

**THE EFFECTS OF PENSION FUNDS INVESTMENTS ON STOCK
MARKET RETURNS AT NAIROBI SECURITIES EXCHANGE**

BY

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DECLARATION

I declare that this research project is my original work and has not been submitted to any University or institution of higher learning for a degree or any other award.

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DEDICATION

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LIST OF ABBREVIATIONS

CMA	CAPITAL MARKETS AUTHORITY
CMD	CAPITAL MARKET DEVELOPMENT
DB	DEFINED BENEFITS
DC	DEFINED CONTRIBUTIONS
DSE	DAR ES SALAAM STOCK EXCHANGE
GDP	GROSS DOMESTIC PRODUCT
GOK	GOVERNMENT OF KENYA
IPO	INITIAL PUBLIC OFFER
MPT	MODERN PORTFOLIO THEORY
NSE	NAIROBI SECURITIES EXCHANGE
NSSF	NATIONAL SOCIAL SECURITY FUND
RBA	RETIREMENT BENEFITS AUTHORITY

ABSTRACT

Pension Funds are among the major institutions that invest in Kenya and all over the world. Pension fund investments provide long-term financing to domestic markets and governments as pension savings are long-term (Raddatz & Schmukler, 2008). They are therefore a significant source of stable and long term capital on the NSE. They also improve the liquidity of the assets traded on the NSE as they invest huge amounts in assets that can be liquidated with much ease such as deposits held with banks, government bonds and other short-term instruments. This study sought to determine the effect of pension fund investments on stock market returns at the NSE. The population for the study was all the 1,297 registered schemes in Kenya while the sample size for the study comprised 130 pension schemes. The independent variables were amount of pension funds invested in stocks, size of pension funds as measured by fund value and level of economic development as measured by change in GDP. Stock market returns at the NSE was the dependent variable which the study sought to explain and it was measured by change in NSE 20 share index. Secondary data was collected for a period of 5 years (2012 to 2016) on an annual basis. The study employed a descriptive and a survey research design and a multiple linear regression model was used to analyze the relationship between the variables. Statistical package for social sciences version 21 was used for data analysis purposes. The results of the study produced R-square value of 0.365 which means that about 36.5 percent of the variation in stock market returns at the NSE can be explained by the selected independent variables while 63.5 percent in the variation was associated with other factors not covered in this research. The study also found that the independent variables had a strong correlation with stock market returns at the NSE. ANOVA results show that the F statistic was significant at 5% level with a $p=0.000$ which was less than 0.05. Therefore the model was fit to explain stock market returns at the NSE. The results further revealed that individually, level of economic development is a significant determiner of stock market returns at the NSE while pension fund investments in stocks and pension fund size were found to be statistically insignificant determiners of stock market returns at the NSE. This study recommends that policy makers should work on improving the prevailing levels of economic development as this will impact on stock market returns at the NSE leading to increased shareholders' wealth.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Institutional investors like pension funds have increasingly becoming important in financial systems development as they enhance public and private savings in different countries. A pension fund is a legal amalgamation of financial assets to which contributions are remitted for the sole reason of servicing retirement benefits liabilities (Yermo, 2005). Pension fund investments contribute to financial performance of the by boost capital market development (CMD) and national savings (Meng & Pfau, 2010). CMD measures the performance of stock and bond market based on changes in security prices and returns (El-Wassal, 2013).According Garcia and Liu, (1999) CMD can also be determined by the market capitalization of the securities and the number of listed companies. Invest in capital markets is made possible through trading on securities exchanges like the Nairobi Securities Exchange (NSE). Pension funds are able to avail long-term financing to domestic markets because pension savings are long-term in nature (Raddatz & Schmukler, 2008). Pension fund investments positively impact the depth and liquidity of the stock market. (Meng & Pfau, 2010). According to Walker and Lefort (2002), pension fund assets decrease volatility of prices and increased volumes traded on the capital markets. Wanjala, (2013) asserted pension fund assets positively affect stock market capitalization. Kyando, (2014) however concluded that the contribution by pension fund investments on the average annual turnover of stock exchange was not significantly affecting speed of CMD.

The relationship between pension funds' investments and stock market returns can further be explained by various theories. The Modern Portfolio Theory (MPT) as advanced by Markowitz (1952) is based on the assumption that investors seek to maximize their return on investment for a certain risk level. Investors are mainly not risk takers therefore they are likely to choose an asset with a lower risk level if presented with two assets that have similar rates of returns. Investors therefore combine assets into efficiently diversified portfolios which in return reduces portfolio risk. Pension funds invest in diversified portfolios on the NSE so as to maximize on returns and minimize on the risks. Capital Asset Pricing model (CAPM) was advanced separately by William Shape (1964) and John Linter (1965). The model outlines the connection between systematic risk and expected return for assets such as stocks. According to Gitman, (2006), pension funds will achieve their goals if they consider both risk and returns in the process making financial decisions. Pension funds are known to be risk averse in nature because they hold pensioners' funds and therefore when presented risky payoffs they will not necessarily choose the option likely to yield higher returns. This concept was advanced by Daniel Bernoulli (1738) in the Expected Utility Theory.

The focus environment for this study is the NSE through which pension fund investments such as bonds and equities are traded. NSE was founded in 1954 and it deals with listing of equity and debt securities. It provides platform for investors to gain entry to Kenya and Africa's economic growth. NSE is regulated by the Capital Markets Authority of Kenya (CMA). According to Okeiga, (2015) investments on the NSE respond highly to pension fund investments. This study therefore seeks to expound on the implications of pension funds' on how the NSE performs financially through an analysis of logical trends and activities of pension fund investment. The

factors to be analyzed in this study will include size of pension funds' investments measured by financial assets, subscription to IPO's, value and volume of shares traded, number of companies listed on the NSE, market capitalization, turnover, liquidity of the market and rates of return.

1.1.1 Pension Fund Investments

Pension fund is an amalgamation of assets that receive contributions from members meant for the specified reason of servicing their retirement benefits liabilities (Yermo, 2005). Over the years, pension funds administration has changed from defined benefit pension systems to defined contributory pension schemes. Defined contributory pension schemes have rules that mandate the employer and the employee to remit a specified percentum to the fund (Oluoch, 2013) .This is as a result of the costs and long-term obligations identified with operating the defined benefit plan. That funds bring together assets which are then invested in financial markets and as a result they enhance the depth and liquidity of the capital markets (Meng & Pang, 2010). Pension fund investments mainly include government bonds and bills, corporate bonds, offshore investments, investment properties, short-term deposits and equities

In Kenya we have four main categories of pension funds. National Social Security Fund (NSSF) founded by the government through an Act of Parliament (Cap 258) following the Sessional Paper no. 10 of 1965 is compulsory to all employees within both the public and private sectors. NSSF remittances are compulsory for employees in firms that have 1 or more employees, and a member's contribution is equaled by the contribution from the employer. Some of the benefits provided by the NSSF include old age pension, survival benefits and gratuities in the form of lump sums (Kakwani, et al.2006). The Fund is an active participant at the NSE and is the largest investor

among pension funds .It has shareholdings in different companies and has also invested heavily in bonds. The fund helps mobilize savings through collection of monthly remittances from the workers. Its fund value as at December 2016 was Kshs. 172.1 billion out of which Kshs.53.9 billion is internally managed by NSSF and Kshs.118.2 billion is managed by 5 contracted fund managers(RBA,2016).

