

# **Dynamic Relationship between Central Securities Clearing and Settlement System (CSCS) and Economic Growth in Nigeria: Special Reference to Pre and Post Analysis (1999 – 2016)**

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## **I. Introduction**

Over the years, the capital market has grown and expanded to cater to the investment and wealth creation capacity of the government, private sector investors and the general public. It has also served as a measure of confidence and, as an effective economic barometer for gauging the economy's temperature from time to time with a view to determining necessary adjustments. Contingent upon its power of pricing mechanism, the market provides management with some ideas of the prevailing cost of capital which goes a long way in the determination of the levels and rates of investment in the economy. It has also acted as a reliable medium for broadening the ownership base from erstwhile family dominated firms (Adewuyi and Olowookere, 2011).

The most important landmark in the capital market development in securities trading is the Central Securities and Clearing System (CSCS Limited) April, 1997), the introduction of Automated Trading System (ATS-April, 1998) and the endorsement of the Abuja Stock Exchange: Also of note is the Investment and Securities Decree 4 5 of 1999, which synchronizes pasty provisions and consolidates authority as well as regulatory and investment powers (Ojo, Michael and Adeusi, 2012).

The capital market is experiencing vibrancy in providing expected funds to corporate organizations as well as the ordinary investors by its new support instrument of CSCS. Over the years, trading had been very clumsy, fraud prone and unprofessional. It was discovered that with the introduction/operation of the CSCS-the delivery and settlement subsidiary of the Exchange there is capability in aborting, blocking and reduction of fraudulent transactions. Indeed, forgeries and cloning of share certificates from the shareholders and registrars are inevitable, yet it was discovered that the CSCS processes share certificates within 24 hours, thereafter the shares as represented, become eligible for trading on the floor of the Exchange. Thus, the CSCS processes trades and forwards same to the settlement banks for settlement (returns/recycles all shares certificates received to registrars for scrutiny and retentions while being updated on the transactions for their application), transactions of the investor improved fairly above the poverty line through a systematically), meaningful interpretation of the time value for money (Yartesy, 2008).

The CSCS is a company established within the capital market to make trading activities in the stock market efficient, transparent and investors' friendly. It has its directors as a Bank representing the settlement Banks, the Association of Registrars of Quoted Companies, Investors in general (A rep) and Representative stock broking firms (Yartesy, 2008).

The introduction of the Central Securities Clearing and Settlement System (CSCS) has enhanced the efficiency of the stock market. Traders are now cleared and settle on T +%basis as against T + 14 which existed prior to the introduction of the new system. With this and the planned automation of the trading system, the Stock Exchange became much more efficient. Undeniably the introduction of the new clearing settlement period has improved transparency and brought the stock market in line with internationally acceptable clearing and settlement standards (Yartesy and Adjasi, 2007).

Operationally, trading transactions is being executed electronically by stock brokers that working from work stations (computers) which are linked to a Central server at the data center of control room. This server is backed by a duplication server in case of eventualities. The ATS is part and parcel of the CSCS with a mandate to speed up the delivery system of the Nigerian Capital Market through the introduction of efficient, effective securities clearing. The NSE hopes to achieve this through the implementation of the Stock Exchange Management System (SEMS), software application package. The SEMS software technology is a four module package which includes clearing and settlement, depositing and registry system, custodian systems, board and automated trading and market, and market control and surveillance, broker management and statistics (Nyong, 2003).

The trading system software also provides for the discharge of investor protection, functions by the exchanger, through surveillance and market control measures. Indeed, the surveillance and investigation Department of SEC is also linked remotely to the ATS environment to provide free access for the commission to monitor trading activities. The investor can access both the primary and the secondary markets through a stock broking firm, which is a dealing member of the NSE (Yartesy, 2008).

Several challenges were faced by the Nigerian Capital Market in the past, for which there has been a turn down in the value of shares resulting from the global economic and financial crisis. This has equally reduced the propensity to invest in the sector thereby, affecting the economic growth of Nigeria. The poor functioning capital markets discourage foreign investors because the markets are illiquid and trading is costly (Geert, 1997, Kolapo and Adaramola, 2012).

The issue of manipulation and other fraud related activities serve as major hindered to capital market objective of improving economic growth due to the fact that leakages caused by player or some stakeholders in the industry lead to stagnant or constant declining of investors to invest in stock market and that was what brought about CSCS to dematerialized the manual processing of the capital market activities (Kolapo and Adaramola, 2012).

