CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The Nigeria environment is a complex super structure comprising several inter-related sectors and activities that work together to facilitate economic growth. The real sector of the economy is essentially involved in the production of goods and services. It activities cut across agriculture, manufacturing, mining, quarrying, water resources, service and technology, environment and tourism. This sector has the highest potential for achieving a broad based and diversified economy, but its performance has been unimpressive over the years. (Edo & Erovie, 2016).

The infrastructure sector of the Nigerian economy has remained weak over the past two decades while the transport infrastructure has been generally poor as road, rail, air and water transport system have for several years been characterized by deplorable conditions. In the external sector, raw materials and capital goods dominate our imports, even as the economy is described as largely import dependent (Edo & Erovie, 2016).

However, the impressive or unimpressive of all other sectors performance hinges on the soundness of the financial sector. In a nutshell, the financial sector is the heartbeat of any economy, and the capital market is a major focal point of the financial sector.

It is a well-established fact that a well-developed capital market facilities economic growth and development (Ibenta, 2000). The capital market provides a platform where financial resources are pooled and made available for productive ventures. Absence of effective capital market could leave most productive projects which carry developmental agenda unexploited. The capital market connects the monetary sector with the real sector and therefore facilitates growth in the real sector, it enhances improvement in the quality of life

of the citizens (Okoro, 2012; Ibenta, 2000). The fundamental channel through which the capital market is connected to the economic growth is that the capital market increases the proportion of long-term savings that is channeled to long-term investment. Besides, capital market also provides equity capital and infrastructural development capital that has strong socio-economic benefit. It also promotes public-private partnerships to encourage participation of private sector in productive investment (Okoro, 2012).

The capital market provides a platform where financial resources are pooled and made available to productive ventures (Oke, 2013). According to Donwa and Odia (2010), the capital market has been identified as an institution which contributes to the socio-economic growth and development of emerging and developed economies. This is made possible by the intermediary role played by the capital market in mobilizing funds from surplus units to deficits units to be invested into projects with positive net present value (NPV) which will enhance economic growth of the nation. Briggs (2015) study shows that capital market remains one of the mainstreams in every economy that has the power to influence economic growth, therefore the organized private sectors need to invest in capital market. Adigwe, Nwanna and Ananwude (2015) study support the argument that stock market development in developing countries contribute positively to economic growth. A financial market works as a conduit for demand and supply of debt and equity capital. It channel's the money provided by savers and depository institutions to borrowers and investees through a variety of financial instruments called securities.

The Nigerian Capital Market has witnessed obvious transformation, growth and expansion evident by the increased level of participation of the private and public investors at the floor of the stock exchange and in various public offers of quoted companies (Riman, 2008). The emerging market has also attracted and embraced the attention and the interest of international investors, thus increasing capital inflow. For example, the overall market capitalisation had risen from N1,698,1 million naira in 1980 to N7,030.8 billion naira in

2009, thus signifying an increase within the period. Transaction at the floor of Nigerian stock exchange has risen to a total of N685,716.2 million naira in 2009 from a previous value of N16.6m recorded in 1970. Between the years 2009 till 2013, transaction in the exchange floor has risen to about N19,077,4 trillion naira while it fell to N16, 875,1 trillion in 2014.The number of deals from all market participants at the floor which recorded a mere 634 deals in 1970 had also witnessed a remarkable increase to N1,739,365 million naira in 2009. The total number of listed companies had also increased from 91 as was listed in 1980 to 213 listed in 2008 and increase to 254 in 2013, but reduced to 253 in 2014.While in 2015, there were reforms in the exchange market but some firms were unable to withstand the reforms (CBN Statistical Bulletin, 2015).

The capital market in Nigeria has faced some challenges as it is being described as a shallow market, this is due mainly to the market float that is very small and is measured by the ratio of securities in the market to the total listed securities outstanding. The challenge that lies ahead is to be able to increase and retain as many of our domestic individual and institutional investors as possible and simultaneously attract foreign ones to the Nigerian Capital Market (Nathanael, 2014). This can be achieved by being dynamic, innovative, and having an open mind so that new ideas can be absorbed and put productively in use. The market need be in a position to provide a spectrum of investment alternatives, new trading instruments with which investors can hedge their risk, as well as an environment which has sufficient structures and where policies are flexible enough to accommodate different investment needs (Ovat, 2012).

Economic growth may be viewed as the increments recorded in productive activities in a current year, compared to that of the previous year. Okoro (2012), explained that economic growth in a modern economy hinges on an efficient financial sector that pools domestic savings and mobilizes foreign capital for productive investments.

Mankiw (2009) viewed economic growth as a positive change in the production output, of a country or an economy. It is measured as a percentage increase in the Gross Domestic Product (GDP) of a given economy. This is done by finding out the previous year's GDP and finding the ratio between the current and the previous GDP. Of more importance is the growth of the ratio of GDP to population which is also called per capita income. An increase in growth caused by more efficient use of inputs such as physical capital, population, or territory is referred to as intensive growth. GDP growth caused only by increases in the amount of inputs available for use is called extensive growth. The capital market of any nation is believed to be efficient if it has the capability and capacity to pool and channel the required resources for economic growth and industrial development. The importance of capital market as an efficient channel of financial intermediation has been well noted by researchers, academicians, and policy makers as a primary determinant of the economic growth of a country both developed and developing countries (Okodua & Ewetan 2013; Ihendinihu & Onwuchekwa 2012; Oke & Adeusi, 2012; Adenuga, 2010). Its major function amongst others is the mobilization of financial resources from the area of surplus to the area of deficit. Capital market is recognized as a viable and efficient tool for the growth of the economy. Many economies now appreciate the market as a major source for long-term finance hence adopt policies that will enhance the activities of the capital market to assist in the fruition of the laudable economic goals (Briggs, 2015; Aye, 2013; Anyanwu, 1998).

The Nigerian economy has experienced mixed fortunes over the years in her quest for sustained economic growth. Between 1986 and 2016 the Nigerian Capital Market has moved from position of trust and dwindling confidence. Moreso, a little over 3.8 million people of over a population of 160 million people of over a population of 160 million people are investors in the market. Thus, the market is better described as small in size (NSE, 2014).

1.2 Statement of the Problem

The Nigerian Capital Market like every other capital markets has faced challenges. These problems are both endogenous and exogenous. The exogenous problems are those outside the direct control of the market but are regulation induced. The endogenous problems are those that are internal to the market but are amenable to changes with improved operational procedures including the adoption of information technology. Some of these problems, particularly to Nigerian Capital Market, have been identified by a number of researchers to include small size of the market, problem of illiquidity of the market, slow growth of security market, delay of shares certificate, problem of microeconomic instability and fewness in number of tradable shares (Echekoba, Ezu & Egbunike, 2013; Aiguh, 2013; Odetayo & Sajuyigbe, 2012; Ohiomu & Enabulu, 2011). These endogenous and exogenous issues identified are capable of hampering capital market development and economic growth in a developing country like Nigeria.

There has been a mixed and divergent positions on the capital market and economic growth nexus leading to confusion on appropriate policy stance to spur growth through capital market performance in Nigeria. Some of these studies have posted that market indicators such as All Shares Index, Market capitalization, Value of transactions and Volume of shares traded indicated positive and significant contributions to the economic growth (Odo, Anoke, Onyeisi & Chukwu, 2017; Obiakor, 2016; Briggs, 2015; Igbodika, 2014); while others observed that the market has not significantly mobilized and effectively channeled substantial capital to the real sector of the economy (Okonkwo, Ogwuru & Ajudua, 2014; Adewuyi & Olowookere, 2011). Even at this, contradictions also emanated wherein studies showed that capital market indices promoted economic growth (Jagadish, 2017; Kumar, 2016; Nordin & Nordin, 2016; Jalloh, 2015; Regimi, 2012; Duca, 2007), and others revealed that the capital market has not positively and

significantly affected economic growths of studied economies (Karim & Chaudhary, 2017; Wang & Ajit, 2013; Jamil & Shazia, 2013; Abdul-Khalia, 2013).Given these divergences in the relationship between capital market performance and the economic growth, capital market policies that spur growth may not be focused.

Despite empirical studies abounds on capital market and growth nexus, the effects of volume of trading, new issues and all share index hardly studied.

1.3 Objectives of the Study

The main objective of the study is to examine capital market performance and economic growth in Nigeria: 1986-2016. Specifically, the study examined the relationship between capital market performance and economic growth as stated below:

1. To ascertain the relationship between market capitalization ratio and economic growth in Nigeria.
2. To assess the relationship between all share index and economic growth in Nigeria.
3. To determine the relationship between values of stock traded ratio and economic growth in Nigeria.
4. To determine the relationship between volume of stock traded and economic growth in Nigeria.
5. To assess the relationship between total market new issues and economic growth in Nigeria
6. To evaluate the relationship between market turnover ratio and economic growth in Nigeria.

1.4 Research Questions

In other to achieve the objectives of this study, the following questions were developed:

1. How does market capitalization ratio relate to economic growth in Nigeria?

2. What is the extent to which all share index relate to economic growth in Nigeria?
3. To what extent has value of stock traded ratio interacted with economic growth in Nigeria?
4. To what degree does the relationship between volume of stock traded relate to economic growth in Nigeria?
5. To what dimension does the total market new issues relate to economic growth in Nigeria?
6. How does market turnover ratio relate to economic growth in Nigeria?

1.5 Research Hypotheses

This study will be guided by the following hypothetical statements which are stated in the null form;

Ho_1: Market capitalization ratio does not predict economic growth in Nigeria

Ho_2: All share index does not significantly impact on economic growth in Nigeria

Ho_3: Economic growth is not a significant function of value of stock traded in Nigeria

Ho_4: Volume of stock traded does not significantly relate with economic growth in Nigeria

Ho_5: Total market new issues does not have significant relationship with economic growth in Nigeria

Ho_6**:** Market turnover ratio does not significantly drive economic growth in Nigeria.

1.6 Significance of the Study

It is expected that this study would consolidate existing literatures on the issues surrounding the effects of capital market performance and economic growth in Nigeria.

This study is also significant in the following ways; it will contribute to the identification of proxies as well as the measure of capital market activities that correlate with economic

growth in Nigeria. The industry level analysis using multivariate models for the period under study will provide greater insight on the relationship between the correlates. This study will be of great help to the investors, Central Bank of Nigeria, financial analyst, policy makers and researchers.

1 Investors

This study provides investors with explanations on how their investments can be affected by the dealings on the exchange floor and also the interplay between capital market indices and revealing the channels of transmission mechanism.

2 Central Bank of Nigeria

This study contributes significantly to enrich the Central Bank of Nigeria monetary policies as it affects the growth of the entire economy of Nigeria.

3Investment Analyst and Corporations

The result of the study is of benefit to investment analysts and corporations in examining the effectiveness of the capital market and thus evaluating the options available for accessing long-term, non-debt financing capital which enables companies to avoid over-reliance on debt-financing thus improving corporate debt-to-equity ratio prices.

4. Policy makers

Given the empirical nature of the study, it is useful to the monetary authorities by providing insight on the nature of the relationship between capital market and economic growth in Nigeria. Besides, the outcome of the study would aid policy makers and regulating bodies in economic modeling and policy simulation with respect to the selected variables examined in the study.

5Researchers

The findings of this study is significant and of great assistance to scholars by adding to the number of existing literatures in the field and in so doing aid future research. It will also provide insight to potential researchers who wish to carryout research relating to the inter-relationship between capital market performance indices such as market capitalisation ratio, all share index, value of stock traded ratio, volume of share traded, total new issues, turnover ratio and other related study.

1.7 Scope of the Study

This work studied how the Nigerian Capital Market performance relate to economic growth, and much attention were not given to evaluating the soundness of the market. Besides the study did not cover all the variables of the capital market performance, only six out of the available ten measurements were considered in the study. The indicators not studied include total listed securities, total number of issues, numbers of deals and total value of deals and the reason for not studying them is because they were near static figures. The choice of the period by the researcher results from the fact that Nigeria had a turning point in the base year (1986) when it adopted the structural adjustment programme. The three major policy thrusts were privatization and commercialization, diversification of export and de-regulation and liberalisation of the economy. Specifically the liberalization of entry into banking and non-banking financial services sub-sector led to proliferation of banks and non-bank financial institutions for which investors were in the Nigerian Capital Market. The limitation year (2016) was because data to be accessed are available up to that year.

1.8 Limitations of the Study

The study utilized secondary data collected from Nigerian Stock Exchange factbook of various issues. As a result, the quality of this study depends entirely upon the accuracy and

reliability of the secondary data source. The study was anchored within the supply leading hypothesis based on its emphasis on the importance of finance in the context of developing economy like Nigeria.

1.9 Operational Definition of Terms

All share index: Capital weighted average of all the shares listed in the Nigeria Stock Exchange.

Market capitalization ratio: This is the value at current market prices of all of a company's ordinary shares or the aggregate value of all the stocks listed in the stock market

Real gross domestic product growth rate: This is the change in real gross domestic product. This adjustment transforms the money-value measure, nominal gross domestic product into an index for quantity of total output measured in millions of Naira.

Total market new issues: These are securities that have been registered, issued and is being sold on a market to the public for the first time. They are often called primary shares or new offerings.

Turnover ratio: The turnover ratio is a measure of capital market liquidity surrogated by ratio of value of stock traded to market capitalization.

Value of stock traded ratio: The value of shares traded is the total number of shares traded both domestic and foreign multiplied by their respective matching prices in the Nigerian Stock Exchange. This indicator complements the market capitalization ratio by showing whether market size is matched by trading.

Volume of stock traded: This refer to the volume of stock traded over a specified period of time on the floor of the Nigerian Stock Exchange.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Concept of Capital Market

The capital market is a network of specialized financial institutions, series of mechanisms, processes and infrastructure that in various ways facilitate the bringing together of suppliers and users of medium to long term capital for investment in socio-economic developmental projects (Al-Faki, 2007). The capital market is a highly specialized and organized financial market and indeed essential agent of economic growth because of its ability to facilitate mobilized saving and investment. To a great extent, the positive relationship between capital accumulation and real economic growths has long affirmed in economic theories (Anyanwu, 1993).

The capital market is a long term end of financial market. It is the market for long-term capital. People and institutions that require funds for long-term will as a matter of fact go to the capital market for the funds. Similarly, those people and institution that have surplus funds that they want to lend, on the long term basis, also go to the capital market (Okoro, 2012). The capital market provides the framework through which owners of surplus long term funds are able to meet those that require long-term funds. Basically, the capital market is the best source from which industry obtains long-term funds. Also, state and federal government borrow from the capital market long term funds for developmental purpose (Okoro, 2012).

The capital market is the segment of the financial market where longer-term instruments (generally those with original maturity of more than one year) are created and/or traded to

meet the long-term funding needs of economic activities (Ibenta, 2000). The role of the capital market in the economy includes its contribution to speedy economy growth and development through enhancing production and productivity in the national economy. The capital market provides the necessary vehicle required for the mobilization of idle savings for productive activities in the economy (Akpan, 2013). Domestic firms source medium to long-term funding for productive use from capital market. The market is an important sources for capital formation though the mobilization of ideal resources which are channeled into effective long-term investments. Investments in the capital market also serve as effective hedge against inflation and currency depreciation. The capital market is central to a well-functioning economy, since capital is crucial for generating economic output (Ogboghro, 2006).

The Nigerian Capital Market offers access to a wide range of assets where investors are free to price and invest. The types of securities offered in the capital market include but not limited to the following: equity, industrial loans, preference shares, state government bonds, federal government bonds and debentures (Oke, 2013)

Capital market is divided into two areas; the primary and the secondary market. The primary market is concerned with the raising of new funds or where new shares are bought and sold, while the secondary market is a market for trading in existing securities that are already in people's hands thus, enabling savers who purchased securities when they had surplus funds to recover their money when they need cash. The primary market will however not function effectively without a well–organized and efficient secondary market. The existence of secondary markets enhances demand for initial public offers (IPO) in the primary market. Thus, the main function of the secondary market is to make it easier and quicker to sell financial instruments to raise cash; that is, they make the shares, bonds and

other instruments more liquid. The primary and secondary markets are inter-related and inter-dependent.

The secondary market can be further segmented into two; namely organized market and over the counter market (OTC). The organized market is where buyers and sellers (or their agents or brokers) meet in one central location to conduct trades e.g. NSE and ACE. In the case of Nigeria, the market for equities in the NSE consists of two tiers, namely, the first tier and second tier exchanges. The first-tier deals with issues of quoted companies while second-tier introduced largely to accommodate the features of SME (Small and Medium Enterprises) which find it difficult to fulfill the stringent listing requirements in the first-tier market. On the other hand, the OTC market has no centralized mechanism or facility for trading, instead trading occurs over sophisticated telecommunication network. The market is conducted through dealers.

Participants in the capital market consist mainly of the firms and individuals who have surplus funds and those who have a deficit of funds to undertake economic activities. It is thus a market for investors and those who seek to finance their deficit positions. The participants in the capital market can be categorized into four, namely: Providers of Funds - this includes individual and institutional investors, unit trust, Nigeria Social Insurance Trust Funds (NSITF), insurance companies and other corporate bodies; Users of funds - this includes government and companies/corporations for their long-term investment; intermediaries - This includes stock brokering firms, issuing houses and registrars; and the Nigerian Stock Exchange (NSE) - The NSE provides the platform, information and the rules and regulations needed to ensure orderly and smooth operations of the exchange (Ogboghro, 2006).

Capital market intermediaries include stock brokering Firms that are licensed by the stock exchange, with obligation of upholding a fair and orderly sequence of prices for a

particular security transacted on the Exchange. In effect, it is an intermediary. Another intermediary are Issuing Houses which are corporate organisations and non-dealing members of the NSE that organize prospectus to sell new securities offered to the member of the public by issuers such as incorporated firms and governments; The Registrars which are institutions in the capital market that keeps the records in respect of quoted stocks and shares in the market. Registrars usually referred to as transfer agents are concerned with the issue of opening registers and keeping the list of share/stock of the firms after the close of subscription and allotment.

2.1.2 Concept of Economic Growth

Economic growth is the increase in the amount of goods and services produced by an economy over time. It is conveniently measured as the percentage rate of increase in real gross domestic product. Growth is usually calculated in real terms that are inflation-adjusted terms, in order to obviate the distorting effect of inflation on the price of the goods produced. In economics, economic growth typically refers to growth of potential output that is production at full employment which is caused by growth in aggregate demand or observed output (Aiguh, 2013).

Often, the concern about economic growth focuses on the desire to improve a country's standard of living that is the level of goods and services that an average individual purchase or otherwise gain access to. Economic growth per capita is primarily driven by improvements in productivity, also called economic efficiency. Increased productivity means producing more goods and services with same inputs of labour, capital energy and materials. Economic growth is measured as a percentage change in the gross domestic product or gross national product. These two measures, which are calculated slightly differently, total the amounts paid for the goods and services that a country produced (Aye, 2013).

Economic growth is measured by changes in the gross domestic product; this measures a country's entire economic output for the past year. This takes into account all goods

andservices that are produced in the country for sale, whether they are sold domestically or sold overseas. It only measures final production, so that the parts manufactured to make a product are not counted. Exports are counted, because they are produced in this country. Imports are subtracted from economic growth (Brown & Nyeche, 2016)

2.1.3 Capital Market and Economic Growth Channels

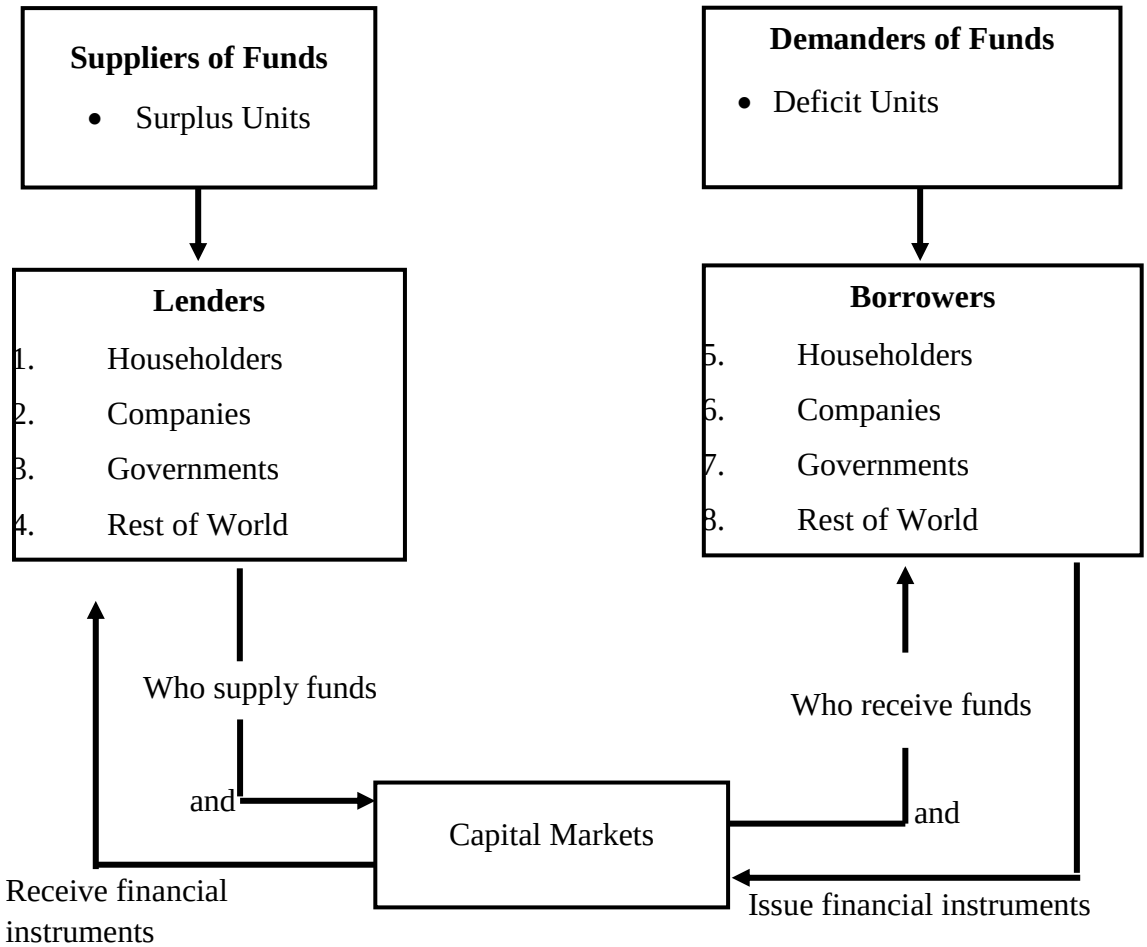
The capital market in principle is expected to accelerate economic growth, by providing a boost to domestic savings and increasing the quantity and the quality of investment. The market is expected to encourage savings by providing individuals with an additional financial instrument that may better meet their risk preferences and liquidity needs. Better savings mobilization may increase the saving rate. The capital market also provides an avenue for growing companies to raise capital at lower cost. The capital market therefore is able to positively influence economic growth through encouraging savings among individuals and providing avenues for firm financing (Akpan, 2013).

Capital market offers access to a variety of financial instruments that enable economic agents to pool, price and exchange. Through assets with attractive yields, liquidity and risk characteristics, it encourages savings in financial form. This is very essential for government and other institutions in need of long term funds and for suppliers of long term funds. Companies can finance their operation by raising funds through issuing equity or debenture/bond borrowed as securities. Equity have perpetual life while debenture and bond issues are structured to mature in periods of years varying from the medium to long-term of usually between five and twenty five years (Obiakor, 2016). Based on the performance of capital market in accelerating economic growth, governments of most nations tend to have keen interest in its performance. The concern is for sustained confidence in the market and for a strong investor's protection arrangement.

Economic growth is generally agreed to indicate development in an economy, because it transforms a country from a five percent saver to a fifteen percent saver. Thus it is argued that for capital market to contribute or impact on the economic growth in Nigeria, it must operate efficiently. Most often, where the market operate efficiently, confidence will be generated in the minds of the public and investors will be willing to part with hard earned funds and invest them in securities with the hope that in future they will recoup their investment (Ewah, Esang & Bassey, 2009).

The role of the capital market is to bring together savers who buy financial instruments and the users of funds who issue financial instruments. The flow of funds, the relationship between savers and users of funds, and the place of the capital market in the flow, are illustrated by Viney (2003) in Figure 2.1

Figure 2.1: Capital Market and Flow of Funds Relationship



Source: Viney (2003) as cited by Meshaal (2014).

2.1.4 Evolution of the Nigerian Stock Market

According to Briggs (2015), the development of the Nigerian Capital Market dates back to the late 1950s when the Federal Government through its ministry of industries set up the Barback committee to advise it on ways and means of setting up a stock market. Prior to independence, financial operators in Nigeria comprised mainly of foreign owned commercial banks that provided short-term commercial trade credits for the overseas companies with offices in Nigeria. Their capital balances were invested abroad in the London Stock Exchange. Thus, the Nigeria Government in an attempt to accelerate economic growth embarked on the development of the capital market. This is to provide local opportunities for borrowing and lending of long-term capital by the public and private sectors as well as an opportunity for foreign-based companies to offer their shares to the local investors and provide avenues for the expatriate companies to invest surplus funds.

Based on the report of the Barback committee the Lagos Stock Exchange was set up in 1959. With the enactment of the Lagos Stock Exchange Act 1961, it commenced business in June, 1961 and assumed the major activities of the stock market by providing facilities for the public to trade in shares and stocks, maintaining fair prices through stock-jobbing and restricting the business to its members. The Lagos stock exchange was renamed the Nigeria Stock Exchange in 1977, with the following objectives;

1) To provide facilities to the public in Nigeria for the purchase and sale of funds, stocks and shares of any kind and for the investment of money.
2) To regulate the dealings of members interest and those of their clients.

3) To control the granting of a quotation on the stock exchange in respect of funds, stocks and shares or any company, government, municipality local authority or other corporate body.

4) To promote, support, or propose legislative or other measures affecting the aforementioned objectives.

Initially, trading activities commenced with two federal government development stocks, one preference share and three domestic equities. The market grew slowly during the period with only six equities at the end of 1966 compared with three in 1961. Government stocks comprised the bulk of the listing with 19 of such securities quoted on the Exchange in 1966 compared with six at the end of 1961. (Nnanna, Englama & Odoko, 2004).

The development of capital market in Nigeria, as in other developing countries has been induced by the government. The history of Nigeria Capital Market could be traced to 1946 when the British colonial administration floated a N600, 000 local loan stock bearing interest at 3¼% for the financing of developmental projects under the ten years plan local ordinance. The loan stock, which had a maturity of 10-15 years, was oversubscribed by more than N1 million, yet local participation of the issued was terribly poor. Certainly, potential funds abound in Nigeria (Nwankwo, 1991). And as result of poor local participation federal government established several economic programmes with hope to foster economic and financial development, such as Structural Adjustment Programme (SAP) 1986, Vision 2010, Vision 2020, Millennium Development Goal (MDGs), National Economic Empowerment Development Strategy (NEEDS), State Economic Empowerment Development Strategy (SEEDS), and other development plans (Odetayo & Sajuyigbe, 2012).

Though prior to the establishment of stock market in Nigeria, there existed some less formal market arrangements for the operation of capital market. It was not prominent until the visit of Lobyneson in 1959, on the invitation of the federal government to advice on the role the Central Bank can play in the development of local money and capital market. As a follow-up to this, the government commissioned and a set up the Barback committee to study and make recommendations on the ways and means of establishing a stock market in Nigeria as a formal capital market (Ogboghro, 2006).

Acting on the recommendations of the committee, the Lagos Stock Exchange (as it was called then) was set-up in March 1960, and in September 1961, it was incorporated under Section 2 cap 37, through the collaborative effort of Central Bank of Nigeria, the business community and industrial development bank. With the establishment of the Central Bank of Nigeria in 1959 and the coming into existence of the Lagos Stock Exchange in 1961 and subsequently, the Nigerian Stock Exchange by an Act in 1979, a solid foundation was laid for the operation of the Nigerian Capital Market for trading in securities of long term nature needed for the financing of the industrial sector and the economy at large. After the incorporation of the Lagos Stock Exchange, it was granted further protection under the law and its activities was placed under some sort of control by the government, hence the passing of the Lagos Stock Exchange Act. However, the Lagos Stock Exchange was only operational in Lagos by the mid 1970's, the need for an efficient financial system for the whole nation was emphasized, and a review by the government of the operations of the Lagos Stock Exchange market was advocated. Dr. Pius Okigbo's committee was established to advise the government on veritable financial system in 1976.

The review was carried out to take care of the low capital formation, the huge amount of currency in circulation which was held outside the banking system, the unsatisfactory demarcation between the operation of commercial banks and the

emerging class of the merchant banks, and the extremely shallow depth of the capital market. In response to the problems mentioned, the government accepted the principle of decentralization but opted for a National Stock Exchange, which will have branches in different parts of the country. On December 2nd, 1977, the memorandum and article of association creating the Lagos Stock Exchange was transformed into the Nigerian Stock Exchange, with branches in Lagos, Kaduna, Port-Harcourt, Yola, Kano, Ibadan, Uyo, Ilorin, Abeokuta, Benin, Owerri, Bauchi, Onitsha and now in Federal Capital Territory, Abuja and some other cities. (Nwanna, 2011).

Prior to 1972 when the indigenization exercise took off, activities on the Nigeria Stock Exchange were low. That was true both in terms of the value and volume of transactions. The major instruments or products available in the Nigerian Capital Market includes; the industrial equities otherwise referred to as ordinary shares; industrial loans such as debentures, unsecured zero coupons, preference bonds and stocks, specialized project loans and infrastructural loans, government stocks or bonds, unit trust schemes, unlisted corporate and industrial loans stock among others. The market is currently divided in to two broad categories, namely equities and debt markets. Ekoko (2007), explained that the institutions that make up the capital market includes: Insurance companies, other financial institutions dealing in long-term funds and the stock market.

The Nigeria Stock Exchange is the primary operator in the Nigerian Capital Market. Ogboghro (2006) describes the stock exchange as a primary capital market in which companies and other institutions can raise funds by issuing shares or loan stock but it is more important as a secondary market for buying and selling existing securities. Edame, and Okoro (2013), believe the capital market is divided into the primary and the secondary market. The primary market or the new issues market provides the avenue through which government and corporate bodies raise fresh funds through the

issuance of securities which is subscribed to by the general public or a selected group of investors. According to Soyode (1990) Primary market is a market for new securities. It is a platform where the companies or government can raise money for investment or where already quoted companies can raise fresh funds for expansion. Both the Securities and Exchange Commission and the Nigerian Stock Exchange are involved in primary market activities. The secondary market provides an avenue for sale and purchase of existing securities. It is a type of market where existing securities of a market are traded on daily and continuous basis. It is the market for existing securities. This consists of exchanges and over-the counter markets where securities are bought and sold after their issuance in the primary market.

The roles of the capital market in the development of the economy as observed by Aremu (2011) as cited by Edame and Okoro (2013) are follows:

1) It provides opportunities for companies to borrow funds needed for long-term investment purposes.

2) It provides avenue for the marketing of shares and other securities in order to raise fresh funds for expansion of operations leading to increase in production.

3) It provides a means of allocating the nations real and financial resources between various industries and companies. Through capital formation and allocation mechanism the capital market ensures an efficient and effective distribution of the scarce resources for the optimal benefit to the economy.

4) It reduces over reliance of the corporate sector on short term financing for long term projects and also provides opportunities for government to finance projects aimed at providing essential amenities for local investors.

5) The capital market can aid the government in its privatization programme by offering her shares in the public enterprises to members of the public through the stock exchange.

6) The capital market also encourages the inflow of foreign capital when foreign companies or investors invest in domestic securities. It provides the needed seed money for creative capital development and acts as a reliable medium for broadening the ownership base of family-owned and dominated firms.

