THE RELATIONSHIP BETWEEN THE PENSION ASSET VALUE AND THE MARKET CAPITALIZATION OF COMPANIES LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

I hereby declare that this is my original work, and has not been presented to any other university for the award of any degree. All sources used in the study have been acknowledged for the ideas borrowed from other scholars and authors in its compilation.

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ABBREVIATIONS

AIMS – Alternative Investment Market Segment

CMA – Capital Markets Authority

EAC – East African Community

FIMS – Fixed Investment Market Segment

FISMS – Fixed Investment Stock Market Segment

GDP – Gross Domestic Product

GEMS – Growth Enterprise Market Segment

IMF – International Monetary Fund

IPO – Initial Public Offer

NSE – Nairobi Securities Exchange

NSSF – National Social Security Fund

OECD – Organization for Economic Co-operation and Development

ABSTRACT

This study aimed at establishing the relationship between pension asset value and the Nairobi Securities Exchange stock market capitalization. The capitalization of a stock market is determined by a number of factors including stock market size, share market turnover, and total value of traded shares and bonds. The study sought to investigate the relationship between RBA asset value, stock market size, share market turnover, and total value of shares traded at the Nairobi Securities Exchange. There has not been a lot of work done on the relationship between stock market capitalization and the asset value of pension funds in Kenya. Given the Kenyan stock market has made various strides in improving some of the aspects that are deemed to result in the development of the stock market which has seen an increase in the number of listed firms on the bourse and also the improvement of regulatory laws that govern trading and disclosures. The study therefore use the explanatory and descriptive design on data collected from all the 68 firms listed at the Nairobi Securities Exchange to establish the relationship between RBA asset value and determinants of stock market capitalization for the period between 2013-2017. The results showed a strong positive relationship between RBA asset value and stock market capitalization. The results found that from the size variables, stock market size (SMS) has a significant positive effect on RBA asset value, which means stock market size is a good predictor of the growth of listed firms and companies. This means the ability of the stock market to increase listing contributes to better mobilization of savings that in turn influences asset portfolio of the listed firms. The liquidity variables were share market turnover and total value traded. From the regression results the share market turnover was found to have a significant positive effect on RBA asset value. The total value traded was also found to have a significant positive relationship with RBA asset value, implying that the two variables are good predictors of RBA asset value for all companies listed at the NSE. The liquidity variables are important determinants of RBA asset value since they indicate the efficiency of the market to mobilize the savings on an economy wide basis. The share market turnover and total value traded have significant positive relation with RBA asset value meaning the capital market is able to efficiently allocate savings from surplus units to more productive enterprises.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Retirement issues have continued to gain prominence globally over the years as the demands of providing old age benefits begin to be a more visible strain to countries' economies. It is estimated that public spending on old age pension payments in OECD countries stood at 11.5% of GDP in 2011, and is projected to rise by 5-6% in the year 2050 (OECD, 2013). A stable and secure retirement benefits system does not only tackles the problem of poverty in old age, but is also an important component of the financial system of a country. It plays a crucial role in mobilizing long term savings. Therefore a vibrant retirement benefits system helps a country in the mobilization of funds for long term high capital investment projects like infrastructure development.

In Kenya, the problem of old age dependency is compounded by rising poverty levels and a family based social security system. It is also widely recognized that a secure retirement savings arrangement is a crucial ingredient for a stable economic system. According to Mutua (2003), a Retirement Benefits Scheme, commonly known as Pension Plan, is a scheme of arrangement established by law or any other instrument to entitle a person to benefits in form of payments. This is normally determined by age, length of service or amount of earnings, and normally payable primarily upon retirement, death or termination of services and any other event as may be specified in such written agreements. Cognizant to the significance of a stable pension plan in an economy, the government has undertaken several policy moves aimed at ensuring growth of the sector. These have been of a regulatory and incentivisation nature.

1.1.1 Pension Asset Value

Pension system plays an important role to increase savings rate in the economy and to transfer idle funds in to the financial system, and thus provides the efficient allocation of the resources. Considering that domestic savings amount/gross domestic product (GDP) ratio is an important indicator for the sustainable growth of the national economy, in developing countries where the

level of saving rates is very low, the importance of private pension system is increasing even further. Pension fund assets in countries have reached a significant percentage of GDP (Ramasamy and Yeung, 2003). Pension funds are the principal sources of retirement income for millions of people in the world (Sze 2008:3). Retirement income accounts for 68% of the total income of retirees in Kenya (Kakwani, Sun and Hinz, 2006), 45% in Australia, 44% in Austria and 80% in France while in South Africa 75% of the elderly population rely on pension income (Alliance Global Investors 2007). In the United States of America, 82% of retirees depend on pension income (EBRI, 2007a). Pension funds should therefore be managed efficiently to ensure higher retirement income for pensioners.

Global indices indicate that pension assets are important to any economy. According to Alliance Global Investors (2007), pension assets in Australia amount to AU$ 1trillion (equivalent to 20% of the GDP), while in Belgium pension assets amounted to 140 billion Euro in 2004. In 2003, the pension assets of Canada were worth CAD 1.3 trillion (30% of the GDP), while in China pension assets amounted to RMB 714 billion (24% of GDP) for same year. The contribution of pension assets to the GDP of the United Kingdom reached 14% (GDP 1.9 trillion) in 2003, while in the United States of America, the pension assets had a value of US$ 14.5 trillion (37.7% of all household financial assets). Closer to home, namely in Kenya and South Africa, the pension assets had a value of KSH 130 billion in 2006, which accounted for 30% of the GDP (RBA 2007) and ZAR 1098 billion in 2004 (Alliance Global Investors 2007) respectively. Pension funds are therefore important contributors to the GDPs of countries and should consequently be managed effectively.

Following the regulation of the retirement benefits sector under the RBA and operationalization of the Capital Markets Act in 2002 (Cap 485a), there have been greater incentives and safety in participation in stock markets for pension schemes. Fund managers have had to rethink the asset allocations that best meet the investment guidelines issued by the RBA (Raichura, 2008). To this end, there has been a shift away from property and other illiquid assets into the stock markets and other capital market investments (World Bank, 2002). A significant portion of industry's asset base of Ksh. 784 billion is invested in various capital market instruments such as listed equity, treasury bills and bonds, corporate bonds and commercial paper and in real estate. It is therefore a crucial ingredient in the development of the capital markets (RBA, 2014). Pension

schemes are one of the major sources of long term capital. This is because pensions are long term liabilities. As such they are the backbone of the development of capital markets (World Bank, 2002).

The sector has witnessed significant growth over the last couple of years. This growth may be explained by the faster economic growth and more importantly to an elaborate legal operating environment that has enhanced the safety of benefits within the occupational schemes by increasing the investments in secure capital market instruments (Fox et al., 2001). Given that the retirement benefits sector is an important element in savings mobilization in the economy, it works to grow the capital markets. Capital markets have been seen to expand faster in situations where there are increased investments from the pensions industry. Market capitalization expands and volatilities in stock market performance are reduced. This is because a regulated pensions industry calls for increased professionalism in asset allocation decisions by fund managers. Retirement benefits sector participation in the stock market influences the growth of market capitalization

1.1.2 Market Capitalization of the Nairobi Stock Exchange

Webber & Davis (2000) define Capital Market as an integral part of the financial system that provides funds for long term development and growth. This is simply a market that brings together lenders (investors) of capital and borrowers of capital (i.e. companies that sell securities to the public). According to CMA (2005), Capital Markets in Kenya play a very critical role in providing a source of long-term finances for long-term productive investments. This acts as a stress-reliever for the banking system as it matches long-term investment with long-term capital. Capital markets also provide equity and infrastructure development capital that can be financed through post-dated bonds and asset-backed securities.

