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Guaranteed Fund Investments and Financial Performance of Pension Funds in Kenya

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Abstract.
Different pension schemes invest in different asset classes in line with their respective investment policy statements and in compliance with government regulations on investment by pension schemes. Different schemes have posted differing financial performance based on choice of asset classes and portfolio rebalancing decisions. A detailed study was required to determine how financial performance of pension funds is affected by the investment in guaranteed funds. The objective of this study was to assess the influence of guaranteed fund investments on the financial performance of pension funds in Kenya. A descriptive research design was used with data collection form used to gather secondary data. The target population for this study was 1,258 registered schemes as per RBA as of 31 December 2021. The sample consisted of 294 registered schemes. Secondary data was obtained from the Retirement Benefits Authority (RBA) for the study variables for the six-year period between 2016- 2021. The data was analyzed using multiple linear regression and subjected to diagnostic tests to ensure that the coefficients of the estimates are consistent and was relied upon in making economic inferences. The study findings revealed that across the years there is an increasing trend of investment in guaranteed funds value across the years. The study also revealed that investment in guaranteed funds had a negative and significant impact on performance of firms, p value 0.0000 which was less than 0.05 level of significance. The results could be attributed to the fact that the funds in guaranteed schemes are mainly invested in low-risk securities, such as government securities, and thus have offered lower returns compared to segregated schemes given that guaranteed funds are offered by insurance companies where the insurance company guarantees a minimum rate of return (the maximum rate by law that can be guaranteed being 4%). Based on the study findings, the study concluded that investment in guaranteed funds indeed influences the financial performance of pension funds in Kenya. It further concluded that guaranteed funds had a negative and significant influence on pension fund performance.The study recommends that guaranteed funds should put into consideration annual inflation rates when deciding on the rate of returns to ensure beneficiaries are compensated for any loss of return suffered due to effect of inflation on the minimum guaranteed returns. Alternatively, funds in the guaranteed schemes could also be invested in the inflation protected assets.
Key Words: *Guaranteed Funds, Financial Performance*

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I. INTRODUCTION

A pension can perform two basic tasks. Firstly, it generates income for individuals based on their previous economic activity (Wang, 2016; Andronicеanu, 2017; Papik, 2017). Secondly, a pension can be seen as a type of insurance based on long-term contracts between savers and pension administrators (Hainaut, 2014; De Hann, 2016; Alda, 2017; Wiafe et al., 2017). The pension economy aggregates knowledge of microeconomics, particularly in decision-making and risk perception, based on individual preferences along with efforts to maximize usefulness. The pension economy is also based on principles of macroeconomics, and it analyses the impact of the pension system on the capital market, labour market as well as the fiscal impact of the pension system on public finances (Gavurova et al., 2017; Ząbkowicz, 2016; Bartram, 2016; Fabuš, 2017; Farias, 2017). The above characteristics indicate that the pension economics deals with issues of the allocation, recovery and redistribution of scarce resources throughout the life cycle of a saver with implications on the macroeconomic and microeconomic perception of the state guaranteed pay-as-you-go pension system and private pension funds (Thomas et al, 2014; Sun et al., 2017; Tao et al., 2017; Vassallo et al., 2017). Barr et al (2006) aver that income security in old age requires two types of instruments: a mechanism for consumption smoothing, and a means of insurance. They posit that people seek to maximize their well-being not at a single point in time, but over time

and that in a model of certainty, individuals save during their working life to finance their retirement. This is where pension funds come in.

A pension fund, also called a superannuation fund, is any plan, fund, or scheme which provides retirement income. In the recent past, there has been a remarkable growth of the pension funds across the globe (Owinyo, 2017). An occupational scheme is a retirement benefit plan devised by an employer to avail retirement benefits to the workers on retirement. This is done by paying retirement contributions. A pension plan is a retirement plan for the future benefit of employees that requires the employers to contribute money into a pool of funds (Jacobsson & Jacobsson, 2012). Investments are done from the pool of funds in the pension scheme and the earnings from the investments yield income to the worker on retirement. The importance of pension funds as a source of long-term capital in many countries is emphasized by Morales et al. (2017).