No gainsaying, whenever investors with high share holdings off-load; the market crashes, but whenever they keep mute in terms of buying and selling, there is stillness in the market. This results in most of the stocks not changing in price movements (Ariyo and Adelegan, 2005). Hence there is need to examine CSCS contribution to economic growth in Nigeria

### **Objective of the Study**

The broad objective of this study is to investigate the effect of capital market central securities clearing system on the Nigeria economic growth while the specific objectives are as follow;

- i. To investigate the effect of Capital Market (Pre and Post CSCS) on Nigeria Economic growth.
- ii. To investigate the capital market significant change in the investment growth in Nigeria before and after implementation of Central Security Clearing System
- iii. To identify the effect of share certificate dematerialization on the performance of trading activities of Capital Market on Nigeria Economic Growth

### **Research Questions**

To achieve the objectives of the study, the following research questions were drawn;

- i. How does capital market (Pre and Post CSCS) affect the Nigeria economic growth within the period under review?
- ii. To what extent does the capital market significantly change the investment growth in Nigeria before and after implementation of Central Security Clearing System?
- iii. What are the effects of share certificate dematerialization on the performance of trading activities of Nigerian Capital Market on Nigeria economy?

### **Research Hypotheses**

In pursuance of this study, three null hypotheses were proposed for the study as stated below;

H<sub>01</sub> Capital Market (Pre and Post CSCS) has no significant effect on Nigeria economic growth.

H<sub>02</sub>: Capital market does not have significant effect on the Nigerian economic growth before and after implementation of Central Securities Clearing System.

H<sub>03</sub>: Capital Market Share certificate dematerialization does not have significant effect on Nigeria economic growth?

The scope of the study will cover the clearing and settlement system in the Nigeria stock exchange with special reference to Lagos, the activities of the Central Security Clearing System, its establishment. It shall also cover how the Central Security Clearing System can improve the transactions in the Nigerian Capital Market. The place of the study is Lagos Metropolis and it will be involving eighteen years of assessment (1999 – 2017) covering pre and post CSCS.

## **II. Literature Review**

The Financial System of any given Society is the Framework within which Capital Formation take place. It is the framework within which the Savings of some members of the society are made available to other members of the society for productive investment. This process is possible by the intermediation of financial institution which, are the money market and capital market. (Adewuyi and Kolawole, 2011)

Notwithstanding, popular claims that a good number of capital markets in Africa are emerging and witnessing rapid growth, there are still some doubts about their ability to play a linkage role between the market and the wider economy. While, for instance, few stocks remain active and make up a bulk of the total market

capitalization, serious informational and disclosure deficiencies remain very prevalent amongst most capital market (Yartey and Adjasi, 2007).

This liquidity argument is based on the proposition that capital markets enable firms to acquire much needed capital quickly and, by so doing, helps in facilitating capital allocation, investment, and growth. It also assists in reducing investment risk due to the ease with which equities are traded and play crucial role in helping to determine the level of economic activities in most economies (Yartey and Adjasi, 2007).

The results of a study carried out by Beccalli, Barbara C. B., Girardone, C. (2006), which examined the effect of capital market development on economic growth in 14 African countries, revealed a positive relationship between the two and indicated that capital market developments played a significant role in growth only for moderately capitalized markets. On the basis of these results, they recommended that low income African countries and less developed capital markets needed to grow more and develop their markets to elicit economic gains from capital markets. Some other studies have equally found evidence in support of the argument that a significant positive relation between savings and capital market size and liquidity do exist and that a growing or deepening capital market would not necessarily spore higher savings rate.

Such efficiency consciousness may no doubt be transmitted into the wider macro-economic management, which consequently would lead to economic development in the country. Providing further illustrations on how this transmission takes place, Yartey and Adjasi (2007) argue that capital markets equally provide an avenue for growing companies to raise capital at a lower cost, while positively influencing individual savings in the economy; and that companies in countries with developed capital markets are less dependent on bank financing, which can reduce the risk of a credit crunch.

Notwithstanding, popular claims that a good number of capital markets in Africa are emerging and witnessing rapid growth, there are still some doubts about their ability to play a linkage role between the market and the wider economy. While, for instance, few stocks remain active and make up a bulk of the total market capitalization, serious informational and disclosure deficiencies remain very prevalent amongst most capital market (Yartey and Adjasi, 2007).

