NEXUS BETWEEN PENSION FUNDS AND STOCK MARKET SUSTAINABILITY DEVELOPMENT IN NIGERIA

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ABSTRACT

Objective: It has long been recognized that pension systems across the emerging markets including Nigeria have undergone dramatic reforms over the last twenty-eight years. This process has mainly been fueled by the demographic problem faced by modern financial systems. Hence, this study examines the short-run and long-run dynamic of pension funds on capital market development in Nigeria using ex-post facto research design.

Method: Data were collected from the Central Bank of Nigeria (CBN) statistical bulletin and annual report of the pension fund commission from 1995 to 2022. Data collected were analyzed using descriptive statistics, unit root test and auto regressive lag model (ARDL) and Toda Yamamoto multivariate granger causality approach. The unit root test reveal that all the variables used in the study are non-stationary at first difference except inflation which is stationary at level.

Results: The findings from the ARDL analysis reveal a short-run dynamic impact between pension funds and capital market development due to the coefficient of error correction mechanism (speed of adjustment) which is negative and significant at 5% level of significant. The result suggests that over 22% of the short run disequilibrium is corrected in the long run equilibrium. However, the results from the long-run dynamic impact reveal a positively significant impact between the proxies of pension funds (pension contributory fund, pension investment) and control variable - inflation to be positively significant with capital market development proxied by market capitalization as a ratio to GDP at 5% level of significant. The results of the Toda Yamamoto granger causality results suggest a bidirectional relationship between pension funds (pension contributory fund, pension investment) and market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria at aggregate level. This suggest that the relationship between pension funds (pension contributory fund, pension investment) and market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria was two-ways.

Conclusion: The study concludes that pension fund administrators in Nigeria should understand that the rate of inflation is dynamic in Nigeria and the value of money is being lost as money is not worth it values in the next five years.

Keywords: pension fund, capital market development, ARDL, Nigeria.

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RELAÇÃO ENTRE FUNDO DE PENSÕES E DESENVOLVIMENTO DA SUSTENTABILIDADE DO MERCADO DE AÇÕES NA NIGÉRIA

RESUMO

Objetivo: Há muito que se reconhece que os sistemas de pensões nos mercados emergentes, incluindo a Nigéria, foram objeto de reformas drásticas nos últimos vinte e oito anos. Este processo foi principalmente impulsionado pelo problema demográfico enfrentado pelos sistemas financeiros modernos. Por conseguinte, este estudo examina a dinâmica de curto e longo prazo dos fundos de pensões no desenvolvimento do mercado de capitais na Nigéria, utilizando um projeto de pesquisa ex-post fato.

Método: Os dados foram coletados no Boletim Estatístico do Banco Central da Nigéria (CBN) e no relatório anual da comissão do fundo de pensões de 1995 a 2022. Os dados coletados foram analisados usando estatísticas descritivas, teste de raiz unitário e modelo de latência regressiva automática (ARDL) e abordagem de causalidade grandiosa multivariada Toda Yamamoto. O teste de raiz unitária revela que todas as variáveis usadas no estudo são não estacionárias na primeira diferença, exceto a inflação que é estacionária no nível.

Resultados: As conclusões da análise da ARDL revelam um impacto dinâmico a curto prazo entre os fundos de pensões e a evolução do mercado de capitais devido ao mecanismo de correção do coeficiente de erro (velocidade de ajustamento), que é negativo e significativo num nível de 5 % significativo. O resultado sugere que mais de 22% do desequilíbrio de curto prazo é corrigido no equilíbrio de longo prazo. No entanto, os resultados do impacto dinâmico a longo prazo revelam um impacto positivo significativo entre os valores aproximados dos fundos de pensões (fundo contributivo para as pensões, investimento em pensões) e a variável de controle - a inflação é positivamente significativa, sendo a evolução do mercado de capitais aproximada pela capitalização bolsista como um rácio em relação ao PIB num nível de 5 % de significativo. Os resultados da causalidade do granger Toda Yamamoto sugerem uma relação bidirecional entre os fundos de pensão (fundo contributivo de pensão, investimento de pensão) e a capitalização de mercado como uma proporção do Produto Interno Bruto (PIB) na Nigéria em nível agregado. Isto sugere que a relação entre os fundos de pensão (fundo contributivo de pensão, investimento de pensão) e a capitalização de mercado como um rácio do Produto Interno Bruto (PIB) na Nigéria era de duas maneiras.

Conclusão: O estudo conclui que os administradores de fundos de pensão na Nigéria devem entender que a taxa de inflação é dinâmica na Nigéria e o valor do dinheiro está sendo perdido, já que o dinheiro não vale seus valores nos próximos cinco anos.

Palavras-chave: fundo de pensão, desenvolvimento do mercado de capitais, ARDL, Nigéria.

1 INTRODUÇÃO

In the literature, pension funds have been recognized to play a contributory role in the development of capital markets. The importance of institutional investors and pension funds is heightened in the context of developing financial markets in a market-based economy, with studies showing a country’s ability to make large gains from
pension funds is dependent on financial market structure. However, some notable authors in this field of study have expressed optimism that the pension scheme has the potentials of mobilizing savings for economic growth. The pension scheme is expected to mobilize savings for capital market development and economic growth. Surprisingly, the various reforms and flexibilities resulted in an 8% rise of annual rate in the pension industry in Africa in which Nigeria in particular, have witnessed a 20% increase in the previous year’s funds (PwC (PricewaterhouseCoopers, 2015). In 2017, approximately USD 41.355 trillion of assets were managed by pension funds (Amadou, 2017; Aminu, 2022; Alehile et al., 2022). As more workers contribute to pensions, assets grow and funds may be invested in areas that facilitate development and enable contributors to earn their benefits.

According to the OECD (2021) Global Pension Study, the assets held by pension funds exceeded USD 56 trillion globally, an increase of 11% from the 2019 statistics of which Africa holds about $700 billion. Once more, it was observed that assets from the defined contribution and personal plans grew faster than those from the defined benefit plans. Two primary asset types—bonds and equities—provided an average rate of return on real investment of 3.5% (OECD, 2021).