The increased role of pension funds and life-insurance companies in the economy has been bolstered by the aging populations and government policies encouraging private pension saving (Coletta and Zinni, 2013). Through their "substituting" and "complementary" roles with other financial institutions, particularly commercial and investment banks, the pension funds facilitate the capital and financial market growth (Were et al., 2017). On average, retirement assets as a proportion of GDP was 50.7% in the OECD area and 19.7% of total GDP in the sample of non-OECD jurisdictions in 2017 (OECD,2017).An article by the financial times in February 5, 2018 titled "value of global pension assets surges to $41.3tn", states that the institutional pension funds' assets across 22 major retirement markets touched$41.3 trillion at the end of 2017; a growth by13 per cent based on the prior year statistics. For the first time since 1997, the aggregate worth of pension assets increased to $4.8trillion. Assets of the pension funds in OECD countries are considered relatively large as they are 36.6 percent of GDP. As of end-2013, pension-fund assets were even in excess of 100 percent in countries such as the Netherlands, Iceland, Switzerland, Australia, and the United Kingdom. In absolute terms, pension funds in OECD countries held $10.4 trillion of assets. While large pension funds (LPFs) held about $3.9 trillion of assets, assets in public and private sector and public pension reserves (PPRFs) stood at $6.5 trillion (Leveraging Pension Funds for Financing Infrastructure Development in Africa, March 2017).

A Citigroup Report, 2016, "The Coming Pensions Crisis" indicates that the combined worth of unfunded or deficit government pension liabilities for twenty OECD countries is an astounding $78 trillion, twice the $44 trillion published national debt obligation. Companies have also not been successful in steadily meeting their pension responsibilities. Many retirement programmes are facing a deficit. A good example is in US and UK where the corporate pension programmes at a huge deficit. The total fund status in the US is at just 82%. Interestingly, while the developing nations in Africa, Asia, the Middle East, the EEC and Latin America are struggling to enhance the adequacy and penetration levels of their pension systems, the systems of the industrialized world are being threatened by longevity, low birth rates, unending fiscal deficits, public debt problems and bankruptcies. They have experienced negative or low returns on pension fund investments due to underperformance of equities and low returns on bonds, which are attributed to prevailing low interest rates as well as high unemployment rates (Amenc, Martellini, &Sender, 2009).

Population aging is expected to accelerate between the years 2010 and 2030, as more people live to age 65 (AfDB, 2011). Forecasts indicate that the elderly will constitute 4.5% of the population by 2030 from 3.2% in 2010.These statistics underpin the importance of pension and retirement structures in ensuring social well-being of senior citizens. As per Price Waterhouse Coopers (PwC) forecasts, pension funds' Assets under Management (AuM) in 12 African markets are expected to rise to around USD 1.098 Trillion by 2020, from a 2008 total of USD 293 billion. David Ashiagbor and Olivier Vidal in their paper; "Pension Funds in Botswana, Kenya, Namibia and Nigeria: New Avenues for Funding Private Equity (2016)" mention that between December 2013 and December 2014, assets under management (AuM) in Kenya increased to USD 7.7 billion or by 13.1 per cent. As per OECD Pension Markets in Focus report, 2016, private pension assets topped USD 38 trillion worldwide in 2015. Assets invested through all pension vehicles in financial markets reached USD 36.9 trillion in the 35 OECD countries in 2015 and amounted to USD 1.3 trillion in a sample of 45 non-OECD countries. Pension funds were the main investors of these assets worldwide (USD 26 trillion, 68% of the total), followed by banks and investment companies (USD 7.7 trillion, 20.2%), insurance companies (USD 4.3 trillion, 11.3%) and employers through their book reserves (USD 0.2 trillion, 0.5%).

