3.5%
Liquidity	0%	0%	0%
	100%	**100%**	**100%**

4.42 Target Returns on Investment

89% of respondent fund managers gave 12 – 14% return per year as their recommended range of net return that ought to be targeted in pension scheme portfolios, making this the modal class of returns. 11% recommended 10 – 11%.

56% of trustees also gave 12 – 14% as the annual range of net return sought on scheme investments. 22% gave 10 – 11.9%, a further 22% giving 8 – 9.9%.

Thus 12 – 14% annual net return was the modal response from both sub-populations, as table 4.4 (b) shows in summary

Table 4.4 (b)

Annual Target Return on Pension Scheme Portfolios

Range	Percentage Frequencies		
	Fund Managers	**Trustees**	**Combined**
12-14%	89%	56%	72.5%
10-11%	11%	22%	16.5%
8-9.9%	0%	22%	11%
6-7.9%	0%	0%	0%
Other	0%	0%	0%
	100%	**100%**	**100%**

4.43 Perception of Risk

Various respondents described pension fund risk variously as they saw it. 72% of trustees described risk as the possibility that the scheme may not achieve a target rate of return set beforehand, while 20% described risk as the degree of fluctuation in the value of the portfolio within a market cycle. The remaining 8% defined risk as the chance of occurrence of loss in the value of individual investments regardless of how well the overall portfolio might perform [See table 4.4 (c)].

Regarding the techniques used to measure risk, 67% of fund managers stated they used standard deviation, 22% gave variance (which is just the square of standard deviation) while 11% did not respond to this particular query. [See Table 4.4 (d)]

Table 4.4(c)

*Respondents Risk Definition**

Response	**Response Frequency**
The Possibility of	
(i) not meeting actuarial assumption	0%
(ii) not achieving target returns	72%
(iii) not equaling the inflation rate	0%
(iv) fluctuation in portfolio value	20%
(v) loss in value of individual security	8%
	100%

** This question had only been put to trustees, hence the absence of fund manager responses.*

Table 4.4 (d)

*Techniques used by Fund Managers to Measure Portfolios Risk**

Response	**Response Frequency**
Beta	0%
Standard Deviation	67%
Variance	22%
No Response	11%
	100%

4.44 Investment Horizon

Regarding the time horizon needed for equity investment to pay off, 78% of fund managers stated that at least 10 years are needed. 22% gave their view as 5 years. They pointed out that in reality; most pension schemes evaluate their equities after barely three years. In the view of fund managers, there is need for greater patience considering that equities are long-term investments.

Indeed 91% of the trustees did give their waiting period as 3 years. The remaining 9% gave theirs as 5 years [See table 4.4 (e)]. This three-year time horizon may mainly have arisen from the RBA's requirement that schemes should undergo actuarial evaluations after every three years (though this requirement only applies to defined benefit schemes). Most schemes therefore evaluate their holdings after a similar period – which, according to fund managers, is an inadequate duration in the case of equity investments.

Table 4.4 (e)

Time Horizon used in Evaluating Equity Investments

Time Horizon	Response Frequencies		
	Fund Managers	**Trustees**	**Combined**
(i) Ten years or more	78%	0%	39%
(ii) Five years	22%	9%	15.5%
(iii) Three years	0%	9%	54.5%
(iv) A market cycle	0%	0%	0%
	100%	**100%**	**100%**

4.45 Evaluation of Actual Equity Performance: An Estimation of Returns and Risks

The actual returns and risks realized by pension schemes on their equity holdings in the past were estimated using the methodology explained earlier in chapter 3. The figures are as tabulated below (see appendix for full details and computations)

Table 4.4 (f)

Equity Market Returns (In Percentage) by Individual Market Segments

	Market Segment					
YEAR	**MIMS**	**C & S**	**F & I**	**I & A**	**AIMS**	**Overall Market**
1996	(3.18)	20.86	(16.21)	(18.91)	(9.92)	(10.27)
1997	9.03	2.22	7.66	(3.87)	25.14	7.53
1998	18.04	(26.21)	(1.99)	(6.14)	(8.72)	(5.88)
1999	(31.65)	(15.90)	(5.11)	(5.54)	(7.31)	(9.26)
2000	(19.20)	(24.82)	(25.79)	(6.80)	(2.77)	(13.88)
2001	(34.81)	(18.13)	(7.69)	(16.61)	64.06	2.39
2002	(30.95)	35.92	15.14	36.60	(7.35)	15.17
Mean Return	**(13.25)**	**(3.73)**	**(4.86)**	**(3.04)**	**7.59**	**(2.03)**

Key:

(i) MIMS : Main Investment Market Segment

(ii) C & S : Commercial and Services Segment

(iii) F & I : Finance and Investment Segment

(iv) I & S : Industrial and Allied Segment

(v) AIMS : Alternative Investment Market Segment

Table 4.4(g)

Equity Market Risks /Standard Deviation (In Percentage by Individual Market Segments

Market Segment						
YEAR	**MIMS**	**C & S**	**F & I**	**I & A**	**AIMS**	**Overall Market**
1996	8.44	18.59	15.12	23.44	16.89	21.47
1997	47.72	18.86	19.59	25.46	58.04	35.49
1998	37.24	24.96	21.82	43.19	55.44	39.18
1999	6.58	8.35	25.82	29.51	30.85	26.02
2000	16.15	20.36	20.97	30.53	14.61	23.94
2001	15.35	20.02	20.34	32.20	241.66	116.98
2002	25.15	95.55	31.32	58.29	13.01	51.13
Mean SD per Segment/ Market	**22.34**	**29.53**	**22.14**	**34.66**	**61.50**	**44.89**

Key:

(i)	MIMS	:	Main Investment Market Segment
(ii)	C & S	:	Commercial and Services Segment
(iii)	F & I	:	Finance and Investment Segment
(iv)	I & S	:	Industrial and Allied Segment
(v)	AIMS	:	Alternative Investment Market Segment

Table 4.4 (h)

Highlights of Market Performance (By Years)