Other types of pension funds include, pension funds sponsored by public service and draw their membership from civil servants, occupational schemes whose members work in private sector companies that operate pension schemes and Individual pension schemes operated as trusts and anyone is free to be a member. All pension schemes in Kenya are regulated by RBA as stipulated by the Retirement Benefits Act. Over the years the pension industry in Kenya has experienced tremendous growth in overall assets and as at December 31st 2016 total pension assets were approximately over one trillion.Pension fund investments being the independent variable is measured by amount invested in stock markets and the pension funds' size expressed as financial assets invested .

1.1.2 Stock Market Returns

This is the yield obtainable by an investor in a quantified period which is occasionally well-thought-out as synonymous to prices of stock. A market is considered strong if it is one that integrates innovative facts on stock prices hence resulting to the stock prices valuation stability and accuracy (Mwangi & Mwiti, 2015). Stock market returns have projective investment power and output since stock market returns are a forward-looking variable that incorporates expectations about future cash flows and discount rates. Stock market returns serve as an index to investors or governments in making their investment decisions. Investors of different financial capacity do

investing in the stock market as long as they will get a yield that is higher than their cost of capital (Wang, 2012).

Stock returns determine the effectiveness and efficiency of stock markets in the allocation of equities and shares based on the availability and preference of the market information. The variations in stock prices increase the uncertainty levels of investors which in turn influence the stocks' demand and supply (Taofik & Omosola, 2013). Stock markets and shares are highly sensitive to any information which directly or indirectly influences price. Stock markets are relevant for predicting future market development and trends (Širucek, 2013). Firms and other corporate bodies attain higher profitability and contribute to economic prosperity when the stock returns level is higher (Aliyu, 2011). Therefore, return in stock markets uncertainty is a vital aspect of economic growth. Unstable economic trends make investment and consumption difficult in a country (Erdugan, 2012).

Stock return is the gain or loss of the value of a share in a particular period usually quoted as a percentage. It consists of capital gains as well as any income received by the investor from the stock (Mugambi & Okech, 2016). Stock performances are often measured using market indexing. Market capitalization is one of the measurements of stock performance; It measures stock market size and liquidity in stock market which is easiness through which the investors can trade securities. Others include Turnover ratio; which is an index of comparison for the level of transaction costs and market liquidity rating and the All Share Index; which reflects the performance and the condition of the stock market (Daferighe & Sunday, 2012). In Kenya, stock returns are normally calculated by the NSE 20 share index as it is often used as a benchmark for stock performance measurement.

1.1.3 Pension Funds' Investments and Stock Market Returns at the NSE

Pension Funds are among the major institutions that invest in Kenya and all over the world. Pension fund investments provide long-term financing to domestic markets and governments as pension savings are long-term (Raddatz & Schmukler, 2008). They are therefore a significant source of stable and long term capital on the NSE. They also improve the liquidity of the assets traded on the NSE as they invest huge amounts in assets that can be liquidated with much ease such as deposits held with banks, government bonds and other short-term instruments (Nderitu, 2012). Improved liquidity of assets leads to strengthening of capital markets and financial systems through increased private sector savings and this in turn reduces the cost of capital for corporations. Pension funds are required by RBA to allocate large portions of their capital to domestic markets thus invest broadly in bonds and equities traded on NSE leading to increased market capitalization, value and volume of securities. Pension funds are therefore among the largest investors on the NSE when compared to other institutional investors. Chan-Lau and Mathieson, (2004) assert that pension funds' investments enhance the stabilization of the markets as their activities reflect the activities of the emerging market investors.

Capital market development (CMD) can also be used to further explain the effects of pension funds' investments on the NSE. According to El-Wassal, (2013) CMD measures the performance of stock and bond market based on changes in security prices and returns. According Garcia and Liu, (1999), CMD can also be determined by the market capitalization of the securities, values traded, turnover ratio as well as the number of listed companies. Yartey, (2008) highlighted that several analysts have used market capitalization as a percentum of Gross Domestic Product (GDP)

to measure CMD as they expect it to be a better representative and less arbitrary compared to other individual measures of capital market development.

1.1.4 Nairobi Securities Exchange

Nairobi Stock Exchange founded in 1954 as per the Societies Act is an association of stockbrokers whose aim was to develop the stock market and regulate. The government embraced a new policy that transferred social and economic control to citizens in 1963. In 1966, NSE Index computed as an average of daily price changes in 17 most active counters was used to measure the daily trading activity at the exchange. By 1968, listed public sector securities were 66 in number 45% belonging to the Kenya government, 23% to the Tanzania government and 11% to Uganda government since the exchange operated as a regional market for East Africa. NSE was registered in 1991 as a private company limited by shares which enabled securities to be traded on the floor of an open system. Live trading on the automated trading systems was enabled in September 2006 (NSE, 2017)

In 2004, a Memorandum of Understanding (MoU) was signed by the Uganda Securities Exchange, DSE and the NSE to form the East African Securities Exchanges Association. Later on in July 2011, the Nairobi Stock Exchange Limited changed its name to the Nairobi Securities Exchange Limited (NSE) so as to mirror its long-term plan of becoming an all-round exchange that supported trading, clearing and settlement of securities. In September 2014, the NSE listed all of its 194,625,000 shares that had been issued and fully paid up after a successful IPO. This Exchange is the second in Africa to be listed, the first one being the Johannesburg Stock Exchange. The NSE currently has 67 listed companies (NSE, 2017)

To ensure efficient and smooth running of the capital markets through the NSE, the Capital Markets Authority (CMA) was founded as an oversight institution. CMA is an independent

institution founded by an Act of Parliament. It was established on December 15, 1989 and inaugurated in March 1990 as a regulator whose main responsibilities include supervising, licensing and monitoring the activities of all market intermediaries. The CMA facilitates the resource mobilization and allocation used in financing the long term productive investments in the economy.

Secondary market trading of the securities through the NSE provides a mechanism for price discovery. Over the years, NSE has steadily offered a perfectly functional, well-regulated, stable and world class platform for trading equities, bonds and the recently listed Barclays New Gold ETF. It is also charged with raising capital for businesses as through it companies sell shares to public investors so as to raise capital for expansion. People are able to save and invest through the NSE which in turn leads to a more rational allocation of resources and reduces excess funds in the economy. Lastly it acts as a barometer of the economy through maintaining securities indexes which are the indicators of the general trend in the economy.

1.2 Research Problem

Over the years emerging market economies have experienced tremendous growth in pension funds' investments due to pension reforms that have shifted the retirement benefits financing from pay-as-you-go to contributory (Davis, 2005). The reforms have enabled pension funds to amass assets and invest them in the financial markets thus promoting depth and liquidity in the capital markets and also enhancing private sector savings (Meng & Pfau, 2010). Pension funds are thence provide long-term funding to their domestic financial markets like the NSE. The funds also enhance competition, improve corporate governance, induce financial innovation, and improve the liquidity of the capital markets.