2.1.5 The role of the financial markets as catalyst for economic growth

Financial markets play an important role in promoting economic growth. It is commonly argued in the economic literature that a well-functioning financial sector creates strong incentives for investment and also fosters trade and business linkages thereby facilitating improved resources use and technological diffusion. By mobilizing savings for productive investment and facilitating capital inflow, financial markets stimulate investment in both physical and human resources. The financial sector also channels savings to more productive uses by collecting and analyzing information about investment. (Briggs, 2015; Oke & Adewusi, 2012; Pat & James, 2010).

Public and private sectors operators make use of various financial instruments to raise and invest short-term funds which if need be, can be quickly liquidated to satisfy short term needs. The central government, for instance can borrow money from the general public to finance long-term investment projects by issuing treasury bill or bonds. The proceeds from the bond issues can be used to build public hospitals, construct roads, provide public transport, build airports, construct dams or build other social infrastructures. This entails national wealth creation for economic growth. In many countries, local government authorities issue municipal bonds to finance long-term projects like construction of public markets, recreational centers, roads, develop

efficient transport system, build schools, hospitals and provide other services from which they can generate a regular income (Okoro, 2012).

Corporate bonds can be issued by public companies to finance long-term development projects like the construction of new plants, expansion of existing plants, construction of new buildings, introduction of new technology, purchase of new equipment's. Corporations can also issue equities to raise additional financial resources for long-term investment. The proceeds from equities could be used to purchase new equipment, construct new factories expand operations, etc. all these activities entail wealth creation from the capital market by corporations (Adenuga & Akpan, 2007).

Investors make money in capital market through buying and selling financial securities. When investors buy debt instruments like government bonds, municipal bonds or corporate banks, they receive an interest payment from the issuer of the debt security plus the principal amount at the end of the loan period (Adenuga & Akpan, 2007).

Stock market contributes to economic growth through the specific services it performs either directly or indirectly. Notable among the functions of the stock market are mobilization of savings, creation of liquidity, risk diversification, improved dissemination and acquisition of information and enhance incentive for corporate control. Improving the efficiency and effectiveness of these functions, through prompt delivery of their services can augment the rate of economic growth (Levine & Zervos, 1998).

Stock market may also affect economic activities through the creation of liquidity. Liquid equity makes available savings for profitable investment that requires long-term commitment of capital. Hitherto, investors are often reluctant to relinquish control of their savings for long periods (Bencivenga, Smith & Starr, 1996).

Closely related to liquidity is the function of risk diversification. Stock markets can affect economic growth when they are internationally integrated. This enables greater economic risk sharing. Because high return projects also tend to be comparatively risky, stock market that facilitates risk diversification encourages a shift to higher-return projects. The resultant effect is a boost in the economy leading to growth through the shifting of society's savings to higher-return investments (Soyode, 1990).

2.1.6 Performance of the Nigerian Capital Market

The performance of the Nigerian Capital Market over the years has been a mixed blessing. Before March, 2008, the market had enjoyed a decade of unprecedented growth. For example Securities and Exchange Commission (SEC) in 2009 disclosed that landmark reforms across banking, insurance and pension sectors between 2004 and 2007 transformed the Nigeria Capital Market as most of the banks in Nigeria were able to raise the required capital after going to the market through initial public offers. Soludo (2006) and Okereke (2008), reports that about $650million was invested in the banking sector in 2005. Al-faki (2007) puts the figure that was raised from the capital market by banks to meet the minimum capital requirement of ₦406.4billion.

The result was an unprecedented growth records (SEC, 2009). That between 2003 and 2007, Market Capitalization had increased by over 66 percent from ₦1.4 trillion to ₦10.2 trillion. In March, 2008, market capitalization had realized an all-time high of ₦12.6 trillion, even though it ended the year at a drop to ₦ 7.0 trillion rating. In 2005/2007, bank recapitalization era, banks and insurance companies were able to raise over ₦ 10 billion from the market (Soludo, 2012). However, shortly after that, the market experienced a near collapse that it has not been fully recovered from ever-since due to mismatches in the way liquidity and profitability was managed by the

participants in the market following the global financial crisis that emanated in America and spread throughout the entire globe.

It is important to know that record show that shortly after March (2008), the capital market that added immensely to economic growth declined that its capitalization went into a spiral decline dropping to 45 percent by the end of 2008. The all-share index (ASI) equally dropped by 52.6 percent by December 2008, from the height in early march 2008. As a matter of fact, the Nigerian Capital Market between march 2008 and December 2008, lost about ₦ 5.7 trillion by 45.1% in value (SEC, 2009).

The federal government of Nigeria took action in August 2009 and set up a committee to stabilize the dwindling trend of the Nigerian capital as well as address the persistent fall in equity prices caused by a noticeable exit of both domestic and foreign investors from the market as a result of loss of confidence in the stock exchange market. The market between 2009 and 2012 did not fully recovered from its 2008 near collapse (Uremadu, Onigah & Duru-Uremadu, 2015).

However, the Nigerian Stock Exchange intensified efforts on the implementation of various reform programmes designed to promote investors' confidence and growth of the Nigerian Capital Market (CBN Annual Report, 2013). While the board approved a revised corporate strategic plan detailing growth from 2015 to 2019, and continued to implement programme towards the transformation of the capital market, (CBN Annual Report, 2015).

The Nigerian Capital Market has performed fairly despite the numerous challenges and problems some of which include: the buy and hold attitude of Nigerians, massive ignorance of a large population of the Nigerian public of the nature and benefits of the capital market, few investment outlets in the market, lack of capital market friendly economic policies and political instability, private sector led economy and less than

full operation of recent developments like the Automated Trading System, Central Securities Clearing System, On-line and Remote Trading, Trade Alerts and Capital Trade Points of the Nigerian Stock Exchange, thus measuring the performance (Yadirichukwu & Chigbu, 2014).

Aggregate market capitalization as a percentage of the nominal GDP in 2014 was 15.8 percent, compared with 23.5 per cent in 2013. The ratio of the value of stocks traded to GDP in 2014 stood at 1.5 percent, compared with 2.9 per cent recorded in 2013, while the turnover value as a percentage of market capitalization was 7.9 percent in 2014 compared with 12.3 percent in 2013. Available statistics to new telegraph on January 2nd, 2017 shows that the activities on the Nigeria Stock Exchange which opened the trading year opened the trading year high at N9.850 trillion in market capitalization and 28,642.25 in index at the beginning of trading on January 4, 2016 closed the year on December 30, 2016 at N9.246 trillion and 26,874.62 index points, hence has loss of about N604 billion or 6.17 percent in the year 2016.

Evolution in the Nigerian Capital Market is still in progress as a market try to recover from the financial crisis that affected it in 2008, so as to enhance the economic growth and development and to achieve a target growth prospects for the Nigerian nation in the 21st century emerging economics of the day.

2.1.6.a. Market Capitalization

This is the most widely used indicator in assessing the size of a capital market to an economy. In a bearish market the market capitalization falls and vice versa for a bullish market (Akeni, 2007). Before 1988, the total market capitalization was less than N10 billion from 1988 to 1994. It hovered between N10 billion to N57 billion. In 2003 it was N1, 3593 trillion, N2.1125 trillion in 2004 and N5.12 trillion in 2006.The market capitalization recorded the highest value of N13.2294 trillion in 2007.But this

fell to N9.562 trillion in 2008 due to the global financial meltdown. The percentage market capitalization compared to the economy's Gross Domestic Product (GDP) helps to assess the size of the stock market. In1981, this was 10.5%, but fell to 7.4% in 1994. It rose again to 9.3% in 1995, 10.6% in 1996; 18.9% in 2003, 25.6% in 2004 and 27.4% in 2005 (CBN Statistical Bulletin, 2006).

Aggregate market capitalization as a percentage of the nominal GDP in 2013 was 23.5 percent, while15.8 per cent in 2014. Market capitalization recorded the highest value in 2013 N19, 077.4 trillion but fail to N16, 875.1 trillion in 2014 while it appreciated to N17,003.4 trillion in 2015 compared to N16,875.1 trillion (CBN Statistical Bulletin, 2015).

2.1.6 b. All- Share Index

All share index started in January, 1985 and stood at 11.3 in January of that year while it grow to 127.3 in December that year. The value grow steadily to 5,092.2 in December 1995, while the growth increase in geometric progression to 24,085.8 twenty years it establish however the Nigerian stock exchange all –share index declined by 16.1 percent to close at 34,657.15 in 2014 compared with 41,329.19 in 2013. The development reflected, largely, the effect of the adoption of flight to quality and safety strategy by investor's, due to the increasing uncertainty over the outcome of the political environment in the second half of 2014. Similarly, the NSE-30 index fell by 18.0 percent and closed the year at 1,563.22 compared with 1,907.17 at end-December 2013 (while there was a higher decline in 2015 to close at N28.642.3 in December, (CBN Statistical Bulletin, 2015).

2.1.6.c. Total New Issues

The total new issues before 1989 was below N1 billion. However, from 1989 to1996 it hovered between N1 billion to N10 billion. The amount crossed the N10 billion marks in 1997. For instance, between 1996 and 2001, a total of 172 new issues (securities of public companies amounting to N56.40 billion) were floated in the capital market. The total new issues were valued at N5.85 billion in 1996 but it rose by about 532% to N37.198 billion in 2001. Total new issue was N61, 284 billion, in 2002, N180, 079.9 billion in 2003. N195, 418.4b in 2004 and N552, 782b in 2005.It crossed the trillion marks in 2007 being N1.935 trillion that year but it fell to N1.509 trillion in 2008. The primary market segment recorded the first initial public offering (IPO) since the market crash in 2008 with the dual listing of shares of Seplat Petroleum Development Company Plc. on the Nigeria Stock Exchange and the London Stock Exchange in April 2014. Overall, in the market for new listings, there were a total of 18 listings, consisting of six (6) new equity and twelve (12) bond listings valued at N271.1 billion, compared with 11 listings valued at N286.8 billion in the preceding year (CBN Annual Report, 2014).

2.1.7 Problems of the Nigerian Capital Market

The Nigerian Capital Market, like the national economy, has been faced with many problems. These problems are both endogenous and exogenous. The exogenous problems are those outside the direct control of the market but which are regulation-induced. The endogenous problems are those that are internal to the market but which are amenable to changes with improved operational procedures including the adoption of information technology. Some of these problems as observed by researchers including (Aiguh, 2013; Echekoba, Ezu & Egbunike, 2013; Odetayo & Sajuyigbe, 2012; Ohiomu & Enabulu, 2011) are discussed below:

(i) Small Size of the Market: Among the major problems facing the Nigerian Capital Market is the size of the market. At about 200 quoted companies and a market capitalization of 294.1 billion at the end-December, 1999 the size of the market can be considered to be small when compared with stock market in other emerging markets. For example, the South African stock market has about 650 listed companies while South Korea has about 700 listed companies. The small size of the Nigerian Stock Market has been traced to apathy of Nigerian entrepreneurs to go public due to the fear of losing control of their businesses. Another factor is the weak private sector which is a serious constraint militating against healthy growth of the stock market.

(ii) Problem of Illiquidity of the Market: The liquidity of a stock market relates to the degree of access, which investors have in buying, and selling of stocks in such a market. The more liquid a stock market is, the more investors will be interested in trading in the market. Inadequate number of investors in the Nigerian Stock Market is a reflection of problem of illiquidity in the market. At an average ratio of 2 per cent per year, the turnover ratio, a measure of the value of shares traded relative to local market capitalization is very low in Nigeria, compared with 10.0 per cent, 9.0 per cent and 4.6 per cent in Botswana, Zimbabwe and Mauritius, respectively. The low trading activities are also a result of the ownership structure. Until 1995, when the Nigerian Investment Promotion Commission Decree 16 and the Foreign Exchange (Monitoring and Miscellaneous) provisions Decree 17 were promulgated to replace the Nigerian Enterprises Promotion Decree of 1984 and Exchange Control Act of 1962, the Nigerian Stock Market was restricted largely to local investors apart from the original investors in foreign companies who were already in the market before the indigenization Decree of 1972. New foreign capital had little or no access to the market. The good performance of Botswana, Zimbabwe and Mauritius has been traced

to the open door investment policy of these countries. In addition, the buy and hold attitude of Nigerian investors contributed to the problem of illiquidity. The holdings of original investors and the public sector are normally not traded except for terminal divestment. This often leaves only the proportion of shares held by few individuals and institutional investors for trading on the market, thus limiting the liquidity of the market (Echekoba, Ezu & Egbunike, 2013).

(iii) Slow growth of Securities Market: Lack of cooperation between the-Securities and Exchange Commission (SEC) and the Nigerian Stock Exchange (NSE) has been responsible for slow growth of the securities market. For example, one of the major criticisms of SEC was that it did not allow the issuing houses and stockbrokers to undertake the pricing of equities. With the transfer in 1993 of pricing and allotment of initial public offer to market operators, positive movement was observed in share prices. The issue of cost of raising funds in the market is also important. The cost of transaction could be said to be a measure of efficiency in the market. Transaction cost in the Nigerian Capital Market is enormous. The costs which an average investor would have to meet in the course of raising funds include; brokerage fees, stamp duties, and other charges that may be imposed by the SEC, apart from other fees payable to stockbrokers. Therefore, the cost of going public, raising additional equity or obtaining loan facility from the capital market is high. It has been estimated that the cost of raising US$ 1 million equity capital in Nigeria is about 4 percent of the value whereas, the cost of raising the same amount in Kenya, Zimbabwe and Ghana is 2.35 and 2.3 percent, respectively.

(iv) Delay in Delivery of Share Certificates: Prior to April, 1997 when the Central Securities Clearing System (CSCS) started operation, the delay in delivery of share certificates to investors and intra-firm settlements used was a problem in the market.

Many of the unclaimed certificates and dividend warrants that are being published regularly are as a result of the delay in delivery of certificates. With the introduction of CSCS, shareholders are now able to take advantage of capital appreciation while transaction period-has been reduced to T+5. The objective of the CSCS system is to achieve real-time transaction reporting, through automated order routing and executing system, which allows post-trade comparison and analysis, and ensures audit trail of all the market transactions.

(v) Problem of Manual Call-over: The manual call-over whereby all stockbrokers have to be physically present on the floor of the Exchange for trading in securities had also contributed to the slow growth of the market. With the recent introduction of Automated Trading System (ATS), it is expected that stockbrokers will be able to do business more efficiently and thus contribute to the growth of the market.

(vi) Double Taxation: The Nigerian Stock Market is faced with the problem of double taxation. In a capital market, the operating tax policies have implications for the supply and demand for financial assets. Depending on its nature and structure, taxation could either enhance or retard capital market growth. Tax can be a source of hindrance to development when it is high or levied at multiple stages. Currently in Nigeria, there is income tax, capital gain tax, withholding tax and company income tax. All these taxes together have the tendency of retarding investment because of their burden on investors. Most often, countries that have experienced growth in their stock market have come to realize the role which taxation plays in the promotion of investment in the stock market. For instance, countries like Botswana, Ghana, Kenya, Mauritius, Namibia and Swaziland have recognized the important role which taxation can play in the development of the market. Taxation of equities at both the corporate tax and dividend withholding levels is an important problem that needs to be examined. The

practice in the United Kingdom (UK) may offer a useful example for Nigeria. In the UK, through the Advance Corporate Tax (ACT) System, individuals are given tax relief at the corporate level for distributed earnings. The ACT was introduced in Britain to correct the distortions which double taxation had on corporate investment. A number of developing countries like Columbia, Jamaica, Indonesia and Mexico, have one form of tax integration or the other. Presently, Nigeria has not taken any step to reduce the burden of double taxation as incentive for investment in the capital market. Apart from its use as a means of generating revenue, some countries have used tax policies as incentives for developing capital market. They have been used not only for the supply and demand for securities, but also as penalties for companies that were reluctant to go public. For example, Brazil used dividend tax exemption or reductions, stock acquisition tax incentives and provision of tax fund shares as incentives for developing the capital market (Aiguh, 2013; Odetayo & Sajuyigbe, 2012).

(vii) Lack of Effective Underwriting: Lack of effective under-writing is one of the problems confronting the Nigerian Capital Market. Underwriting could be in the form of firm contract, or stand-by arrangement and when an issue is large, there would be need for an underwriting syndicate. An observed deficiency of the Nigerian securities market is the non-existence of effective underwriting. Though the issuing houses claim to undertake underwriting as part of their functions, and a consortium of underwriters often exist when shares are being offered, underwriting business has hardly taken place in the real sense of it. Underwriting entails effective placing of entire issues, and establishing or maintaining a stable trading market for the under-written securities for which there would always be a lead or managing underwriter. Only a few of the existing issuing houses can undertake such functions that guarantee the underwriting of the shares not absorbed by the investors up to a certain percentage. The underwriters

are in fact the 'market makers' who purchase the securities concerned on their own account to maintain a price when the market price of the offered security falls under the issue price. When such problem arises, the lead or managing underwriter would be expected to buy all such securities and distribute them to the other members of the underwriting syndicate or consortium according to predetermined ratio (Aiguh, 2013; Odetayo & Sajuyigbe, 2012).

(viii) Problem of Macroeconomic Instability: Lastly, the problem of macroeconomic instability in the country has continued to be a hindrance in the development of the Nigerian Capital Market. Macroeconomic policies that would ensure long-term stability are essential in attracting a sustainable long term investments. Such policies should be conducive to both savings and investment to ensure confidence in the economy. Policies must ensure attractive long-term yields for equities in comparison with other domestic and foreign investment alternatives. Frequent fluctuations in exchange rates and negative real rates of return on investments often force investors to move to other investment outlets or out of the economy entirely (Ohiomu & Enabulu, 2011).

2.1.8 Regulators of the Nigerian Capital Market

2.1.8a Security and Exchange Commission (SEC)

Security and Exchange Commission is the apex regulatory authority in the Capital Market. It is a Central government Agency founded by No. 71 SEC Act of 1979. It evolved from the Capital Issues Committee (CIC).

2.1.8b Nigerian Stock Exchange

The Nigerian Stock Exchange (NSE) is a trading platform where stocks (also called shares), bonds, and other securities are bought and sold in Nigeria. The exchange

provides amenities for the issuance and redemption of securities and other financial instruments. Examples of instruments traded on a typical stock exchange include shares issued by listed companies, pooled investment products, unit trusts, derivatives and bonds. The Nigerian stock exchange provides a trading platform for stocks, bonds and other securities for the biggest economy in the continent of Africa. The exchange is an incorporated organization that is limited by guarantee. It was established in 1960 and licensed under the investments and securities Act CISAS. It is regulated in Nigeria by the Securities and Exchange Commission (SEC). Some of the services carried out by the Exchange include licensing of stock brokers, listing and trading of securities, providing adequate stock data for proper market analysis, ancillary technology services among others.

2.1.8c Central Bank of Nigeria (CBN)

As with money market, the CBN is a key participant in the capital market. Primarily, it is the apex regulatory institution in both banks and non-banks financial institutions. It also underwrites federal government debt, by taking all unsubscribed portion of the debt.

2.1.8d Chartered Institute of Stockbrokers (CIS)

The Chartered Institute of Stockbrokers (CIS) is a non-profit making organization chartered by the Act 105 of 1992. The main function of the CIS is to regulate the conduct and practice of the stockbroking profession in capital market.

2.1.9 Nigerian Stock Exchange Specific Reforms

The Nigerian Capital Market has evolved having undergone several reforms over the years. Before 1959, almost all formal savings and deposits in Nigeria were in the banking system. The country's major capital balances were invested on the London Stock Exchange usually via London-based stockbrokers. The Nigerian Capital Market

effectively came into being with the establishment of the Lagos Stock Exchange in 1960, which began actual trading in 1961. The Nigeria Stock Exchange was incorporated under the companies ordinance as an association limited by shares initially, but became a company limited by guarantee in 1990. It received initial financial support from the Central Bank Nigeria through an annual subvention. The Lagos Stock Exchange's name was changed to The Nigeria Stock Exchange in 1977 following recommendations by the government financial system review committee of 1976. In addition to the Lagos bourse (by far the preponderant stage for trading activity) the Nigeria Stock Exchange opened trading floors in Port Harcourt and Kaduna in 1980 and has since added Kano, Yola, Calabar, Ilorin, Uyo, Benin, Onitsha and the latest being the Abeokuta branch commissioned in November 2008. Some specific reforms have been carried out on the Nigeria Stock Exchange over the years to make the exchange more efficient. Some of the developments in the NSE are identified in Store (2004), Alabede (2005) and SEC (2005) as follows:

- **Automated Trading System (ATS)** – This is one of the most outstanding innovations in the securities market in Nigeria. The automated trading system is a system of security trading arrangement whereby transactions are conducted through a network of computers. Before automated trading system was introduced, the call over system was used and this system made the settlement cycle on the Nigeria Stock Exchange to be 21 days. Automated trading system was launched on the 27th of April, 1999.
- **Central Securities Clearing System (CSCS)** – The Nigeria Stock Exchange commissioned the CSCS in 1997 as a subsidiary but it came into operation on the 14thof April, 1999. According to the securities and exchange commission (SEC, 2005), the CSCS was conceived as primarily a settlement arena for the achievement of

the T-3 settlement cycle. The CSCS serves as an interface with the ATS and automatically receives data relating to trade as they take place for settlement.

- **On-line Trading -** The NSE has been able to link some of its branches that have large daily transactions to the central server at the Customs House, Lagos, Abuja, Kano, Benin, Onitsha, Yola, and Port Harcourt. Branches are now fully integrated to the main trading platform. Stockbrokers residing in these areas do not have to be in the Lagos trading floor to trade anymore.
- **Remote Trading** – As part of the reform in the NSE, in order to make it efficient, in 2004, the exchange introduced remote trading. Remote trading is a system where brokers trade from the comfort of their offices. The computers of the stockbrokers are connected to the main trading machines through one of the safest connection devices. This system guarantees safe delivery of data from the mainframe of the trading machine to the computers in the office of stockbrokers. The objective of this system is to eliminate the formal trading floor.
- **E-bonus** – The e-bonus was put in place to ensure bonuses issued to an investor by companies are instantly credited to the investors' accounts at the CSCS.
- **E-IPO** – This system ensures that the Initial Public Offer of listed companies are electronically captured on the accounts of the CSCS. After the closure of the offer and allotment by the company, lists of the successful investors would be forwarded to the CSCS for retention in the depository.

This system will eliminate the long waiting period which the registrar hitherto took to print and distribute certificates.

- **The Trade Alert** – This was introduced in 2005 and generated a lot of controversy. This system was introduced as a means of protecting the securities market against ever increasing threats from fraudsters. The trade alert is a device

which, when subscribed to by a security holder, will send a notice to the security holder's mobile phone indicating elaborately all transactions taking place in his accounts in the CSCS. The aim of this device is to stop any unauthorized trade, before it takes place thereby protecting the investment.

2.1.9 Capital Market Growth and Information Technology

Ezirim, Adebajo, Elike and Muoghalu (2009) utilize the modified Gompertz technology diffusion model to investigate the effects of information and technology on the growth and development of capital market in Nigeria. The results reveal that growth in market capitalization is affected by the level of interaction between stockbrokers and investors brought about by information and communication technology (ICT) in the form of internet access, telephone as well as access to the websites of stockbrokers. Growth in the total volume and value of shares traded is significantly affected by communication technology. The number of securities listed on the Stock Exchange as well as the growth in federal and state government bonds does not appear to have any significant relationship with the adoption of information and communication technology. Private debt stock appears to have been significantly affected by information and communications technology especially in respect of increase in the number of stockbrokers and access to ICT. Generally, Information Technology has contributed to growth of the Nigerian Capital Market, with the effect mostly seen in the availability of information to investors and the improvements in the trading patterns of the Nigeria Stock Exchange (Ezirim, Adebajo, Elike & Muoghalu, 2009).

The effect of information and communication technology (ICT) on the growth and development of capital markets has been a subject of debate in recent times. A school of thought led by authors like Porteba and Summers (1988) would argue that capital

markets have become excessively volatile since the adoption of computer assisted trading strategies as the latter increase short-term price volatility and risks. They also argue that very few investors have access to online trading systems. Few actually own computers and have easy access to the Central Securities Clearing System (CSCS). Many investor, they claimed, do not have access to a system that sends orders to stockbrokers for automated execution. They also contend that ICT driven capital market operations are fraught with fraud and manipulation, which mostly affect individual investors. A case in point relates to the sale of shares without authorization of the stockholders, a practice that is given impetus by greed and dishonesty of some market participants. They further argued that surveillance problems and the lack of proper enforcement of penalties by the legal system make the adoption of a fast-paced ICT system is dangerous to investors.

The second school of thought, which includes authors like Fama (1990, 1991), Fama and French (1988), on the other hand, argued that information technology have made capital markets more efficient as attendant stock prices now reflect important information and investors perception of stocks more swiftly. In their contention, ICT has made the Capital market more efficient by providing all participants with faster and more effective means of exchanging information. They maintained that new products and instruments have been made readily available as a result of the advent of sophisticated ICT. Evidently, capital markets can be more resilient, possess greater depth and breadth with the intervention of ICT.

It must be observed say Ezirim, Adebajo, Elike and Muoghalu, (2009) that the premises of the above theorizing are capital markets in developed countries. Would their arguments hold true for the Less Developed Countries (LDC)? Which school of

thought would appropriately explain the experiences of the LDCs? Perhaps the critical questions that need to be addressed would include:

Has the adoption of information technology had a positive or negative impact on the Nigerian Capital Market? Has ICT transformed the way business is conducted on the Exchange? Has ICT benefited the Nigerian investor? The plethora of research questions can go on and on.

The conceptual clarifications of some important terms as they relate to capital market and information technology according to Ezirim, Adebajo, Elike and Muoghalu, (2009) need to explained. Such terms include diffusion, information diffusion model, capital market peculiarities and information and communication technology. Diffusion is a process in which an innovation is communicated through certain channels over time among the members of a social system. Simply, diffusion is the way a given information and technology innovation spreads amongst a given population. Traditionally, there are two widely used diffusion models – the internal influence model and the external influence model. The former assumes that there is a given level of interaction among the subjects of the given population such that knowledge of the innovation is disseminated through the interaction channels to the entire population. The current stock of finance and economics literature on the diffusion of ICT have focused on the impact of stock market financing (as opposed to bank financing) on ICT growth and development as well as the determinants of ICT development (Saint-Paul, 1992, Allen & Gale, 1999). This probably accounts for the dearth of literature on the impact of ICT diffusion on stock exchange development indicators. Several researchers have examined the benefits of adoption of ICT in developing as well as developed capital markets. Such studies agree that ICT makes capital markets more efficient for example Mahonney (1997) describes the securities markets as where

information technology innovations often lead to changes in the way securities transactions are negotiated, executed, cleared and settled.

In a study on stock market development in sub-Saharan Africa, Yartey and Adjani (2007) proposed that the adoption of a robust electronic trading system and a central depository system among others are key preconditions for addressing the prevalent problem of liquidity as these stock exchanges seek regional integration. The paper elucidated some problems peculiar to stock exchanges in Africa, which the adoption of ICT could minimize. First is that only a few stocks are traded on the floor of the market on daily basis and these few stocks account for a large part of the total market capitalization. Secondly, problems of information and disclosure deficiencies abound for most stocks in an environment of inadequate regulatory authorities. Thirdly, the markets are small with few listings, low market capitalization, low liquidity as measured by the turnover ratio and low business volumes. The paper however noted that stock exchanges in Africa were among the best rated for high returns on investment citing the Ghana Stock Exchange as number one in the world in 2004 (Yartey & Adjani, 2007).

The analyzed adoption of ICT in the New York Stock Exchange (NYSE) and concluded that the NYSE invested in ICT to create new resources for advantage and to enhance existing resources. According to the paper, ICT provides for efficient trade executions and adequate trading capacity, ensures a high quality securities market and reduces labour expenses and the demand for physical space. Levine (1991) proposed that stock market liquidity – ability to trade shares easily- which is facilitated by ICT play a key role in economic development.

The available literature examined suggests that automation of stock exchanges reduce the costs and inefficiencies associated with share trading, increase trading activity and

liquidity. Also adoption of ICT speeds up operations and activities of the exchange and reduces costs associated with manual systems. ICT enables the exchanges extend trading days and hours as cumbersome processes are eliminated. It also eliminates the need for intermediation (stockbrokers) as investors can monitor markets and trade online. The Central Securities Clearing System (CSCS) enables shares to exist in electronic form and thus helps eliminate risks of loss, mutilation and theft of certificates as well as reduce errors and delays. Finally, the adoption of ICT would help in the integration of African Stock Exchanges.

On the relationship between capital markets and ICT development in an economy, King and Levine (1993) contend that capital markets facilitate the diversification of ICT risks and therefore positive development of stock markets enhances innovations in ICT. However, Singh (2000) investigated the relationship between ICT and the capital market using multivariate regression analysis on cross sectional data from 63 countries including both emerging and developed economies. They found that stock markets are neither necessary nor sufficient conditions for promoting the development of ICT. The econometric analysis did not reveal any robust systematic relationship between stock market development indicators and ICT development indicators.

Similarly, Yartey (2006) examined the role of financial development and financial structure in explaining cross country diffusion of ICT. The paper found that the structure of a country's capital market does not appear to have any significant relationship with the level of ICT development. Financial development however was found to be an important determinant of ICT development and the paper therefore emphasized the need to develop financial markets in emerging economies. Previous researchers attempted to establish relationships between ICT diffusion in an economy as facilitated by capital markets.

Ezirim, Adebajo, Elike and Muoghalu, (2009) results reveal the following important findings:

- Growth in market capitalization is affected by the level of interaction between stockbrokers and investors brought about by ICT in the form of internet access, telephone as well as access to the websites of stockbrokers.
- Growth in the total value of shares traded is significantly affected by communication technology.
- Growth in the volume of shares traded arises from the interaction between stockbrokers and investors mainly via mobile telephony.
- The number of securities listed on the stock exchange does not appear to have any significant relationship with the adoption of information and communication technology.

Similarly, growth in federal and state government bonds has not been significantly affected by information and communications technology. Private debt stock appears to have been significantly affected by information and communications technology especially the increase in the number of stockbrokers and access to telephone lines. Lastly, turnover in the market seem to be affected significantly and positively by access to mobile phone technology. Information technology has contributed to growth in the Nigerian Capital Market. The effect is mostly seen in the availability of information to investors and the improvements in the trading patterns of the exchange. The results call for further advances in information technology that could help to broaden and deepen the market thus improving its effectiveness and efficiency.

In spite of the phenomenal growth recorded in the Nigerian Capital Market as reflected in aggregates such as market capitalization and value of transactions, the market is still

relatively small compared to other more developed markets. This reveals that there is great potential for further growth (Ovat, 2012).

First, the continued expansion of the internet creates opportunities for innovation in financial services, thus the regulators of the Nigerian Capital Market should seek to expand and deepen the market by introducing new products such as derivatives like option and futures trading. In addition, online trading by investors directly through the internet or mobile phones should be explored rather than the present system of passing all trades through stockbrokers creating unnecessary delays and inappropriate pricing of securities.

Secondly, companies listed on the stock exchange should be mandated to provide timely electronic information on their operations such as quarterly and annual financial statements on their websites thus making them available to all investors. This would enable the market learn, absorb and act on information quickly leading to market efficiency and precise pricing of securities.

Thirdly, companies should be encouraged to hold electronic annual meetings and thus conduct on-line voting which would provide a wider sector of investors the chance to participate in the affairs of their companies. In recent times, some listed companies have used the internet to disseminate offer for sale/subscription of shares forms and prospectuses. This is quite commendable. However, companies can go a step further to allow investors purchase such shares through the internet rather than traditional modes. The transaction cycle of three days should be reviewed and made instantaneous. This is possible using information technology to integrate the databases of players in the financial system. A one day transaction cycle for instance would eliminate the risk of default on trades. The fact that ownership transfer of securities could be reflected only in the records of the depository and settlement done through electronic banking.