There have been growing concerns and controversies on the role of the stock markets on economic growth and development (Ewah, Esang and Basse 2009).

Ewan, et al (2009) appraises the impact of the capital market efficiency on the economic growth of Nigeria using time series data from 1961 to 2004. They found that the capital market in Nigeria has the potential of growth inducing but it has not contributed meaningfully to the economic growth of Nigeria because of low market capitalization, low absorptive capitalization, illiquidity, misappropriation of funds among others.

Pat D (2010) studied "An Empirical Analysis of the Impact of the Nigerian Capital Market on Her Socio-economic Development" In his analysis, he specified that the socioeconomic development (proxy by Gross Domestic Product) is significantly influenced by the capital market indices (market capitalization, new issues, value of transaction and total listing). It was found that the market capitalization and value of transaction had positive but insignificant impact on the GDP whereas the total new issues had a negative influence on GDP. However, the total listing was positively signed and also statistically significant. The findings agree with Ewah et al. (2009) who found that the capital market in Nigeria has the potentials for growth inducing but have not contributed meaningfully to the economic growth of Nigeria due to low market capitalization, small market size, few listed companies low volume of transactions, low absorptive capitalization, illiquidity etc.

Ewah, Esang and Basse (2009) there have been controversies on the role of the stock markets on economic growth and development. There have been mixed results; while some are in support of a positive link, some negative link and others do not find any empirical evidence to support such conclusion. However, the researcher will come up with either positive or negative link between the variables under study. Thus, the findings and conclusion was supported with empirical evidence.

### **III. Research Method**

This section presents the research method for this study which focuses on Central Securities Clearing System (CSCS) with special reference to Nigeria economic growth.

The researcher adopted the multiple regression analysis based on the classical linear regression model, otherwise known as Ordinary Least Square (OLS) technique. The researcher's choice of this technique of analysis based not only on its computational simplicity but also as a result of its optimal properties such as linearity, unbiasedness, minimum variance, zero mean value of the random terms, etc (Gujarati 2004, Koutsoyiannis 2001).

Following the approach adopted by Ewal et al (2009) in their works on capital market and economic growth, this work will make use of the secondary data. Such data will be sourced from Central Bank of Nigeria, Published from annual report and the Nigerian Stock exchange, CBN Statistical Bulletin and annual report and other relevant documents.

The researcher will use multiple time series and ordinary least square regression to evaluate the relationship between capital market CSCS and Nigeria economic growth. The justification for adopting this analytical technique was based on the optimal properties such as linearity, unbiasedness, minimum variance, zero mean value of the random terms, etc (Gujarati 2004, koutsoyiannis 2001). The estimated parameter was evaluated by determining whether they have satisfied the statistical a priori criteria. In the course of the data analysis, the test statistics were evaluated with the following; correlation coefficient, t-test and f-test. This technique chosen will aid the researcher in ascertaining the relationship between the variables stated in the model simultaneously.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + U_t$$

Where Y = Dependent Variable

X1, X2 and X3 = Explanatory Variables

$\beta_0$  = Constant

$\beta_1 + \beta_2 + \beta_3$  = Slope of coefficients

$U_t$  = Stochastic variable

According to Pat D (2010), studied “An Empirical Analysis of the Impact of the Nigerian Capital Market on Her Socio-economic Development” In his analysis, he specified that the socioeconomic development (proxy by Gross Domestic Product) is significantly influenced by the capital market indices (market capitalization, new issues, value of transaction and total listing).

Thus, the researcher evaluates the strong relationship between Capital Market and economic growth using capital market indicators.

The model is based on Demirguc-Kunt and Levine (1996), Levine and Zervos (1996), Demirguc-Kunt et al. (1996), Levine (2002), Ewah et al. (2009) and Pat D(2010) which have investigated linkage between stock market and economic growth. Model which specifies that the socio-economic development (proxy by GDP) is significantly influenced by the capital market indices (market capitalization, new issues, value of transaction and total listing) was used by them.