Market capitalization is a business term that refers to the overall value of a company's stock (CMA, 2005). In essence, it is the price one must pay to buy an entire company (putting aside the fact that trying to buy an entire company off the market would cause immense price distortions, and takeovers are always at higher prices than the prevailing market prices).It is a measurement of corporate or economic size of a company and is equal to the stock price times the number of shares outstanding. Since owning stock represents owning the company and its assets,

capitalization represents the public opinion of a company's net worth, which is a determining factor in stock valuation. In the sense of a stock market, capitalization refers to the aggregate value of all the listed companies. Therefore capitalization of a country's stock market or economic region may be compared to other economic indicators as a measure of Financial Market Development (CMA, 2003).

Market capitalization (or market cap) is the total value of the issued shares of a publicly traded company; it is equal to the share price times the number of shares outstanding. As outstanding stock is bought and sold in public markets, capitalization could be used as a proxy for the public opinion of a company's net worth and is a determining factor in some forms of stock valuation. The total capitalization of stock markets or economic regions may be compared to other economic indicators. Market capitalization is used as a measure of a company's worth and it is a useful reference point in valuations for mergers & acquisitions. From an overall economic perspective, the capitalization of the stock market may be used to indicate the economy's ability to mobilize long term capital. Stock market capitalization growth is useful as a measure of the market's capital gains, and listings activity.

The Capital Markets Authority was established in 1989 through the Capital Markets Authority Act, Cap 485A (CMA, 1989) to regulate and oversee the orderly development of Kenya's capital markets. The Authority ensures the development and maintenance of an appropriate legal and regulatory framework to boost investor confidence, enhance efficiency and to create and maintain a fair and orderly market. The Authority also reviews existing policies and makes recommendations to the Government on new policy issues that could promote and enhance market development. It also provides guidance to market operators (CMA Act, 2002).

In Kenya, dealing in shares and stocks started in the 1920s when the country was still a British Protectorate, with share sales taking place at the Stanley Hotel in Nairobi. The Nairobi Stock Exchange was originally set up in 1953 as a regional exchange for Kenya, Tanganyika, Uganda, and Zanzibar. After these countries attained independence, the exchange became Kenya's national exchange and stopped servicing the other countries' markets. In 1991 NSE was registered under the companies Act and phased out the "call over" trading system in favor of the floor based open outcry system (NSE, 2004). As of December 2004, 49 companies were listed on the Nairobi Stock Exchange and total market capitalization was US$3.89 billion, down from

US$4.18 billion a year earlier (Odundo, 2004). As at December 2006, market capitalization stood at Ksh. 791 billion with 50 companies listed. Turnover in 2006 stood at Ksh. 96 billion.

The NSE has overseen several huge privatizations of formerly government parastatals, with the privatization of Kenya Airways in 1996 being the then largest share issue in the history of NSE. This earned the NSE a World Bank Award of Excellence for the successful divestiture of state-owned corporation (Ngugi, 2003). In 2006, the privatization of KenGen saw the NSE record the largest share issue, only for the record to be broken again in 2008 by the Initial Safaricom IPO shares sale (NSE, 2010). The government has expanded the scope for foreign investment by introducing incentives for capital markets growth including the removal of Capital Gains Tax, elimination of withholding tax on dividends on investments by pension funds and Insurance Companies, allowing beneficial ownership by foreigners in local stockbrokers and fund managers and the envisaged licensing of dealing firms to improve market liquidity (NSE, 2004). The exchange has three market tiers: Main Investments Market Segment, Alternative Investment Market Segment, and Fixed Income Securities Market Segment (NSE, 2005).

In 2006, the market was automated and abandoned the open outcry trading method. Plans also are underway for an over the-counter market (CMA, 2007). The stock market has experienced significant growth since launch but the 2000's have been the most remarkable. Market capitalization steadily rose from Ksh 8.6 billion in 2001 (or 8% of the country's GDP) to Ksh 791 billion (an equivalent of 56% of Kenyan GDP) as at the end of 2006 (NSE, 2008). The key drivers to this meteoric rise included robust economic growth, improved corporate profits, increased investor participation, public divestiture programs, and stabilized interest rates. All these factors played the market stimulation role to a varying extent. The robust growth of the economy since 2002 has been a key factor in the stock market expansion. Economic growth can be viewed as having contributed to the stock market in the following ways: i) Increased employment and earnings that enabled a large portion of the population to save invest in the market; ii) increased company profitability that enhanced their market value; and iii) Improved employment rates meaning that more people contribute to the retirement assets, with a good portion of it being channeled into the stock market investments (World Bank, 2002). Institutional investors control a significant portion of the stock market investments. This category of investors

is led by Pension Fund Managers and insurance companies. It is notable that increased investor participation has also enhanced the stock market growth.

The NSE has grown to be the largest market in East and Central Africa, with its market capitalization soaring to approximately KES.1.176 trillion as at 19th October 2012 from KES.112.05 Billion in December 2002, likewise within the same period the NSE Stock index has increased by over 260% to 4034.07 points (CMA, 2013). Currently the NSE has 68 listed members and other trading firms within the four trading segments, Main Investment Market Segment (MIMS); Alternative Investment Market Segment (AIMS); Fixed Income Market Segment (FIMS/FISMS) and the Growth and Enterprise Market Segment (GEMS).The AIMS isan alternative method of investment in capital by small, medium sized and young companies that find it difficult to meet the more stringent listing requirements of the MIMS. It is geared towards responding to the changing needs of issuers and facilitates the liquidity of companies with a large shareholder base through 'introduction' that is, listing of existing shares for marketability and not for raising capital. It also offers investment opportunities to institutional investors and individuals who want to diversify their portfolios (NSE, 2010). The stock market plays a pivotal role in the economic growth and development of a country. It performs a wide range of economic and political functions while offering trading, investment, speculation, hedging, and arbitrage opportunities to various investors (Ndako, 2012). It also provides an alternative and important platform through which, institutions and the Government can mobilize capital for investment and assess economic growth and stability.

1.1.3 Retirement Benefits Sector

In the earlier Kenyan Retirement Benefit Scheme systems before reforms were done to the sector, the Retirement Benefit Scheme fund system provided for benefits once a worker retired on attaining the mandatory retirement age of 55 (RBA, 2006). The guarantee was fixed as the worker's full basic salary throughout his life or that of the widow as the law did not imagine a situation where the wife would support the husband (NSSF Act); Pensions Act (Cap 189).RBA has been the regulatory arm of government that is tasked to regulate the Kenyan Retirement Benefit Scheme fund system since 2000, which oversees the 1997 RBA Act that brought about regulation, protection and structure to the Retirement Benefit Scheme fund industry. The RBA continues working to develop the industry and advise the government on Retirement Benefit

Scheme policy reforms. The Kenyan Retirement Benefit Scheme fund system has four components: NSSF; Civil Servants Pension Scheme (CSPS); Occupational Retirement Schemes (ORS); Individual Retirement Schemes.

Given the economic importance as a financial intermediation agent and the possible fiscal and social consequences of a non-functional retirement benefits industry, there have been moves to regulate the sector, world over. The retirement benefits sector in Kenya is a three tier structure made up of the unfunded civil service pension scheme, occupational and individual retirement benefits schemes regulated by the Retirement Benefits Authority, and the National Social Security Fund, NSSF (Grosh, 2005). The National Social Security Fund, NSSF, was established in 1965 by an Act of Parliament, Cap 258 Laws of Kenya. The first contributions into the Fund (from men only) were received in July 1966. Female employees first registered in January 1975 but started contributing in 1977. The NSSF Act was amended in 1987, thereby transforming the fund into a State Corporation under the management of a board of trustees (Rwelamira, 1993).