However, after several years of the introduction of pension scheme in Nigeria, there is still doubt as to the ability of the pension fund scheme to solve the problem of scarcity of long-term funds for long-term investment. Pension fund portfolios in some cases have remained highly exposed to shorter-term assets, such as bank deposits and shorter-term government bonds. This, in turn, has led to relatively low investment returns and underperformance of the capital market, thereby potentially affecting income adequacy in retirement and the general well-being of senior citizens. Pension fund investment and capital market development are dynamic phenomena rather than static variables. The literatures such as Babalos et al., 2020 and Amujiri, 2021 have established discrepancies on the challenges posted by pension contributory fund, pension fund investments on capital market development proxied market capitalization as a ratio of gross domestic product. Several works have been done on the subject with mixed results. Studies reveal that the argument in the literature on the impact of pension fund on the development of the capital market has not been adequately resolved. The inconclusive nature of these theoretical and empirical studies provides the basis for a further empirical investigation on the role of pension fund on capital market in economic growth. Hence, this study was needed.
The scope of this study is limited to the impact of pension funds on capital development in Nigeria covering a period of 28 years from 1995-2022. This period is being chosen so as to cover the past and current issues on Pension Fund Reform Act of 2004 and Pension Amendment Act of 2014 in Nigeria. Moreover, the period was chosen because it was the period when most of the reforms of Pension Fund Administration in Nigeria took serious effect. This study provides a fulcrum for policy makers in the pension and financial markets to seek new ways to solve this conundrum. Also, the government and players in the capital market will benefit from this study. The study is also expected to add knowledge into the growing body of work in capital markets and pension funds. Finally, other researchers and investment institutions willing to expound on the effects of pension funds’ investments on the financial performance of the Nigerian Exchange Group (NGX) and will also find this study resourceful. First, the study expects that a healthy pension fund market tends to suppress the risky behavior of participants in the capital market, and thereby helps reinforce a desirable relationship between pension funds and the capital market.

2 LITERATURE REVIEW

Scholtens’ theory of financial intermediation (2003) tends to concentrate on receiving deposits and issuing loans as financial intermediaries, a subset of capital and money markets operations. A wider canvas is required to understand the changing role of pension funds as financial intermediaries and their impact on financial markets. Financial intermediation theory, which focuses primarily on banks, considers actions such as deposit taking and loan issuance as defining the function of financial intermediary (Chovancova et al., 2019), while expanding the concept of economic intermediation to the operations of pension funds. Consequently, pension funds play a financial intermediary function by investing cash accumulations in a multitude of financial resources (e.g. corporate equity, government bonds, actual estate, corporate debt, overseas tools, and deposits) (Dabo, 2015). An appropriate framework for evaluating the function of pension funds as intermediaries is through account of the financial system's general tasks. This offers a foundation for assessing the extent to which pension funds act as agents of economic change by more effectively fulfilling the tasks of economic structures than options (such as banks and individual investors).
Past studies and researches that have been done in the area of the impact of pension funds on capital market development shall be exhaustively highlighted. This is aim at unravelling up-to-date information about the subject matter. There is no agreement whatsoever on the specific mechanisms underlying these relationships or on their direction of causality. Hence, the literature remains with mix reactions and inconsistencies on determining the true relationship among the various variables.

Stock market capitalization and pension fund assets’ perspectives of financial deepening appeared neglected in current researches. Hence, Ahmed et al. (2022) examined these seemingly neglected areas. Secondary data were collected from Central Bank of Nigeria Statistical Bulletin, 2017 and the Global Financial Development Bulletin, 2017 from 1981 to 2016. Ex-post facto research design was employed. Data were analyzed with Ordinary Least Square statistical technique. The results showed that stock-market capitalization to GDP had positive but no significant effect while pension fund assets to GDP had positive significant effect on economic growth in Nigeria. Based on the results of the study, it was concluded that pension fund assets to GDP had positive significant effect while stock-market capitalization to GDP had positive but no significant effect on economic growth in Nigeria. It was recommended, among others, that the Pension commission alongside other operators in the pension industry should work towards involving the informal sector in the Contributory Pension Scheme as this will reduce their exclusion from the financial system thereby extending the reach of the financial sector to the wider economy.

Akowe, Ocheni and Daniel (2015) in their study evaluated the contribution of portfolios of new contributory pension fund on Nigerian gross domestic product (GDP) and the relationships between the pension portfolios with the Nigerian GDP. The population of the study entails nine (9) years while six (6) years were sampled for study (2007-2012). The parameters like Domestic Ordinary Shares, Federal Government of Nigeria Securities, Local Money Market Securities and Real Estate Property of pension fund for the period under review were used. Statistical tool like Scientific Packages for Social Scientists (SPSS) version 18.0 were used to regress the data and the hypotheses were tested using f-test and Pearson product moment correlation test. Result shows that, Domestic Ordinary Shares, Federal Government of Nigeria Securities and Real Estate Property of pension fund all have positive contributions to Nigerian gross domestic product for the period under review while Local Money Market Securities have negative
contribution to Nigerian GDP. The study recommended that there should be more investment of pension fund in Domestic Ordinary Shares, Federal Government of Nigeria securities and Real estate property to boost Gross Domestic Product (GDP) of Nigeria. However, there should be a reduce investment of pension fund in Local Money Market Securities because of its negative impact on the Nigerian gross domestic product as revealed by this study.

Using time series secondary data retrieved from the National Pension Commission and the Nigerian Exchange Group (NGX) for the periods 2005 Q1 through 2019 Q4, Bakare (2019) explored the effect of contributory pension funds on capital market performance in Nigeria. The study's particular goals were to look into the effect of pension funds investment in government securities, corporate securities, and real estate property in Nigeria on capital market performance. Market capitalization is a proxy for capital market performance. It used an ex post facto research approach, and the data were subjected to a stationarity test, which revealed that they were stationary at first difference. The study uses the Johansen co-integration test to conduct a co-integration test, the results of the co-integration test demonstrated that the variables have a long-term relationship. Pension funds' investments in government and corporate securities have a significant positive effect on capital market performance in Nigeria in both the long and short run, whereas pension funds' investments in real estate property have no significant effect on capital market performance in Nigeria in the long or short run. The study suggests that pension fund investments have had a favorable effect on the expansion of the Nigerian stock market. According to the study, administrators of pension funds should allocate more assets and investments in government securities because they are a less hazardous and safer investment option. In order to expand Nigeria's capital market expansion, pension fund administrators should invest more funds in relatively high corporate debt securities that give high yields, such as banks. Finally, Nigerian Pension Fund Administrators should gradually lower their investment exposure to real estate property, as our study has indicated that investing in real estate property has not benefited Nigeria's capital market performance.

