

INTERNATIONAL JOURNAL OF SUSTAINABLE DEVELOPMENT

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ISSN: 2384-5341 | Volume 12, Issue 2 | August, 2019 | pages 01 – 27

Double Blind Peer Reviewed International Research Journal

Financial Sector Development and Nigeria's Economic Growth (1981 – 2017)

¹Asso. Prof. Emerenini, F.M.

²Azubuikwe, Chibuokwu Robinson

¹Department of Economics, Faculty of Social Sciences, Imo State University, Owerri.

²Ph.D Student, Department of Economics, Faculty of Social Sciences. Imo State University, Owerri | E-mail: zubbychubby84@gmail.com

A SPECIAL ISSUE CONFERENCE PROCEEDING PAPER

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Special Issue Theme: "Sustainable Development in Nigeria"

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International Journal of Sustainable Development

ISSN: 2384-5341

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¹Department of Economics, Faculty of Social Sciences, Imo State University, Owerri.

²Ph.D Student, Department of Economics, Faculty of Social Sciences. Imo State University, Owerri | E-mail: zubbychubby84@gmail.com

Abstract: *The Nigerian Financial Sector has undergone various reforms aimed at enhancing the sector's contribution to National growth and development. However, the empirical implications of these reforms have been divergent. This study is therefore necessitated to investigate the effects of financial sector development on Nigeria's economic growth. The study employed the use of time series data spanning the period 1981 to 2017, which were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin 2017 edition. The study was carried out using two major indicators of financial sector development namely, Total Deposits of the deposit money banks (TDDMBK) and Total market capitalization of the Nigerian Stock exchange market (TMKTCAP); whereas the Real gross domestic product (RGDP) was used as proxy for Nigeria Economic Growth. The data analysis was estimated using the Ordinary Least Square Regression method. The model was subjected to test for stationarity, Cointegration test, and Causality test. The result of the stationarity test revealed that all the variables of the study are all order one differencing. The cointegration test revealed that there exists a long-run relationship between variables of the model. The result further showed that there is a significant relationship between financial sector variables collectively and the real gross domestic product. The two explanatory variables employed in the study were found to exert positive significant effect on the real gross domestic product. The study concluded that financial sector development is key to stimulating desired economic growth of the Nigerian Economy, as the sector remains a prime mover and propeller that induces growth through effective and efficient operations of its sub-sectors in financial intermediation, capital formation, the management of the payment/exchange system, etc., and recommended among others the development of the Nigerian Money and Capital Markets by the Nigerian government through conscious formulation of favourable policies and implementation, as this will encourage Foreign Direct investment through equity investment and others.*

Key words: *Financial Sector, Development, Economic Growth.*

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INTRODUCTION

1.1 Background to the Study

The role of the financial sector in engendering desired economic growth in nations has dominated debates and discussions among financial experts, economists, researchers, scholars, investors and the business world at large. There seems to be no clear causal link or direction

between financial sector development and economic growth. While some scholars argued in favor of the contribution of the sector in achieving economic growth as evidenced in the earlier studies of Schumpeter (1911), Gurley and Shaw (1955); others argued against, and berated the various reforms of the sector in achieving the nominated objective of nations growth and development. The later, (Levine and Zervos, 1996), argued that financial sector development do not translate to growth of nations, but responds to the development of the productive sector of goods and services in an economy, (The Real Sector), which its growth directly engenders economic growth of nations. Also, according to the new growth theorists, a well-developed financial sector facilitates high and sustainable economic growth (Hicks, 1969 in Garba, 2014).

Adekunle *et al.*, (2013) opined that an efficient financial system is essential for building a sustained economic growth and an open vibrant economic system. Countries with well-developed financial institutions tend to grow faster; especially the size of the banking system and the liquidity of the stock markets tend to have strong positive impact on economic growth.

To Anyanwu, (2010) in CBN, (2013), there are four interrelated sectors in operation in an economy with the aim of ensuring effective and efficient utilization of resources in the production of goods and services for the maximization of the welfare of the citizenry. These are the financial, fiscal, external and real sector. Evidently, each of these four sectors has very important roles it plays in ensuring the actualization of the citizen's general well-being. However, the role of the financial sector is crucial and strategically significant, as the workings of the economic superstructure (including its macro and micro components), the functionality of its institutions, and the smoothening of its financial/exchange operations are predominantly the responsibility of the financial sector.

To Oluyemi (1995), the financial sector of an economy is the propelling engine of growth and development that could greatly assist in the promotion of rapid economic transformation. In furtherance, he contained that no economy can attain the desired economic growth and development level without an appreciable development of the financial sector.

Nzotta (2004) asserted that the financial sector is a prime mover of economic development. It achieves this through the intermediation process, which entails providing a medium of exchange necessary for specialization and the mobilization of savings from surplus to deficit economic units. This arrangement enhances productive activities and thus positively influences aggregate output and economic growth.

Goldsmith (1969), for instance posited that the financial sector development is of prime importance because the financial superstructure, in the form of both primary and secondary securities, accelerates economic growth and improves economic performance to the extent that it facilitates the migration of funds to the best user; i.e., to the place in the economic system where the funds will yield the highest social return.

In serving as a catalyst to economic growth and its development, the financial system seeks to achieve the basic function of resource intermediation. Here, through various institutional structures, the system vigorously seek out and attract the reservoir of idle funds and allocate same to entrepreneurs, businesses, households and governments, for investments and use in various projects and purposes with a view of returns. Alternatively, they may listlessly exploit their quasi-monopolistic position and fritter away investment possibilities with unproductive loans (investments), Cameroon *et al.*, (1969) in Nzotta (2004). CBN (2009), the financial services sector is made up of the banking system, other financial institutions, Securities and

Exchange Commission, insurance and pension sub-sectors.

Although the Nigeria financial system recorded appreciable progress in the last few years, the sustainability of this presumed progress has been impeded by some economic factors. The problem of macroeconomic instability has continued to hinder the development of the financial sector in Nigeria. Frequent policy reversals and reoccurring policy summersaults have resulted to disinvestment in the financial and real sectors which have negatively affected macro-economic performances (Oriavwote and Eshenake, 2014).

Owing to the development dynamics both in Nigeria and overseas, the Nigerian financial sector requires transformation that would position it for the sustenance of economic growth in the face of changing realities. In order to benefit maximally from such efforts, the institutions that enable smooth two-way interactions of the financial and real sectors of the economy should also be reformed. On this note, this study therefore seeks to critically examine the transformation and development of financial sector and its effects on the economic growth of Nigeria from 1981 to 2017.

1.2 Statement of the Problem

The Nigerian financial sector has witnessed a number of structural and policy reforms over the past two decades, expected to stimulate the growth of the economy through increased mobilization of savings, provision of credit to the private sector and reduction in information and transaction costs (Iheanacho, 2016).

Without the allocation machinery set forth by the financial sector, no economic system will approach efficiency in allocation of resources. The very existence of financial disequilibrium spelt out by the predominance of deficit and surplus economic units underscores the inefficiency of existing economies of nations. However, by providing a system comprising of the financial markets, intermediaries and institutions, finance helps the society contend with the allocative and distributive problems and thus achieve optimality (Ezirim, 2005).