Highlight	1996	1997	1998	1999	2000	2001	2002	Overall Market '96 – 02'
i) (a) Highest Return Stock	Marsahlls	A. Baumaunm	W/Tea	Kapchora	Bamburi	Eagads	Bamburi	Eagads
(b) Return level	41.89	144.70	73.84	57.89	31.43	660.00	177.78	94.90
ii) (a) Lowest Return Stock	EAPC	Dunlop	Dunlop	KCB	Pan-African	Total	Marshalls	Dunlop
(b) Return level	60.86	(60.78)	(81.50)	(49.60)	(59.26)	(65.45)	(72.13)	(32.06)
iii) (a) Highest Return Segment	C & S	AIMS	MIMS	F & I	AIMS	AIMS	I & A	AIMS
(b) Return level	20.86	25.14	18.04	(5.11)	(2.77)	64.06	36.60	7.59
iv) (a) Least return Segment	I & A	I & A	C & S	MIMS	F & I	MIMS	MIMS	MIMS
(b) Return Level	(18.91)	(3.87)	(26.21)	(31.65)	(25.79)	(34.81)	(30.95)	(13.25)
v) (a) Most Risky Segment	1 & A	AIMS	AIMS	AIMS	I & A	AIMS	C & S	AIMS
(b) Risk Level	23.44	58.08	55.44	30.85	30.53	241.66	95.55	61.50
vi) (a) Least Risky Segment	MIMS	C & S	F & I	MIMS	AIMS	MIMS	AIMS	F & I
(b) Risk Level	8.44	18.86		6.58	14.61	15.35	13.01	22.14
vii) (a) Most Risky Stock								Eaagads
(b) Risk Level SD								69.95
viii) (a) Least Risky Stock								City Trust
(b) Risk level								7.53

Recap:

(i) Over the past seven years the, average annual return per stock, included in the study was NEGATIVE 2.03%.

(ii) Over the past seven years, the average volatility per listed stock studied here was 44.89%

(iii) Over the past seven years, the average returns for the market as a whole for different equity holding periods have as follows (See Appendix IV for the analysis of returns for individual market segments).

Table 4.4(i)

Analysis of Cumulative Percentage Returns Over Different Holding Periods.

Length of Holding Period (In Years) (Beginning 1996)	**Cumulative Percentage Returns**
1	-10%
2	- 4%
3	- 9%
4	-18%
5	- 29%
6	- 27%
7	- 16%

The picture portrayed by the above figures is of a market that is largely unrewarding and extremely volatile. What the analysis reveals is that for all the high risk involved over the seven-year period studied, investors were, in real terms, not at all compensated and, on the whole, they actually lost money. With such poor returns (losses, really) coupled with unduly high volatility, the market would indeed, be hard pressed in finding investors willing to risk scarce capital.

The average annual losses across most segments compare badly against segmental risk levels. The high risk involved demand that returns be commensurate, but for the period studied, this is far from being the case. As the data shows, 4 out of the 5 segments actually posted yearly losses over the reviewed duration, yet at the same time running double-digit volatility levels. This state of affairs would certainly deter any rational investors and, this being the reality, it should not be surprising that pension funds, as institutional investors, have largely shunned equities.

4.5 Other Determinants of Pension Scheme Equity Investments

Both the managers and trustees surveyed gave their opinions on the relative importance of various corporate and industrial factors considered in evaluating equity investments i.e. for both initial and continuing equity holdings. These factors are tabulated and analyzed in Table 4.5 below.

Table 4.5 (a)

Relative Importance of Various Factors Governing the Level of Pension Fund Equity Investments

	Relative Importance & Relative Scores (R.S)			
FACTORS	**Very Important R.S = 3**	**Important R.S = 2**	**Unimportant R.S = 1**	**Total Score R.S x % Frequency**
1. Fund Managers				
(i) Corporate Factors				
(a) Profitability	100%	-	-	300
(b) Size (i.e. Mkt. Capitalization	-	33%	67%	133
(c) Degree of Financial Leverage	88%	12%	-	288
(d) Age of Company (In Years)	-	-	100%	100
(e) Historical Dividend Ratio	100%	-	-	300
(ii) Industry Factors				
(a) Size	-	44%	56%	144
(b) Degree of Competition (i.e. No of Firms in Industry)	89%	11%	-	289
(c) Maturity (i.e. the rate of new entrants into the market)	67%	22%	11%	256
2. Trustees				
(i) Corporate Factors				
(a) Profitability	100%			300
(b) Size (Mkt. Capitalization)	-	45%	55%	145
(c) Degree of Financial Leverage	78%	22%	-	234
(d) Age of Company (in Years)			100%	100
(e) Historical Dividend Ratio	81%	19%	-	281
(ii) Industry Factors				
(a) Size		12%	88%	112
(b) Degree of Competition	75%	25%	-	275
(c) Maturity	84%	6%	10%	274

Table 4.5(b)

SUMMARY		
(i) Corporate Factors	Total Score	Combined Ranking
(a) Profitability	600	1
(b) Size	389	4
(c) Degree of Financial Leverage	522	3
(d) Historical Dividend Ratio	581	2
(ii)Industry Factors		
(a) Size	256	7
(b) Degree of Competition	275	5
(c) Maturity	274	6

CHAPTER 5

5.0 SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH.

5.1 SUMMARY AND CONCLUSIONS

The general attitudes of the surveyed fund managers and trustees towards equities are characterized by much fear, diffidence, caution and general aversion. This attitude appears well founded going by the past experience of investors on the local equity market, at least over the period studied.

Over the years 1996-2002, the average NSE return per listed stock was NEGATIVE 2.03% annually at a 44.89% volatility level. This, as compared to a modal target return of 12-14% per annum, is nothing but disastrous. The shocking reality, as pointed out in the previous chapter, is of a market that is highly risky but in which such risk is not compensated by meaningful returns.

Under such conditions, the aversive behaviour of pension funds regarding equity allocation becomes much more understandable. Given the harsh reality in this market, any prudent investor would choose to stay away from the market rather than risk scarce capital in vain.

It may well be that the market's performance over the period studied was influenced by factors beyond the market per se. Indeed, the second half of the nineties witnessed severe challenges as the Kenyan economy struggled to recover from the reeling effects of excessive money supply, withdrawal of donor support, a severe banking crisis, and so on. All these could have impacted negatively on the bourse's performance, with the consequence of keeping away would-be investors, including pension funds, from the market. But at any rate, the bourse's performance as seen here was, on its own, bad enough to bring down confidence levels and deter investors.

