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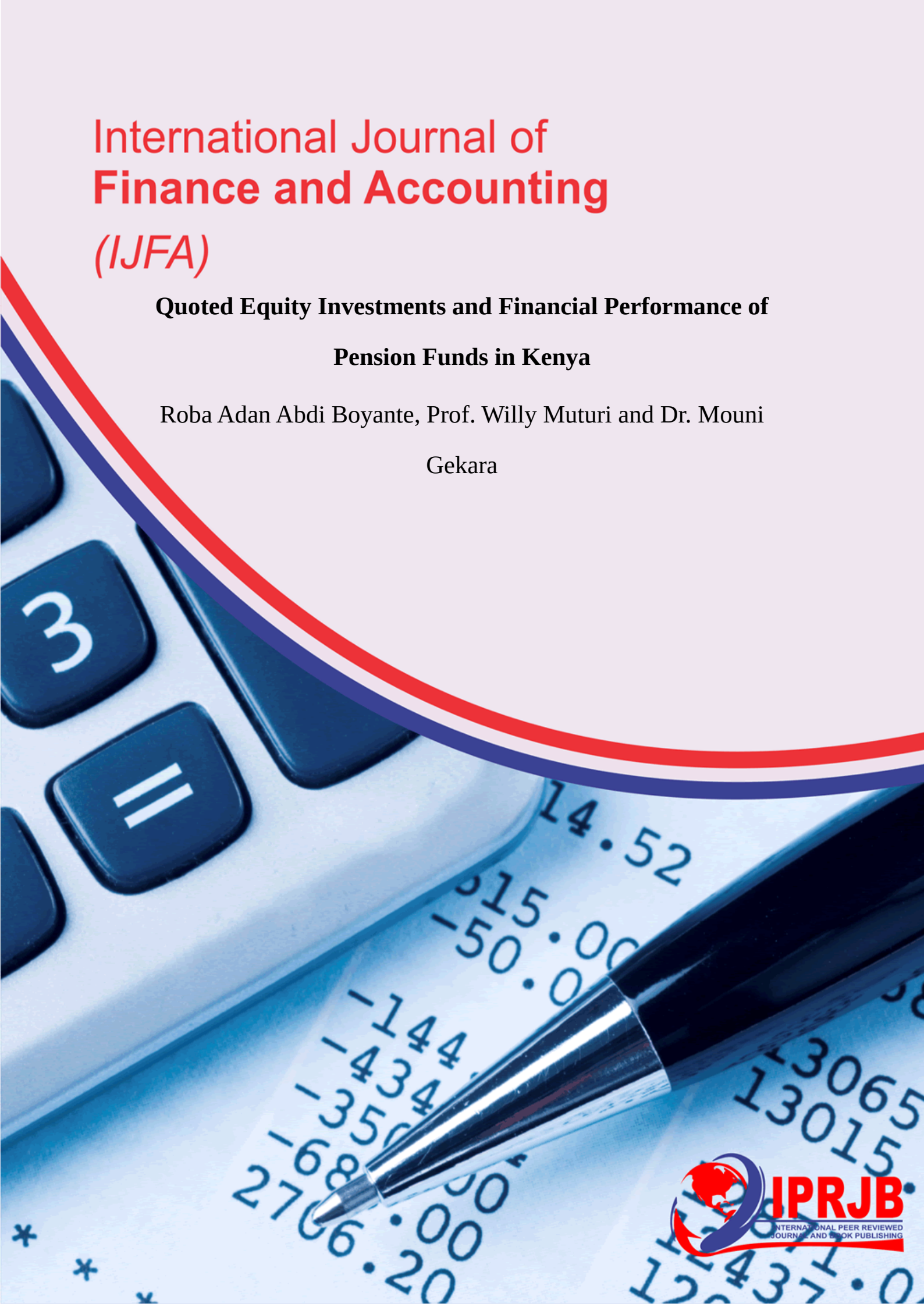

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Quoted Equity Investments and Financial Performance of Pension Funds in Kenya

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Abstract

Purpose: This study is inspired by the need to investigate the contribution of quoted equity to financial performance of pension funds in Kenya

Methodology: The study used a descriptive research design 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 subjected to diagnostic tests and analyzed using multiple linear regression method.