In the works of Demirguc-Kunt and Levine (1996), Levine and Zervos (1996), Demirguc-Kunt et al. (1996), Ewah et al. (2009) and Pat D(2010), their model was specified in relation to their investigation on stock market and economic growth. The socio-economic development (proxy by Gross Domestic Product) is significantly influenced by the capital market indices (market capitalization, new issues, value of transaction and total listing) are formulated as follows:

$$GDP = F (MCAP, TNI, TNS)$$

$$GDP = a + a_1 MCAP + a_2 TNI + a_3 TNS + U$$

Where the *a priori* expectation is:  $a_1, a_2, a_3, a_4 > 0$  and

GDP = Gross Domestic Product,

MCAP = Market capitalization,

TNI = Total New Issues,

TNS = Total value of transactions,

U = Disturbance Term,

a = Intercept,  $a_1 - a_4$  = coefficient of the independent variables

In a linear function, it is represented as follows with respect to the hypotheses;

Hypothesis 1

Capital market does not have significant effect on the Nigerian economic growth after implementation of Central Securities Clearing System  $RGDP = \beta_0 + \beta_1 MCAP + \beta_2 TNI + \beta_3 TNS + U_1$

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Hypothesis 2

Capital Market has not caused any significant change in the investment growth in Nigeria after Central Security Clearing System.

$GCF = \beta_0 + \beta_1 MCAP + \beta_2 TNI + \beta_3 TNS + U_2$  .....2

#### **IV. Interpretation and Results Analysis**

This section shows the results of the empirical analysis on Market Capitalization (MCAP), Total New Issues (TNI), Total Value of Transactions (TNS) and Real Gross Domestic Product (RGDP) in Nigeria between 1999 and 2016.

Multiple Regression Analysis (MRA) of Ordinary Least Square (OLS), Empirical Analysis of Effect of MCAP, TNI and TNS on GDP for the Period of 1999 and 2016 (Covered Pre (1999 – 2007) and Post (2008 – 2016) CSCS), in order to achieve the first specific objective, we adopt Ordinary Least Square for both pre (1999 – 2007) and post (2008 – 2016) as a method of estimation techniques to estimate the effect of endogenous variables over exogenous variable with a view to reconcile conflicting view express in previous literature. We therefore present our results of both pre and post CSCS via OLS estimation techniques in Table 4.1

**Table 4.1:** Estimate Results of Effect of MCAP, TNI and TNS on GDP for the Period of 1999 and 2016 (Covered Pre (1999 – 2007) and Post (2008 – 2016) CSCS)

Variables	OLS (PRE)		OLS (POST)	
	Coefficient	Prob.	Coefficient	Prob.
C (Constant)	3.85E+12	0.0110	1.00E+14	0.0287
GDP				
MCAP	184.2101	0.0585	-133.1810	0.8157
TNI	371325.6	0.8167	-17579243	0.0473
TNS	1.05E+10	0.0156	-6.28E+10	0.0984
R Square	0.958399		0.651977	
Adjusted R <sup>2</sup>	0.933438		0.443164	
Durbin Watson	2.216160		0.469038	
F – Statistics	38.39648		3.122293	
Prob. F – Statistics	0.000708		0.126030	
No of Observation	9		9	
Schwarz criteria	59.48812		64.60275	
Mean Dep. Variable	1.05E+13		6.78E+13	
S.D. Dep Variable	6.39E+12		2.85E+13	
SSR	1.36E+25		2.26E+27	

Source: Author’s Computation, 2018

The effect of the variables in both period (pre and post CSCS) were presented in table 4.1 for comprehensive assessment. In both pre and post CSCS, the Durbin Watson shows that autocorrelation and heteroscedasticity are absent with 2.2 during pre and 0.46 during post, though have a better in post compare to that of pre. The R-square of 0.958399 depicts that variation in dependent variable (economic growth proxy with GDP) was 95% percent jointly explained all independent variables (MCAP, TNI, and TNS) for the period of pre CSCS while 0.651977 representing 65 percent of all variables of interest was gotten for the period of post.

The effect of each of the exogenous variables on economic growth (proxy with GDP) was via their coefficient. The coefficient of MCAP which was 184.2101 shows that there was positive but insignificance effect on economic growth (GDP) as demonstrated in the probability of 0.0585. Thus, a percentage change in MCAP leads to 0.0585 percentage change in economic growth (GDP) during pre CSCS but negative coefficient was realized during post CSCS to the tune of -133.1810 which implies that a percentage change in MCAP leads to 113.18 declined in economic growth (GDP). This is contrary to apriori-expectation of the work, because positive relationship was expected in post CSCS between the exogenous variable (MCAP) and endogenous variable (GDP). It is as well shows direct negative implication between both variables (MCAP and GDP) during post CSCS which is contrary to the result gotten for the period of pre CSCS.