The sector's regulation was achieved through the creation of the Retirement Benefits Authority under the Retirement Benefits Act, 1997 and became operational in 2001. The enactment of the Act, and the Retirement Benefits Regulations, 2000, set out a clear legal framework under which retirement benefits are to be managed. The Act requires among other things, registration of every scheme with the Authority, the appointment of a professional fund manager, a custodian and an administrator, all answerable to a Board of Trustees, the ultimate legal owners of a scheme assets. It also sets out an investment guideline which schemes must adhere to. In this way, it has enhanced the security of member benefits and guarantees prudent investment decisions. Under the Act, NSSF should also comply with the RBA regulations. The fund was however allowed a reprieve up to June 2006 to comply given the myriad problems and misaligned investments that had been made based on political interference. As at the end of the extended period, the fund was yet to comply. The Fund's assets as at 30th June 2005 stood at are Ksh. 54.5 billion. There were about 998 registered occupational schemes with assets totaling 122.3 billion as at 31st December 2005, bringing the total industry assets to Ksh. 176.8 billion (Sheehan et.al.,2005). The industry assets grew to Ksh. 584 billion or 28% of the Kenyan GDP as at 31st December 2013 (RBA, 2015).

1.1.4 Relationship Between Pension Asset Value and NSE Market Capitalization

There are several factors that affect the NSE market capitalization. According to Lungu (2009) the listed firms play a very significant role in the market capitalization. If a pension fund has majority young contributors who have not attained retirement age, it implies that they will have more financial resources that can be channeled into investment activities thus earning more income. On the other hand if most of the contributors are old and almost attaining retirement, the fund has to spend more funds to service retirement packages for the contributors and this implies that less funds available for investments.

The density of contributions that pension funds receive from the contributors is also very important in the capitalization of the stock market. If a fund has many contributors who are capable of channeling huge funds to the scheme, then there will be enough funds to invest and this will assist the fund to earn better revenues from the stock market. The reverse is also likely to happen if the amount of contributions received from the contributors are not large enough to enable the fund to enter into any meaningful asset investment (Bodie et al, 2009).

1.2 Research Problem

The importance of savings in a developing economy like Kenya cannot be overemphasized. Financial intermediation vehicles such as the banking system and the retirement benefits sector work hand in hand with stock exchanges to mobilize and build a pool of resources that can be productively employed in the economy. While it is just recently that awareness on the importance of retirement savings has come to the fore in Africa, this sector is the cornerstone for long term capital formation. Stock markets are similarly relatively underdeveloped. These two have the potential of mobilizing significant amounts of savings and investment for overall development of the economy and the fight against poverty. Poverty and the resultant the low savings rate in many African countries have continued to constrain demand and supply of equity in stock markets.

The eligibility requirements as exemplified in the requirements for listing at the NSE have created high barriers to potential entrants to the stock exchanges. Thus, the stock exchanges have tended to operate like closed membership organizations that do not effectively play their due role

and more often than not remain nascent. Recent moves by international development organizations to encourage the development of capital markets in developing countries are bearing fruits and markets are maturing faster. We have seen a shift of focus with more family owned businesses, manufacturing companies, real estate ventures, as well as agricultural companies i.e. Kapchorua Teal Ltd looking at the stock markets as a source of finance as well as a means of unlocking value.

Several studies have been done relating the investment in stock markets to the factors such as political uncertainties and economic policies. Most of these studies have aimed to explain the decline in confidence and subsequent poor performance of the stock markets. Issues of compliance requirements have also been cited as constraints to the development of the market. For instance, in Kenya, the NSE and CMA both serve as regulators of market participants. Each has its own requirements for membership, listing and participation in the market and although there are similarities, the multiplicity creates uncertainty as to which requirements are applicable in different situations. Studies testing the importance and level of participation of retirement benefits savings in the stock markets are scanty.

Since the operationalization of the Retirement Benefits Authority as the regulator of all pension schemes in the country, there has been increased surveillance and guidance over the investment decisions on pension assets. This has seen a change of orientation towards increased asset allocation to the capital markets and more specifically the stock market. Some of the key challenges that the regulator cites as constraining development of the sector has been the low levels of diversification, overreliance on investments in government securities due to limited availability of good quality scrip and other long term assets (RBA, 2013). Over the years, there has been growing participation of pension schemes in the stock market. However, there have been notable challenges in achieving the desired levels of participation at the NSE, given the shallow nature of the Kenya's stock market. Nevertheless, the authority remains optimistic that these challenges will be overcome. There is therefore need to increase the number of company listings at the exchange in order to lessen the hurdles faced in achieving portfolio diversification. It is on this premise that the study intends to establish the relationship between the RBA retirement asset value and the market capitalization of all companies listed at the NSE.

1.3 Study Objective

The objective of the study is to establish the relationship between the RBA pension asset value and the market capitalization of all companies listed at the Nairobi Securities Exchange.

1.4 Value of the Study

The NSE has grown to be the largest stock market in East and Central Africa, with its market capitalization soaring to approximately Ksh 3.176 trillion. The stock market plays a pivotal role in the economic growth and development of Kenya, and therefore the study stands to benefit majority of the groups as explained below.

The Nairobi Securities Exchange stands to benefit from the study findings by using them as a basis to formulate strategies geared towards harnessing resource mobilization and strengthening capital markets. As various studies have found, effective participation of the pension sector in a country capital markets is one of the factors behind rapid growth of these markets.

The Retirement Benefit Authority will use the study findings to monitor the NSE index with the purpose of determining the future level of retirees' contributions that will help maximize their income. Retirement dependency is becoming increasingly important due to the strain that can befall an economy out of unplanned for old age financial needs. The RBA will therefore use the study to formulate policies that ensure protection and strengthening the retirement savings sector.

The Kenyan Government through the Treasury will obtain insight from the study findings on how retirement savings can be used to spur growth of the stock market and the economy at large. The retirement savings lessen the population's dependency burden from the mainstream economy, therefore trading pension proceeds on the stock market becomes a priority for a government that wishes to spread tentacles in revenue generation for its people.

The study may also be used as a source of knowledge for researchers who may want to use the study findings as a point of reference on the role of pension funds in stock market capitalization. This will enable scholars establish the link between a robust retirement plan and the growth of capital markets.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section gives a review of various scholar concepts about pension funds and to investigate their role as Institutional Investors in Emerging Market Economies. The chapter further seeks to create more light on the concept of pension Funds, investigate the contribution of pension funds in emerging markets economies, establish the main factors determining the investment performance of emerging market pension funds, assesses the contribution of domestic pension funds to the development of local securities markets in emerging market countries, establish the factors that determines the emerging market asset allocation of pension funds in developing countries and highlight on the concept of Emerging Market Economies.

2.1 Theoretical Literature

Provision of old age benefits remains one of the key economic challenges of the 21st Century. This is because, where the Retirement Benefits regulation and administration remains one of the modern times. Securities markets tend to grow in terms of market capitalization quite significantly, entailing a rise in the ratio of securities to bank deposits and loans, increase in turnover, in addition to a change in their nature. Pure retail markets develop a form of polarization between retail and wholesale/institutional business. Trading systems evolve and a general sharp increase in innovations and technological advances in trading systems is witnessed. These developments strongly reflect the growing size and activity of institutional investors. The study therefore anchors its analysis on Efficient Market Hypothesis (EMH) theory and Life Cycle Hypotheis (LCH) theory.

2.1.1 Efficient Market Hypothesis (EMH)

According to Fama (1970), a market is said to be efficient with respect the information set if the market price "fully" reflects that information set. The capital market price would therefore not be affecting by disclosing the information set to all market participants. Coined by Roberts (1970)

and formalized by Fama (1970), the efficient market hypothesis (EMH) asserts that financial markets are efficient in their natural state. However, Scholes (1972) differed with this view after observing the impact of issuing new stock for public sale from a company that has already made its initial public offer (IPO). According to Scholes (1972), the price effects of secondary offering show the market is efficient except for some indication of post-event price drift. In his critique of the EMH theory, Sewell (2011) noted that the assertion of "fully reflecting" by Fama (1970) is an exacting requirement, implying that no real market could ever be real, and that EMH remains just that, a false hypothesis. An in-depth observation by Sewell (2011) at the EMH theory concluded that strictly speaking the EMH may be false, but in spirit of the stock market operations, the theory is profoundly true. The EMH has withstood the test off time to prove that indeed market information disclosure to all participants stabilizes the prices to an efficient point.