It may also be argued that since equities are long-term investments, returns should be higher if investors used a longer time horizon. As noted earlier, while most schemes use a three-year investment horizon (owing mainly to regulatory reasons), asset managers advise a ten-year horizon if equities are to be judged fairly.

But in the case of the local bourse, the evidence suggests otherwise [see table 4.4 (i)]. The cumulative losses appear to increase in tandem with the lengthening of the investment horizon. What the evidence really suggests is that a shorter investment horizon would have been more advisable for the period studied. This way, while the time horizon remains relevant as a determinant of equity investment levels, its role here has been reversed from that which it would ordinarily be expected to play, in theory at least.

Two factors besides investment performance, given as most important governors of pension fund equity commitments are, in summary, as follows.

Firstly, *company profitability*. It is from it's profits that a company pays dividends to its shareholders, thereby determining the level of return on members' equity holdings, hence the importance of the profit factor in influencing the equity preferences of actual and potential equity investors.

The second most important factor, as established in this survey is the company's *historical dividend payout ratio* ,which serves to indicate past variations on dividend payments, hence being an indicator of the consistency or inconsistency with which the company may be expected pay dividends in future.

The two least important factors in governing pension funds equity investments were given as, firstly, *the level of industrial maturity*, which is the rate of new entrants into the market as an indicator as to whether the industry is growing,

stagnant or declining. This apparently, was thought not to impact on the fortunes of individual firms provided they are well managed, hence would not, by itself, impact heavily on equity returns and risks (although in theory, this is an influencing factor).

The second least important factor was found to be *Industrial Size*, which is the number of firms operating in a particular industry at any one time. Apparently, the respondents were of the opinion that, whether or not a given firm meets its shareholders' return expectations depends principally on how well it is managed, and not how many other firms it is competing against. Industrial size, in itself, was therefore not important according to those surveyed.

5.2 Limitations of the Study

This study was plagued by a number of difficulties, which included the following:

(i) There was a shortage of material regarding historical asset allocation by pension schemes in Kenya. This stemmed mainly from the fact that regulatory reporting requirements in Kenya are a recent phenomenon, and there hadn't been any obligation on pension schemes to report on their activities until the RBA Act was passed by Parliament in 997.This shortage greatly hampered literature review.

(ii) The respondents withheld much important information that they deemed 'confidential'. Yet, this information would have been important in bringing out patterns and relationships within the data. For instance, all respondent trustees omitted the first part of their questionnaire (see appendix III), making it impossible to study investment profiles along lines of type of scheme, age of scheme, levels of membership, etc., which was the information sought by that part of the questionnaire. This prevented the discernment of important relationships or patterns that could have been present.

(iii) Time and financial constraints meant that the survey could only be done on a limited scale, which was limited even further by the low response rate obtained from the initial sample. Consequently, generalization to the larger scheme population was impaired.

5.3 Recommendations for Further Research

This study focused on common stocks (equity) investment decisions by trustees and fund managers of pension schemes in Kenya. Other studies that could add on to material in this area include:

(i) a repetition of this same survey but on a larger scale;

(ii) a study on the factors governing trustee and fund manager investment decisions pertaining to other asset classes besides equities, and

(iii) an evaluation of the past performance of unquoted equities in pension scheme portfolios.

BIBLIOGRAPHY

Asher, Mukul. (1995) "Investing National Provident Fund Balances in Malaysia and Singapore: Practice and Issues." A background paper of the World Bank, China and Mongolia Department, Washington, D.C.

Badger, R.E, Torgerson, H.W and H.R Guthmann (1969); "Investment Principles and Practices," 6th Ed;;Prentice-Hall Inc, New York.

Breckler S.J (1984) "Empirical Validation of Affect, Behaviour and Cognition As Distinct Components of Attitude". Journal of Personality and Social Psychology. 47,1191-1205.

Davis, E.P. (1993)."The Structure, Regulation and Performance of Pension Funds in Nine Industrial Countries". Policy Research Working paper 1229, WB, Washington, D.C

Davis, E.P. (1995). "Pension Funds" Oxford: Clarendon Press

Escolme, B., Hudson, D and P. Greenwood (1990): "Hosking's Pension Schemes and Retirement Benefits". 6th Ed, Sweet & Maxwell, London.

Goff, T.C (1971) "Theory and Practice of Investment" William Heinemann Ltd, London.

Graham, B., Dodd, D.L, and S.Cottle (1962), "Security Analysis: Principles and Technique" 4th Ed, McGraw-Hill, New York.

Kohn, M (1994)"Financial Institutions and Markets" Tata McGraw-Hill, New Delhi

Logue D.E and J.S Rader (1998): "Managing Pension Plans:
A Comprehensive Guide to Improving Plan Performance"
Harvard Business School Press

Sdorrow, M.L (1993) "Psychology" 2nd Ed. 1993. Brown & Benchmark, Chicago

Mugo, W.E (1999): "A Study of Factors that Institutional Investors Consider in Making Decisions on Investments in Shares Traded on the Nairobi Stock Exchange." MBA Project (Unpublished), University of Nairobi.

McConnell. J.V (1978)"Understanding Human Behaviour" McGraw – Hill, New York.

Nairobi Stock Exchange (NSE) Bulletin; Dec. 2002

Olson, R.L (1999) "The Independent Fiduciary: Investing for Pension Funds and Endowment Funds" John Wiley & Sons, Inc., Chicago.

Russell / Mellon. CAPS "Pension Fund Returns 2001"
See http://www.caps-iis.com/download/SegPresentation 2001.ppt

RBA Act (1997). Kenya Gazette Supplement No. 63 (Acts No. 4)
Nairobi 29th August 1997

Retirement Benefits Regulations (2000). Kenya Gazette Supplement
Nairobi , Legislative Supplement No. 72.9th October 2000

Retirement Benefits Authority (RBA) Newsletters (Quarterly), Nairobi
Vol 1, No. 1 (September 2001) and Vol. 2 No. 1 (September 2002)

Sarney, M.A (2000) "State and Local Pension Plans: Equity Holdings and Returns."
Social Security Bulletin Vol. 63 No.2, New York.