This therefore suggest an area of policy shift for government and policy maker to meet CSCS economic diversification strategy to achieve positive coefficient and probability to be significance instead of 0.8157 level insignificance level. On the other hand, experience positive coefficient result (371325.6) during the pre CSCS but insignificance (0.8167) as depicted in Table 4.1 while the coefficient is negative (-7579243) during post CSCS with probability of 0.0473 which as well contrary to apriori expectation.

Lastly the TNS coefficient was positive (1.0E+10) with probability of 0.0156 insignificance level during pre CSCS while the coefficient was negative (-628E+10) during post CSCS with insignificance level of 0.0984. above all the results shows that all exogenous variables (MCAP, TNI, TNS) were positive and insignificance during pre CSCS but experience negative coefficient and also insignificance during post CSCS.

The second result we examined is the descriptive analysis of data that gave us brief overview of the sample statistics of the data. We considered statistics such as minimum and maximum value, mean as well as standard deviation and probability for both pre and post CSCS. The statistical analysis also provide the information about the distribution of selected samples using kurtosis, skewness and Jarque-Bera statistics. The report of most of this characteristics were shown in Table 4.2 below;

**Table 4.2** Descriptive Statistics of Empirical Analysis of the Effect of Lending Rate (LR) on Bank Performance (Return on Equity) in Nigeria

Variables	Pre – CSCS					Post- CSCS				
	Min	Max	Mean	Std. D	Prob.	Min	Max	Mean	Std. D	Prob.
RGDP	3.31	2.09	1.05	6.39	0.64	2.47	1.03	6.78	2.85	0.68
MCAP	2.37	8.49	2.00	2.66	0.03	2.98	8.06	4.99	1.58	0.78
TNI	387	378	986	138	0.32	257	385	709	117	0.00
TNS	13.7	789	251	0.94	0.50	2.49	956	210	284	0.00

Source: Author’s computation, 2018

Above Table 4.2 shows the results deduced from result for both pre and post CSCS for the period of eighteen years (9 years pre CSCS and 9 years post CSCS). It is crystal clear that different behaviour were recorded in term result gotten. RGDP minimum value was 3.31 during pre CSCS but reduces to 2.47 during post CSCS, maximum value, mean, standard deviation and probability (2.09, 1.05, 6.39 and 0.64 respectively) were value gotten during pre CSCS while 1.03, 6.78, 2.85 and 0.68 were vale realized respectively for maximum value mean, standard deviation and probability during post CSCS for RGDP.

The Table 4.2 also depicts the value for MCAP in relation to minimum value, maximum value, mean, standard deviation and probability as 2.37, 8.49, 2.00, 2.66 and 0.03 respectively during the pre CSCS while 2.98, 8.06, 4.99, 1.58 and 0.78 were value derived for minimum value, maximum value, mean, standard deviation and probability respectively for the post CSCS. The TNI recorded 387, 376, 986, 138 and 0.32 as value for minimum value, maximum value, mean, standard deviation and probability respectively during pre CSCS while 257, 385, 709, 117 and 0.00 were recorded against minimum value, maximum value, mean, standard deviation and probability respectively during post CSCS.

TNS based on Table 4.2 report shows that minimum value, maximum value, mean, standard deviation and probability have 13.7, 789, 251, 0.94 and 0.50 value respectively during pre CSCS while 2.49, 956, 210, 284 and 0.00 are minimum value, maximum value, mean, standard deviation and probability respectively for the period during CSCS. Both TNI and TNS were significance during post CSCS while other variables including TNI and TNS (except during post CSCS) were not significance.

The estimate of the causal nexus among the variables of interest (MCAP, TNI, TNS and economic growth (GDP) were further carried out using granger causality test and the result was presented in Table 4.3 below.