As per RBA, the retirement benefits assets under management increased by 5.77 percent from Kshs. 1,322.59 billion in June 2020 to Kshs. 1,398.95 billion in December 2020 compared to 7.76 per cent in December 2019. The slow growth in the assets during the period was attributed to the adverse effects of the Covid-19 pandemic which adversely affected the financial markets and the wider economy in the first half of 2020. As per RBA (2016), the pension subsector in Kenya is estimated to cover 15% of the labour force and has accumulated assets of 18% of the GDP. This implies that 85% of the labour force is not pensionable. In 2017, the retirement schemes assets increased by Kshs. 167.44 billion surpassing the KSh1 trillion mark ever. This was attributed to the heightened supervision by the RBA and better compliance by the employers (RBA, 2017). By December 2017, pension schemes managed Kshs. 1.08 trillion in December 2017, 18.35 per cent more than KSh912.66 in 2016. As per the RBA Act, Pension fund managers in Kenya are required to submit Investment

Policy Statements (IPSs) to RBA. IPSs represent the broad outlines of the investment principles and strategies to be adopted in managing a pension fund portfolio. As per the RBA, IPS's must be subjected to independent reviews of every 3 years. The retirement funds' AuM in Kenya are estimated to rise to USD 1.098 Billion by 2020 as per the Africa Asset Management 2020 report.

1.1 Statement of the Problem

Private and public pension schemes are currently facing several challenges (Mačí & Valentová Hovorková, 2017; Vychytilová, 2015). Population aging leads not only to an increase in the retirement age population in proportion to the (employed) working age population, but also to an increase in the number of years spent in retirement. Sinicakova & Gavurova (2017) posits that the slow pace of economic growth reduces the scope for potential appreciation of retirement savings. Hannah (2011) posits that the growth of the schemes in Kenya is faced by multiple diverse problems. Muriithi and Wamari (2013) in their study pointed out that there were a frustrated lot of pensioners in Kenya who have not been paid or paid less than the minimum portfolio return based on their contribution and anticipated earnings of the schemes. A great quandary exists to the members of pension funds, elected trustees, fund managers and sponsors as to what can be considered an optimal asset mix and what choice of assets can maximize financial performance of pension funds.

In 2014, it was reported that Kenya Railways scheme sits on Sh30b as thousands of retirees live in misery (Dominic, 2016). The financial performance of pension funds schemes both public and private have in the past come under increased criticism (Gakure & Gakera, 2015). According to Mutuku, Kathurima, and Toroitich (2013) pension industry investments have been subject to significant volatility resulting in large variation in investment performance which contribute to negative returns periods, even to those schemes invested in guaranteed funds. Former employees and retirees of various public sector a private pension funds have lodged various claims regarding their underpaid pension benefits with the RBA and the high Court as per petition no. 57 of 2014 against the Trustees of their respective Pension Scheme due to breach of contract by their trustees and administrators (Kenya Law ,2015 & RBA, 2016). Matimbwa (2021) did a study on the factors influencing performance of pension funds: evidence from LAPF in Tanzania. The study concluded that the assets acquired by the pension scheme do not translate into higher returns.

Pension funds invest in different assets in line with their approved investment policy statements. Consequently, choice of assets of different pension funds will vary in line with their respective investment policy statements. The investments and choice of assets must also be in compliance with government regulations on retirement schemes in Kenya. Available research reveals that there are variations in the returns declared to members of pension funds every year. Beath (2014) posits that the variance in performance among defined benefit pension funds in the U.S. can mainly be understood from the differences in the asset allocation decisions by the different schemes. Babalola (2017) states that fund returns are significantly affected by the tactics employed in investing the scheme assets. Njeru et al. (2015) avers that retirement funds are impacted by the directives issued on funds' investments; notwithstanding whether the directives are flexible or non-discretionary. Obwoge (2013) asserts that investment strategy is not the significant factor that affects the performance results of the investment funds in Kenya.