Oluitan and Folade (2020) on their part examined Pension Fund Assets (PFA) and Infrastructural Financing (INFF) in Nigeria. The Generalized Methods of Moment was used to analyze secondary data of Pension Fund Administrators. The findings show that PFA has a positive and significant effect on INFF. GDP and PFA ratio was found
significant in INFF positively and Capital expenditure and PFA ratio had a positive and significant effect on INFF. Inflation however has a negative and significant effect on INFF. The paper recommends PFA as an alternative source of INFF provided measures are taken to prevent its abuse.

Iwegbu (2020) in a study examined the indirect effect of pension fund on economic growth in Nigeria through the financial system. Using Autoregressive Distributive Lag (ARDL) model, the study found out that pension fund contribution is effective in stimulating growth through investment in portfolios that yield short term returns; this implies that pension fund contribution cannot on its own without a credible financial system impact on economic growth. The policy implication of this study is for Pension Fund Administrators (PFAs) to invest in portfolios with short-term returns; thus, a large chunk of funds invested in federal government securities should be unbundled to other portfolios that yield short-term returns.

Folami, Mamadelo and Tiamiyu (2020) examined the dynamic and causal relationship between pension fund investment and capital market development in Nigeria. The paper employed the Autoregressive distributed lag model to estimate the co-integration relationship between the variables. The results indicate that in the long-run, the impact of local ordinary share (LOC) on total market capitalization was positive and statistically significant while Pension fund investment asset (PFI) and monetary policy rate (MPR) were positive and statistically insignificant. Also, when the total value of shares traded was used as a measure of capital market development, the results indicate that increase in lag one and lag three of the total value of stock traded and lag one of pension fund investment results in an increase in the total value of stock traded. In terms of which variable granger causes the other, the results indicate that none of the variable Granger causes each other meaning that both variables (Pension fund investment and Market Capitalization) are determined independently. That is, neither pension fund investment causes total market capitalization or Total Market Capitalization granger cause Pension fund investment. Based on the findings of the study, therefore, concludes that over the years the investment of pension funds into the capital market has assisted to engender the development of the Nigeria Capital market. The study recommends that more pension fund investment should be channeled to the capital market to develop and strengthen the Nigerian capital market and make the market more competitive.
Kolodziej et al (2021) in their study established the impact of pension assets on economic growth using the example of post-socialist countries (Hungary, the Slovak Republic, Slovenia, Poland, and the Czech Republic). The use of methods of correlation and regression analysis allows determining the type of dependence (linear, exponential, gradual, and logarithmic) of countries’ economic growth indicators on pension assets and patterns for their investment (deposits, securities of public and private sectors). The obtained economic growth indicators of the studied post-socialist countries show a strong logarithmic dependence on the size of pension assets: Gross fixed capital formation depends on changes in the pension asset amount by 76.44% and GDP by 71.01%. The economic growth of the studied post-socialist countries is most significantly influenced by pension assets invested in deposits. Investing pension savings in public and private sector securities is less effective. The proved provisions determine the expediency of moving from the predominant pay-as-you-earn pension scheme to the predominant fully funded pension system for Ukraine. Such a transformation requires a stable and efficient construction of the country’s banking system, a developed policy for reforming the pension system while considering the criteria of the internal demographic, social, and financial situation.

Datom and Mancha (2021) in their study offered evidence on the impact of contributory pension fund investment by private and public sectors on economic growth in Nigeria spanning from 2004 to 2019 using Ordinary Least Square. It is undauntedly obvious from the estimation results that increase in pension fund contribution either from the private or public sector in Nigeria positively and significantly influenced economic growth as the scheme encouraged the release of un-invested funds by channeling excess liquidity into the capital and money markets. Also, the study unraveled that sectoral pension fund contribution has formed huge investment of funds in the capital and money markets than its aggregate thereby creating employment opportunities as well as improving investment climate. The estimation results further revealed that both the private and the public sector whether aggregated or disaggregated, market capitalization and investment in money and capital markets can have an appreciable effect on sustained economic growth in Nigeria. Consequently, this study recommended that Gross Domestic Product statistics reported from Nigeria can be improved upon if the estimates of the unreported (hidden) activities are captured. Furthermore, the study recommends that there
is need for existing national statistical agencies to increase their capacities for data collection and documentation processes in order to deepen further analysis.

The study of Sanusi and Kapingura (2021) explored the impact of accumulated pension funds on the investment level and economic growth in South Africa using Bayesian Linear Regression (BLR) model. Time series data on Gross Domestic Product (GDP), total official pension funds and gross fixed capital formation (as a proxy for total investment level) from 1990(Q1) to 2019 (Q3) were employed. The study makes use of MCMC (Markov Chain Monte Carlo) algorithm to obtain regression model parameters. The empirical findings from Bayesian Linear Regression estimation suggest that the mean effects of pension funds on economic growth and investment level in South Africa are approximately zero. The empirical conclusion is further corroborated by FMOLS results, which show that accumulated pension funds have no significant impact on the overall investment level and economic growth in South African economy. The study recommends that policymakers and the pension funds regulators have to come up with workable means by which pension funds can be invested to significantly benefit the economy; at the same time, ensuring the safety of the invested funds so as not to jeopardize the interest of pension funds owners and understanding of the informal sector.

The study of Nnaji (2021) examined the effect of pension industry’s delay on pensioners in Nigeria. The study used Ex-post facto research design. Its specific objectives were to examine the effect of Pension fund investment in Federal government bonds, Pension fund investment in State government bonds and Pension fund investment in Private sector bonds on financial intermediation in Nigeria. Ordinary Least Square regression was used as analysis technique. It was found that Pension fund investment in Federal government bonds has positive and no significant effect on financial intermediation in Nigeria; Pension fund investment in State government bonds has negative and no significant effect on financial intermediation in Nigeria; and Pension fund investment in Private sector bonds has positive and no significant effect on financial intermediation in Nigeria. This implies that a unit change in pension fund investment do not lead to significant increase in financial intermediation. Based on the findings of the study it was concluded that pension industry investments have insignificant effect on depth and liquidity of financial intermediation in Nigeria. It was recommended that the pension industry should spread its investments beyond financial instruments in order to
widen its investments portfolio and aid a larger sphere of the economy with its intermediation.

