

**CAPITAL MARKET DEVELOPMENT AND ECONOMIC GROWTH IN  
NIGERIA**

**BY**

**Chidinma Rita DUNU**

**MGS1709033**

**DEPARTMENT OF BANKING AND FINANCE**

**FACULTY OF MANAGEMENT SCIENCES**

**UNIVERSITY OF BENIN**

**BENIN CITY**

**DECEMBER, 2022**

**CAPITAL MARKET DEVELOPMENT AND ECONOMIC GROWTH IN  
NIGERIA**

**BY**

**Chidinma Rita DUNU**

**MGS1709033**

**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF  
BANKING AND FINANCE, FACULTY OF MANAGEMENT SCIENCES,  
UNIVERSITY OF BENIN, BENIN CITY, IN PARTIAL FULFILMENT OF  
THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF  
SCIENCE (BSC), DEGREE IN BANKING AND FINANCE**

**DECEMBER, 2022**

## **DECLARATION**

I, **Chidinma Rita DUNU**, solemnly declare that the project is based on my own work carried out during the course of my study. I affirm that the statements made and conclusions drawn are the corollary of my research work. I further authenticate that the work contained in the report is original and has been done by me under the general supervision of my supervisor. The work has not been submitted to any institution for any other degree or diploma certificate program in this university or any other university.

---

**Chidinma Rita DUNU**

**MGS1709033**

---

Date

## CERTIFICATION

I hereby certify that this project work was carried out by **Chidinma Rita DUNU** with the Matriculation Number MGS1709033 to the Department of Banking and Finance, Faculty of Management Science, University of Benin, Benin City under the full Supervision of Dr. Osagie Osifo and in accordance with the requirement of t he Department of Banking and Finance of the University of Benin, Benin City for the award of bachelor of science degree in Banking and Finance.

---

DR. OSAGIE OSIFO  
SUPERVISOR

---

SIGNATURE AND DATE

---

DR. J. OBAYAGBONA  
PROJECT CO-ORDINATOR

---

SIGNATURE AND DATE

---

DR. OSAZEE OMOROKUNWA  
HEAD OF DEPARTMENT

---

SIGNATURE AND DATE

## **DEDICATION**

I dedicate this project work to Him that is able to do exceeding abundantly above all I can ever ask or think, the Lord God Almighty, the One who is ever faithful. Also, to my amazing and loving family for their unending love and support.

## ACKNOWLEDGEMENTS

I want to acknowledge my father and maker, the giver of life, wisdom and strength. My sincere gratitude goes to God Almighty for His unending love and provision.

My profound gratitude goes to my supervisor, Dr. O. Osifo for his enthusiasm for the project, for his support, encouragement and patience. His careful editing contributed enormously to the production of this project. My appreciation goes to the H.O.D of the department of Banking and Finance, Dr. O. Omorokunwa, my Course Advisers, Dr. F.O Ogeiva and Dr. L. Igbinovia and all the lecturers in the department for impacting knowledge into me and sharpening my intellectual base. Nobody has been more important to me in the pursuit of this project than the members of my family. I would like to thank my parents Mr. and Mrs. Dunu Austin and Dunu Vivian for their love, care, moral and financial support up to this stage of my life. thank you my two lifelines, I always knew that you believed in me and wanted the best for me. Special and profound thanks to my loving siblings, Amarachi, Chiwendu, Victoria, Onyinyechukwu and Akachukwu, who offered invaluable support and humor over the years.

Finally, to my super amazing friends; Godwin Great, Precious, and Nonso, you should know that your support and encouragement was worth more than I can express on paper. May the almighty God bless you all, Amen.

## TABLE OF CONTENTS

TITLE PAGE.....	i
DECLARATION.....	3
CERTIFICATION.....	iv
DEDICATION.....	v
ACKNOWLEDGEMENTS.....	vi
TABLE OF CONTENT.....	Viii
ABSTRACT.....	x
Background to the Study.....	1
Statement of the Research Problem.....	3
Research Questions.....	5
1.4 Objectives of the Study.....	6
1.5 Research Hypotheses.....	6
1.6 Scope of the Study.....	6
1.7 Limitation of the Study.....	7
1.8 Significance of the Research .....	8
<b>CHAPTER TWO: LITERATURE REVIEW</b>	
2.1 Introduction.....	9

2.2 Conceptual Review.....	9
2.2.1 Concept of Economic Growth.....	9
2.2.2 Nigeria Economy.....	10
2.2.3 Concept of Capital Market Development in Nigeria.....	14
2.2.4 Market Capitalization and Economic Growth.....	18
2.2.5 All Share Index and Economic Growth.....	18
2.2.6 Volume of Trade and Economic Growth .....	19
2.2.7 Value of Transaction and Economic Growth.....	19
2.3 Theoretical Review.....	20
2.3.1 Endogenous Growth Theory .....	20
2.3.2 Exogenous Growth Model.....	21
2.3.3 Efficient Market Theory.....	22
2.3.4 Financial Liberalization Theory .....	23
2.4 Empirical Review.....	24
2.5 Theoretical Frame Work.....	36
 <b>CHAPTER THREE: METHODOLOGY</b>	
3.1 Introduction.....	37
3.2 Research Design.....	37

3.3 Population and Sampling Techniques of the Study.....	37
3.4 Sampling Techniques.....	38
3.5 Sources of Data.....	38
3.6 Model Specification.....	38
3.7 Method of Data Analysis .....	39
3.8 Operationalization of Variable .....	40

**CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS OF RESULTS**

4.1 Introduction .....	42
4.2 Descriptive Statistics.....	42
4.3 Correlation Analysis.....	43
4.4 Presentation and Analysis of Regression Results for Relationship Between Capital .....	45
4.5 Test of Hypotheses .....	47
4.7 Discussion of findings.....	49

**CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

5.1 Introduction .....	51
5.2 Summary of Findings.....	51

5.3 ..Conclusion .....	52
5.4 Recommendation.....	52
References .....	54
Appendix .....	57

## ABSTRACT

*The study is on capital market development and economic growth in Nigeria. The goal of the study is to ascertain the impact of capital market performance on economic growth in Nigeria.*

*The study adopted the fully modified ordinary least square (FMOLS). The outcome of the study revealed that all capital market indicators (MCAP, VOT, VAT) except All share index (ASI) are positive and significant with economic growth in Nigeria. The study however recommends that market capitalization must be improved by encouraging more foreign investors to participate in the market, this will increase new issues which will automatically increase economic growth of Nigeria.*

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Scholars, researchers and policymakers have recognized the value of the capital market as an effective route of financial intermediation as a key factor in a nation's economic progress. According to Chinwuba and Amos (2011), one of key institutions that enables a stagnant economy progression toward growth and development is the capital market. This complex establishment is bestowed with an innate mechanism that allows long-term funds from the surplus sectors of the economy to be mobilized, harnessed, and made available to the economy's deficit sectors. The services that capital market offers, whether directly or indirectly, aid the economy to thrive. Due to its capability and capacity to promote and mobilize saving and investment, the capital market is a genuinely distinct and coordinated financial industry and a vital agent of economic growth and development (Odetayo & Sajuyigbe, 2012; Okoye & Nwisienyi, 2013). The capital market performs a number of important goals, including the mobilization of savings, generation of liquidity, investment risk, better incentive for corporate governance, and improved information dissemination and acquisition (Okodua & Ewetan, 2013). High rates of capital formation in developing nations are designed to accomplish economic growth goals. Financial institutions must therefore harness local savings and draw in foreign investment in order to hasten sustainable economic growth. A necessity for stimulating and directing capital growth is the expansion of the capital

market. Boosting these functions' effectiveness and efficiency via quick service provision can accelerate economic growth (Okereke, 2010; Obadan, 2015)

Economic expansion also relies on a robust financial system that pools domestic wealth and attracts international money for profitable investments. International investors are discouraged by underdeveloped capital markets because they are usually overpriced and illiquid. Three key routes through which capital markets and economic growth may be related have been identified in prior research on financial development and growth (Pagano, 2013). First of all, when capital markets develop, more savings are directed toward investments. Furthermore, changes in the capital market could affect investments by altering the savings rate. The efficiency in capital allocation is also improved by the growth of the capital markets. The capital market is fundamental to the development of the Nigerian economy because it creates a venue for investors and commercial organizations with ambitious expansion plans and new projects that urgently require money. The rapid rise of private and public investor activity at the stock exchange floor and in various public offerings of quoted businesses has resulted in a dramatic overhaul of the Nigerian capital market. International investors' interest and attention were also drawn to the market, increasing capital inflow.

For instance, Nkiruka (2021) asserts that the Nigerian stock market has had a dramatic upturn, with third quarter 2021 numbers indicating a capital appreciation of approximately N1.196 trillion. Analysts ascribed the outcome to the recent increase in crude oil prices on the global market, which occurred just as third quarter earnings

season was expected to produce excellent results. Moreover, the progress was broadly in accordance with analysts' predictions that the market would improve despite the unfavorable mood that had persisted for the majority of the first half of the year (H1'21) due to the increase in interest rates in fixed-income instruments during the time. Keep in mind that the benchmark All Share Index (ASI) dropped to 37,907.28 points in June 2021, triggering investor losses of N1.3 trillion and a 6.2 percent market decrease in the first half of 2021. But somehow the trend started to revert in July and turned northward towards the conclusion of the third quarter (Nkiruka, 2021).

