

# Long Term Investment Portfolio and Economic Growth In Nigeria: A Causal Inference

Gbenga Festus BABARINDE

*Department of Banking and Finance, Modibbo Adama University, Yola, Nigeria.*  
E-mail: [ljfiedfjb@gmail.com](mailto:ljfiedfjb@gmail.com)

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**Abstract:** In this research, correlation analysis and pairwise granger causality techniques were applied in the examination of causal link between long term investment portfolio and economic growth in Nigeria. the study employed annualized secondary data obtained from the central bank of Nigeria (2020)'s statistical bulletin covering a period of 40 years (1981-2020). empirical findings of this study indicate strong positive correlation between long term investment portfolio and economic growth in Nigeria with an evidence of a long run relationship also established between the two variables. furthermore, there is an evidence of a unidirectional causality flow from economic growth to long term investment portfolio in Nigeria. It can therefore be concluded that economic growth leads long term investment portfolio and not vice versa. this implies that increase in the productive capacity of the economy, reflected in the rise in aggregate demand tend to stimulate demand for long term investment capital (portfolio). this finding is in line with the postulate of the demand-following hypothesis which advocates that economic growth stimulates financial development of the country. this study reveals the need for the Nigerian government to encourage more growth-induced policies and programmes in the country; particularly, policy frameworks aimed at stimulating aggregate demand should be vigorously pursued by the government in close and cooperative partnership with the organized private sector.

**Keywords:** Capital market, causality, economic growth, long term investment, portfolio

## 1. INTRODUCTION

The role of capital formation, financial development and financial sector in economic development of countries has been established in the literature. Sources of capital formation could either be internal or external, debt or equity. Foreign capital which could be in the form of foreign direct investment or foreign portfolio investment, have been found to play a significant role in the development of economies of emerging countries. Financially, local avenues for capital formation and accumulation in Nigeria

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include the domestic financial markets, comprising of the money market and capital market. Long term investible funds, which forms the bulk of the country's capital stock is transacted in the capital market. The instruments of trade in the Nigerian capital market include government stocks, industrial loan, second tier securities, Exchange-traded funds (ETFs), bonds and equities.

The Nigerian capital market's total value of transaction (VTRAN) is singled out for investigation in terms of its role in economic growth in that it represents a more active and realistic measure of contribution to growth. VTRAN represents currently actively traded securities unlike market capitalization which is a blanket for both active and non-active listed shares on the capital market. Figures from Central Bank of Nigeria [CBN](2020)'s statistical bulletin have shown that the total value of long term investment portfolio (represented by total value of transaction at the Nigerian Stock exchange) as at 1981 stood at ₦0.30billion with an average of ₦4.07 billion between 1981 to 1990. The value of total long term investment portfolio became ₦0.23billion in the year 1990. Beginning from 1991, a slight rise occurs to VTRAN to record ₦0.24billion in that year. Between 1991 and 2000, the average VTRAN stood at ₦77.46billion against the ₦4.07billion average of the 80s. In year 2000, the value was ₦28.5billion. Further statistics shows that ₦57.68billion and ₦799.91billion are the value of long term investment portfolio in years 2001 and 2010 respectively but the average over the period stood as ₦5437.29billion. From 2011 (with year's value standing as ₦638.93billion) to 2020 (with year's value standing as ₦1,086.18billion), the average value of capital market transactions (long term portfolio) over the last decade of this study was ₦10992.79billion.

In the same vein, statistics (CBN,2020) on real gross domestic product (RGDP) of Nigeria indicates the 1981 figure to be ₦19,549.56billion but it reached ₦21,462.73billion in 1990 with period's average standing at ₦181,106.78billion. From 1991 through 2000, the average RGDP was ₦228,259.00billion with the associated 1991's and 2000's RGDP standing at ₦21,539.61billion and ₦25,169.54billion respectively. However, between 2001 and 2010, there was an average RGDP in Nigeria standing at ₦399,909.34billion; with respective year's RGDP of ₦26,658.62billion and ₦54,612.26billion for years 2001 and 2010. Furthermore, ₦57,511.04billion and ₦70,014.37billion are the Nigeria's RGDP for 2011 and 2020 respectively. In the last decade of this study, (2011-2020), the Nigeria's RGDP average figure stood at ₦664,460.73billion.