Akpeghughu and Igoni (2021) assessed the impact of pension contributory funds on economic development in Nigeria with the application of time series data between 2004 and 2019. The study adopted the Error Correction Model (ECM) to analyze the long-run co-integration, Parsimonious short-run response and the Granger Causality. The co-integration technique results indicated a long run relationship between pension contributory funds and economic development (per capita income). The study further revealed in the ECM short run results that both the Private and public sector pension growth rates influenced the growth of per capita income in Nigeria at the minimal standard. The Granger causality results showed that pension contributory funds flow from the public sector and promoted the growth rate of the private sector within the Nigerian economy. The study recommended the Pension Administrators to constantly educate the employees both in the private and public sectors about the scheme benefit, and should also imbibe the culture of investing the inflows of funds contributed by the employees for short-term returns. Finally, employees should further be given financial and investment education by the employers to prepare their minds for an alternative livelihood when retired from active service.

Madukwe and Okeke (2022) investigated the effect of inflation on pension fund investment in federal government securities in Nigeria utilizing time series data spanning from 2007 to 2019. Ex-post facto was the research design used in the study. Secondary data for the period were collected from the National Pension Commission Annual Reports and Central Bank of Nigeria Statistical Bulletin. Data collected were analyzed and tested for unit root, using the Augmented Dickey-Fuller test. While Ordinary Least Square (OLS) estimation technique was used to test the hypothesis. The result revealed that inflation rate did not significantly impact on pension fund investment in federal Government Securities in Nigeria. This result implies that pension funds invested in federal government Securities yield adequate return on investment capable of withstanding the adverse effect of rising rate of inflation in Nigeria. This could be that, the volumes of monthly pension contributions channeled into Federal Government Securities actually cover the effect of inflation on pension fund investment in federal government securities in Nigeria. Based on the findings of the study, it was concluded that inflation did not significantly impact on pension fund investment in federal
government securities in Nigeria. In line with the findings of the study, it was
time to advocate that policy
makers target reduction in the monetary policy rate and also stabilize the value of Naira
in order to enhance actual value of pension benefits in the long run. Also, the National
Pension Commission should differentiate the monthly contributions that come into the
pension fund investment in the annual report so as to determine the actual return on
investment of various securities where pension fund is invested.

Oyedokun, Akingunola and Somoye (2022) examined the effect of pension
investment on financial depth in Nigeria. The study adopted an ex-post facto research
design. The population of the study is 14 years of Nigeria economy from the year 2007-
2020. Time-series data were sourced for the study, which are entirely secondary data from
the Pension Commission and the Central Bank of Nigeria (CBN) statistical bulletin, and
the World development indicator (WDI) of the World Bank Database. Autoregressive
Distributed Delay Limitation (ARDL) bounds testing approach was adopted to examine
the long- and short-term relationships between the series, using Eview 12 version. The
result of the hypothesis shows that there is evidence that pension investment in equities
has positive relationship with financial deepening. This implies that increases in pension
investment in equities will lead to increase in financial depth in Nigeria. In sharp contrast,
pension investments in FGN securities, local money market securities and mutual funds
have a negative relation with financial depth. This implies that increases in pension
investments in FGN securities, local money market securities and mutual funds will lead
to decrease in financial depth in Nigeria. The result also shows that in the short run that
pension investments in equities and mutual funds have positive but insignificant
relationship with financial depth, while FGN securities and local money market securities
have negative and insignificant relationship with financial depth. The study then
recommended that, to accelerate financial sector depth, it is necessary for the financial
sector regulators and policymakers to strengthen the depth of banks asset, other financial
institutions and financial markets through policies and reforms to attract more pension
investment that will contribute to the development of Nigeria’s financial stance.

Abdullahi, Obadare and Anifowose (2022) embarked upon a study to provide
empirical evidence on the effect of contributory pension scheme on economic growth in
Nigeria. Data for the study were secondary sourced from various records of PENCOM
Annual Reports and CBN Bulletin (database). The data were computed with the use of
Statistical Package for Social Sciences (SPSS). It was concluded that pension fund assets and pension contribution/savings mobilized over the years have positive and insignificant impact on economic growth. The implication of this finding is that the authorities concerned have not been able to use the pension fund asset and savings mobilized to boost economic growth in Nigeria. It was therefore recommended that, there should be more emphasis on the management of pension assets in the capital market as well as government bond, real estate and investment trust to boost Gross Domestic Product (GDP) of the country (Nigeria). Secondly, there should be prompt reconciliation between Pension Fund Administrators (PFAs) and Pension Fund Custodians. This will bring transparency and accountability to the system. Finally, PENCOM should ensure effective monitoring, supervision and enforcement of the provision of the PRA 2004, which are the inevitable ingredients in the Contributory Pension Scheme towards Gross Domestic Product (GDP).

Morina and Grima (2022) analyzed the impact of pension asset investments on the economic growth of selected non-OECD countries, taking into account the controlling effect of gross fixed capital formation, domestic credit to the private sector, inflation, public debt and population. To conduct the econometric analysis in this study, the authors relied on secondary data published in the annual reports of the OECD, the World Bank and the IMF. Based on the econometric results of this study, the authors conclude that the investment of pension fund assets has positively impacted the economic growth of selected non-OECD countries (2002–2018). This study is of scientific importance because it provides detailed empirical evidence regarding the investment of pension funds in international financial markets and the effects of these investments on the economic growth of non-OECD countries. Moreover, the authors of this study through this scientific paper provide new scientific evidence to governments and policymakers in these countries on how to design appropriate strategic investment policies so that pension funds invest their pension assets at a safe rate of return from investments to ensure economic growth and efficiency in the capital markets. Given that most non-OECD countries are emerging and transition economies, the importance of this study lies in the fact that the authors, through empirical findings, highlight the importance of pension fund investments in global financial markets and the effects of these investments on the economic growth of these countries.
Bakare (2022), using time series secondary data retrieved from the National Pension Commission and the Nigerian Exchange Group for the periods 2005 Q1 through 2019 Q4, explored the effect of contributory pension funds on capital market performance in Nigeria. The study's particular goals were to look into the effect of pension funds investment in government securities, corporate securities, and real estate property in Nigeria on capital market performance. It used an ex post facto research approach, and the data were subjected to a stationarity test, which revealed that they were stationary at first difference. The study uses the Johansen co-integration test to conduct a co-integration test, the results of the co-integration test demonstrated that the variables have a long-term relationship. Pension funds' investments in government and corporate securities have a significant positive effect on capital market performance in Nigeria in both the long and short run, whereas pension funds' investments in real estate property have no significant effect on capital market performance in Nigeria in the long or short run. The study suggests that pension fund investments have had a favorable effect on the expansion of the Nigerian stock market. According to the study, administrators of pension funds should allocate more assets and investments in government securities because they are a less hazardous and safer investment option.