Findings: Regression results on the influence of quoted equity on the performance of pension funds shows that the coefficient had a negative and significant impact on performance of firms, p value 0.000 which was smaller than 0.05 level of significance. This shows that quoted equity had a negative impact on the performance of firms. In addition, 16.6% of the variation in performance of firms is explained by quoted equity. The study findings echo policy discourses suggesting that quoted equity investments may be riskier and therefore need for increased risk premium to cushion investors against increased risks

Unique Contributions to Theory, Practice and Policy: The study validates the modern portfolio theory whose premise is selection and construction of asset portfolios to maximize the portfolio expected return and the concurrently minimize the attendant risk. The study can help policy makers such as Retirement Benefits Authority (RBA) in Kenya review investment ceilings imposed on quoted equity The trustees and fund managers can use the study findings to determine proportion of quoted equity investments in the investment policy that is optimal given risk characteristic of quoted equity as an asset class.

Keywords: *Quoted Equity, Financial Performance, Investment Policy Statement*

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INTRODUCTION

A pension can perform two basic tasks. Firstly, it generates income for individuals based on their previous economic activity (Wang, 2016; Androniceanu, 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). 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). 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). 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.

Douglas & Sklar (2018) investigated what determines the UK defined benefit pension funds' investment decisions. There was an indication that funds supported by financially weaker scheme sponsors are likely to rise their bond allocations to reduce the perceived vulnerability of their sponsors. In contrast, funds buttressed by financially stronger corporates are likely to surge their equity holdings to benefit from their higher expected earnings from the equities. Okeyo (2014) posits that quoted equity investment yield long term gains, dividend and capital gain to the pension funds as an investment asset. Njeru, Dominic & Fredrick (2015) aver that equities perform better compared to all other asset classes in pension fund's portfolio and note that equities performed better in large pension fund compared to medium and small funds. Mwangi (2018) states that investment in quoted securities decreased financial performance of individual benefit retirement schemes such that a unit increase in quoted securities would lead to decrease in performance of individual benefit pension schemes by 0.0005.

This paper contributes to literature by providing new evidence on how quoted equity may influence financial performance of pension funds. We equally expanded the literature by assessing the Time Weighted Rate of Return (TWRR) as a return measure for financial performance compared to conventional return measures like Return on investment (ROI). The Time Weighted Rate of Return (TWRR) measure is often used

to compare the returns of fund managers because it eliminates the distorting effects on growth rates created by inflows and outflows of money. The paper considers all 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 subjected to diagnostic tests and analyzed using multiple linear regression method. Our findings indicate that quoted equity had a negative and significant impact on performance of firms, p value 0.000 which was smaller than 0.05 level of significance. In addition, 16.6% of the variation in performance of firms is explained by quoted equity.

Statement of the Problem

Private and public pension schemes are currently facing several challenges (Mačí & Valentová Hovorková, 2017; Vychytilová, 2015). 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. 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.

Sanga (2016) avers that pension funds with higher return on equity are highly considered to pay its members on time. Owiyo (2013) posits that equities portfolio allocation significantly affects the financial performance of the retirement scheme. Ndungu (2014) states that returns in equities significantly affects fund performance. Mwachanya (2015) states that of all the asset classes permitted by the Retirement Benefits Authority (RBA), investments in equities was relatively more important than investments in fixed deposits in determining the overall performance of the pension funds. Mwangi (2018) avers that investment in quoted securities decreased financial performance of individual benefit retirement schemes and therefore imprudent to invest in quoted securities. Wanjohi & Kariuki (2019) posit that a unit increase in equity investments will increase fund performance by 0.189. In summary, studies on the effect of quoted equity investments on the financial performance of pension funds have yielded mixed results. It is for the foregoing reason that this study is conducted.

LITERATURE REVIEW

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.

Empirical Review

Sanga (2016) conducted a study assessment of financial performance of pension funds: a survey of selected pension funds in Tanzania. The study was mainly aimed at assessing financial performance of selected pension funds (NSSF, PPF, PSPF, and LAPF) in Tanzania. Data collection method was mainly documentary review obtained from annual reports of pension funds and administration of questionnaires and interview questions which involved 25 of Male and 25 female participants. The results show that pension funds with higher return on equity are highly considered to pay its members on time.

Mwachanya (2015) conducted a study on the impact of asset allocation on financial performance of pension funds in Kenya. The study adopted a descriptive survey and utilized a sample of 245 schemes that drawn from a population of 1214 schemes in

Kenya. Secondary data on pension schemes asset allocation and returns was obtained from Retirement Benefits Authority. The study findings indicated that of all the asset classes permitted by the Retirement Benefits Authority (RBA), investments in equities was relatively more important than investments in fixed deposits in determining the overall performance of the pension funds.

Mwangi (2018) investigated the effect of asset allocation on the financial performance of individual Benefit Pension Schemes in Kenya. Descriptive research design was used on a target population of 1400 registered schemes, with 32 schemes categorized as individual retirement benefit schemes (IRBS) identified for the study. From this, a sample of 30 schemes was derived applying relevant formula. The data was analyzed using STATA. The study findings indicated that investment in quoted securities decreased financial performance of individual benefit retirement schemes. This led to the conclusion that it is impudent to invest in quoted securities.