The establishment of NSE was geared towards enhancing capital market activities in the country so as to benefit individuals and the economy of Kenya. The institution focuses on providing a platform for individual and institutional investors to take part in buying and selling securities as which in turn encourages stable firms to go public and be listed. Chepkoiwo, (2011) asserts that Kenya's capital market is faced with challenges like financial sector being biased towards banking institutions that do not adequately provide long-term capital. Despite the government instituting various measures at different instances, performance indicators like turnover ratio, market capitalization to GDP ratio and value of stock traded to GDP ratio indicate a relative poor performance of the NSE compared to other developing stock markets. Kenya's capital market has however come a long way since the country's independence in 1963. The capital market now comprise of the trading of debt and equity over the NSE and development financial institutions (DFI's) and pension funds as some of the institutional investors. NSE is important in financial sector development and the realization of value as it assists in price discovery, liquidity provision and proper allocation of risk between various participants on a more macro-economic level. The capital market development is therefore positively correlated to a country's economic growth.

A study carried out by Meng and Pfau, (2010) on what role pension funds play in capital market development at the stock and bond market level concluded that the financial assets of a pension fund enhanced the depth and liquidity of stock and bond market, with more positive impact for countries whose financial development was high as compared to the ones with low level financial development. Kyando, (2014) then studied the contribution of pension funds to the development of capital markets in Tanzania and concluded that pension fund activities on the DSE did not affect

the rate of capital market development in Tanzania. Raddatz and Schmukler, (2008) in their study on pension funds and the development of capital market had concluded that the patterns of pension funds contribution to the growth of primary markets were not conforming to the earlier assumptions that the funds would rapidly influence the overall capital markets development. Walker and Lefort, (2002) concluded that pension reforms positively affected capital markets. From the international studies above there's room for more research because the findings vary from one research to another depending with the country and context of study.

A study by Wanjala, (2013) on how pension fund assets relate to the economic growth in Kenya found that pension fund assets positively affected stock market capitalization. The study however is not done in the current context and only addresses asset of pension funds and stock market capitalization in brief. Njeru, (2014) when evaluating financial performance on portfolio holdings by pension funds in Kenya concluded that equities performed better than all the other asset classes. The study did not however address how the performance affected the overall market returns at the NSE. Chepkoiwo, (2011) used a case study of the NSE to research on the factors affecting the development of emerging capital markets and only briefly mentioned pension funds as one of the institutional investors on the NSE. Okeiga, (2015) stated that investments in Kenya are highly responsive to pension scheme funds. From the studies analysed, the researcher has identified a research gap in that no study in Kenya has directly and in detail analysed the effects of pension funds' investments on the financial performance of the NSE. This research work therefore aims at bridging this gap.

1.3 Research Objective

The objective of this research was to establish the effects of pension funds' investments on stock market returns at the Nairobi Securities Exchange.

1.4 Value of the Study

First the research will be valuable to pension funds in evaluating their portfolio of investments together with the returns from the portfolio to enable them determine the best performing investments in comparison to the overall investment returns at the NSE. Second, RBA which regulates pension fund investments together with the CMA which regulates the investments at the NSE may use the study to identify the areas that need improvement in terms of pension fund investments Third, this study will enable Fund managers to spur the expansion of the country's capital markets through prudent professional investment of scheme funds because it highlights investments that pension funds have highly invested in and the investments with greater returns.

The study is also expected to add knowledge into the growing body of work in capital markets and pension funds. Finally, other researchers and investment institutions willing to expound on the effects of pension funds' investments on the financial performance of the NSE and will also find this study resourceful.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will discuss information relevant to the study and the concepts. The chapter also highlights theories guiding the study, previous studies conducted and new developments relevant that provide an overview of key ideas for the study. . The chapter similarly looks at the research gap.

2.2 Theoretical Review

This section mainly reviews theories that are relevant and form the theoretical background of the study

2.2.1 Modern Portfolio Theory

Modern portfolio theory (MPT) developed by Markowitz (1952) states that the rate of return variance is an important measure of portfolio risk given some assumptions that relate to the behavior of investors. According to MPT investors should not only focus on reducing overall portfolio risk through diversification but also learn effective diversification in order to be able select profitable investments. MPT assumes that investors are able maximize their return on investment for a certain risk level. However investors are mostly risk averse thus are more likely to settle for assets with lower risk levels given different assets with equal rates of return

According to MPT, investors can minimize portfolio risk if they pay attention to the volatility of expected returns by picking assets with dissimilar price movement. Bodie et al. (2008) adds that investors when constructing their portfolio decide on the asset allocation from among the broad

asset classes and select securities to hold in each asset class. This applies to the study as pension funds invest in diversified portfolios on the NSE so as to maximize on returns and minimize on the risks. Diversification of pension schemes' investment portfolio can also provoke development of new capital market instruments. The investments are mainly in bonds and equities which have varying risks and returns. The investments made contribute to the market capitalization, volume and value of shares traded at the NSE.

2.2.2 The Capital Asset Pricing Model (CAPM)

This equilibrium representation was advanced separately by William Shape (1964) and John Linter (1965) and it identifies the adequate cost of capital in project valuation. CAPM highlights the relationship between systematic risk and expected return for assets, majorly stocks. It is used in finance to determine prices of risky securities, calculate expected returns for assets given their risk and calculate costs of capital.

CAPM highlights the behavior of stock prices while providing a structure that investors can use in assessing the effect of the probable investment on the total portfolio risk and return. An awareness of the trade-off and consideration of risk and returns in financial decision making helps pension funds achieve their goals (Gitman, 2006). This is key to pension funds' investments on the NSE when determining the asset class mix. Fixed-income securities like bonds are classified as relatively conservative investments. Reilly and Wright, (2004) in their analysis of risk and return characteristics of thirty six (36) asset classes of long term securities concluded that government and high-grade corporate bonds were less risky, followed by high-quality common stocks and

lastly emerging-market stocks. The asset mix of pension funds on the NSE highly determines how they contribute to the liquidity, rate of return and overall market capitalization of the exchange.

2.2.3 Expected Utility Theory (EUT)

This theory as advanced by Daniel Bernoulli (1738) explains the existence of anomalies using a psychological perspective whereby explanations in human and social psychology helps to explain the understanding of the behavior of stock market . It also states that individuals are often biased in processing available information because they have limited processing capabilities and mostly depend other people's opinions. In the presence risky payoffs, a decision maker does not necessarily choose the payoff with higher expected value investments because some people are risk averse thus prefer the sure investment. Pension funds are known to be risk averse in nature because they hold pensioners' funds and such will invest the funds in less risky but sure investments.