Over time, the oil and gas industry has been Nigeria's main economic driver. To propel the economy toward growth, the industry, manufacturing, and service sectors are utterly underdeveloped. The nation's long-term development plan, which is outlined in the Economic Recovery and Growth Plan (ERGP), is designed to transform the Nigerian economy into an industrialized one with a stable business environment. Therefore, achieving this goal requires an efficient and functional financial system; otherwise, Nigeria's potential for prosperity may be hampered. A smooth flow of local and foreign investment is anticipated after the capital market has grown to the point of uniform regulatory regimes.

## **1.2 Statement of the Research Problem**

Contrary to other capital markets in Europe and America, the Nigerian capital market is still undeveloped and operates below its potential despite playing a vital role in capital generation and nation building. The capital market in Nigeria is not increasing at a rate

that can efficiently mobilize money for the growth of the Nigerian economy. The market capitalization of the Nigerian capital market is incredibly low as a result of the small number of companies registered on the Nigerian stock exchange, the small number of persons participating in the market (savers), or a general lack of knowledge about how the market functions. These could be the consequence of high operational costs, a lack of market knowledge, rigid and rigid listing criteria, insufficient stock information dissemination, and relative return uncertainty.

Similar to the global financial crisis of 2008, 2016 saw a decline in oil prices and stock prices that investors on the Nigerian Stock Exchange (NSE) will never forget. This is because country's stock market for the period under review suffered a significant setback with a drop in market capitalization of more than N1 trillion. Numerous investors and publicly traded firms withdrew as a result of the drop in oil prices. Additionally, the share index ratios suffered (Obadan, 2015). This was mostly caused by endogenous variables unique to the Nigerian financial system. Many investments ended up suffering significant losses (Obadan, 2015). These erode investor trust, which finally results in a slowing of both Nigeria's capital market expansion and its rate of economic growth.

However, due to the COVID-19 pandemic's impact on economic performance, both individuals and businesses will need more long-term capital to maintain their operations. The Nigerian government expects the market to step in and raise the needed funds as an intervention fund. Given the Nigerian capital market's low growth rate, it could be

problematic for the capital market to provide this timely assistance and intervention. These limitations suggest that the Nigerian capital market has to be overhauled as well as further developed. There seems to be a discrepancy between the level of development and efficiency of the Nigerian capital market, its impact on fluctuations in the business cycle, and how it can impact economic growth, despite the fact that the relationship between the capital market and economic growth has previously been researched in Nigeria. Additionally, by using real gross domestic product (RGDP) as a stand-in for economic growth, this study aims to bridge this difference. This will depict genuine growth precisely, free from the impacts of inflation. The goal of this study is to paint a more complete picture of the economic growth in Nigeria brought on by developments in the capital market.

### **1.3 Research Questions**

- i. What is the influence of market capitalization on economic growth in Nigeria?
- ii. What is the effect of all share index on economic growth in Nigeria?
- iii. What is the influence of volume of trade (VOT) on economic growth in Nigeria?
- iv. What is the relationship between value of transaction on economic growth in Nigeria?

#### **1.4 Objectives of the Study**

The broad objective of the study is to examine the relationship between capital market development and economic growth in Nigeria. In order to achieve the broad objective, the study sought to address the following specific objectives are to:

- i. Evaluate the influence of market capitalization on economic growth in Nigeria.
- ii. Ascertain the effect of all share index on economic growth in Nigeria.
- iii. Determine the influence of volume of trade (VOT) on economic growth in Nigeria.
- iv. Establish the relationship between value of transaction on economic growth in Nigeria.

#### **1.5 Research Hypotheses**

The hypotheses of the study will be tested in null form:

Ho<sub>1</sub>: Market capitalization has no significant influence on economic growth in Nigeria.

Ho<sub>2</sub>: All share index has no significant effect on economic growth in Nigeria.

Ho<sub>3</sub>: Volume of trade (VOT) has no significant effect on economic growth in Nigeria.

Ho<sub>4</sub>: There is no significant relationship between value of transaction and economic growth in Nigeria.

## **1.6 Scope of the Study**

This study focused on capital market development and Nigerian economic growth. This is informed by the importance of the capital market development to the economic growth of the country because it provides long term funds needed for investment for the growth of Nigeria economy.

The choice of the period of study, 1984 – 2020 is predicted on the reasoning that, Nigeria capital market has experienced remarkable developmental changes as well as improvement in policy framework of the market. This is in terms of its operational activities, increase in the number of quoted companies and securities, as well as market capitalization. However, volume of transactions has recorded significant increase during the period of study but there have been records of downturn in some years as a result of the global financial crisis especially the decline in economic performance due to the COVID-19 pandemic.

## **1.7 Limitation of the Study**

One of the major limitation of this study is the problem on the part of previous researchers in extracting consistent and accurate data from relevant data source. Nevertheless, this constraint was minimized by trying as much as possible to stick to recent data from CBN annual report and CBN annual bulletin, since those sources are more credible in Nigeria.

Other limitations stem from setback and pitfall of the various preliminary test and estimation techniques that was employed by prior researchers in the cause of the study.

However, efforts will be made such that the results from the study are accurate and reliable for policy implications.

### **1.8 Significance of the Research**

This research empirically appraises the capital market development and its implication on the Economic growth of Nigeria. It will be of great significance to investors, government and academia in the following ways;

- i. Investors: the study is timely especially now that share ownership is gaining increasing popularity by the day in Nigeria. Also, investors will be acquainted with the activities regarding the operations by their stock brokers.
- ii. Government: the study will provide recommended policies that will assist the concerned agencies (Security and Exchange Commission, Nigerian Stock Exchange) in formulating policies towards improving performance, efficiency and development of the market.
- iii. Academia: this study will contribute to knowledge and literature to be referred to by researchers. It will throw more light on empirical evidence on the growth of the economy. In addition, it will possibly spur other research work aimed either sustaining or debunking its evidence.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In line with the objectives of this study, this chapter gives an overview of the concept of capital market development and terminologies with regards to economic growth in Nigeria. This chapter also gives a concise review of previous works that were done by various researchers to solve problems relating to the research problems of this study and effort were made to review their various conclusions and to determine whether their conclusions are similar or conflicting so as establish the need for further research on this topic

#### **2.2 Conceptual Review**

##### **2.2.1 Concept of Economic Growth**

Economic growth was described by Anyanwuocha (2016) as the way of enhancing national income or output. Similar to this, economic growth is an increase in an economy's effectiveness, or an increase in the level of output, which is possible when all the production elements are completely utilized. If there is a consistent growth in the real output of goods and services per person, an economy is deemed to be expanding. Therefore, the rate of economic growth measures the growth in real national income

over a time period, often a year. Basically, there are three factors that influence a country's economic growth rate, and they are as follows:(1) Increases in the labor force (2) Increases in the capital stock Technical advancement.

A society may be able to generate more combinations of goods and services thanks to an expanding labor pool, which could result in an expansion of the frontier of its production potential. This can then result in a rise in output per person, which could boost social welfare. International migration, the participation rate, and natural population growth all influence the size of the labor force.

On the other hand, the expansion of a country's capital stock through net investment determines the growth of the capital stock. A new potential source of economic growth, this expansion raises the nation's stock of productive resources.

Technical advancements make up the third factor in economic growth. It raises the standard of the work force's capital stock, which is another potential driver of economic growth in the form of advancements in machinery, invention, or educational attainment as well as better manufacturing methods. Technical advancement increases the stock's productivity of labor and capital. In Nigeria, the three factors are each used to assess economic development or wellbeing.

### **2.2.2 Nigeria's Economy**

Prior to Nigeria's independence, the British controlled for nearly a century in order to capitalize on the country's enormous natural resources, which were critical to the empire's survival. In order to increase the exportation of raw commodities to their

country, the colonial rulers built the necessary basic infrastructure. The colonial economy was propelled by trade and agriculture because that was in the colonialists' best interests. To promote the production of industrial raw resources including cocoa, cotton, groundnuts, groundnut oil, palm oil, and kernels, rubber, and groundnut oil, they implemented a number of steps. This resulted in the economy of Nigeria being dominated by the export of commodities. Aside from cotton, cocoa, and rubber, other large agricultural goods like groundnuts, cotton, and rubber were also developed as a result of the increase in export demand. The commerce in the key agricultural commodities during this colonial era served as the primary source of foreign exchange gains (Onimode, 1983). As food crops were cultivated by farmers who typically worked on tiny plots of land with antiquated traditional technology, the export marketing of key farm commodities aggravated the issue of food insecurity.

The mining of mineral resources like coal, tin, petroleum, and gold was another form of economic activity all through colonial era. Unlike other commodities, which were left to independent foreign corporations, gold mining was regulated by British government. In order to preserve the market for goods made in their own country, their economic interests hampered the promotion of industrial activities, particularly manufacturing. The average annual growth rate of Nigeria's GDP per capita since the country gained its independence in 1960 is 1.7 percent. The consistency of the nation's economic growth is a sign that it is getting near to reaching its long-term steady state balanced growth path. The lack of changes in its capital-output ratio and real interest rates clearly

demonstrates this. Between 1950 and 1959, the real GDP per capita was approximately \$122.

Under the leadership of the country's first president, the sum increased to US\$1477. Between 1976 to 1979, while Olusegun Obasanjo's military rule, the GDP per capita peaked at roughly US\$1804, on average. The average real GDP per capita began to decline after the military rule of Obasanjo.