2.1.2 The Life Cycle Hypothesis (LCH)

In their study on the life cycle hypothesis of saving, Ando-Modigliani (1963) argue that people seek to maintain the same level of consumption throughout their lifetimes by borrowing in their early life when the income is low, saving during their prime earning age when income is high, and later on liquidating their assets late on in life when the income falls. In the 1950's, Ando Modigliani and his student Robert Brumberg formalized the idea that people maximize utility of their future consumption in Modigliani &Brumberg (1954), asserting that the main motivation of saving is to accumulate resources for later expenditures (Japelli, 2005). In contrasting the LCH from the famous Keynesian theory, Modigliani &Brumberg (1954)observed that the LCH implies that the savings ratio depends on the growth rate of income, whereas the Keynesian view that an economy's aggregate savings rate is determined by the total income level of the entire economy. When income in a country is growing, each new generation has higher consumption expectations than the previous one. To maintain their higher consumption when they get older, prime-age workers in a growing economy will save more than past cohorts of prime-age workers, and the dissaving of those past cohorts (who are now retirees) will be less than the current workers' savings rate.

The Ando & Modigliani (1963) theory made is mainly founded on the assumption that the utility of an individual depends on his/her planned saving, and it is a homogenous function of planned investments and planned consumption, and that the aggregate saving rate depends on the demographic structure of a nation and life expectancy, even though it is independent from per capita income. These assumptions foresee the need for individuals to maintain their standard of living over the entire life cycle. This justifies why saving for retirement has become an important matter for research to ascertain to what extent it can affect the individual's consumption-saving behavior over his/her entire lifespan.

Ando & Modigliani (1963) specified the consumption function as a function of labour disposable income and non-labour or property income. Using the Ando-Modigliani specification model, many other studies have been carried out. Feldstein (1974), in one of the most cited studies, extended the Ando-Modigliani specification model to include the effect of retirement benefit on consumption. Barro (1978) proposed another modification to the study by Ando-Modigliani (1963) and the Feldstein (1974) specifications to include the effect of per capita government surpluses and real per capita consumer expenditure on durable goods. In this study we adopt the Feldstein (1974) specification as applied to investigate the extent to which the schedule of taxing retirement savings applied in South Africa, affected savings and thus investment in capital markets. Thus, market capitalization is taken as function of disposable income and pension and provident benefits (both official and privately administered).

2.2 Empirical Literature

According to Davis & Steil (2001), the rapid growth of capital markets is driven by increased investment from the retirement benefits sector. Pension funds in Latin America and Eastern Europe hold sizable positions in stock markets, in equity and fixed income investments. As of June 2003, stock markets recorded the dominant share of pension funds' portfolios in many countries: 70% in Malaysia and Poland, 80% in Argentina, India, and Mexico, and 90% in Hungary.

Due to their regular and significant cash inflows, Polish pension funds were expected to trigger an upturn in the domestic stock market. By the end of 2002 open pension funds' investments into

stocks listed on the Warsaw Stock Exchange (WSE) amounted to about 30% of the assets under management or US $ 2.2 billion. Funds' participation in the daily turnover of the WSE accounts for 17% and surpasses 5% of the capitalization of the Exchange (KNUiFE, 2003a, www.igte.com.pl). Funds' holdings were also found to be highly concentrated and limited to the large capitalization stocks that are listed in the blue-chip index, WIG20 (Karpinski, 2002b). The Pension funds' investments in shares had not reached the 40% limit that was intended by the polish Government. The findings indicated a less than optimal achievement by the pension's sector in growing the stock market in Poland.

Cox and Jimenez (1992) found that a reduction in pension funds size by 37% yielded a 5% reduction in capital markets investments in Peru. In a similar study in South Africa it was found that 5% reduction in pension funds resulted in a 20-30% decline in market capitalization (Jensen, 2004). There is no clear direction of relationship.

Blake, Lehmann & Timmermann (2002) studied the UK retirement benefit fund performance and concluded that in the presence of relative performance benchmarks, pension fund managers are likely to invest the funds in the capital markets. Their study concentrated on pension funds of the so-called 'Anglo-Saxon' type, while omitting the 'Continental' and 'Latin American' types of pension funds adopted in the developed European countries, and the emerging economies of Latin America and Central Europe. This mission was important because of the pronounced differences in investments regulations shaping these three types of pension funds. In their study, Blake et al. (2002) found out that different investment rules affected institutional trading resulting in different patterns of investment behavior amongst pension funds. The prudent rules type of regulations allowed greater participation in the stock markets while the quantitative restrictions imposed by the Latin American type could hinder participation. Kenya's investments regulations as set out in the RBA Investment guidelines 2000 are structured with quantitative limits and therefore fall into the category of the Latin American type.

Following Rybczynski (1997), it is notable that institutional investors are crucial in the development of the capital markets from the bank oriented phase where banks control almost fully the capital markets, to a market oriented phase where other players such mutual funds

emerge to assist in the intermediation activity and to a market oriented level where most of intermediation activity is undertaken by other players with banks taking a greater role in trading in derivatives, providing guarantees etc. The presence of a strong banking sector and a well regulated overall monetary system is crucial. Pension funds have been found to have a great role to play in the development of the capital markets and more particularly stock markets.

2.3 Literature Overview

Based on the above literature, many issues have been seen to explain the role of retirement benefits sector to the growth of market capitalization in different countries. Various components of retirement benefit funds such as pension's funds have also been highlighted by most of the literature. On the other hand various capital markets in different countries have also been highlighted such as the ones in South Africa, Poland and others.

The studies reviewed have used different methodologies and variables to establish that increased investment of pension funds leads to increased market capitalization rate. Conspicuously missing from the review is the literature concerning the Nairobi Stock Exchange market and retirement benefit sector in Kenya or indeed any Sub Saharan African country other than South Africa. This could partly be the result of nascent stock markets in most of these countries, which makes comprehensive studies difficult. However, going by the recent developments in these economies, there will be a change. This study will therefore bridge the knowledge gap by providing precise information on the relationship between the retirement benefit sector and the stock market capitalization of NSE listed companies.

2.4 Conceptual Framework
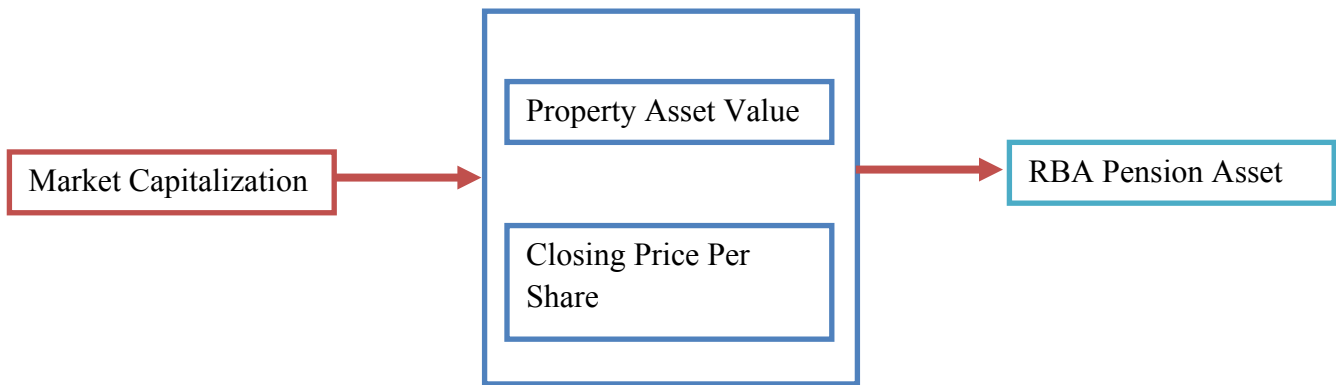
Independent Variable   **Dependent Variable**

Control Variables

| Property Asset Value |
| Closing Price Per Share |

Market Capitalization → [Control Variables box] → RBA Pension Asset

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Introduction

This chapter highlights the methods and procedures to be used in carrying out the study. It includes the research design to be employed, target population of the study, the sampling frame and the unit of analysis to be used. The section also highlights the type of data to be employed and a brief discussion on the regression model and data analysis to be carried out on the collected data.