This theory is significant to the study as it explains how pension funds invest on the NSE where the funds invest more in bonds compared to stocks. Bonds pay interest half yearly and their prices are less volatile. Equities on the other hand pay dividends which are dependent on the company's performance and also their prices are very volatile. While equities tend to yield better returns in good years, pension funds prefer bonds whose income is guaranteed. Treasury bonds and bills accounted for the largest portion of overall pension fund investments at 30 percent of the total assets under management as at December 2015 (RBA, 2015)

2.2.4 The Efficient Market Hypothesis(EMH)

This theory as advanced by Eugene Fama (1970) explains the behavior of a perfect market where securities are in equilibrium. According to Fama, such a market is where the security prices fully

reflect all public information available and the market reacts swiftly to new information thus enabling the stocks to be fairly priced. There are three main types of market efficiencies. Weak form efficiency is where prices of assets only reflect all the past publicly available information. Semi-Strong efficiency is where prices reflect all publicly available information and they adjust to any new information. Strong form of efficiency is where prices reflect all information whether past or present, and such that no investor can benefit in form excess payoffs. Trading activities on the NSE spur financial sector development through enhancing liquidity providing a mechanism for price discovery and reduction of transaction costs. This lowers the cost of generating and disseminating of information market players thus improving efficiency (Yartey & Adjasi, 2007)

2.3 Determinants of Stock Market Returns at the NSE

Returns in stock market are a matter of great interest to the stock market investors, in that it directly affects the wealth they hold. Key factors thought of playing a part in the overall stock markets performances are as follows:

2.3.1 Market Sentiments

Mayo (2016) noted that market sentiment entails the sensibility of market contestants, independently as well as communally. This possibly is the annoying class since we know it is substantial disapprovingly, but we start to comprehend it. Market sentimentality is normally personal, unfair and fixed. For instance, it is possible to make a concrete verdict concerning a stock's forthcoming development predictions as well as the future might even authorize your forecasts, nonetheless temporarily the market may shortsightedly dwell on a single piece of newscast that keeps the stock theatrically high or low.

Market sentimentality is being discovered by the comparatively new arena of social money. It begins with the supposition that social money are actually not effectual more time, and this inadequacy could be elucidated by thinking and other communal disciplines. The notion of applying communal science to economics was completely legalized when Daniel Kahneman, was awarded the Economics 2002 Nobel Memorial Prize. Numerous of the thoughts in interactive business approve noticeable doubts: that stakeholders tend to exaggerate data which emerge effortlessly to mind; that numerous stakeholders respond with superior pain to losses than with preference to equal gains; and that shareholders tend to carry on in an error (Lee, 2009).

2.3.2 Industry Performance

The profitability and success of the industry or sector in which the company operates has a significant part to play in influencing the company's stock price. Typically, stock prices for firms in the same sector will fluctuate in tandem. Investors usually evaluate a firm owing to its earnings per share (EPS), future earning prospect and revenue. The reason for this being that conditions of the market will mainly affect companies in the same industry in a similar way. Nevertheless, the firm's stock price may at times gain from bad news in its rival if the two firms are targeting the same market (Madura, 2008).

The market share gains and losses can lead to substantial effects on a company's stock performance, depending on the economic sector's conditions. Market share is primarily a sector's total sales percentage that the firm earns. Market share shifts have a greater effect on firm performance in cyclic industries with low growth. Corporation's securities tend to track with the market and with their industry peers or sector (Acheampong, Agalega & Shibu, 2014). According to Mayo (2016) the mixture of general sector and market movements compared to a firm's performance individually predicts most of a stock price changes.

2.3.3 Company News and Performance

The securities markets are affected profoundly by rumors and news. The news can affect the sentiments and prospect of the investors and performance of corporations as people construe news differently depending on their own cognitive power. The enterprise particular factors that may influence the share price include: change of management; earnings news releases, profits and future projected earnings; declaration of dividends; introduction of new products; obtaining a new large contract; accounting errors or scandals; employee layoffs; and expected takeover or merger (Alanyali, Moat & Preis, 2013).

Certain enterprises are exposed more to own-industry specific circumstances as opposed to the wide conditions of the economy thus investors monitor price movements of the industry's products, entry into the industry and industry sales forecasts. An improvement in dividends may signify the prospect that the company can certainly afford to pay more dividends. The declaration of less than anticipated incomes can lead to investors trimming their company's valuation of stock and flows. The diversities are often considered as an encouraging indicator about a company if the stripped assets isolated from the company's core business. This naturally leads to an enhanced stock demand and as a result increases stock prices (Mayo, 2016).

2.3.4 Firm Size

The size of a listed firm is measured by its stock market capitalization. Firm size can also be assessed in terms of a firm's total assets. Ikikii and Nzomi (2013) define stock market capitalization as the combined value of all company's issued shares listed on a national stock exchange. The higher the number of outstanding shares for a firm, holding other factors constant, the larger the market capitalization. Musebe (2015) noted that market capitalization is a key measure for investors in the determination of the yields from their investment. It is also a

universally accepted metric for assessing the health of a publicly traded company and an approximation of the value of a business entity.

Firms, whose market capitalization is low, on average, realize greater returns than firms whose market capitalization is high (Banz, 1981). The assertion was supported by Idris and Bala (2015) who established that market capitalization has a significant negative effect on stock market returns. The assertions are due to the fact that investors demand higher returns from smaller firms compared to larger firms due to the risky nature of smaller firms. Firm size can also be computed or measured by the sum of total assets for a firm (Pervan & Visic, 2012). Firm size was an independent variable in the study.

2.3.5 Size of the Pension Fund

The size of pension funds is given by pension fund financial assets (Meng & Pfau, 2010). The bigger the size the more funds available for investment in the stock and bond market.

2.4 Empirical Review

While there have been several studies that tried to gauge the effects of pension funds' investments on security exchanges and capital markets, there's still room for more research. Kyando, (2014) studied the contribution of pension funds in the development of capital markets in Tanzania. Data from 29 respondents spread across four (4) different organizations; the DSE, brokerage firms, Investment advisory services and the Pension funds was collected through questionnaires. The data was analyzed through spread sheet software through which graphs, charts and reports were generated and interpreted. The findings concluded that the pension funds' contribution to average annual turnover on DSE, their subscription to the past IPOs, and the assets apportioned to capital market did not affect the rate of development of the capital market in Tanzania.

A panel study carried out by Walker and Lefort, (2002) on 33 emerging markets using time series found that pension reforms such better corporate governance, transparency and integrity have led to increase to capital accumulation which to be invested in capital markets. They also found that reforms also led to lower security price volatility, reduced cost of capital and increased volumes traded. The reforms therefore directly contributed to economic growth and productivity. However, they noted that some of their results from estimation may have suffered greatly from errors arising from measurements, and thus that their conclusions were preliminary and needed more verification using a longer period of observations.

Meng & Pfau (2010) using a biased-corrected Least Square Dummy Variables estimator analyzed the impact of pension funds in the development of capital market for both stock and bond markets for 32 developed and emerging market countries. The findings showed that pension fund assets had enhanced depth and liquidity of stock and bond. However, upon closer comparison it was noted that these positive impacts were only significant for highly developed countries compared to countries with low levels of financial development.

Raddatz and Schmukler (2008) carried out a study on pension funds and capital market development by analyzing unique data on monthly asset-level portfolio allocations of Chilean pension funds within a ten-year period between 1995 and 2005. According to the findings, pension funds as investors have huge amounts in investments that include deposits in banks, government paper, and short-term assets without actively trading them. They concluded that the patterns of pension funds input to the development of primary markets were not conforming to the earlier

assumptions that the funds would rapidly influence the overall capital markets development. They also concluded that liquidity of assets and manager incentives might be the driving force behind the results and not regulatory restrictions.

Impavido and Musalem (2000) used a three-asset model to analyze panel data for some OECD countries and developing countries to determine the relationship between the development of contractual savings institutions including pension funds and stock and asset market. The findings indicated that contractual savings institutions spur the growth of stock markets. The institutions mainly invest in stocks and long-term bonds due to their long-term liabilities. They however note that the regulations on the composition of pension fund's portfolios affected the overall input of development of contractual savings on capital markets.

