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The Central Securities Clearing System (CSCS) and Nigerian Capital Market Development: Empirical Evidence

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Abstract: *The study is about the impact of Central Securities Clearing System (CSCS) operations on the development of Nigerian capital market. The Nigerian stock exchange was facing a great challenge of ever-growing volume of transactions on one hand and ensuring the transparency in transactions on the other. The need for efficient market where price determination will be effective and transparent became of increasing concern. The call-over system had been then over stretched, need for sudden transformation of the system was necessary where CSCS took the center stage which is one of the outstanding innovations in the securities market in Nigeria. The study focuses on whether the establishment of the central securities clearing system being sponsored by the exchange and the private sector is providing fast and efficient services for the development of the market compared to the era of call-over system. The study is based on the number of objectives prominent among them is, to determine whether the introduction of the CSCS has created a remarkable improvement in the market capitalization and to ascertain if the introduction of CSCS has affected the volume/value of share traded significantly. The procedure for data collection was strictly on secondary source of data, and based on the available data three hypotheses were stated and the econometric technique of student t-test was used to test the hypotheses. The key findings was that CSCS creates an avenue for modernization of operations of the Nigerian capital market contrary to call-over system. The delivery and settlement of transactions has changed to T-3. The trading operations are more attractive unlike pre CSCS era. Based on the findings, the following conclusions was made that CSCS creates a significant impact in the development of the Nigerian capital market as evidence in the NSE all share index and other variables.*

Key words: *Central Securities Clearing System, Nigeria Capital Market Development*

1. Introduction

The idea to have a stock market in Nigeria dates back to the late fifties, this period witnessed an upsurge of private industrial investments and many other developments took place that time which promoted government in taking initiative in establishing formal financial markets. Among those issues were:

a. The need for government to finance the growing budget deficit as from 1958.
b. Increasing pressure from nationalists among others (Aile and Anao, 1986).

The Nigerian stock exchange formally known as the Lagos stock exchange was incorporated in September, 15 1960. On 5th January 1961, the exchange commenced operations with three industrial securities, two Federal Government bonds and seven other securities, which were subject to UK stamps duty.

The three important objectives for the incorporations of the exchange are:

a. To provide facilities to the public in Nigeria for the purchase and sale of funds, shares of any kind and the investment of money.

b. To control the granting of a quotation on the Lagos Stock Exchange in respect of funds, shares, or stock of any company, government municipalities authority or any other corporation.
c. To control the stock broking activities of members, facilitate the exchange of information for their mutual advantage for the benefit of their clients, and other facilities whereby the public can be informed of the prices of shares traded by members (Alile, 1986).

Several relevant enactments gave birth to the chronological development of the Nigerian capital market, among which were the Lagos Stock Exchange Act 1961, Nigerian Enterprise promotion Decrees 1972 &1977, the Securities and Exchange Commission Act 1979 and Nigerian Enterprises Promotion Decree (1989). Government promulgated Decree 1989 where a bold step was taken to encourage foreign investors to have meaningful investment in the country.

Furthermore, in an attempt to encouraged foreign investor participation in the economy, the Federal Government initiated policy: to shift the focus of the economy from government dominated economy to private-sector driven led economy. The main objectives of this policy shift were to:

i. Develop the Nigerian capital market, amongst others.

Over the years, there have been increasing calls on relevant authorities for modification of the nation’s economic policies as they affect the entire capital market with a view to:

i. Increasing the number of operators in the market and create room for competition and efficiency in the provision of financial services, among others.

Despite all these economic policies aimed at improving the operations of capital market it was facing some problems, the market then was operating on its call-over system. The system poised the following weaknesses which according to Dada (2003) include:

- ✓ Constant signature verification.
- ✓ Some dealing members sold what they did not have.
- ✓ Manipulations were high due to long transaction cycle.
- ✓ There was minimal transparency and lack of trust in general operations of the market.
- ✓ Numerous complaints concerning failed transactions.
- ✓ Lost of certificates.
- ✓ Risk factor was very high, undue delay, manually operated, among others.

These problems were worldwide and needed solution. Thus, Central Securities Clearing System (CSCS) was established and commissioned on 8th April 1997 to speed up the delivery and settlement systems of the stock market among others (Asinobi, 2004).