The average per capita income in the nation from 1960 and 1985 was around US\$ 1544 before the 1986 Structural Adjustment Programme (SAP) was adopted. After the SAP era, however, real GDP per capita started to fall. When the nation was ruled by a military dictatorship, the real GDP per capita was on average \$1446 USD.

Real GDP per capita has increased in the nation since it switched to a system of democracy. This could be a reflection of the beneficial impact democracy has had on economic growth, as noted in the research. The period between 1999 and 2007 saw Nigeria's GDP per capita grow at the highest annual pace. Before the inauguration of a democratic administration, the country had seen the lowest growth rate. In particular, GDP per capita growth during the post-SAP era was faster than during the pre-SAP era. The country's real GDP per capita was highest during the military rule of Olusegun Obasanjo, even though Gowon administration saw the highest pace of economic growth. When Shehu Shagari was in charge of the nation's affairs, a dramatic fall in the growth rate of the per capita GDP was apparent. However, the nation's average yearly GDP per person has grown to US\$1627.59 since gaining its independence from US\$1222.48

between 1950 and 1959. This reveals that over the course of its independence for more than 55 years, Nigeria was able to add around US\$405 (a 33% increase) to its pre-independence per capita income. The system of government and regime dynamics of the nation have an influence on the level of economic performance. This raises the issue of why some political structures increased the rate of economic growth while others slowed it down, and what distinguishes some government systems with better economic performance than others. This necessitates for a fact-based response on how political influences affect economic growth in Nigeria. For a nation like Nigeria, that possesses the potential to be at the forefront of growth but has recently struggled to emerge from an economic slump, this validates the importance of this study in offering insightful information on the political effects of economic progress. Nigeria, meanwhile, went through its worst economic downturn in two decades in 2020. Growth, again, resumed in 2021 as an outcome of the government putting plans in place to combat the economic shock and the lifting of pandemic regulations and a recovery in oil prices. Due in large part to the drop in oil prices, Nigeria was extremely exposed to the COVID-19-related economic turmoil on the world stage. Over 80% of exports, a third of credit in the banking industry, and half of government revenue are all attributed to oil. In 2018, 53 million more Nigerians (or 25% of the population) were vulnerable, with 83 million of them living below the poverty line. In the years 2019 to 2023, 12 million more Nigerians are anticipated to be living below the global poverty line (World bank, 2021).

The government implemented long-delayed policy changes in 2020 as a part of its COVID-19 reaction. Notably, it started to synchronize exchange rates, (ii) started reforms to end gasoline subsidies, (iii) changed electricity tariffs to more cost-reflective levels, (iv) reduced non-essential spending, and (v) improved debt management and increased transparency in the public sector, especially for oil and gas operations. Nigeria's labor market is still being affected by the COVID-19 situation. Although it has now surpassed pre-pandemic levels, advances have mostly been brought about by workers engaging in small-scale, non-farm enterprise operations in retail and trade, the income from which is still insecure. The economic prognosis for Nigeria is still somewhat hazy. The timing of immunizations and the duration of COVID-19 remain uncertain. Additionally, the oil sector's unpredictability, which could include an unanticipated shock to oil prices, and vulnerabilities in the financial sector could jeopardize the modest predicted rebound. Even in the most favorable global environment, Nigeria's government's policy response will be critical to laying the groundwork for a strong recovery.

### **2.2.3 Nigeria Capital Market Development**

The British colonial administration first released a set of government securities (loan stock) in Nigeria in 1946 to finance development projects under the local ordinance's ten-year plan. This is when the country's capital market began to grow. Although the loan stock, which had a 10- to 15-year maturity, was oversubscribed, the local take-up was pitiful. There was no institutional structure in place at the time to enable this

economic operation, therefore until 1960, when the Lagos Stock Exchange was founded, the capital market was operated under less formal market arrangements (Yadirichukwu & Chigbu, 2014). The Lagos Stock Exchange, which was originally established in 1960 and later legally incorporated in 1961 thanks to the combined efforts of the Central Bank of Nigeria (CBN), industrial development banks, and the business communities, suddenly begins operations with 19 securities listed on the floor for trading. This was the beginning of the activities and other operational undertakings of the Nigerian capital market. The Lagos Stock Exchange was eventually transformed into the Nigerian Stock Exchange (NSE) in 1977 as the country's progress under post-colonial reform and the recommendations of the government financial review committee of 1976 continued.

With the creation of the Nigerian stock exchange, a solid foundation for the operation of the Nigerian capital market was established, with trading in long-term securities necessary for financing the overall economy. The Securities and Exchange Commission, which functions as the Nigerian capital market's regulatory body, oversees the regulation of the Nigerian stock exchange. There was a demand for an effective financial system for the entire economy in the mid-1970s, despite the fact that the stock exchange was only operating in Lagos (Taiwo, Adebayo & Evawere, 2016). A study was undertaken to account for factors such as low capital formation, significant amounts of money in circulation that weren't held in banks, and insufficient separation between the operations of commercial banks and the newly developing class of merchant banks. In reaction to the aforesaid situation, the federal government embraced

the decentralization tenets but opted for a national stock exchange with locations all across the nation. The Nigeria Stock Exchange was founded in December 1977 when a memorandum and articles of incorporation for the Lagos Stock Exchange were changed. In light of the current transition, the market opened for business with nine (9) trading floors spread across the nation, each with a unique year of establishment, including Lagos (1961), Kaduna (1978), Port Harcourt (1980), Onitsha (1990), Ibadan (1990), Abuja (1999), Yola (2002), and Benin (2005). The Nigerian Stock Exchange (NSE) now has thirteen (13) branches around the country, with its headquarters in Lagos, with branches in Abeokuta, Bauchi, Ilorin, Kano, Owerri, and Uyo (Taiwo, Adebayo & Evawere, 2016).

Only 14 firms were listed in 1971, and 952 transactions totaling \$18.1 million worth of securities were made. Government securities dominated the market in terms of value, making up 90.1 percent of the total, while industrial stocks made up 78.6 percent of trading volume. Since the NSE was established in 1977, the position of the Nigerian capital market has evolved significantly (NSE fact sheet, 2020). For the international online transmission of market information, the Nigerian stock exchange was connected to the Reuters Electronic Contributor System in 1987. In addition, the NSE established the internet system (CAPNET) as one of the critical new technological infrastructures to help with the difficulties of globalization and enhanced service delivery.

Additionally, the Nigerian Stock Exchange maintains an All-Share-Index (ASI), which was created in January 1984 (1984 = 100), and uses only common equities (ordinary

shares) in its computation. But the Central Securities Clearing System limited (CSCS), a division of the Stock Exchange, carries out electronic clearing, settlement, and delivery of transactions on the NSE. The government took steps in 1992 to guarantee that the Nigerian Stock Market was extremely effective and investor-friendly, including the incorporation of the CSCS Ltd, popularly known as the clearing house.

In tandem to CSCS, Trade Alert was also implemented in 2005 to further shield the market against unethical practices, including the unlawful selling of a client's stake. The gadget also serves as a means of getting market data to subscribers. These tendencies have promoted market liquidity, presented opportunities for price recovery, enhanced market effectiveness in service provision, and further led to unprecedented growth in both the primary and secondary markets (NSE fact sheet, 2020). Following the liberalisation of the Nigerian capital market in 1993, issuing houses or brokers controlled the prices of new issues in the primary market, but only stockbrokers did so in the secondary market. With the cross-border listing of M-net/Super sports on the Nigerian stock exchange in 1999, the NSE made a remarkable attempt to expand the market internationally (NSE fact sheet, 2020). The secondary listing of Oando Plc (a Nigerian oil business) on the JSE Securities and the Exchange of South Africa in 2005 might be used to gauge the effectiveness of this policy. The corporate finance choices for Nigerian businesses are increased thanks to this foreign listing, which may also lower the cost of domestic capital. As of November 2019, it had 161 listed firms, including 4 on the Alternative Securities Market (ASeM) board, 144 on the main market,

and 8 domestic companies on the premium board. 53 memorandum listings, 84 FGN bonds, 21 state bonds, 27 corporate bonds, and 1 supranational bond are all available on the NSE's Fixed Income market (NSE fact sheet, 2020).

#### **2.2.4 Market Capitalization and Economic Growth**

The share price multiplied by the number of outstanding shares is the market capitalization, commonly referred to as market value. This quantifies the size of the capital markets and is used to gauge their level of development in relation to economic expansion.

#### **2.2.5 All Share Index and Economic Growth**

A market index is a swift way to evaluate the market's general direction and the extent of its change. A market index is a numerical indicator that depicts the overall worth of market attributes. It is a measure of the average share price among all listed companies that is frequently used to assess the performance of various industries and sectors. It can also refer to a collection of figures that display the fluctuating average value of the share prices of all firms listed on a stock exchange and are used to gauge how well a marketplace is doing. The All Share Index assesses daily stock price changes and reflects investors' independence in the market through their purchase and sell activities. The more active trading in the stock market coming from significant amounts of stock, the better the economy is doing.