Vittas, D. (1996) "Pension Funds and Capital Markets"
FSD Note No. 71, February Washington D.C:
World Bank

Watson Wyatt Inc. "Global Investment Review (2003)"
www.watsonwyatt.com

Wilshire Associates, "Private Versus Public Pension Fund Investment Performance".
(Feb. 1999). Summary of report located at
www.calpers.ca.gov/whatshap/hottopic/w-study.htm

Srinivas P.S and Yermo, J (1999). "Do Investment Regulations Compromise Pension
Fund Performance? Evidence from Latin America." (May),
World Bank, Washington D.C

APPENDIX I
LETTER OF
INTRODUCTION

UNIVERSITY OF NAIROBI

FACULTY OF COMMERCE

MBA PROGRAMME - LOWER KABETE CAMPUS

Telephone: 732160 Ext. 208
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE: .....

TO WHOM IT MAY CONCERN

The bearer of this letter: Gitu, M. I.....

Registration No: D/61/P/8198/2000.....

is a Master of Business & Administration student of the University of Nairobi.

He/she is required to submit as part of his/her coursework assessment a research project report on some management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate if you assist him/her by allowing him/her to collect data in your organization for the research.

Thank you.

M. B. A. OFFICE
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NAIROBI
FACULTY OF COMMERCE
UNIVERSITY OF NAIROBI

DR. MARTIN OGUTU
LECTURER & CO-ORDINATOR, MBA PROGRAMME

MO/ek

APPENDIX II

FUND MANAGERS QUESTIONNAIRE

Question 1

The following are some of the main assets available locally to investors. In considering their respective magnitudes of return on capital, per annum, how would you rank, between them, each of the assets listed below, from your experience as an investment manager? (Please rank them, numberwise, consecutively in descending order).

Treasury Bonds _____

Treasury Bills _____

Corporate Bonds _____

Commercial Paper _____

Real Estate _____

Equity (Common Stocks) _____

Question 2

The primary emphasis in examining the investment performance of equity holdings managed by your firm is on

a) comparing actual returns to an 'absolute' percentage return target
b) 'relative' comparison i.e. comparing the actual account returns to various market indices
c) using both 'absolute' and 'relative' measures
d) I have no real preferences

Question 3

How do you feel about investing in common stocks, by pension schemes, in general?

a) I think stocks are very attractive and should occupy a dominant position in pension scheme portfolios. _____

b) Common stocks should have a place in the investment portfolios. _____

c) I think stocks are relatively risky and their use by pension schemes should be limited.

d) I think pension schemes should use stocks very sparingly, if at all.

Question 4

How would you describe your outlook for local equities over the next five years?

a) Very positive

b) Somewhat positive

c) Neither positive nor negative

d) Somewhat negative

e) Very negative

f) I am undecided

Question 5

If the market generally is very optimistic on the outlook for common stocks, what is the maximum percentage of your pension scheme clients' portfolio you would advise to be invested in common stocks?

0%

5%

10%

20%

40%

60%

80%

100%

Question 6

If the market generally is very pessimistic on the outlook for common stocks, what is the minimum percentage of your pension scheme client's portfolio you would allow to be invested in common stocks?

0%

5%

10%

20%

40%

60%

80%

100%

Question 7

What average annual 'absolute' rate of return (as opposed to return 'relative' to a market index) do you consider to be a worthwhile investment objective for a pension fund, on a long-term basis? (i.e. for a period of 5 years or more).

a) 12 –14% p.a
b) 10 – 11.9% p.a
c) 8 – 9.9% p.a
d) 6 – 7.9% p.a
e) Other. If other please specify _____

Question 8

In your firm, what technique do you use to measure the risk of returns from quoted equity?

a) Beta _____

b) Standard Deviation _____

c) Variance _____

d) Other. Please specify _____

Question 9

What have been the average annual absolute percentage returns from equity holdings managed by your firm on behalf of pension schemes? _____

Question 10

In your experience as an asset manager, how would you generally categorize the investment objectives of your client pension schemes?

a) Growth – Maximum growth of capital with little or no income considerations.
b) Growth with income – Primary emphasis on capital growth of the fund with some focus on income.
c) Income – Primary emphasis on income with little or no capital considerations
d) Liquidity
e) Other (Please specify)

_____

_____

_____

Question 11

An increase in investment return is usually associated with an increase in the acceptable level of fluctuation of the portfolio value to market cycle (i.e. risk). Would you be willing to accept a higher risk level (i.e. a wider variation in portfolio value) by increasing the equity proportion of a pension scheme portfolio in an attempt to achieve a higher return?

(Yes/No) _____

Question 12

The time period in evaluating investment return has a significant impact on the probability of realizing the stated return objective. In your experience, what investment time horizon seems most appropriate for pension schemes in as far as equity holdings are concerned?

a) Ten years or more
b) Five years
c) Three years
d) A complete market cycle
e) Other. Please specify _____

Question 13

In part (i) above, what is the average time horizon actually used by your client pension schemes on their common stock holdings, in your experience?

a) Ten years or more
b) Five years
c) Three years
d) A complete market cycle
e) Other . Please specify

_____

Question 14

In evaluating potential equity investments on behalf of client pension schemes, how would you describe the following corporate and industry variables pertaining to the potential investee firms, in terms of relative importance? (Please tick on either '*very important*', '*important*', or '*unimportant*' as the case may be).

	Very Important	**Important**	**Unimportant**
(i) Corporate Factors			
(a) Profitability	( )	( )	( )
(b) Size (i.e. market capitalization)	( )	( )	( )
(c) Degree of financial leverage (i.e. level of debt in capital structure)	( )	( )	( )
(d) Length of time (in years) that investee has been in operation	( )	( )	( )
(e) Historical dividend payout ratio	( )	( )	( )
(ii) Industry Factors			
(a) Size	( )	( )	( )
(b) Degree of competition (i.e. no. of firms in industry)	( )	( )	( )
(c) Maturity (i.e. number of new firms entering the market)	( )	( )	( )

APPENDIX III

TRUSTEES' QUESTIONNAIRE

Part I

1. On what date was your scheme officially set up?_____
2. What is the type of your scheme?
   a) Fully Defined Benefit _____
   b) Fully Defined Contribution _____
   c) Part Defined Benefit and Part Defined Contribution _____
3. Please fill in the following details regarding your scheme:
   a) Total assets held *(by latest market valuation)* _____
   b) Total membership:
      (i) still in employment _____
      (ii) retired (and receiving pensions) _____

PART II

Question 1

The following are some of the main assets available locally to investors. In considering the respective magnitudes of return on capital per annum from individual classes how would you rank each? (Please number them in descending order of their annual returns)

Treasury Bonds _____

Treasury Bills _____

Corporate Bonds _____

Commercial Paper _____

Real Estate _____

Equity (Common stocks) _____

Question 2

The primary emphasis in examining the investment performance for equity holdings owned by your scheme is on:

a) comparing actual returns to an 'absolute' percentage return target
b) 'relative' comparison i.e comparing the actual account returns to various market indices
c) using both 'absolute' and 'relative' measures
d) I have no real preferences

Question 3

How do you feel about investing in common stocks in general?

a) I think stocks are very attractive and should occupy a dominant position in our scheme's portfolio.
b) Common stocks should have a place in our scheme's investment portfolio
c) I think stocks are relatively risky and their use in our pension scheme should be limited.
d) I think our pension scheme should use stocks very sparingly, if at all.