Wanjala (2013) using a multiple regression model analyzed the relationship between pension fund assets and economic growth in Kenya. Secondary data from the periods 2002 to 2011 was gathered from four (4) main institutions that included RBA, KNBS, KIPPRA, Ministry of Finance and Planning and NSSF and analyzed through SPSS software through which graphs, charts and reports were generated and interpreted. The results of the findings showed that retirement pension assets positively affected economic growth in Kenya. The findings also showed that retirement pension assets and the stock market capitalization had relatively increased in complete terms over time

Njeru (2014) carried out inferential statistics to evaluate financial performance on portfolio holdings by pension funds in Kenya. Using a sample of 35 pension funds selected through judgmental sampling, the findings suggested that the performance of equities was better than all other asset classes over a period of 1 year and 3 years. The performance was however poor over a 3 month period. Equities performed better in large funds compared to medium and small funds.

Offshores had the poorest performance especially for medium pension funds. A period by period analysis revealed that the funds performed well over longer periods compared to shorter periods. The researcher also noted that a large portion of pension fund holdings have been invested on the Nairobi Securities Exchange (NSE) as opined by RBA. Few pension funds have also invested minimal amounts in property, offshore, unquoted equity and cash and cash equivalents.

Chepkoiwo (2011) using a case study of the NSE analysed the factors that affected the development of an emerging capital market. Secondary data collected from 56 listed companies in NSE for the period 2005-2010 was analysed using descriptive statistics and regression analysis. The findings indicated that 85% of the development of stock market is as a result of factors such as liquidity of the market, the quality of institutions, the per capita income, macroeconomic stability, domestic savings and private capital flows. The study recommends that NSE needs to be developed further to enhance domestic resource mobilization. Various policies and programs that affect stock market development such as regulation of institutional investors like pension funds and privatization need to be addressed.

Langat (2010) using a case study of the NSE carried out descriptive statistics to evaluate the determinants of capital markets development in Kenya. Data was collected from NSE, listed companies and the member firms. A census was drawn from the total population of 104 respondents. The findings showed that institutional factors, macroeconomic factors, political risk and regulatory changes affected development of the capital markets. The researcher however did not address pension funds as major institutional investors on the NSE and such play a role in its development.

Okeiga (2015) carried out time series analysis to estimate the impact of pension savings scheme on Kenya's investment growth for a period between 2001- 2014 using data obtained from RBA, the World Bank Data source and Statistical Abstract. He constructed the pension's contribution variable that captured two national investments similar to the model used by Corbo and Schmidt-Hebbel, (2002) to determine the role of pension system reforms in the development of the Chilean financial market. The study findings show that the investments in Kenya responded highly to pension scheme funds. The researcher concluded that given pension liabilities are long-term in nature, if reasonable investments are made coupled with proper policies they will spur economic growth and deepen the capital and financial markets in general.

Notwithstanding the studies done, the actual effects of pension funds' investments on capital markets is still subject to debate .In a presentation done by Odundo, (2004) on the contribution of pension funds to capital markets development in Kenya, he asserted that pension funds can spur the expansion of the country's capital markets through prudent investment of the funds. The development of pension funds therefore can influence capital markets through; enhanced investment and establishing of regulations in capital markets that will enhance good corporate governance practices and detailed scrutiny of any conflict of interest issues

2.5 Conceptual Framework

INDEPENDENT VARIABLE

DEPENDENT VARIABLE

Figure 2.1: Conceptual Model

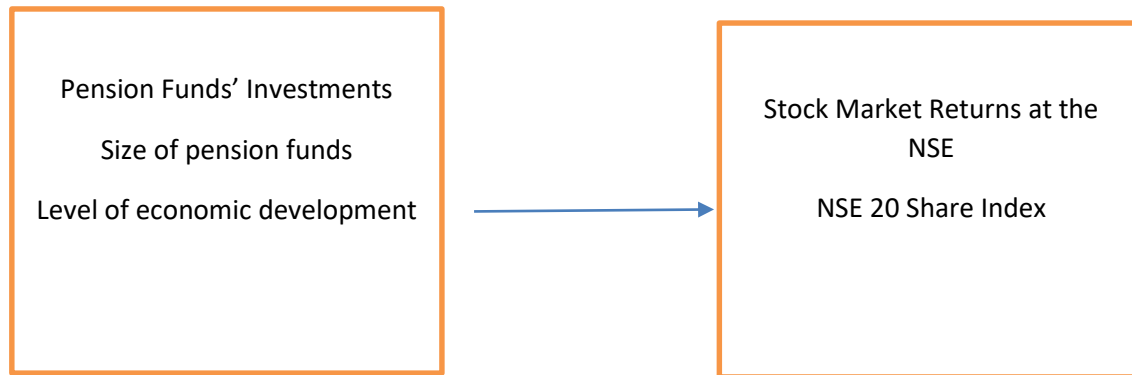


Figure 2.1 presents a conceptual framework model showing the relationship between pension funds' investments and stock market returns at the NSE. It shows that different aspects of pension funds have an aggregate impact on the stock market returns at the Nairobi Securities Exchange. The conceptual framework explains how the dependent and independent variables correlate. The independent variable here is Pension funds' investments measured by the amount invested in stocks and size of pension funds as measured by the fund value. Economic growth is a control variable in this study and it will be measured by change in GDP. Stock market returns at the NSE is the dependent variable and it will be measured by the percentage change in the NSE 20 share index.

2.6 Summary of the Literature Review

This chapter has surveyed both theoretical and empirical literature that give rise to the model developed in the next chapter. The significance of the relationship depends on factors such as the country under study, context of study, number of time period observations and the specific capital market or security exchange. The review also shows that the debate on effect of pension funds'

investments on capital markets is far from being conclusive and there's still room for extensive research to be carried out.

Kyando (2014) concluded that pension fund activities on the DSE did not significantly affect rate of capital market development in Tanzania. Meng and Pfau (2010) concluded that pension fund financial assets positively impacted on stock and bond market depth as well as liquidity for highly developed countries compared to those with low level development. Raddatz and Schmukler, (2008) concluded that the patterns of pension funds contribution to development of certain primary markets were not conforming to the initial assumption that the funds would rapidly influence the overall development of capital markets. Wanjala (2013) found that retirement pension assets and the stock market capitalization increased in complete terms over time. Okeiga (2015) stated that investments in Kenya are highly responsive to pension scheme funds.

MPT and CAPM theory are among the theories best suited to explain the effects of pension funds on the NSE. Few local studies have highlighted the development of capital markets with a case study of the NSE but did not highlight the contribution of pension fund investments on the same. Also, other studies, have addressed the contribution of pension funds' investments to other aspects like economic growth in general but have failed to address the contribution of pension funds on the NSE market returns. This study attempts to bridge this gap.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Research methodology defines how to methodically address the research problem and it also explains how the research is carried out (Kothari, 2004). This chapter therefore highlights the research design, population, sample, data collection and data analysis. It also explains how the research was undertaken to meet the established objectives and research questions of the study.