### **2.2.5 Volume of Trade and Economic Growth**

The overall number of shares traded for a given security is known as the volume of trade. Stocks, bonds, options, futures, and other kinds of commodities are included in the measurement of transaction volume. It counts the total volume of shares or contracts traded for a given security during a given time frame. The entire number of shares exchanged between a buyer and a seller during a transaction is included in this. When securities are traded more frequently in an economy, the trade volume is higher; conversely, when securities are traded less frequently, the trade volume is lower. Every market exchange keeps tabs on its trading activity and publishes volume information. Investors can learn about the market's activity and liquidity by looking at the volume. Greater liquidity, better order execution, and a more active market for bringing buyers and sellers together are all indicators of larger trade volumes for a given security. Futures trading activity tends to grow during periods of investor uncertainty, which frequently results in more active trading of options and futures on certain stocks. Generally speaking, volume is higher on Mondays and Fridays, as well as during the market's opening and closing hours. It typically drops before a holiday and at lunch.

### **2.2.7 Value of Transaction and Economic Growth**

Value of the transaction is the total sum paid or supplied by the corporation in cash, securities, and other assets. Any such securities (whether debt or equity) or other property shall have a value equal to the fair market value as assessed by the Company and the Underwriters in agreement or by an independent assessor chosen jointly by the Company and the Underwriters. This represents the monetary value of all bonds, stocks, and other commodities traded on the capital market. It indicates how liquid the market is across the entire economy.

## **2.3 Theoretical Review**

### **2.3.1 Endogenous Growth Theory**

Romer advanced the idea of endogenous growth in the 1950s. Economic theory that contends that economic development is produced from within a system as a direct outcome of internal processes is known as endogenous growth theory, according to Eric (2020). As a result, exogenous technical advancement has a favorable impact on growth rate. However, physical capita per worker rather than economic growth is the determining factor in financial development. The performance of economic growth, on the other hand, is correlated with advancements in finance, technology, and income distribution, according to endogenous growth models. The membership in an information processing intermediary that enhances financial decisions and economic progress is determined in part by per capita income, according to Greenwood (2014).

They formalized the relationships between financial markets and economic growth by incorporating the importance of financial forces in endogenous growth models. Recent models have been attempting to determine the mechanism by which financial markets drive economic growth in light of the advancements in endogenous growth literature. Numerous pathways have been put forth. The first is the financial markets, which can influence economic growth through effective resource allocation, with innovation activities acting as the growth catalyst. Productivity increases more quickly when there are more successful breakthroughs.

Instead of investing in assets that are more productive but less liquid due to a lack of financial markets, one can choose to fund initiatives that can be quickly liquidated. Individuals can find less risky, liquid, and profitable investments on the market. Second, the information channel allows financial markets to have an impact on economic expansion. For instance, because the stock price includes performance information that cannot be retrieved from a firm's present or future statistics, the stock markets serve as a monitor of managerial performance.

### **2.3.2 Exogenous Growth Model**

Exogenous growth was first proposed by Robert Solow in 1956 and is also referred to as the neo-classical growth model or the Solow-Swan growth model. An aggregate production function of the following form:  $Y_t = F(K_t, L_t, A_t)$  forms the core of the traditional Solow neoclassical growth model (Solow, 1956). Where: Y is the output, F is the function, K is the capital, L is the labor, and A is a technology or efficiency index.

In particular, Solow claims that  $F$  is characterized by constant returns to scale, diminishing returns to each input, and a positive and constant elasticity of substitution. The model's fundamental dynamic equation links the evolution of the capital stock to constant rates of saving and depreciation. Exogenous exponential growth rates are seen in both the level of labor and technology. According to this concept, as labor increases, capital returns become less favorable and countries utilise their resources effectively. The neo-classical model derives three key conclusions from these two premises. First, it asserts that growing capital relative to labor leads to economic growth because greater capital enables individuals to be more productive. Second, because each capital investment will yield a larger return than in rich countries with plenty of capital, impoverished countries with lower capital per person will expand quicker. Third, economies will eventually reach a point when no more capital investments will result in economic growth because of the diminishing returns to capital. A "steady state" is what is at this stage. Growth in this scenario would eventually come to an end if there were to be no technology breakthroughs. However, the model's structure was chosen to enable efficiency gains to counteract the declining capital returns. According to endogenous growth theory, the rate of return on capital served as the sole determinant of growth rate (Gillman, 2002). While Lucas advocated the following production technology:  $Y_t = AK_t (u_t h_t L_t)^{1-h}$  (Lucas, 1988) where  $Y$ ,  $A$ ,  $K$  and  $L$  are, once more, output, technology, capital, and labor,  $u$  is the percentage of a person's time committed to work,  $h$  is the skill level or human capital of the representative agent, and  $h$  is the

average level of human capital in the economy. It is expected that level A of technology would never change (so that it could in principle be dropped from the expression or subsumed within the capital term).

### **2.3.3 Efficient Market Theory**

The theory contends that security prices incorporate all pertinent information, meaning that a security's current market price reflects all pertinent information (Levy, 2009). The best indication of a security's intrinsic value, if a financial market is efficient, is provided by its current market price. In a market that functions efficiently, it is believed that a sizable number of analysts are determining the genuine value of the firms. The analysts search for stocks whose market prices deviate significantly from their underlying worth. The market price will immediately move toward the security's genuine worth if analysts discover such "mispriced" securities by buying or selling them. As a result, the stock market's competitiveness drives prices up to their "true" value. As a result, stock values fluctuate as fresh information enters the market every day, every hour, and even every second (Levy, 2009).

### **2.3.4 Theory of Financial Liberalization**

According to the Financial Liberalization hypothesis, government involvement in the financial sector poses a significant barrier to saving, investment, and economic growth. In emerging economies, the government's role in regulating interest rates and allocating credit to key economic sectors hinders capital development, economic growth, and the accumulation of savings. Inadvertently, deposit interest caps deter people from saving

money, which creates a surplus of liquidity outside the banking system. Additionally, extensive government participation in the financial system via the regulatory and supervision network, notably in regulating interest rates and the distribution of credit, tends to distort financial markets. Government meddling subsequently has a negative impact on market participants' saving and investment decisions and fragments the financial mediation industry. An economy that is financially depressed is the end result. Its core tenet is that financial markets should be liberalized and the free market should determine how credit is distributed. Low yielding projects will be abandoned and the real interest rate will adjust to its equilibrium values.

## **2.4 Empirical Review**

The linkage between the capital market and economic growth has received a lot of attention over the years, and numerous studies have been conducted in this field that have outlined some of the empirical ways in which the capital market influences economic growth.

In their 2013 study, Adenusi, Sulaiman, and Azeez looked at the effects of Nigeria's liberalisation strategy from 1986 to 2010 on economic growth and development. They used estimation techniques for Johansen co-integration and Ordinary Least Square (OLS). Economic growth was measured by Gross Domestic Product (GDP), while the development of the capital market was shown by Market Capitalization (MCAP), Total Value of Transaction (TVT), Total New Issues (TNI), All-Share Index (ALSI), and Total Listing on the NSE (TLT). Their study's findings demonstrated that, despite the

capital market's expansion as a result of the liberalization strategy, it has not had a favorable impact on the growth and development of Nigeria's economy. This is because the market is relatively tiny. According to the study, rules should be created to encourage both domestic and foreign investors to invest in the sector. The effect of capital market development on economic growth in Nigeria under democratic governance from 2004 to 2011 is also covered in Nwaolisa, Kasie, and Francis' (2013) study.

The findings of the study, which has used time series data and the multivariate regression approach to analyze the model coefficients, indicate that total market capitalization and all share indices have a positive impact on GDP growth rate, but total stock value has a negative impact. In a similar vein, Enekwe (2014) investigated the role of the capital market in Nigeria's financial development from 1981 to 2012. Simple regression analysis was utilized by him. GDP was chosen as the measure of economic growth, and market capitalization, the number of recorded securities, and the total value of exchanged securities were taken into account. The results of the study demonstrate that market capitalization alone had a major impact on financial growth. Securities exchange transactions may have had an impact on the economy, but it was more likely that they had. Therefore, it was advised that regulatory experts should familiarize ICT policies with urge more organizations to get to their reconnaissance in order to check shady practices that undermine the integrity of the market and disintegrate financial certainty. Yadirichukwu and Chigbu (2014) looked into the effect of Nigeria's capital

market on economic growth. Their study utilized a time-series research design that heavily relied on secondary data spanning the years 1985–2012. In order to evaluate the properties of time series data using a disaggregated capital market indexes approach, their study used regression analysis as a data analysis method that included multivariate co-integration. According to their findings, two of the variables showed a statistically significant positive link with economic growth, while the other two showed an inverse relationship. According to their findings, regulatory bodies should prioritize increasing market efficiency and openness in order to boost investor trust. As a result, there is a need for an efficient and favorable macroeconomic environment to stimulate economic growth and ensure that the connections for capital market-induced growth are built around efficient systems. Policy institutions also need to be actively involved in conducting systemic checks as well as developing the necessary policy innovations to ensure capital market-led economic growth.