Udoka, Bassey, John and Orok (2022) examined contributory pension fund assets on the economic performance of Nigeria. The study adopted the exploratory research design and employed the ordinary least square (OLS) estimation technique within the modeling framework of autoregressive distributive lag (ARDL) analytical methods in testing and in the estimation of the relevant equations. The findings from the analyses revealed that the relationship between pension fund assets and real capital market capitalization in Nigeria was found to be positive and significant in the long run as well as in the short run. In conclusion, contributory pension fund asset has an effective and efficient capacity in boosting economic performance (capital market capitalization) in Nigeria. Based on the findings from this study, there should be more investment of pension funds in ordinary shares, government securities, money market instruments, and other forms of assets in order to boost credit to the core private sector in Nigeria.

Sani, Sani and Hassan (2022) noted that in recent years, the performance of pension contribution funds administrators in Nigeria has been rated as unsatisfactory, negatively impacting the ambitions of retirees. The research was conducted in Nigeria, and annual data sets on pension contributions and other macroeconomic factors were
acquired for the years 2004 through 2020. The long and short run dynamics of some macroeconomic variables and pension contribution were analyzed using the Auto-regressive Distributed Lag method. The analysis demonstrates a positive and significant association between exchange rate and pension contributions in both the long and short run. Similarly, inflation rate demonstrates a negative and statistically significant link with pension contributions in both the long and short run. The results also show that the Error Correction Model (ECM) coefficient has the correct sign: negative, less than one, and statistically significant which means that, the system will correct itself at a rate of 38 percent from the short to the long run. The study concludes that there should be concerted efforts by the government to curve the excessive inflation rate down, deposit rate should be monitored and always relate it to pensioners fund in order to maintain its financial sustainability.

Orlu (2022) examined contributory pension schemes and workers' productivity in the University of Port Harcourt. The paper was anchored on a life cycle theory. A descriptive research design was adopted for the study. Data were gathered through secondary and primary sources. The primary data were gotten from the researcher's personal observations and a self-made questionnaire structured on a four likert scale. Simple random sampling was used in the selection of a manageable sample size and the distribution of the researcher's instrument to the respondents. The retrieved questionnaires were subjected to statistical analysis through the use of means and standard deviations. The criterion mean for decision making was at 2.5. That is, any mean above 2.5 is accepted while the alternative is rejected. The paper revealed that low coverage of the scheme, inadequacy of benefits from the pension scheme, poor awareness of contributory pension schemes, poor outreach of the management of pension schemes and non-compliance by the government are the major challenges bequeathing the contributory pension scheme at the Federal University of Port Harcourt.

Ahmed and Opusunju (2022) investigated determinants of efficiency of pension fund administrators in Nigeria. The study used ex-post facto research design. The population of the study comprised 21 pension fund administrators registered by the National Pension Commission in Nigeria. The study used purposive sampling method to select 10 registered Pension Fund Administrators. The study collected data from the companies’ financial statements and used panel regression to analyze the data. The study found that determinants of efficiency of listed Pension administrators in Nigeria include
short term debt to total and total debt to total asset. Total debt to total asset was found to have a negative and statistically significant effect on efficiency of pension administrators in Nigeria. The study recommended that pension fund administrators in Nigeria should obtain short term debt and also ensure more realization of total asset since it can enhance efficiency. Total debt to total asset should be maintained in order to increase efficiency of pension fund administrators.

Ndum and Okoye (2022) assessed the relationship between Pension Fund Asset Investment and Economic Growth in Nigeria utilizing time series data spanning for a twelve year period, from 2006 to 2017. Secondary data for the period were collected from the National Pension Commission (PENCOM) Annual Reports, Central Bank of Nigeria, National Bureau of Statistics and World Bank development indicator (database) of twenty-one licensed pension fund administrator as at 31st December, 2017. The data collected were analyzed and tested for unit root, using the Augmented Dickey-Fuller test using E-Views statistical software. The Ordinary Least Square techniques were used to estimate three models in line with the formulated hypotheses. The results from the models revealed a significant positive relationship between pension fund assets, pension fund contribution, pension fund investment and gross domestic product at 5% level of significance. Consequently, it was recommended inter alia that there should be more emphasis on the management of pension assets in the capital market as well as government bond, real estate and investment trust to boost Gross Domestic Product (GDP) of Nigeria.

Okoye, Innocent, Nwobia and Ibechole (2022) examined the effect of Pension Contribution (PC) on economic growth in Nigeria. The time series data used in this study were for a period of twelve years (2005 - 2017). Data were collected from the Annual Reports of National Pension Commission (PENCOM). The study anchored its theory on the “theory of intermediation” and the study also employed sophisticated econometrics statistical tools like unit root test, the ordinary least square, and granger causality test. The econometric results indicated that PC has negative and insignificant relation. The insignificant relationship of PC on economic growth in Nigeria could also be as a result of Pension fund looting and non-remittance of pension contribution over the years. This study therefore recommends that efforts should be intensified to incorporate pension as a course of study in our higher institutions of learning, just as we have insurance as a course of study in our higher institutions, and also regulatory authorities should collaborate and
generate a Reporting Software’s and data base of the names of organizations whose staff ought to contribute. This will make the supervisory function of the regulatory authority more efficient and effective.

Ogonda and Okiakpe (2022) examined the link between pension fund investment and Nigeria’s economic development. The study used investments in money market instruments, federal government securities, quoted ordinary shares, and corporate loan instruments as indicators of pension fund in Nigeria; while human development index (HDI) was used to represented economic development. National Pension Commission, World Bank, and National Bureau of Statistics secondary time series data from 2004 to 2020 were used and analyzed using descriptive statistics, correlation, and Fixed/Random Effects Regression Model. The study found that pension fund investments in money market instruments had a negative and insignificant influence on HDI, while pension fund investment in federal government securities had a positive and insignificant effect on HDI. Pension fund investment in quoted ordinary shares and corporate debt securities have positive influence on Nigeria's economic development in terms of the HDI. The study concludes that pension fund investment influence economic development in terms of HDI and recommends that, for improved economic development in terms of HDI, pension funds should be invested more in ordinary shares and corporate debt securities; and that pension fund investment in money market instruments should be discouraged while investment of pension funds in federal government securities should be done with caution.