3.2 Research Design

According to Law & Lodge (2005), research design describes the nature of the pattern the research intends to follow. It describes the plan or strategy for conducting the research and is, simply put, a road map guide of how research itself will be conducted. The study employed the use of both explanatory and descriptive research designs. According to Saunders, Lewis & Thornhill (2003), studies that establish causal relationships between variables may be termed as explanatory studies. This is because the emphasis is normally on analyzing a situation or a problem in order to explain the relationship between the variables under observation (Saunders et. al, 2003).

Hair, Babin, Money & Samouel, (2003) observed that explanatory studies are designed to test whether there is any relationship between two mutually exclusive events. The choice of the descriptive survey research design on the other hand was made based on the fact that in the study, the research is interested on the state of affairs already existing in the field and no variable shall be manipulated. A descriptive study attempts to describe or define a subject, often by creating a profile of a group of problems, people, or events, through the collection of data and tabulation of the frequencies on research variables or their interaction as indicated by Cooper and Schindler (2003). In general, explanatory and descriptive design is appropriate because the study intends to establish the relationship between RBA pension asset value and the market capitalization of companies listed at the NSE.

3.3 Target Population and Sample

The sampling frame or population is the list from which the sample for a given study is obtained. Mugenda & Mugenda (2003) define population as a complete set of individuals, cases or objects with common observable characteristics. It is an entire group of individuals who are the concern for the study within the area of the study. According to Ngechu (2004), a population is a well-defined set of people, services, elements and events, group of things or households that are being investigated. It is a complete group that fits the researcher's specification from which the researcher was to generate the result of the study. The population of this research consists of all the listed companies in the Nairobi Securities Exchange. According to NSE (2017), there are 68 companies listed at the Nairobi Securities Exchange (NSE). The target population for the study was therefore all the 68 firms listed at the Nairobi Securities Exchange (See Appendix I).

Given that there are 68 companies listed at the Nairobi Securities Exchange, the study carried out total enumeration of all the listed firms at the NSE. This is supported by Gupta (2007) which posits that if the researcher has enough resources and time he can choose to do a complete census of the study if the population size is small. Gupta (2007) gives the advantages of a census, stating that it does not have any bias that may occur due to sample size selection. Therefore the study carried out total enumeration of all the 68 firms listed at the NSE for a period of five years (2013 to 2017).

3.4 Data Collection and Research Instruments

In this study, two data collection methods shall be employed to collect both primary and secondary data. The study mainly relied on secondary data collected from print and online materials on the study subject matter. Secondary data was collected from the National Social Security Fund (NSSF) reports, the Retirement Benefit Authority reports, the NSE reports and statistical bulletins, World Bank reports, KNBS Statistical Abstracts, Central Bank financial reports, etc. Primary data was used to complement the findings obtained from secondary data. Closed-ended questionnaire which includes Likert-type questions was used to collect data. This is deemed important for this study since the respondents are limited to predetermined possible responses and this captures a broad range of attitudes of the respondents regarding the study questions.

3.5 Data Collection Procedure

The researcher obtained a research authorization letter from the University of Nairobi and a research permit from National Commission for Science, Technology and Innovation (NACOSTI) before undertaking this study so as to ensure the legal basis for the study is established. Permission will also be sought from the Nairobi Securities Exchange and all the listed companies to allow enumerators collect data. Consent was then obtained from the respondents before the study tool (questionnaire) is administered. The researcher adhered to ethical standards. In this regard, the respondents was informed of the purpose of the study before their participation.

3.6 Pilot Testing

Kothari (2004) describes a pilot study as the replica and rehearsal of the main study. According to van Teijlingen & Hundley (2010), a pilot study (also referred to as feasibility studies) refers to small versions of a full-scale study, as well as the specific pretesting of a specific research instrument such as an interview schedule or a questionnaire. Usually conducted by experts, pilot studies bring to the light the weaknesses of the questionnaires and also of the survey techniques that may arise so that improvements can be made as per the experience gained in this way (Kothari, 2004). Although conducting a pilot study does not guarantee success in the main study, it does increase the likelihood of success in the main study. Pilot studies fulfil a range of significant functions and can provide valuable knowledge for other researchers (Teijlingen & Hundley, 2010).

According to Cohen et al (2002), a pilot study is a trial run of the major study with the purpose to check the time taken to complete the questionnaire, to check whether the questionnaire is too long or too short, too easy or too difficult and to check the clarity of the questionnaire items. The pilot study also aims to eliminate ambiguities or difficulties in wording within a questionnaire.

The pilot study was undertaken to pre-test the research instrument, so as to ensure that it is concise, clear, comprehensive and reliable. This helped identify any possible weaknesses and adjustments made to make the test reliable, appropriate and comprehensible. According to Mugenda & Mugenda (2003), a pilot study sample should be in the range of one 1-10% of the sample size selected. In this study a total of 10 respondents were selected to participate in pilot study.

3.6.1 Validity of the Instrument

Gay, Mills and Airasian (2006) posit that validity refers to the degree to which a test or an instrument measures what it is supposed to measure. In order to ensure the validity of the instrument, internal and external validity tests were carried out. Face validity was assessed by finding out the ease with which the respondents answer the research questions. In this case, any ambiguous questions were adjusted to make them easy to understand and answer. Cooper and Schindler (2003) point out that content validity offers adequate investigation of the study questions. The questionnaire was presented to the supervisors for review and their input on the constructs of the research used to improve the questionnaire.

3.6.2 Reliability of the Instrument

Mugenda & Mugenda (2008) point out that reliability is a measure of the degree to which a research instrument yields consistent results after repeated trials. The data obtained from the pilot study was used to ascertain the appropriateness and relevancy of the questionnaire to the study. Cronbach's Alpha will be used to test the reliability of the research instrument. According to Malhotra (2004), a Cronbach's Alpha Reliability Coefficient varies from 0 to 1, where a value of 0.7 or less indicates unsatisfactory internal consistency reliability. Cronbach alpha measures how well a set of items (or variables) measures a single uni-dimensional latent construct. When data has a multidimensional structure, Cronbach's alpha is usually very low. Technically, Cronbach's alpha is not a statistical test but a coefficient of reliability (or consistency) test. Cronbach's alpha is written as a function of the number of test items and the average inter-correlation among the items. The formula for the standardized Cronbach's alpha can be represented as:

……………………….… (3.3)

Where

= The number of items

= The average inter-item correlation among the items.

From the formula, when the number of items increases, the Cronbach's alpha increases. If the average inter-item correlation is low, the Cronbach alpha will be low. If the average inter-item correlation increases, Cronbach's alpha increases as well. In cases of multi-dimensional data,

Cronbach's alpha is generally be low for all items. According to Nunnaly (1978), Cronbach's Alpha Reliability Coefficient above 0.7 is an acceptable reliability coefficient. The values of Cronbach alpha greater than 0.7 implies that the questionnaire is reliable otherwise it is unreliable. If the estimated value of Cronbach alpha less than 0.7, the questionnaire is reformulated and the pilot study conducted again until the questionnaire is reliable.