But the findings of many scholars' studies on the impact of the financial sector development on Nigeria's economic growth revealed that the sector has not fared well in achieving this nominated objective of nation's growth and development enhancing. Adekunle *et al.*, (2013) asserted that irrespective of declared year to year profits to the tune of Billions of Naira by the financial sub-sectors (the banks and others); it is not reflective as the real sector continues to weaken thereby reducing the nation's productivity level and capacity. In furtherance, they contained that most operators in the productive sector are folding up due to inability in accessing loans and credits from the financial institutions; or outrageous cost of borrowing. One would therefore ask if the various reforms the financial sector has undergone in the recent past were result oriented to the underlying objectives of engendering growth or if they were wasteful ventures. Can the Nigerian economy achieve optimality in its productive capacity as the financial sector meets the allocative and distributive societal problems? Notably in Nigeria, the adoption of the Structural Adjustment Programme (SAP) in 1986 shifted the nation's attention in driving the desired growth level and development through a conscious reform and development of the financial sector. However, publications of relevant agencies in recent time indicated inconsistency in growth trend of the contributions of the financial sector to GDP. The Finance and Insurance Sector consists of the two subsectors, Financial Institutions and Insurance firms, which in nominal terms account for 87.00% and 13.00% of the sector respectively. As a whole the sector grew by 19.74% in nominal terms (year on year), with the growth rates of

20.02% and 17.89% for Financial Institutions and Insurance respectively. The overall rate was higher than that in fourth quarter of 2015 by 3.03 % points, and lower by 0.91 % points than the preceding quarter. The sector's contribution to the overall nominal GDP was 3.33 % in fourth quarter of 2016, higher than the 3.14% it represented a year previous, and down from the contribution of 3.51 % it made in the preceding quarter. Again driven by the Financial Institutions activity, growth of the sector in real terms was 2.68%, lower by 3.73% points from the rate recorded in the fourth quarter of 2015, and higher by 0.04% points from the rate recorded in the preceding quarter. For full year 2016, this sector in real terms contracted by – 4.56% (compared to a growth of 7.12% in 2015), driven by a –5.57% contraction in financial institutions real GDP. (NBS, 2017; CBN, 2017). This study therefore is necessitated by the dominated opinions and findings on the subject matter, to among other things, investigate the impact, if any, the development of the Nigerian financial sector has on the economic growth of the country. The study spanned the year 1981 to 2017, covering a period of 37years.

1.3 Objectives of the Study

The broad objective of this study is to ascertain the effects of financial sector development on Nigeria Economic Growth.

Other specific objectives include:

1. To examine the relationship between the total deposit of the deposit money banks and Nigeria economic growth.
2. To ascertain the effect the growth of the capital market (total market capitalization of the Nigerian stock Exchange market) has on Nigeria economic growth.

1.4 Research Questions

With the above mentioned objectives, the following research questions are considered relevant to the study.

1. What relationship exists between the total deposit of Deposit Money Banks and Nigeria Economic Growth?
2. What effect has total market capitalization of the Nigerian Stock Exchange on Nigeria Economic Growth?

1.5 Research Hypotheses

The following hypotheses are therefore formulated for this study and they are stated in the null.

Ho1: There is no significant relationship between Total Deposits of the Deposit Money Banks and Nigeria's Economic Growth.

Ho2: Total Market Capitalization of the Nigerian Stock Exchange Market has no significant effect on Nigeria's Economic Growth.

1.6 Significance of the Study

The findings of this study will be of immense contribution to the Nigerian government and other economies/countries with similar economic and political settings like that of Nigeria; policy makers, economic/financial analysts and planners, researchers and the academic world.

LITERATURE REVIEW

2.1 Conceptual Framework

2.1.1 The Concept of Financial System

The financial system includes all financial intermediaries that operate in the financial sector in the economy. It is anchored on the belief that economic agents are categorized into surplus and

deficit spending units. The surplus spending units are individuals, groups or organizations operating within the economy that have excess funds above their immediate needs. They constitute suppliers of surplus funds to the financial system. The deficit spending units are those that have a shortage of funds and thus require borrowing to fund their operations. They are the users of the excess funds supplied by the surplus spending units in the financial system (CBN, 2017).

To Okereke *et al.*, (2009), the financial system can be defined as the entire environment that facilitates the transfer of savings from surplus economic units to deficit economic units for the purpose of achieving some nominated objectives. In other words, the environment within which the creation, destruction, custodian, and distribution of financial assets and liabilities are made and effectively managed is the financial system.

Nzotta (1999), the financial system consists of various financial institutions, operators and instruments that operate in an orderly manner to ensure the smooth flow of funds and thus accord the system its character and uniqueness. According to the Central Bank of Nigeria (1993), in Nzotta (1999), the financial system refers to the set of rules and regulations, and the aggregation of financial arrangements, institutions, agents, that interact with each other and the rest of the world to foster economic growth and development of a nation.

To Ezirim (2005), the financial system comprises a plethora of financial institutions, financial markets, financial instruments, rules, conventions and norms that lubricate the flow of funds through the entire economy. The management of the financial system, on a macro-note, is concerned with how we can plan, organize, direct, control, and co-ordinate our financial institutions and markets, and conduct our monetary policy so that the economy can achieve its macroeconomic objectives.

The financial system provides an enabling environment for economic growth and development, productive activity, financial intermediation, capital formation and management of the payments system. With intermediation, savers lend to intermediaries, who in turn lend firms and other fund using units. The saver holds claim against the intermediaries, in form of deposits rather than against the firm. These institutions provide a useful service by reducing the cost to individuals, of negotiating transactions, providing information, achieving diversification and attaining liquidity.

2.1.2 Structure of the Nigerian Financial Sector

The Nigerian financial system consists of the formal sector (bank and non-bank financial institutions) and the informal sector (savings and loan association, local money lenders, etc.). The institutions are regulated by the Central Bank of Nigeria (CBN), Federal Ministry of Finance, Nigeria Deposit Insurance Corporation (NDIC), Securities and Exchange Commission (SEC), the National Insurance Commission (NIC), and the Federal Mortgage Bank of Nigeria (FMBN).

The informal sector is largely loosely organized without any form of formal regulation. To interpret the financial system and evaluate its performance requires an understanding of its functions in the economy. With reference to the allocation of resources and economic efficiency, the financial system performs three major functions, which are vital to economic growth and development.

First, the system provides convenient and efficient payments system without which specialization in production, so vital to productivity improvements would be greatly impeded.

Secondly, the financial system pools savings from net surplus units and channels them to productive investment (CBN, 2017).

2.1.3 Role of the Nigerian Financial System

A sound financial system is critical to economic growth and as such plays very important roles in ensuring national growth and development. The roles as outlined by CBN, (2017) include the following:

- It enhances economic performance of the players by improving the overall welfare of the people. The financial system provides a platform for financial infrastructure to help allocate resources to individuals/units that are potentially more productive, to invest those resources.
- The financial system gives room for more efficient transfer of resources/funds. In any economy, problems of inefficient allocation of financial resources and information asymmetry may arise as one financial institution possesses superior information than the other parties.
- The financial system provides a balance between those who have funds to invest and those in need of funds, if the problem of information asymmetry is solved. The transfer of funds from surplus units (mainly household) to deficit units (mainly business, government and some households) can take place directly, while direct finance, as the process is called is inconvenient both for ultimate provider of funds and the ultimate user of funds.