Owinyo (2017) did a study on the determinants on the financial performance of retirement benefit schemes in Kenya. The study used quantitative design to determine the financial performance relationship with determinants of performance. The population for this study were the 1262 retirement benefit schemes registered with the Retirement Benefit Authority, RBA by close of 2013. Simple random sampling was used and Fishers formula was used to come up with sample size of 48 private pension funds. The study findings revealed equity investment does not have an influence on the financial performance of retirement schemes.

Wanjohi & Kariuki (2019) did a study on the relationship between asset allocation and fund performance of occupational pension schemes in Kenya. The research was conducted through a descriptive survey and utilized secondary data available from RBA and Fund Managers. The result of the study indicated the existence of a positive significant relationship between equities and fund performance with a coefficient of 0.189. This is an implication that a unit increase in equity will increase fund performance by 0.189. 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 findings suggested that investment in equities positively related to the performance of pension funds. A unit increase in investment in equity leads to an increase in ROA of 3.55%.

From the empirical review, we observe that quoted equity investments and financial performance of pension funds have attracted attention from researchers. Previous studies have presented contrasting interpretations on how quoted equity may influence the financial performance of pension funds in Kenya. The study differentiates itself from previous studies on several fronts. We try to explain how quoted equity may

affect the financial performance of pension funds in Kenya using the latest reports by the Retirement Benefits Authority. As an improvement over previous studies, we used Time Weighted Rate of Return to measure financial performance. Time Weighted Rate of Return (TWRR) measures the rate of return of a portfolio by eliminating the distorting effects of changes in cash flows.

METHODOLOGY

Sample Description

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. There are three categories of variables used in this paper:

(i) The independent variable which was represented by investments quoted equities.

(ii) Moderating variable which was the portfolio rebalancing measured by tactical shifts in allocations to quoted equity year on year.

(iii) The dependent variable which was the computed scores of the financial performance as measured by the Time Weighted Rate of Return.

Model Specification

The study employed multiple linear regression model to analyze the influence of quoted equity investments on the financial performance of pension funds in Kenya. The model analysis was used to test the statistical significance of the independent variable (quoted equity investments) on the dependent variable (financial performance as measured by the Time Weighted Rate of Return). In this study, the following linear regression equation was utilized to determine the moderating influence of asset allocation on the financial performance of pension funds in Kenya;

1 $Rit= \beta 0 + \beta 1 QEIit + ej$

2 $Rit= \beta 0 + \beta 1 QEIit + ej$ [Baron & Kenny, 1986].

3 $Rit = b0 + b1 QEIit + e2$

Where:

Rit is TWRR for each firm i and year t

TWRR is Time Weighted Rate of Return

QEI is Quoted Equity Investments

Ej is the error term.

Time Weighted Rate of Return (TWRR) is computed as (Ending value – Beginning Value)/Beginning value. It measures the rate of return of a portfolio by eliminating the distorting effects of changes in cash flows

Quoted Equity is computed as equity Investments divided by the total assets of the fund. It represents investments by pension funds in stocks of companies listed at the Nairobi Securities Exchange.

Portfolio Rebalancing is measured as tactical shifts in individual asset classes year on year.

RESULTS AND DISCUSSIONS

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

Table 1: Descriptive Statistics for Quoted Equity

Year	MEAN	MIN	MAX	STD.DEV	SKEWNESS	KURTOSIS
2016	232350383	0	57037979000	2834568702	19.182	379.676
2017	173476121	0	49901026000	2389722236	20.082	413.206
2018	206285962	0	53440070533	2530242051	20.100	417.936
2019	290044567	0	65838312252	3242814011	19.594	392.692
2020	192781307	0	52750355185	2389430087	21.240	463.441
2021	193360846	0	52543439582	2409622514	21.115	455.459

Table 1 gives the summary statistics for the Quoted Equity across years. The descriptive statistics of the firms across the six-year period indicate that the minimum value was 0. The year that recorded the highest value was 2019 and the year that recorded the lowest average was 2017. A sharp decline is observed between the year 2019 to 2020. The skewness values across the years is positive and the kurtosis is high more than 3 indicating that it is heavy tailed. 2017 recorded the lowest value which is partly attributable to political risk after the Supreme Court annulled August 2017 presidential election results and ordered that a new vote be held in October 2017. Disputes over the management of this re-run election have raised fears that the authorities could miss the court-imposed deadline, which would prompt a constitutional crisis. The sharp decline between 2019 to 2020 could be attributed to the onset of COVID-19 pandemic. The markets went up significantly in 2019 and the momentum continued into 2020. Thereafter, all sectors sharply declined in the early days of the pandemic.