3.2 Research Design

This refers to procedures and methods that are used in collecting, analyzing and measuring of the variables as per the research problem. Research design is therefore a framework in which the research has been carried out (Kothari, 2004). This study used a descriptive research design and survey method. A survey is a method of obtaining information on a specific phenomenon, from the whole population or a selected sample. The survey design was used to collect quantitative information which is formalized, structured and characterized by selectivity. Descriptive research design is appropriate because it allows tabulation of the data through use of charts and graphs to aid in understanding the data distribution. It also allows inclusion multiple variables for analysis.

3.3 Population

Population refers to the absolute spectrum of the identified entity or process that is of importance to the researcher. According to RBA (2016), there were 1,297 registered schemes as at December 2015 out of which 468 were segregated schemes and 829 were guaranteed funds managed by fund managers and insurance issuers respectively. This constitutes the population of the study.

3.4 Sample Design

A sample size of 130 schemes based on the criteria described below was drawn from the target population for the purposes of the study. The target population is above 500 respondents hence a 10% sampling method as per Mugenda and Mugenda (2003) was used to select 130 schemes. All schemes that have invested solely in guaranteed funds were eliminated from the sample for the purposes of this study because data on specific investments under guaranteed funds is difficult to obtain due to the fact that it is not a statutory disclosure under the Insurance Act. The sample selected of 130 schemes was therefore solely segregated schemes.

3.5 Data Collection

This study utilized mainly secondary data which was quantitative and representative in nature. Data on pension fund financial assets and returns was gathered from the annual reports of pension funds and reports filed with RBA. Data on stock market returns was collected from NSE while economic growth data was collected from KNBS. For the data to be representative, the period of review was 5 years from 2012 to 2016.

3.6 Data Validity and Reliability.

Validity and reliability help to identify potential errors in the research data. Reliability is the ability of measures yield consistent results (Zikmund, 2000). It denotes similarity in conclusion despite several research studies being carried out differently on the same topic. Reliability can be achieved by analyzing the various studies and conclusions made on the same topic to determine consistency. A reliable instrument is able to recreate the study results under an identical procedure (Joppe 2000). The reliability of research instrument is determined by the extent to which an assessment done again and again remains the same, stability and the similarity of measurements within a given time period.

Validity on the other hand is the ability of the research findings to measure exactly what is expected of the study. The validity of the measuring instrument used in the study will determine if the research aptly serves the intended purpose (Joppe, 2000). Validity thus ascertains accuracy of the measurements in capturing the intended variables.

3.6.1 Diagnostic Tests

This is a set of different tests whose performance varies depending on the population. Normality tests was used to ascertain if the data has been well modelled through a normal distribution by analyzing if the random variables are distributed normally. This was done through use of graphs. Homogeneity tests were carried out to measure how of the data values vary over a period of time. For this study the regression model was used to ascertain the variations of the unknown values to the known values. Multicollinearity tests was used to determine how the predictor variable in the model can be linearly and accurately predicted by the other variables. The t-tests at 95% confidence level estimated the statistical importance of the individual variables while the F-tests estimated statistical importance the regression model as a whole. The analysis was done using SPSS

3.7 Data Analysis

The research is based on various variables hence a multivariate analysis used to analyze more than one statistical variable at a given time was used. Data collected was analyzed using quantitative methods which will include design, techniques and measures that will produce numerical or quantifiable data. The raw data collected using the questionnaire was sorted, edited, coded, and analyzed through descriptive statistics. Exploratory data analysis which includes graphical representations, percentages, time series, statistical summaries, regression analysis, charts and tables were used in the analysis of data after which conclusions and recommendations of the study

were made (Cooper & Schindler, 2011). Comparative analysis was done on the accumulated data over a period of 10 years. Data was analyzed mainly through SPSS package after which conclusions were made.

3.7.1 Analytical Model

The analytical model considered by the researcher is a multiple linear regression model. Stock market returns at the NSE was determined by percentage change in NSE 20 share index on an annual basis as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Y = Stock market returns as measured by annual change in NSE 20 share index

α = alpha coefficient (the value of Y when all X values are zero),

X_1 = Pension fund financial assets invested in stock market

X_2 = Size of pension funds as measured by change in fund value

X_3 = Level of economic development measured by change in GDP

ε = random disturbance term or error term

β_1 , β_2 , β_3 , β_4 and β_5 are coefficients/weights of the following respective independent variables.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

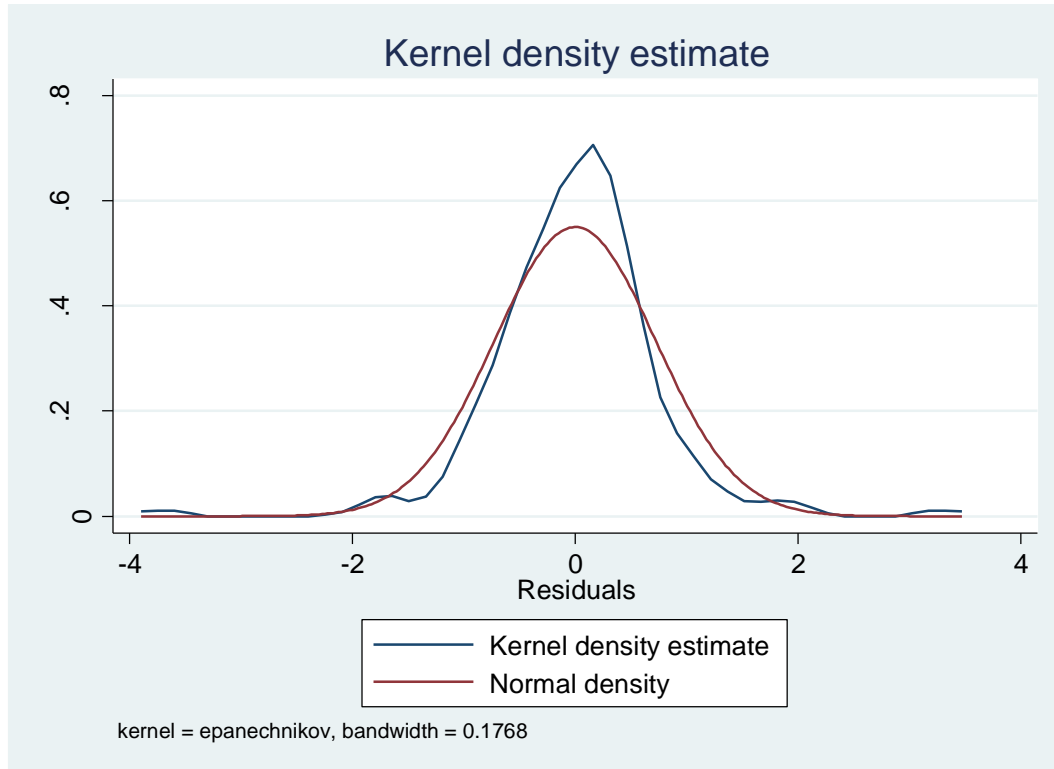
This chapter focused on the analysis of the data collected from annual reports of pension funds, reports filed with RBA and NSE to establish the effect of pension funds' investments on stock market returns at the Nairobi Securities Exchange. Using descriptive statistics, correlation analysis and regression analysis, the results of the study were presented in table forms as shown in the following sections.