The upward trend of the both RGDP and long term investment portfolio, as indicated by the decades' average values, indicate a tentative/perceived

association between the two variables. What is probing here is: to what extent does the value of transactions at the Nigerian Stock Exchange (NSE) (a proxy for long term portfolio in this study) contributes to the productive capacity of the country in form of economic growth? Or can the concurrent upward trends be a mere statistically display of association and of no economic and financial implications?

In an attempt to establish empirical link between investment portfolio and economic growth, extant studies (such as Baghebo and Apere (2014), Acha and Essien (2018), Ekine, Ewubare and Ajie (2019)) focused squarely of foreign portfolio investment, without attention to long term investment portfolio, as represented by portfolio of capital market investments. In fact, most past studies found evidence of a positive significant connection between foreign capital inflows and economic growth of recipient countries (Baghebo and Apere (2014), Okonkwo (2016), Suhadak and Nuzula (2016), Acha and Essien (2018), Ekine, Ewubare and Ajie (2019), Ezeanyejí and Maureen (2019)). Moreover, without specificity of portfolio, most other past studies had also emphasized the role of capital market on economic growth (Donwa and Odia (2010); Kolapo and Adaramola (2012), Yadirichukwu and Chigbu (2014), Obubu *et al.* (2016), Inimino, Bosco and Abuo (2018), Babarinde, Gidigbi and Abdulamjeed (2020)).

Theoretically, long term investment capital available through the capital market is expected to increase the financial resources available to firms that will help them expand business operations and as well eventually contribute to the productive capacity of the entire economy. However, empirical link between long term investment portfolio and economic growth is still largely unexplored by researchers, most especially in developing country such as Nigeria. Hence, the motivation for this study. Therefore, the kernel of study is to empirically determine the causal link between long term investment portfolio and economic growth in Nigeria for the period, 1981 to 2020. Specifically, the study aims to assess whether or not a long-run relationship exist between long term investment portfolio and economic growth in Nigeria; and also to determine the direction of causality between the two variables.

## **2. LITERATURE REVIEW**

### **2.1. Conceptual Review**

Investment portfolio is an investment in capital market in the form of equity, which do not involve direct establishment of business enterprise (Suhadak & Nuzula 2016). Portfolio is a basket of investment options comprising of

debts, equities derivatives, real estates, etc making the total assets of an economic agent. Investment portfolio could be constructed by investing in either money market or capital market instruments. Basically, investments in different money market instruments could bring about short term investment portfolio while capital market is an avenue for medium and long term investment portfolios. The various transactions carried out at the Nigerian capital market broadly involve investments in debts and equities.

Economic growth has been described as an increase in the capacity of an economy to produce goods and services, compared from one period of time to another (Agu, 2018). It is usually proxied by gross domestic product, real gross domestic product, gross national income, etc.

## **2.2. Theoretical Review**

This study reviewed three theories, namely, the supply-leading hypothesis, the demand-following hypothesis and endogenous growth theory. The supply-leading hypothesis view of financial development states that in the early stages of economic development the financial sector grows substantially faster than economic growth. This implies that the development of financial institutions ahead of demand for their services, will facilitate the financial sector's ability to serve as a conduit for real sector development (Acquah-Sam & Salami, 2014). The supply-leading hypothesis states that finance granger-causes economic growth. This view emphasizes the role of financial development in the growth of the economy, by providing needed financial resources to entrepreneurs to expand business outfits and thereby expanding their operations as well as capacity to contribute at a higher rate to the productive capacity of the economy, thus promoting economic growth.