In order to provide the level of per capital income enjoyed in modern industrial nations today, a very healthy flow of saving and investment must be sustained. As a general proposition, the greater the proportion of current output saved, and invested, the more rapid is the rate of economic growth (Ndugbu, 2013).

It is the function of financial institutions and markets to provide the mechanism for transferring funds from savers to investors in real capital requirement. In a broader sense, these financial institutions and markets assist in funneling money from surplus units (savers) to deficit-spending units (dissevers); Ndugbu (2013) concluded.

The import of the above, according to Nzotta (2004) is that the financial sector (operating through a well-structured financial system) ensures the transfer of savings from those who generate them to those who ultimately use them for investments or consumption. It also provides mechanisms for organizing and managing the payments system, mechanisms for the collection and transfer of savings by banks and other depository institutions, arrangements covering the activities of the capital market with respect to the issue and trading of long term securities, arrangements covering the workings of the money market in respect of short term financial instruments and arrangements covering the activities of financial markets complementary of the money and capital markets, for example the foreign exchange markets, the arrangements for risk insurance, the futures markets, etc. From all available evidence, the level of financial sector development is the best indicator of general economic development potential.

2.1.4 Financial Sector Development:

Financial sector development in developing countries and emerging markets is part of the private sector development strategy to stimulate economic growth and reduce poverty. The Financial sector is the set of institutions, instruments, and markets. It also includes the legal and regulatory framework that permit transactions to be made through the extension of credit (OECD,

2012). Fundamentally, financial sector development concerns overcoming “costs” incurred in the financial system. This process of reducing costs of acquiring information, enforcing contracts, and executing transactions results in the emergence of financial contracts, intermediaries, and markets. Different types and combinations of information, transaction, and enforcement costs in conjunction with different regulatory, legal and tax systems have motivated distinct forms of contracts, intermediaries and markets across countries in different times (World Bank, 2014).

The five key functions of a financial system in a country are: (i) information production ex ante about possible investments and capital allocation; (ii) monitoring investments and the exercise of corporate governance after providing financing; (iii) facilitation of the trading, diversification, and management of risk; (iv) mobilization and pooling of savings; and (v) promoting the exchange of goods and services (Levine, 1997, 2005).

Financial sector development takes place when financial instruments, markets, and intermediaries work together to reduce the costs of information, enforcement and transactions (World Bank). A solid and well-functioning financial sector is a powerful engine behind economic growth. It generates local savings, which in turn lead to productive investments in local business. Furthermore, effective banks can channel international streams of private remittances. The financial sector therefore provides the rudiments for income-growth and job creation.

To David Lynch (1996), financial sector development, defined as the unification of fragmented financial markets, is an ongoing process for both developing and developed countries. Unification is ultimately represented in a set of internally consistent prices across all financial markets. Price discrepancies are large at the early stages of financial development. The first objective of financial development in a financial repressed economy is to set financial prices at broadly the correct level, that is, real deposit and loan interest rates should be significantly positive. This is the most important mechanism through which financial sector development can promote economic growth in a repressed economy. From this base, it is possible to develop a range of financial markets that gradually fine-tune financial prices, including the development of products with valuable liquidity and risk management features that enhance.

2.1.5 Importance of Financial Sector Development

There are ample evidence suggesting that financial sector development plays a significant role in economic development. It promotes economic growth through capital accumulation and technological advancement by boosting savings rate, delivering information about investment, optimizing the allocation of capital, mobilizing and pooling savings, and facilitating and encouraging foreign capital inflows (National Archives, UK). A meta-analysis of 67 empirical studies finds that financial development is robustly associated with economic growth (Havranek, *et al.*, 2013).

Countries with better-developed financial systems tend to enjoy a sustained period of growth, and studies confirm the causal link between the two: financial development is not simply a result of economic growth; it is also the driver for growth (Levine, Loayza and Beck, 2000).

Additionally, it reduces poverty and inequality by enabling and broadening access for the poor and vulnerable groups, facilitating risk management by reducing their vulnerability to shocks, and raising investment and productivity that generates higher income (Demirguic, Kunt and Levine, 2009). Financial sector development also assists the growth of small and

medium-sized enterprises (SMEs) by giving them with access to finance. SMEs are typically labour intensive and create more jobs than large firms, which contributes significantly to economic development in emerging economies. Additionally, financial sector development also entails establishing robust financial policies and regulatory framework. The absence of adequate financial sector policies could have disastrous outcome, as illustrated by the global financial crisis. Financial sector development has heavy implication on economic development--both when it functions and malfunctions (Global FinReport, 2018). The crisis has challenged conventional thinking in financial sector policies and sparked debate on how best to achieve sustainable development. To effectively reassess and re-implement financial policies, publications such as Global Financial Development Report (GFDR) by the World Bank and Global Financial Stability Report (GFSR) by the IMF can play an important role. The Global Financial Development Report, a new initiative by the World Bank, highlights issues that have come to the forefront after the crisis and presents policy recommendation to strengthen systems and avoid similar crisis in the future. By gathering data and knowledge on financial development around the world, the GFDR report aims to put into spotlight issues of financial development and hopes to present analysis and expert views on current policy issues (Wikipedia, 2018).

2.1.6 The Concept of Economic Growth

Economic growth can be characterized by an upward change in the level of production of goods and services by a country over a certain period of time. It is usually brought about by advancement in innovative technology and relationship with external forces. An economy is said to be growing when it increases its productive capacity which later yield more in production of more goods and services (Jhingan, 2003).

Azubuikwe *et al.*, (2013) defined economic growth as a process by which the productive capacity of an economy increases over a given period of time causing a rise in the level of the national income. In furtherance, they contained that with economic growth, there is increase in income level, an expansion in the labour force, an increase in the total capital stock of the country and a higher volume of trade and consumption.

2.1.7 The Financial Sector Contribution to Gdp Year on Year Report

The Finance and Insurance Sector consists of the two subsectors, Financial Institutions and Insurance firms, which in nominal terms account for 87.00% and 13.00% of the sector respectively; according to the National Bureau of Statistics Report (NBS, 2017).

As a whole the sector grew by 19.74% in nominal terms (year on year), with the growth rates of 20.02% and 17.89% for Financial Institutions and Insurance respectively. The overall rate was higher than that in fourth quarter of 2015 by 3.03 % points, and lower by 0.91 % points than the preceding quarter. The sector's contribution to the overall nominal GDP was 3.33 % in fourth quarter of 2016, higher than the 3.14% it represented a year previous, and down from the contribution of 3.51 % it made in the preceding quarter.