4.2 Diagnostic Tests

The study looked for data that would be able to meet the objectives of the study. The data collected from the various companies' websites was cross checked for errors to test the validity of the data sources. The research assumed a 95 percent confidence interval or 5 percent significance level (both leading to identical conclusions) for the data used. These values helped to verify the truth or the falsity of the data. Thus, the closer to 100 percent the confidence interval (and thus, the closer to 0 percent the significance level), the higher the accuracy of the data used and analyzed is assumed to be.

The researcher carried out diagnostic tests on the collected data. Kernel density was used to test for normality. The null hypothesis for the test was that the secondary data was not normal. If the p-value recorded was more than 0.05, the researcher would reject it. Figure 4.1 shows that the data was normally distributed.

Figure 4.1: Normality test



Source: Research Findings (2017)

Cameron & Trivedi’s IM-test used to test for heteroscedasticity. The null hypothesis states that there is no heteroscedasticity. Results in Table 4.1 show that the p-value ($p=0.3892$) is greater than the critical value of 0.05. Therefore, we fail to reject the null hypothesis and conclude that the variance is homogenous.

Table 4.1: Cameron & Trivedi's Decomposition of IM-test

Source	chi2	Df	P
Heteroskedasticity	18.56	17	0.3892

Source: Research Findings (2017)

Both Kolmogorov-Smirnova and Shapiro-Wilk tests recorded o-values greater than 0.05 which implies that the research data was normally distributed and therefore the null hypothesis was rejected. The data was therefore appropriate for use to conduct parametric tests such as Pearson's correlation, regression analysis and analysis of variance.

4.3 Descriptive Analysis

Descriptive statistics gives a presentation of the mean, maximum and minimum values of variables applied together with their standard deviations in this study. Table 4.2 below shows the descriptive statistics for the variables applied in the study. An analysis of all the variables was obtained using SPSS software for the period of five years (2012 to 2016). Stock market return which was the dependent variable in this study had a mean of 0.706 and a standard deviation of 21.242. Pension fund investment in stocks, pension fund size as measured by fund value and level of economic development as measured by change in GDP had a mean of (8.32, 8.89, 5.471) and a standard deviation of (1.042, 0.879, 0.495) respectively.

Table 4.2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Stock Market Returns	75	-24.000	27.220	.706	21.242
Log Pension fund investments	75	7	11	8.32	1.042
Log Pension fund size	75	8	10	8.89	.879
Level of economic dev.	75	4.563	5.879	5.471	.495
Valid N (listwise)	75				

Source: Research Findings (2017)

4.4 Correlation Analysis

Correlation analysis is used to establish if there exists a relationship between two variables which lies between (-) strong negative correlation and (+) perfect positive correlation. Pearson correlation was employed to analyze the level of association between dependent variable and the independent variables selected for this study.

The results show that no relationship exists between stock market returns and pension fund investments while pension fund size had a weak relationship with stock market returns. The association between level of economic development and stock market returns was found to be significant strong and positive. Although the independent variables had an association with other independent variables, no association was above 0.7 and so we can conclude that the data did not exhibit Multicollinearity.

Table 4.3: Correlation Analysis

		Stock Market Returns	Pension fund investments	Pension fund size	Level of economic development
Stock Market Returns	Pearson Correlation	1	.000	-.044	.604**
	Sig. (2-tailed)		.998	.709	.000
	N	75	75	75	75
Pension fund investments	Pearson Correlation	.000	1	.672**	.007
	Sig. (2-tailed)	.998		.000	.951
	N	75	75	75	75
Pension fund size	Pearson Correlation	-.044	.672**	1	.038
	Sig. (2-tailed)	.709	.000		.747
	N	75	75	75	75
Level of economic development	Pearson Correlation	.604**	.007	.038	1
	Sig. (2-tailed)	.000	.951	.747	
	N	75	75	75	75
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Research Findings (2017).

4.5 Regression Analysis and Hypothesis Testing

Stock market returns at the NSE as measured by change in NSE 20 share index was regressed against three predictor variables; investment in stocks, pension fund size and level of economic development. The regression analysis was undertaken at 5% significance level. The study obtained the model summary statistics as shown in table 4.4 below.

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.604 ^a	.365	.339	17.2767487	1.583

a. Predictors: (Constant), Level of economic development, Pension fund investments, Pension fund size

b. Dependent Variable: Stock Market Returns

Source: Research Findings (2017)

R squared, being the coefficient of determination indicates the deviations in the response variable that is as a result of changes in the predictor variables. From the outcome in table 4.4 above, the value of R square was 0.365, a discovery that 36.5 percent of the deviations in stock market returns at the NSE are caused by changes in investment in stocks, pension fund size and level of economic development. Other variables not included in the model justify for 63.5 percent of the variations in stock market returns at the NSE as measured by change in NSE 20 share index. Also, the results revealed that there exists a strong relationship among the selected independent variables and stock market returns at the NSE as shown by the correlation coefficient (R) equal to 0.604. A Durbin-

watson statistic of 1.583 indicated that the variable residuals were not serially correlated since the value was more than 1.5.

Table 4.5: Analysis of Variance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	12199.046	3	4066.349	13.623	.000 ^b
	Residual	21192.509	71	298.486		
	Total	33391.555	74			

a. Dependent Variable: Stock Market Returns

b. Predictors: (Constant), Level of economic development, Pension fund investments, Pension fund size

Source: Research findings (2017)

When stock market returns is measured using change in NSE 20 share index, the significance value is 0.000 which is less than $p=0.05$. This implies that the model is statistically significant in predicting how the independent variables affect stock market returns at the NSE.

The researcher used t-test to determine the significance of each individual variable used in this study as a predictor of stock market returns at the NSE. The p-value under sig. column was used as an indicator of the significance of the relationship between the dependent and the independent variables. At 95% confidence level, a p-value of less than 0.05 was interpreted as a measure of statistical significance. As such, a p-value above 0.05 indicates a statistically insignificant

relationship between the dependent and the independent variables. The results are as shown in table 4.6

Table 4.6: Model Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	145.853	29.862		4.884	.000
1 Pension fund investments	.696	2.605	.034	.267	.790
Pension fund size	-1.061	3.091	-.044	-.343	.732
Level of economic dev.	25.862	4.065	.602	6.362	.000

a. Dependent Variable: Stock Market Returns

Source: Research Findings (2017)

From the above results, when stock market returns measured using change in NSE 20 share index, it is evident that only level of economic development is a significant determiner of stock market returns at the NSE (high t-value (6.362, $p < 0.05$). Investment in stocks and pension fund size were found to be statistically insignificant in determining stock market returns at the NSE as shown by low t values and p- values that are more than 0.05.

4.6 Discussion of Research Findings

The study sought to establish the effects of pension funds' investments on stock market returns at

the Nairobi Securities Exchange. Pension funds invested in stocks, size of pension funds, and level of economic development were the independent variables for this study while stock market returns at the NSE was the dependent variable as measured by change in NSE 20 share index. The effect of each of the independent variable on the dependent variable was analyzed in terms of strength and direction.

The Pearson correlation coefficients between the variables showno significant association between stock market returns and pension fund investments. The association between pension fund size and stock market returns was found to be weak negative and insignificant while the association between level of economic development and stock market returns was found to be significant, strong and positive. Although the independent variables had an association with other independent variables, the association was found to be below 0.7 implying no Multicollinearity among the independent variables.