3 LITERATURE GAPS

There is no doubt that, a lot of studies have been done similar to this current study. Majority of these studies analyzed number of cases pertaining to pension funds and their impact on capital market development. These include how pension funds perform various roles in various aspects of economic development, the challenges, prospects and success in their respective countries. However, when going through these reviewed literatures thoroughly, it may be noticed that, there are very few studies which explored on pension funds influence to the capital market development. This justifies the necessity of carrying out the new study so as to address the identified existing gap in the academic realm of Nigeria. Many authors have tried to establish the empirical connection between pension funds and capital market development using different samples of countries and
methodology. The studies of Iwegbu (2020), Owinyo (2017), Patrick and Akinwumi (2017), and Babalos and Stavroyiannis (2020) all established a positive relationship between pension funds investment and capital market development but in a static approach rather than a dynamic relationship considering the fact that pension fund investment and capital market development are a dynamic phenomenon. This study therefore extended the methodology of previous studies to incorporate other market variables in our models to test the dynamic relationship between pension fund investment and capital market development. Also, various studies that have established the relationship between pension funds and capital market development have not looked at the short run and long run dynamic impact between the two subject matters. Hence, the use of ARDL methodology.

4 METHODOLOGY

In the course of this study, the researcher adopted the ex-post facto research design. Since this study focuses on the assessment of the impact of pension fund on capital market development, the data used for analysis were extracted based on the objectives of the study. The population of the study is the entire economy of Nigeria across all sectors in aggregate form. This study sourced for data through secondary means that were generated from the annual reports of Central Bank of Nigeria Statistical Bulletin, National Bureau for Statistics (NBS) and Securities and Exchange commission (SEC) for various years.

4.1 MODEL SPECIFICATION

This study adapted the model of Abu (2009) with little modifications. Thus the model that was used for this study is stated below:

\[ \text{MCAP2GDP}_t = \gamma_0 + \gamma_1 \text{PENFUND}_t + \gamma_2 \text{PENINVEST}_t + \gamma_3 \text{INFLAT}_t + \mu_t \]  

Where:

- MCAP2GDP,
- INFLAT,
- PENFUND,
- PENINVEST,
- \( \gamma_0 \), \( \gamma_1 \), \( \gamma_2 \), \( \gamma_3 \), and \( \mu_t \) represent the respective variables and coefficients.
5 FINDINGS AND DISCUSSIONS

5.1 PRE-TEST ANALYSIS

5.1.1 Descriptive Statistics Results for Market Capitalization Model

To avoid the misuse of econometric tools, the properties of the data must be checked before determining which tool suites. Table 1 presents the descriptive statistics of the data for the model.

<table>
<thead>
<tr>
<th></th>
<th>MCAP2GDP</th>
<th>PENFUND</th>
<th>PENINVEST</th>
<th>INFLAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>395.9311</td>
<td>185.4111</td>
<td>2748.240</td>
<td>13.75143</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>255.9469</td>
<td>194.7007</td>
<td>2823.901</td>
<td>5.829539</td>
</tr>
<tr>
<td>Skewness</td>
<td>0.257039</td>
<td>2.135509</td>
<td>0.605073</td>
<td>0.840476</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>1.501604</td>
<td>7.278874</td>
<td>1.737720</td>
<td>3.106303</td>
</tr>
<tr>
<td>Jarque-Bera</td>
<td>2.927711</td>
<td>42.64209</td>
<td>3.567435</td>
<td>3.309713</td>
</tr>
<tr>
<td>Observations</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
</tbody>
</table>

Source: Author’s Computation, (2023)

The summary of the statistics used in this empirical study is presented in the Table 1 above. It can be observed that inflation (INFLAT) has the lowest mean value of 13.75143 and pension fund investment (PENINVEST) has the highest mean value of 2748.240 whereas the mean value of market capitalization as a ratio of gross domestic product (MCAP2GDP) and pension fund (PENFUND) are 395.9311 and 185.4111 respectively. The standard deviation measures how concentrated the data are around the mean, hence it can be observed from the study presented in Table 4.1 that pension fund investment (PENINVEST) is the largest with the value of 2823.901 while inflation (INFLAT) is the lowest value of 5.829539 giving the implication that the values for the operational data values are further from the mean on averages. The measure of how asymmetric a distribution can be called skewness. All the variables were positively skewed, meaning that the mass of the distribution is concentrated on the right (that is, it is said to be left-skewed). The implication of this is that the skewness tends to say more on the mean value of the distribution being higher or lower than the median. Hence, positively skewed value indicates a higher mean value over the median value. On the part of Kurtosis, all the variables used present positive values which mean that the distribution is leptokurtic (too tall).
5.1.2 Unit Root Test

This study proceeds to examining the stochastic properties of the variables considered in the model by analyzing their order of integration based on a series of unit root test using Augmented Dickey Fuller unit root test).

Table 2 Augmented Dickey Fuller (ADF) Unit Root Test Result for Capital Market Development

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>First Difference</th>
<th>Order In Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ADF Value</td>
<td>Mackinnon Critical Values</td>
<td>ADF Value</td>
</tr>
<tr>
<td>MCAP2GDP</td>
<td>-1.415063</td>
<td>-2.976263</td>
<td>-4.256113</td>
</tr>
<tr>
<td>PENFUND</td>
<td>-1.495562</td>
<td>-3.595026</td>
<td>-3.576188</td>
</tr>
<tr>
<td>PENINVEST</td>
<td>-3.117782</td>
<td>-3.622033</td>
<td>-4.259252</td>
</tr>
<tr>
<td>INFLAT</td>
<td>-3.329771</td>
<td>-3.587527**</td>
<td>-4.512223</td>
</tr>
</tbody>
</table>

Source: Author’s Computation, (2023)

From the Augmented Dickey Fuller unit root table 2 above, it could be seen that market capitalization as a ratio to GDP (MCAP2GDP), pension contributory fund (PENFUND) and pension investment (PENINVEST) are all non-stationary series in first difference except inflation (INFLAT) which is stationary at level; meaning that variables such as MCAP2GDP, PENFUND and PENINVEST are of order 1 while only INFLAT is of order 0. This justifies the reason to embark on the ARDL estimation.