Additionally, using data over the period from a panel of 36 African countries spanning the years 1980–2010, Ngare, Nyamongo, and Misati (2014) assessed the impact of stock market development on economic growth in Africa. Using a panel regression approach, the results demonstrate that nations with stock markets tend to grow more quickly than those without them, and that more developed countries with stock markets tend to grow more slowly than smaller countries with stock markets. Additionally, the increase of the stock market had a favorable impact on economic expansion. Multiple regression was used by Amu, Nwezeaku, and Akujuobi (2015) to evaluate how

Nigeria's capital market expansion affected the country's economic expansion. The analysis uses annual data for the period spanning the years 1981 to 2012. Results show that, during the time period under consideration, Nigeria's capital market has a strong beneficial impact on economic growth. Considering the 20-year span from 1992 to 2011. Market capitalization was used as a stand-in for the Nigerian capital market when compared to economic indicators like GDP, FDIC, inflation rates, total new issues, transaction value, and total listing. The study concludes that the capital market had a negligible impact on the economy over the time period examined using multiple regression analysis. The study therefore recommended that policies and measures that would increase market confidence be incorporated into the management of the Nigerian Capital Market in order for it to significantly contribute to the expansion of the Nigerian economy, noting that all market components are crucial components to the development of a nation. Afolabi (2015) investigated the effects of the Nigerian Capital Market on the country's economy over the period of twenty years, from 1992 to 2011. Market capitalization for the Nigerian Capital Market was used as a proxy for economic indicators such as Gross Domestic Product (GDP), Foreign Direct Investment, Inflation Rates, Total New Issues, Value of Transaction, and Total Listing. The study concludes from the multiple regression analysis that the capital market had little effect on the economy throughout the time period taken into account.

The study recommended therefore that policies and measures that would increase investor confidence be incorporated into the management of the Nigerian Capital

Market in order for it to significantly contribute to the expansion of the Nigerian economy, noting that all market components are crucial components to the development of a nation.

Onwe (2015) investigated into how Nigeria's capital market affected economic growth from 1990 to 2013. To ascertain the long-term and causality link between Nigeria's capital market and economic growth, the study used time - series data econometrics analysis. The study's diagnostic procedures comprised the use of unit root, co-integration, and error correction mechanisms (ECM).

Additionally, utilizing annual time series data from the CBN statistical bulletin, the study used ordinary least square (OLS), in which changes in GDP were regressed on Market capitalization (MCAP), All share index (ASI), Total value for Transactions (VLT), and Turnover (TO). All variables were stationary at initial difference and co-integrated of the same order over the long run, according to the unit root's result. Their OLS results showed that the capital market had a major impact on economic growth in Nigeria. According to their research's conclusions, the government should step up efforts to encourage investment in Nigeria. By fostering a climate that encourages investment to flourish in the nation, this can be accomplished. The Nigeria stock market benefits more from economic investment the more there are investors. Investment will improve domestic output, which is a crucial cure for any failing economy, in addition to enhancing stock market development.

Taiwo (2015) looked at how committed the capital market was to the expansion of Nigeria's economy. He employed the Vector Error Correction techniques using annual time arrangement data covering the years 1981 to 2014 to examine a mistake amendment model for growth in Nigeria. According to the study's findings, market capitalization rate, total value of recorded insurance, workforce support rate, accumulated savings, and capital arrangement are important macroeconomic factors of monetary growth in Nigeria. The capital market's existing situation should be empowered to progress and create speculation opportunities for both local and global financial markets, it was then recommended, in order for the capital market to comprehend its full capabilities. Between 1970 and 2008, Ogunleye (2015) looked at how Nigeria's monetary growth was affected by advancements in the securities exchange. As estimation techniques, Co-integration Analysis and Error Correlation Mechanism were chosen to determine whether there was a long-term link between the development of the securities exchange and economic growth. The results indicate that there is a long-term link between better financial exchange and monetary growth in Nigeria. As a result of the study's findings, the government should make strong policy predictions to improve the Nigerian stock exchange's exhibit and restore the confidence of financial backers in order to solve the lack of venture assets.

Once more utilizing annual data spanning the years 1980 to 2008, Adediran, Adeyemo, and Alade (2015) examine the economic integration brought on by globalization and the impact of the capital market in Nigeria. Findings from a regression study show that

sound financial and economic reforms are required for Nigeria to achieve sustainable growth. Similarly, using aggregate data for growth indicators and capital market indicators for the years 1990–2013, Ologunwa and Sadibo (2016) investigate the relationship between economic growth and capital market development in Nigeria. The study uses a structural dynamic model that incorporates the vector error correction model and the Johansen co-integration to examine the relationship between the variables. The findings show that the capital market ratio and turnover ratio are important and advantageous factors influencing economic growth in Nigeria, and that stock markets have an impact on economic growth through the mobilization of savings. In a similar vein, Ali and Fei (2016) investigated the effects of Malaysia's capital market and other important factors on economic growth and went on to further determine the long-run and short-run relationships between the economic growth and capital market, foreign direct investment, and real interest rate by using the bound testing co-integration of ARDL covering the sample period of 1988 to 2012. Results show that real interest rates and the capital market have a favorable effect on economic growth in both the short- and long-term. Francis, Hassan, and Ofori (2016) investigate how the emergence of capital markets affected economic expansion in Africa between 2000 and 2012. After stock markets are formed, the study's multi-variable regression analysis shows a considerable increase in real GDP per person. His studies show that stock markets complement the banking industry by increasing the amount of private credit available in the area. (2016) Taiwo, Adedayo, and Evawere assessed the capital

market's contribution to the expansion of Nigeria's economy. Using vector error correction techniques on an annual time series of data ranging from 1981 to 2014, they estimated an error correction model for economic growth in Nigeria. The Phillip Perron Unit Root Test was performed on the data used in their investigation at the level and first difference. Their findings demonstrated that all variables were stationary at the initial differencing, at a 1% level of significance. The market capitalization rate, total market value of listed securities, labor force participation rate, cumulative savings, and capital formation were found to be key macroeconomic determinants of economic growth in Nigeria. Since the stock market functions in a macroeconomic setting, the study concluded that in order for the capital market to reach its full potential, its environment must be enabled to promote and stimulate investment opportunities for both local and foreign investors. Therefore, an upgrade to Nigeria's trading structure that aims to make it simpler for shareholders to buy and sell shares could ensure stock market liquidity.

In their 2016 study, Okoye, Modebe, Taiwo, and Okorie looked at the relationship between financial growth and capital market development from 1981 to 2014. He used the vector error revision model's econometric methodology, and the results revealed that turnover and market capitalization ratios significantly reduce the overall public yield in the short run (GDP). The results also revealed both a positive impact of a high ratio of value traded and a marginally negative impact of GDP growth rates. Their long-run gauge revealed that all exogenous variables adversely affect GDP and that changes in

market capitalization, value traded, and turnover proportions create GDP changes that are not proportional. Their research established that the expansion of financial exchange constitutes an important factor in Nigeria's economic progress. Thaddeus and Nnenna (2017) looked into the trends of economic indicators and factors influencing economic indicators of capital market model impacting foreign investment inflows between South Africa and Nigeria from 2000 to 2015. Using the Granger causality technique, the results in both nations show that the market capitalization and total transaction value are the major economic indicators of the capital market model that attracts foreign investment. In other words, all economic indicators of the capital market model, with the exception of the interest rate, which has a long-term equilibrium with foreign investment in South Africa, had an impact on foreign investment in a short-run equilibrium connection. In addition, Coskun, Seven, Ertugrul, and Ulussever (2017) examined the relationships between economic growth in Turkey between the years 2006:M1 and 2016:M6 in relation to the development of various capital market sub-components, including mutual/pension funds, corporate bonds, stock markets, and government bond markets. Simple regression analysis is used in the investigation. The results of their study show a co-integrating association between economic growth and capital market development as well as a unidirectional causality that runs from capital market development to economic growth. Through the use of multi-variable regression analysis from 2005 to 2015 and Engle-Granger co integration, Ajibola (2017) constructs a model that examines how the growth of the capital market influences business cycle

volatility and long-term economic growth. The findings indicate that while all capital market interventions are beneficial to economic growth, they are largely inconsequential. The endogenous growth model, which holds that developing countries, including Nigeria, are particularly vulnerable to macroeconomic shocks like those affecting the money supply, export supply, productivity, etc., is supported by the volatility measure, which established a negative but highly significant impact on economic growth. Furthermore, the Engle-Granger co integration test demonstrates the existence of a long-term connection between Nigeria's capital market development and economic expansion.

Using multiple regression analysis, Araoye, Ajayi, and Aruwaji (2018) looked at the effects of the development of the Nigerian stock market on the country's economic growth from 1985 to 2014. According to the findings of their research, Nigeria's economic growth was significantly influenced by the stock market. They said that by encouraging foreign direct investment into the market, policymakers could secure an increase in market capitalization.

Chukwuemeka (2018) investigated how Nigeria's capital market affected economic expansion. For the years 1981 to 2016, annual time series data on the study's variables were gathered from the Statistical Bulletins of the Securities and Exchange Commission and the Central Bank of Nigeria. Using the Augmented Dickey-Fuller test approach, a unit root test was performed, and the results showed that the variables were stationary, albeit at different levels. According to the short run on regression, total listed equity and

the volume of transactions have a negative impact on Nigeria's economic growth, whereas market capitalization and the number of deals have a favorable impact. According to the results of the long run dynamic analysis, the number of deals has a negative and non-significant impact on Nigeria's economic growth, whereas total listed equity has a positive and significant impact.

Similar to this, Njemcevic (2019) tests the effect of three capital market variables on economic development in the South Eastern European region from 2003 to 2012 using the panel-corrected standard errors (PCSE) model. Only the market capitalization indicator was shown to have a substantial impact on economic growth, according to the study's findings. Through the use of multi-variable regression analysis between 2000 and 2015, Ajibola (2019) develops a model that examines how capital market development affects business cycle volatilities and long-run economic growth. As a result, economic growth is positively impacted by all capital market initiatives, but these effects are generally small. Although the volatility measure found a negative but highly significant impact on economic growth, this supports the endogenous growth model's contention that developing nations, including Nigeria, are particularly vulnerable to macroeconomic shocks like those affecting the money supply, export supply, productivity, etc.