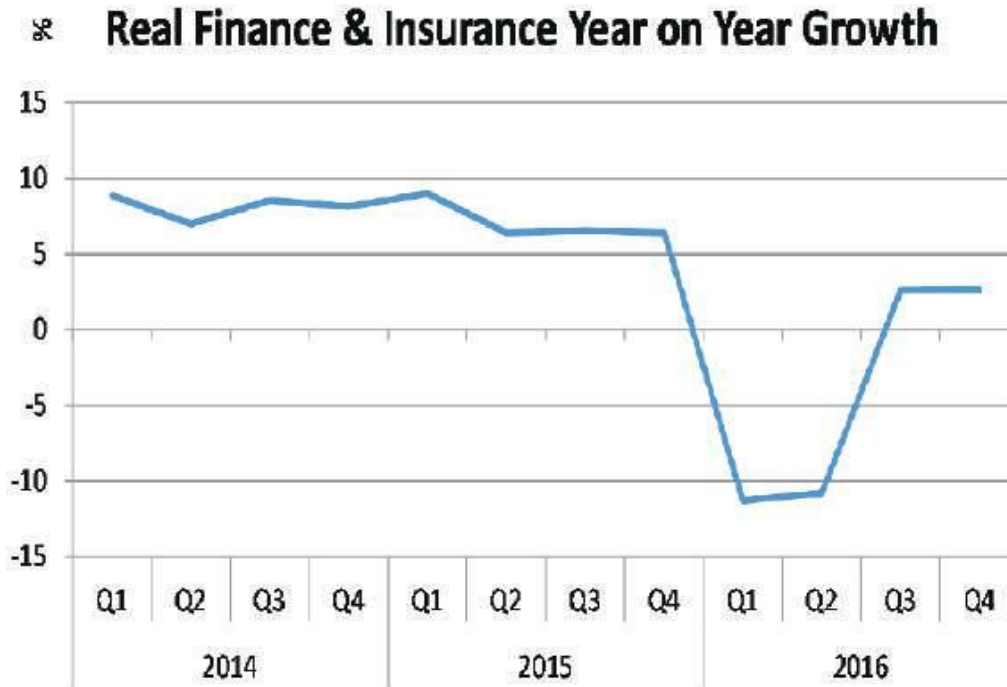
Again driven by the Financial Institutions activity, growth of the sector in real terms was 2.68%, lower by 3.73% points from the rate recorded in the fourth quarter of 2015, and higher by 0.04% points from the rate recorded in the preceding quarter.

For full year 2016, this sector in real terms contracted by -4.56% (compared to a growth of 7.12% in 2015), driven by a -5.57% contraction in financial institutions real GDP.

Quarter on quarter growth in real terms stood at 3.22%. The contribution of Finance and

Insurance to real GDP totaled 2.88%, higher than the contribution of 2.76% recorded in the fourth quarter of 2015, but lower than the share of 2.90% recorded in the preceding quarter (NBS, 2017).

Fig 2.1: The financial sector year on year growth trend



Source: National Bureau of Statistics (NBS) 2017.

2.2 Theoretical Reviews

2.2.1 Solow-Swan Model

Solow-Swan model popularly referred to as Solow growth model was developed in 1956 from the independent works of Robert Solow and Trevor Swan and it explains economic growth via capital accumulation, labour, and increases in productivity. Solow (1956) suggests that economic growth can be examined by assuming a standard neoclassical production function with decreasing returns to capital. The model argues that the financial sector is vested with the responsibility to intermediate funds from savers to entrepreneurs for investment purposes and the absence of the financial sector impede economic productivity, growth and development.

2.2.2 The Endogenous Growth Theory

The endogenous growth literature, postulated by Romer (1996), supports argument that financial development has a positive impact on the steady-state growth (Bencivenga and Smith, 1991; Bencivenga *et al.*, 1995; and Greenwood and Jovanovic, 1990, in Anyanwu, 2010). Well-functioning financial systems are able to mobilize household savings, allocate resources efficiently, diversify risks, induce liquidity, reduce information and transaction costs and provide an alternative to raising funds through individual savings and retained earnings. These functions suggest that financial development has a positive impact on growth.

Yang, *et al.*, (2006) extended the endogenous growth model with horizontal innovations

by establishing a five sector growth model in which they introduced an independent financial sector. The model solution in the balanced growth path shows that steady-state consumption and output growth rate essentially depends on the productivity in Research & Development sector, human capital sector as well as financial sector. They opined that further comparative static analysis demonstrated that more efficient financial system leads to higher steady-state growth rate, but the effects of productivity in other sectors on financial sector are uncertain.

2.2.3 McKinnon - Shaw Financial Repression Paradigm

The McKinnon-Shaw paradigm postulates that government restrictions on the operations of the financial system, such as interest rate ceiling, direct credit programs and high reserve requirements may hinder financial deepening, and this may in turn affect the quality and quantity of investments and as such, have a significant negative impact in economic growth. This means that the McKinnon-Shaw financial repression paradigm implies that a poorly functioning financial system may retard economic growth. However, a sound effective government, couple with an efficient financial system, will reflect on the positive growth of the sector which will translate to the nation's economic growth.

A well-structured financial system enhances investment by identifying and funding good business opportunities, mobilize savings, enabling trading, hedging and diversifying risk, and facilitating the exchange of goods and services. These functions result in a more efficient allocation of resources, rapid accumulation of physical and human capital, and faster technological progress, which in turn result in economic growth and by extension, the development of the real sector.

As contained in Adekunle, Salami and Adedipe (2013), the McKinnon-Shaw hypothesis implies that a monetized economy reflects a highly developed capital market; hence a high degree of monetization should be positively related to growth performance. In furthermore, they posited that most literatures stated that McKinnon (1973) and Shaw (1973) argue that policies that lead to financial repression reduce the incentives to save. The McKinnon-Shaw thesis suggests that a low or negative real interest rate discourages saving and hence reduces the availability of loan-able funds, constrains investment, and in turn lowers the rate of economic growth.

To Anyanwu (2010), the McKinnon-Shaw financial repression paradigm implies that a poorly functioning financial system may retard economic growth whereas better functioning financial system leads to more robust economic growth.

RESEARCH METHODOLOGY

3.1 Sample, Source of Data and Sample Period

This section investigates the interaction between financial sector variables employed in the study and the annual real gross domestic output in Nigeria, for the period under study.

For the purpose of this study, data were obtained from secondary source, precisely, annual time-series data were retrieved from the Central Bank of Nigeria Statistical Bulletin 2017 edition. The period under review is between 1981 and 2017.

3.2 Model Specification and Estimation Model

This study employed some financial sector variables to measure the sector's development via: total deposit of the Deposit Money Banks (TDDMBK) and total market capitalization of the Nigerian Stock Exchange Market (TMKTCAP). The Real Gross Domestic Product (RGDP), was used as proxy for Nigeria Economic Growth.

The functional expression of the model is:

$$RGDP = f(TDDMBK, TMKTCAP) \quad (3.1)$$

The econometric form of the model expressed in equation is:

$$RGDP = \alpha_0 + \alpha_1 TDDMBK + \alpha_2 TMKTCAP + \mu \quad (3.2)$$

α_0 is the Model Intercept; $\alpha_1 - \alpha_2$ are Estimates/Coefficients of Financial Sector Variables adopted in the study; and μ is the error term.

In order to bring Financial Sector variables' values and Real Gross Domestic Product values to a similar base (i.e., comparative level), the logarithm of each variable is derived.

The logarithm form of equation (3.2) becomes:

$$\log RGDP = \alpha_0 + \alpha_1 \log TDDMBK + \alpha_2 \log TMKTCAP + \mu \quad (3.3)$$

On the basis of period under review, the choice of estimation method is made. The estimation method to be adopted is the Ordinary Least Squares (OLS) method. More also, time series analysis will be carried out on the study, comprising of test for stationarity, using Augmented Dickey Fuller unit root test; test for long-run relationship i.e. cointegration test using Johansen Cointegration test; and test for causality using pairwise granger causality test.