3.7 Empirical Model

According to Mugenda and Mugenda (2003), the regression technique is used to analyze the degree of relationship between two variables. There is a very close semblance of ideas between the Life Cycle Hypothesis (LCH) of Modigliani & Brumberg (1954) and Ando & Modigliani (1963), and the Permanent Income Hypothesis (PIH) of Friedman (1957). The study therefore opted to borrow much from the LCH and PIH theoretical frameworks in deriving its empirical model.

3.7.1 Model Specification

The dependent variable was the retirement/pension asset value (with RBA pension asset value to be used as a proxy), while the company market capitalization was the independent variable. The value traded ratio complements the market capitalization. It's a measure which equals the total value of bonds and shares traded divided by the Gross domestic product of the economy. This indicator of growth indicates the liquidity observed in the capital market. In this research this ratio will be used to compliment the market capitalization rate as a measure of growth of the capital market in line with the work of (Donwa & Odia, 2010).

The model can therefore be specified as below.

.... (4)

Where

……………………………………… (5)

- Retirement Asset Value (Proxied by the RBA pension asset value)

– An autonomous variable that affects the relationship between pension asset value and market capitalization of a company

– A coefficient of Market Capitalization for company *i*.

– The market capitalization for company *i*.

– Stock Market Size

– Share Market Turnover

- Total Value Traded

– Error term for other explanatory variables that cannot be explained within the model.

The model therefore becomes

…………………… (6)

3.8 Data Analysis Technique

Burns & Grove (2003) define data analysis as a mechanism for reducing and organizing data to produce findings that require interpretation by the researcher. The study used frequencies, averages and percentages to describe trends and tendencies. The study employed the use of Statistical Package for Social Sciences (SPSS) to generate the descriptive statistics and inferential results. Regression analysis of equation (i) above was used to demonstrate the relationship variables under observation.

In this study, quantitative techniques was be used in analyzing data. This was done for purposes of developing and employing mathematics models, theories and hypotheses pertaining to natural phenomena (Babbie and Mouton, 2006). Herein, quantitative technique shall be used to reduce text to numbers and the frequency distribution as well as the relative importance of the responses obtained assessed.

Data was analyzed using Statistical Package for Social Sciences (SPSS Version 20.0) program. Since the study is descriptive in nature, both quantitative analysis and inferential analysis were used as data analysis technique. Quantitative analysis included descriptive statistics (measure of

central tendency (mean), frequency and percentages) and inferential statistics (correlation and multiple regression).

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1   Introduction

This chapter describes the analysis of data followed by a discussion of the research findings. The findings relate to the research questions that guided the study. Data for the period 2013-2017 was analyzed on market capitalization and RBA asset value. This chapter presents the descriptive statistics of data, normality tests carried out on data, and the empirical research findings obtained by regressing data using that SPSS statistical package.

4.2 Descriptive and Inferential Statistics and Normality Tests

An inferential statistical analysis was done on the study variables to determine the relationship between RBA asset value and market capitalization of firms listed at the NSE in Nairobi Kenya. The tables in this section provide the outcomes of the inferential analysis. Table 4 below shows the descriptive statistics for the data on RBA asset value between 2013 and 2017. The statistics computed include measures of central tendency such as the mean, median, skewness and kurtosis, and the Jacque-Bera normality test. Skewness is a measure of the direction and degree of asymmetry, while kurtosis measures the peaking and flattening of the distribution tail. For a normal distribution skewness is 0 with a kurtosis of 3 and the JB of 0. A distribution is said to be skewed to the left if the mean is less than the median (negative skew), and vice versa.
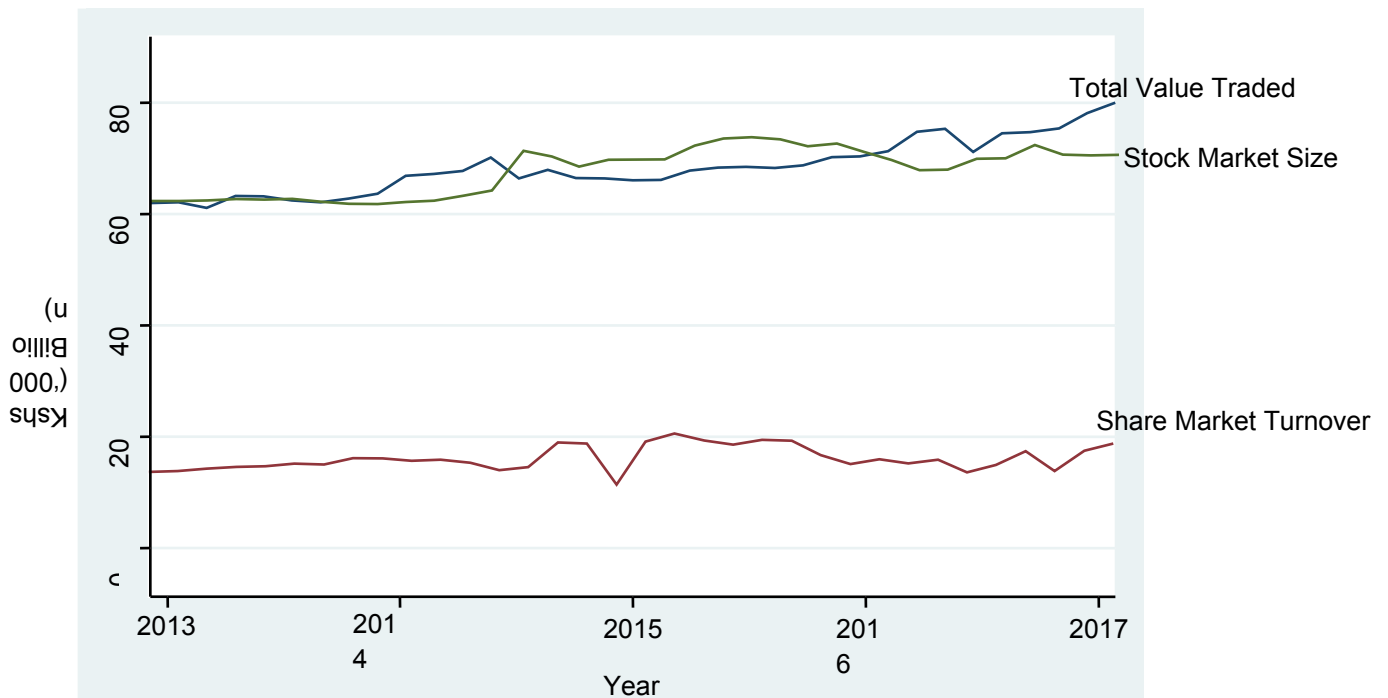
Table 4. 1: Descriptive Statistics

Variable	SMS	SMT	TVT
Observations	35	35	35
Mean	69,911.0	19,467	77,298
Median	68,055.5	19,765	75,941
Std Deviation	1.273268	10.71057	19.44065
Skewness	0.4254036	0.1059352	0.1145474
Kurtosis	2.063519	1.638205	1.637209
Jacque-Bera	-0.1340	-3.4129	-0.1033

Source: Author (2018)

Table 4.1 shows that none of the model variables is absolutely normally distributed, since the mean and median are not equal. However, the normality statistics computed above show the variables as being near-normal, with marginal variations in the skewness for all the four variables. Given that the closer Jarque –Bera test statistic is to zero, the normally distributed the variable is, the results above indicate that the series is a normal distribution for Stock market size (SMS), and Total value traded (TVT). However, share market turnover (SMT) shows a higher Jarque-Bera test statistic value, signifying that the variables cannot be conclusively said to be normally distributed. A normally distributed data ought to have the skewness value of zero. Therefore the variables in the model are positively skewed. Kurtosis shows whether the distribution is peaks or flattens compared to a normal distribution. For a normal distribution, the kurtosis statistic should fall between -3 and +3. In table 4 above, the series appear to be normal kurtosis since the measure of kurtosis is less than 3 for all the variables.