Question 4

How would you describe your outlook for the local equity market over the next five years?

a) Very positive
b) Somewhat positive
c) Neither positive nor negative
d) Somewhat negative
e) Very negative
f) I am undecided

Question 5

If your fund manager is very positive on the outlook for common stocks, what is the maximum percentage of your scheme's portfolio you would allow to be invested in equities?

a) 0%
b) 5%
c) 10%
d) 20%
e) 40%
f) 60%
g) 80%
h) 100%
i) I do not Know

Question 6

If your fund manager is very negative on the outlook for common stocks, what is the minimum percentage of your schemes' portfolio you would allow to be invested in common stocks?

a) 0%
b) 20%
c) 40%
d) 60%
e) 80%
f) 100%
g) I do not know

Question 7

Please indicate what your choice of investment would be given the following options for your pension scheme's portfolio.

a) Equities Vs Bonds _____

b) Equities Vs Real Estate _____

c) Equities Vs Commercial Paper _____

d) Equities Vs Govt. Paper _____

e) Equities Vs Commodities _____

Question 8

How would you generally categorize your scheme's investment objectives?

a) Growth – Maximum growth of capital with little or no income considerations

b) Growth with income – Primary emphasis on capital growth of the fund with some focus on income

c) Income – Primary emphasis on income with little or no capital consideration

d) Liquidity

e) Other (Please specify)

_____

_____

_____

Question 9

What average annual 'absolute ' rate of return (as opposed to return ' relative' to a market index) do you consider as the investment objective for your fund, on a long-term basis (i.e. over 5 years or more)?

a) 12 – 14% p.a.

b) 10 –11.9% p.a

c) 8 –9.9% p.a.

d) 6 –7.9% p.a.

e) Other. Please specify _____

f) I do not know.

Question 10

Scheme 'risk' can be defined in different ways. Please indicate below the single item that best describes how you, as trustee, tend to view risk.

a) The possibility of not meeting actuarial assumptions
b) The possibility of not achieving a target rate of return
c) Not at least equaling the rate of inflation
d) High degree of fluctuation in the value of the portfolio within a market cycle
e) The chance of a great loss in the value of an individual security regardless of how well the overall portfolio might perform.
f) Other.(If other, please specify in the space below)

_____

_____

_____

Question 11

To the best of your knowledge, what actual percentage annual levels of returns and risks has your scheme recorded in both its present and past equity investments?

Returns _____

Risks _____

Question 12

Within what time horizon do you evaluate the performance of your scheme's equity holdings i.e. within what average duration do you usually expect your scheme's equity investments to have realized the stated return objectives?

a) Ten years or more
b) Five years
c) Three years
d) A complete market cycle
e) I do not know
f) Other. If other, please specify _____

Question 13

In evaluating potential equity investments, what relative importance do you attach to the following corporate and industry variables? (Please tick either '*Very Important*', '*Important*' or '*Unimportant*' as the case may be).

	Very Important	**Important**	**Unimportant**
(i) Corporate Factors			
a) Profitability	( )	( )	( )
b) Size (i.e market capitalization)	( )	( )	( )
c) Degree of financial leverage (i.e level of debt in capital structure)	( )	( )	( )
d) Age of the potential investee (i.e how old is the firm)	( )	( )	( )
e) Historical trend in firm's share price movements (as a possible indication of future trends)	( )	( )	( )
f) Historical trend in dividend payment levels(as a possible indication of future dividend payments)	( )	( )	( )

	Very Important	Important	Unimportant
(ii) Industry Factors			
a) Size (i.e no. of firms in the industry)	( )	( )	( )
b) Degree of competition (i.e the relative market shares of individual firms in industry)	( )	( )	( )
c) Maturity (i.e rate of new entrants into the market)	( )	( )	( )

APPENDIX IV(a)

YEAR 1996

	SECURITY	Beginning Price (P(t-1) Kshs.	Ending Price P(t) Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return r(t)%	Average Return/ Segment	SD Return / Segment	Mean Return / Year(%)	SD Return / Year(%)
	MIMS								
1	Brooke Bond	190.00	168.00	1.50	(10.79)				
2	Kakuzi	94.00	97.50	2.05	5.90				
3	Sasini	64.50	59.50	2.00	(4.65)				
						(3.18)	8.443699		
	C & S								
4	Car & General	20.50	20.00	0.10	(1.95)				
5	CMC Holdings	54.00	65.00	4.00	27.78				
6	Marshalls (EA) Ltd	37.00	48.50	4.00	41.89				
7	Nation Media Group	97.00	110.00	2.25	15.72				
						20.86	18.59167		
	F & I								
8	Barclays	155.00	99.00	10.00	(29.68)				
9	Diamond Trust	52.00	32.00	1.60	(35.38)				
10	Housing Finance	26.75	18.30	1.00	(27.85)				
11	ICDC Investments	33.00	32.25	4.50	11.36				
12	Jubilee Insurance	47.25	33.50	2.50	(23.81)				
13	KCB	85.00	70.00	6.00	(10.59)				
14	NIC	49.00	40.75	3.30	(10.10)				
15	Pan Africa Insurance	62.00	50.00	-	(19.35)				
16	StanChart	53.00	47.75	5.00	(0.47)				
						(16.21)	15.12073		
	I & A								
17	Bamburi Cement	35.75	29.25	0.60	(16.50)				
18	BAT	89.00	63.00	5.50	(23.03)				
19	Carbacid	94.00	80.00	2.00	(12.77)				
20	Dunlop	253.00	255.00	21.00	9.09				
21	EA Cables	36.00	31.25	2.00	(7.64)				
22	EA Portland Cement	52.50	20.25	0.30	(60.86)				
23	EABL	57.50	50.00	1.50	(10.43)				
24	Kenya Oil Co. Ltd	60.50	50.00	-	(17.36)				
25	KPLC	175.00	140.00	-	(20.00)				
26	Total	171.00	65.00	2.50	(60.53)				
27	Unga	142.00	158.00	1.00	11.97				
						(18.91)	23.43552		
	AIMS								
28	A. Baumann	46.75	33.00	1.50	(26.20)				
29	City Trust	28.00	26.00	1.25	(2.68)				
30	Eaagads	30.00	27.25	0.70	(6.83)				
31	Express Ltd	88.00	84.50	-	(3.98)				
32	Williamson Tea	86.00	70.00	1.00	(17.44)				
33	Kapchorua	116.00	70.00	1.00	(38.79)				
34	Kenya Orchards	17.00	19.50	-	14.71				
35	Limuru Tea	1,300.00	1,300.00	24.25	1.87				
						(9.92)	16.89458	(10.27)	21.46562