Lastly, the capital market regulators especially the Securities and Exchange Commission should be more open to innovations and be flexible without jeopardizing the interest and protection of investors as well as the efficiency of the market. The Commission needs to encourage more companies to list in the market so as to expand it and give investors more choices of where to invest. The recent incidents of massive over-subscriptions of offers attest to the fact that the Nigerian investor desires more depth in the market (Ezirim, Adebajo, Elike & Muoghalu, 2009).

2.1.10 Stock Market and Economic Growth

The part played by stock markets in the process of economic growth has been given less attention than many other aspects of the financial sector, with economists having traditionally concentrated on banks. Schumpeter (1912) cited by Levine (1998) and Hugh (1966) claim that the services the banking system provides are necessary for technological progress and economic growth. Such as McKinnon (1973) offer conceptual descriptions of how economic growth is affected by the financial system. Recent theoretical models have presented the ties between banks and economic activity, as banks can exert an influence on the allocation of resources by saving on the expenses involved in obtaining and processing information about companies and managers. Better banks produce information at lower costs, which has implications for capital allocation and productivity growth, (King & Levine, 1993).

Over the last two decades more appropriate data has become available, and this has led to an increase in empirical research in this domain. Ghani (1992), King and Levine, (1993), Demirguc-Kunt and Maximovic, 1998; Rousseau and Wachtel (2000), Beck, Levine and Loayza. (2000), Pagano (1993), demonstrate that there is a strong correlation between measures of banking development and economic growth in a wide

range of countries. Their view is that a properly-functioning financial system is vital for sustained economic growth.

In the same time, there has also been an increase in theoretical literature which proposes that well-functioning stock markets can play a significant part in the process of economic development by the performance of certain financial functions, including the diversification of risk, the promotion of corporate control and monitoring, the collection and dissemination of information about companies, and transmitting a path for monetary policy. Through changing the quality of these functions, a correctly-functioning stock market can influence a steady state of growth by changing the rate of savings, technological progress, and economic efficiency.

Figure 2.2: A Functional Approach to Finance and Growth

Source: Ahmed (2012).

As shown in Figure 2.2, Levine (1997) and Khan (2000) pointed out five basic functions linking finance and growth: mobilizing savings, facilitating risk

management, allocating resources, monitoring managers and exerting corporate control and facilitating the exchange of goods and services.

However, there is disagreement as to the signs of the effect of stock market on economic growth, with several theoretical works suggesting that economic growth is in fact slowed by stock market development. In other words, there is disagreement among economists concerning the relationship between stock market development and economic growth and the position of stock markets in emerging economies.

2.2 Theoretical Framework

Many economic theories have been developed at different time in an attempt to discuss the perceived relationship between economic growth and capital market performance. Some of these theories are supply leading hypothesis also called the finance economic growth nexus theory, demand following hypothesis and efficient market hypothesis. This study is anchored on the supply leading hypothesis based on its emphasis on the importance of finance in the context of a developing country like Nigeria.

2.2.1 The Demand Following Hypothesis

The demand-following view states that capital market development follows economic growth (Robinson, 1952). As the economy expands its demand for certain financial instruments increases, leading to the growth of these services (Hugh, 1966; Jung, 1986; Odhiambo, 2010).

Hugh (1966) stated that, the causal nature of relationship between financial development and economic growth has not been fully explored either theoretically or empirically. Moving away from the neo-classical state equilibrium analysis, to a highly developed financial system, consisting of financial intermediaries, leads to a 'demand following' phenomena (Hugh, 1966). Under this, in response to the demand from real economy, there is the creation of modern financial institutions, their financial assets

and liabilities, and related financial services. The evolutionary development of the financial system is a continuous result of the pervasive, widespread process of economic development. The financial system is influenced by economic environment, institutional framework and also by individual motivations, attitudes, tastes and preferences. The demand for financial services is a function of growth of real output, commercialization, monetization of agriculture and other traditional subsistence sectors. The faster the growth in real national income, the greater will be the demand for external funds by enterprises. Financial intermediation plays a vital role, as internal funds generated are not sufficient for firms to finance expansion. Thus, finance is passive and permissive to growth process.

2.2.2 The Supply Leading Hypothesis

This view contends that a well-functioning capital market channels limited resources from surplus units to deficit units and in so doing providing an efficient allocation of resources, thereby resulting in economic growth (Hugh, 1966; Shaw, 1973; Jung 1986; Levine & Zervos, 1998).

The supply leading phenomena refers to the creation of financial institutions and the supply of their financial assets, liabilities, and related financial services taking place, prior to their demand especially in the modern growth inducing sectors. 'Supply Leading' approach performs two important functions, viz., (i) transfer of resources from traditional (non-growth) sectors to modern sectors, and (ii) promotes and stimulates an entrepreneurial response in these sectors. According to Hugh, in actual practice, there is an interaction of supply leading and demand following phenomena. Prior to sustained modern growth supply leading could induce real growth through innovative investments by financial means. With real growth, the supply leading gradually becomes passive and the demand following financial response becomes predominant.

In the linkage between financial growth and economic development, one of the most important relationships is the stock of financial assets and liabilities to the real capital stock, apart from their optimal composition, rate of growth, their efficient allocation and utilization. Thus, the financial system influences the capital stock in three different ways.

First, financial intermediaries through intermediation among various types of asset holders can encourage more efficient allocation of a given amount of tangible wealth.

Second, by intermediating between savers and investors, they can bring in allocative efficiency in new investments, that is additions to capital stock from lesser to more productive uses.

Third, by providing increased incentives to save, invest and work, they can induce an increase in the rate of capital (Hugh, 1966). While recognizing the important role played by financial intermediaries and also the differences in the distribution of saving and investment in both developed and underdeveloped countries, Hugh (1966) views that with the perfection of financial markets, near optimum allocation of investment is possible and the financial system accommodates economic growth. On the contrary, if the financial system is underdeveloped, the growth is restricted.

2.2.3 Efficient Market Hypothesis

The efficient-market hypothesis was first expressed by Louis Bachelier, a French mathematician, in his 1900 dissertation, "The theory of speculation". His work was largely ignored until the 1950s; however beginning in the 1930s scattered, independent work corroborated his thesis. One of the key concepts underlying investment analysis is the notion of efficient capital markets. From the economic point of view, the efficient of stock markets is the key to optimal allocation of resources. From the investor's point of view, it is necessary to have an efficient stock market to ensure that he is involved in a fair game. The efficient market hypothesis (EMH) was developed

from the random walk theory. The EMH says that the market is efficient at all times meaning that share prices instantly reflect available information in the market. Consequently, if the market is efficient as argued, then the market price is the only good and correct guide for the share selection.

Markets are said to be efficient if prices, at any point in time fully reflect all available information and this means that all new relevant information are quickly and accurately reflected in prices. Then competition will eliminate opportunities for earning positive Net Present Value (NPV). In an efficient market, the same rate of interest by an individual should result in consistently higher returns than those realized on a buy and hold strategy (Samuel & Wilkes, 1990). However, an efficient market is not necessarily a perfect market and it is doubtful whether any stock market or any other market can satisfy all the conditions required for it to be perfect. In fact, recent studies critical of stock market efficiency have proved the existence of market abuses by corporate insiders and other such anomalies which appear inconsistent with market efficiency.

The crucial question is how much deviation a market can stand to determine whether or not it is efficient. How does new information affect share prices? Do those operating in the market all have access to the same information? The following assumptions are sufficient for an efficient market Olowe, (1997) cited by Ibenta, (2005). No transaction costs of trading insecurities, Information is freely available to all market participants, all investors have information for the current price and distribution implication of current information for the current price and distribution of future prices of each security and all investors have the same time horizon.

The efficient market theory tells us that opportunities for excess profits that is profits in excess of the normal rate of return for the specific degree of risk are quickly competed away. This can be tested by comparing the actual price or actual return with

the expected price or expected return, where the expected figure is arrived at based on a model, which represents the efficient market model, was expressed mathematically by Fama (1990).

2.3 Empirical Studies

2.3.1 Empirical Studies on Market Capitalization Ratio and Economic Growth

Jagadish (2017) examined the empirical relationship between stock market development and economic growth in Nepal over the period of 22 years from 1993 to 2014. The long-run and short-run elasticity were estimated by the use of autoregressive distributed lag (ARDL) bounds testing approach for co-integration analysis. The economic growth was measured by real gross domestic product per capita, and stock market development measured by market capitalization of Nepal stock exchange (NEPSE). Findings indicated that market capitalization has a significant positive impact on the economic growth in both long as well as in short run.

Muyambiri and Chabaefe (2017) investigated the relationship between stock market development and economic growth in Botswana using quarterly time series data from 2005 to 2015. The study employed the Pesaran, Shin and Smith (2001) autoregressive distributed Lag (ARDL) bounds test. The stock market developmentsare measured using total market capitalization ratio, total value of stocks traded and turnover ratio. Economic growth is measured by changes in gross domestic product. Results of the study showed that there is no long-run relationship between market-based development and economic growth. However, the results of only the short-run estimated function show statistical significance of the effect of two indicators of stock market development on economic growth, i.e. stock turnover and the stock traded value.

Rezina, Jahan and Mustati (2017) investigated whether there is a relationship between stock market development and economic growth in case of developing economy such

as Bangladesh. The data set covers annual times series data from 1971 to 2013. To investigate long-run causal linkages and short-run dynamics, Engle-Granger causality and ARDL tests were applied respectively. Their findings suggested that there exist a very strong relationship between stock market development through market capitalization and economic growth as causality runs from stock market development to economic growth.

Kumar (2016) investigated the relationship between market capitalization, saving and GDP growth over the last three decades. Applying different econometric tools such as unit root, granger causality test, Johansen co-integration and error correction model, the result indicated that growth of market capitalization has positive association with economic growth.

Lazarov, Miteva-Kacarski and Nikoloski (2016) assessed the influence of stock market development envisaged by market capitalization ratio on economic growth for a group of 14 transition economies from the Central and South-East European (CSEE) region in the period 2002-2012. The panel regression models (fixed and random effects) and a dynamic panel model (generalized method of moments – GMM) were the method of data analysis. The estimated results indicated that market capitalization ratio is positive and significantly correlated with economic growth.

Nordin and Nordin (2016) analysed the influence of the stock market (market capitalization ratio) and the debt market on the Malaysian economy. The Johansen-Juselius co-integration test revealed the existence of co-integrating relationship between real growth domestic product per capita, stock market and debt market. The vector error correction model long-run results showed that both, the stock market and the debt market, have positive and significant influence on the Malaysian economy. The stock market is found to exert greater influence on the Malaysian economy compared to the debt market.

Nyanaro and Elly (2016) investigated the relationship between the stock market performance and the economic growth in the East African Community. The stock market variables considered in the study were stock market capitalization, market liquidity and share price volatility. The GDP growth was a used a measure for economic growth. The study employed the vector autoregressive (VAR) model as well as the Granger test for causality to estimate as well as provide evidence regarding the nature and direction of relationship of the variables. The study established an existence of long term relationship between the stock market performance variables (market capitalization and liquidity) and economic growth in the East African Community.

Adigwe, Nwanna and Ananwude (2015) ascertained the effect of stock market capitalization ratio on economic growth of Nigeria from 1985 to 2015. Ordinary Least Square econometric technique was used for the time series analysis in which variations in economic growth was regressed on market capitalization ratio to GDP, value of stock traded ratio to GDP, trade openness and inflation rate. The analysis revealed that stock market has the potentials of growth inducing, but has not contributed meaningfully to Nigerian economic growth, since only 26.5% of variations in economic growth were explained by the stock market development variables.

Amu, Nwezeaku and Akujuobi (2015) evaluated the impact of growth in capital market on economic growth in Nigeria using regression analysis on annual data from 1981 to 2012. The result provided evidence to show that the capital market has significant positive impact on economic growth in Nigeria. The results also showed, however, that growth in market capitalization does not have significant impact on the economy in Nigeria.

Dockmen, Aysu and Bayramoglu (2015) analysed the linkages between market capitalization and economic growth using annual data of eight emerging countries for

the period 1991 to 2012. The main aim of the study was to determine the reaction of economic growth in the face of a shock in market capitalization rate and to examine whether stock market development has a positive or negative effect on national economies. Using panel vector autoregressive models, they found positive and statistically significant responses to a market capitalization rate shock.

Jalloh (2015) provided further evidence on the relationship between stock market capitalization and economic growth using data from a sample of African countries with well-functioning stock markets. A dynamic panel estimation approach is employed with a view to assessing the relative impact of stock market capitalization on economic growth in Africa. The results from the study reveal that stock market capitalization had positive and significant relationship with economic growth. Again, raising stock market capitalization by a marginal average of 10% induces growth on average by 5.4% in countries studied.

Jibril, Salihi, Wambai, Ibrahim, Mohammed and Ahmed (2015) investigated the effect of Nigerian Stock Exchange Market development on economic growth using a 20 year time series data from 1990-2010. The method of analysis was the ordinary least square techniques. The stock market capitalization ratio was adopted as a proxy for market size and the result revealed that market capitalization has a negative correlation with economic growth.

Niranjala (2015) explored the presence of a causal relationship between stock market development and economic growth in Sri Lanka. Sample period uses annual time series data over the period from 1990 to 2013. The granger causality test was employed and nominal gross domestic product values was used as a proxy for economic growth, and market capitalization ratio used as a proxy for stock market development. The result supported that the stock market performance plays a major role in economic growth in Sri Lanka.

Moldovan (2015) analyzed using Vector Error Correction model, as well as Wald and Granger causality tests, the nature and direction of causal relationships between the real economy and the financial sector in Romania, both on the short and long run. The results showed that on the long run, between real gross domestic product and credit to the private sector there is a one-way relationship, namely real gross domestic product influences credit, but not vice versa. Also, on the long run, there is no correlation between market capitalization and real gross domestic product. However, on the short run, there is a unidirectional causality from credit to real domestic product, and also from real gross domestic product to market capitalization.

Osama (2015) studied the causal relationship between stock market development and economic growth in Egypt using time series data for the period of 2002 to 2013. Vector auto regression estimates (VAR) was chosen to test the long-run relationship between stock market development and economic growth. Granger causality test was applied to determine the direction of causality between the examined variables. The results do not indicate a causal relationship between market capitalization alone and the economic growth. However, the results show a link between stock market development as well as foreign direct investment and economic growth.

Olaitan and Henry (2014) looked at the contributions of capital market and financially deepening to economic growth in Nigeria over the period of 1981 to 2012 using Ordinary Least Square method. The study revealed that stock market capitalization significantly impacted the promotion of economic growth of the country during the period of study.

Bayar, Kaya and Yildrim (2014) examined the relationship between stock market development and economic growth in Turkey during the period 1999-2013 by using Johansen-Juselius co-integration test and Granger causality test. The empirical results indicate that there is a long run relationship between economic growth and stock

market capitalization and also there is unidirectional causality from stock market capitalization to economic growth.

Balago (2014) looked into the relationship between financial sector development and economic growth in Nigeria. Time series data from 1990-2009 were fitted into the regression equation using various econometric techniques such as Augmented Dickey Fuller (ADF) test, Johansen multivariate co-integration test, ordinary least square regression and vector error correction model (VEC).The result showed that development in financial sector variables viz: banking sector credits, total market capitalization and foreign direct investment positively affect economic growth variables – real gross domestic product.

Igbodika (2014) looked into the relationship between stock market and economic growth of Nigeria, using time series data from 1999 to 2011. The study employed Ordinary Least Square techniques. Gross domestic product was used as proxy for economic growth. Stock market development was measured for size and liquidity, the size was measured with market capitalization while liquidity was measured using total value of stock traded and stock market turnover. The findings show that both liquidity and market size have no significant individual effect on the economy but when combined, it has overall significant effect on the economic growth of Nigeria.

Mittal (2014) explored the presence of a causal relationship between stock market development and economic growth. The study was aimed to explore the relationship in the nine Newly Industrialized Countries (NIC's): Brazil, China, India, Malaysia, Mexico, Philippines, South Africa, Thailand and Turkey using Granger Causality Test. Nominal gross domestic product values are used as a proxy for economic growth, and market capitalization ratio is used as a proxy for stock market development. Results showed that market capitalization ratio(MCR) contributes to growth for all of the

countries except for Mexico. Results show bi-directional causality for China, Thailand and Turkey between GDP and MCR. Unidirectional causality for MCR to GDP exists for India and Mexico. Unidirectional causality for GDP to MCR exists for Malaysia, the Philippines and South Africa. No causality is determined for Brazil. The results show that the financial markets are important for economic growth in India, Mexico, China, Thailand and Turkey.

Edame and Okoro (2013) ascertained the impact of capital marker development on the economic growth of Nigeria from 1970 to 2010 using data from the Central Bank of Nigeria. They employed multiple regression model, from the result obtained market capitalization has positive and significant impact on economic growth in Nigeria. Other capital market variables captured in the model such as number of deals and value of transactions were all positive and significant in promoting economic growth in Nigeria.

Ioana-Alexandra (2013) assessed the relationship between stock market development surrogated by market capitalization ratio and economic growth for Romania, using quarterly data for the period 2000-2011. The methodology was anchored on unrestricted VAR and ordinary least square regression and found that there is a feed-back effect between economic growth and market capitalization with more influence from market capitalization to economic growth.

Okodua and Ewetan (2013) examined the relationship between stock market performance and economic growth in Nigeria. It utilized the bounds testing co-integration procedure also known as autoregressive distributed lag estimation procedure. The empirical model combined key stock market indicators and some traditional macroeconomic variables to estimate the hypothesized relationship in the study. It found that in the long-run, overall output in the Nigerian economy is less

sensitive to changes in stock market capitalization casting doubt on the ability of the Nigerian Stock Market in its present level of development to serve as a barometer for measuring or predicting the overall health of the Nigerian economy.

Osuala, Okereke and Nwansi (2013) ascertained the existence of causality relationship between stock market performance and economic growth in Nigeria using the general-to-specific autoregressive distributed lag (ARDL) and Bound testing approach covering the period 1981–2011.The study finds the empirical evidence of long-run co-integration between economic growth and stock market performance. However, with regard to causal relationship between gross domestic product and stock market performance indicators, no unidirectional causality was established for market capitalization ratio and economic growth.

Usman and Alfa (2013) investigated the impact of stock exchange market on economic growth in Nigeria spanning 1981 to 2010. The study applied the Johansen co-integration test approach and granger causality test and the result reveals that there is a positive long run relationship between market capitalization, value traded and economic growth in Nigeria. While the granger causality test indicates a bi- directional relationship between market capitalization and value traded in stock market. There is also a unidirectional between market capitalization and real gross domestic productwith causality running from real gross domestic product to market capitalization. Conversely, value traded granger causes real gross domestic product in the short run.

Wang and Ajit (2013) investigated the impact of stock market development on economic growth in China. To this end, the quarterly data from 1996 to 2011 were used and the empirical investigation was conducted within the unit root and the co-integration framework. The results showed that the relationship between the stock

market development, proxied by the total market capitalization, and economic growth is negative.

Onwumere, Ibe, Okafor and Ugwuanyi (2012) ascertained the impact of stock market development on economic growth from the demand-following arguments from the period 1996-2010. Employing the ordinary least square (OLS) regression, they found that economic growth has positive and non-significant impact on market capitalization ratio and turnover ratio of the Nigerian stock exchange but had a negative on the Nigerian Stock Market value traded ratio.

Asante, Agyapong and Adam (2011) studied the relationship between bank competition, stock market and economic growth in Ghana using time series data for the period between 1992 and 2009. Short and long run relationship were established within the frameworks of granger causality and the autoregressive distributed lag and ordinary least square approach respectively. It was found that bank competition and stock market development expressed by market capitalization ratio granger cause economic growth in Ghana. Also, in the long run, banking competition is good for economic growth.

Obiakor and Okwu (2011) studied stock market and macroeconomic performance in Nigeria from 1993 to 2007. The co-integration test results suggested the presence of a long run relationship among the variables, namely, real gross domestic product, market capitalization ratio, investment ratio, and the aggregate price level. In addition, the impulse-response functions and variance decompositions simulated from the estimated VAR models clearly indicate positive and sizeable contributions of stock market development to real GDP as well as investment ratio.

Abu (2009) investigated whether stock market development raises economic growth in Nigeria, by employing the error correction approach. The econometric results indicate

that stock market development (market capitalization-GDP ratio) increases economic growth.

Pradhan (2009) ascertained the causal nexus between financial development and economic growth in India in a multivariate VAR model. The co-integration test finds the presence of long run equilibrium relationship between financial development and economic growth. The granger causality test finds the existence of bi-directional causality between money supply and economic growth, bank credit and economic growth, money supply and foreign trade, and market capitalization and foreign trade. It also confirmed the unidirectional causality from market capitalization to economic growth.

Abiola and Okodua (2008)determined the role of the stock market in achieving the vision 2020. Applying co-integration and error correction model to stock market performance and per capita income time series data, the findings indicated that market capitalization significantly impacts positively on per capita income.

Rahman and Salahuddin (2008) empirically analysed the relationship between economic growth and its determinants with special focus on the stock market development in Pakistan. Using data for the period from 1971 to 2006 we have employed FMOLS and ARDL bounds-testing for the long run relationship and error correction model for the short run dynamics. The findings suggest a positive relationship between efficient stock market reflected by market capitalization ratio and economic growth both in short run and long run.

Osei (2005) appraised the impact of stock market on economic growth in Ghana. The empirical results indicate that stock market development as measured by market capitalization ratio granger cause economic growth in Ghana and the causation is unidirectional from stock market to economic growth hence, the study has revealed

that the establishment of Ghana Stock Exchange (GSE) matters for economic growth in Ghana.

2.3.2 Empirical Studies on All Share Index and Economic Growth

Ikpefan, Ikwuetoghu, Okafor and Isibor (2016) investigated the impact of capital market on economic growth in Nigeria. The research adopted a time-series research design depending comprehensively on secondary data with coverage from 1983 to 2013. The study employed regression analysis. The findings from this study suggest that all share index exhibited an inverse significant relationship with economic growth.

Obiakor (2016) examined capital market-economic growth nexus in Nigeria, during the 1985-2015 periods. Analysis was anchored on relevant multiple regression model whose coefficients were estimated via the ordinary least squares techniques using data from Securities and Exchange Commission and Central Bank of Nigeria. Results showed that all share index had positive and significant relationship with economic growth.

Okonkwo, Ananwude and Echekoba (2016) studied the impact of stock market development and economic growth and applied the Johansen co-integration model to evaluate the causal relationship of economic growth and stock market development using four measures of stock market development indices: market capitalization, number of deals, all share index and total value of market transaction. The study established the existence of co-integration for all the stock market development measures. Results obtained showed that all share index was positively and significantly related with economic growth.

Patrick, Anthony, Temitope and Adefemi (2015) examined whether the stock market promotes economic growth and development in Nigeria. Ordinary Least Squares

regression (OLS) was employed using the data from 1984 to 2008. The results indicated that there is a positive relationship between economic growth and all share index.

June (2014) identified the relationship between stock market index, trading volume, turnover ratio, and economic growth in Malaysia and United Kingdom for the period of 2005 to 2013, using quarterly data. The ordinary least square estimator was used to determine the relationship of stock market and economic growth. The empirical results illustrate that stock market index is positively correlated to economic growth in Malaysia and United Kingdom.

Wild and Lebdooui (2014) looked into the relationship between stock market development and economic growth in Morocco for the period from 2000 to 2013 on quarterly basis. The study employed Vector Autoregressive Model on Morocco all shares index, market liquidity, market capitalization and principal component analysis based stock market development index. The results showed that long run association exists between stock market development and economic growth, and unidirectional Granger-causalities running from all shares index, traded volume and stock market index to the real gross domestic product existed.

Udoka and Anyingang (2014) investigated the extent to which the operations of the market have contributed to the growth of the Nigerian economy and also to determine the functionality of the market. Data were gathered on some capital market indicators from the stock exchange on market capitalization, all share index, volume of transaction, value of transaction and number of listed companies on the stock exchange. The data were tested using the ordinary least square statistical technique.

Findings resulting from the test of data showed that all share index positive and significant relationship economic growth.

Akpan (2013) addressed the extent of relationship between stock market capitalization and performance on the Nigerian economy from 1988-2008. Data were collected from secondary source,Nigeria Stock Exchangereports and were analysed using multiple regression statistics. The results showed that there is a negative and insignificant relationship between all share index and performance on the Nigerian economy.

Atoyebi, Ishola, Kadiri, Adekunjo and Ogundeji (2013) determined the impact of capital market on economic growth in Nigeria using annual data from 1981 to 2010 using the ordinary least square test. Empirical investigations revealed that all share index significantly influence economic growth.

Bashorun and Bakare-Aremu (2013) explored link between capital market development and economic growth in Nigeria. Applying co-integration and error correction model to stock market and macroeconomic time series data, they found evidence that all share index have positive and significant impact on economic growth .The pair-wise granger causality test shows that there exists a unidirectional causality running from capital market to economic development and feedback causality between market capitalization and economic growth.

Echekoba, Ezu and Egbunike (2013) examined the impact of capital market on the growth of the Nigerian economy under a democratic rule. The study relied on time series data and applied multivariate regression method to analysed the data. The result showed that all share indexes exert positive influence on the gross domestic product growth rate.

Nneji (2013) investigated the efficiency of the Nigerian Capital Market from 1986 to 2009 through the random walk theory, the rate at which stock information is reflected in stock price and its impact on Nigeria's economic development. ADF unit root test, the ARMA Test, the VAR-based granger causality test, the co-integration analysis and the vector error correction test were employed for data analysis. The revelation from the study was that all share index has negative and insignificant relationship with economic growth in Nigeria.

Okoye and Nwisienyi (2013) analysed the impact the capital market has on the Nigerian economy, using time series data for 10-year period; 2000 – 2010. The model specification for the analysis of data was multiple regression and ordinary least squares estimation techniques. The gross domestic product was adopted as the dependent variable while the all-share index, market value and market capitalization were the independent variables. The result showed that there are significant relationship between share index, market value and market capitalization on gross domestic product.

Oke and Adeusi (2012) examined the impact of capital market reforms on the Nigerian economic growth between 1981 and 2010. The ordinary least square method of regression and the Johansen co-integration analysis were employed to analyse the secondary data sourced from the Central Bank of Nigeria statistical bulletin, the Nigeria Stock Exchange. The results showed that all share index positively impact on economic growth.

Owolabi and Adegbite (2012) empirically examined the effect of capital market operations on Nigeria economy. Secondary data were obtained from central bank of Nigeria statistical bulletin covering the period of 1990 to 2010. Multiple regressions were employed to analysed data on such variables gross domestic product, share index,

market turnover. All share index was found to insignificant negative relationship economic growth.

Regmi (2012) examined causal relationship between stock market development and economic growth in Nepal for the period 1994-2011, using unit root test, co-integration, and vector error correction models and developing all share index as an indicator of stock market development. The finding suggests that stock market development has significantly contributed to the economic growth in Nepal.

Akeem (2011) examined the impact of capital market on the Nigeria economy and also examine how stock exchange market has contributed to the economic growth which aims at studying the second tier securities market. The secondary data employed for this research work were sourced from the statistical bulletin of the Central Bank of Nigeria. The ordinary least square was used for all variables in order to determine the linear relationship between the independent and independent variable. The result revealed that all share index has negative and significant relationship with economic growth.

Olowe, Matthew and Fasina (2011) critically analysed the efficiency of capital market on the Nigerian economy for the period between 1979 and 2008 by applying multiple regression method of econometric analysis. The major findings revealed a negative relationship between the market capitalization and the gross domestic product as well as a negative relationship between the turnover ratio and the gross domestic product while a positive relationship was observed between the all-share index and the gross domestic product. In Ukrainian reality, Gamolya (2006) evaluated the relationship between stock market index and economic growth. Using the VAR estimation, they

witness a clear ability of Ukrainian stock market index to at least somehow advance economic activity.

Paramati and Gupta (2011) evaluated whether the stock market performance leads to economic growth or vice versa. Monthly Index of Industrial Production (IIP) and quarterly Gross Domestic Production (GDP) data for the time span of April, 1996 to March, 2009. They undertake unit root (ADF, PP and KPSS) tests, Granger Causality test, Engle-Granger Co-integration test and Error Correction Model. The quarterly results of the Granger causality test suggest reveal that there is a unidirectional relationship and that runs from GDP to all share index.

Duca (2007) employed the Granger causality test in order to examine causality direction between stock market and economic growth using quarterly data was obtained from the IMF International Financial Statistics (IFS) for five countries USA, UK, Germany, France and Japan. The all share index was the proxy for stock market development. When causality was established, it suggested that stock market index predicted economic growth in the five selected countries.

2.3.3 Empirical Studies on Value of Stock Traded Ratio and Economic Growth

Karim and Chaudhary (2017) appraised the effect of stock market development on economic growth of two Asian regions namely South Asia and East Asia. They used market capitalization, total value traded ratio and turnover ratio as indicators of stock market development while gross domestic product per capita growth rate is used for measuring economic growth. The linear panel data methodology is applied over the annual data of 1996-2015 to study the phenomenon. The empirical findings indicate that turnover ratio contributes to some extent in the economic growth of South Asian region but its impact on East Asian region found to be insignificant.

Odo, Anoke, Onyeisi and Chukwu (2017) adopted auto regressive distributed lag bound testing and VAR granger causality econometric tools to estimate the relationship between value of stock traded ratio and economic growth in Nigeria. The result indicated stock traded total value had a negative insignificant link with economic growth in both short and long run.

Abbas, Pei and Rui (2016) explored the relationship between the stock market measures and economic growth in Tanzania. In order to achieve the objective, they examined the impact of stock total value of share traded on Tanzanian economy based on the time series data from 2000 - 2011. They employed the Ordinary Least Square techniques and their findings suggest that total value of share traded has no effect on economic growth of Tanzania.

Bilal, Chen and Komel (2016) studied impact of stock market development on economic growth: evidence from lower middle income countries by panel data techniques by fixed effects and random effects by applying Hausamn test. Overall results suggest that there is positive and significant impact of stock market development on economic growth. The findings show a positive relationship between stock market development and economic growth. Total value traded ratio has insignificant relationship with economic growth.

Bashir and Ahmad (2016) conducted an empirical analysis on impact of capital market performance indicators on economic growth. The research was quantitative research and made used of secondary data from reports of SEC, NSE, CBN and NBS for the period 2005 -2014. The findings of the study showed that value of stock traded ratio impacted insignificantly on gross domestic product which is the proxy of economic growth using SPSS's regression analysis.

Brown and Nyeche (2016) appraised the relationship between total value traded in the stock market, market capitalization, trade openness, inflation rate and economic growth in Nigeria. The study adopted the ordinary least squares techniques of multiple regression and co integration test. The lag one and two forms of the independent variables value of stock traded ratio and market capitalization were positively signed evidencing a positive and significant relationship between total value traded ratio and economic growth.

Echekoba and Ananwude (2016) explored the casual linkage between the depth of development in Nigerian Stock Market and economic growth as well as the short-run and long-run dynamics of the stock market. They used annual data of growth rate of gross domestic product, stock market capitalization and value of stock traded ratio from 1981 to 2015 as sourced from NSE. The results of granger causality test show that there is no causal linkage between stock traded ratio and economic growth at 5% level of significance. The result also depicted that via the error correction model, value of stock traded ratio deviated away from the long-run equilibrium, then GRGDP makes all adjustment to restore the long-run equilibrium by correcting disequilibrium by about a factor of 1.25 (or 1.21).

Magweva and Mashamba (2016) explored the relationship between capital market development and economic growth in Zimbabwe from 1989 to 2014. The study applied the error correction model after affirmation that the variables were stationary. The result disclosed that value of stock traded ratio negatively and insignificantly relates with economic growth. Using a panel data approach with fixed effects to differentiate the long-run rate from short-run level effect of stock market development on economic growth against a sample of 70 countries over the period 1975-1992, Shao-Chi (2001) empirical evidence indicated that development of stock markets value

of stock traded ratio has significant positive effects on both the long-run growth rate and short-run level of real gross domestic product per capita.