In summary, studies on the influence of choice of assets on financial performance of pension firms have yielded mixed results. It is not clear which choice of assets will yield maximum returns on assets under management by the pension funds. It is for the foregoing reasons that this study is conducted.

1.2 Objective

To determine the influence of the guaranteed funds'investments on the financial performance of pension funds in Kenya

1.3 Scope of the Study

The study focused on the pension firms that have been in existence for five years between 2016 and 2021 and registered with the Retirement Benefits Authority (RBA). As at closure of business in December 2021, they were one thousand two hundred and fifty-eight (1,258) pension funds registered with RBA (RBA, 2021). The study used a sample of 294 firms selected using stratified and random selection techniques. The choice of the pension schemes regulated by RBA was informed by availability of information and their significant contribution to savings mobilization and investments in Kenya. The asset class used in this study was guaranteed funds. The financial performance measures used was time weighted return. The study used secondary data which was obtained from the annual reports submitted by different schemes to the RBA and also other research papers and market reports prepared by the regulator.

II. Literature Review

2.0 Theoretical Framework

The study is underpinned by modern portfolio theory, risk return trade off theory and liquidity preference theory since all of them support both the dependent and predictor variables as shown in the conceptual framework. The Modern Portfolio Theory outlines the selection and construction of asset portfolios whose premise is to maximize the portfolio expected return and the concurrently minimize the attendant risk. The theory has four basic steps (Brodie, 2009); security valuation which describes a universe of assets in terms of expected return and expected risk; determining how assets are to be distributed among classes of investment (asset allocation decision); reconciling risk and return in selecting the securities to be included (portfolio optimization); and dividing each stock's performance (risk) into market-related (systematic) and industry/security-related (residual) classifications(performance measurement). The Risk-Return Trade-Off Theory posits that there is an expectation of greater return by investors taking high levels of risk. As explained by Markowitz (1952) as well as Fama and French (2001), the investors choice is affected by the risk and return of a given asset and for every higher level of risk taken, the investors will expect a greater return to compensate for the high risks. The expected return of an asset rises with risk or uncertainty because investors hold a risky asset (security) if they are compensated with commensurably higher returns (Mollik & Bepari, 2015). The liquidity preference hypothesis implies that the longer the term to maturity of a security, the higher its term premium (Ornelas & Antonio, 2014). Lee (2016) avers that Investors value financial assets not only for their intrinsic value, i.e., their expected dividend or payment stream, but also for their liquidity: their ability to help agents facilitate transactions.

2.1 Empirical Review

Chumba (2018) conducted a study on the effect of selected internal factors on the performance of occupational pension schemes in Kenya. Descriptive research design was used in the study to analyse secondary data collected for 60 pension schemes registered with RBA as at 31st December 2018. The study found out that there was a negative and weak relationship between investment in guaranteed funds and fund value. Fund value and investment in guaranteed funds however, had a negative and weak impact on performance with coefficients of -2.344e-12 and -0.0077 respectively.

Bohnert (2015) investigated the impact of guarantees on the performance of pension saving schemes using insights from the existing literature. A choice of relevant articles were made and the same examined in more depth subsequently. Relevant journals were selected in the field of risk and insurance and actuarial science (journal selection). Out of the universe of the finance literature, 14 relevant journals were identified with the help of ABS and VHB rankings and journal lists. A final sample of eight articles was examined more closely and classified according to two major characteristics, namely the type of guarantee under study and the performance measurement approach. The results show that, primarily, two major types of guarantees are analyzed explicitly or implicitly by the papers with respect to their impact on product performance comprising cliquet-style guarantees and point-to-point guarantees. Overall, the results show that guarantees in pension saving products are expensive in the sense that they can reduce a contract's performance, which considerably depends on the type of guarantee. In addition to this, financial guarantees have a substantial impact on the characteristics of risk-return profiles.