3.3 Data Description

- i. **RGDP:** This is the value of the yearly real gross domestic output/productivity of the Nigerian economy.
- ii. **TDDMBK:** This is the yearly value of the total deposits of the Deposit Money Banks in Nigeria.
- iii. **TMKTCAP:** This is the yearly total market capitalization of the Nigerian Stock Exchange Market.

DATA PRESENTATION AND ANALYSIS

4.1 Preamble

This section presents the computer analysis and the presentation of data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin 2017 Edition. The E-view software was used for the time series and Multiple Regression Analysis.

The table array for variables needed for this analysis is presented below.

Table 4.1 Dependent Variable (Real Gross Domestic Product) with predictor variables (Total Deposits of the Deposit Money Banks and Total Market Capitalization of the Nigerian Stock Exchange market); in year t.

YEAR	TDDMBK(N'B)	TMKTCAP(N'B)	RGDP(N'B)
1981	5.8	5.0	15,258.00
1982	6.8	5.0	14,985.08
1983	8.1	5.7	13,849.73
1984	9.4	5.5	13,779.26
1985	10.6	6.6	14,953.91
1986	11.5	6.8	15,237.99
1987	15.1	8.2	15,263.93
1988	18.4	10.0	16,215.37

1989	17.0	12.8	17,294.68
1990	23.2	16.3	19,305.63
1991	30.4	23.1	19,199.06
1992	41.8	31.2	19,620.19
1993	60.5	47.5	19,927.99
1994	77.2	66.3	19,979.12
1995	99.5	180.4	20,353.20
1996	118.5	285.8	21,177.92
1997	141.7	281.9	21,789.10
1998	172.1	262.6	22,332.87
1999	274.2	300.0	22,449.41
2000	357.1	472.3	23,688.28
2001	499.2	662.5	25,267.54
2002	653.2	764.9	28,957.71
2003	759.6	1359.3	31,709.45
2004	932.9	2112.5	35,020.55
2005	1,089.5	2900.1	37,474.95
2006	1,747.3	5120.9	39,995.50
2007	2,693.6	13181.7	42,922.41
2008	4,309.5	9563.0	46,012.52
2009	5,763.5	7030.8	49,856.10
2010	5,954.3	9918.2	54,612.26
2011	6,531.9	10275.3	57,511.04
2012	8,062.1	14800.9	59,929.89
2013	8,606.6	19077.4	63,218.72
2014	11,936.9	16875.1	67,152.79
2015	11,403.2	17003.4	69,023.93
2016	11,949.3	16185.7	67,931.24
2017	11,986.7	21128.9	68,490.98

Source: CBN Statistical Bulletin 2017.

4.2 Descriptive Statistics

The table below synthesizes the descriptive statistics. The mean value of RGDP over time is 32749.95. The median value lies well below the mean value at 22449.41. The maximum value of RGDP is 69023.93, while the minimum value stands as low as 13779.26. The RGDP has its deviation from its mean, with the value of 18889.20. All the variables of the study are positively skewed. More also, all the variables of the study are peaked (leptokurtic) relative to the normal distribution.

DISCRIPTIVE STATISTICS

	RGDP	TDDMBK	TMKTCAP
Mean	32749.95	2604.816	4594.424
Median	22449.41	274.2000	300.0000
Maximum	69023.93	11986.70	21128.90
Minimum	13779.26	5.800000	5.000000
Std. Dev.	18889.20	4051.170	6760.654
Skewness	0.801592	1.394284	1.189917
Kurtosis	2.141006	3.443736	2.881205
Jarque-Bera	5.099939	12.29172	8.753150
Probability	0.078084	0.002142	0.012568
Sum	1211748.	96378.20	169993.7
Sum Sq. Dev.	1.28E+10	5.91E+08	1.65E+09
Observations	37	37	37

4.3 DATA ANALYSIS AND INTERPRETATION

4.3.1 Test for Stationary Using Augmented Dickey Fuller’s Unit Root Test.

VARIABLE	AT LEVEL	AT 1 ST DIFF.	LEVEL OF INTEGRATION
RGDP	-2.128038	-5.172187	(1)
TDDMBK	-2.384092	-6.419605	(1)
TMKTCAP	0.658270	-5.734359	(1)
Critical Value	5% = -3.580623		

Decision Rule:

The result shows that all the variables incorporated in are all order one integrating [1(1)], i.e., they are stationary at first difference because the Augmented Dickey Fuller Test Statistics are greater than the Mackinnon critical value at 5% level of significance.

4.3.2 Test for Long – Run Relationship using Johansen Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
0.838720	92.59909	29.79707	0.0000
0.445603	28.73771	15.49471	0.0003
0.206421	8.092089	3.841466	0.0044

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Max-Eigen	0.05

Eigenvalue	Statistic	Critical Value	Prob.**
0.838720	63.86138	21.13162	0.0000
0.445603	20.64562	14.26460	0.0043
0.206421	8.092089	3.841466	0.0044

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Decision Rule: The result of the Trace test indicates 3 co-integrating equation(s) at 0.05 level of significance. Also, the maximum eigenvalue test indicates 3 co-integrating equations at 0.05 level of significance.

We therefore reject the null hypothesis and accept the alternative hypothesis that there is a long-run relationship among the variables of the model.

4.3.3 GRANGER CAUSALITY TEST – Pairwise

Pairwise Granger Causality Tests

Date: 04/12/19 Time: 15:25

Sample: 1981 2017

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
TDDMBK does not Granger Cause RGDP	35	6.13734	0.0058
RGDP does not Granger Cause TDDMBK		7.37580	0.0025
TMKTCAP does not Granger Cause RGDP	35	0.29901	0.7437
RGDP does not Granger Cause TMKTCAP		14.2735	4.E-05
TMKTCAP does not Granger Cause TDDMBK	35	48.5187	4.E-10
TDDMBK does not Granger Cause TMKTCAP		5.47341	0.0094

Decision Rule:

The reported Granger Causality test results in the table above revealed that there is a Causal link between two lag periods of Real Gross Domestic Product (RGDP) and Financial Sector Development Variables in varying cases. Two lag periods of RGDP was found to granger cause current changes in all the financial sector Development variables, TDDMBK and TMKTCAP. More also, among the incorporated financial sector development variables, TDDMBK was found to granger cause current changes in RGDP.

Summarily, the result shows that the variables (dependent and explanatory) granger cause each other at 5% level of significance because their probability values are less than 0.05.

We therefore establish a bi-directional causal relationship from financial sector development to Economic Growth, and vice versa.

4.4.1 Multiple Regression Analysis

MULTIPLE REGRESSION ANALYSIS RESULT

Dependent Variable: RGDP
 Method: Least Squares
 Date: 04/12/19 Time: 14:27
 Sample: 1981 2017
 Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20575.15	1034.433	19.89027	0.0000
TDDMBK	2.268644	0.725430	3.127307	0.0036
TMKTCAP	1.363697	0.434698	3.137115	0.0035
R-squared	0.928959	Mean dependent var		32749.95
Adjusted R-squared	0.924780	S.D. dependent var		18889.20
S.E. of regression	5180.605	Akaike info criterion		20.02084
Sum squared resid	9.13E+08	Schwarz criterion		20.15145
Log likelihood	-367.3855	Hannan-Quinn criter.		20.06688
F-statistic	222.2978	Durbin-Watson stat		0.318031
Prob(F-statistic)	0.000000			

Source: E-View 7 Output, 2019.