Prats and Sandoval (2016) examined the empirical analysis for six countries in Eastern Europe (Bulgaria, Slovakia, Hungary, Poland, Czech Republic and Romania), using Vector Autoregressive Model. They further tried to show the link between the stock market development and economic growth in these countries from 1995 to 2012. The results showed evidence of Granger causality between economic growth variables and financial market variable: value of stock traded ratio.

Bulere (2015) examined the long run causal relationship between stock market development and economic growth in the context of Uganda using quarterly data from 1998 to 2012. Total value of shares traded was used to proxy market liquidity. The study applies Multivariate vector autoregressive models and vector error correction models to capture the short and long run dynamics of the relationship. The Johansen test of co-integration reveal that variables are co-integrated and the VECM reveals existence of long running relationship. The granger causality test results however were inconclusive showing no causality between stock market and growth in Uganda.

Lahura and Vega (2014) explored the causal effect of stock market development expressed through value of stock traded ratio on real economic activity in Peru. Based on the predictions of a simple growth model, they estimated vector autoregressive models and identify stock market shocks by imposing long-run restrictions in the dynamic response of real output per capita using annual time series data for the period 1965-2013.They find that stock market shocks have had a short-run causal effect on real gross domestic product per capita only after 1991, however, the contribution of stock market shocks to output growth dynamics have been small.

Omoniyi, Adeleke and Sikiru (2014) determined the impact of financial market development on the Nigerian economy. Base on growth theory and other empirical findings the model express gross domestic product as a function of exchange rate, money supply growth rate, market capitalization and stock traded turnover ratio. Ordinary least square estimating technique was adopted particularly simple regression analysis. The results showed that market capitalization has positive and significant impact on the growth of Nigerian economy.

Ishioro (2013) explored the causal linkage between stock market development and economic growth in Zimbabwe for the period 1990 to 2010. He Applied the Augmented Dickey Fuller (ADF) unit root tests and the long-run Granger non causality estimation technique proposed by Toda and Yamamoto (1995). They tested the nature and direction of the causality between economic growth proxy by the real gross domestic product growth rate and stock market development proxy by value traded ratio and found that there is a bi-directional causality exists between economic growth and stock market development.

Mwambene (2013) studied the relationship between levels of stock market development and economic growth in emerging market African countries from 1991 to 2011. Panel data/cross-sectional time-series methodology was applied. They found out that in the short-run there is a significant and positive correlation between stock market development indicators and economic growth in African emerging market countries. Only value of stock traded ratio that was found to be significant and positively correlated with long-run economic growth.

Rioja and Valev (2011) applied value of stock traded ratio among other variables of stock market development and studied the effects of stock markets and banks on the

sources of economic growth, productivity and capital accumulation, using a large cross country panel that includes high- and low-income countries. Results show that, in Low Income countries, banks have a sizable positive effect on capital accumulation. They found that stock markets, however, have not contributed to capital accumulation or productivity growth in these countries. Conversely, in high-income countries, stock markets are found to have sizable positive effects on both productivity and capital growth, while banks only affect capital accumulation.

Nazir, Nawaz and Gilano (2010) explored the relationship between the stock market development and economic growth in Pakistan for the period of 1986 to 2008 using Ordinary Least Square method. They investigated the stock market development and economic growth relationship by using the two major measures of stock market development, namely: size of the market and liquidity (value of stock traded ratio). The results revealed that economic growth can be attained by increasing the size of the stock markets as against value of stock traded ratio.

Dey and Flaherty (2009) examined how the interdependence between stock market liquidity and bank credit determines gross domestic product growth for several countries, after controlling for legal origin and stock market efficiency factors. The researchers employed Ordinary Least Square method and their results suggested that bank credit and stock market liquidity are inversely related to each other. They found that stock market liquidity (direct) is a consistently significant factor for growth in gross domestic product.

Ewah, Esang and Bassey (2009) appraised the impact of capital market efficiency on economic growth in Nigeria, using time series data on market capitalization, money supply, interest rate, total market transaction and government development stock that

ranges between 1961 to 2004. The model specification for the analysis of data was multiple regression and ordinary lest squares estimation techniques. The result of the study showed that value of stock traded ratio positively and significantly relates with economic growth.

Nowbusting and Odit (2009) examined the impact of stock market development on growth in Mauritius. A time series econometric investigation was conducted over the period 1989 -2006. They analysed both the short run and long run relationship by constructing an error correction model. They define market liquidity as volume of share traded over gross domestic product and found that stock market development positively affect economic growth in Mauritius both in the short run and long run.

Duan (2008) using a data set for the period 1995-2007 and applying the co-integration and causality analysis technology, provides evidence of a positive and significant causal relationship going from stock market value traded ratio to economic growth in long term in China. Also, the result indicates that stock market promoted economic growth in China by mobilizing savings and providing liquidity.

Levine and Zervos (1996) empirically evaluate the relationship between stock market development and long-term growth using Ordinary Least Square techniques. Stock market development was proxy by value of stock traded ratio and market capitalization ratio. The result of the study suggested that stock market development positively associate with economic growth in the long run.

2.3.4 Empirical Studies on Volume of Stock Traded and Economic Growth

Spaseska, Vitanova, Sotiroski, Odzaklieska, Jankuloska and Risteska (2017) examined the extent which capital market performance influences real sector growth in Macedonian economy. Correlative and regressive analysis of time series disclosed that

there is a very strong link between gross domestic product and the performances of the Macedonian stock exchange: market capitalization of the listed companies, volume of trading on the Macedonian stock exchange and number of listed companies in Malaysia and United Kingdom.

Werema and Nikupala (2016) investigated the impact of stock exchange market to the economic growth in Tanzania over a period of 1998 - 1992. A simple regression model using the 1998-2012 annual data sets was employed. The empirical findings show that volume of transaction has significant and positive impact on economic growth.

Oladokun, Adeagbo and Abiola (2015) assessed the impact of Nigerian Stock Market on the country's economic growth between 1981 and 2013 using Wald test analysis and ordinary least square techniques. The economic growth was proxy by gross domestic product while various stock market variables such as market capitalization, total new issues, volume of transaction and total listed equities and government stock were considered. It was revealed that volume of transaction has positive and significant relationship with economic growth.

Asiri and Abdalla (2015) looked at the relationship between stock market development and economic growth in the Kingdom of Bahrain over the twenty-five year period of 1990 to 2014. Using regression analysis, the study analysed the relationship between economic growth and volume of transaction. The finding showed that volume of transaction had influenced on economic growth in Bahrain.

June (2014) identified the relationship between stock market index, trading volume, turnover ratio, and economic growth for the period of 2005 to 2013, using quarterly data. The ordinary least square estimator was used to determine the relationship of stock market and economic growth. The empirical results illustrated that stock market

trading volume is positively correlated to economic growth in Malaysia and United Kingdom.

Sa'adu (2014) assesses the impact of capital market performance on economic growth of Nigeria for the period 1983 – 2010. Economic growth was proxy by gross domestic product while capital market performance was measured by volume of transaction. Data was collected using secondary source of data only while simple regression was used for the analyses. The findings of the study showed that volume of transaction has positively and significantly impacted on the Nigerian economy.

Ioana-Alexandra (2013) examined the relationship between stock market development and economic growth in Romania using quarterly data for the period 2000-2011. The unrestricted VAR and OLS regression were the techniques of data analysis. The result of the analysis depicted that there is a bi-directional relationship between the growth of the trading volume and the growth of gross domestic product with more influence from trading volume to economic growth.

Donwa and Odia (2010) empirically analysed the impact of the Nigerian Capital Market on her socio-economic development from 1981 to 2008. The socio-economic development was proxy by the gross domestic product while the capital market variables considered included market capitalization, total new issues, volume of transaction and total listed equities and Government stock. Using the ordinary least square it was found that the volume of transaction has no significant impact on economic growth.

2.3.5 Empirical Studies on Total Market New Issues and Economic Growth

Hammed, Shittu, Yusuf and Akanbi (2017) investigated the impact of economic growth and development in Nigeria using vector error correction model to examine the

long-run relationship between the capital market development and economic growth, the study used annual series from 1970 to 2013. Variables such as gross domestic product, total new issues and value of share traded and total listed equity are used for the study. The empirical results indicated total new issues has no significant effect on economic growth of Nigeria.

Muritala and Ogunji (2017) evaluated the relationship between the capital market and economic growth of Nigeria. Data were mainly obtained from secondary sources, the CBN statistical bulletin over the period of 1980–2015. Ordinary Least Square technique was used. The results from the augmented Dicker Fuller unit root test show that all the variables were stationary at the level expect RGDP, MCAP and TNI, which were stationary at the first difference. However, the results from Ordinary Least Square reveal that total new issue, market capitalization, and total listing positively impact the economy while the value of the transaction has a negative impact on real gross domestic product.

Afolabi (2015) empirically assessed the impact of the Nigerian Capital Market on the Nigerian economy looking at a 20 years period from 1992 to 2011. The Nigerian Capital Market was proxy as market capitalization against some variables of the economy such as Gross Domestic Product (GDP), Foreign Direct Investment, Inflation Rates, Total New Issues, Value of Transaction and Total Listing. Using the Multiple Regression analysis, He find that capital market has an insignificant impact on the economy within the period under review.

Dabo (2015) studies the impact of total new issues of the Nigerian Capital Market and it's on the growth of the Nigerian economy. The paper employs annual time series data from 2001 to 2012 (12 year period) collected from various issues of Central Bank of

NigeriaStatistical Bulletin and Annual Report and Statements of Accounts of Nigeria Stock Exchange. A regression analysis was adopted in computing the interaction between total new issues of the Nigerian Capital Market and Nigeria's economic growth. The empirical results showed that, there was unidirectional causality between total new issues of the stock market and economic growth, which ran from total new issues to economic growth.

Oladokun, Adeagbo and Abiola (2015) assessed the impact of Nigerian Stock Market on the country's economic growth between 1981 and 2013 using Wald test analysis and ordinary least square techniques. The economic growth was proxy by gross domestic product while various stock market variables such as market capitalization, total new issues volume of transaction and total listed equities and government stock were considered. The result obtained showed that total market new issues have positive and significant relationship with economic growth.

Sa'adu (2014) ascertained the impact of capital market performance on economic growth of Nigeria for the period 1983 – 2010. The technique employed was simple regression as tool of analysis for the study while data was collected using secondary source of data only. Four indices of capital market performance were employed and the results depicted that total new issues has positive and significant relationship with economic growth in Nigeria.

Udoka and Anyingang (2014) determine the extent to which the operations of the market have contributed to the growth of the Nigerian economy, they analysed and tested gathered on some capital market indicators from the stock exchange on market capitalization, all share index, volume of transaction, value of transaction and number of listed companies on the stock exchange using the ordinary least square statistical

technique. The result unveiled that volume of transaction has positive and significant relationship economic growth.

Yadirichukwu and Chigbu (2014) examined the impact of capital market on economic growth in Nigeria. The study adopted a time-series research design relying extensively on secondary data covering 1985 -2012. The study utilizes regression analysis as data analysis method incorporating multivariate co-integration and error correction. The finding suggests total new issues have significant positive relationship with economic growth.

Aiguh (2013) evaluated the performance of the capital market in relation to the economic growth in Nigeria from 1980 to 2010. Using secondary data from Central Bank of Nigeria and applying ordinary least square technique for analysis, the result disclosed that total market new issues has positive and significant relationship with economic growth.

Odita and Oghoghomeh (2013) attempted to model the effect and importance of the Nigerian Capital Market, as a veritable source of medium and long term development. The data collected were from the Central Bank of Nigeria statistical bulletin and the Security and Exchange Commission from the period of 2001 to 2010, using Ordinary Least Square techniques. They proxy economic growth by gross domestic product, while the capital market variables considered included the annual market capitalization and the total volume of transactions. Findings revealed that there was a positive relationship between total volume of transactions and gross domestic product, although the relationship was not statistically significant.

Kolapo and Adaramola (2012) ascertained the impact of the Nigerian Capital Market on its economic growth from the period of 1990-2010. The economic growth was

proxy by gross domestic product while the capital market variables considered include; market capitalization, total new issues, value of transactions, and total listed equities and government stocks. Applying Johansen co-integration and granger causality tests, results show that the Nigerian Capital Market and economic growth are co-integrated. This suggested the presence of a long run relationship exists between capital market and economic growth in Nigeria. The causality test result suggested that total new issue has no significant effect on economic growth.

Odetayo and Sajuyigbe (2012) evaluate the impact of Nigerian Capital Market on economic growth and development between 1990 and 2011, he analysed data collected from Security Exchange Commission from 1990 to 2011. Ordinary least square was the method of regression analysis. It was revealed that total new issues had significant positive impact on economic growth.

Ogboi and Oladipo (2012) specifically investigated the effect and the causal relationship between capital market and economic growth in Nigeria. The study employed annual time series data from 1981 to 2008 collected from various issues of Central Bank of Nigeria's Statistical Bulletin. The granger causality showed that it is economic growth that determines the total market new issues.

Ohiomu and Enabulu (2011) examined the effect of stock market on economic growth in Nigeria. Ordinary least squares regression was employed using the data from 1989 to 2008. The results indicated that there is a positive relationship between economic growth and all the stock market development variables used. Total new issues had positive and significant relationship with economic growth.

Donwa and Odia (2010) analysed the impact of the Nigerian Capital Market on her socio-economic development from 1981 to 2008. Gross domestic product was proxy

for economic growth the while market capitalization, total new issues, volume of transaction and total listed equities and government stock were the capital market variables considered. The result of the ordinary least square showed that total listed securities had significant positive relationship with economic growth.

Osinubi and Amaghionyeodiwe (2003) determined the linkage between total market new issues and economic growth. To achieve this objective, ordinary least squares regression was employed using the data from 1980 to 2000.The results indicated that there is a positive relationship between growth and total new issues.

2.3.6 Empirical Studies on Market Turnover Ratio and Economic Growth

Karimo and Ogbonna (2017) determined the direction of causality between financial deepening and economic growth in Nigeria for the period 1970–2013. The study adopted the Toda–Yamamoto augmented Granger causality test and results showed that the growth-financial deepening nexus in Nigeria follows the supply-leading hypothesis. The analysis disclosed that stock market turnover ratio had significant impact on economic as causality flows from turnover ratio to economic growth.

Rezina, Jahan and Mustafi (2017) evaluated the causal relationship between stock market development and economic growth in Bangladesh as well as the impact of stock market performance upon the economic growth of Bangladesh. The study was conducted using Augmented Dickey Fuller unit root test, Johansen co-integration test and the granger causality test. The finding revealed that turnover ratio has negative impact on economic growth of Bangladesh.

Awan and Iftekhar (2015) empirically attempted to establish the relationship between stock market development and economic growth in Pakistan. The stock turnover ratio was used for stock market development, financial depth is used as the proxy of

financial intermediary and the economic growth measured with gross domestic product growth over the time period 1988-2012. The ordinary least square and granger causality test are applied to assess the investigation. The result revealed that stock turnover ratio had significant relationship with economic growth.

Nyasha and Odhiambo (2014) examined the impact of both bank- and market-based financial development on economic growth in South Africa during the period from 1980 to 2012. The study used the newly developed autoregressive distributed lag (ARDL) bounds testing approach to examine this linkage. The empirical results of this study show that there is a positive relationship between bank-based financial development and economic growth in South Africa. The results, however, fail to find any relationship between market-based financial development surrogated by turnover ratio and other stock market variables and economic growth in South Africa. These results implied that it is bank-based financial development rather than market-based financial development that plays a pivotal role in propelling South Africa's real sector.

Omoruyi and Ede (2014) investigated empirically the short-run and long-run relationships between financial system development and economic growth in Nigeria. The study adopted a multivariate ordinary least square analysis for the estimation process, co-integration analysis for long-run equilibrium relationship and the associated error correction model to determine the short-run impact of the variables. The findings of the study were that financial development (measured by banking system and stock market turnover ratio) positively influenced economic growth in Nigeria.

Osho (2014) evaluated the role of stock market on Nigeria's economic development from 1980 to 2010 which cover the market performance and economic growth in

Nigeria. Data were sourced from statistical bulletin. This research study made use of annual time series data covering the period 1980 – 2010. The study applied the ordinary least square and from the study, turnover ratio significantly and positively correlates with economic growth.

Rana (2014) used 26 annual observations from Mid-July 1988 to 2013 on economic and financial time series of real gross domestic product, market capitalization and annual turnover and employs Engle-Granger (1987) and Johansen's (1988) co-integration test to examine the long-run co-integrated relationship between economic growth proxy by log of real gross domestic product and stock market size and liquidity proxy by log of market capitalization and log of annual turnover respectively. The results of co-integration regression show that stock market size and liquidity both can predict economic growth in Nepal. The results of co-integration test from Engle-Granger procedures and Johansen's method suggest that real gross domestic product is co-integrated annual turnover.

Srinivasan (2014) investigated the direction of causality between stock market development and economic growth in the Indian context. Using the co-integration and causality tests for the period June 1991 to June 2013, the study confirmed a well-defined long-run equilibrium relationship between the stock market development indicators and economic growth in India. The empirical results showed bi-directional causality between market capitalization and economic growth and uni-directional causality from turnover ratio to economic growth in the long-run and short-run. By and large, it can be inferred that the stock market development indicators viz. market capitalization and turnover ratio have a positive influence on economic growth in India.

Abdul-Khaliq (2013), identified the position of stock market liquidity at Amman Stock Exchange (ASE) during the period from 1991 to 2011. For measurements of liquidity at ASE they used turnover ratio and market capitalization to gross domestic product. The model adopted for testing the relationship was the simple linear regression mode and it was found that market capitalization to gross domestic product doesn't exert significant effect upon the economic growth but the turnover ratio has significant effect upon the economic growth.

Jamil and Shazia (2013) appraised the impact of capital market deepening on economic growth of Bangladesh using the time series data on market capitalization to gross domestic productratio, total market turnover to gross domestic product ratio and Savings to gross domestic product ratio over the period covering from the year 1991 to 2011. The economic results found by applying ordinary least square shows that the capital market deepening has little contribution to the economic growth as the relationship between turnover ratio and economic growth was negative and significant.

Nyamakanga (2013) researched on the causal relationship between stock market development and economic growth in Kenya over the period 1993-2012. The study applied the granger test for causality. The results showed a strong positive relationship between stock market development and economic growth stemming from a one sided causal relation from market capitalization to economic growth while market liquidity (stock market turnover ratio) showed a non-causal effect to economic growth.

Alajekwu and Achugbu (2012) investigated the role of stock market development on economic growth of Nigeria using a 15-years time series data from 1994 - 2008. The method of analysis used was ordinary least square techniques. The value traded ratio and turnover ratio were used as proxy for market liquidity while stock market

capitalization ratio was used as a proxy for market size. The results show that market capitalization and value traded ratios have a very weak negative correlation with economic growth while turnover ratio has a very strong positive correlation with economic growth.

Alajekwu and Ezeabasili (2012) investigated the relationship between stock market liquidity and economic growth in Nigeria between 1986 and 2010. Econometric evidence revealed stationarity of the variables at their first differences while the Johansson integration approach also confirms the existence of co-integrating relationship at the 1 percent and 5 percent level of significance. In addition, the regression estimates revealed that stock market liquidity: turnover ratio value trade ratio and number of shares trade ratio has no significant impact on economic growth. Furthermore, the pairwise Granger causality test revealed that there is no causal relationship between turnover ratio and economic growth in Nigeria.

Fynn (2012) studied the impact of the stock market primarily on economic growth using panel data from 1990-2010. The study applied the generalized least squares techniques for fixed effects with the exclusion of the subgroup 2005-2010 which uses random effects. The effect of the stock market on growth is based on country-specific effects and varies in different time periods. The study failed outwardly to reject the null hypothesis that turnover ratio is greater than zero. The effect of the equity market on economic growth varies per region and time periods.

Chizea (2012) examined the long run causal relationship between the stock market and economic growth. It used one bank and three measures of stock market development: the loans to deposit ratio of banks, market capitalization ratio, value traded to market capitalization ratio as well as value traded to gross domestic product ratio. The study

exploited time series analysis techniques to test for the existence of a relationship and, where one is found to exist, the casual nature of that relationship. The granger causality revelation showed that turnover ratio has significant effect on economic growth.

Ovat (2012) investigates empirically into the acclaimed positive role played by stock markets in driving growth, with evidence from the Nigerian Stock Market. The study Utilize several econometric techniques, such as unit root test, co-integration test and Granger causality test. The findings suggested that there is a two way causation between turnover ratio and economic growth. Furthermore, stock market liquidity was found to significantly impact on growth while market size was found to have little or no effect on growth.

Adenuga (2010) explored the hypothesis that stock market development promotes economic growth in Nigeria and attempts to confirm its validity or otherwise, using quarterly data from 1990 to 2009 for Nigeria by employing vector error correction model technique on the commonly used stock market development indicators. From the result, the model for the total value of shares traded ratio has the best fit followed by the market capitalization ratio model while the model for the turnover ratio lagged behind. The result revealed that turnover ratio has positive and significant relationship with economic growth.

Boubakari and Jin (2010) explored causality relationship between stock market and economic growth based on the time series data compiled from 5 Euronext countries (Belgium, France, Portugal, Netherlands and United Kingdom) for the period 1995 to 2008. Granger causality test was used to find causality relationship between turnover ratio and economic growth. The results of the study suggested a positive links between

the turnover ratio and economic growth for some countries for which the stock market is liquid and highly active. However, the causality relationship is rejected for the countries in which the stock market is small and less liquid.

Tswamuno, Pardee and Wannava (2007) looked into the relationship between stock market turnover ratio and economic growth in South Africa. They employed Ordinary Least Square technique. Post-liberalization foreign portfolio investment has no positive effect on economic growth. In addition, increased post-liberalization stock market turnover had a negative effect on economic growth. In contrast to this situation, evidence shows that foreign portfolio investment and increased turnover contributed positively to economic growth in a more controlled pre-1994 South African economy.

Using turnover ratio as measurement of stock market development, Beck and Levine (2004) investigated the impact of stock markets and banks on economic growth using a panel data set for the period 1976- 1998 and applying recent GMM techniques developed for dynamic panels. They found that stock markets development and banks positively influence economic growth and these findings are not due to potential biases induced by simultaneity, omitted variables or unobserved country-specific effects.

In a cross country research by Levine and Zervos (1996) on the association between stock market development and long-term growth, they discovered that long term economic growth is positively and significantly associated with stock market turnover ratio. Again, instrumental variables procedures suggested that a strong connection between predetermined components of stock market and economic growth in the long run.

Table 2.1: Literature Exploration

S/N	Author (s)/ Year of Study	Title of Article/ Period Covered	Theoretical Framework	Methodology	Findings
1.	**Anulika.A. (2017)**	Impact of the Nigerian stock exchange on economic growth (1980-2011)		Ordinary least square GDP = *f* (MCAP, INTR, TLS, TNI, NOD, VOD + FDI)	The result revealed that only three variables are significant in the explant of the dependent variable while the remaining four variables are insignificant.
2.	**Magweva .R. and Mashamba .T. (2016)**	Stock market development and economic growth: An empirical analysis of Zimbabwe (1989-2014)		Vector error correction model GDPPC = (MCGDP, TOR, TUGDP)	The results evidence the lack of a significant relationship between the variables in the short run.
3.	**Obubu .M., Konwe .C.S, Nwabenu .D.C., Umokri .P.A and Chijioke .M. (2016)**	Evaluation of the contribution of Nigeria stock market on economic growth; regression approach (1961-2015)		Ordinary least square $GDP_t = f(MC_t + TR_t + ASI_t + NOD_t + VOT_t)$	The result of the study established positive links between capital market and economic growth.
4.	**Adigwe .P.K, Nwanna .I.O and Ananwude .A (2015)**	Stock market development and economic growth in Nigeria: An Empirical Examination (1985-2014)	MCK Innon-Shaw Hypothesis	Ordinary least square GDP = *f* (SMD + OPEN + IFR)	The result revealed that stock market has the potentials of growth, but has not contributed meaningfully to Nigerian economic growth.
5.	**Afolabi .A.A (2015)**	Impact of the Nigerian Capital Market on the economy (1992-2011)		Ordinary least square MKTCAP = *f* (GDP + INTR + FDI + TNI + TVTS + TLE)	The result shows that capital market has an insignificant impact on the economy within the period under review.
6.	**Briggs .A.P (2015)**	Capital market and economic growth in Nigeria (1981-2011)		Johanson Co-integration and Granger Causality test was applied GDP = *f* (MCAP, TNI, VLS, LEGS, INF, EXC)	The result shows clear positive impact in the capital market plays on economy growth.
7.	**Ituma .O.S (2015)**	Capital market and Nigeria's economic growth (1980-2013)	Efficient Market Hypothesis	Johanson Co-integration test and Error Correction Mechanism GDP = *f* (MCAP +TUT + TDS + U)	The result of the study shows that activities in the capital tend to impact positively on the economy.

8.	**Jibril .R.S, Salihi .A.A, Wambai .U.S, Ibrahim .F.B, Muhammad .S and Ahmad .T.H (2015)**	An assessment of Nigerian Stock Exchange Market development to economic growth (1990-2010)		Ordinary least square GDP = *f* (SMCR,VTR, TURNR)	The study revealed that market capitalization and value traded ratio have a negative correlation with economic growth while turnover ratio has a strong positive correlation with economic growth.
9.	**Ogunleye .E.O and Adeyemi .P.A (2015)**	The impact of stock development on economic growth in Nigeria (1970-2008)		Co-integration and Error Correlation Mechanism GDP = *f* (SMS, TVT, TR, GCF, MS_2)	The result shows that there is long-run relationship between stock market development and economic growth.
10.	**Uremadu .S.O, Onigah .P.O and Duru-Uremadu .C.E (2015)**	Capital market performance and economic growth in Nigeria (1980-2012)	Neoclassical Growth Model	Ordinary least square RGDP = *f* (MCAP, INFR, EXCHR, NLB, BSTA)	The study results strongly suggest that market capitalization and economic growth have a stable significant short run and long run relationship.
11.	**Nathanael .E.O (2014)**	Stock prices , capital market development and Nigeria's economic growth (1980-2012).		Johansen co-integration and ECM test GDP = *f* (CAP, GOVTSR, VEQ, TNI)	The result reveals that the value of equities is statistical significant and have a positive linear association with the economic growth of Nigeria.
12.	**Okonkwo .O.N, Ogwuru .H.O and Ajudua .E.I (2014)**	Stock market performance and economic growth in Nigeria (1981-2012).		Error correction model and VECM RGDP = *f* (MCAP, VTR, TVT)	The result of the study shows that stock market can positively increase economic growth if enabled environment for enlisting companies is created.
13.	**Osho .A.E (2014)**	The role stock market on Nigeria economic development (1980-2010).	Efficient market hypothesis	Ordinary least square GDP = *f* (MCR_t + $BVTR_t$ + BOT_t + U_t)	The result reveals that the stock market capitalization and total value of traded ratio negatively affect gross domestic product while total turnover positively affect the dependent variable.
14.	**Yadirichukwu .E and Chigbu .E.E (2014)**	The impact of capital market on economic growth: Nigerian perspective (1985-2012).		Multivariate Co-integration and error correction models GDP = f (MKTCAP, TONIS, VALTRAN, TOLIST)	The result shows that there is an inverse relationship between the stock market capitalization ratio and long run economic growth
15.	**Adefeso .H.A. (2013)**	Stock market development and growth in Nigeria. A causal analysis (1980-2010).		Error correction model	The result indicates that stock market development and banking activities both granger cause economic growth in Nigeria.
16.	**Aye.G.C. (2013)**	Causality between financial Deeping, economic growth and poverty in Nigeria (1960-2001).		Vector autocorrelation and vector error correlation models	The result shows that there is no evidence of the long run relationship between finance and economic while the short run result shows unidirectional

					causality from financial development to poverty via growth.
17.	**Bashorun .O.T and Bakare-Aremu .A.T (2013)**	Capital market development and economic growth: Evidence from Nigeria (1981-2011)	Endogenous growth theory	Vector Autoregressive Model and Granger Causality Technique GDP = f (ASI, NOD, MKTCAP)	The result shows that All-Share-Index, number of deals and Market capitalization have individual positive and significant. The pairwise granger causality test indicates that there is a unidirectional causality running from the capital market for economic development.
18.	**Echekoba .F.N, Ezu .G.K and Egbunika, C.F (2013)**	The impact of capital market on the growth of the Nigerian economy under democratic rule (1999-2011)	Efficient market hypothesis	Multivariate regression model GDPGR = *f* (TMC, ASI, TVS)	The result shows that while total market capitalization and all share index exert positive influence on the gross domestic product, growth rate, the total value of stock has a negative effect on the GDP growth rate, and none is significant.
19.	**Edame G.E. and Okoro.U. (2013)**	The impact of capital market and economic growth in Nigeria (1970-2010).		Co-integration Analysis. GDP = *f* (MAKAP, NDEALS, VTRAN, INT)	Their finding results show that Capital Market has positive and significant impact on Economic Growth in Nigeria.
20.	**Maduka .A.C and Onwuka .K.O (2013)**	Financial market structure and economic growth (1980-2012).		Vector error correction model	The result reveals that the Nigerian financial structure has negative and significant effect on the rate of economic growth
21.	**Oke .M.O (2013)**	Capital market operations and economic growth in Nigeria (1985-2011).		Error correction model	The study shows that increase in market capitalization and the number of dealing can reduce economic performance.
22.	**Okodua .H and Ewetan .O.O (2013)**	Stock market performance and sustainable economic growth in Nigeria (1981-2011)		Ordinary least square RGDP = *f* (MCAP, VTS, ADY, INTR, FIND)	The result shows that there exist a long run relationship between the dependent and independent variables.
23.	**Owolabi .A and Ajayi .N.O (2013)**	Econometrics analysis of impact of capital market on economic growth in Nigeria (1971-2010).		Ordinary least square GDP = *f* (GCF, FDI, CMI, DOH)	The result shows that there is a positive relationship between capital market growth and stock market variables in the analysis
24.	**Odia.A. and Oghoghomeh. T. (2013)**	Modeling the effect of capital market ; Empirical evidence from Nigeria		Ordinary least square GDP = $f(\beta_o + \beta_1$ MCAP + β_2 VTS + β_3 NLS + $\mu)$	The result shows that capital market indices have not significantly impacted on gross domestic product.