4.3 Trend analysis

This section examines the trends of stock market size, stock market turnover as well as total value as key determinants of stock market capitalization.

Figure 4. 1: Trends of Market capitalization determinants between 2015 - 2017

Figure 4.1 is a graphical illustration of trends of share market turnover, stock market size, and total value traded, which are the identified factors responsible for market capitalization at the Nairobi Securities Exchange in Kenya. There is an observed meteoric rise in stock market turnover from the period starting 2013 to around late 2014, thereafter a sharp decline before another steady rise from early 2016 until the end of the study period. Unlike the stock market turnover, total value traded and stock market size depict shallow troughs throughout the period of the study. Despite the general increase in commodity prices (inflation), the GDP total value traded and stock market size have remained steady across the period of the study.

4.4 Diagnostic tests

The study conducted tests to verify various OLS assumptions as suggested in the methodology. They include unit root tests, co integration, normality, autocorrelation, and multicollinearity.

4.4.1 Unit root tests

If variables are non- stationary, there is a tendency of the estimates to change over time. It is practically impossible to have a 'strictly stationary' time series data, therefore most studies test for second order or weak stationarity (Nason, 2006). The ADF operates on the hypothesis that:

H_0: The series Y_t is $I(1)$ or H_0: The series data is non-stationary

H1: The series Y_t is $I(0)$ H_1: The series data is stationary

The study employed ADF to check for presence of unit roots in data, so as to ascertain if the series is $I(0)$ or $I(1)$. If the absolute test statistic value is greater than the absolute critical value, we reject H_0 and conclude that the series is stationary. The test was carried on the variables of the model and the results obtained were as follows.

Table 4. 2: Unit root test on non-lagged model variables

Variable	ADF Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Comment
RBA Asset Value	3.545	-3.702	-2.980	-2.622	Stationary
SMS	-6.252	-3.709	-2.983	-2.623	Stationary
TVT	-7.085	-3.709	-2.983	-2.623	Stationary
SMT	0.793	-3.702	-2.980	-2.622	Non-stationary

The test shows that the dependent variable has no unit roots hence stationary. Two of the three explanatory variables, SMS and TVT were also found to be stationary since there were no unit

roots present. However, SMT was found to have unit roots present, hence non-stationary. Proceeding to regress the model with this kind of data would lead to spurious results. One way of eliminating unit roots is by obtaining differences of non-stationary variables. Therefore the first difference of the non stationary explanatory variable in the model was obtained. The ADF was then performed on all variables together with the first difference of SMT, and the following results were obtained as seen in table 4.3 below.

Table 4. 3: ADF unit root test on variable differences

Variable	ADF Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Comment
RBA Asset Value	3.545	-3.709	-2.983	-2.623	Stationary
SMS	-6.252	-3.709	-2.983	-2.623	Stationary
TVT	-7.085	-3.709	-2.983	-2.623	Stationary
D_SMT	-5.257	-3.709	-2.983	-2.623	Stationary

After the first difference of SMT, all variables in the study model are now stationary. Regression carried out on the variables is therefore valid, and results obtained thereof can be relied upon for policy recommendations.

4.4.2 Cointegration

The study conducted cointegration analysis to establish existence of either a long run or short run relationship between pension asset value and market capitalization of NSE listed companies, as well as the relationship between NSE stock market size, total value traded, and the stock market turnover. Having established the stationarity, the study generated the residuals and the first differences of the residual. The first differences, lagged values and lagged values of the first

differences are included in another successive regression as model regressors. The null hypothesis of no long run relationship between RBA asset value and the explanatory variables were tested against the alternative hypothesis of presence of long run relationship. From the results, it was found that the p-value of 0.000 is less than 0.05 implying that there is cointegration. This means that there is no long run relationship between health outcomes and the four explanatory variables. It implies that the variables under study do not move together in the long run.

4.4.3 Autocorrelation

Autocorrelation refers to a case where error term is related to its preceding value. Presence autocorrelation however, does not affect the unbiasedness of the estimates but render hypothesis testing inapplicable. Autocorrelation does not affect the unbiasedness, linearity and asymptotic nature of the estimators. The only problem is that it violates the Best property of OLS which makes conclusion of hypothesis testing wrong. The study therefore carried out autocorrelation on the data and the results were as tabulated in the table below.

Table 4. 4: Breusch-Godfrey LM test

Lags(p)	chi2	Df	Prob> chi2
1	1.927	1	0.1650
H_0: No serial correlation			

As shown in the study results in Table 4.3, it was found that there was no serial correlation between variables in the model since the LM test has a p-value of 0.1650 which is more than 0.05. We therefore fail to reject the null hypothesis and conclude that there is no serial correlation in the model variables used in the study.

4.4.4 Multicollinearity test

Multicollinearity promotes biasness which arises when one or more pairs of independent variables are perfectly correlated to each other. The presence of Multicollinearity inflates the

variance of parameter estimates leading to provision of wrong estimates and signs and thus incorrect conclusions. This is meant to detect whether the error terms relates to any two different observations which are mutually independent.

The Variance Inflation Factors (VIF) was used to assess multicollinearity between model variables. A rule of thumb states that there is evidence of collinearity if the largest VIF is greater than 10. Therefore variables that have a VIF greater than 10 may not be considered in the final regression model. Table 4.4 presents VIF for covariates for the variables.

Table 4. 5: Variance Inflation Factors for Covariates

Variable	VIF	1/VIF
SMS	2.32	0.431817
TVT	1.86	0.536321
D_SMT	1.19	0.843136
Mean VIF	**2.29**	

The study findings in Table 4.5 indicate that there is no collinearity since no variable had VIF of greater than 10. Given that any variable with VIF greater than 10 should not be considered in the final regression model, the study found that all the selected variables were fit to be included in the final regression model for analysis and conclusion.

4.5 Model Specification and Regression Results

The main objective of this study was to establish the relationship between the RBA pension asset value and the market capitalization of all companies listed at the Nairobi Securities Exchange. The study assessed the relationship between RBA asset value (dependent variable) and the deterministic variables and obtained the model specification results as presented in Table 4.5.

Table 4. 6: Model Specification

Source	SS	Df	MS	Std. Error of the Estimate
Model	167.885562	4	41.9713904	0.68585
Residual	14.5819265	31	0.470384725	
Total	**182.467488**	**35**	**5.21335681**	

n = 36

R^2 = 0.9201

Adjusted R^2 = 0.9098

F(4, 31) = 89.23

Prob > F = 0.0000

Table 4. 7: Model Coefficients

NMR	Coef	Std Err	T	p>|t|
SMS	-.0002956	.0000287	-10.29	0.000
TVT	-.935207	.4425955	-2.11	0.043
D_SMT	-.0742942	.0142313	-5.22	0.000
Cons	**58.48774**	**2.217408**	**26.38**	**0.000**

The regression analysis carried out provided the study with coefficients of the relationship between the independent variables (Stock market size, first difference of share market turnover, and total value traded) and pension asset value indicated by RBA asset value. At a 95% confidence level presumed in the study, most of the variables posited p-values (sig.) of less than 0.05 ($p<0.05$), indicating that the variables were statistically significant and had the ability to be used in the study. The model thus becomes

An R^2 of 0.9201 implies that the stock market size, first difference of share market turnover, and total value traded explain 92.01% of the RBA asset value for each of the 68 firms listed at the NSE. The regression results lead to the rejection of the null hypothesis, because the F-statistic falls within the rejection region. This means that all variables in the model are significant to explaining the RBA asset value.