Table 2: Regression Results for Quoted Equity as Independent Variable

Variable	Estimate	Std. Error	t-value	Pr(>|t|)
Quoted Equity	-2.234	0.324238	-6.890	0.000
Total Sum of Squares: 33688				
Residual Sum of Squares: 28090				
R-Squared: 0.16616				
Adj. R-Squared: 0.04917				
F-statistic: 187.511 on 1 and 941 DF, p-value=0.0000				

As shown in Table 2, results on the effects of quoted equity on the performance shows that the coefficient had a negative and significant impact on performance of firms, p value 0.000 which was smaller than 0.05 level of significance. This shows that quoted equity had a negative impact on the performance of firms. In addition, 16.6% of the variation in performance of firms is explained by quoted equity. Therefore, the study rejects the null hypothesis $H0_1$ and it is observed that for each unit increase quoted equity investments, there is 0.16616 unit decrease in the financial performance of pension funds. This infers that quoted equity investments negatively influences financial performance of pension funds in Kenya. The finding is consistent with Owiyo (2013) who concluded that equities portfolio allocation significantly affects the financial performance of the retirement scheme. The findings also agree with Ndungu (2014) who found out that returns in equities, significantly affected the pension fund performance. Additionally, the findings also agreed with Mwachanya (2015) who concluded that of all the asset classes permitted by the Retirement Benefits Authority (RBA), investments in equities was relatively more important than investments in fixed deposits in determining the overall performance of the pension funds. However, the findings contradict Owinyo (2017) who posits that equity investment does not have an influence on the financial performance of retirement schemes.

Moderating Effect of the Portfolio Rebalancing on the Relationship the Investment Spectrum and Financial Performance of Pension Funds in Kenya.

Table 3: Model with Moderator

Variable	Estimate	Std. Error	t-value	Pr(>|t|)
Quoted Equity	-0.337703	0.1482	-2.2787	0.0114
Quoted Equity: Portfolio	-2.569664	1.0439	-2.4616	0.0070
Total Sum of Squares: 33688				
Residual Sum of Squares: 5003.9				
R-Squared: 0.85146				
Adj. R-Squared: 0.7217				
F-statistic: 502.956 on 10 and 932 DF, p-value=0.0000				

Table 3 gives the moderating effect of portfolio rebalancing on the relationship between quoted equity investments and financial performance of pension funds in Kenya. As shown, quoted equity on its own has a negative and significant influence on the financial performance of pension funds in Kenya (p value 0.0114 < 0.05). On the effect of the moderating variable on the relationship between quoted equity and financial performance of pension funds in Kenya, there is a negative moderating influence of portfolio on the relationship between quoted equity and financial performance of pension funds in Kenya, p value < 0.05.

Table 4: Model without Moderator

Variable	Estimate	Std. Error	t-value	Pr(>|t|)
Quoted Equity	4.1493	0.602693	6.8846	0.0040
Total Sum of Squares: 33688				
Residual Sum of Squares: 18199				
R-Squared: 0.45977				
Adj. R-Squared: 0.31736				
F-statistic: 159.489 on 5 and 937 DF, p-value=0.0000				

Table 4 shows the regression results without the moderating variable. Quoted equity had a positive and a significant influence on the financial performance of pension funds in Kenya, p value 0.0040 < 0.05.

CONCLUSIONS AND POLICY RELEVANCE

The negative or low performance of pension funds and increasing deficit and its likely effects on pensioners or retirees motivated this study. The rational is that, if we can optimally manage members funds and actively manage the assets under management; then we can reduce the deficits due to low or negative pension fund performance. Our finding echoes policy debates by suggesting that quoted equity may negatively influence pension fund performance and consequently considered riskier. This provides rationale for equity risk premium.

Secondly, our study findings observed that portfolio rebalancing has significant moderating influence on the relationship between quoted equity and financial performance of pension funds. It is therefore incumbent upon the trustees and fud mangers to regularly review their portfolio holdings with an objective of optimizing returns while minimizing risks.

Lastly, the current investment guidelines by RBA allows up to 70% investment in preference shares and ordinary shares of companies listed in a securities exchange in the East African Community and collective investment schemes incorporated in Kenya and approved by the Capital Markets Authority. Given the study findings, we recommend that the proportion of quoted equity in the fund's assets under management and approved quoted equity levels in the approved investment policy statement may need to be reviewed to ensure pension funds invest in alternative asset classes available that can positively and significantly influence pension funds' performance. Further, due diligence must be undertaken on the nature of the industry and the company's financial performance and prospects before investing in its stocks.

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