25.	**Oluwatosin .E.O, Adekanye .T and Yusuf .S.A (2013)**	Empirical analysis of the impact of capital market efficiency on economic growth and development in Nigeria (1999-2012)	Efficient Market Hypothesis	Ordinary Least Square (OLS) GDP = *f* (MCAP, AST, TLS)	The result shows that all capital market variables can jointly predict economic growth, but at an insignificant rate.
26.	**Rasaki .K, Saffiyah .S, Kamilu .R and Hakeem .B (2013)**	The impact of capital market on the Nigerian economy (1981-2008)		Ordinary least square GDP = (TMC, TVSTOPN, PCE,TVST)	The result indicates a steady rise in the macroeconomic variables considered.
27.	**Alajekwu .U.B and Achugbu .A.A (2012)**	The role of stock market development on economic growth in Nigeria: A time series analysis (1994-2008)		Ordinary least square $GDP_t = (a_o + \beta_1 MCR + \beta_2 VTS_t + \beta TOR_t + U_t$	The finding shows that stock market turnover ratio has a very strong relationship with economic growth while stock market capitalization ratio gives very weak negative correlation which is not significant for economic growth.
28.	**Chizea .J. (2012)**	Stock market development and economic growth (1980-2007).		Multivariate vector auto regressive model	The result of the study shows evidence of co-integration in the short run while in the long run stock market development impacted on economic growth.
29.	**Ihedinihu J.U. and Onwuchekwa. J.C. (2012)**	Stock market performance and economic growth in Nigeria (1984-2011).		Ordinary least square GDP = *f* (MCAP, ASI, NLC)	The result indicates that share index, market capitalization and number of listed companies are positively correlate with gross domestic product.
30.	**Kolapo .F.T and Adaramola .A.O (2012)**	The impact of Nigerian Capital Market on economic growth(1990-2010).		Johansen co-integration and Granger Causality tests. GDP = *f* (MCAP, TNI, VLT, LEGS)	Their results show that the Nigerian Capital Market and economic growth are co-integrated.
31.	**Ogbo .I.C and Oladipo, S.O (2012)**	Stock exchange and economic growth : the Nigeria experience		Error correction model and Grander Causality test Approach GDP=f (MCAP, UTT, TNI, BT)	The result shows that there is a unidirectional causality between the stock market and economic growth which runs from economic growth to stock market.
32.	**Oke .M.O and Adeusi .S.O (2012)**	Impact of capital market reforms on economic growth: The Nigerian experience		Ordinary least square and Johanson Co-integration Analysis GDP = *f* (MCAP, ASI, VTS, ND, INF)	The results show that capital reforms positively impact on Nigerian economic growth.
33.	**Akeem .U.O**	The role of capital market on economic growth	Efficient market	Ordinary least square RGDP=F(ALS, MC,	The result show that the variables studied to not have

	(2011)	(1980-2011)	hypothesis	TR, INF, EXR,TSE)	significant positive effect on economic growth
34.	**Asante,.S. Agyapong .D. and Adam .A.M. (2011)**	Bank competition, stock market, and economic growth In Ghana (1992-2009).		Granger causality and ordinary least square	The found that bank competition and stock market development granger- cause economic growth in Ghana in the long run banking competition is good for economic growth, but there is a disproportionate response of economic growth to stock market development.
35.	**Ohiomu. S. and Enabulu G.O (2011)**	The effect of stock market on economic growth in Nigeria (1989-2008)		Ordinary least square GDP=F (GPCI,CMI, GK, NI, GRV)	The result indicated a positive relationship between economic growth and all the stock market development variable studies
36.	**Olwenhy .T.O and Kimani .D (2011)**	Stock market performance and economic growth empirical evidence from Kenya using causality test approach (2001-2010).		Granger causality test based VAR model	The findings imply that the causality between economic growth and stock market run unilaterally from the NSE 20 share index to the GDP
37.	**Adenuga.A.O. (2010)**	Stock market development indicators and economic growth in Nigeria (1990: 1-2009: 4).		vector error correction model	The three stock market development indicators used for the study were found to be positively significant
38.	**Ake .B. and Ognaligui.R.W (2010)**	Financial stock market and economic growth in developing countries (2006-2010).		Granger – casualty test	Their findings suggested that the Donala stock exchange still does not affect Cameroonian economic growth
39.	**Antonios .A. (2010)**	Financial development and economic growth: A comparative study between 15 European union member states(1965-2007).		Two stage least square model	The result indicates that there is a positive relationship between financial development on economic growth taking into account the negative effects of inflation rate interest rate
40.	**Athanasios .V.and Antonios.A. (2010)**	The effect of stock and credit market development on the economic growth: and empirical analyses for Italy (1965-2007).		Vector error correction model	The results of granger causality test indicated that there is only a unidirectional relationship runs from economic growth to the stock market development variable in the model
41.	**Donwa.D. and Odia.J. (2010)**	An Empirical Analysis of the Impact of the Nigerian Capital Market on Her Social-Economic Development (1981-2008)		Ordinary least square	The study found that capital market indicators have not impacted significantly on the gross domestic product.

42.	**Hossain.S. and Kamal.M. (2010)**	Does stock market development cause economic growth? (1976-2008).		Engle-granger causality and ML tests	They found that stock market development strongly influences economic growth in Bangladesui economy but there is no causation from economic growth to stock market development
43.	**Odhiambo .N (2010)**	Finance investment growth nexus in South Africa (1980-2008).		Autoregressive distributed lag	The result shows that on whole economic growth has a formidable influence on the capital market development; the study also found out that there is a distinct unidirectional causal flow from economic growth to investment
44.	**Tachiwou .A.M (2010)**	Stock market development and economic growth: The case of West Africa Monetary Union (1995-2006).		Error correction model	He found that stock market development positively affect economic growth in West Africa monetary union both in short-run and long-run
45.	**Ujunwa .A and Salami .O.P (2010)**	Stock market development and economic growth: Evidence from Nigeria (1986- 2006).		Ordinary least square	The result shows that market capitalization and rate of turnover are positively associated with economic, while stock market liquidity is negatively correlated with economic growth
46.	**Abu .N.(2009)**	Does Stock Market Development raise Economic Growth?		Error correction model	The result indicates that the stock market development increases economic growth.
47.	**Ewah,.S.O Esang A.E and Bassey J.U.(2009)**	Appraisal of capital market efficiency on economic growth in Nigeria (1987-2008).		Ordinary least square	The result shows that market capitalization and total stock transaction have a positive sign
48.	**Ezoeh,.A. Ebele .O.and Ndi-Okereke,.O. (2009)**	Stock market development and private investment growth in Nigeria (1970-2006).		Johasen co-integration and vector error correction models	The result suggest that the stock market development and industrial production have positive effect on economic growth
49.	**Maku .O.E and Atanda .A.A (2009)**	Does macroeconomic indicators exert shock on the Nigerian Capital Market(1984-2007).		Vector error correlation model RGDP = *f* (ASI, INF, TBR, EXR, BMD)	The result suggested that Nigerian stock exchange all share index is responsible to change in exchange rate broad money supply, inflation and rate output.
50.	**Ngugi, R. Amanja .D and Maana .I (2009)**	Capital market, financial deepening and economic growth in Kenya (1985-2008).		Ordinary Least Square (OLS)	The study conclude that there is a noteworthy relationship between economic growth and capital market
51.	**Oluwatoyin .I.O and**	The impact of stock market earnings on		Co-integration and error correcting	The study revealed that while activities in the secondary

	Ocheja .E (2009).	Nigerian Per-capital income.		model.	capital market tend to grow the stock market earnings through its wealth effect that of the primary market ironically did not.
52.	**Ang .J. (2008)**	Financial development and economic growth in Malaysia (1995-2006).		ARDL approach	The result indicate that financial development has a strong linkage with economic growth through qualitative and quantitative channels
53.	**Mohammed .S.E (2008)**	Finance growth nexus in Sudan empirical assessment based on an application of the autoregressive distributed LAG (ARDL) model (1970-2004).		Autoregressive distributed Lag and Co-integration	The found that financial development variables negatively affect real gross domestic product.
54.	**Olofin .S.O and Afangidah .U.F (2008)**	Financial structure and economic growth in Nigeria, a macro econometric approach (1970-2005).		Three-stage least square technique	The study result confirmed that both stock market- based and bank-based financial development have a similar significant impact on the real domestic sector of the economic
55.	**Agrawalla.R. and Tuteja .S. (2007)**	Causality between stock market development and economic growth (04/1990-12/2002).		Vector error correction model	They found a long-run unidirectional relationship between stock market development and economic growth
56.	**Abu-Bader.S. and Abuqarn .A.S. (2006)**	Financial development on economic growth nexus: time series evidence from middle eastern and northern African countries (1960-2004).		Vector auto regression model	They find that there is no significant relationship between capital market development and economic growth
57.	**Adam J.A and Sanni.I. (2005)**	Stock market development and Nigerian economic growth.		Granger causality test and multiple regression analysis.	The authors discovered a one-way causality between GDP growth and market turnover.
58.	**Caporale,G.M Howells .P. and Soliman. .A.M (2005)**	Endogenous growth models and stock market development. Evidence from four countries (1971:1-1998:4).	Endogenous growth theory	Ordinary least square	Their results suggest that stock market development affect long-run economic growth through its impact on investment productivity.
59.	**Mosesov .A and Sahawneh .N (2005)**	Financial development and economic growth (1973-2003).		Ordinary least squares	They found no relationship between financial development and economic growth in the UAE

60.	**Oke, B. and Mokuolu, J.O (2004)**	Stock exchange development and economic growth in Nigeria (1999-2012)	Efficient market hypothesis	Ordinary least square GDP= *f* (MCAP AST, TLS)	The researchers finding it indicates that there exist positive relationship between both long run and short run stock market development and economic growth in Nigeria
61.	**Choong .C.K, Zulkornain,.Y. Siong,H.L and Khim V.S. (2003)**	Financial development and economic growth in Malaysia: the stock market perspective (1978-2000).		Vector error correction model	The result suggests that stock market development affect the long-run economic growth through its impact on investment productivity.
62.	**Osinubi .T.S and Amaghionye-odiwe .L.A (2003)**	Stock market development and long run growth in Nigeria (1980-2000).	Endogenous growth theory	Ordinary least square	There is no relationship between stock market development and economic growth.
63.	**Osinubi T.S (2002)**	Does stock market promote economic growth in Nigeria (1980-2000)		Ordinary least square GDP=f (MCR, TNI, VTR, GCF, PCE, TO DR)	The result of the study showed that there is a positive correlation between the measures of capital market and long term economic growth
64.	**Kularatne .C. (2001)**	An examination of the impact of financial deepening on long run economic growth (1954-1992).		Vector error correction model	The study found that the financial system has indirect effect on GDP via the investment rate.
65.	**Hamid.M. and Sumit.A.(1998)**	Stock market development and economic growth from Jordianian market.		Dynamic panel method	Their results indicate a positive relationship between several indicators of stock market performance and economic growth.
66.	**Nyong .M.O (1997)**	Capital market development and economic growth (1970-1994).		Multiple regression analysis.	The result shows that capital market development is negatively correlated with long-run growth in Nigeria.

Source: Author Compilation, 2018

2.4 Summary of Reviewed Literature

An ample of literature reviewed showed divergence in their positions on the nexus of capital market performance and economic growth both in Nigeria and other developing countries. It is observed that these studies employed various tools of analyses including simple to multiple OLS regression; cointegration and error correction as well as some forms of structural analyses like granger causality, impulse response and variance decomposition.

2.5 Gap in Literature

The following gaps are identified in the extant studies. These empirical gaps are some of the areas the present study aims to fill. These include:

i. Most of the extant studies on capital market did not consider the effects of new market issues and volume of trading on economic growth, while All Share Index was sparingly used. The most predominantly employed capital market variables are value traded ratio, market capitalization ratio, and turnover ratio). The standard commonly used parameters as stipulated by the World Bank include market capitalization ratio, value of stock traded andmarket turnover ratio,in addition, this study added all share index, volume of trade and market new issues to make the study more robust.

ii. Ample of studies review have not covered up till 2016. The need to single out only the market based periods that began with the structural adjustment programme of 1986 has been visited by many studies but it has not been extended upto 2016 as the present study intended to do.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

Creswell and John (2003), defines a research design as the scheme, outline or plan that is used to generate answers to research problem. It is arrangement of conditions for collection and analysis of data in a manner that is relevant to the purpose of the research. The method of study adopted in this study is the *ex-post facto* researchdesign as the events being examined have already taken place providing already established secondary data for the study. According to Esene (2009), "*Ex-postfacto* study or after the fact research is a category of research design in which the investigation starts after the fact has occurred without interference from the research". Thus, the data for the study were collected from source that the research has no ethical and statutory powers to manipulate. Hence, the data were collected and used in their original state.

3.2 Sources of Data Collection

Data are facts, observations or experiences on which an argument, theory or test is based. Data may be numerical, descriptive or visual. Data may be raw or analyzed, experimental or observational (Borgman, 2010). The secondary data used in analysis were sourced from Central Bank of Nigeria Statistical Bulletinand Nigeria Stock Exchange (NSE) factbook of various editions. All the data were on annual basis.

3.3 Description of Variables in the Models

Economic growth is the dependent variable and was proxied by Real Gross Domestic Product Growth Rate (RGDPGR) which measures the changes in real output. The explanatory variables which are the indices of capital market performance include Market Capitalization Ratio (MKTCAPRAT), All Share Index (ALSIND), Value of Stock Traded Ratio to GDP (VSTTRA), Volume of Stock Traded (VOLSTRD), Total Market New

Issues (TMNI) and Turnover Ratio (TURNR). The RGDPGR as stated above is real gross domestic product growth rate. This is the change in real gross domestic product. This adjustment transforms the money-value measure, nominal Gross Domestic Product into an index for quantity of total output measured in millions of Naira. Echekoba and Ananwude (2016) while following Chizea (2012), stated that RGDPGR captures the actual change in GDP from the previous year to the current and, thus, if the economy has grown it is positive and, if it has not, then it will be negative.Echekoba, Ezu and Egbunike (2013) and Echekoba and Ananwude (2016) used this indicator in their study.

MKTCAPRAT is market capitalization ratio:It is the share price times the number of shares outstanding in the stock exchange market. It is also known as market value. It is expected that an increase in market capitalization will aid growth in Nigeria. Okonkwo, Ananwude and Echekoba (2015), Adigwe, Nwanna and Ananwude (2015) and Chizea (2012) have applied this variable to measure capital market performance.

ALSIND is all share index:This is a total market (broad-base) index, reflecting a total picture of the behaviour of the common shares quoted on the Nigerian Stock Exchange. It is calculated on a daily basis, showing how the prices have moved. It is expected that an increase in all share index in the Nigeria Stock Exchange Market will promote growth in Nigeria economy.Atoyebi, Ishola, Kadiri, Adekunjo and Ogundeji (2013), Olwenhy and Kimani (2012) and Olawoye (2011) have utilized this index of capital market performance in their study.

VSTTRA is value of stock traded ratio:This is the total value of shares traded during the period deflected. This indicator complements the market capitalization ratio by showing whether market size is matched by trading. It is expected that an increase in value of transactions will spur economic growth in an economy. This indicator was used in the works ofEchekoba and Ananwude (2016), Adigwe, Nwanna and Ananwude (2015) and Enisan and Olufisayo (2009).

VOLSTRD is volume of stock traded:This refers to the volume of stocks traded over a specified period of time on the floor of the Nigerian Stock Exchange. A higher volume suggests more trading is taking place on the exchange. This variable was employed in the works of Obubu, Konwe, Nwabenu, Omokri and Chijioke(2016), Owolabi and Ajayi(2013), Oke and Adeusi (2012), and Ewah, Esang and Bassey (2009).

TMNI is total market new issues:These are securities that has been registered, issued and are being sold on a market to the public for the first time. They most often called primary shares or new offerings. Researchers such as Briggs (2015), Afolabi (2015), Yadirichukwu and Chigbu (2014), Pat and James (2010) and Osinubi and Amaghionyeodiwe (2003) applied this index in their work.

TURNR is turnover ratio:The turnover ratio is a measure of capital market liquidity surrogated by ratio of value of stock traded to market capitalization. A higher turnover ratio reflects the ability of investors to easily divest their assets (Abbas, Pei & Rui,2016; Aigbov andUwubamwen, 2014 and Alajekwu& Achugbu, 2012).

3.4 Model Specification

The model of analysis follows a linear combination of explanatory time series variables. This research work adopted and modified the model of Ogunleye and Adeyemi(2015)for a similar study in Nigeria. Ogunleye and Adeyemi(2015) expressed economic growth as a function of capital market performance . The Ogunleye and Adeyemi(2015)'s model is stated as:GDP = + α1 SMC + α2 TVT + α3 TR + α4 GCF +α5 MS2 + Ut 3.1

Where GDP = Gross Domestic Product,

SMC = Stock Market Capitalization

TVT = Total Value Traded,

TR = Turnover ratio

GCF = Gross capital formation,

MS2 = Broad money supply.

= error term,

$\alpha 0$ = intercept

$\alpha 5$ = parameters or coefficient estimates

In this study, the above model is modified to capture the relationship between economic growth and:- market capitalization ratio, all share index, value of stock traded ratio, volume of stock traded, total market new issues and turnover ratio. The modified model is stated as follows:

RGDPR = f(MKTCAPRAT, ALSIND, VSTTRA, VOLSTRD,TMNI, TURNR)3.2

This translates to: RGDPGRt = β_0+β1MKTCAPRATt +β2ALSINDt + β3VSTTRAt + β4VOLSTRDt+ β5TMNIt+ β6TURNRt +ε_t 3.3

Where:

The variables are as explained under variables description above,

RGDPGRt = the gross domestic product real growth rate in year t

β1 to β6 are beta coefficients of the explanatory variables

β0 = the constant/intercept of the model.

ε_t = error term

Toavoid the probable relationship of outlier which may cast a dent on the regression output, thevariables with large absolute values were transformed to log form as follows:

RGDPGRt = β_0+β1MKTCAPRATt +β2logALSINDt +β3logTMNIt+ β4VSTTRAt + β5TURNRt+ β6logVOLSTRDt +ε_t ----------3.4

2.5 Methods of Data Analysis

In the course of carrying out the data analysis in this study the following procedures and methods are employed:- Unit Root Test - to ascertain stationarity of the data to avoid the incidence of spurious regression. This was done using the Augmented Dickey-Fuller and Phillips Perron approaches at level(trend and intercept) and first differencing(also

trend andintercept) respectively. After confirming stationarityof all the data and the order integration,a co-intgration test was carried out for evidence any long run relationship among the variables utilizing the Johansen approach. Decision to adopt vector error correction model or vector auto-regressive model is based on the outcomes of the co-integration and unit root tests. The statistical package employed for the analysis is E-views 9.

3.6 A Priori Expectation

The a priori expectation shows the relationship between and or among the dependent andexplanatory variables. From the theory on which this research is anchored: supply leading hypothesis, it is expected that market capitalization ratio, value of stock traded ratio, all share index, volume of transaction, total market new issues and turnover ratio would positively relate with economic growth represented by real gross domestic product growth rate. The expected signs of the explanatory variables in line with the supply leading hypothesis are summarized in Table 3.1.

Table 3.1: A Priori Expectation

Symbol	Independent Variable	Expected Signs
MKTCAPR	Market Capitalization Ratio	+
ALSIND	All Share Index	+
VSTTR	Value of Stock Traded Ratio	+
VOLSTR	Volumeof Stock Traded	+
TMNI	Total Market New Issues	+
TURNR	Turnover Ratio	+

Source: Author's Compilation based on Supply Leading Hypothesis Assumptions

3.7 Decision Rule for the Interpretation of Model Estimations

The usually associated p-value of t-value/statistic is employed as the criterion at 5% significance level. However, if the analysis requires the use of vector error correction model, the interpretation will be based on the values of the coefficient and standard error of thevariables and the t-values. This is because under vectorerror correction model,E-views does not generate the p-value for t-statistic which is derived from coefficient

andstandard error. The significance of the t-value is decided based on the values of the coefficient and standard error. It appears reasonable to expect that for t-value to be significant, the coefficient may cover at least twice the value of the standard error. Therefore, it is reasonable to again to suggest that a coefficient which is less than the standard error will produce an insignificant t-value.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

The data that were used in the analysis were presented in Tables 1 and 2. The data were sourced from Central Bank of Nigeria statistical bulletins and Nigeria Stock Exchange factbook of various issues. Table 1 summarized the data for real gross domestic product and growth rate, market capitalization ratio and all share index from 1986 to 2016 while Table 2 presented the data for value of stock traded ratio, volume of stock traded, total new issues and turnover ratio.

Table 4. 1: Real Gross Domestic Product, Market Capitalization Ratio and All Share Index from 1986-2016

Year	Real Gross Domestic Product ₦'Million	Real Gross Domestic Product Growth (%)	Market Capitalization Ratio (%)	All Share Index (Points)
1986	15,237.99	1.86	0.03	163.80
1987	15,263.93	0.17	0.03	190.90
1988	16,215.37	5.87	0.05	233.60
1989	17,294.68	6.24	0.03	325.30
1990	19,305.63	10.42	0.01	513.80
1991	19,199.06	-0.56	0.01	783.50
1992	19,620.19	2.15	0.03	1,108.00
1993	19,927.99	1.54	0.04	1,543.80
1994	19,979.12	0.26	0.05	2,205.00
1995	20,353.20	1.84	0.09	5,092.00
1996	21,177.92	3.89	0.32	6,992.00
1997	21,789.10	2.80	0.47	6,440.50
1998	22,332.87	2.43	0.61	5,672.70
1999	22,449.41	0.52	0.63	5,266.40
2000	23,688.28	5.23	1.19	8,111.00
2001	25,267.54	6.25	2.28	10,963.10
2002	28,957.71	12.74	9.40	12,137.70
2003	31,709.45	8.68	13.10	20,128.90
2004	35,020.55	9.45	16.50	23,844.50
2005	37,474.95	6.55	19.50	24,085.80
2006	39,995.50	6.30	28.10	33,358.30
2007	42,922.41	6.82	56.00	57,990.22
2008	46,012.52	6.72	39.70	31,450.78
2009	49,856.10	7.71	28.50	20,827.20
2010	54,612.26	**8.71**	33.60	24,770.52
2011	57,511.04	5.04	16.10	20,730.63
2012	59,929.89	4.04	20.40	28,078.81
2013	63,218.72	5.20	23.50	41,329.19
2014	67,152.79	5.86	18.70	34,657.15
2015	69,023.93	2.71	17.90	28,642.25
2016	67,984.20	-1.52	17.00	26,874.62

Source: Central Bank of Nigeria and Nigerian Stock Exchange factbook 1986 to 2016

Table 4.2: Value of Stock Traded Ratio, Volume of Stock Traded, Total New Issues and Turnover Ratio from 1986-2016

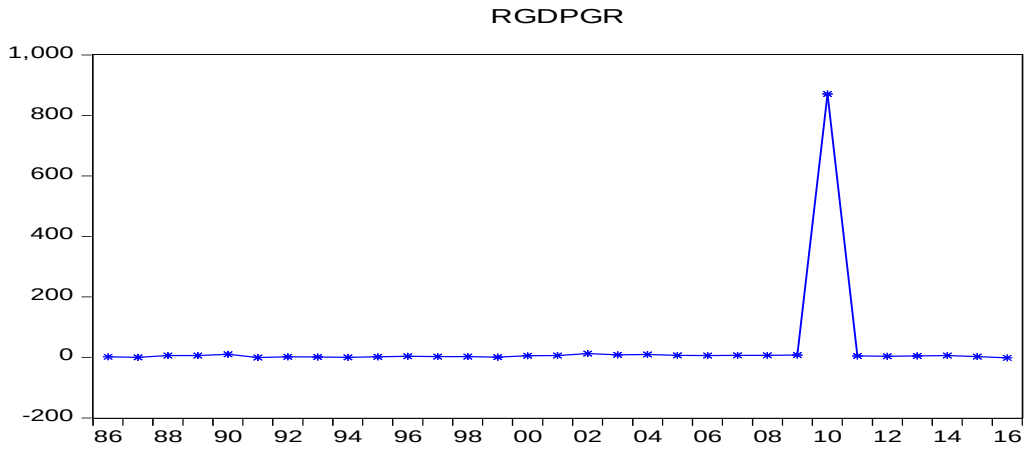
Year	Value of Stock Traded Ratio (%)	Volume of Stock Traded₦'Million	Total New Issue ₦'Million	Turnover Ratio (%)
1986	0.45	495.99	833.0	7.32
1987	0.54	380.50	450.7	4.66
1988	0.62	260.00	4,000.0	8.50
1989	0.74	675.00	1,629.9	4.77
1990	0.88	248.00	9,964.5	1.38
1991	1.20	177.00	1,870.0	1.05
1992	1.59	262.00	3,306.3	1.58
1993	2.38	473.00	2,636.9	1.69
1994	3.32	524.00	2,161.7	1.49
1995	8.86	397.00	4,425.6	1.02
1996	13.50	882.00	5,858.2	2.44
1997	12.94	1,300.0	10,875.7	3.66
1998	11.76	2,100.0	15,018.1	5.17
1999	13.36	3,900.0	12,038.5	4.69
2000	19.94	5,000.0	17,207.8	5.96
2001	26.22	5,900.0	37,198.8	8.71
2002	0.70	6,600.0	61,284.0	7.77
2003	1.20	13,200.0	180,079.9	8.86
2004	1.90	19,200.0	104,418.4	10.69
2005	1.80	26,700.0	552,782.0	9.07
2006	2.60	36,500.0	707,400.0	9.18
2007	8.90	138,100.0	1,935,080.0	8.16
2008	10.00	193,140.0	1,509,230.0	17.56
2009	10.00	102,900.0	1,724,214.0	9.75
2010	2.70	93,300.0	2,440,000.0	8.07
2011	1.00	90,700.0	2,200,000.0	6.22
2012	1.10	104,200.0	1,062,400.0	5.47
2013	2.90	267,300.0	1,742,200.0	12.32
2014	1.50	108,470.0	583,980.00	7.91
2015	1.00	92,900.0	77,490.15	5.60
2016	1.00	95,814.79	14,061.76	6.22

Source: Nigerian Stock Exchange factbook 1986 to 2016

Real Gross Domestic Product Growth Rate

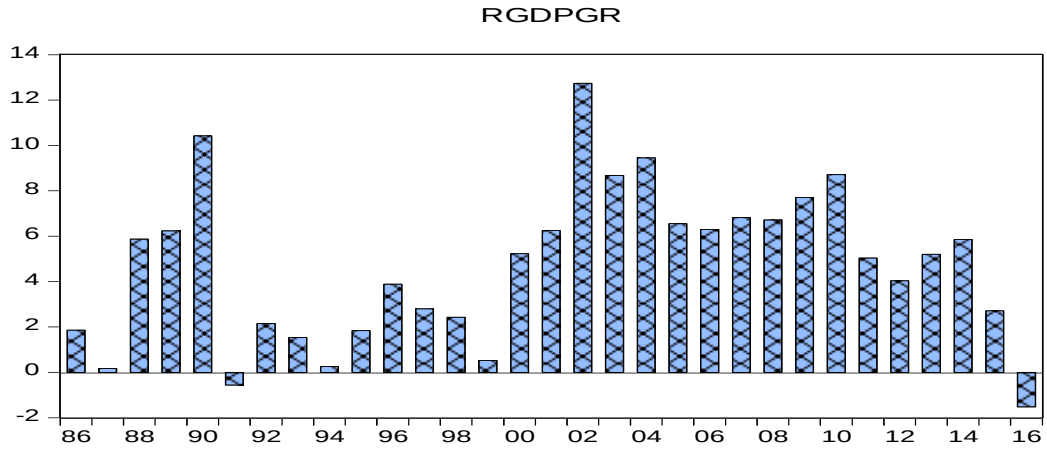
Real gross domestic product growth rate of Nigeria was 1.86 in 1986, but rose by 78.65% by the end of 2010 to settle at 8.71. From 2005 to 2008, there was a marginal rise in real gross domestic product growth rate from 6.55 in 2005 to 6.72 in 2008 before it declined to 5.04 in 2011. From 2012 to 2016, as shown in Table 1, Fig. 1 and 2, real gross domestic product growth rate has been depreciating. In 2016, the economy witnessed a negative growth as the real gross domestic product growth rate was -1.52 due to recession that engulfed the economy at that period.

Fig. 1: Graphical Trend in Real Gross Domestic Product Growth Rate 1986 to 2016



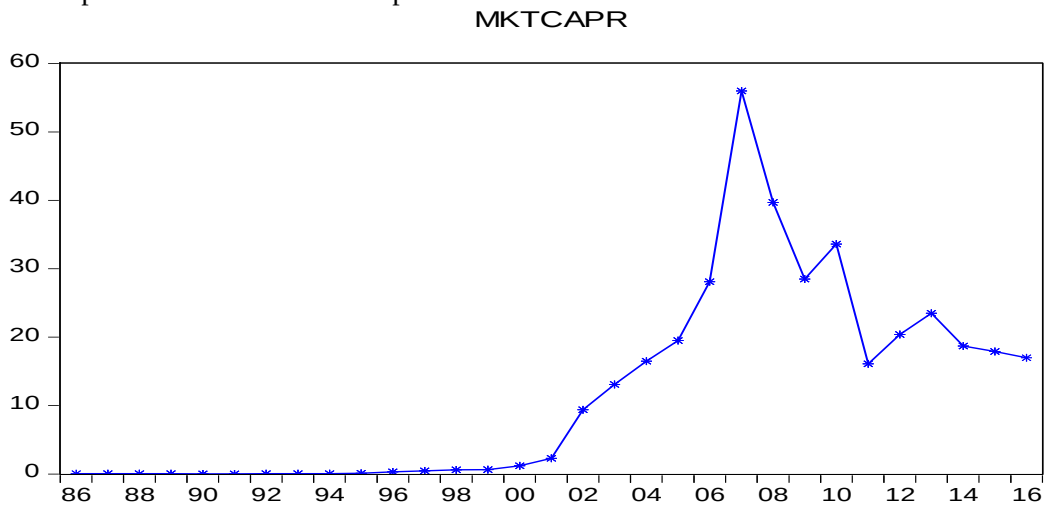
Source:Central Bank of Nigeria Annual Report, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 2: Bar Chart Trend in Real Gross Domestic Product Growth Rate 1986 to 2016



Source: Central Bank of Nigeria Annual Report, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 3: Graphical Trend in Market Capitalization Ratio 1986 to 2016

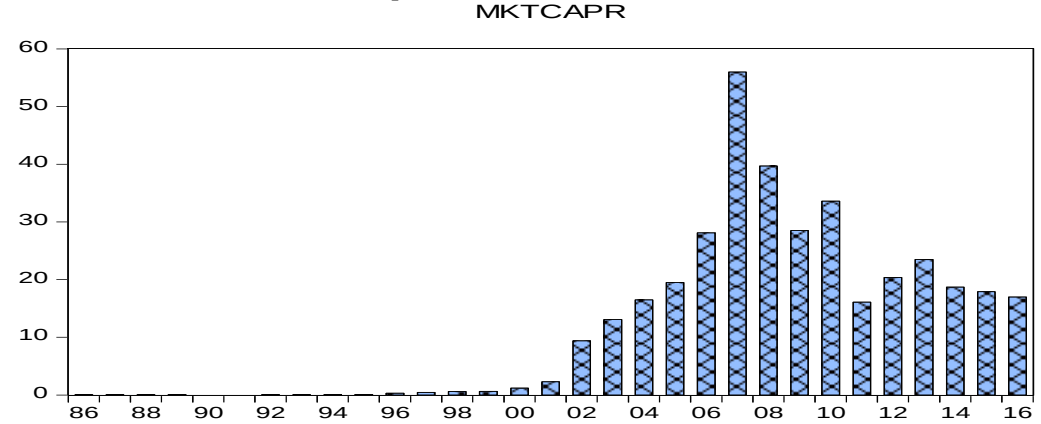


Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Market Capitalization Ratio

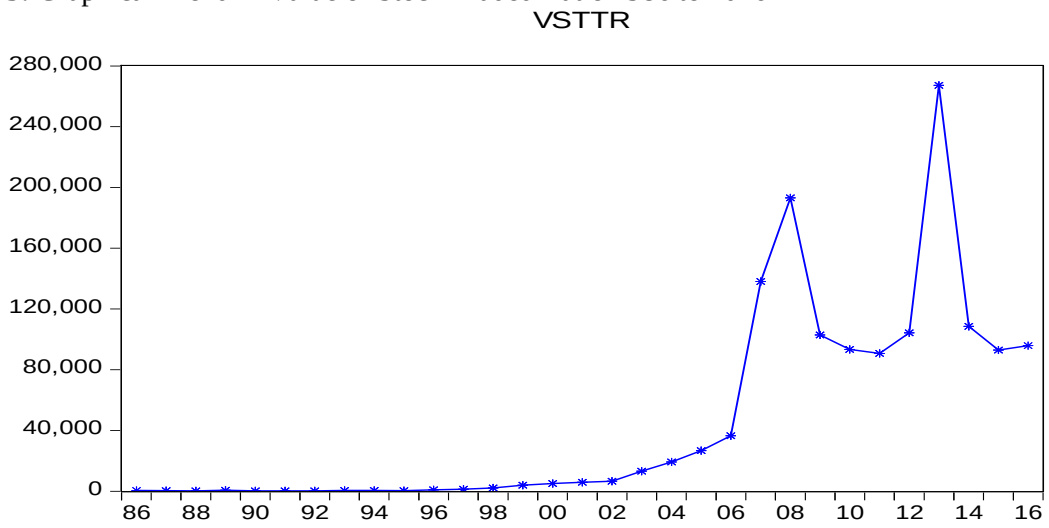
Market capitalization ratio in 2006 was 28.10, a rise of over 9,989.32% from 0.03% in 1986. In 2012, market capitalization ratio increased to 20.40%. As can be seen from Table 2, Fig. 3 and Fig. 4, between 2000 and 2007, market capitalization ratio rose tremendously, however, it sharply declined to 39.70% in 2008 from 56.10% in 2007. In 2010, market capitalization ratio was 33.60% compared to 28.50% in 2009. It fluctuated from 23.50% in 2013 to 17.0% in 2016.