Furthermore, the Engle-Granger Johansen co-integration test demonstrates the existence of a long-term connection between Nigeria's capital market development and economic expansion.

Using annual secondary data, Acha, Ikechukwu, Akpan, and Sunny (2019) investigated the relationship between capital market performance and economic development in Nigeria during the years 1987 to 2014. Using the Vector Autoregressive (VAR) model as the foundation, the Granger causality test was used to investigate the causal link. To test for stationarity for all the time series in their levels and initial differences, the unit root Augmented Dickey Fuller test is one of the statistical methods utilized. Utilizing trace statistics and maximal Eigen-value tests, the Johansen co-integration test was utilized to determine whether the co-integrated variables are of the same order. It was discovered that the variables were co-integrated with at least one co-integrating vector. According to the study's findings, the relationship between GDP and capital market performance and economic growth is causally indiscriminate.

Using annual data from 1981 to 2019, Miftahu (2020) investigated how Nigeria's capital market development affected economic growth. The analysis of the study entails determining the stationary properties of each variable under consideration in order to assess their stochastic characteristics. The model is then estimated using the ordinary least square technique, the Johansen co-integration test, and the Granger causality test. Results of the analysis show a long-term, positive association between Nigeria's capital market development and economic expansion. An additional finding from the Ganger causality test shows that there is a unidirectional causal relationship between the capital market and economic growth during the time period under consideration. Instead, it is necessary to plan for contemporary capital market infrastructure that will attract

overseas investors by retaining cutting-edge technical offerings. More specifically, Nigeria must create an efficient and effective capital market by enhancing access to credit and financial services, promoting the mobilization of long-term savings, and fostering the availability of long-term capital for investment.

## **2.4 Theoretical Frame Work**

The endogenous growth theory provides the theoretical underpinning for the linkages between the growth of the capital market and economic expansion. Growth is decided in the near term by adjusting to a new steady state that is solely produced by changes in capital investment, labor force growth, and depreciation rate. The shift in the savings rate caused a change in the capital investment. According to the Cobb-Douglas production function, which is represented by the notation  $F(K, L) = K^{\alpha}L^{1-\alpha}$ , the output (the amount produced) is a function of the inputs labor and capital (K, L), and the marginal product of capital is the proportion of capital income to output (that is, GDP). However, the quality of the labor force and the ratio of average hours worked per worker to output have an impact on economic growth (that is, human capital). More specifically, growth occurs through capital stock in terms of investments in physical stock, capital stock growth, and physical capital composition. Both physical and human capital are impacted by technology.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter covers the method and procedure that will be used in this project work for answering the research questions set in chapter one of this work. It presents a careful description of the research design, population and sample of the study, sources of data, theoretical framework and model specification, measurement and operationalization of variable as well as method of data analysis.

#### **3.2 Research Design**

A Research design is the plan structure and strategy of investigation, conceived so as to obtain answers to research questions (Mugenda & Mugenda, 2003). This study will adopt the Ex-Post-facto and longitudinal research design which is very applicable in the management and social sciences. An Ex-Post-facto research which involves secondary data in which responses in nature of a factor and its effects on individuals are being studied, the researcher does not have the ability to manipulate the independent variables.

#### **3.3 Population and Sampling Techniques of the Study**

The population is the totality of the object being studied. The population of this work is the Nigeria capital market; i.e. the impact of capital market development on economic growth in Nigeria. While the sample will be a census study of the economy and capital market and it is restricted to capital market variables such as; market capitalization, all

share index, volume of trade (VOT) and value of transaction within the time frame of 1984 – 2020.

### 3.4 Sampling Techniques

To address the research problem and objectives of the study, the simple random sampling techniques will be use in order to estimate the chances that each variable can be chosen randomly and entirely by equal chance. i.e. each variable has the same probability of being selected at any time during the sampling process.

### 3.5 Sources of Data

The data for the study will be sourced from different edition of central Bank of Nigeria statistical bulletin fact book of Nigeria Exchange limited.

### 3.6 Model Specification

The linear regression analysis model would be used is given as follows;

$$RGDP = f(MCAP, ASI, VOT, VAT) \dots\dots\dots(1)$$

The econometric form of the model of the study is stated below:

$$RGDP = \beta_0 + \beta_1 MCAP + \beta_2 ASI + \beta_3 VOT + \beta_4 VAT + \mu_t \dots\dots\dots(2)$$

Where:

RGDP = Real Gross domestic product (proxy for economic growth)

MCAP = Market capitalization

ASI = All share index

VOT = Volume of trade

VAT = Value of trade

$\mu_t$  = Error term

$\beta_0 + \beta_1, \beta_0 + \beta_1 \text{MCAP} - \text{A priori Expectation}$

$\beta_1 - \beta_5 > 0$

### **3.7 Method of Data Analysis**

The analysis of the data is pertinent so as to make research work meaningful and also to make a valid conclusion. It involves converting a series of recorded observation into descriptive statement about the relationship that exists between the independent variables and dependent variables. For the purpose of the nature and complexity of the relationship being study, the Fully modified ordinary least square estimation technique will be used. The study will also use the descriptive statistics to describe the distribution of the data particularly with reference to normality and other data characteristic effect that are of relevance to this study. In the regression results, the t- statistics with their probability values will be used to determine the statistical significance of the individual variables in the study.

### 3.8 Operationalization of Variable

Item	Operational Definition	Types of Variable	Measurement
Real Gross domestic product (RGDP)	This is the standard measure of the value of final goods and services produced by a country during a particular period	Dependent variable	RGDP can be measured by summing up national income and adjusting for depreciation, taxes, and subsidies. $Y = C + I + G + (X-M)$
Market capitalization (MCAP)	This is operationally defined as the market share price per share multiplied by numbers of outstanding shares.	Independent variable	It is the total market share price multiplied by the number of shares.
All share index (ASI)	All share index measures the collective performance of all the ordinary shares of companies on the Nigeria securities exchange.	Independent variable	It is based on market capitalization. Weighting of shares is conducted in proportion to the issued ordinary capital of the listed companies, valued at current market price.

Volume of trade (VOT)	It is the total quantity of shares traded for a specific security.	Independent variable	It is the total numbers of securities traded on the exchange
Value of trade (VAT)	It is the monetary values of shares, bonds or securities that exchanged hands using the prevailing market price	Independent variable	The monetary value of securities traded on a ratio of GDP

Source: Researchers' Compilation, 2022.

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSIS OF RESULTS

#### 4.1 Introduction

This chapter deals with the analysis and interpretation of the data based on the empirical approach adopted. The least square regression technique is used for the analysis. In order to present a robust investigation and analysis of the study, two general methods are used in the empirical analysis, namely statistical and econometric methodologies. The statistical method involves the use of descriptive statistics as well as correlation analysis to examine the initial characterization and relationship among the variables of interest; while the fully modified ordinary least square estimation techniques is used to estimate the empirical model drawn from the data in order to succinctly determine the effect of the independent variables on economic growth.

#### 4.2 Descriptive Statistics

	RGDP	MCAP	ASI	VOT	VAT
Mean	2.01E+11	449213.2	16841.43	14493.21	0.830226
Median	9.54E+10	59406.70	13298.80	1679.140	0.574130
Maximum	5.47E+11	2350815.	58570.60	57990.20	6.298354
Minimum	2.78E+10	225.4000	111.3000	57.68000	0.108820
Std. Dev.	1.75E+11	590883.5	15575.43	16208.95	1.258846
Skewness	0.593576	1.299151	0.646834	0.677185	3.210214
Kurtosis	1.712287	4.189494	2.606751	2.377778	13.41199

Jarque-Bera	4.729112	12.58935	2.818505	3.424774	230.6819
Probability	0.093991	0.001846	0.244326	0.180435	0.000000
Sum	7.45E+12	16620889	623132.9	536248.7	30.71838
Sum Sq. Dev.	1.11E+24	1.26E+13	8.73E+09	9.46E+09	57.04892
Observations	37	37	37	37	37

**Table 4.1: Descriptive Statistics**

The summary statistics of the dependent and independent variables is presented in Table 4.1. The descriptive statistics shows much disparity between the mean values and the values for standard deviation. This is indicative of the presence of outliers in those variables with much disparity. The descriptive statistics reveals that the average RGDP (mean value) is 2.01E+11 which is relatively high. The median value of 9.54E+10 is lower than the mean value. Amongst all the variables, only VAT (Value of transaction) has a low mean value. The other variables have very high mean values.

All the variables are positively skewed towards the origin. Using the Jarque – Bera statistic and the probability values of the Jarque Bera statistics, only MCAP (market capitalization) and VAT (Value of transaction) are statistically significant at 5% level of significance.

### **4.3 Correlation Analysis**

#### **4.3.1 Presentation and Analysis of the Correlation Matrix**

Below is the results and interpretation for the correlation matrix:

The results of the correlation matrix below revealed that the Real gross domestic product is strongly related with Market capitalization. All share index, volume of trade

and value of transaction were also strongly related to Real gross domestic product. Amongst all the variables, market capitalization, all share index and volume of trade have the highest correlation value followed by value of transaction. This implied that the level of capital market development is majorly determined by the total number of market capitalization. The correlation matrix is analyzed based on 5% level of statistical significance.