5.1.3 Estimation of the ARDL Models for MCAP2GDP Model for Capital Market Development

There is no deterministic short-run and long-run impact of pension contributory fund on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria. The result of the hypothesis is presented in Figure 1 showing the model criteria selection graph and Tables 3 showing the bound test, after which the estimation was broken down into its short run and long run components as well as the speed of adjustment to equilibrium in the case of disequilibrium.
5.1.4 Model Selection – Criteria Graph for MCAP2GDP Model for Capital Market Development

Figure 1: The best 20 models, among which the overall best is automatically chosen for the estimation of the ARDL for MCAP2GDP Model for Capital Market Development

Figure 1 give the values of the Akaike information criterion for the estimated ARDL model, the purpose is to see clearly that the model that minimizes the AIC is chosen given the maximum lag selected.

5.1.5 Cointegrating Bound Testing for ARDL Models Estimation for MCAP2GDP for Capital Market Development

Table 3: The Bound Test for Co Integration

<table>
<thead>
<tr>
<th>Test Statistics (K)</th>
<th>MCAP2GDP Model - For Capital Market Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-Statistics</td>
<td>6.887732</td>
</tr>
<tr>
<td>Critical Value Bounds</td>
<td>I(0) Bound</td>
</tr>
<tr>
<td>10%</td>
<td>2.72</td>
</tr>
<tr>
<td>5%</td>
<td>3.23</td>
</tr>
<tr>
<td>2.5%</td>
<td>3.69</td>
</tr>
<tr>
<td>1%</td>
<td>4.29</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, (2023).

As presented in Table 3, the parameters k is simply equals to total variables minus one that is 3. Cointegration is tested on MCAP2GDP Model using each of the measures of capital market development as the dependent variable. The findings reveal that the $F$-statistic is higher than both the lower and upper bound critical value at the 1%, 2.5%, 5% and 10%, level of significance using restricted intercept and no trend in all the
specifications. The findings therefore suggest the presence of cointegration among each of the individual measures of capital market development. Based on the results, the null hypothesis of no cointegration is rejected. Therefore, this implies that the measure of capital market development are all bound by a long run relationship in Nigeria. The study therefore moves on to the estimation of the short run and long run situations as presented on the tables to follow:

5.1.6 ARDL Short run Estimates for Capital Market Development Model - For MCAP2GDP

<table>
<thead>
<tr>
<th>Models</th>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFF Model 1 - Value of Transaction</td>
<td>CointEq(-1)</td>
<td>-0.219347</td>
<td>0.165133</td>
<td>-1.328305</td>
<td>0.0036</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, (2023).

The short run cointegrating form of the models is presented on Table 4, in which the findings from the ARDL analysis reveal a short-run impact between pension funds and capital market development due to the coefficient of error correction mechanism (speed of adjustment) which is negative and significant at 5% level of significant. The result suggests that over 22% of the short run disequilibrium is corrected in the long run equilibrium.

5.1.7 ARDL Long run Estimates for Models for MCAP2GDP – Capital Market Development

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-Stat</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENFUND</td>
<td>8.978471</td>
<td>8.712464</td>
<td>1.030532</td>
<td>0.0270</td>
</tr>
<tr>
<td>PENINVEST</td>
<td>0.406607</td>
<td>0.320803</td>
<td>1.267467</td>
<td>0.0337</td>
</tr>
<tr>
<td>INFLAT</td>
<td>4.465304</td>
<td>42.694769</td>
<td>0.104587</td>
<td>0.0188</td>
</tr>
<tr>
<td>C</td>
<td>217.709819</td>
<td>511.690313</td>
<td>0.425472</td>
<td>0.0095</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, (2023).
Hypothesis:

$H_{01}$: There is no deterministic short-run and long-run impact of pension contributory fund on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria.

Table 5 presents the short run and long run dynamic impact of pension contributory fund on capital market development proxied by market capitalization to GDP using ARDL approach. The findings from the Market Capitalization model specification showed that the error correction model’s coefficients suggest that over 22% of the short run disequilibrium is corrected in the long run equilibrium of the specifications. Meaning that there is short run dynamic impact between pension contributory funds and capital market development measured by market capitalization to GDP. Moreover, the study found the coefficient of value of pension contributory fund to be positively significant with capital market development proxied with market capitalization as a ratio to GDP at 5% level. The finding of this study agrees with the finding of Glass & Saggi, 2018; Obwona, 2021; El Khoury & Soovides, 2017; Roller, & Waveraman, 2021).

Hypothesis:

$H_{02}$: There is no deterministic short-run and long-run impact of pension investment on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria.

Table 5 presents the short run and long run dynamic impact of pension investment on capital market development proxied by market capitalization to GDP using ARDL approach. The findings from the Market Capitalization model specification showed that the error correction model’s coefficients suggest that over 22% of the short run disequilibrium is corrected in the long run equilibrium of the specification. Meaning that there is short run dynamic impact between pension investment and capital market development measured by market capitalization to GDP. Moreover, the study found the coefficient of value of pension investment to be positively significant with capital market development proxied with market capitalization as a ratio to GDP at 5%. The finding of this study agrees with the finding of Glass & Saggi, 2018; Obwona, 2021; El Khoury & Soovides, 2017; Roller, & Waveraman, 2021).

Hypothesis:

$H_{03}$: There is no significant impact of inflation on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria.
Table 5 presents the long-run impact of inflation on capital market development proxied by market capitalization to GDP using ARDL approach. The findings from the Market Capitalization model specification showed that the study found the coefficient of value of inflation to be positively significant with capital market development proxied with market capitalization as a ratio to GDP at 5%. The finding of this study agrees with the finding of Glass & Saggi, 2018; Obwona, 2021; El Khoury & Soovides, 2017; Roller, & Waveraman, 2021).

**Diagnostic Result:**

In other to test for the diagnostic test in the study, the result can be obtained from the table 6:

<table>
<thead>
<tr>
<th>Table 6: Residual Diagnostic Test and Stability Diagnostic Test Result</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residual Diagnostic Test Result</strong></td>
</tr>
<tr>
<td>Tests</td>
</tr>
<tr>
<td>MCAP2GDP Market Capitalization Model 1</td>
</tr>
<tr>
<td>Breusch-Godfrey Serial Correlation LM Test:</td>
</tr>
<tr>
<td>Heteroskedasticity Test: ARCH</td>
</tr>
<tr>
<td><strong>Stability Diagnostic Test Result</strong></td>
</tr>
<tr>
<td>Tests</td>
</tr>
<tr>
<td>MCAP2GDP Market Capitalization Model 1</td>
</tr>
<tr>
<td>Ramsey RESET Test</td>
</tr>
</tbody>
</table>

SOURCE: Authors Computation (2023)