Fig. 4: Bar Chart Trend in Market Capitalization Ratio 1986 to 2016



Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 5: Graphical Trend in Value of Stock Traded Ratio 1986 to 2016

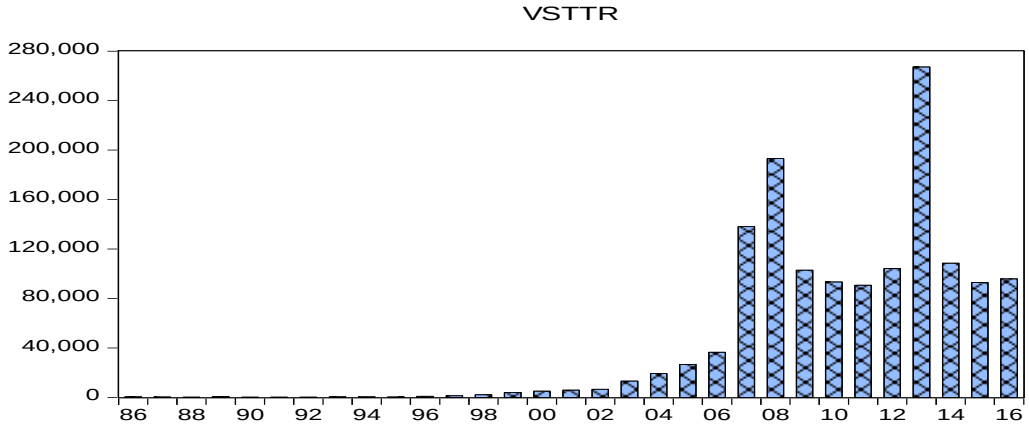


Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Value of Stock Traded Ratio

The value of stock traded ratio was 0.45% in 1986, which had risen by 95.50% by 2010 to settle at 10.0%. The value of stock traded ratio greatly fluctuated from 2010 to 2016, declining to just 1.0% in 2016 compared to 10.0% in 2009. From 2001 to 2016, as shown in Table 2, Fig. 5 and 6, value of stock traded ratio magnificently depreciated from 26.22% in 2001 to 1.0% in 2016.

Fig. 6: Bar Chart Trend in Value of Stock Traded Ratio 1986 to 2016



Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Turnover Ratio

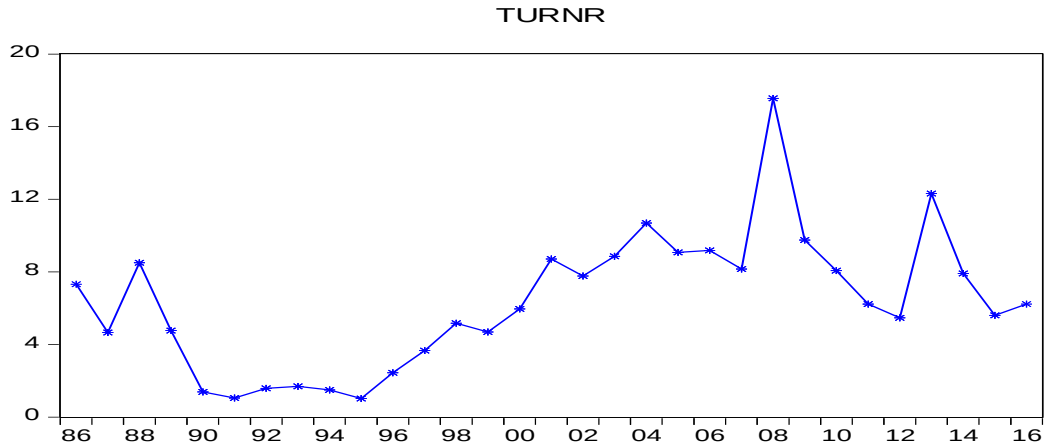
As can be seen in Table 2, Fig.7 and Fig. 8, from 1986 to 2016, there has been up and down in turnover ratio of the Nigeria Stock Exchange. The turnover ratio was 7.32% in

1986 but marginally depreciated to 6.22% in 2016. 1999 to 2004 reveals a steady upsurge in turnover ratio from 4.69% in 199 to 10.69% in 2004. The turnover was hit by the global financial crisis of 2007 to 2009 as it surged to 9.75% in 2009 as against 17.56% in 2008.

Total Market New Issues

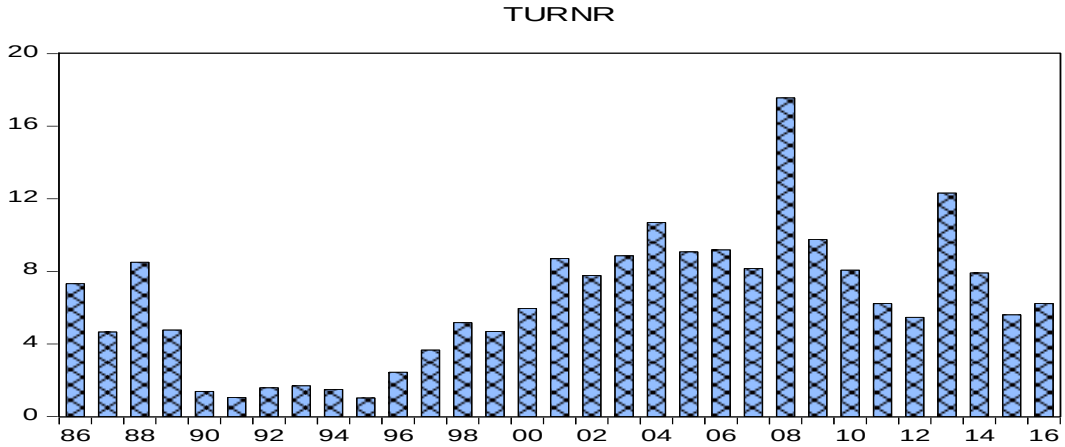
Table 2, Fig. 9 and Fig. 10 show the trend in total market new issue during the period 1986 and 2016. Total market new issues grew from ₦833 million in 1986 to ₦14, 061.76 million in 2016 indicating an appreciation of over 94.07% within a period of thirty one years. From 2014 to 2016, the total market new issue declined considerably from ₦583, 980 billion in 2014 to ₦14, 061.76 billion in 2016.

Fig.7: Graphical Trend in Turnover Ratio 1986 to 2016



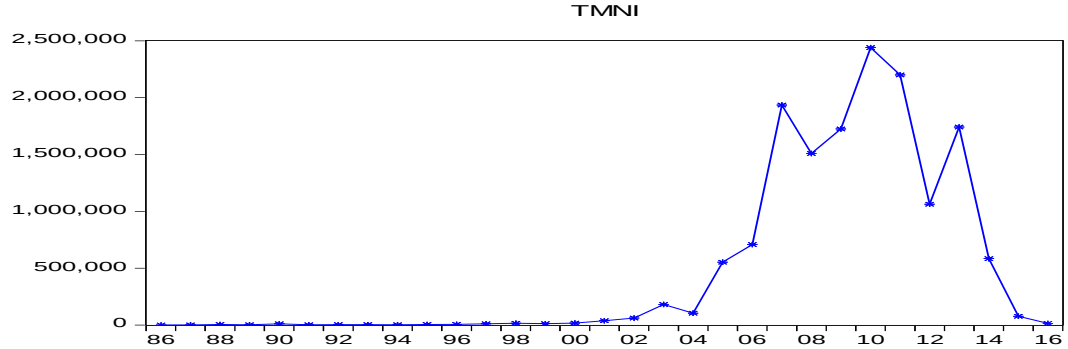
Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 8: Bar Chart Trend in Turnover Ratio 1986 to 2016



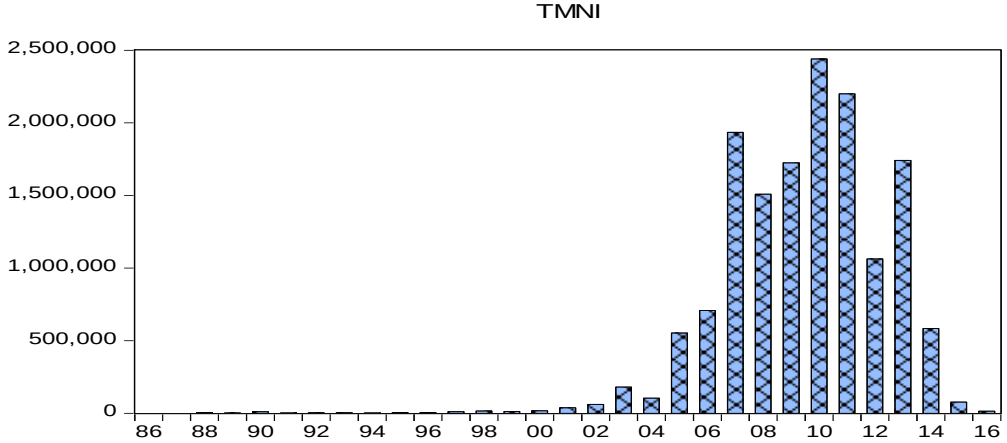
Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 9: Graphical Trend in Total Market New Issues 1986 to 2016



Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 10: Bar Chart Trend in Total Market New Issues 1986 to 2016

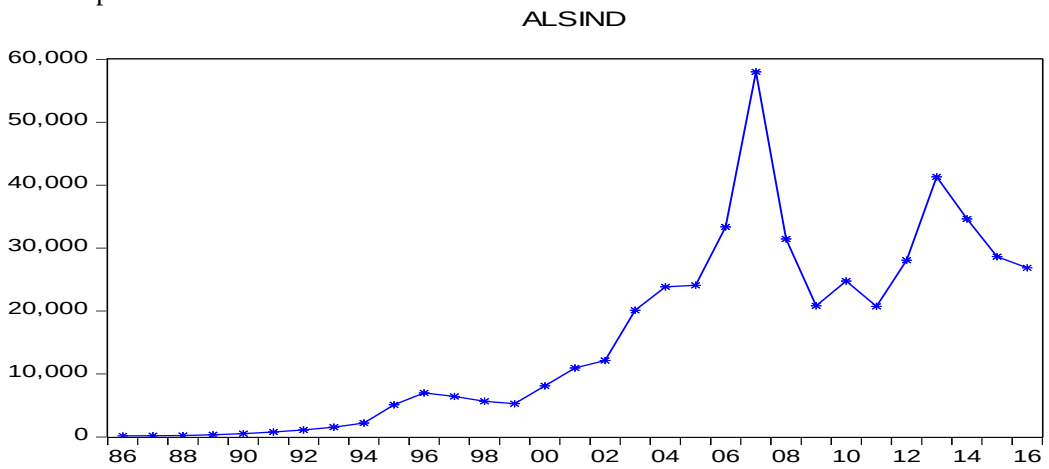


Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

All Share Index

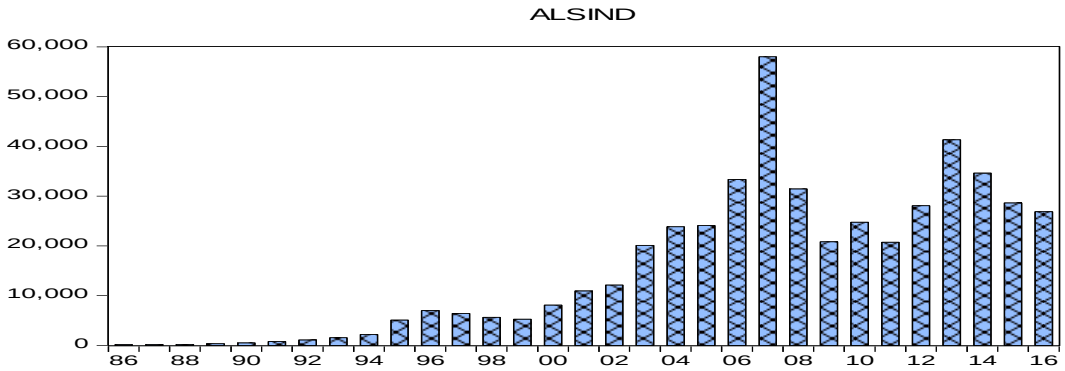
The all share index has increased tremendously over the years. From 163.80 points in 1986, it rose to reach 6,440.50 points at the end of 1997 then continue to appreciate, closing at 8,111.00 points in 2000. Between 2000 and 2016 all share index rose from 8,111.00 points to 26,874.62 points. Fig. 11 and 12 illustrate the trend in all share index over the period reviewed by this study.

Fig. 11: Graphical Trend in All Share Index 1986 to 2016



Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 12: Bar Chart Trend in All Share Index 1986 to 2016

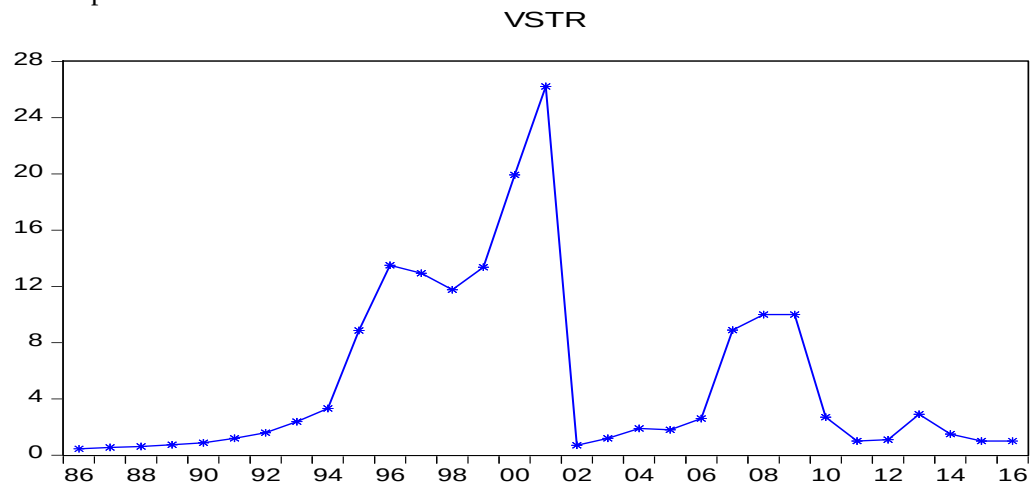


Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Volume of Stock Traded

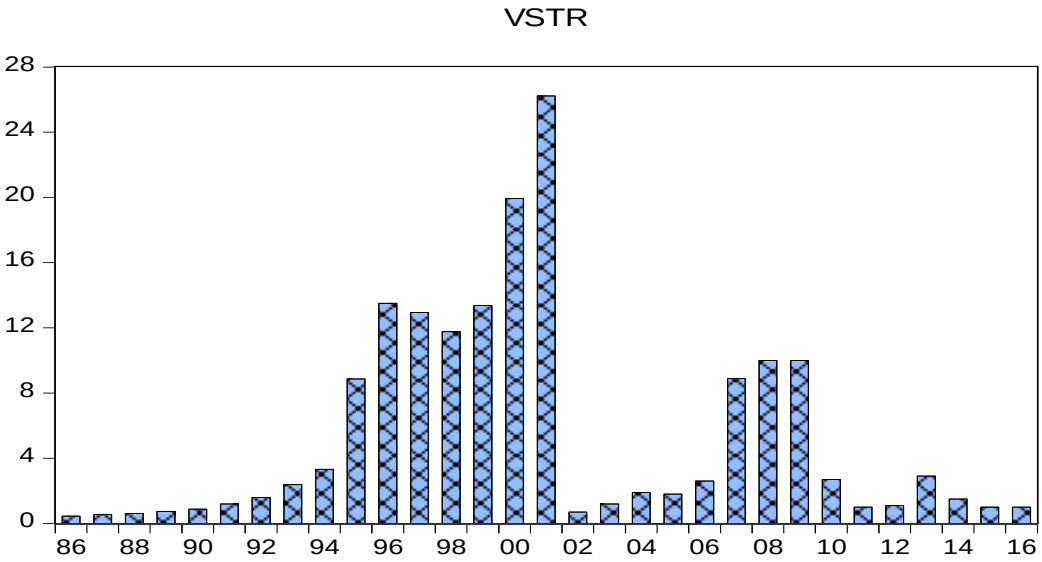
In 1986 the volume of stock traded was ₦495.99 billion but it rose to ₦93, 300 billion in 2010, envisaging over 99.47% appreciation volume of stock traded. The volume of stock traded significantly increased to ₦193, 140 billion in 2008 from ₦6, 600 billion in 2002. With inferences from Table 2, Fig. 13 and 14, volume of stock traded rose from ₦5, 900 billion in 2001 to ₦95, 814.79 billion in 2016.

Fig. 13: Graphical Trend in Volume of Stock Traded 1986 to 2016



Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data from e-views 9.0 version.

Fig. 14: Bar Chart Trend in Volume of Stock Traded 1986 to 2016



Source: Nigerian Stock Exchange factbook, 1986 – 2016; and output data fromE-views 9.0 version.

Table 4.3: Log Version of All the Raw Data

Year	RGDPGR	MKTCAPR	ALSIND	TMNI	VSTTR	TURNR	VOLSTR
1986	0.620576	-3.506558	5.098646	6.725034	-0.798508	1.990610	6.206556
1987	-1.771957	-3.506558	5.251750	6.110802	-0.616186	1.539015	5.941486
1988	1.769855	-2.995732	5.453610	8.294050	-0.478036	2.140066	5.560682
1989	1.830980	-3.506558	5.784748	7.396274	-0.301105	1.562346	6.514713
1990	2.343727	-4.605170	6.241834	9.206784	-0.127833	0.322083	5.513429
1991	NA	-4.605170	6.663771	7.533694	0.182322	0.048790	5.176150
1992	0.765468	-3.506558	7.010312	8.103585	0.463734	0.457425	5.568345
1993	0.431782	-3.218876	7.342002	7.877359	0.867100	0.524729	6.159095
1994	-1.347074	-2.995732	7.698483	7.678650	1.199965	0.398776	6.261492
1995	0.609766	-2.407946	8.535426	8.395161	2.181547	0.019803	5.983936
1996	1.358409	-1.139434	8.852522	8.675598	2.602690	0.891998	6.782192
1997	1.029619	-0.755023	8.770361	9.294286	2.560323	1.297463	7.170120
1998	0.887891	-0.494296	8.643420	9.617011	2.464704	1.642873	7.649693
1999	-0.653926	-0.462035	8.569102	9.395865	2.592265	1.545433	8.268732

2000	1.654411	0.173953	9.000976	9.753118	2.992728	1.785070	8.517193
2001	1.832581	0.824175	9.302290	10.52403	3.266522	2.164472	8.682708
2002	2.544747	2.240710	9.404072	11.02327	-0.356675	2.050270	8.794825
2003	2.161022	2.572612	9.909912	12.10116	0.182322	2.181547	9.487972
2004	2.246015	2.803360	10.07931	11.55616	0.641854	2.369309	9.862666
2005	1.879465	2.970414	10.08938	13.22272	0.587787	2.204972	10.19242
2006	1.840550	3.335770	10.41506	13.46935	0.955511	2.217027	10.50507
2007	1.919859	4.025352	10.96803	14.47566	2.186051	2.099244	11.83573
2008	1.905088	3.681351	10.35618	14.22711	2.302585	2.865624	12.17117
2009	2.042518	3.349904	9.944015	14.36028	2.302585	2.277267	11.54151
2010	6.769642	3.514526	10.11741	14.70751	0.993252	2.088153	11.44358
2011	1.617406	2.778819	9.939368	14.60397	0.000000	1.827770	11.41531
2012	1.396245	3.015535	10.24277	13.87604	0.095310	1.699279	11.55407
2013	1.648659	3.157000	10.62932	14.37066	1.064711	2.511224	12.49613
2014	1.768150	2.928524	10.45326	13.27762	0.405465	2.068128	11.59423
2015	0.996949	2.884801	10.26264	11.25791	0.000000	1.722767	11.43928
2016	NA	2.833213	10.19894	9.551214	0.000000	1.827770	11.47017

Source: EViews 9 Output, 2018

From Table 4.3, it could be noticed that the natural log version for RGDPGR for 1991 and 2016 are not provided by the E-views package. The reason for this may not be unconnected with the negative nature of the economic growth recorded in the two years.This development gives rise to "insufficient observation" error and hinders further analysis on the data. In view of this reality, the set of data have been modified and final data for the analysis given on Table 4.4 below.

Table 4.4: Final Data For Analysis

RGDPGR	MKTCAPRAT	ALSIND(Log)	TMNI(Log)	VSTTRA	TURNRVOLSTRD(Log)	
1.86	0.03	5.098646	6.725034	0.45	7.32	6.206556
0.17	0.03	5.251750	6.110802	0.54	4.66	5.941486
5.87	0.05	5.453610	8.294050	0.62	8.50	5.560682
6.24	0.03	5.784748	7.396274	0.74	4.77	6.514713
10.42	0.01	6.241834	9.206784	0.88	1.38	5.513429
-0.56	0.01	6.663771	7.533694	1.20	1.05	5.176150
2.15	0.03	7.010312	8.103585	1.59	1.58	5.568345
1.54	0.04	7.342002	7.877359	2.38	1.69	6.159095
0.26	0.05	7.698483	7.678650	3.32	1.49	6.261492
1.84	0.09	8.535426	8.395161	8.86	1.02	5.983936
3.89	0.32	8.852522	8.675598	13.50	2.44	6.782192
2.80	0.47	8.770361	9.294286	12.94	3.66	7.170120
2.43	0.61	8.643420	9.617011	11.76	5.17	7.649693
0.52	0.63	8.569102	9.395865	13.36	4.69	8.268732
5.23	1.19	9.000976	9.753118	19.94	5.96	8.517193
6.25	2.28	9.302290	10.52403	26.22	8.71	8.682708
12.74	9.40	9.404072	11.02327	0.70	7.77	8.794825
8.68	13.10	9.909912	12.10116	1.20	8.86	9.487972
9.45	16.50	10.07931	11.55616	1.90	10.69	9.862666
6.55	19.50	10.08938	13.22272	1.80	9.07	10.19242
6.30	28.10	10.41506	13.46935	2.60	9.18	10.50507
6.82	56.00	10.96803	14.47566	8.90	8.16	11.83573
6.72	39.70	10.35618	14.22711	10.00	17.56	12.17117

7.71	28.50	9.944015	14.36028	10.00	9.75	11.54151
8.71	33.60	10.11741	14.70751	2.70	8.07	11.44358
5.04	16.10	9.939368	14.60397	1.00	6.22	11.41531
4.04	20.40	10.24277	13.87604	1.10	5.47	11.55407
5.20	23.50	10.62932	14.37066	2.90	12.32	12.49613
5.86	18.70	10.45326	13.27762	1.50	7.91	11.59423
2.71	17.90	10.26264	11.25791	1.00	5.60	11.43928
-1.52	17.00	10.19894	9.551214	1.00	6.22	11.47017

Source :*Central Bank of Nigeria and Nigerian Stock Exchange factbook 1986 to 2016*&EViews 9 Output, 2018

Table 4.5 Descriptive Statistics of the Variables of the Study

Date: 09/04/18
Time: 22:53
Sample: 1986 2016

	RGDPGR	MKTCAPRAT	ALSIND	TMNI	VSTTRA	TURNR	VOLSTRD
Mean	4.802000	12.12800	8.871009	10.79790	5.538333	6.320667	8.851803
Median	5.215000	5.840000	9.353181	10.13857	2.140000	6.090000	8.738767
Maximum	12.74000	56.00000	10.96803	14.70751	26.22000	17.56000	12.49613
Minimum	-1.520000	0.010000	5.251750	6.110802	0.540000	1.020000	5.176150
Std. Dev.	3.453278	14.54739	1.682049	2.683421	6.563854	3.792434	2.487781
Skewness	0.139290	1.167402	-0.846315	0.127577	1.522744	0.665898	-0.050816
Kurtosis	2.501841	3.942401	2.479277	1.629864	4.719612	3.789377	1.459301
Jarque-Bera	0.407211	7.924283	3.920186	2.427972	15.29007	2.995994	2.980104
Probability	0.815784	0.019022	0.140845	0.297011	0.000478	0.223578	0.225361
Sum	144.0600	363.8400	266.1303	323.9369	166.1500	189.6200	265.5541
Sum Sq. Dev.	345.8287	6137.173	82.04933	208.8217	1249.441	417.0942	179.4826
Observations	30	30	30	30	30	30	30

Source E-views Output, 2018

4.2 Variables Descriptive Properties

Table 4.5 reveals the descriptive properties of the variables. The descriptive properties of the variables were highlighted based on the mean, median, maximum, minimum, standard deviation, skewness, kurtosis, Jarque-Bera, p-value and number of observation. From Table 3, the mean of variables are 4.802, 12.128, 8.871, 10.797, 5.538, 6.320 and 8.851for RGDPGR, MKTCAPRAT,ALSIND, TMNI, VSTTRA, TURNR, and VOLSTRD while their respective median is observed to be 5.215,5.840, 9.353, 10.138, 2.14, 6.090, 8.738. The maximum and minimum values are 12.740 & -1.520, 56.000 & 0.0100, 10.968 &5.251, 14.707 & 6.110, 26.220 & 0.540, 17.560 & 1.020, 12.496 & 5.176 also for RGDPGR,

MKTCAPRAT,ALSIND, TMNI, VSTTRA, TURNR, and VOLSTRD respectively**.** All the variables are positively skewed toward normality.

The kurtosis statistic suggests that all the variables are leptokurtic in nature except for RGDPGR, ALSIND, TMNI and VOLSTRD whose kurtosis values are less than the benchmark of 3.0.

4.3 Diagnostic Tests

4.3.1 Stationarity Test Result

The variables were subjected to stationarity test to ensure the data are not encumbered by the stationarity defect that affects most time series which lead to bias inferences of regression results. Unit root test was checked using Augmented Dickey-Fuller (ADF) and Phillips Perron (PP). The ADF and PP were tested in level and at first difference-trend and intercept respectively . The tests show that all the variables are stationary at first differencing (trend and intercept) and are summarized in Tables…

Table 4.6: ADF Test Result at Level: Trendand Intercept(Full Details in Appendix 1)

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remarks
RGDPGR	-2.552321 (0.30)	-4.296729	-3.568379	Not Stationary
MKTCAPR	-1.992442 (0.58)	-4.296729	-3.568379	Not Stationary
VSTTR	-3.139968 (0.12)	-4.416345	-3.622033	Not Stationary
TURNR	-3.179868 (0.10)	-4.296729	-3.568379	Not Stationary
TMNI	-4.419126 (0.00)*	-4.356068	-3.595026	Stationary
ALSIND	-2.934454 (0.16)	-4.296729	-3.568379	Not Stationary
VSTR	-2.429792 (0.35)	-4.296729	-3.568379	Not Stationary

Source: Output Data via E-views 9.0
Note: The optimal lag for ADF test is selected based on the Akaike Info Criteria (AIC), p-values are in parentheses where (*) and (**) denotes significance at 1% and 5% respectivel

Table 4.7: ADF Test Result at First Difference: Trend and Intercept

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remarks
RGDPGR	-4.029045 (0.01)*	-4.339330	-3.587527	Stationary
MKTCAPR	-5.679460 (0.00)*	-4.309824	-3.574244	Stationary
VSTTR	-9.179407 (0.00)*	-3.724070	-2.986225	Stationary
TURNR	-7.377191 (0.00)*	-4.309824	-3.574244	Stationary
TMNI	-3.329699 (0.05)**	-4.339330	-3.587527	Stationary
ALSIND	-5.193517 (0.00)*	-4.323979	-3.580623	Stationary
VSTR	-5.583199 (0.00)*	-4.309824	-3.574244	Stationary

Source: Output Data via E-views 9.0
Note: The optimal lag for ADF test is selected based on the Akaike Info Criteria (AIC), p-values are in parentheses where (*) and (**) denotes significance at 1% and 5% respectively.

Table 4.8 : Phillips-Perron Test Result at Level: Trend and Intercept

Variables	PPTest Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remarks
RGDPGR	-2.552321 (0.30)	-4.296729	-3.568379	Not Stationary
MKTCAPR	-1.992442 (0.58)	-4.296729	-3.568379	Not Stationary
VSTTR	-3.139968 (0.12)	-4.416345	-3.622033	Not Stationary
TURNR	-3.179868 (0.10)	-4.296729	-3.568379	Not Stationary
TMNI	-4.419126 (0.00)*	-4.356068	-3.595026	Stationary
ALSIND	-2.934454 (0.16)	-4.296729	-3.568379	Not Stationary
VSTR	-2.429792 (0.35)	-4.296729	-3.568379	Not Stationary

Source: Output Data via E-views 9.0
Note: In determining the truncation lag for PP test, the spectral estimation method selected is Bartlett kernel and Newey-West method for Bandwidth, p-values are in parentheses where (*) and (**) denotes significance at 1% and 5% respectively.

Table 4.9: The Phillips-PerronsTest Result at First Difference: Trend and Intercept

Variables	PP Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remarks
RGDPGR	-4.029045 (0.01)*	-4.339330	-3.587527	Stationary
MKTCAPR	-5.679460 (0.00)*	-4.309824	-3.574244	Stationary
VSTTR	-9.414586 (0.00)*	-2.660720	-1.955020	Stationary
TURNR	-7.377191 (0.00)*	-4.309824	-3.574244	Stationary
TMNI	-4.329699 (0.05)**	-3.752946	-2.998064	Stationary
ALSIND	-5.193517 (0.00)*	-4.323979	-3.580623	Stationary
VSTR	-5.583199 (0.00)*	-4.309824	-3.574244	Stationary

Source: Output Data via E-views 9.0
Note: In determining the truncation lag for PP test, the spectral estimation method selected is Bartlett kernel and Newey-West method for Bandwidth, p-values are in parentheses where (*) and (**) denotes significance at 1% and 5% respectively.

4.3.2Multicollinearity Test

Correlation indicates the degree of association between variables. It assesses the extent and strength of the association between two variables. The result as presented in the table 4.2.7 showed that most of the variables employed are highly correlated with each other.

However,because the directions of the correlations are both negative and positive, the threat of influence ofmulticollinearity is not considered significant as the effects tend to cancel out.

Table 4.9 Multicollinearity Test

	RGDPGR	MKTCAPR	ALSIND	TMNI	TURNR	VSTR	VSTTR
RGDPGR	1.000000	0.287738	0.120189	0.475340	0.095974	0.135319	-0.076465
MKTCAPRAT	0.287738	1.000000	0.919484	0.803222	0.668909	0.765015	-0.085627
ALSIND	0.120189	0.919484	1.000000	0.683190	0.630904	0.806111	-0.064165
TMNI	0.475340	0.803222	0.683190	1.000000	0.518733	0.757485	-0.066047
TURNR	0.095974	0.668909	0.630904	0.518733	1.000000	0.639221	0.062916
VOLSTRD	0.135319	0.765015	0.806111	0.757485	0.639221	1.000000	-0.095350
VSTTRA	-0.076465	-0.085627	-0.064165	-0.066047	0.062916	-0.095350	1.000000

Source: E-views 9.0 Output, 2018

4.3.3 Co-integration Test

The co-integration test is used in the determination of the long-run relationship that exists between variables. It is in line with the proposition of the Johansen in 1991.