The study found that a unit increase in stock market size increases the RBA asset value at the NSE by 0.742942. Unit increase in first difference of share market turnover also leads to an increase in RAV by 0.935207. It was also noted that a unit increase in total value traded increases RAV by 0.0342531 at the Nairobi Securities Exchange. This is a clear indication that there is a variables used in the model have a direct effect on the dependent variable, which is a positive outcome as the aim of the study was to establish effective ways of improving the Nairobi stock market capitalization.

4.6 Correlation

Correlation analysis is useful in testing the relationship strength between given variables. The values of correlation coefficient varies between -1 and 1 with values close to one (in absolute terms) suggesting perfect correlation. On the other hand, a correlation coefficient close to zero suggests absence of correlation. In this study, Pearson correlation coefficient was used to examine the relationship between RBA asset value and explanatory variables. Correlation analysis was employed to establish the nature and the degree of the interaction between the lead variables in the research. Table 4.22 shows the results obtained

Table 4. 8:Correlation Matrix

	RBA asset value	Stock market size	Share market turnover	Total value traded
RBA asset value	1			
Stock market size	.681**	1		
Share market turnover	.567	.669**	1	
Total value traded	.506	.598**	.671**	1

Source: Author (2018)

The results of in Table 4.8 show that a significantly positive relationship exists between RBA asset value and stock market size, with a correlation coefficient of 0.681. There is also a positive relationship between RBA asset value and share market turnover and total value traded with correlation coefficient of 0.567 and 0.506 respectively.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presented summary of the findings, conclusions as well as the recommendations of the study. This study focused on establishing the relationship between the RBA pension asset value and the market capitalization of all companies listed at the Nairobi Securities Exchange.

5.1 Summary of Findings

The objective that was set was to establish the relationship between the RBA pension asset value and the market capitalization of all companies listed at the Nairobi Securities Exchange. Using explanatory and descriptive design, the study focused on data from for the period between 2013 and 2017. Correlation and regression analysis results were used to determine the relationship between RBA pension asset value and the market capitalization of companies listed at the NSE. The market capitalization variables were divided into the size variable and liquidity variables.

The size variable was stock market size while the liquidity variables were Share market turnover and total value traded variables. The results concluded that from the size variables, stock market size (SMS) has a significant positive effect on RBA asset value, which means stock market size is a good predictor of the growth of listed firms and companies. This means the ability of the stock market to increase listing contributes to better mobilization of savings that in turn influences asset portfolio of the listed firms.

The liquidity variables were share market turnover and total value traded. From the regression results the share market turnover was found to have a significant positive effect on RBA asset value. The total value traded was also found to have a significant positive relationship with RBA asset value, implying that the two variables are good predictors of RBA asset value for all companies listed at the NSE. The liquidity variables are important determinants of RBA asset value since they indicate the efficiency of the market to mobilize the savings on an economy wide basis. The share market turnover and total value traded have significant positive relation

with RBA asset value meaning the capital market is able to efficiently allocate savings from surplus units to more productive enterprises and thereby enhance economic growth, which is consistent with empirical finance growth theory.

The Nairobi Securities Exchange stock market development is greatly affected by measures such as improved regulation and liquidity. As such the measures put in place by the CMA to enhance the capital markets in Kenya have seen the Stock exchange develop to become one of the best performing bourses on the African continent and also one of the biggest in terms of size. This should translate to increase level of economic activity and hence formed the basis for the study, using the notion by Levine (1991) that nations with well developed financial markets are associated with a better per capita income level.

5.2 Conclusion

The study found a positively significant relationship between pension asset value and the NSE market capitalization. This clearly shows that stock market development in terms of size (market capitalization) has a big role to play in boosting economic activity. These results also show that future economic activity can be forecasted or predicted by looking at both performance and development of the NSE. These results are in line with the studies done by Olweny & Kimani (2011) and Osamwonyi & Kasimu (2013), which found the NSE 20 Share index to predict the economic growth in Kenya.

5.3 Recommendations

The results of this study show that stock market development is an important aspect of economic growth in Kenya and hence it is recommended that the Capital markets authority CMA continue to find way to ensure that the bourse continually integrates into the global markets and also open up more foreign investor trading. The NSE also needs to work in tandem with the CMA on this regard. Some noteworthy projects that have been put in the pipeline by the NSE are the financial derivate market proposal and also the proposal to allow for online trading.

Online trading will ensure that international investors are able to trade on the equities listed on the NSE anywhere in the world and this has potential to not only boost the daily turnover but

also the market capitalization of the bourse which will have positive long term impact on the Kenyan economy.

5.4 Limitations of the Study

Given the study set out to carry total enumeration of all the 68 firms listed at the NSE, it was combated by a myriad of challenges, key among them being non-disclosure by senior managers in some of the listed firms. This they said was due to the fear that the information may find itself to the competitors who would gain unfair advantage. Another limitation was poor accessibility to some of the firm's especially agricultural firms, due to poor road network and erratic weather which was characterized by torrential rains and flash floods.

5.5 Suggestions for Further Research

Due to the great significance of the NSE to the economic well being of Kenyans from all walks of life, the study recommends that further research should be carried out on the influence of non-salaried non-pensionable small scale traders on the market capitalization of Nairobi Securities Exchange.

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APPENDICES

APPENDIX I: LISTED COMPANIES AT THE NSE

SECTOR	COMPANY
A AGRICULTURAL	
	Eaagards Ltd
	Kapchorua Tea Company Ltd
	Kakuzi Ltd
	Limuru Tea Company Ltd
	Rea Vipingo Plantations
	Sasini Ltd
	Williamsons Tea Kenya Ltd
B AUTOMOBILES AND ACCESSORIES	
	Car and General Kenya Ltd
C BANKING	
	Barclays Bank Ltd
	Stanbics Holdings Plc
	I&M Holdings Ltd
	Diamond Trust Bank Kenya Ltd
	HF Group Ltd
	KCB Group Ltd
	National Bank of Kenya Ltd
	NIC Group Plc
	Standard Chartered Bank Ltd
	Equity Group Holdings Ltd
	The Co-operative Bank of Kenya Ltd
D COMMERCIAL AND SERVICES	
	Express Ltd
	Sameer Africa PLC

Kenya Airways Ltd

National Media Group

Standard Group Ltd

TPS East Africa (Serena) Ltd

Scangroup Ltd

Uchmi Supermarket Ltd

Longhorn Publishers Ltd

Atlas Development and Support Services

Deacons East Africa

Nairobi Business Ventures Ltd

E   **CONSTRUCTION AND ALLIED**

Athi River Mining

Bamburi Cement Ltd

Crown Paints Kenya PLC

E. A. Cables Ltd

E.A. Portland Cement Ltd

F   **ENERGY AND PETROLEUM**

KenolKobil Ltd

Total Kenya Ltd

KenGen Ltd

Kenya Power & Lighting Company Ltd

Umeme Ltd

G   **INSURANCE**

Jubilee Holdings Ltd

Sanlam Kenya PLC

Kenya Re-Insurance Corporation Ltd

Liberty Kenya Holdings

Britam Holdings Ltd

CIC Insurance Group Ltd

H INVESTMENT

Olympia Capital Holdings Ltd

Centum Investment Company Ltd

Trans-Century Ltd

Home Africa Ltd

Kurwitu Ventures

I INVESTMENT SERVICES

Nairobi Securities Exchange Ltd

J MANUFACTURING AND ALLIED

B.O.C Kenya Ltd

British American Tobacco Kenya Ltd

Carbacid Investments Ltd

East African Breweries Ltd

Mumias Sugar Company Ltd

Unga Group Company Ltd

Eveready East Africa Ltd

Kenya Orchads Ltd

Flame Tree Group Holdings Ltd

K TELECOMMUNICATION AND TECHNOLOGY

Safaricom PLC

L REAL ESTATE INVESTMENT TRUST

Stanlib Fahari I-REIT

M EXCHANGE TRADED FUND

New Gold Issuer (RP) Ltd