**Table 4.3: Granger Causality Result Output (Pre and Post)**

Null Hypothesis:	Pre-CSCS			Post-CSCS	
	Obs	F-Stat	Prob.	F-Stat	Prob.
MCAP does not Granger Cause RGDP	7	0.24468	0.8034	0.13186	0.8835
RGDP does not Granger Cause MCAP		0.08299	0.9234	0.56531	0.6389
TNI does not Granger Cause RGDP	7	9.30049	0.0971	20.9156	0.0456
RGDP does not Granger Cause TNI		1.77818	0.3599	0.28821	0.7763
TNS does not Granger Cause RGDP	7	0.37200	0.7289	6.23716	0.1382
RGDP does not Granger Cause TNS		0.32833	0.7528	537.288	0.0019
TNI does not Granger Cause MCAP	7	4.36244	0.1865	0.04442	0.9575
MCAP does not Granger Cause TNI		5.0073	0.1665	0.18735	0.8422
TNS does not Granger Cause MCAP	7	0.1069	0.9033	1.30908	0.4331
MCAP does not Granger Cause TNS		0.6980	0.5889	0.49543	0.6687
TNS does not Granger Cause TNI	7	1.1448	0.4662	0.34465	0.7437
TNI does not Granger Cause TNS		2.2748	0.3054	9.68396	0.0936

**Source: author's computation, 2018**

The result shows that there is a unidirectional causality running from market capitalization (MCAP) to economic growth (proxy with RGDP) which depicted that an increase in economic growth can be achieved as a result of increasing in market capitalization (MCAP) in both pre and post CSCS era. Thus, situation that occur between total value of transactions (TNI) and economic growth (proxy with RGDP) in pre CSCS and shows no directional relationship either from TNI to RGDP or otherwise during pre CSCS and also no causal relationship observed in post CSCS based on above Table 4.4 result.

However, there is a unidirectional causality running from total value of transaction TNS to market capitalization (MCAP) at post but causal relation was absence at pre CSCS era. The table also depicted that there is a unidirection relationship between TNS and MCAP at pre CSCS era but no causal relation between TNS and MCAP at post CSCS. Finally, there was no causal relation between TNI and TNS at both era (CSCS pre and post).

We advanced our analysis interactive effect of our variables of interest by graphical representation in which the pre and post CSCS were demonstrated graphically.

### V. Summary of Findings, Conclusion and Recommendation

The broad objective of this study is to investigate the effect of capital market central securities clearing system on the Nigeria economic growth. The sustainability and safety of a healthy capital market system is solely reliant on the market capitalization (MCAP), total new issues (TNI) and total value of transaction (TNS) in which economic growth will be spurred. In order to achieve and maintain adequate economic growth level, the factors that have significant effects on economic growth needs to be well-managed and controlled adequately.

The previous studies (Ewah, Esang and Bassey, 2009) show that there have been controversies on the role of stock markets on economic growth and development across the globe. Market capitalization (MCAP) is the prime determinant of economic growth while others total new issues (TNI) and total value of transaction (TNS) are secondary variables that as well affect the economic growth. The motivation of the study emanates from the poor operational method before the introduction of CSCS to the capital market and low levels transaction via manual operation and delay in result of dealing with high manipulation in Nigeria.

The specific objectives of the study are to investigate the effect of Capital Market (Pre and Post CSCS) on Nigeria Economic growth, to investigate the capital market significant change in the investment growth in Nigeria before and after implementation of Central Security Clearing System and to identify the effect of share certificate dematerialization on the performance of trading activities of Capital Market on Nigeria Economic Growth over the period 1999 -2016.

The study made use of market capitalization (MCAP), total new issues (TNI) and total value of transaction (TNS) as exogenous variables while real gross domestic product (RGDP) serves as endogenous variable. The methodology adopted for the study were multiple regression analysis (MRA) of OLS, descriptive statistics (DS), granger causality (GC) as well as graphical representation from Nigeria capital market data between 1999 and 2016.

In Nigeria, the three exogenous variables (market capitalization (MCAP), total new issues (TNI) and total value of transaction (TNS) as exogenous variables) were manipulated easily, delayed because of the manual involvement before CSCS but near perfection after CSCS and little or no manipulation were involved. Endogenous variable experienced shocks as a result of introduction of CSCS policy, previous study lacks enough evidence to ascribe the capital market crisis. However in the Nigeria, capital market displayed an unusual trend during the period post CSCS and this trend could be due to the sensitive nature of the implementation of CSCS. The implication of these findings is that capital market must continuously review their managerial policies.

Capital market via market capitalization (MCAP), total new issues (TNI) and total value of transaction (TNS) positively influences economic growth in Nigeria. However, capital market size positively influences economic growth in Nigeria, though, negatively affects economic growth in Nigeria after implementation of CSCS. Meanwhile, market capitalization (MCAP) has no influence on economic growth in Nigeria after implementation of CSCS.