Despite the relevance and the relationship of CSCS to the development of the capital market, many still raise questions of doubt whether the exchange has improve its services in terms of providing fast and efficient services with regards to, clearing, settlement certification, and issuance of certificate or dematerialisation of certificates.

Many researchers support the fact that there is no agreement on the nature of the relationship between CSCS and stock market performance. There is not causal relationship between CSCS and stock market which others are if the opinion that it leads to the development of capital market. The researcher also concord that no available evidence to show that CSCS impact the development of capital market. A review of literature attests to this and proved that there is lack of literature on the said subject matter. Above all, this study hope to fill the existing gap.

In this research work, the following hypotheses were stated with the view of testing them, to see their validity or otherwise:

1. H_0 There is no significant difference between the NSE All-shares index movement in the pre-CSCS era and the post-CSCS era.
2. Ho There is no significant difference between the volume/value of shares traded at the Nigerian stock market during the pre-CSCS and the post-CSCS era.
3. H_o There is no significant difference between market capitalisation during the pre-CSCS and post-CSCS era.

2. Review of Related Literature

The institutional framework for the creation of wealth in the free enterprise economies which brought the institution of the stock market into being in medieval Europe has throughout the succeeding centuries, continued to support the institution and to justify its existence ensuring its current placing today as the pivot of the capitalist economic system.

Today, the institution has sprouted in many countries spanning across the globe from Australia to Canada, from Hong Kong to Taiwan and from Kenya (Nairobi) to Biogota (Columbia), and many other countries of the world.

In many of these countries the exchange has served to facilitate the accumulation of savings and their efficient channelling into competing productive uses without violating the basic principle of free enterprises (Kemrgul and Levme (1996).

It is not only crucial, but also central to the entire capital mobilization process. This is chiefly because of the opportunity, which it offers for the continuous, trading in securities issued by fund users. Without this facility and the chance, which avails investors, to liquidate their investment or adjust their portfolio whenever they desire to do so, it is doubtful if there would be any incentive or motivation to invest in securities. Most savers would probably hold on to their funds in cash or bank deposit which guarantees that they would be able to meet the fundamental purposes of the saving, such motive is usually quite from a desire to invest. As a result, returns on the aggregate level of savings, it can also be speculated that in the absence of a capital market, the level of saving carried out in aggregate terms would be much lower.

2.1. The Development of Stock Market in Nigeria

The earliest one can reasonably finds some of the antecedents leading to the establishment of a stock market in Nigeria is 1946 when the ten year plan local loan ordinance was promulgated. The ordinance provided for the floatation of *E*300,000 (N600,000) local loan stock bearing interest at 3¼%. The loan stock which was issued in units of *E*10 (N20) had a maturity profile of 10-15 years. In the event, the issues was oversubscribed by *E*500,000 (1000,000). Not surprisingly however, only a small part of the issue was subscribed locally; the buck of the response being from the UK (Anao, 1970).

Another attempt at capital accumulation in the public sector was made in 1951 through the creation of a loan fund for financing some public utilities. The scheme was to be funded from public by collected revenues and from soft loans (bearing low interests rates and easy repayment terms) were made from time to time for the development of the relevant corporations. These and similar endeavours forming part of the implementation strategy for the ten year development plan, 1946-55, constituted the first significant attempts made under the British colonial administration to give investment opportunities to Nigerians. They therefore mark the beginning of capital market development in Nigeria (World Bank, 1996).

It can be argued with the benefit of hindsight that these attempts did not amount too much and that the specific objective of developing a local capital market was not seriously or singularly pursued by the colonial administration. However, evidence exists pointing to the fact that the development of a local network of financial institutions also apart from the purely political issue of independence, engaged the attention of the early nationalities (Alile and Anano, 1986).

At late 50's a number of developments took place that promoted the government into taking initiative in establishing formal financial markets. Among these issues according to Dougalls (1980) were:

a. The need for government to finance the growing budget deficits as from 1958.
b. The deteriorating balance of payment deficits as from the late 1950's.
c. Increasing pressure from the nationalists.
d. The need to mobilize finance to embark upon development programmes.

In May 1958, the then Federal minister of Commerce and Industry appointed a committee under professor Barback, the director of the Nigerian institute of social and economic research to consider the ways and means of fostering shares' market in Nigeria. The report of the Barback committee published in 1959 recommended among others, the following:

a. The creation of facilities for dealing in shares
b. The establishment of rules regulating transfers, and
c. Measures to encourage savings and issue of securities of government and other organisation.