APPENDIX IV(b)

YEAR 1997

	SECURITY	Beginning Price P(t-1) Kshs.	Ending Price P(t) Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return r(t)%	Average Return/ Segment	SD Return / Segment	Mean Return / Year(%)	SD Return / Year(%)
	MIMS								
1	Brooke Bond	168.00	110.00	0.80	(34.05)				
2	Kakuzi	97.60	96.00	2.40	0.82				
3	Sasini	60.50	94.00	3.00	60.33				
						9.03	47.72232		
	C & S								
4	Car & General	20.00	16.10	-	(19.50)				
5	CMC Holdings	65.00	74.00	0.50	14.62				
6	Marshalls (EA) Ltd	48.50	41.00	4.00	(7.22)				
7	Nation Media Group	110.00	130.00	3.10	21.00				
						2.22	18.86036		
	F & I								
8	Barclays	99.00	115.00	10.00	26.26				
9	Diamond Trust	32.00	22.00	-	(31.25)				
10	Housing Finance	18.30	19.00	0.75	7.92				
11	ICDC Investments	32.25	34.50	2.00	13.18				
12	Jubilee Insurance	33.50	36.75	-	9.70				
13	KCB	70.00	79.50	7.00	23.57				
14	NIC	40.75	51.00	1.75	29.45				
15	Pan Africa Insurance	50.00	41.75	1.75	(13.00)				
16	StanChart	47.75	45.50	3.75	3.14				
						7.66	19.58913		
	I & A								
17	Bamburi Cement	29.25	36.00	1.25	27.35				
18	BAT	63.00	50.00	6.00	(11.11)				
19	Carbacid	80.00	66.00	2.00	(15.00)				
20	Dunlop	255.00	100.00	-	(60.78)				
21	EA Cables	31.25	29.00	2.50	0.80				
22	EA Portland Cement	20.25	20.00	0.70	2.22				
23	EABL	50.00	48.50	6.00	9.00				
24	Kenya Oil Co. Ltd	50.00	48.25	4.00	4.50				
25	KPLC	140.00	180.00	8.00	34.29				
26	Total	65.00	52.00	2.50	(16.15)				
27	Unga	158.00	120.00	10.00	(17.72)				
						(3.87)	25.46271		
	AIMS								
28	A. Baumann	33.00	80.00	0.75	144.70				
29	City Trust	26.00	34.00	1.50	36.54				
30	Eaagads	27.25	41.50	2.00	59.63				
31	Express Ltd	84.50	59.00	4.10	(25.33)				
32	Williamson Tea	70.50	86.00	1.50	24.11				
33	Kapchorua	70.00	70.00	1.50	2.14				
34	Kenya Orchards	19.50	19.40	-	(0.51)				
35	Limuru Tea	1,300.00	750.00	27.50	(40.19)				
						25.14	58.08445	7.53	35.48903

APPENDIX IV(c)

YEAR 1998

	SECURITY	Beginning Price P(t-1) Kshs.	Ending Price P(t)% Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return (r)%	Average Return/ Segment	SD Return / Segment	Mean Return / Year (%)	SD Return / Year(%)
	MIMS								
1	Brooke Bond	110.00	140.00	1.70	28.82				
2	Kakuzi	96.00	140.00	2.75	48.70				
3	Sasini	94.00	70.00	2.00	(23.40)				
						18.04	37.24046		
	C & S								
4	Car & General	16.10	12.00	-	(25.47)				
5	CMC Holdings	74.00	36.00	0.50	(50.68)				
6	Marshalls (EA) Ltd	41.00	25.00	1.00	(36.59)				
7	Nation Media Group	130.00	138.00	2.25	7.88				
						(26.21)	24.9614		
	F & I								
8	Barclays	115.00	126.00	12.00	20.00				
9	Diamond Trust	22.00	22.00	1.00	4.55				
10	Housing Finance	19.00	16.55	1.50	(5.00)				
11	ICDC Investments	34.50	42.00	3.00	30.43				
12	Jubilee Insurance	36.75	30.00	1.75	(13.61)				
13	KCB	79.50	62.50	8.00	(11.32)				
14	NIC	51.00	37.00	1.75	(24.02)				
15	Pan Africa Insurance	41.75	25.00	1.75	(35.93)				
16	StanChart	45.50	51.50	1.75	17.03				
						(1.99)	21.8169		
	I & A								
17	Bamburi Cement	36.00	36.00	0.60	1.67				
18	BAT	50.00	76.50	6.50	66.00				
19	Carbacid	66.00	62.50	2.20	(1.97)				
20	Dunlop	100.00	18.50	-	(81.50)				
21	EA Cables	29.00	20.00	2.00	(24.14)				
22	EA Portland Cement	20.00	17.55	1.00	(7.25)				
23	EABL	48.50	67.00	6.00	50.52				
24	Kenya Oil Co. Ltd	48.25	55.00	4.00	22.28				
25	KPLC	180.00	125.00	5.00	(27.78)				
26	Total	52.00	46.50	2.60	(5.58)				
27	Unga	120.00	47.00	1.20	(59.83)				
						(6.14)	43.19238		
	AIMS								
28	A. Baumann	80.00	16.80	0.75	(78.06)				
29	City Trust	34.00	26.25	2.00	(16.91)				
30	Eaagads	41.50	43.00	4.75	15.06				
31	Express Ltd	59.00	28.75	2.20	(47.54)				
32	Williamson Tea	86.00	142.00	7.50	73.84				
33	Kapchorua	70.00	95.00	7.50	46.43				
34	Kenya Orchards	19.40	5.00	-	(74.23)				
35	Limuru Tea	750.00	750.00	87.50	11.67				
						(8.72)	55.43591	(5.88)	39.17897