**Table 4.2: Correlation Matrix for Dependent Variable (Real Gross Domestic Product) and the Independent Variables**

Covariance Analysis: Ordinary

Date: 11/10/22 Time: 16:27

Sample: 1984 2020

Included observations: 37

Correlation					
Probability	RGDP	MCAP	ASI	VOT	VAT
RGDP	1.000000				
	-----				
MCAP	0.884354	1.000000			
	0.0000	-----			
ASI	0.798013	0.791690	1.000000		
	0.0000	0.0000	-----		

VOT	0.729070	0.634085	0.780823	1.000000	
	0.0000	0.0000	0.0000	-----	
VAT	0.338563	0.521379	0.586460	0.377534	1.000000
	0.0404	0.0009	0.0001	0.0212	-----

Source: Author's computation Using Econometric View Software (EView), 2022.

#### **4.4 Presentation and Analysis of the Regression Results for the Relationship Between Capital Market Development and Economic Growth in Nigeria**

The regression results are presented below in table 4.3 This shows the magnitude of the impact of the independent variables on the dependent variable. Also, shown by the regression result is the model fitness and the statistical significance of the variables.

**Table 4.3: Regression Results for RGDP and Independent Variables**

Dependent Variable: RGDP

Method: Least Squares

Date: 11/10/22 Time: 16:19

Sample: 1984 2020

Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.22E+11	3.60E+10	3.393291	0.0019
MCAP	208937.5	31725.32	6.585827	0.0000
ASI	2546262.	1585541.	1.605926	0.1181

VOT	2102306.	1137818.	1.847665	0.0073
VAT	3.27E+10	1.14E+10	2.875827	0.0071
<hr/>				
R-squared	0.865714	Mean dependent var		2.01E+11
Adjusted R-squared	0.848928	S.D. dependent var		1.75E+11
S.E. of regression	6.81E+10	Akaike info criterion		52.85225
Sum squared resid	1.49E+23	Schwarz criterion		53.06995
Log likelihood	-972.7667	Hannan-Quinn criter.		52.92900
F-statistic	51.57424	Durbin-Watson stat		1.602371
Prob(F-statistic)	0.000000			
<hr/>				

Source: Author's computation Using Econometric View Software (EView), 2022.

The results in table 4.3 revealed that MCAP, VOT and VAT are statistically significant at 5% level of statistical significance in determining variation in capital market development and Economic Growth in Nigeria. ASI is not significant in determining variation in capital market development and Economic Growth in Nigeria.

The model parameters performed considerably well. The R-squared value of 86.5714% revealed

to the extent of this amount in accounting for the systematic variation in the dependent variables

contributory of the independent variables. The Adjusted R-squared value of 84.48928 also shows that on the average the model is properly fitted in providing explanation to the hypothesized functional relationship. On the overall statistical significance of the model, the F value of 51.57424 with a probability value of 0.000000 revealed that on

the overall the model is statistically significant. The Durbin-Watson statistic of 1.602371 (approximately 2) show that there is absence of serial correlation in the model used in the study for explaining the relationship between capital market development and Economic Growth in Nigeria.

The model summary mathematically is presented below:

$$RGDP = 208937.5*MCAP+ 2546262*ASI +2102306 *VOT +3.27E+10*VAT --(4.1)$$

#### **4.5 Test of Hypotheses**

For this study, four (4) hypotheses were formulated. The decision rule is to accept the null hypotheses (reject alternate) if the P-value is greater than 0.05 or reject the null (accept alternate) if the P-value is lower than 0.05. Thus, the significance level for testing the hypotheses is 5%.

##### **Hypothesis 1**

##### **Market Capitalization Has no Significant Influence on Economic Growth in Nigeria**

From the regression result, it was observed that MCAP has a calculated t–value of 6.58 and p-value of 0.000 is less than 0.05. This means that it is significant at 5% level of confidence.

Therefore, the study rejects the null hypothesis that Market capitalization has no significant influence on economic growth in Nigeria and accept the alternate hypothesis that Market capitalization has a significant influence on economic growth in Nigeria.

## **Hypothesis 2**

### **All Share Index (ASI) Has no Significant Effect on Economic Growth in Nigeria**

From the regression result, it was observed that ASI has a t-value of 1.605 and a probability value of 0.11 which is greater than 0.05. This means that it is not statistically significant at 5% confidence interval level. Therefore, the study accepts the null hypothesis that All share index has no significant effect on economic growth in Nigeria and reject the alternate hypothesis that All share index has a significant effect on economic growth in Nigeria.

## **Hypothesis 3**

### **Volume of Trade (VOT) Has no Significant Effect on Economic Growth in Nigeria**

From the regression result, it was observed that VOT has a t-value of 1.84 with probability value of 0.0073 is lesser than 0.05. This means that it is statistically significant at 5% confidence interval. Therefore, the study rejects the null hypothesis that Volume of trade (VOT) has no significant effect on economic growth in Nigeria and accepts the alternate hypothesis that Volume of trade (VOT) has a significant effect on economic growth in Nigeria.

## **Hypothesis 4**

### **There is no Significant Relationship Between Value of Transaction and Economic Growth in Nigeria**

From the regression result, it was observed that VAT has a calculated t-value of 2.875 and p-value of 0.0071 which is less than 0.05. This means that it is significant at 5%

level of confidence. Therefore, the study rejects the null hypothesis that there is no significant relationship between value of transaction and economic growth in Nigeria and accept the alternate hypothesis that there is a significant relationship between value of transaction and economic growth in Nigeria.

**Table 4.4 Summary of Hypotheses Testing**

Hypotheses	T. Stat	Prob.	Remark
Market capitalization has no significant influence on economic growth in Nigeria	6.585827	0.0000	Reject Null
All share index has no significant effect on economic growth in Nigeria	1.605926	0.1181	Accept Null
Volume of trade (VOT) has no significant effect on economic growth in Nigeria	1.847665	0.0073	Reject Null
There is no significant relationship between value of transaction and economic growth in Nigeria.	2.875827	0.0071	Reject Null

Source: Author's Field Survey, 2022.

#### **4.5 Discussion of Findings**

This section concerns the discussion of the empirical results obtained in preceding segments. The finding obtained showed that market capitalization has a positive and statistically significant relationship between real gross domestic product. This implies

that an increase in market capitalization will boost economic growth. The finding agrees with Oke & Adeusi, (2012), Pat and James, (2010)) who found that market capitalization has a positive impact on economic growth and development of Nigeria.

All share index was found to have a positive and insignificant relationship with real gross domestic product. The findings agree with Ilaboya & Ibrahim, (2004) who stated that “The insignificant relationship reflects the fact that majority of key investors prefer to invest in other sectors of the economy other than the capital market”.

Volume of trade was found to have a positive and statistically significant relationship with real gross domestic product. This concludes that the volume of trade is an important factor in determining the magnitude of trading of shares in the capital market and it goes a long way in influencing the performance of the market and as well as influencing the efficiency of the market which invariably impact the economic growth of Nigeria.

Value of transaction was found to have a positive and statistically significant relationship with real gross domestic product. It shows that an increase in aggregate value of all cash, securities and other property paid or contributed by the companies on capital market will result to a positive increase in economic growth of Nigeria.

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

The focus of this chapter is to summarize the findings, draw conclusions reached in the study and make recommendations based on research objectives and the overall perspective of the main findings. The chapter is arranged as follows: section 5.2 summary of findings, section 5.3 covers the conclusion; section 5.4 enumerates the recommendations.

#### **5.5 Summary of Findings**

This study sought to examine the relationship between capital market development and economic growth in Nigeria. To facilitate the study, various hypotheses were stated on the relationship between market capitalization, all share index, volume of trade and value of transaction and real domestic product in Nigeria within the period of 1984 to 2020. The ordinary least squares econometric tools was employed to empirically examine the relationship. In particular, the following specific findings were made from the analysis:

- i. Market capitalization has a positive and statistically significant relationship with real gross domestic product.
- ii. All-share index has a positive and insignificant relationship with real gross domestic product.

iii. Volume of trade has a positive and statistically significant relationship with real gross domestic product.

iv. There exist a positive and statistically significant relationship between value of transaction and real gross domestic product.

### **5.3 Conclusion**

This study examines the relationship between capital market development and economic growth in Nigeria. The preliminary analysis of the data was evaluated using descriptive and correlation analysis. The regression analysis was conducted using the Ordinary Least Square method. The study has provided evidence on the four independent variables; market capitalization, all share index, volume of trade and value of transaction in explaining and predicting the relationship between capital market development and economic growth in Nigeria. The study concludes that capital market development has a significant relationship with economic growth of Nigeria. This is in agreement with Osamwonyi (2006) that capital market is a driving force for economy growth and development.

### **5.4 Recommendations**

Based on the findings of the study, the following recommendations are made:

i. Market capitalization must be improved by encouraging more foreign investors to participate in the market, this will increase new issues which will automatically increase economic growth of Nigeria.

ii. Nigeria Government should find means of boosting the confidence of investors to retain their portfolio investment. This can be done by putting in place regulatory laws that protect the investor and this will no doubt encourage investors to keep investing in areas that yield maximum returns without fear of losing investible funds. If this is sustained, the number of listed securities and All share index of the capital market will without a doubt increase and invariably bring about a positive index in economic growth of Nigeria.

iii. There is need for policy consistency in the pursuit of the development of the Nigerian capital market. By being objective in this regard, counter developmental policies should not be allowed in to crowd out the gains of capital market development on economic growth in the long run.

iv. Nigerian Stock Exchange should boost the volume of trade through the introduction of more derivatives, convertibles, futures and options in the markets in order to be internationally competitive. This will improve Nigeria economy.

v. Securities and Exchange Commission and the Nigerian Stock Exchange should remove impediments to capital market development in form of legal and regulatory barriers because they are sometimes disincentives to investment which affect economic growth.