Estimation Command:

```
=====
LS RGDP C TDDMBK TMKTCAP
```

Estimation Equation:

```
=====
RGDP = C(1) + C(2)*TDDMBK + C(3)*TMKTCAP
```

Substituted Coefficients:

```
=====
RGDP = 20575.1514703 + 2.26864355322*TDDMBK + 1.36369709531*TMKTCAP
```

Barring all factors, Nominal Gross Domestic Product (NGDP) autonomously averages 20575.15 per annum absolutely.

The result also shows that there is a positive relationship between Financial Sector variables, Total Deposits of the Deposit Money Banks (TDDMBK), Total Market Capitalization of Nigerian Stock Exchange (TMKTCAP) and the Real Gross Domestic Product of the Nigeria's economy within the period under review.

4.4.2 Test for Goodness of Fit Using Adjusted Coefficient of Determination (R-Squared Adjusted)

The result shows that all the independent variables included in the model accounted for 92% variations in the dependent variable. This gives a good fit and shows that our model is adequate and plausible. The remaining unexplained variations are taken care of by the error term (et).

4.4.3 Test for the Individual Significance Using T-test

HYPOTHESIS ONE

TOTAL DEPOSIT OF THE DEPOSIT MONEY BANKS (TDDMBK).

HO1: There is no significant relationship between Total Deposits of the Deposit Money Banks and Nigeria's Economic Growth.

$$T_{cal} = 3.127307$$

$$T_{tab} = 1.960$$

Decision Rule

Since $t_{calculated}$ is greater than $t_{tabulated}$, we reject the null hypothesis and accept the alternative hypothesis and infer that keeping other regressors constant, Total Deposits of the Deposit Money Banks has a significant relationship with Nigeria's Economic Growth.

HYPOTHESIS TWO:

Total Market Capitalization of the Nigerian Stock Exchange Market (TMKTCAP)

Ho2: Total Market Capitalization of the Nigerian Stock Exchange Market has no significant effect on Nigeria's Economic Growth.

$$T_{cal} = 3.137115$$

$$T_{tab} = 1.960$$

Decision Rule:

Since $t_{calculated}$ is greater than $t_{tabulated}$, we reject the null hypothesis, and accept the alternative hypothesis, and infer that keeping other regressors constant, total market capitalization of the Nigerian Stock Exchange Market has a significant effect on Nigeria's Economic Growth.

4.4.4 Test for Joint Significance Using the Fishers Distribution

Ho: There is no significant relationship between financial sector variables collectively and Nigeria's Economic Growth.

$$F_{cal} = 222.2978$$

$$F_{tab} = 2.53 @ 5\%; 3.70 @ 1\%$$

Decision rule:

Since $F_{calculated}$ is greater than $F_{tabulated}$ at both 1% and 5% critical values respectively, we reject the null hypothesis and accept the alternative hypothesis and infer that financial sector variables (TDDMBK and TMKCAP) jointly affect RGDP.

4.5 Discussion of Findings

From the tests and analysis conducted towards the actualization of the objectives of this study, we found that there is a significant relationship between financial sector development variables collectively and Nigeria's Economic Growth within the period under review. This finding justifies Garba (2014) contained in the empirical literature which revealed that the development of the financial sector influence the growth of the economy.

The study in answering the research questions, on individual financial sector development variables relationship and effects basis, shows that there is a positive relationship between Total Deposits of the Deposit Money Banks (TDDMBK), Total Market Capitalization of the Nigeria Stock Exchange Market (TMKTCAP) and the Real Gross Domestic Product (RGDP). This finding justifies Adekunle *et al.*, (2013) contained in the literature which held that countries with well-developed financial institutions tend to grow faster; especially the size of the banking system and the liquidity of the stock markets tend to have strong positive impact on economic growth.

On individual hypothesis tests, the explanation variables (TDDMBK and TMKTCAP) were found to exert significant positive effect on the dependent variable, RGDP. This justifies Oluyemi (1995), which contained that the financial sector is the propelling engine of growth and development that could greatly assist in the promotion of rapid economic transformation.

From the stationary test using the Augmented Dickey Fuller Unit root test, the result shows that all the variables of the study (RGDP, TDDMBK and TMKTCAP) are all order one differencing; i.e. stationary at first difference.

On the test for long-run relationship using Johansen Co-integration test, the result indicated that there exists a long-run relationship among the variables of the model. This finding agrees with Puatwoe and Piabuo (2017), as contained in the empirical literature, where it was established of the existence of a long-run relationship between financial sector development variables and economic growth of Cameroon.

The result from the Causality test using Pairwise Granger Causality test, showed that there is a causal link between the past values of financial sector development variables and the nominal gross domestic product in Nigeria. The findings established a bi-directional causal relationship from financial sector development to Nigeria Economic Growth, and vice versa. This finding justifies Levine, Loayza and Beck (2000) contained in the literature which established a causal link between the financial sector development and economic growth. The study concludes that financial sector development is not simply a result of economic growth; it is also the driver for growth (i.e., bi-directional causal link).

On the goodness of fit of the model used for the analysis, the independent variables included in the model accounted for 92% variations in the dependent variable, making the model adequate and plausible.

On a general note, the study revealed that the development of the financial sector; its robustness, efficiency and effective operations of its sub-sectors, remains key to engendering desired economic growth of nations; as the sector remains a prime mover in fostering, promoting and sustaining a nation's growth through funds channeling/intermediation, and economic activities smoothening.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Research Findings

This study analyzed Financial Sector Development and Nigeria's Economic Growth. The broad objective of the study was to ascertain effects the development of the Nigerian Financial Sector has on the nation's Economic Growth using changes in various financial sector development variables, representing its various sub-sectors on the nation's real gross domestic product within the period 1981 – 2017.

Financial Sector development was proxied in the study with Total Deposit of the Deposit money banks and Total Market Capitalization of the Nigerian Stock Exchange Market whereas the real gross domestic product was used for the Nigerian Economic Growth.

In the method of analysis, the study adopted the OLS multiple regression (of time series data) method; test for stationarity using the Augmented Dickey Fuller to carry out the unit root test; cointegration test with Johansen test and Granger causality test with Pairwise test; and diagnostic tests.

All these tests were carried out with the aid of interactive computer software, the E-view

software.

The findings of the study indicated that there is a significant relationship between financial sector development variables collectively and the real gross domestic product in Nigeria within the period under review. Among the incorporated financial sector variables, the result shows that there is a positive significant relationship between Total Deposits of the Deposit Money Banks (TDDMBK), Total Market Capitalization of the Nigeria Stock Exchange Market (TMKTCAP) and the Real Gross Domestic Product (RGDP) at 0.05 level of significance.

The result shows that the independent variables included in the model accounted for 92% variations in the dependent variable. The remaining unexplained variation is taken care of by the error term represented in the model by the error term (e_t).

In addition, the results from the stationarity test using the Augmented Dickey Fullers unit root test showed that all the variables of the study (RGDP, TDDMBK and TMKTCAP) are all order one differencing, i.e., stationary at first difference; because the Augmented Dickey Fuller test statistics are greater than the Mackinnion critical value at 5% level of significance.

The cointegration test using the Johansen test revealed that there is a long run relationship among the variables of the model.