APPENDIX IV(d)

YEAR 1999

	SECURITY	Beginning Price P(t-1) Kshs.	Ending Price P(t) Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return r(t)%	Average Return/ Segment	SD Return / Segment	Mean Return / Year(%)	SD Return / Year(%)
	MIMS								
1	Brooke Bond	140.00	104.00	2.30	(24.07)				
2	Kakuzi	140.00	87.00	2.75	(35.89)				
3	Sasini	70.00	45.00	0.50	(35.00)				
						(31.65)	6.582515		
	C & S								
4	Car & General	12.00	10.00	-	(16.67)				
5	CMC Holdings	36.00	30.00	0.75	(14.58)				
6	Marshalls (EA) Ltd	25.00	23.50	-	(6.00)				
7	Nation Media Group	138.00	100.00	1.65	(26.34)				
						(15.90)	8.353384		
	F & I								
8	Barclays	126.00	103.00	10.50	(9.92)				
9	Diamond Trust	22.00	26.00	0.40	20.00				
10	Housing Finance	16.55	10.55	1.25	(28.70)				
11	ICDC Investments	42.00	50.00	2.50	25.00				
12	Jubilee Insurance	30.00	25.75	0.75	(11.67)				
13	KCB	62.50	31.50	-	(49.60)				
14	NIC	37.00	27.00	1.75	(22.30)				
15	Pan Africa Insurance	25.00	27.00	0.75	11.00				
16	StanChart	51.50	56.50	5.40	20.19				
						(5.11)	25.82243		
	I & A								
17	Bamburi Cement	36.00	26.25	1.25	(23.61)				
18	BAT	76.50	77.50	7.50	11.11				
19	Carbacid	62.50	67.00	5.00	15.20				
20	Dunlop	18.50	10.00	0.40	(43.78)				
21	EA Cables	20.00	13.00	2.00	(25.00)				
22	EA Portland Cement	17.55	11.25	-	(35.90)				
23	EABL	67.00	70.00	7.00	14.93				
24	Kenya Oil Co. Ltd	55.00	67.00	-	21.82				
25	KPLC	125.00	93.50	80.00	38.80				
26	Total	46.50	48.25	3.00	10.22				
27	Unga	47.00	26.00	-	(44.68)				
						(5.54)	29.51337		
	AIMS								
28	A. Baumann	16.80	14.70	1.25	(5.06)				
29	City Trust	26.25	22.00	4.00	(0.95)				
30	Eaagads	43.00	26.00	1.25	(36.63)				
31	Express Ltd	28.75	19.00	-	(33.91)				
32	Williamson Tea	142.00	93.00	-	(34.51)				
33	Kapchorua	95.00	150.00	-	57.89				
34	Kenya Orchards	5.00	5.00	-	-				
35	Limuru Tea	750.00	650.00	60.00	(5.33)				
						(7.31)	30.84854	(9.26)	26.02083

APPENDIX IV(e)

YEAR 2000

	SECURITY	Beginning Price P(t-1) Kshs.	Ending Price P(t) Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return r(t)%	Average Return/ Segment	SD Return / Segment	Mean Return / Year(%)	SD Return / Year(%)
	MIMS								
1	Brooke Bond	104.00	97.00	4.00	(2.88)				
2	Kakuzi	87.00	55.00	1.40	(35.17)				
3	Sasini	45.00	34.00	2.20	(19.56)				
						(19.20)	16.14677		
	C & S								
4	Car & General	10.00	10.00	-	-				
5	CMC Holdings	30.00	15.25	-	(49.17)				
6	Marshalls (EA) Ltd	23.50	18.60	-	(20.85)				
7	Nation Media Group	100.00	69.00	1.75	(29.25)				
						(24.82)	20.36476		
	F & I								
8	Barclays	103.00	75.50	10.00	(16.99)				
9	Diamond Trust	26.00	14.00	0.40	(44.62)				
10	Housing Finance	10.55	5.50	0.25	(45.50)				
11	ICDC Investments	50.00	46.50	3.00	(1.00)				
12	Jubilee Insurance	25.75	18.50	1.50	(22.33)				
13	KCB	31.50	25.50	-	(19.05)				
14	NIC	27.00	17.75	1.80	(27.59)				
15	Pan Africa Insurance	27.00	11.00	-	(59.26)				
16	StanChart	56.50	49.50	9.40	4.25				
						(25.79)	20.96993		
	I & A								
17	Bamburi Cement	26.25	33.75	0.75	31.43				
18	BAT	77.50	60.50	14.25	(3.55)				
19	Carbacid	67.00	40.00	2.75	(36.19)				
20	Dunlop	10.00	6.40	0.40	(32.00)				
21	EA Cables	13.00	9.25	4.50	5.77				
22	EA Portland Cement	11.25	11.70	-	4.00				
23	EABL	70.00	74.50	7.50	17.14				
24	Kenya Oil Co. Ltd	67.00	73.00	7.50	20.15				
25	KPLC	95.50	40.00	2.00	(56.02)				
26	Total	48.25	55.00	3.40	21.04				
27	Unga	26.00	13.90	-	(46.54)				
						(6.80)	30.53178		
	AIMS								
28	A. Baumann	14.40	9.50	1.00	(27.08)				
29	City Trust	22.00	23.25	2.00	14.77				
30	Eaagads	26.00	20.50	-	(21.15)				
31	Express Ltd	19.00	17.90	-	(5.79)				
32	Williamson Tea	93.00	97.00	2.50	6.99				
33	Kapchorua	150.00	150.00	2.50	1.67				
34	Kenya Orchards	5.00	5.00	-	-				
35	Limuru Tea	650.00	650.00	55.00	8.46				
						(2.77)	14.61269	(13.88)	23.93581

APPENDIX IV(f)