Conversely, the demand-following hypothesis postulates a unidirectional causality flow from economic growth to financial sector development. This postulates emphasizes the positive role of increase in aggregate demand in the economy, which raises the capacity of the economic agents in the economy and eventually causes a rise in demand for more financial products and services. This hypothesis therefore, traces financial development to the increased demand for more financial products and services.

In another theoretical postulate, endogenous growth theory emphasizes the role of internal processes, institutions, agents, markets and mechanism rather external agents in promoting economic growth of the nation. This theory emphasizes the need for developing countries to focus on their

domestic resources and capital for as catalyst for economic growth and development.

### **2.3. Empirical Review**

Empirically, although past studies have reported the significant link between capital market (in aggregation) and economic growth. However, findings on the value of capital market transaction and economic growth reported in the related studies are summarized as follows. In the said empirics, some scholars report evidence of a positive significant relationship between total value of shares issued at the Nigerian stock exchange and the country's economic growth (Edame and Okoro (2013), Okoye and Nwisienyi (2013), Yadirichukwu and Chigbu (2014), Briggs (2015)). Contrarily, some studies show that value of transaction at NSE exerts negative significant effect on Nigeria's economic growth (Kolapo and Adaramola (2012), Abina and Lemea (2019), Acha and Akpan (2019), Inimino, Bosco and Abuo (2018)). The third strand of evidence is that of neutral effect of value of capital market transactions on economic growth (Adeusi, Sulaiman and Azeez (2013), Nwaolisa, Kasie and Egbunike (2013), Afolabi (2015), Obiakor (2016), Agu (2018)).

Furthermore, in a related study, Egbeonu (2016) examined the empirical connection between insurance investment portfolio and economic development in Nigeria. The study established that insurance companies' investments in bills of exchange, and stocks and bonds have positive and significance effect on economic growth while negative and non-significant relationship was found between economic growth and investment in government securities. In the same vein, Akpan and Joseph (2017) concluded that investment portfolios of commercial banks have significant effect on economic growth in Nigeria unlike the investment portfolio of insurance companies which is not significantly related to economic growth in Nigeria.

The empirical review above has further exposed the lacuna in literature on specific studies devoted to examining the relationship between long term investment portfolio and economic growth in both developed and developing countries. It is seen that there are numerous studies on capital market-growth nexus clarification. These studies only included value of capital market transactions as a capital market indicator in their study of economic growth but failed to focus on long term investment portfolio and its interconnectedness with economic growth. This study is considered handy in filling the perceived gap discovered in empirical literature.

### 3. METHODOLOGY

#### 3.1. Data and Research Design

This study employed secondary data on an annualized basis in the investigation of the nexus between long term investment portfolio and economic growth in Nigeria stretching from 1981-2020. The source of the data is the Central Bank of Nigeria (2020)' statistical bulletin. Long term investment portfolio here refers to the totality of market value of transactions at the Nigerian capital market (Ayodele, Afolabi & Olaoye, 2017) while economic growth is measured as the real gross domestic product (Atoyebi *et al.*, 2013; Taiwo, Alaka & Afieroho, 2016; Agu, 2018; Babarinde, Gidigbi & Abdulamjeed, 2020). Both variables are measured in billion Naira. This study employed cause-and-effect approach, whereby the independent variable (long term investment portfolio) is investigated in terms of the causal-effect on the dependent variable (economic growth).

#### 3.2. Estimation Procedures

In the procedure of estimation and data analysis, firstly, preliminary test in the form of descriptive statistical analysis was carried out to have an understanding of the statistical behavior and properties of the variables of study. Then, the unit root properties of the variables were examined using two distinct unit root tests, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. Thereafter, Pearson correlation test was conducted to determine the nature of relationship between long term investment portfolio and economic growth in Nigeria. This was followed by test of cointegration between long term investment portfolio and economic growth. To do this, Johansen's test of cointegration, was applied. After the confirmation of cointegration between portfolio and economic growth, lastly, the pairwise Granger causality technique was employed in the determination of direction of causality between long term investment portfolio and economic growth in Nigeria.