Furthermore, operations quality of capital market after implementation of CSCS has positive influence on economic growth in Nigeria but adverse effect before implementation of CSCS. The market capitalization (MCAP), total new issues (TNI) and total value of transaction (TNS) coefficients have negative effects on economic growth in Nigeria during post CSCS but experiences positive effects during pre CSCS.

However, the market capitalization (MCAP), total new issues (TNI) and total value of transaction (TNS) (pre and post era) has no significant effect on economic growth (proxy with RGDP) in Nigeria between the period under review based on available outcome.

Finally, the study found unidirectional causal relationship running from market capitalization (MCAP) to economic growth (proxy with RGDP) and unidirectional causal relationship running from total value of transaction TNI to market capitalization (MCAP) at post CSCS era which implies that an increase in economic growth can be achieved as a result of increasing in market capitalization (MCAP) in both pre and post CSCS era as well as an increase in total value transaction.

This research work contributes to the body of knowledge by investigate the effect of capital market central securities clearing system on the Nigeria economic growth with special reference to pre and post CSCS. The study also utilized multiple regression analysis (MRA) of OLS, descriptive statistics (DS), Granger causality (GC) as well as graphical analysis for the analysis of variables of interest which is uncommon in literatures. The use multiple regression analysis enables the study estimate the effects of exogenous variables (Market Capitalization (MCAP), Total New Issues (TNI), Total Value of Transactions (TNS)) on Real Gross Domestic Product (RGDP) in Nigeria between 1999 and 2016, it further allow the study carry out descriptive statistics check on the variables and as well as causal relationship among variables of interest for the period of pre (1999 to 2007) and post (2008 to 2016) CSCS era.

Consequently, this study focuses on the movement and strength of the variables as depicted in graphical analysis, the study therefore, suggests that the better performance can be achieved by controlling and managing the exogenous variables Market Capitalization (MCAP), Total New Issues (TNI), Total Value of Transactions (TNS).

### **Recommendations**

Based on the findings from the study, the following recommendations are suggested, for economic growth in Nigeria to achieve and maintain good stand, policies must be made and implemented on how exogenous variables of interest (Market Capitalization (MCAP), Total New Issues (TNI), Total Value of

Transactions (TNS)) can positively impacted on economic growth in Nigeria. Management needs to efficiently measure, manage and control the exogenous variables of interest (Market Capitalization (MCAP), Total New Issues (TNI), Total Value of Transactions (TNS)), since this is considered the one of the main determinant of economic growth improvement in Nigeria.

In the two eras under study, Subsequently, to sustain good economic growth, the study recommends that managers should control and manage the capital market efficiently by making and implementing appropriate policies. They should also take precaution in the area of old operation method by considering the new innovation and the manipulation method that was in existence before introduction of CSCS, they should avoid the too big to manage syndrome which could lead to bureaucracy, inflexibility, and materialized instead of paperless and dematerialized that presently in operation.

Generally, this study has achieved its objective of investigate the effect of capital market central securities clearing system on the Nigeria economic growth from 1999 – 2016. The study has clearly shown that there are evidences for the existence of strong relationship between exogenous variables (market capitalization (MCAP), total new issues (TNI), total value of transaction (TNS)) and endogenous variable (real gross domestic product (RGDP)).

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### Appendix I

#### PRE CSCS

Dependent Variable: RGDP

Method: Least Squares

Date: 06/10/18 Time: 13:51

Sample: 1999 2007

Included observations: 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MCAP	184.2101	75.45051	2.441470	0.0585
TNI	371325.6	1519750.	0.244333	0.8167
TNS	1.05E+10	2.92E+09	3.598705	0.0156
C	3.85E+12	9.77E+11	3.936728	0.0110
R-squared	0.958399	Mean dependent var		1.05E+13
Adjusted R-squared	0.933438	S.D. dependent var		6.39E+12
S.E. of regression	1.65E+12	Akaike info criterion		59.40047
Sum squared resid	1.36E+25	Schwarz criterion		59.48812
Log likelihood	-263.3021	Hannan-Quinn criter.		59.21131
F-statistic	38.39648	Durbin-Watson stat		2.216160
Prob(F-statistic)	0.000708			