YEAR **2001**

	SECURITY	Beginning Price P(t-1) Kshs.	Ending Price P(t) Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return r(t)%	Average Return / Segment	SD Return / Segment	Mean Return / Year%	SD Return / Year%
	MIMS								
1	Brooke Bond	97.00	72.00	6.00	(19.59)				
2	Kakuzi	55.00	36.00	-	(34.55)				
3	Sasini	34.00	15.90	1.00	(50.29)				
						(34.81)	15.35494		
	C & S								
4	Car & General	10.00	10.00	-	-				
5	CMC Holdings	15.25	9.00	0.75	(36.07)				
6	Marshalls (EA) Ltd	18.60	18.30	-	(1.61)				
7	Nation Media Group	69.00	43.00	1.95	(34.86)				
						(18.13)	20.02435		
	F & I								
8	Barclays	75.50	73.00	10.25	10.26				
9	Diamond Trust	14.00	9.00	0.60	(31.43)				
10	Housing Finance	5.50	4.00	0.38	(20.36)				
11	ICDC Investments	46.50	38.00	2.00	(13.98)				
12	Jubilee Insurance	18.50	15.50	1.75	(6.76)				
13	KCB	25.50	16.00	-	(37.25)				
14	NIC	17.75	15.00	1.65	(6.20)				
15	Pan Africa Insurance	11.00	13.10	-	19.09				
16	StanChart	49.50	47.50	10.60	17.37				
						(7.69)	20.33671		
	I & A								
17	Bamburi Cement	33.75	16.65	0.50	(49.19)				
18	BAT	60.50	49.50	7.45	(5.87)				
19	Carbacid	40.00	34.80	2.75	(6.13)				
20	Dunlop	6.40	5.00	0.40	(15.63)				
21	EA Cables	9.25	9.50	1.10	14.59				
22	EA Portland Cement	11.70	12.70	1.00	17.09				
23	EABL	74.50	74.00	9.00	11.41				
24	Kenya Oil Co. Ltd	73.00	74.00	13.50	19.86				
25	KPLC	40.00	19.05	-	(52.38)				
26	Total	55.00	19.00	-	(65.45)				
27	Unga	13.90	6.80	-	(51.08)				
						(16.61)	32.19557		
	AIMS								
28	A. Baumann	9.50	8.05	-	(15.26)				
29	City Trust	23.25	19.20	2.00	(8.82)				
30	Eaagads	2.50	19.00	-	660.00				
31	Express Ltd	17.90	7.00	-	(60.89)				
32	Williamson Tea	97.00	66.00	5.00	(26.80)				
33	Kapchorua	150.00	137.00	2.50	(7.00)				
34	Kenya Orchards	5.00	5.30	-	6.00				
35	Limuru Tea	650.00	394.00	30.00	(34.77)				
						64.06	241.6625	2.39	116.9842

APPENDIX IV(g)

YEAR **2002**

	SECURITY	Beginning Price P(t-1) Kshs.	Ending Price P(t) Kshs.	Cash Dividends Paid/Share D(t) Kshs.	Rate of Return r(t)%	Average Return / Segment	SD Return / Segment	Mean Return / Year(%)	SD Return / Year(%)
	MIMS								
1	Brooke Bond	72.00	54.00	2.00	(22.22)				
2	Kakuzi	36.00	14.65	-	(59.31)				
3	Sasini	15.90	13.60	0.50	(11.32)				
						(30.95)	25.15471		
	C & S								
4	Car & General	10.00	8.95	-	(10.50)				
5	CMC Holdings	9.00	21.00	0.75	141.67				
6	Marshalls (EA) Ltd	18.30	5.10	-	(72.13)				
7	Nation Media Group	43.00	77.00	2.40	84.65				
						35.92	95.54571		
	F & I								
8	Barclays	73.00	98.50	14.25	54.45				
9	Diamond Trust	9.00	10.00	0.40	15.56				
10	Housing Finance	4.00	5.20	-	30.00				
11	ICDC Investments	38.00	29.00	2.00	(18.42)				
12	Jubilee Insurance	15.50	15.50	3.00	19.35				
13	KCB	16.00	17.00	-	6.25				
14	NIC	15.00	18.55	1.60	34.33				
15	Pan Africa Insurance	13.10	7.00	-	(46.56)				
16	StanChart	47.50	58.50	8.60	41.26				
						15.14	31.32065		
	I & A								
17	Bamburi Cement	16.65	42.50	3.75	177.78				
18	BAT	49.50	54.00	8.60	26.46				
19	Carbacid	34.50	37.25	23.10	74.93				
20	Dunlop	5.00	5.00	-	-				
21	EA Cables	9.50	9.20	1.10	8.42				
22	EA Portland Cement	12.70	13.00	0.50	6.30				
23	EABL	74.00	119.00	11.50	76.35				
24	Kenya Oil Co Ltd	74.00	107.00	11.50	60.14				
25	KPLC	19.05	15.80	-	(17.06)				
26	Total	19.00	22.00	-	15.79				
27	Unga	6.80	5.00	-	(26.47)				
						36.60	58.29162		
	AIMS								
28	A. Baumann	8.05	5.30	1.00	(21.74)				
29	City Trust	19.20	18.00	2.00	4.17				
30	Eaagads	19.00	17.40	0.50	(5.79)				
31	Express Ltd	7.00	6.80	-	(2.86)				
32	Williamson Tea	66.00	43.75	0.50	(32.95)				
33	Kapchorua	137.00	137.00	0.50	0.36				
34	Kenya Orchards	5.30	5.30	-	-				
35	Limuru Tea	394.00	394.00	-	-				
						(7.35)	13.01351	15.17	51.12824

APPENDIX IV (h)

Value of Kshs. 1.00 invested in the Nairobi Stock Exchange (NSE) on 1.1.1996

Holding Period (In Years)	Market Segment					
	MIMS	C & S	F & I	I & A	AIMS	Overall Market
0	1.00	1.00	1.00	1.00	1.00	1.00
1	0.97	1.21	0.84	0.81	0.90	0.90
2	1.06	1.24	0.90	0.78	1.13	0.96
3	1.25	0.91	0.88	0.73	1.03	0.91
4	0.85	0.77	0.84	0.69	0.95	0.82
5	0.69	0.58	0.62	0.64	0.93	0.71
6	0.45	0.47	0.57	0.54	1.52	0.73
7	0.31	0.64	0.66	0.73	1.41	0.84