Musembi (2018) conducted a study titled a review of guaranteed pension funds in Kenya. The Primary focus of the study was to establish the benefits of guaranteed pension's schemes, its limitations and establish measures that can be undertaken to enhance guaranteed pension schemes in Kenya. The study used descriptive research design. The target population of the study was 829 pension schemes that included guaranteed pension schemes listed by the Retirement Benefit Authority of Kenya. The study adopted random sampling method. Descriptive statistics was used to analyze data collected. The study established that the pensioners gained strategic value from guaranteed pension schemes through preservation of capital, transfer of investment risk, minimized administrative cost and higher return on economies of scale. However, the study also noted limitations of guaranteed funds including variations on the trustee's involvement on decision making, rate of returns and regulation by government. The study recommended that management of guaranteed pension schemes should put into consideration annual inflation rates when deciding on the rate of returns, regular review of schemes, government regulation and more trustee's involvement in running of guaranteed pension schemes.

Sahin & Elveren (2009) did a study on the cost analysis of a minimum pension guarantee for the individual pension system in Turkey. In the study, a cost analysis of a minimum benefit guarantee mechanism for the Individual Pension System in Turkey, a privately managed defined contribution scheme which was introduced in 2003 as a complement to the traditional pay-as-you-go system is done. In addition, the cost estimates and the probability of guaranteed payoffs under various economic and demographic assumptions are examined. The findings of the study indicate that as the contribution period grows longer, the cost of the minimum guarantee and the probability of payoffs decrease. The higher return of equities reduces the cost of

guarantees, as the percentage of assets invested in equities increases. However, the higher volatility of equity returns increases the probability of payoffs.

III. Methodology

The study adopted three philosophical positions. They included positivism, realism and interpretivism. The study adopted positivism and realism approaches. This study adopted deductive research approach given that sampled data was used to infer about the population which consisted of all pension schemes registered with Retirement Benefits Authority. This study used epistemology, positivism and deductive approach for research design, choice of sampling technique, data collection and data analysis given that this the research variables revolved around resources available to pension schemes and how trustees and fund managers make investment decisions over these resources. The study used descriptive survey research design. The target population for this study was 1,258 registered schemes as per RBA as of 31 December 2021. The registered pension fund providers Kenya as at close of the year on the 31st of December 2021 constituted the sampling frame for this study. Cochran (1977) formulae was used to determine the sample for the study. The study used data collection form to obtain quantitative data for analysis.

3.1 Analytical Model

The study employed multiple linear regression model to analyze the influence of guaranteed fundinvestments on the financial performance of pension funds in Kenya. The model analysis was used to test the statistical significance of the independent variable (guaranteed fund investments) on the dependent variable (performance as measured by the time weighted return). In this study, the following linear regression equation was utilized to determine the influence of guaranteed fund investments on the financial performance of pension funds in Kenya;

1 $Rit= \beta 0 + \beta 5GFIit + ej$
2 $Rit= \beta 0 + \beta 5GFIit + ej$ [Baron & Kenny, 1986].
3 $Rit = b0+b1GFIit+e6$

Where:
Rit is TWRR for each firm i and year t
TWRR is Time Weighted Rate of Return
GF is Guaranteed Funds' Investments
βi, αi, λi, ai, bi and ci (i=0,1…,6) are the associated regression coefficients.
Ej is the error term (j=1,2…,6)
Diagnostic Tests such as Breusch-Pagan Lagrange Multiplier (LM); Multicollinearity; Normality Tests; Heteroscedasticity; Durbin-Watson (Autocorrelation) Test; Stationarity Test, Panel Unit Root Test and Hausman Test were conducted to ensure that the coefficients of the estimates are consistent and relied upon in making economic inferences.

IV. Findings And Discussions

$H0_1$: Investments in Guaranteed Funds do not affect the financial performance of pension funds in Kenya.