Post CSCS

Dependent Variable: RGDP  
 Method: Least Squares  
 Date: 06/10/18 Time: 13:47  
 Sample: 2008 2016  
 Included observations: 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MCAP	-133.1810	542.1144	-0.245670	0.8157
TNI	-17579243	6720026.	-2.615949	0.0473
TNS	-6.28E+10	3.10E+10	-2.027609	0.0984
C	1.00E+14	3.30E+13	3.041326	0.0287
R-squared	0.651977	Mean dependent var	6.78E+13	
Adjusted R-squared	0.443164	S.D. dependent var	2.85E+13	
S.E. of regression	2.13E+13	Akaike info criterion	64.51509	
Sum squared resid	2.26E+27	Schwarz criterion	64.60275	
Log likelihood	-286.3179	Hannan-Quinn criter.	64.32593	
F-statistic	3.122293	Durbin-Watson stat	0.469038	
Prob(F-statistic)	0.126030			

**Appendix II**

Descriptive Statistics Pre

	RGDP	MCAP	TNI	TNS
Mean	1.05E+13	2.00E+10	986070.6	251.1447
Median	8.74E+12	1.38E+10	158355.1	161.5820
Maximum	2.09E+13	8.49E+10	3783990.	789.2500
Minimum	3.31E+12	2.37E+09	38740.78	13.71340
Std. Dev.	6.39E+12	2.66E+10	1378430.	263.8660
Skewness	0.480836	1.796901	1.220941	0.947570
Kurtosis	1.814395	5.119679	2.898302	2.780141
Jarque-Bera	0.873926	6.528166	2.239922	1.364961
Probability	0.645995	0.038232	0.326292	0.505362
Sum	9.49E+13	1.80E+11	8874636.	2260.302
Sum Sq. Dev.	3.27E+26	5.64E+21	1.52E+13	557002.0
Observations	9	9	9	9

Descriptive Statistics Post

	RGDP	MCAP	TNI	TNS
Mean	6.78E+13	4.99E+10	709783.5	210.9848
Median	7.26E+13	5.00E+10	324167.7	130.8800
Maximum	1.03E+14	8.06E+10	3852485.	956.4360
Minimum	2.47E+13	2.98E+10	257046.5	2.488000
Std. Dev.	2.85E+13	1.58E+10	1179476.	284.0802
Skewness	-0.481325	0.552954	2.467119	2.318497
Kurtosis	1.937628	2.718393	7.102955	6.717352
Jarque-Bera	0.770749	0.488376	15.44285	13.24516
Probability	0.680196	0.783340	0.000443	0.001330

*Dynamic Relationship Between Central Securities Clearing And Settlement System (CSCS) And*

Sum	6.11E+14	4.49E+11	6388051.	1898.863
Sum Sq. Dev.	6.50E+27	1.99E+21	1.11E+13	645612.3

Observations	9	9	9	9
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Appendix III

Granger pre

Pairwise Granger Causality Tests

Date: 06/10/18 Time: 13:52

Sample: 1999 2007

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
MCAP does not Granger Cause RGDP RGDP does not Granger Cause MCAP	7	0.24468 0.08299	0.8034 0.9234
TNI does not Granger Cause RGDP RGDP does not Granger Cause TNI	7	9.30049 1.77818	0.0971 0.3599
TNS does not Granger Cause RGDP RGDP does not Granger Cause TNS	7	0.37200 0.32833	0.7289 0.7528
TNI does not Granger Cause MCAP MCAP does not Granger Cause TNI	7	4.36244 5.00733	0.1865 0.1665
TNS does not Granger Cause MCAP MCAP does not Granger Cause TNS	7	0.10699 0.69801	0.9033 0.5889
TNS does not Granger Cause TNI TNI does not Granger Cause TNS	7	1.14488 2.27482	0.4662 0.3054

Granger Post

Pairwise Granger Causality Tests

Date: 06/10/18 Time: 13:56

Sample: 2008 2016

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
MCAP does not Granger Cause RGDP RGDP does not Granger Cause MCAP	7	0.13186 0.56531	0.8835 0.6389
TNI does not Granger Cause RGDP RGDP does not Granger Cause TNI	7	20.9165 0.28821	0.0456 0.7763
TNS does not Granger Cause RGDP RGDP does not Granger Cause TNS	7	6.23716 537.288	0.1382 0.0019
TNI does not Granger Cause MCAP MCAP does not Granger Cause TNI	7	0.04442 0.18735	0.9575 0.8422
TNS does not Granger Cause MCAP MCAP does not Granger Cause TNS	7	1.30908 0.49543	0.4331 0.6687
TNS does not Granger Cause TNI TNI does not Granger Cause TNS	7	0.34465 9.68396	0.7437 0.0936