Decision rule: If the trace statistics (Likelihood ratio) is greater than the 5% critical value at none**, we reject the Null hypothesis (H_0) which says that there is no long-run relationship and accept the Alternate hypothesis (H_1) which says that there is long-run relationship between the variables.The decision is usually confirmedby theUnrestricted Cointegration Rank Test (Maximum Eigenvalue).

Table 4.10: Cointeregration Test (Full Details in Appendix 2)

Date: 08/31/18 Time: 15:33
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDPGR MKTCAPRAT ALSIND TMNI VSTTRA TURNR VOLSTRD
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 *	0.890505	193.3921	125.6154	0.0000
At most 1 *	0.783290	129.2477	95.75366	0.0000
At most 2 *	0.694292	84.90100	69.81889	0.0020
At most 3 *	0.545988	50.53241	47.85613	0.0274
At most 4	0.411809	27.63307	29.79707	0.0871
At most 5	0.338967	12.24266	15.49471	0.1457
At most 6	0.008176	0.238073	3.841466	0.6256

Trace test indicates 4 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 *	0.890505	64.14441	46.23142	0.0003
At most 1 *	0.783290	44.34666	40.07757	0.0156
At most 2 *	0.694292	34.36858	33.87687	0.0437
At most 3	0.545988	22.89934	27.58434	0.1778
At most 4	0.411809	15.39041	21.13162	0.2625
At most 5	0.338967	12.00459	14.26460	0.1105
At most 6	0.008176	0.238073	3.841466	0.6256

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

Source: E-views 9.0 output 2018

Table 4.10 shows that long-run relationship (co-integration) exists among the variables. This is based on the trace and maximum eigenvalues against the 5%critical value. Based on these values, it is confirmed that there are three(3) cointegrating equations in the model. In view of thepresence of long-run relationship (co-integration) amongthevariables, it becamenecessary for VectorError Correction Model to beadopted for the analysis of the data of the Study in order to capture the short run disequillibrum thatmight have occurred in estimating the long run cointegrating equations.Theoutcomes of thevectorerror correction analysis aredisplayed on Table 4.11(i) below.

Table 4.11(i): Vector Error Correction Model Results (Full Details in Appendix 3)

Vector Error Correction Estimates
Date: 09/04/18 Time: 00:36
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments
Standard errors in ( ) & t-statistics in [ ]

CointEq1(ECM)	**-1.241767**	**-0.653428**	**-0.044727**

Cointegrating Eq:	CointEq1
RGDPGR(-1)	1.000000
MKTCAPRAT(-1)	0.015948 (0.02909) [0.54814]
ALSIND(-1)	0.665952

	(0.26649)
	[2.49894]
TMNI(-1)	-0.114512
	(0.39460)
	[-0.29020]
VSTTRA(-1)	-0.124189
	(0.03148)
	[-3.94463]
TURNR(-1)	-1.277638
	(0.09010)
	[-14.1808]
VOLSTRD(-1)	0.351018
	(0.43407)
	[0.80867]
C	-4.316961

Error Correction:	D(RGDPGR)	D(MKTCAPRAT)	D(ALSIND)	D(TMNI)
R-squared	0.823093	0.100844	0.505060	0.336237
Adj. R-squared	0.748605	-0.277747	0.296665	0.056757
Sum sq. resids	52.09309	1532.731	1.376941	15.81290
S.E. equation	1.655820	8.981651	0.269204	0.912282
F-statistic	11.05011	0.266367	2.423564	1.203082
Log likelihood	-48.42187	-95.76671	2.442479	-31.73098
Akaike AIC	4.101562	7.483336	0.468394	2.909356
Schwarz SC	4.529771	7.911545	0.896603	3.337565
Mean dependent	-0.263929	0.605357	0.169476	0.044899
S.D. dependent	3.302443	7.945727	0.320996	0.939328

Determinant resid covariance (dof adj.)	50.81942
Determinant resid covariance	3.366656
Log likelihood	-295.1068
Akaike information criterion	26.07906
Schwarz criterion	29.40957

Source: E-view 9

From the results of theerror correction model on the Table 11(i) above, shows that the short run disequilibrium recovers at the rate of24.17 percenttowards a long run equilibrium withECM of -1.2417.This means thattheeconomy at the rate of24.17 percentfrom short run disequilibrium. The negative sign of the ECM is appropriate as it implies that the process is converging in the long run and thus, the model specification is good.The Adjusted R-squared indicates that74.86 percent variation in Nigeria's economic growth is explained by the explanatory variables. Also from theTabletheconnectingequation is estimated as

D(RGDPGR) = - 4.316 + 0.0160*MKTCAPRAT(-1) + 0.665*ALSIND(-1) - 0.114*TMNI(-1) - 0.124*VSTTRA(-1) - 1.277*TURNR(-1) + 0.351*VOLSTRD(-1).

This is also confirmed by Gauss-Newton / Marquardt steps in Table 4.11(ii) below.

Table 4.11(ii): Vector Error Correction Model Results-Gauss-Newton / Marquardt steps

Dependent Variable: D(RGDPGR)
Method: Least Squares (Gauss-Newton / Marquardt steps)
Date: 09/04/18 Time: 00:20
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments
D(RGDPGR) = C(1)*(RGDPGR(-1) + 0.0159480228207*MKTCAPRAT(-1) + 0.665951750053*ALSIND(-1) - 0.114511803477*TMNI(-1) -0.124189384878*VSTTRA(-1) - 1.27763804924*TURNR(-1) + 0.351017828346*VOLSTRD(-1) - 4.31696108252) + C(2)

*D(RGDPGR(-1)) + C(3)*D(MKTCAPRAT(-1)) + C(4)*D(ALSIND(-1)) + C(5)*D(TMNI(-1)) + C(6)*D(VSTTRA(-1)) + C(7)*D(TURNR(-1)) + C(8) *D(VOLSTRD(-1)) + C(9)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-1.241767	0.175038	-7.094288	0.0000
C(2)	-0.073760	0.115162	-0.640492	0.5295
C(3)	-0.131496	0.060378	-2.177873	0.0422
C(4)	9.127267	1.739435	5.247259	0.0000
C(5)	-0.016800	0.413885	-0.040592	0.9680
C(6)	-0.183889	0.077123	-2.384370	0.0277
C(7)	-0.823473	0.166552	-4.944234	0.0001
C(8)	2.392399	0.778208	3.074240	0.0062
C(9)	-2.242726	0.461463	-4.860039	0.0001

R-squared	0.823093	Mean dependent var	-0.263929
Adjusted R-squared	0.748605	S.D. dependent var	3.302443
S.E. of regression	1.655820	Akaike info criterion	4.101562
Sum squared resid	52.09309	Schwarz criterion	4.529771
Log likelihood	-48.42187	Hannan-Quinn criter.	4.232470
F-statistic	11.05011	Durbin-Watson stat	2.034279
Prob(F-statistic)	0.000011		

4.4 Presentation and Analysis of Results

From Tables4.11(i) and 4.11(ii) aboveMKTCAPRAT- market capitalization ratio has positive relationship with the economy with a coefficient of 0.0160, standard error of 0.02909 and t-value of 0.548. However, with t-value less than 2, its relationship is considered insignificant.All Share Index- ALSIND also has a positive relationship with the economy

with t-value of 2.498 suggesting a significant positive relationship with the economy. Again, Volume of stock traded- VOLSTRD has a positive but insignificant relationship with the economy with t-value of 0.8. Total MarketNew Issues- TMNI, value of stock traded- VSTTRA and stock market turnoverratio- TURNRindicate a negative and insignificant relationship.The F-statistic indicates that the model is well fit for the estimation because the associated p-value of 0.0000 at 5 percent significance level. The Durbin Watson Statistic value of 2.03 does not suggest presence of auto correlation. Therefore the model could be used for statistical inference like hypothesis testing.

4.5 Test of Hypothesis

4.5.1 Hypothesis One

Restatement of Research Hypothesis

H_0: Market capitalization ratio does not predicteconomic growth in Nigeria.

From Tables 4.11 above and 4.12 below, it could beconfirmed that the standard error for Market capitalization is 0.02909 and that its coefficient is 0.015948. In view ofthe decision rulespecifiedundersection 3.7 above and sinceunder vector error correction model, E-views does not generate the p-value for t-statistic decision is anchored on value of thecoefficient to vis-a-vis value of the standard error. In view of this, market capitalization whosecoefficient is positive but less than its standarderror, is considered to indicate a positive and insignificant relationship with economic growth in Nigeria. Thus the null hypothesis is accepted.

Table 4.12 Coefficient, Standard Error and t-values of Market Capitalization Ratio

MKTCAPRAT(-1)	0.015948
	(0.02909)
	[0.54814]

4.5.2 Hypothesis Two

Restatement of Research Hypothesis

H_0: All share index does not significantly impacton economic growth in Nigeria.

From thesize of thevalues of thecoefficient (0.665952) and standard error of all share index-ALSIND has positive and significant relationship with economic growth in Nigeria. Thus the null hypothesis is rejected

Table 4.13 Coefficient, Standard Error and t-values of All Share Index

ALSIND(-1)	0.665952
	(0.26649)
	[2.49894]

4.5.3 Hypothesis Three

Restatement of Research Hypothesis

H_0: Economic growth is not a function of value of stock traded in Nigeria.

From the size of the values of the coefficient (-0.124189) and standard error ofValue of Stock Traded Ratio – VSTTRA on Table 4.14 below; VSTTRA has negative and insignificant relationship with economic growth in Nigeria. Thus the null hypothesis is accepted.

Table 4.14 Coefficient, Standard Error and t-values of Value of Stock Traded

VSTTRA(-1)	-0.124189
	(0.03148)
	[-3.94463]

4.5.4 Hypothesis Four

Restatement of Research Hypothesis

H_0: Volume of Stock Traded does not significantly relate with economic growth in Nigeria.

From the size of the values of the coefficient (0.351018) and Standard error ofVolume of Stock Traded–VOLSTRD on Table 4.15 below; VOLSTRD has positive and insignificant relationship with economic growth in Nigeria. Thus the null hypothesis is accepted.

Table 4.15 Coefficient, Standard Error and t-values ofVolume of Stock Traded

VOLSTRD(-1)	0.351018
	(0.43407)
	[0.80867]

4.5.5 Hypothesis Five

Restatement of Research Hypothesis

H_0: Total Market New Issues does not have significant relationship with economic growth in Nigeria.

From the size of the values of the coefficient (-0.114512) and standard error ofTotal Market New Issues – TMNI on Table 4.16 below; TMNI has negative and insignificant relationship with economic growth in Nigeria. Thus the null hypothesis is accepted.

Table 4.16 Coefficient, Standard Error and t-values of Total Market New Issues

TMNI(-1)	-0.114512
	(0.39460)
	[-0.29020]

4.5.6 Hypothesis Six

Restatement of Research Hypothesis

H_0: Stock Market Turnover Ratio doesnot significantly drive economic growth in Nigeria.

From the size of the values of the coefficient (-1.277638) and Standard error ofStock Market Turnover Ratio –TURNR on Table 4.17 below; TURNR has negative and insignificant relationship with economic growth in Nigeria. Thus the null hypothesis is accepted.

Table 4.17 Coefficient, Standard Error and t-values ofStock Market Turnover Ratio

TURNR(-1)	-1.277638
	(0.09010)
	[-14.1808]

4.6 Discussion of Findings

With theexception of All Shares Index, all the other selected capital market performance variables indicate insignificant relationship with Nigeria economic growth. The insignificant relationship between market capitalization ratio and economic growth is indication that more

investors are needed in order to spur economic growth.This is in agreement with previous studies of Adigwe, Nwanna and Ananwude (2015),Amu, Nwezeaku and Akujuobi (2015),Igbodika (2014),Onwumere, Ibe, Okafor and Ugwuanyi (2012) while the studies of Jagadish (2017),Muyambiri and Chabaefe (2017), Lazarov, Miteva-Kacarski and Nikoloski (2016),Nordin and Nordin (2016),Dockmen, Aysu and Bayramoglu (2015),Jalloh (2015),Alenoghena (2014),Balago (2014),Edame and Okoro (2013) and Abiola and Okodua (2008) disagrees with the finding of the study.

All share index has positive and significant relationship with economic growth for the period under study and this agrees with the previous studies studies of Ikpefan, Ikwuetoghu, Okafor and Isibor (2016),Obiakor (2016),Okonkwo, Ananwude and Echekoba (2016),Atoyebi, Ishola, Kadiri, Adekunjo and Ogundeji (2013),Bashorun and Bakare-Aremu (2013),Akeem (2011), Enisan and Olufisayo (2009) and contradicts the findings inthe studies of Akpan (2013),Nneji (2013),Owolabi and Adegbite (2012),Olowe, Matthew and Fasina (2011) whichfound insignificant relationship between all share index and economic growth.

There is negative and insignificant relationship between value of stock traded ratio and economic growth the result is consistent with the studies of Karim and Chaudhary (2017),Odo, Anoke, Onyeisi and Chukwu (2017), Muritala and Ogunji (2017), Abbas, Pei and Rui (2016),Bilal, Chen and Komel (2016),Bashir and Ahmad (2016),Magweva and Mashamba (2016) while the studies of Brown and Nyeche (2016),Shao-Chi (2001),Omoniyi, Adeleke and Sikiru (2014),Mwambene (2013) and Dey and Flaherty (2009) found a significant relationship between value of stock traded ratio and economic growth.

Total market new issues having a negative and insignificant relationship with economic growth largely agrees with the claims of Obubu, Konwe, Nwabenu, Omokri and Chijioke (2016), Afloabi (2015) and Enekwe, Eziedo and Agu (2014) but disagrees with Hammed, Shittu, Yusuf and Akanbi (2016), Muritala and Ogunyi (2016), Dabo (2015), Emeh and

Chigbu (2014) and Odetayo and Sajuyigbe (2012) that total market new issues positively and insignificantly relate with economic growth in Nigeria.

Volume of stock traded has a positive and insignificant relationship with economic growth which disagrees with the previous studies of Spaseska, Vitanova, Sotiroski, Odzaklieska, Jankuloska and Risteska (2017),Werema and Nikupala (2016),Oladokun, Adeagbo and Abiola (2015),June (2014) and Sa'adu (2014) while the study of Donwa and Odia (2010) refutes this finding.

Turnover ratio has negative and insignificant relationship with economic growth which agrees with the previous studies ofAbdul-Khaliq (2013), Jamil and Shazia (2013),Osho (2014),Awan and Iftekhar (2015),Karimo and Ogbonna (2017) and Chizea (2012) while the studies of Omoruyi and Ede (2014),Alajekwu and Ezeabasili (2012)refute this finding.

The result from the regression confirmed thatthere is insignificant relationship between capital market and economic growth in Nigeria which is an indication of the underdeveloped nature of the capital market and its little role in contributing to economic growth in Nigeria. This is attributed to small size of the market, illiquidity in the market, slow growth of securities market, delay in delivery of share certificates, problem of manual call-over, double taxation, lack of effective underwriting and problem of macroeconomic instability.

The result of the study is a reflection of the under developed nature of the Nigerian economy since the capital market is an integral part of the financial sector which is a sub-set of the economy, the capital market therefore cannot grow more than the Nigeria economy. To buttress this point, the under-developed nature of the economy has made the capital market more of appendage of government institutions rather a market driven by efficiency through the interplay of the forces of demand and supply.

The results of the study invariably show that some serious policy issues have to be put in place to promote economic growth. For example there is need for large corporation shares to be listed in the Nigerian Capital Market as this will increase the volume of transaction in the

market furthermore; the need to establish fund managers and scheme will help for frequent transaction in the market.

The result of the study also indicates that if the capital market will impact on the economic growth there is need to create more financial institutions to boost capital needs of the market and this could be achieved through promoting entrepreneurship via market participation. The implication of the result shows that the Nigeria economy needs to be properly streamlined and strategically positioned via establishment of sustainable institutions and adoption of global best practice as this will enable the capital market in turn drive the expected growth in the economy.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This research work ascertained the relationship of capital market performance on economic growth in Nigeria by specifically ascertaining the relationship of market capitalization ratio, all share index, value of stock traded ratio, volume of stock traded, total market new issues and turnover ratio on economic market from 1986 to 2016. The findings of the study revealed the following:

1. There is positive and insignificant relationship between market capitalization and Nigeria economic growth for the period under review.

2. All share index has positive and significant relationship with Nigeria economic growth for the period under study.

3. Value of stock traded ratio has negative and insignificant relationship with Nigeria economic growth for the period under study.

4. There is negative and insignificant relationship between volume of stock traded ratio and Nigeria economic growth for the period under review.

5. Total market new issues have negative and insignificant relationship on Nigeria economic growth for the period under study.

6. Turnover ratio has a negative and insignificant relationship with economic growth for the period study.

5.2 Conclusion

Capital market lacked the capacity to significant enhance economic growth in Nigeria. Thus capital market indices in Nigeria are not significant variables in explaining economic growth at least in the short run in Nigeria. As such the Nigeria Capital Market has not contributed significantly to economic growth in Nigeria under the period studied. This is not surprising given that the growth in a sub-system hardly overtakes the entire system growths potential. The various sectors of the economy has performed below

expectation, for instance, the real sector of the economy that should essentially be involved in the production of goods and services has been unimpressive over the years, while the infrastructural sector has remained weak over the past two decades (Edo & Erovie,2016). As such the capital market which is a sub-sector of the financial market cannot overtake the entire system in growth potential.

Besides, the insignificant explanatory power of capital market indices is amplified by the existence of viable informal sector as such stock market is not a true representation of the economy as only a handful of stocks are listed in the Nigerian Capital Market compared to firms operating in the economy both in the private and public sector.

5.3**Recommendations of the study**

In lieu of the results of the analysis, this study puts forward the following recommendations for attention and consideration of decision makers to improve the contribution of the capital market to economic growth in Nigeria:

1.The federal government through the Central Bank should implement policies such as maintenance of relative stability of domestic prices, maintenance of healthy balance of payment, reduction in inflationary trend in the economy as this will provide more needed funds for investors for further investments in the capital market which will result in increased level and size of market capitalization which in turn will lead to economic growth.

2.The study recommended that there is need for serious policy issues to be put in place to promote economic growth. For example there is need for large corporations' shares to be listed in the Nigerian Capital Market as this will increase the all share index transaction in the market.

3. Considering that Nigeria economy is recovering from recession, all tiers of government should be encouraged to fund their realistic long term developmental programs through

the Nigerian Capital Market. This will served as a lead way to freeing resources that may be used in other sphere of the economy.

4.Capital market regulatory authorities should be more proactive in their surveillance role by promoting preference for stock statements through public enlightenment campaigns, quick payment of dividend to shareholders via automated process and ensurethe capital marketoperators should be more disciplined, acting professionally toward prospective investors so as to increase volume of transactions in the market as this will result in economic growth in Nigeria.

5. It is recommended that awareness crusades and sensitization programmes should be monthly or quarterly organized by capital market regulatory authorities and market operators to enlighten and educate potential investors on the need to invest in the capital market as the number of individual investors engaged in the capital market are relatively small compare to the size of the economy, as this will increase total market new issues which will translate to economic growth.

6. Government should promote sound economic policies and relatively stable political environment that will be conducive for long term investments in the economy. They should implement growth economic strategies devoid of selfish interest. Maintaining relative political stability in the country will encourage more local investors and attract more capital inflow that will result in sustainable economic growth.

5.4 Recommendations for Future Research

Future research should address the limitations of this study. Several extensions to this study are possible. Firstly, the study focused only on Nigeria Capital Market performance and economic growth in Nigeria. Notwithstanding, how robust the results from this study

may be, yet it may not reflect a true and comprehensive stand of the global capital market performance and various countries economic growth.

Secondly, future research can be carried to study an in-depth analysis on a comprehensive basis: inter-regional basis (comparative analysis between countries of the same region) or intra-regional basis (between one region and another).

5.5 Contribution to Knowledge

This study on the relationship between capital market performance and economic growth of Nigeria (1986 – 2016) contributes to the body of knowledge in the following ways;

1. The study refutes the findings of some researchers such as (Odo, Anoke, Onyesis & Chuckwu, 2017; Obiakar,2016; Briggs, 2015; Igbodika, 2014) that market indicators studies positively and significantly contributes to economic growth.
2. To the best of the researcher's knowledge based on the literature reviewed, this study examined the relationship of six (6) of the capital market performance indicators beyond the three popularly used by the World Bank (market capitalization ratio, value of stock traded ratio and market turnover ratio) and employed by other researchers.
3. This study contributes to current body of literature on the subject by showing that the Nigeria Capital Market has not actually reflected the generally economic performance indicators in Nigeria. Indeed, many who should be participants in the market are yet to be involved.

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APPENDICES

Appendix 1: Results of Unit Root Tests

1) ADF

LEVEL- Intercept only

Null Hypothesis: RGDPGR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.453630	0.0001
Test critical values:	1% level	-3.670170	
	5% level	-2.963972	
	10% level	-2.621007	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDPGR)
Method: Least Squares
Date: 08/26/18 Time: 16:56
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDPGR(-1)	-1.030326	0.188925	-5.453630	0.0000
C	34.56569	30.06227	1.149803	0.2600

R-squared	0.515085	Mean dependent var	-0.112667
Adjusted R-squared	0.497767	S.D. dependent var	227.0860
S.E. of regression	160.9323	Akaike info criterion	13.06418
Sum squared resid	725177.4	Schwarz criterion	13.15760
Log likelihood	-193.9628	Hannan-Quinn criter.	13.09407
F-statistic	29.74208	Durbin-Watson stat	2.001721
Prob(F-statistic)	0.000008		

Decision: RGDPGR is stationary at level(INTERCEPT only) as value of T-statistic is less than that of T-calculated

ADF

LEVE- Trend and Intercept

Null Hypothesis: RGDPGR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.558751	0.0005
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDPGR)
Method: Least Squares
Date: 08/26/18 Time: 17:10
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDPGR(-1)	-1.072638	0.192964	-5.558751	0.0000
C	-19.98533	60.36634	-0.331067	0.7431
@TREND("1986")	3.611300	3.467211	1.041557	0.3069

R-squared	0.533816	Mean dependent var	-0.112667
Adjusted R-squared	0.499284	S.D. dependent var	227.0860
S.E. of regression	160.6890	Akaike info criterion	13.09146
Sum squared resid	697165.8	Schwarz criterion	13.23158
Log likelihood	-193.3719	Hannan-Quinn criter.	13.13628
F-statistic	15.45852	Durbin-Watson stat	2.001507
Prob(F-statistic)	0.000034		

Decision : RGDPGR is stationary at level (TREND stationary at level (TREND and INTERCEPT) as value of T-statistic is less than that of T-calculated

ADF- First Differencing: Trend and Intercept

Null Hypothesis: D(RGDPGR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-8.823534	0.0000
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RGDPGR,2)
Method: Least Squares
Date: 08/26/18 Time: 17:30
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDPGR(-1))	-1.499278	0.169918	-8.823534	0.0000
C	11.75151	83.26720	0.141130	0.8889
@TREND("1986")	-0.737197	4.611884	-0.159847	0.8742

R-squared	0.749651	Mean dependent var	-0.087586
Adjusted R-squared	0.730393	S.D. dependent var	400.1265
S.E. of regression	207.7605	Akaike info criterion	13.60835
Sum squared resid	1122275.	Schwarz criterion	13.74979

Log likelihood	-194.3210	Hannan-Quinn criter.	13.65265
F-statistic	38.92742	Durbin-Watson stat	2.334498
Prob(F-statistic)	0.000000		

Decision : RGDPGR is also stationary at first differencing (TREND and INTERCEPT) as value of T-statistic is less than that of T-calculated at 5% significance level .

PHILLIPS-PERRON TEST :LEVEL - Trend and Intercept

Null Hypothesis: RGDPGR has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.620908	0.0004
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	23238.86
HAC corrected variance (Bartlett kernel)	17638.97

Phillips-Perron Test Equation
Dependent Variable: D(RGDPGR)
Method: Least Squares
Date: 08/26/18 Time: 17:54
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDPGR(-1)	-1.072638	0.192964	-5.558751	0.0000
C	-19.98533	60.36634	-0.331067	0.7431
@TREND("1986")	3.611300	3.467211	1.041557	0.3069

R-squared	0.533816	Mean dependent var	-0.112667
Adjusted R-squared	0.499284	S.D. dependent var	227.0860
S.E. of regression	160.6890	Akaike info criterion	13.09146
Sum squared resid	697165.8	Schwarz criterion	13.23158
Log likelihood	-193.3719	Hannan-Quinn criter.	13.13628
F-statistic	15.45852	Durbin-Watson stat	2.001507
Prob(F-statistic)	0.000034		

Decision : RGDPGR is stationary at level (TREND and INTERCEPT) as value of T-statistic is less than that of T-calculated at 5% significance level .

Phillips- Perron Test: First Differencing (Trend and Intercept)

Null Hypothesis: D(MKTCAPR) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.709462	0.0003
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	57.91955
HAC corrected variance (Bartlett kernel)	51.34541

Phillips-Perron Test Equation
Dependent Variable: D(MKTCAPR,2)
Method: Least Squares
Date: 08/26/18 Time: 18:02
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MKTCAPR(-1))	-1.107126	0.194935	-5.679460	0.0000
C	1.571281	3.229880	0.486483	0.6307
@TREND("1986")	-0.057506	0.178549	-0.322073	0.7500

R-squared	0.553750	Mean dependent var	-0.031034
Adjusted R-squared	0.519423	S.D. dependent var	11.59428
S.E. of regression	8.037573	Akaike info criterion	7.103829
Sum squared resid	1679.667	Schwarz criterion	7.245273
Log likelihood	-100.0055	Hannan-Quinn criter.	7.148127
F-statistic	16.13167	Durbin-Watson stat	2.035062
Prob(F-statistic)	0.000028		

Decision : RGDPGR is also stationary at first differencing (TREND and INTERCEPT) as value of T-statistic is less than that of T-calculated at 5% significance level .

ADF: Level (Trend and Intercept)

Null Hypothesis: MKTCAPR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.992442	0.5817
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MKTCAPR)
Method: Least Squares
Date: 08/26/18 Time: 17:52
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MKTCAPR(-1)	-0.277388	0.139220	-1.992442	0.0565
C	-0.839264	2.967466	-0.282822	0.7795
@TREND("1986")	0.297560	0.232166	1.281669	0.2109

R-squared	0.130454	Mean dependent var	0.565667
Adjusted R-squared	0.066043	S.D. dependent var	7.668331
S.E. of regression	7.410785	Akaike info criterion	6.938389
Sum squared resid	1482.833	Schwarz criterion	7.078509
Log likelihood	-101.0758	Hannan-Quinn criter.	6.983215
F-statistic	2.025344	Durbin-Watson stat	1.923461
Prob(F-statistic)	0.151513		

Decision : MKTCAPR is not stationary at Level (TREND and INTERCEPT) as value of T-statistic is greater than that of T-calculated at 5% significance level .

ADF: First Differencing (Trend and Intercept)

Null Hypothesis: D(MKTCAPR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.679460	0.0004
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MKTCAPR,2)
Method: Least Squares
Date: 08/26/18 Time: 18:15
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MKTCAPR(-1))	-1.107126	0.194935	-5.679460	0.0000
C	1.571281	3.229880	0.486483	0.6307
@TREND("1986")	-0.057506	0.178549	-0.322073	0.7500

R-squared	0.553750	Mean dependent var	-0.031034
Adjusted R-squared	0.519423	S.D. dependent var	11.59428
S.E. of regression	8.037573	Akaike info criterion	7.103829
Sum squared resid	1679.667	Schwarz criterion	7.245273
Log likelihood	-100.0055	Hannan-Quinn criter.	7.148127
F-statistic	16.13167	Durbin-Watson stat	2.035062

Prob(F-statistic)	0.000028

Decision : MKTCAPR is stationary at first differencing (TREND and INTERCEPT) as value of T-statistic is less than that of T-calculated at 5% significance level .

PHILLIPS-PERRON TEST :LEVEL - Trend and Intercept

Null Hypothesis: MKTCAPR has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.133059	0.5076
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	49.42776
HAC corrected variance (Bartlett kernel)	56.73356

Phillips-Perron Test Equation
Dependent Variable: D(MKTCAPR)
Method: Least Squares
Date: 08/26/18 Time: 18:23
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MKTCAPR(-1)	-0.277388	0.139220	-1.992442	0.0565
C	-0.839264	2.967466	-0.282822	0.7795
@TREND("1986")	0.297560	0.232166	1.281669	0.2109

R-squared	0.130454	Mean dependent var	0.565667
Adjusted R-squared	0.066043	S.D. dependent var	7.668331
S.E. of regression	7.410785	Akaike info criterion	6.938389
Sum squared resid	1482.833	Schwarz criterion	7.078509
Log likelihood	-101.0758	Hannan-Quinn criter.	6.983215
F-statistic	2.025344	Durbin-Watson stat	1.923461
Prob(F-statistic)	0.151513		

Phillips- Perron Test: First Differencing (Trend and Intercept)

Null Hypothesis: D(MKTCAPR) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-5.709462	0.0003
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	

	10% level	-3.221728

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

Residual variance (no correction)	57.91955
HAC corrected variance (Bartlett kernel)	51.34541

Phillips-Perron Test Equation
Dependent Variable: D(MKTCAPR,2)
Method: Least Squares
Date: 08/26/18 Time: 18:26
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MKTCAPR(-1))	-1.107126	0.194935	-5.679460	0.0000
C	1.571281	3.229880	0.486483	0.6307
@TREND("1986")	-0.057506	0.178549	-0.322073	0.7500

R-squared	0.553750	Mean dependent var	-0.031034
Adjusted R-squared	0.519423	S.D. dependent var	11.59428
S.E. of regression	8.037573	Akaike info criterion	7.103829
Sum squared resid	1679.667	Schwarz criterion	7.245273
Log likelihood	-100.0055	Hannan-Quinn criter.	7.148127
F-statistic	16.13167	Durbin-Watson stat	2.035062
Prob(F-statistic)	0.000028		

Decision : MKTCAPR is stationary at first differencing (TREND and INTERCEPT) as value of T-statistic is less than that of T-calculated at 5% significance level .