Table 4.1: Summary Statistics for Guaranteed Funds

Year	Mean	MIN	MAX	Standard Deviation	Skewness	Kurtosis
2016	59506316	0	1994541000	160394251	7.880	76.275
2017	68662282	0	2397571000	224223288	7.599	65.458
2018	92653537	0	3907188156	302526604	8.353	82.316
2019	167269713	0	12233209935	729767460	12.098	181.370
2020	116826001	0	6656004897	451913914	9.587	110.421
2021	137245241	0	7916925571	557736105	9.615	107.067

Table 4.1 gives the summary statistics for guaranteed funds. Across the years there is an increasing trend of the guaranteed funds value across the years.

Table 4.2: Regression Results for Guaranteed Funds

Variable	Estimate	Std. Error	t-value	Pr(>|t|)
Guaranteed Funds	-1.7841	0.3192	- 5.589	0.0000
Total Sum of Squares: 33688 Residual Sum of Squares: 27688 R-Squared: 0.178105 Adj. R-Squared: 0.17723 F-statistic: 203.9151 on 1 and 941 DF, p-value: 0.0000				

As shown in Table 4.2 above, results on the effects of Guaranteed Funds on the performance shows that the coefficient had a negative and significant impact on performance of firms, p value 0.0000. The model

summary statistics for influence of guaranteed fund investments on the financial performance of pension funds revealed that 17.81 variation of financial performanceof pension funds is predicted by guaranteed fund investments. Therefore, the study rejects the null hypothesis $H0_1$ and it is observed that for each unit increase in guaranteed funds, there is 0.1781 unit decrease in the financial performance of pension funds. This infers that guaranteed fund investments negativelyinfluencefinancial performance of pension funds in Kenya.The findings agree with Chumba (2018) whose findings indicated a negative relationship between investment in guaranteed funds and fund value. The findings also agree with Bohnert (2015) who avers that guarantees in pension saving products are expensive in the sense that they can reduce a contract's performance, which considerably depends on the type of guarantee and that financial guarantees have a substantial impact on the characteristics of risk-return profiles. The findings are also in agreement with Sahin & Elveren (2009) whose findings indicated that as the contribution period grows longer, the cost of the minimum guarantee and the probability of payoffs decrease. The findings however contradict Musembi (2018) who avers that the pensioners gained strategic value from guaranteed pension schemes through preservation of capital, transfer of investment risk, minimized administrative cost and higher return on economies of scale.

V. Conclusions And Recommendations

The study found out that investment in Guaranteed Funds had a negative and non-significant influence on the financial performance of pension funds in Kenya. The current investment guidelines by RBA allows 100% investment in guaranteed funds. Whereas the return is assured, most guaranteed funds perform below the benchmark due to investment in low-risk securities such as government securities, and thus have offered lower returns compared to segregated schemes. The findings agree with Chumba (2018) whose findings indicated a negative and weak relationship between investment in guaranteed funds and fund value. The findings also agree with Bohnert (2015) who avers that guarantees in pension saving products are expensive in the sense that they can reduce a contract's performance, which considerably depends on the type of guarantee and that financial guarantees have a substantial impact on the characteristics of risk-return profiles. The findings are also in agreement with Sahin & Elveren (2009) whose findings indicated that as the contribution period grows longer, the cost of the minimum guarantee and the probability of payoffs decrease. The findings however contradict Musembi (2018) who avers that the pensioners gained strategic value from guaranteed pension schemes through preservation of capital, transfer of investment risk, minimized administrative cost and higher return on economies of scale.

The study recommends that the trustees' role in management of guaranteed funds should be enhanced to ensure members funds are protected from inflation given the minimum returns to guaranteed finds from low-risk securities they are invested in. Further, the study recommends that guaranteed funds should put into consideration annual inflation rates when deciding on the rate of returns to ensure beneficiaries are compensated for any loss of return suffered due to effect of inflation on the minimum guaranteed returns. Alternatively, funds in the guaranteed schemes could also be invested in the inflation protected assets.

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