#### 3.3. Model Estimation

In order to ascertain any causal inference from the nexus between long term investment portfolio and economic growth in Nigeria, the pairwise Granger causality technique was applied to the time series. Hence, the Granger causality equations for this study are specified in equations (1) and (2) below.

$$GROWTH_t = GROWTH_{t-1} + PORTFOLIO_{t-1} + u_{t1} \quad (1)$$

$$PORTFOLIO_t = PORTFOLIO_{t-1} + GROWTH_{t-1} + u_{t2} \quad (2)$$

Where;  $GROWTH_t$  represents economic growth at time  $t$ ;  $PORTFOLIO_t$  denotes long term portfolio at time  $t$ ;  $u_{t1}$  and  $u_{t2}$  are the error terms.

## 4. RESULTS AND DISCUSSION

### 4.1. Descriptive Statistics

The descriptive statistics presented in Table 1 reveal the non-normality of portfolio (PORTFOLIO) while economic growth (GROWTH) attains normality at 10% level of significance. The average value of portfolio in the Nigerian capital market (total value of transaction) (₦ 412.7903 billion) is less than that of economic growth (represented as RGDP) with mean value of ₦36,843.40 billion. economic growth is relatively stable around its mean value but investment portfolio is widely dispersed from its average value.

Table 1: Descriptive Statistics

	<i>N</i>	<i>Mean</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Std. Dev.</i>
GROWTH	40	36843.40	16048.31	71387.83	19785.11
PORTFOLIO	40	412.7903	0.220000	2350.880	576.5914
	<i>N</i>	<i>Skewness</i>	<i>Kurtosis</i>	<i>Jarque-Bera</i>	
GROWTH	40	0.631816	1.794414	5.083673*	
PORTFOLIO	40	1.419245	4.575857	17.56724***	

Source: Author's Estimation (2021). Note: \*Prob.= 0.078722; \*\*\*Prob.= 0.000153

### 4.2. Unit Root Tests

The results of the unit root tests, augmented Dickey-Fuller (ADF) and Phillip-Perron (PP), as presented in Table 2 indicate the two variables, economic growth (GROWTH) and long term investment portfolio (PORTFOLIO) are not stationary at level but became stationary at first difference. This suggests that the variables are integrated of order 1.

### 4.3. Correlation Analysis

The Pearson correlation analysis whose results are reported in Table 3 show the correlation coefficient to be 0.835390 with an associated p-value of 0.0000. This means that long term investment portfolio has a strong, positive and statistically significant relationship with the Nigerian economic growth in the study period.

**Table 2: ADF and PP Unit Root Tests**

<i>Variables</i>	<i>ADF at level</i>		<i>ADF at first difference</i>		<i>I(d)</i>
	<i>t-statistic</i>	<i>p-value</i>	<i>t-statistic</i>	<i>p-value</i>	
GROWTH	-1.987512	0.2907	-2.728210	0.0787 *	I(1)
PORTFOLIO	-2.408343	0.1480	-6.217016	0.0000 ***	I(1)
	<i>PP at level</i>		<i>PP at first difference</i>		<i>I(d)</i>
	<i>t-statistic</i>	<i>p-value</i>	<i>t-statistic</i>	<i>p-value</i>	
GROWTH	0.950188	0.9952	-2.686565**	0.0857 *	I(1)
PORTFOLIO	-1.940568	0.3110	-12.32217*	0.0000 ***	I(1)

Source: Author's Estimation (2021)

Note: \*\*\* and \* rejection of null hypothesis of unit root at 1% and 10% respectively, since  $p < 1\%$  and  $10\%$ ; I(d) denotes order of integration.

**Table 3: Correlation Analysis**

<i>Correlation</i>	<i>GROWTH</i>	<i>PORTFOLIO</i>
GROWTH	1.000000	
PORTFOLIO	0.835390	1.000000
	0.0000	

Source: Author's Estimation (2021)

#### 4.4. Cointegration Tests

Johansen test of cointegration was carried out and results presented in Table 4. The test indicates the existence of cointegration between long term investment portfolio and economic growth in Nigeria. Specifically, both Trace and Maximum Eigenvalue statistics indicate one cointegrating equation at the 0.05 level, which implies that there is a long run relationship between long term investment portfolio and economic growth in Nigeria in the period of study.