ADF Level : Trend and Intercept

Null Hypothesis: ALSIND has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.934454	0.1666
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(ALSIND)
Method: Least Squares
Date: 08/26/18 Time: 18:30
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ALSIND(-1)	-0.501898	0.171036	-2.934454	0.0067

C	-2241.095	3020.707	-0.741910	0.4645
@TREND("1986")	695.9807	292.0243	2.383298	0.0245

R-squared	0.242552	Mean dependent var	890.3607
Adjusted R-squared	0.186444	S.D. dependent var	8180.240
S.E. of regression	7378.357	Akaike info criterion	20.74513
Sum squared resid	1.47E+09	Schwarz criterion	20.88525
Log likelihood	-308.1769	Hannan-Quinn criter.	20.78995
F-statistic	4.322998	Durbin-Watson stat	1.740371
Prob(F-statistic)	0.023511		

Decision: Not stationary

ADF First Differencing : Trend and Intercept

Null Hypothesis: D(ALSIND) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.193517	0.0013
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(ALSIND,2)
Method: Least Squares
Date: 08/26/18 Time: 18:34
Sample (adjusted): 1989 2016
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ALSIND(-1))	-1.466907	0.282450	-5.193517	0.0000
D(ALSIND(-1),2)	0.365119	0.193370	1.888188	0.0711
C	2113.227	3602.773	0.586556	0.5630
@TREND("1986")	-36.88129	195.6680	-0.188489	0.8521

R-squared	0.596030	Mean dependent var	-64.65464
Adjusted R-squared	0.545534	S.D. dependent var	12393.85
S.E. of regression	8355.206	Akaike info criterion	21.03072
Sum squared resid	1.68E+09	Schwarz criterion	21.22104
Log likelihood	-290.4301	Hannan-Quinn criter.	21.08890
F-statistic	11.80345	Durbin-Watson stat	1.961719
Prob(F-statistic)	0.000060		

Decision : Stationary at first differencing

Phillips- Perron Test: Level (Trend and Intercept)

Null Hypothesis: ALSIND has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 2 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.940834	0.1648
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	48996140
HAC corrected variance (Bartlett kernel)	49319746

Phillips-Perron Test Equation
Dependent Variable: D(ALSIND)
Method: Least Squares
Date: 08/26/18 Time: 18:38
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ALSIND(-1)	-0.501898	0.171036	-2.934454	0.0067
C	-2241.095	3020.707	-0.741910	0.4645
@TREND("1986")	695.9807	292.0243	2.383298	0.0245

R-squared	0.242552	Mean dependent var	890.3607
Adjusted R-squared	0.186444	S.D. dependent var	8180.240
S.E. of regression	7378.357	Akaike info criterion	20.74513
Sum squared resid	1.47E+09	Schwarz criterion	20.88525
Log likelihood	-308.1769	Hannan-Quinn criter.	20.78995
F-statistic	4.322998	Durbin-Watson stat	1.740371
Prob(F-statistic)	0.023511		

Phillips- Perron Test: First Differencing (Trend and Intercept)

Null Hypothesis: D(ALSIND) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 7 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-6.241616	0.0001
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	66444915
HAC corrected variance (Bartlett kernel)	24092777

Phillips-Perron Test Equation
Dependent Variable: D(ALSIND,2)
Method: Least Squares
Date: 08/26/18 Time: 18:40

Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ALSIND(-1))	-1.071475	0.195809	-5.472031	0.0000
C	1622.368	3457.653	0.469211	0.6428
@TREND("1986")	-39.50311	191.0871	-0.206728	0.8378

R-squared	0.535396	Mean dependent var	-61.88724
Adjusted R-squared	0.499658	S.D. dependent var	12170.53
S.E. of regression	8608.812	Akaike info criterion	21.05666
Sum squared resid	1.93E+09	Schwarz criterion	21.19810
Log likelihood	-302.3215	Hannan-Quinn criter.	21.10096
F-statistic	14.98083	Durbin-Watson stat	2.048140
Prob(F-statistic)	0.000047		

Decision : Stationary at first differencing

ADF : Level- Trend and Intercept

Null Hypothesis: TMNI has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-1.881712	0.6389
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	1.79E+11
HAC corrected variance (Bartlett kernel)	2.36E+11

Phillips-Perron Test Equation
Dependent Variable: D(TMNI)
Method: Least Squares
Date: 08/26/18 Time: 18:43
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TMNI(-1)	-0.216744	0.144052	-1.504623	0.1440
C	9536.528	177941.5	0.053594	0.9577
@TREND("1986")	6409.608	12763.89	0.502167	0.6196

R-squared	0.092565	Mean dependent var	440.9587
Adjusted R-squared	0.025347	S.D. dependent var	451396.1
S.E. of regression	445638.5	Akaike info criterion	28.94704
Sum squared resid	5.36E+12	Schwarz criterion	29.08716

Log likelihood	-431.2056	Hannan-Quinn criter.	28.99187
F-statistic	1.377095	Durbin-Watson stat	2.093944
Prob(F-statistic)	0.269470		

ADF First Differencing : Trend and Intercept

Null Hypothesis: D(TMNI) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-6.193461	0.0001
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	1.92E+11
HAC corrected variance (Bartlett kernel)	2.76E+11

Phillips-Perron Test Equation
Dependent Variable: D(TMNI,2)
Method: Least Squares
Date: 08/26/18 Time: 18:44
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TMNI(-1))	-1.203521	0.191848	-6.273297	0.0000
C	139894.6	186555.6	0.749882	0.4601
@TREND("1986")	-8680.456	10346.93	-0.838941	0.4092

R-squared	0.602181	Mean dependent var	-2174.003
Adjusted R-squared	0.571580	S.D. dependent var	706527.3
S.E. of regression	462449.0	Akaike info criterion	29.02416
Sum squared resid	5.56E+12	Schwarz criterion	29.16560
Log likelihood	-417.8503	Hannan-Quinn criter.	29.06846
F-statistic	19.67821	Durbin-Watson stat	1.986384
Prob(F-statistic)	0.000006		

Decision : Stationary at first differencing

Phillips- Perron Test: Level- Trend and Intercept

Null Hypothesis: TMNI has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-1.881712	0.6389

Test critical values:	1% level	-4.296729
	5% level	-3.568379
	10% level	-3.218382

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

Residual variance (no correction)	1.79E+11
HAC corrected variance (Bartlett kernel)	2.36E+11

Phillips-Perron Test Equation
Dependent Variable: D(TMNI)
Method: Least Squares
Date: 08/26/18 Time: 18:50
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TMNI(-1)	-0.216744	0.144052	-1.504623	0.1440
C	9536.528	177941.5	0.053594	0.9577
@TREND("1986")	6409.608	12763.89	0.502167	0.6196

R-squared	0.092565	Mean dependent var	440.9587
Adjusted R-squared	0.025347	S.D. dependent var	451396.1
S.E. of regression	445638.5	Akaike info criterion	28.94704
Sum squared resid	5.36E+12	Schwarz criterion	29.08716
Log likelihood	-431.2056	Hannan-Quinn criter.	28.99187
F-statistic	1.377095	Durbin-Watson stat	2.093944
Prob(F-statistic)	0.269470		

Phillips- Perron Test: First Differencing (Trend and Intercept)

Null Hypothesis: D(TMNI) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-6.193461	0.0001
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	1.92E+11
HAC corrected variance (Bartlett kernel)	2.76E+11

Phillips-Perron Test Equation
Dependent Variable: D(TMNI,2)
Method: Least Squares
Date: 08/26/18 Time: 18:51
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TMNI(-1))	-1.203521	0.191848	-6.273297	0.0000
C	139894.6	186555.6	0.749882	0.4601
@TREND("1986")	-8680.456	10346.93	-0.838941	0.4092

R-squared	0.602181	Mean dependent var	-2174.003
Adjusted R-squared	0.571580	S.D. dependent var	706527.3
S.E. of regression	462449.0	Akaike info criterion	29.02416
Sum squared resid	5.56E+12	Schwarz criterion	29.16560
Log likelihood	-417.8503	Hannan-Quinn criter.	29.06846
F-statistic	19.67821	Durbin-Watson stat	1.986384
Prob(F-statistic)	0.000006		

Decision: Stationary at First Differencing

ADF: Level - Trend and Intercept

Null Hypothesis: VSTTR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.429792	0.3580
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VSTTR)
Method: Least Squares
Date: 08/26/18 Time: 19:18
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VSTTR(-1)	-0.356422	0.146688	-2.429792	0.0220
C	2.817464	2.081365	1.353661	0.1871
@TREND("1986")	-0.053657	0.109602	-0.489561	0.6284

R-squared	0.187890	Mean dependent var	0.018333
Adjusted R-squared	0.127734	S.D. dependent var	5.559158
S.E. of regression	5.191986	Akaike info criterion	6.226749
Sum squared resid	727.8313	Schwarz criterion	6.366869
Log likelihood	-90.40124	Hannan-Quinn criter.	6.271575
F-statistic	3.123372	Durbin-Watson stat	1.865427
Prob(F-statistic)	0.060228		

ADF: First Differencing- Trend and Intercept

Null Hypothesis: D(VSTTR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.583199	0.0005
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VSTTR,2)
Method: Least Squares
Date: 08/26/18 Time: 19:14
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(VSTTR(-1))	-1.090527	0.195323	-5.583199	0.0000
C	1.247705	2.340758	0.533035	0.5985
@TREND("1986")	-0.076883	0.129782	-0.592402	0.5587

R-squared	0.545233	Mean dependent var	-0.003103
Adjusted R-squared	0.510251	S.D. dependent var	8.307882
S.E. of regression	5.814029	Akaike info criterion	6.456122
Sum squared resid	878.8762	Schwarz criterion	6.597566
Log likelihood	-90.61377	Hannan-Quinn criter.	6.500420
F-statistic	15.58606	Durbin-Watson stat	2.043264
Prob(F-statistic)	0.000036		

Decision: Stationary at First differencing

Phillip-Perron: Level- Trend and Intercept

Null Hypothesis: VSTTR has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 3 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-2.381532	0.3810
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	24.26104
HAC corrected variance (Bartlett kernel)	22.93033

Phillips-Perron Test Equation
Dependent Variable: D(VSTTR)
Method: Least Squares

Date: 08/26/18 Time: 18:58
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VSTTR(-1)	-0.356422	0.146688	-2.429792	0.0220
C	2.817464	2.081365	1.353661	0.1871
@TREND("1986")	-0.053657	0.109602	-0.489561	0.6284

R-squared	0.187890	Mean dependent var	0.018333
Adjusted R-squared	0.127734	S.D. dependent var	5.559158
S.E. of regression	5.191986	Akaike info criterion	6.226749
Sum squared resid	727.8313	Schwarz criterion	6.366869
Log likelihood	-90.40124	Hannan-Quinn criter.	6.271575
F-statistic	3.123372	Durbin-Watson stat	1.865427
Prob(F-statistic)	0.060228		

Phillips-Perron: First Differencing -Trend and Intercept

Null Hypothesis: D(VSTTR) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 16 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-8.867304	0.0000
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	30.30608
HAC corrected variance (Bartlett kernel)	4.109041

Phillips-Perron Test Equation
Dependent Variable: D(VSTTR,2)
Method: Least Squares
Date: 08/26/18 Time: 19:07
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(VSTTR(-1))	-1.090527	0.195323	-5.583199	0.0000
C	1.247705	2.340758	0.533035	0.5985
@TREND("1986")	-0.076883	0.129782	-0.592402	0.5587

R-squared	0.545233	Mean dependent var	-0.003103
Adjusted R-squared	0.510251	S.D. dependent var	8.307882
S.E. of regression	5.814029	Akaike info criterion	6.456122
Sum squared resid	878.8762	Schwarz criterion	6.597566
Log likelihood	-90.61377	Hannan-Quinn criter.	6.500420
F-statistic	15.58606	Durbin-Watson stat	2.043264
Prob(F-statistic)	0.000036		

Decision: Stationary at First Differencing

ADF: Level- Trend and Intercept

Null Hypothesis: TURNR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.179868	0.1075
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TURNR)
Method: Least Squares
Date: 08/26/18 Time: 19:32
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNR(-1)	-0.532135	0.167345	-3.179868	0.0037
C	1.280477	1.153417	1.110160	0.2767
@TREND("1986")	0.133278	0.072173	1.846659	0.0758

R-squared	0.272644	Mean dependent var	-0.036667
Adjusted R-squared	0.218766	S.D. dependent var	3.218435
S.E. of regression	2.844693	Akaike info criterion	5.023427
Sum squared resid	218.4915	Schwarz criterion	5.163547
Log likelihood	-72.35140	Hannan-Quinn criter.	5.068252
F-statistic	5.060376	Durbin-Watson stat	2.082126
Prob(F-statistic)	0.013601		

ADF: First Differencing- Trend and Intercept

Null Hypothesis: D(TURNR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

	t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-7.377191	0.0000
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TURNR,2)
Method: Least Squares
Date: 08/26/18 Time: 19:33
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TURNR(-1))	-1.341626	0.181861	-7.377191	0.0000
C	0.233474	1.262265	0.184965	0.8547
@TREND("1986")	-0.012496	0.069906	-0.178761	0.8595

R-squared	0.676883	Mean dependent var	0.113103
Adjusted R-squared	0.652028	S.D. dependent var	5.339319
S.E. of regression	3.149620	Akaike info criterion	5.230138
Sum squared resid	257.9228	Schwarz criterion	5.371583
Log likelihood	-72.83700	Hannan-Quinn criter.	5.274437
F-statistic	27.23308	Durbin-Watson stat	2.057510
Prob(F-statistic)	0.000000		

Phillips-Perron (PP): Level- Trend and Intercept

Null Hypothesis: TURNR has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 0 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.179868	0.1075
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	7.283051
HAC corrected variance (Bartlett kernel)	7.283051

Phillips-Perron Test Equation
Dependent Variable: D(TURNR)
Method: Least Squares
Date: 08/26/18 Time: 19:35
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TURNR(-1)	-0.532135	0.167345	-3.179868	0.0037
C	1.280477	1.153417	1.110160	0.2767

@TREND("1986")	0.133278	0.072173	1.846659	0.0758

R-squared	0.272644	Mean dependent var	-0.036667
Adjusted R-squared	0.218766	S.D. dependent var	3.218435
S.E. of regression	2.844693	Akaike info criterion	5.023427
Sum squared resid	218.4915	Schwarz criterion	5.163547
Log likelihood	-72.35140	Hannan-Quinn criter.	5.068252
F-statistic	5.060376	Durbin-Watson stat	2.082126
Prob(F-statistic)	0.013601		

Phillips-Perron (PP): First Differencing- Trend and Intercept

Null Hypothesis: D(TURNR) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 19 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-11.12977	0.0000
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	8.893890
HAC corrected variance (Bartlett kernel)	2.161860

Phillips-Perron Test Equation
Dependent Variable: D(TURNR,2)
Method: Least Squares
Date: 08/26/18 Time: 19:37
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TURNR(-1))	-1.341626	0.181861	-7.377191	0.0000
C	0.233474	1.262265	0.184965	0.8547
@TREND("1986")	-0.012496	0.069906	-0.178761	0.8595

R-squared	0.676883	Mean dependent var	0.113103
Adjusted R-squared	0.652028	S.D. dependent var	5.339319
S.E. of regression	3.149620	Akaike info criterion	5.230138
Sum squared resid	257.9228	Schwarz criterion	5.371583
Log likelihood	-72.83700	Hannan-Quinn criter.	5.274437
F-statistic	27.23308	Durbin-Watson stat	2.057510
Prob(F-statistic)	0.000000		

Decision: Stationary at First differencing

ADF: Level- Trend and Intercept

Null Hypothesis: VSTR has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 7 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.139968	0.1210
Test critical values:	1% level	-4.416345	
	5% level	-3.622033	
	10% level	-3.248592	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VSTR)
Method: Least Squares
Date: 08/26/18 Time: 19:55
Sample (adjusted): 1994 2016
Included observations: 23 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VSTR(-1)	-1.285554	0.409416	-3.139968	0.0078
D(VSTR(-1))	1.330599	0.562974	2.363517	0.0343
D(VSTR(-2))	0.019076	0.324266	0.058829	0.9540
D(VSTR(-3))	1.944422	0.805120	2.415070	0.0312
D(VSTR(-4))	-1.150048	0.450941	-2.550332	0.0242
D(VSTR(-5))	3.257472	1.086210	2.998934	0.0103
D(VSTR(-6))	-1.069093	0.745180	-1.434677	0.1750
D(VSTR(-7))	2.549521	1.156009	2.205451	0.0460
C	-51331.26	38071.21	-1.348296	0.2006
@TREND("1986")	4537.515	2689.526	1.687106	0.1154

R-squared	0.789338	Mean dependent var	4145.295
Adjusted R-squared	0.643495	S.D. dependent var	57878.92
S.E. of regression	34558.38	Akaike info criterion	24.03771
Sum squared resid	1.55E+10	Schwarz criterion	24.53140
Log likelihood	-266.4336	Hannan-Quinn criter.	24.16187
F-statistic	5.412241	Durbin-Watson stat	2.427217
Prob(F-statistic)	0.003316		

ADF: First Differencing- Trend and Intercept

Null Hypothesis: D(VSTR) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 4 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.433584	0.8251
Test critical values:	1% level	-4.374307	
	5% level	-3.603202	
	10% level	-3.238054	

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

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VSTR,2)
Method: Least Squares
Date: 08/26/18 Time: 19:56
Sample (adjusted): 1992 2016
Included observations: 25 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(VSTR(-1))	-1.560406	1.088465	-1.433584	0.1688
D(VSTR(-1),2)	0.325673	0.916260	0.355437	0.7264
D(VSTR(-2),2)	-0.033643	0.741883	-0.045347	0.9643
D(VSTR(-3),2)	-0.086174	0.507132	-0.169923	0.8670
D(VSTR(-4),2)	-1.002929	0.392425	-2.555718	0.0199
C	6511.032	22251.76	0.292608	0.7732
@TREND("1986")	26.84363	1302.466	0.020610	0.9838

R-squared	0.849567	Mean dependent var	119.4316
Adjusted R-squared	0.799422	S.D. dependent var	87901.72
S.E. of regression	39367.58	Akaike info criterion	24.23077
Sum squared resid	2.79E+10	Schwarz criterion	24.57205
Log likelihood	-295.8846	Hannan-Quinn criter.	24.32543
F-statistic	16.94240	Durbin-Watson stat	1.875640
Prob(F-statistic)	0.000002		

Decision: Stationary at First Differencing.

Phillips-Perron (PP): Level- Trend and Intercept

Null Hypothesis: VSTR has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 4 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-3.399973	0.0703
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

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

Residual variance (no correction)	1.68E+09
HAC corrected variance (Bartlett kernel)	1.37E+09

Phillips-Perron Test Equation
Dependent Variable: D(VSTR)
Method: Least Squares
Date: 08/26/18 Time: 19:40
Sample (adjusted): 1987 2016
Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VSTR(-1)	-0.630303	0.178095	-3.539141	0.0015
C	-25295.00	18000.12	-1.405269	0.1713
@TREND("1986")	3620.997	1362.626	2.657366	0.0131

R-squared	0.316924	Mean dependent var	3177.293
Adjusted R-squared	0.266326	S.D. dependent var	50443.60
S.E. of regression	43207.36	Akaike info criterion	24.28005
Sum squared resid	5.04E+10	Schwarz criterion	24.42017
Log likelihood	-361.2007	Hannan-Quinn criter.	24.32487
F-statistic	6.263536	Durbin-Watson stat	1.942890
Prob(F-statistic)	0.005825		

Phillips-Perron (PP): First Differencing- Trend and Intercept

Null Hypothesis: D(VSTR) has a unit root
Exogenous: Constant, Linear Trend
Bandwidth: 28 (Newey-West automatic) using Bartlett kernel

		Adj. t-Stat	Prob.*
Phillips-Perron test statistic		-13.95004	0.0000
Test critical values:	1% level	-4.309824	
	5% level	-3.574244	
	10% level	-3.221728	

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

Residual variance (no correction)	2.38E+09
HAC corrected variance (Bartlett kernel)	2.23E+08

Phillips-Perron Test Equation
Dependent Variable: D(VSTR,2)
Method: Least Squares
Date: 08/26/18 Time: 19:42
Sample (adjusted): 1988 2016
Included observations: 29 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(VSTR(-1))	-1.256625	0.189537	-6.629959	0.0000
C	3689.408	20637.93	0.178768	0.8595
@TREND("1986")	26.19526	1142.751	0.022923	0.9819

R-squared	0.628343	Mean dependent var	104.4924
Adjusted R-squared	0.599754	S.D. dependent var	81381.44
S.E. of regression	51486.00	Akaike info criterion	24.63370
Sum squared resid	6.89E+10	Schwarz criterion	24.77515
Log likelihood	-354.1887	Hannan-Quinn criter.	24.67800
F-statistic	21.97845	Durbin-Watson stat	2.140974
Prob(F-statistic)	0.000003		

Decision: Stationary at First Differencing.

Appendix 2: Results of Johansen Cointegration Test

Date: 08/31/18 Time: 14:03
Sample (adjusted): 1988 2015
Included observations: 25 after adjustments
Trend assumption: Linear deterministic trend
Series: RGDPGR MKTCAPRAT ALSIND TMNI VSTTRA TURNR VOLSTRD
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 *	0.971030	233.1723	125.6154	0.0000
At most 1 *	0.818924	144.6352	95.75366	0.0000
At most 2 *	0.811530	101.9142	69.81889	0.0000
At most 3 *	0.676012	60.19381	47.85613	0.0023
At most 4 *	0.460824	32.01757	29.79707	0.0273
At most 5 *	0.368977	16.57473	15.49471	0.0343
At most 6 *	0.183376	5.064401	3.841466	0.0244

Trace test indicates 7 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 *	0.971030	88.53711	46.23142	0.0000
At most 1 *	0.818924	42.72096	40.07757	0.0246
At most 2 *	0.811530	41.72044	33.87687	0.0047
At most 3 *	0.676012	28.17623	27.58434	0.0420
At most 4	0.460824	15.44285	21.13162	0.2591
At most 5	0.368977	11.51033	14.26460	0.1304
At most 6 *	0.183376	5.064401	3.841466	0.0244

Max-eigenvalue test indicates 4 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=I):

RGDPGR	MKTCAPRAT	ALSIND	TMNI	VSTTRA	TURNR	VOLSTRD
-0.976162	-1.522566	1.848656	3.825416	0.251255	5.563442	-4.671127
-1.971957	3.888360	-2.359418	-0.317260	0.453962	-4.042063	-1.233213
0.022802	1.377293	-2.053346	0.362683	-0.449777	-1.873835	-0.467924
0.002164	-4.242917	4.115035	1.104763	-1.407975	3.264285	0.268177
-0.940783	-1.641905	0.551170	0.904620	0.333864	3.201693	0.146712
-0.287001	0.164534	-1.088055	1.084957	0.121051	-0.386454	-0.138060
-0.405738	-0.283293	-1.273854	2.142604	1.021795	-0.158777	-1.337541

Unrestricted Adjustment Coefficients (alpha):

D(RGDPGR)	-0.016737	0.173544	0.147507	-0.280424	0.764505	-0.083577	0.0
D(MKTCAPRAT)	0.051544	0.067935	-0.223350	-0.111662	-0.020871	-0.068915	0.0
D(ALSIND)	0.092403	0.090036	0.048046	0.016521	0.051444	-0.092912	0.0
D(TMNI)	0.104794	0.074525	0.269759	-0.449218	0.065353	-0.263264	-0.0
D(VSTTRA)	0.116982	0.611347	0.362831	0.245468	-0.085658	0.008986	-0.0
D(TURNR)	-0.125028	0.124024	-0.023499	-0.105476	-0.091798	0.117203	0.0

D(VOLSTRD)	0.273390	0.125768	0.060783	-0.011869	-0.136240	0.087242	0.0

1 Cointegrating Equation(s): Log likelihood -57.65703

Normalized cointegrating coefficients (standard error in parentheses)

RGDPGR	MKTCAPRAT	ALSIND	TMNI	VSTTRA	TURNR	VOLSTRD
1.000000	1.559748	-1.893801	-3.918834	-0.257391	-5.699304	4.785198
	(0.26791)	(0.24873)	(0.18907)	(0.07673)	(0.37500)	(0.17821)

Adjustment coefficients (standard error in parentheses)

D(RGDPGR)	0.016338
	(0.29570)
D(MKTCAPRAT)	-0.050315
	(0.07995)
D(ALSIND)	-0.090200
	(0.05935)
D(TMNI)	-0.102296
	(0.18804)
D(VSTTRA)	-0.114193
	(0.20953)
D(TURNR)	0.122048
	(0.07475)
D(VOLSTRD)	-0.266873
	(0.07732)

2 Cointegrating Equation(s): Log likelihood -36.29656

Normalized cointegrating coefficients (standard error in parentheses)

RGDPGR	MKTCAPRAT	ALSIND	TMNI	VSTTRA	TURNR	VOLSTRD
1.000000	0.000000	-0.528952	-2.116994	-0.245386	-2.276864	2.947980
		(0.08876)	(0.11603)	(0.05670)	(0.13413)	(0.14050)
0.000000	1.000000	-0.875045	-1.155212	-0.007697	-2.194226	1.177894
		(0.05168)	(0.06756)	(0.03301)	(0.07810)	(0.08181)

Adjustment coefficients (standard error in parentheses)

D(RGDPGR)	-0.325884	0.700286
	(0.65966)	(1.25191)
D(MKTCAPRAT)	-0.184280	0.185677
	(0.17629)	(0.33457)
D(ALSIND)	-0.267746	0.209401
	(0.12428)	(0.23585)
D(TMNI)	-0.249255	0.130223
	(0.42187)	(0.80063)
D(VSTTRA)	-1.319742	2.199024
	(0.33161)	(0.62933)
D(TURNR)	-0.122523	0.672615
	(0.15407)	(0.29239)
D(VOLSTRD)	-0.514883	0.072778
	(0.15996)	(0.30357)

3 Cointegrating Equation(s): Log likelihood -15.43634

Normalized cointegrating coefficients (standard error in parentheses)

RGDPGR	MKTCAPRAT	ALSIND	TMNI	VSTTRA	TURNR	VOLSTRD
1.000000	0.000000	0.000000	-3.383569	0.028918	-3.036152	4.312885
			(0.24769)	(0.11435)	(0.31387)	(0.33112)
0.000000	1.000000	0.000000	-3.250504	0.446084	-3.450315	3.435855
			(0.39593)	(0.18278)	(0.50170)	(0.52928)
0.000000	0.000000	1.000000	-2.394498	0.518580	-1.435457	2.580396
			(0.43108)	(0.19901)	(0.54625)	(0.57627)

Adjustment coefficients (standard error in parentheses)

D(RGDPGR)	-0.322521	0.903447	-0.743288
	(0.65469)	(1.30823)	(1.08098)
D(MKTCAPRAT)	-0.189373	-0.121941	0.393614
	(0.12643)	(0.25265)	(0.20876)
D(ALSIND)	-0.266651	0.275575	-0.140266
	(0.12144)	(0.24267)	(0.20051)
D(TMNI)	-0.243104	0.501761	-0.536016
	(0.39494)	(0.78918)	(0.65209)
D(VSTTRA)	-1.311469	2.698748	-1.971181
	(0.26483)	(0.52921)	(0.43728)
D(TURNR)	-0.123059	0.640249	-0.475507
	(0.15353)	(0.30680)	(0.25351)
D(VOLSTRD)	-0.513497	0.156494	0.083856
	(0.15643)	(0.31259)	(0.25829)

4 Cointegrating Equation(s): Log likelihood -1.348221

Normalized cointegrating coefficients (standard error in parentheses)

RGDPGR	MKTCAPRAT	ALSIND	TMNI	VSTTRA	TURNR	VOLSTRD
1.000000	0.000000	0.000000	0.000000	2.003577	3.502786	-0.737723
				(0.34668)	(0.78495)	(0.19462)
0.000000	1.000000	0.000000	0.000000	2.343086	2.831469	-1.416130
				(0.36191)	(0.81943)	(0.20317)
0.000000	0.000000	1.000000	0.000000	1.916015	3.192045	-0.993839
				(0.31653)	(0.71667)	(0.17769)
0.000000	0.000000	0.000000	1.000000	0.583602	1.932557	-1.492687
				(0.09049)	(0.20488)	(0.05080)

Adjustment coefficients (standard error in parentheses)

D(RGDPGR)	-0.323128	2.093260	-1.897240	-0.375387	
	(0.63625)	(1.76679)	(1.58725)	(1.15970)	
D(MKTCAPRAT)	-0.189615	0.351832	-0.065880	-0.028742	
	(0.11051)	(0.30687)	(0.27568)	(0.20143)	
D(ALSIND)	-0.266615	0.205476	-0.072279	0.360592	
	(0.12110)	(0.33628)	(0.30210)	(0.22073)	
D(TMNI)	-0.244076	2.407756	-2.384564	-0.021205	
	(0.30807)	(0.85546)	(0.76853)	(0.56151)	
D(VSTTRA)	-1.310938	1.657248	-0.961072	0.656324	
	(0.22782)	(0.63263)	(0.56834)	(0.41525)	
D(TURNR)	-0.123287	1.087776	-0.909545	-0.642681	
	(0.14215)	(0.39472)	(0.35461)	(0.25909)	
D(VOLSTRD)	-0.513522	0.206855	0.035013	1.014862	
	(0.15630)	(0.43402)	(0.38991)	(0.28488)	
	(0.24241)	(0.64090)	(0.55885)	(0.41648)	(0.16224)
D(TURNR)	-0.036925	1.238500	-0.960142	-0.725723	0.153318
	(0.14451)	(0.38206)	(0.33315)	(0.24828)	(0.09672)
D(VOLSTRD)	-0.385350	0.430549	-0.040079	0.891616	0.069672
	(0.14916)	(0.39437)	(0.34388)	(0.25627)	(0.09983)

Appendix 3: Results of Vector Error Correction Model Estimation

Vector Error Correction Estimates
Date: 09/04/18 Time: 00:36
Sample (adjusted): 1988 2015
Included observations: 28 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1
RGDPGR(-1)	1.000000

MKTCAPRAT(-1)	0.015948
	(0.02909)
	[0.54814]
ALSIND(-1)	0.665952
	(0.26649)
	[2.49894]
TMNI(-1)	-0.114512
	(0.39460)
	[-0.29020]
VSTTRA(-1)	-0.124189
	(0.03148)
	[-3.94463]
TURNR(-1)	-1.277638
	(0.09010)
	[-14.1808]
VOLSTRD(-1)	0.351018
	(0.43407)
	[0.80867]
C	-4.316961

Error Correction:	D(RGDPGR)	D(MKTCAPRAT)	D(ALSIND)	D(TMNI)
CointEq1	-1.241767	-0.653428	-0.044727	-0.148239
	(0.17504)	(0.94945)	(0.02846)	(0.09644)
	[-7.09429]	[-0.68821]	[-1.57172]	[-1.53715]
D(RGDPGR(-1))	-0.073760	-0.249234	-0.004773	0.040114
	(0.11516)	(0.62467)	(0.01872)	(0.06345)
	[-0.64049]	[-0.39898]	[-0.25494]	[0.63223]
D(MKTCAPRAT(-1))	-0.131496	-0.244803	-0.025885	-0.030041
	(0.06038)	(0.32751)	(0.00982)	(0.03327)
	[-2.17787]	[-0.74747]	[-2.63690]	[-0.90307]
D(ALSIND(-1))	9.127267	8.385261	1.020061	1.733077
	(1.73944)	(9.43520)	(0.28280)	(0.95835)
	[5.24726]	[0.88872]	[3.60703]	[1.80840]
D(TMNI(-1))	-0.016800	1.285298	0.035806	-0.154445
	(0.41389)	(2.24503)	(0.06729)	(0.22803)
	[-0.04059]	[0.57251]	[0.53211]	[-0.67730]
D(VSTTRA(-1))	-0.183889	-0.246810	-0.031850	-0.069280
	(0.07712)	(0.41834)	(0.01254)	(0.04249)
	[-2.38437]	[-0.58998]	[-2.54012]	[-1.63047]
D(TURNR(-1))	-0.823473	-0.908083	-0.059429	-0.138420
	(0.16655)	(0.90343)	(0.02708)	(0.09176)
	[-4.94423]	[-1.00515]	[-2.19471]	[-1.50846]
D(VOLSTRD(-1))	2.392399	-0.054658	0.031047	0.923069
	(0.77821)	(4.22123)	(0.12652)	(0.42876)
	[3.07424]	[-0.01295]	[0.24539]	[2.15290]
C	-2.242726	-0.907424	-0.006281	-0.396788
	(0.46146)	(2.50311)	(0.07502)	(0.25424)

	[-4.86004]	[-0.36252]	[-0.08372]	[-1.56065]
R-squared	0.823093	0.100844	0.505060	0.336237
Adj. R-squared	0.748605	-0.277747	0.296665	0.056757
Sum sq. resids	52.09309	1532.731	1.376941	15.81290
S.E. equation	1.655820	8.981651	0.269204	0.912282
F-statistic	11.05011	0.266367	2.423564	1.203082
Log likelihood	-48.42187	-95.76671	2.442479	-31.73098
Akaike AIC	4.101562	7.483336	0.468394	2.909356
Schwarz SC	4.529771	7.911545	0.896603	3.337565
Mean dependent	-0.263929	0.605357	0.169476	0.044899
S.D. dependent	3.302443	7.945727	0.320996	0.939328

Determinant resid covariance (dof adj.)	50.81942
Determinant resid covariance	3.366656
Log likelihood	-295.1068
Akaike information criterion	26.07906
Schwarz criterion	29.40957