More also, the result from the Causality test using Pairwise Granger Causality test, showed that there is a causal link between the past values of financial sector development variables and the real gross domestic product in Nigeria. The findings established a bi-directional causal relationship from financial sector development to Nigeria Economic Growth, and vice versa

5.2 Conclusion

The researcher concluded that financial sector development is key to stimulating desired economic growth of the Nigerian Economy, as the sector remains a prime mover and propeller that induces growth through effective and efficient operations of its sub-sectors in financial intermediation, capital formation, the management of the payment system, among others.

5.3 Recommendations

Based on the findings and conclusion of this study, we recommend that:

- The deposit money banks and Central Bank of Nigeria should employ products and policies respectively that will enhance the increased deposits of funds into deposit money banks, such as the financial inclusion policy of the Central Bank of Nigeria. The deposit money bank's products should entice customers to use the banks, thus encouraging savings mobilization.
- The Nigeria stock exchange and its regulator – Securities and Exchange Commission need to continually introduce and implement reforms/policies that will encourage the listing of more companies on the floor of the exchange for trading, and also for participation of individual and corporate entities in stock/shares trading. The forgoing will boost the total stock market capitalization and in turn positively affect economic growth of Nigeria.
- The development of the Nigerian Money and Capital Markets should be given greater attention by the Nigerian government, through conscious formulation and implementation of favourable policies that will encourage more patronage and investment, especially, private investors and Foreign Direct Investment.

Suggestion for Further Studies: We suggest further study on the subject matter to be carried out, incorporating additional variables for financial sector development like; Yearly income of the Insurance companies, Banks Credit to the Private Sector, and Foreign Direct Investment to determine their individual effects and also collective effect to the Economic Growth of Nigeria.

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APPENDICES

TEST FOR STATIONARITY USING AUGMENTED DICKEY FULLER UNIT ROOT TEST

RGDP @ LEVEL

Null Hypothesis: RGDP has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 8 (Automatic - based on AIC, maxlag=14)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.128038	0.5088
Test critical values:		
1% level	-4.323979	
5% level	-3.580623	
10% level	-3.225334	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(RGDP)
 Method: Least Squares
 Date: 04/12/19 Time: 14:34
 Sample (adjusted): 1990 2017
 Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(-1)	-0.147769	0.069439	-2.128038	0.0483
D(RGDP(-1))	0.612097	0.220865	2.771359	0.0131
D(RGDP(-2))	0.040423	0.313713	0.128854	0.8990
D(RGDP(-3))	-0.069719	0.311365	-0.223915	0.8255
D(RGDP(-4))	0.552973	0.312647	1.768680	0.0949
D(RGDP(-5))	0.263497	0.332478	0.792523	0.4390
D(RGDP(-6))	-0.186255	0.328555	-0.566890	0.5782
D(RGDP(-7))	0.118837	0.317118	0.374742	0.7125
D(RGDP(-8))	0.246641	0.312811	0.788467	0.4413
C	94.36442	918.1469	0.102777	0.9193
@TREND(1981)	199.4574	92.73782	2.150766	0.0462
R-squared	0.690752	Mean dependent var		1828.439
Adjusted R-squared	0.508841	S.D. dependent var		1513.492
S.E. of regression	1060.696	Akaike info criterion		17.05796
Sum squared resid	19126308	Schwarz criterion		17.58133
Log likelihood	-227.8115	Hannan-Quinn criter.		17.21796
F-statistic	3.797202	Durbin-Watson stat		1.775209
Prob(F-statistic)	0.007685			

RGDP @ 1ST DIFF.

Null Hypothesis: D(RGDP) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 15 (Automatic - based on AIC, maxlag=15)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.172187	0.0026
Test critical values:		
1% level	-4.498307	
5% level	-3.658446	
10% level	-3.268973	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(RGDP,2)
 Method: Least Squares
 Date: 04/12/19 Time: 14:37
 Sample (adjusted): 1998 2017
 Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP(-1))	-13.04608	2.522352	-5.172187	0.0354

D(RGDP(-1),2)	11.94063	2.384012	5.008629	0.0376
D(RGDP(-2),2)	11.92019	2.340648	5.092688	0.0365
D(RGDP(-3),2)	11.08996	2.125613	5.217299	0.0348
D(RGDP(-4),2)	10.98302	1.925710	5.703361	0.0294
D(RGDP(-5),2)	9.269378	1.683941	5.504573	0.0315
D(RGDP(-6),2)	7.634277	1.509322	5.058083	0.0369
D(RGDP(-7),2)	7.137598	1.249760	5.711177	0.0293
D(RGDP(-8),2)	7.320896	1.185943	6.173060	0.0253
D(RGDP(-9),2)	6.271365	1.131238	5.543809	0.0310
D(RGDP(-10),2)	5.161302	1.010318	5.108591	0.0362
D(RGDP(-11),2)	5.116375	0.972119	5.263114	0.0343
D(RGDP(-12),2)	5.329095	0.893184	5.966403	0.0270
D(RGDP(-13),2)	4.664790	0.862893	5.405988	0.0326
D(RGDP(-14),2)	3.254476	0.620509	5.244852	0.0345
D(RGDP(-15),2)	2.001746	0.466835	4.287910	0.0503
C	-25741.18	6003.497	-4.287698	0.0503
@TREND(1981)	1678.621	374.4157	4.483308	0.0463
<hr/>				
R-squared	0.980445	Mean dependent var		-2.572000
Adjusted R-squared	0.814224	S.D. dependent var		1260.041
S.E. of regression	543.0996	Akaike info criterion		14.92988
Sum squared resid	589914.5	Schwarz criterion		15.82604
Log likelihood	-131.2988	Hannan-Quinn criter.		15.10482
F-statistic	5.898456	Durbin-Watson stat		2.194705
Prob(F-statistic)	0.154534			

TDDMBK @ LEVEL

Null Hypothesis: D(TDDMBK) has a unit root
 Exogenous: Constant
 Lag Length: 1 (Automatic - based on AIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.384092	0.1535
Test critical values:		
1% level	-3.639407	
5% level	-2.951125	
10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TDDMBK,2)
 Method: Least Squares
 Date: 04/12/19 Time: 14:39
 Sample (adjusted): 1984 2017
 Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TDDMBK(-1))	-0.506942	0.212635	-2.384092	0.0234
D(TDDMBK(-1),2)	-0.414117	0.163206	-2.537394	0.0164
C	185.7646	134.6962	1.379137	0.1777

R-squared	0.527276	Mean dependent var	1.061765
Adjusted R-squared	0.496778	S.D. dependent var	930.3907
S.E. of regression	660.0017	Akaike info criterion	15.90646
Sum squared resid	13503671	Schwarz criterion	16.04114
Log likelihood	-267.4098	Hannan-Quinn criter.	15.95239
F-statistic	17.28872	Durbin-Watson stat	2.036895
Prob(F-statistic)	0.000009		

TDDMBK @ 1ST DIFF.