From the table 6 above, the Breusch-Godfrey Serial Correlation LM test for the two models reveals that there is no presence of serial correlation judging from the F-Statistics and the probability values which are greater than 0.05. Also, the heteroskedasticity ARCH LM test for the two models reveals that there is no heteroscedasticity problem judging from the F-Statistics and the probability values which are greater than 0.05. However, the stability test result using Ramsey RESET test shows that the two models were very stable considering the probability value that were greater than 5%.
5.1.8 Estimation of Multivariate Granger Causality

Table 7 Estimation Results of Multivariate Granger Causality

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs.</th>
<th>F-statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENFUND does not Granger Cause MCAP2GDP</td>
<td>26</td>
<td>2.47487</td>
<td>0.0084</td>
</tr>
<tr>
<td>MCAP2GDP does not Granger Cause PENFUND</td>
<td>26</td>
<td>0.66823</td>
<td>0.0032</td>
</tr>
<tr>
<td>PENINVEST does not Granger Cause MCAP2GDP</td>
<td>26</td>
<td>4.14172</td>
<td>0.0005</td>
</tr>
<tr>
<td>MCAP2GDP does not Granger Cause PENINVEST</td>
<td>26</td>
<td>0.07323</td>
<td>0.0096</td>
</tr>
</tbody>
</table>

Source: Authors’ Computation, (2023).

Hypothesis:

H04: There is no significant causality between the pension contributory fund on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria.

The result of this hypothesis is presented in Table 7 showing the causality relationship between pension contributory fund on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria. These results suggest that at aggregate level, a bidirectional relationship exists between pension contributory fund on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria suggesting that the relationship between pension contributory fund on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria was two-ways. Meaning that as pension contributory fund influences market capitalization as a ratio of Gross Domestic Product (GDP), market capitalization as a ratio of Gross Domestic Product (GDP) also influences pension contributory fund. This decision was based on the values of F-statistic and probability. From table 4.9, it is observed that the F-statistics (2.47487 and 0.66823) and a significant probability values (0.0088 and 0032). The finding of this study agrees with the finding of (Ding and Haynes, 2015; Zhang, 2021; Sridhar and Sridhar, 2018; Glass & Saggi, 2018; Obwona, 2021; El Khoury & Soovides, 2017; Roller, & Waveraman, 2021).

Hypothesis:

H05: There is no significant causality between the pension investment on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria.

Also, at aggregate level, the Table 7 shows the bidirectional causality between pension investment on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria. These results suggest that at aggregate level, a bidirectional relationship exists between pension investment on market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria suggesting that the relationship between pension investment on
market capitalization as a ratio of Gross Domestic Product (GDP) in Nigeria was two-ways. Meaning that as pension investment influences market capitalization as a ratio of Gross Domestic Product (GDP), market capitalization as a ratio of Gross Domestic Product (GDP) also influences pension investment. This decision was based on the values of F-statistic and probability. From table 4.9, it is observed that the F-statistics (4.14172 and 0.7323) and a significant probability values (0.0005 and 0096). The finding of this study agrees with the finding of (Ding and Haynes, 2015; Zhang, 2021; Sridhar and Sridhar, 2018; Glass & Saggi, 2018; Obwona, 2021; El Khoury & Soovides, 2017; Roller, & Waveraman, 2021).

6 CONCLUSION AND RECOMMENDATIONS

Pension fund systems have undergone substantial reforms over the last twenty-eight years. Consistently with this development, the recent growth in pension fund investments in equities has attracted the interest of academics and researchers to the interaction between stock market development and pension funds. It has also long been recognized that pension systems across the emerging markets including Nigeria have undergone dramatic reforms over the last twenty-eight years. This process has mainly been fueled by the demographic problem faced by modern economic systems. One question that sparks this study is whether the evolution of pension funds enhances the well-being of capital market development. Capital market data provide evidence in favour of the dominant role of pension funds in capital markets worldwide but its influence on Nigerian capital market is still questionable.

The importance of this pension funds to the Nigerian capital market development performance is very significant as they contribute sizeable portion to the country’s Gross Domestic Product (GDP). The main objective of the study is to examine the impact of pension funds on capital market development in Nigeria. This study has empirically examined the long run and short run dynamic of pension funds on capital market development of Nigeria using the ARDL and multivariate granger causality approach over the period 1995–2022.

Therefore, this study recommends that:

i. economic growth policies that aim at increasing GDP per capita during the short run as well as long run be pursued to heighten MNCs in Nigeria.
ii. Also, effort should be directed at deepening the activities of companies to increase their corporate social responsibility activities to drive the economy.

iii. Federal government should ensure that multinational corporations plough back part of their profits to the development of the host communities in order to established good working relationship.

iv. Federal environmental protection agencies should ensure effective monitoring of multinational corporations to avoid the violation of the lay down rules and regulations guiding their operations.

**CONTRIBUTION TO KNOWLEDGE**

This study has the following contributions to knowledge: Firstly, this study revealed that the level of multinational corporations in service, construction and oil and gas sector and its impact on the GDP as an economic indicator for growth in Nigeria between 1981 and 2021. Secondly, this study revealed the long run and short run dynamic impact of the multinational corporations on the economic growth in Nigeria between 1981 and 2021 with an updated year. Thirdly, this study revealed the relationship between the multinational corporations on the economic growth in Nigeria between 1981 and 2021. Lastly, this study used the Autoregressive distributed lag and granger causality in examining the methodology.

**LIMITATIONS OF THE STUDY AND SUGGESTION FOR FURTHER RESEARCH**

In this study, there are limitations that need improvement for future studies. They include:

i. This study recommends that future studies should incorporate collection of control variables (macroeconomic variables) which would add value to Nigeria context and situation.

ii. This study also recommends future studies into the contributions of more multinational corporations in other sectors excluding (service, construction and oil and gas sector) to economic growth and development in Nigeria since independence in 1960-2021.
iii. This study also recommends future studies into the assessment of multinational corporations to the economic progress in Nigeria (1960-2021).

iv. The study was only conducted in Nigeria, so the results of this study may not be the same if applied to other continents. In a subsequent study, it is suggested that research should be conducted on diverse continents, such as Sub-Saharan African countries, so it can be used as a comparison with the results of previous studies.

v. This study also recommends future studies into the using other technique such as General Method of Moments (GMM) in examining the impact of multinational corporations to the economic progress in Nigeria (1960-2021).
REFERENCES


Channarith, M., & Wade, D. P. (2010). The role of pension funds in capital market development. National graduate institute for policy studies 7-22-1