## REFERENCES

- Acha, I., & Akpan, S. (2019). Capital Market Performance and Economic Growth in Nigeria. *Noble International Journal of Economics and Financial Research*. 2519-9730 2523-0565(04), 10-18.
- Adediran, O., Adeyemo, K., & Alade, A. (2015). Globalization, capital market and economic development in Nigeria. *Journal of Governance and Regulation*, 4(1), 57-62.
- Adeusi, S., Sulaiman, L. & Azeez, B. (2013). Impact of Capital Market Development on the Nigerian Economy: A Post-SAP Analysis. *Journal of Economics and Behavioral Studies*. 5, 1, 1-7.
- Afolabi, A. (2015). Impact of the Nigerian capital market on the economy. *European Journal of Accounting Auditing and Finance Research*, 3(2), 88-96.
- Ajibola, A. (2017). Capital market development and economic growth in Nigeria. *Schooled International Journal of Management & Development*, 4(10), 99-110.
- Ali, M., & Fei, Y. (2016). Impact of Malaysia's Capital Market and Determinants on Economic Growth. *Journal of Asian Finance, Economics and Business*, 3(2), 5-11.
- Amu, C., Nwezeaku, N., & Akujuobi, A. (2015). Impact of capital market growth on economic growth and development in Nigeria. *American Journal of Marketing Research*, 1(3), 93-98.
- Araoye, F., Ajayi, E., & Aruwaji, A. (2018). The impact of stock market development on economic growth in Nigeria. *Journal of Business and African Economy*. 4(1), 2545-5281.
- Chukwuemeka, N. (2018). Impact of Capital Market On the Economic Growth in Nigeria. *Journal of Economics and Finance*, 9(5), 48-59.
- Coskun, Y., Seven, U., Ertugrul, H., & Ulussever, T. (2017). Capital market and economic growth nexus: Evidence from Turkey. *Central Bank Review*, 17, 19-29.
- Enekwe, C., Agu, C., & Eziedo, K. (2014). The effect of financial leverage on financial performance. *IOSR Journal of Economics and Finance* 2321-5925, 5(3).

- Francis, B., Hassan, I., & Ofori, E. (2015). Investor protections, capital markets, and economic Growth. *Advances in Financial Economics*, 18(1), 239-272.
- Gillman, M. (2002). Exchange rate and the money market. *Journal of Monetary Economics* 35, 513-542.
- Greenwood, O. (2014). *Financial Markets in Development, and the Development of Financial Markets*; Rochester: University of Rochester, March
- Lucas, R. (1988). On the Mechanics of Economic Development. *Journal of Monetary Economics*, 22. 2– 42.
- Levy, H (2009). *Introduction to investments*. Ohio; International Thompson Publishing.
- Obadan, M. (2015). *Presidential Address presented on the “Capital Market and Nigeria’s Economic Development”* at one-day seminar organized by Nigeria Economic Society at the Institute of International Affairs, Lagos.
- Odetayo, T., & Sajuyigbe, A. (2012). Impact of Nigerian Capital Market on Economic Growth and Development. *International Journal of Arts and Commerce*. 1(5), 3-9.
- Ogunleye, O. (2015). Stock Market Development and Long-run Growth. *World Bank Economic Review*. 10(2).
- Okodua, H. & Ewetan, O. O. (2013). Stock Market Performance and Sustainable Economic Growth in Nigeria: A Bounds Testing Co-Integration Approach. *Journal of Sustainable Development*. 6(8), 8-10.
- Okereke, O. (2010). Stock market financing options for public projects in Nigeria. *The Nigerian Stock Exchange Fact Book*.
- Okoye, V., & Nwisienyi, K. (2013). The capital market contributions towards economic growth and development; the Nigerian experience”. *Global Advanced Research Journal of Management and Business Studies*. 2, (2), 2-5.
- Ologunwa, O., & Sadibo, O. (2016). Capital market development and economic growth in Nigeria. *FUTA Journal of Management and Technology, maiden edition*. 2(3), 48-59.

- Onwe, J. (2015). Nigerian Capital Market and its Impact on Economy (1990 – 2013). *Nigerian Journal of Economics and Development Studies*, 1(1), 115-127.
- Miftahu, I. (2020). Analysis of Capital Market Development and Economic Growth in Nigeria *Global Journal of Applied, Management and Social Sciences (GOJAMSS)*; 20, 156 – 172 ( 2276 – 9013).
- Ngare, E., Nyamongo, E., & Misati, R. (2014). Stock market development and economic growth in Africa. *Journal of Economics and Business*, 74, 24-39.
- Nwaolisa, E., Kasie, E., & Francis, E. (2013). The impact of capital market on the growth of the Nigerian economy under democratic rule. *Arabian Journal of Business and Management Review*, 3(2), 53-62.
- Pagano, M. (2013). Financial Markets and Growth, *European Economic Review*, 37, (2) 613- 622.
- Taiwo, J., Adebayo, A., & Evawere, A. (2016). Capital market and economic growth in Nigeria. *Account and Financial Management Journal*, 1(8), 497-525.
- Thaddeus, O., & Nnenna, O. (2015). Causality effect of capital market indicators on foreign investment model in Nigeria and South Africa (1980-2013). *International Journal of Innovation and Economic Development*, 1(2), 7-11.
- Yadirichukwu, E., & Chigbu, E. (2014). The impact of capital market on economic growth. *International Journal of Development and Sustainability*, 3(4), 838-864.

## APPENDIX A

	RGDP	MCAP	ASI	VOT	VALUE OF TRANSACTION
1984	73484359521	269.3	111.3	23844.5	0.108820185
1985	73745821158	330.5	134.6	24085.8	0.108820185
1986	54805852581	519.9	166.9	33189.3	0.108820185
1987	52676041931	409.6	190.8	57990.2	0.108820185
1988	49648470440	850.3	239.7	31450.8	0.108820185
1989	44003061108	610.3	343	20827.2	0.108820185
1990	54035795388	225.4	528.7	24770.5	0.108820185
1991	49118433048	242.1	794	20730.6	0.108820185
1992	47794925815	491.7	1113.4	28078.8	0.108820185
1993	27752204320	804.4	1666.3	41329.2	0.108820185
1994	33833042988	985.9	2285.3	34657.2	0.132414929
1995	44062465800	1838.8	5135.1	28642.3	0.189685254
1996	51075815093	6979.6	7268.3	26874.6	0.615986254
1997	54457835193	10330.5	6435.6	38243.2	0.916360333
1998	54604050168	13571.1	5494.8	31430.5	1.116254194
1999	59372613486	14072	5752.9	26842.1	0.189649728
2000	69448756933	28153.1	8794.2	26831.8	0.189649728
2001	74030364472	57683.8	10650	57.68	0.228554866
2002	95385819321	59406.7	13298.8	59.41	0.189649728
2003	104912000000	120402.6	22712.9	120.4	0.189649728
2004	136386000000	225820	23073.8	225.82	1.232260096
2005	176134000000	262935.8	23679.4	262.94	1.109251498
2006	236104000000	470253.4	36784.5	470.25	1.523731181
2007	275626000000	1076020.4	58570.6	1076.02	6.298353509
2008	339476000000	1679143.7	21652.2	1679.14	4.924825136
2009	295009000000	685716.2	22594.9	685.72	1.522914062
2010	361457000000	799208.4	26830.7	799.91	1.412385245
2011	404994000000	638753.9	20875.8	638.93	0.956047221
2012	455502000000	808428.9	31853.2	808.99	0.898526082
2013	508693000000	2350814.6	40571.6	2350.88	1.224294509
2014	546676000000	1334783.1	29562.1	1338.6	0.938930277
2015	486803000000	961221.5	23916.2	978.05	0.83912538
2016	404650000000	607407	26036.2	577.82	0.373074029
2017	375746000000	1272708.5	44343.7	1078.49	0.587126265
2018	397190000000	1203250.4	30557.2	1203.37	0.651123814
2019	448120000000	963122.9	28843.5	931.48	0.606223199
2020	432294000000	963122.9	40270.72	1086.18	0.574130403

Dependent Variable: RGDP

Method: Least Squares

Date: 11/10/22 Time: 16:19

Sample: 1984 2020

Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.22E+11	3.60E+10	3.393291	0.0019
MCAP	208937.5	31725.32	6.585827	0.0000
ASI	2546262.	1585541.	1.605926	0.1181
VOT	2102306.	1137818.	1.847665	0.0073
VAT	3.27E+10	1.14E+10	2.875827	0.0071
R-squared	0.865714	Mean dependent var		2.01E+11
Adjusted R-squared	0.848928	S.D. dependent var		1.75E+11
S.E. of regression	6.81E+10	Akaike info criterion		52.85225
Sum squared resid	1.49E+23	Schwarz criterion		53.06995
Log likelihood	-972.7667	Hannan-Quinn criter.		52.92900
F-statistic	51.57424	Durbin-Watson stat		1.602371
Prob(F-statistic)	0.000000			

## APPENDIX B