Null Hypothesis: D(TDDMBK) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 0 (Automatic - based on AIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.419605	0.0000
Test critical values:		
1% level	-4.243644	
5% level	-3.544284	
10% level	-3.204699	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TDDMBK,2)
 Method: Least Squares
 Date: 04/12/19 Time: 14:43
 Sample (adjusted): 1983 2017
 Included observations: 35 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TDDMBK(-1))	-1.156967	0.180224	-6.419605	0.0000
C	-349.4744	233.7328	-1.495188	0.1447
@TREND(1981)	39.22742	12.35960	3.173841	0.0033

R-squared	0.563455	Mean dependent var	1.040000
Adjusted R-squared	0.536171	S.D. dependent var	916.6063
S.E. of regression	624.2544	Akaike info criterion	15.79281
Sum squared resid	12470193	Schwarz criterion	15.92612
Log likelihood	-273.3742	Hannan-Quinn criter.	15.83883
F-statistic	20.65147	Durbin-Watson stat	1.874989
Prob(F-statistic)	0.000002		

TMKTCAP @ LEVEL

Null Hypothesis: TMKTCAP has a unit root
 Exogenous: Constant
 Lag Length: 0 (Automatic - based on AIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	0.658270	0.9894
Test critical values:		
1% level	-3.626784	
5% level	-2.945842	
10% level	-2.611531	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TMKT CAP)
 Method: Least Squares
 Date: 04/12/19 Time: 14:50
 Sample (adjusted): 1982 2017
 Included observations: 36 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TMKT CAP(-1)	0.037915	0.057598	0.658270	0.5148
C	429.9901	427.1639	1.006616	0.3212
R-squared	0.012584	Mean dependent var		586.7749
Adjusted R-squared	-0.016457	S.D. dependent var		2110.302
S.E. of regression	2127.596	Akaike info criterion		18.21733
Sum squared resid	1.54E+08	Schwarz criterion		18.30530
Log likelihood	-325.9119	Hannan-Quinn criter.		18.24803
F-statistic	0.433319	Durbin-Watson stat		2.077607
Prob(F-statistic)	0.514798			

TMKT CAP @ 1ST DIFF.

Null Hypothesis: D(TMKT CAP) has a unit root
 Exogenous: Constant, Linear Trend
 Lag Length: 1 (Automatic - based on AIC, maxlag=2)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.734359	0.0002
Test critical values:		
1% level	-4.252879	
5% level	-3.548490	
10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
 Dependent Variable: D(TMKT CAP,2)
 Method: Least Squares
 Date: 04/12/19 Time: 14:52
 Sample (adjusted): 1984 2017
 Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TMKTCAP(-1))	-1.512718	0.263799	-5.734359	0.0000
D(TMKTCAP(-1),2)	0.360286	0.181702	1.982837	0.0566
C	-793.3545	784.9239	-1.010741	0.3202
@TREND(1981)	85.50226	37.62476	2.272500	0.0304
R-squared	0.595833	Mean dependent var		145.3667
Adjusted R-squared	0.555416	S.D. dependent var		3055.306
S.E. of regression	2037.190	Akaike info criterion		18.18666
Sum squared resid	1.25E+08	Schwarz criterion		18.36623
Log likelihood	-305.1732	Hannan-Quinn criter.		18.24790
F-statistic	14.74225	Durbin-Watson stat		2.089448
Prob(F-statistic)	0.000004			

COINTEGRATION TEST USING JOHANSEN COINTEGRATION TEST

Date: 04/12/19 Time: 14:54
 Sample (adjusted): 1983 2017
 Included observations: 35 after adjustments
 Trend assumption: Linear deterministic trend
 Series: RGDP TDDMBK TMKTCAP
 Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.838720	92.59909	29.79707	0.0000
At most 1 *	0.445603	28.73771	15.49471	0.0003
At most 2 *	0.206421	8.092089	3.841466	0.0044

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.838720	63.86138	21.13162	0.0000
At most 1 *	0.445603	20.64562	14.26460	0.0043
At most 2 *	0.206421	8.092089	3.841466	0.0044

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
 * denotes rejection of the hypothesis at the 0.05 level
 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b*S11*b=D):

RGDP	TDDMBK	TMKTCAP
-7.61E-05	-0.000923	0.000914

0.000254	-0.000752	-9.16E-05
0.000133	-0.001063	0.000164

Unrestricted Adjustment Coefficients (alpha):

D(RGDP)	10.87622	233.4264	410.2635
D(TDDMBK)	419.7613	192.8677	26.11887
D(TMKT CAP)	-1175.903	1086.689	-100.9234

1 Cointegrating Equation(s):	Log likelihood	-842.9511
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Normalized cointegrating coefficients (standard error in parentheses)

RGDP	TDDMBK	TMKT CAP
1.000000	12.12575	-12.00627
	(1.39835)	(0.94835)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	-0.000828	
	(0.01346)	
D(TDDMBK)	-0.031954	
	(0.00483)	
D(TMKT CAP)	0.089516	
	(0.02393)	

2 Cointegrating Equation(s):	Log likelihood	-832.6283
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Normalized cointegrating coefficients (standard error in parentheses)

RGDP	TDDMBK	TMKT CAP
1.000000	0.000000	-2.647050
		(0.15287)
0.000000	1.000000	-0.771847
		(0.01980)

Adjustment coefficients (standard error in parentheses)

D(RGDP)	0.058430	-0.185579
	(0.04547)	(0.20429)
D(TDDMBK)	0.017008	-0.532510
	(0.01398)	(0.06280)
D(TMKT CAP)	0.365386	0.268242
	(0.06464)	(0.29038)

PAIRWISE GRANGER CAUSALITY TEST

Pairwise Granger Causality Tests

Date: 04/12/19 Time: 15:25

Sample: 1981 2017

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
TDDMBK does not Granger Cause RGDP	35	6.13734	0.0058
RGDP does not Granger Cause TDDMBK		7.37580	0.0025
TMKTCAP does not Granger Cause RGDP	35	0.29901	0.7437
RGDP does not Granger Cause TMKTCAP		14.2735	4.E-05
TMKTCAP does not Granger Cause TDDMBK	35	48.5187	4.E-10
TDDMBK does not Granger Cause TMKTCAP		5.47341	0.0094

MULTIPLE REGRESSION ANALYSIS USING RGDP AS THE DEPENDENT VARIABLE

Dependent Variable: RGDP
 Method: Least Squares
 Date: 04/12/19 Time: 14:27
 Sample: 1981 2017
 Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20575.15	1034.433	19.89027	0.0000
TDDMBK	2.268644	0.725430	3.127307	0.0036
TMKTCAP	1.363697	0.434698	3.137115	0.0035
R-squared	0.928959	Mean dependent var		32749.95
Adjusted R-squared	0.924780	S.D. dependent var		18889.20
S.E. of regression	5180.605	Akaike info criterion		20.02084
Sum squared resid	9.13E+08	Schwarz criterion		20.15145
Log likelihood	-367.3855	Hannan-Quinn criter.		20.06688
F-statistic	222.2978	Durbin-Watson stat		0.318031
Prob(F-statistic)	0.000000			

DESCRIPTIVE STATISTICS

	RGDP	TDDMBK	TMKTCAP
Mean	32749.95	2604.816	4594.424
Median	22449.41	274.2000	300.0000
Maximum	69023.93	11986.70	21128.90
Minimum	13779.26	5.800000	5.000000
Std. Dev.	18889.20	4051.170	6760.654
Skewness	0.801592	1.394284	1.189917
Kurtosis	2.141006	3.443736	2.881205
Jarque-Bera	5.099939	12.29172	8.753150
Probability	0.078084	0.002142	0.012568
Sum	1211748.	96378.20	169993.7
Sum Sq. Dev.	1.28E+10	5.91E+08	1.65E+09
Observations	37	37	37