#### 4.5. Pairwise Granger Causality Test Estimates

The result of the pairwise Granger causality test as presented in Table 5 indicate that the hypothesis, long term investment portfolio (PORTFOLIO) does not Granger cause economic growth (GROWTH), cannot be rejected because the probability value (0.2103) exceeds any of the three ideal critical level of significance (1%, 5% and 10%). This implies that there is no unidirectional causality flow from long term investment portfolio to economic growth in Nigeria. However, with the p-value (0.0027) not



**Table 4: Johansen Cointegration Test**

Unrestricted Cointegration Rank Test (Trace)				
<i>Hypothesized No. of CE(s)</i>	<i>Eigenvalue</i>	<i>Trace Statistic</i>	<i>0.05 Critical Value</i>	<i>Prob.</i>
None *	0.402517	19.62945	15.49471	0.0112
At most 1	0.001534	0.058331	3.841466	0.8091
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
<i>Hypothesized No. of CE(s)</i>	<i>Eigenvalue</i>	<i>Max-Eigen Statistic</i>	<i>0.05 Critical Value</i>	<i>Prob.</i>
None *	0.402517	19.57112	14.26460	0.0066
At most 1	0.001534	0.058331	3.841466	0.8091

Source: Author's Estimation (2021)

Note: \* denotes rejection of the null hypothesis that the series are not cointegrated at the 0.05 level since the p-values are not less than 5%.

exceeding any of 0.01, 0.05 or 0.10, the hypothesis that economic growth (GROWTH) does not Granger cause long term investment portfolio (PORTFOLIO), can be conveniently rejected at one per cent level of significance. This suggests that there is a causal inference running unilaterally from economic growth to long term investment portfolio. This result is line with the postulate of the Demand-Following hypothesis, that economic growth leads financial development. This study proved that it is the economic growth that Granger-cause long term investment portfolio and not the other way round.

**Table 5: Pairwise Granger Causality Tests**

Lags: 2			
<i>Null Hypothesis:</i>	<i>Obs</i>	<i>F-Statistic</i>	<i>Prob.</i>
PORTFOLIO does not Granger cause GROWTH	38	1.63542	0.2103
GROWTH does not Granger cause PORTFOLIO	7.12887	0.0027	

Source: Author's Estimation (2021)

## 5. CONCLUSION

This paper is on the causality between long term investment portfolio and economic growth in Nigeria based on annualized secondary data obtained from the Central Bank of Nigeria (2020)'s statistical bulletin covering a period of 40 years (1981-2020). Empirical findings from unit root tests reveal

that economic growth and portfolio are stationary at first difference. Furthermore, the correlation analysis confirms that long term investment portfolio has a strong, positive and significant relationship with the Nigerian economic growth. The results of the cointegration tests show evidence of long run relationship between the two variables. The pairwise Granger causality analysis confirms the existence of a unidirectional causality flowing from economic growth to long term investment portfolio in Nigeria.

This study proved that it is the economic growth that Granger-cause long term investment portfolio and not the other way round, such that increase in the productive capacity of the economy, reflected in the rise in aggregate demand tend to stimulate demand for long term investment capital (portfolio) and thereby causing the development of the long term investment portfolio. This finding is in line with the postulate of the Demand-Following hypothesis which advocates that economic growth stimulates financial development of the country.

It is therefore recommended that government should encourage more growth-induced policies and programmes in the economy, particularly, policy frameworks aimed at stimulating aggregate demand should be vigorously pursued by the government in close and co-operative partnership with organized private sector. In the same vein, incentives such as capital market loans, tax holiday on capital market investments, more public awareness on activities and investment and business outlets available at the capital market should be vigorously pursued by the government.

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