The model summary revealed that 36.5 percent of the deviations in stock market returns at the NSE as measured by stock market returns are caused by changes in investment in stocks, pension fund size and level of economic development. Other variables not included in the model justify for 63.5 percent of the variations in stock market returns at the NSE as measured by change in NSE 20 share index. The model is fit at 95% level of confidence since the p-value of 0.000 is less than 0.05. This confirms that overall the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables affects stock market returns at the NSE.

The findings of this study are in line with Chepkoiwo (2011) who using a case study of the NSE analysed the factors that affected the development of an emerging capital market. Secondary data collected from 56 listed companies in NSE for the period 2005-2010 was analysed using

descriptive statistics and regression analysis. The findings indicated that 85% of the development of stock market is as a result of factors such as liquidity of the market, the quality of institutions, the per capita income, macroeconomic stability, domestic savings and private capital flows. The study recommends that NSE needs to be developed further to enhance domestic resource mobilization. Various policies and programs that affect stock market development such as regulation of institutional investors like pension funds and privatization need to be addressed.

This study is in contrast with Impavido and Musalem (2000) who used a three-asset model to analyze panel data for some OECD countries and developing countries to determine the relationship between the development of contractual savings institutions including pension funds and stock and asset market. The findings indicated that contractual savings institutions spur the growth of stock markets. The institutions mainly invest in stocks and long-term bonds due to their long-term liabilities. They however note that the regulations on the composition of pension fund's portfolios affected the overall input of development of contractual savings on capital markets.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the previous chapter, conclusion, limitations encountered during the study. This chapter also elucidates the policy recommendations that policy makers can implement to achieve the expected stock market returns at the NSE. Lastly the chapter presents suggestions for further research which can be useful by future researchers.

5.2 Summary of Findings

The study sought to establish the effects of pension funds' investments on stock market returns at the Nairobi Securities Exchange. The independent variables for the study were pension funds investment in stocks, size of pension funds and level of economic development were the independent variables for this study while stock market returns at the NSE was the dependent variable. The study adopted a descriptive cross-sectional research design. Secondary data was obtained from annual reports of pension funds; reports filed with RBA and NSE and were analyzed using SPSS software version 21. The study used annual data covering a period of five years from 2012 to 2016.

From the results of correlation analysis, The Pearson correlation coefficients between the variables show no significant association between stock market returns and pension fund investments. The association between pension fund size and stock market returns was found to be weak negative

and insignificant while the association between level of economic development and stock market returns was found to be significant, strong and positive. Although the independent variables had an association with other independent variables, the association was found to be below 0.7 implying no Multicollinearity among the independent variables.

The co-efficient of determination R-square value when stock market returns is measured using change in NSE 20 share index was 0.365 implying that 36.5 percent of the deviations in stock market returns at the NSE are caused by changes in investment in stocks, size of pension funds and level of economic development. Other variables not included in the model justify for 63.5 percent of the variations in stock market returns at the NSE. The model is fit at 95% level of confidence since the p-value of 0.000 is less than 0.05. This confirms that overall the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables affects stock market returns at the NSE.

The researcher used t-test to determine the significance of each individual variable used in this study as a predictor of stock market returns at the NSE. The p-value under sig. column was used as an indicator of the significance of the relationship between the dependent and the independent variables. From the results, when stock market return is measured using change in NSE 20 share index, it is evident that only level of economic development is a significant determiner of stock market returns at the NSE. Investment in stocks and pension fund size were found to be statistically insignificant in determining stock market returns at the NSE.

5.3 Conclusion

From the study findings, the study concludes that stock market returns at the NSE as measured by change in NSE 20 share index is significantly affected by level of economic development

prevailing in the country. The study also found that although the amount of pension funds invested in stocks and the size of pension funds as measured by fund value have an association with stock market returns at the NSE, the effect is not significant. The study therefore concludes that pension fund investments are not significant determinants of financial performance at the NSE.

This study concludes that independent variables selected for this study influence stock market returns at the NSE when measured by change in NSE 20 share index as they explain 36.5% of the changes. This means that there are other factors not included in this model that account for 63.5% of changes in stock market returns at the NSE as measured by change in NSE 20 share index. The models were found to be fit at 95% level of confidence since the F-value was more than the critical value obtained from the table. This confirms that overall the multiple regression model was statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables affect stock market returns at the NSE.

This finding concurs with Chepkoiwo (2011) who using a case study of the NSE analysed the factors that affected the development of an emerging capital market. Secondary data collected from 56 listed companies in NSE for the period 2005-2010 was analysed using descriptive statistics and regression analysis. The findings indicated that 85% of the development of stock market is as a result of factors such as liquidity of the market, the quality of institutions, the per capita income, macroeconomic stability, domestic savings and private capital flows. The study recommends that NSE needs to be developed further to enhance domestic resource mobilization. Various policies and programs that affect stock market development such as regulation of institutional investors like pension funds and privatization need to be addressed.

5.4 Recommendations

The study established that although there is an effect of pension fund investments on stock market returns at the NSE, the effect is not significant and this implies there are other significant factors that influence the overall stock returns at the NSE. Managers and policy makers should pay keen attention to these variables as they will ultimately influence the success or failure of NSE.

The study found out that there is a strong and significant effect of level of economic development on stock market returns at the NSE. This study therefore recommends that policy makers should work on improving the prevailing levels of economic development as this will impact on stock market returns at the NSE leading to improved performance.

5.5 Limitations of the Study

The scope of this research was for five years 2012-2016. It has not been determined if the results would hold for a longer study period. Furthermore it is uncertain whether similar findings would result beyond 2016. A longer study period is more reliable as it will take into account major happenings not accounted for in this study.

One of the limitations of the study is the quality of the data. It is difficult to conclude from this research whether the findings present the true facts about the situation. The data that has been used is only assumed to be accurate. The measures used may keep on varying from one year to another subject to prevailing condition. The study utilized secondary data, which had already been obtained and was in the public domain, unlike the primary data which is first-hand information. The study also considered selected determinants and not all the factors affecting stock market returns at the NSE mainly due to limitation of data availability.

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more and more data is added to the functional regression model, the hypothesized relationship between two or more variables may not hold.

5.6 Suggestions for Further Research

This study focused on pension fund investments and stock market returns at the NSE and relied on secondary data. A research study where data collection relies on primary data i.e. in depth questionnaires and interviews covering all pension funds in Kenya is recommended so as to complement this research.

The study was not exhaustive of the independent variables affecting stock market returns at the NSE and this study recommends that further studies be conducted to incorporate other variables like management efficiency, growth opportunities, corporate governance, industry practices, age of the firm, political stability and other macro-economic variables. Establishing the effect of each variable on stock market returns will enable policy makers know what tool to use when maximizing shareholder's wealth.

The study concentrated on the last five years since it was the most recent data available. Future studies may use a range of many years e.g. from 2000 to date and this can be helpful to confirm or disapprove the findings of this study. The study limited itself by focusing on NSE only. The recommendations of this study are that further studies be conducted on other stock markets such as the East African Stock Exchange. Finally, due to the shortcomings of regression models, other models such as the Vector Error Correction Model (VECM) can be used to explain the various relationships between the variables.

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