According to Alile (1986) the Central Bank of Nigeria in pursuance of its role in respect to the development of a capital market floated the First Federation of Nigeria Development Loan of N4 million on behalf of the government in 1959. Since a formal market had not been established, the central bank had to put a lot of effort and time to ensure that the stock floated carried with them a reasonable assurance of marketability by introducing arrangement involving the maintenance of a central register for matching buyers and sellers of shares and suggesting a price at which a deal took place.

The favourable report of the Barback committee led to the registration of a business name. The Lagos stock exchange, in March 1960, this was followed later by its incorporation under section 2, cop. 37 on 15th September 1960 through the collaborative effort of the Central Bank of Nigeria, the business community and the Nigerian industrial development bank (it was known by then as the investment company of Nigeria Ltd (ICON) later, the exchange was statutorily empowered in 1961 by the enactment of Lagos stock exchange Act. The exchange commenced operation on July 5, 1961 with 13 securities. During the early stage, the exchange received considerable financial and other resistance from government through the institutions referred to above (Dada, 2003).

He further maintains that some events occurred in 1962 which has effect on the development of the infant market. These included the need of Nigerian investment from London by Nigerian produce marketing company (NPMC), the promulgation of the Exchange Control Act 1962, and the establishment of the capital issues committee (CIC) under the auspices of the central bank of Nigeria. Though without legal barking the CIC operated like adhoc consultative body to ensure the orderly development of the market by regulating share prices and timing of public issues of the securities so as not to overtax the absorptive capacity of the budding capital market.

Despite these efforts, the activities in the market was generally assessed to be low in the twelve years between 1967 and 1971, as the market was very little known by the populace. Government remains a dominant key player especially in the new issues market by regularly floating development loan stocks as a way of stimulating the market. As the end of 1971, government had floated 39 securities compared to 13 equities and 8 industrial loan stocks. Similarly, the market was characterised by few operators, and ten number 10 no quoted indigenous company and poor infrastructural facilities.

Ijewere (2000) add that government action in enacting the first Nigerian Enterprises Promotion Act (NPA) in 1972, which obliged specified alien enterprises to indigenised part of their ownership, made a remarkable positive impact on the development of the market. Within three years of its enactment 20 new companies were quoted on the exchange, compared to 13 in twelve years (1960-1971). Again, following the report of the panel set up in 1975 to review the 1972 indigenization exercise, the committee was enacted in 1977, ostensibly to correct the failures of the first exercise. The rejuvenated 1977 Act brought more companies into the market and consequently more listings were recorded on the exchange in years subsequently to its introduction; thus deepening the market. At the height of its compliance were listed on the exchange in that year alone.

Apart from the indigenization programmes, four other government initiatives impacted positively on the development of the capital market, Ijewere (2000) chromatically states them as follows:

i. Enactment of the Capital Issues Commission Act in 1973 which formally established Capital Issues Commission (CIC) and introduced statutory regulation into the market. The functions were not in any way different from that of the defunct committee.

ii. On April 5 1976 the Okigbo committee was set up to undertake a comprehensive review of the Nigerian financial system. With respect to the capital market, the committee made a number of recommendations many of which wholly or partially accepted. Amongst these were: establishment of the Securities and Exchange Commission (SEC), to replace the capital issues commission. Consequently, the Securities and Exchange Commission Act was enacted in 1979.

    The Act made SEC the apex regulatory institution in the capital market in Nigeria. In addition to taking over the functions of the capital Issues Commission, it was empowered to register securities, operators stock exchange and maintain surveillance over the market to prevent abuses and practice that may be detrimental to the orderly development of the capital market.

iii. The structural adjustment programme (SAP) was launched in 1986 to redress serious macro-economic problems. The programme includes the rationalization of the public sector through divestment of government holdings and debt conversion programme. Consequently, government commenced privatization of its interest in some public companies, some of which were effected through offer for sale. The sale of these shares to the investing public further increased the number of tradable securities in the market and thus improve the market depth.

iv. About the time SAP was launched, the second-tier securities market (SSM) was introduced to attract smaller companies to the market, which hitherto could not meet the more stringent listing conditions of the first-tier market.

In the post-SAP era the market became a truly capitalist instrument for mobilizing and allocating capital funds in the process of wealth creation rather than as a vehicle for wealth distribution, as the pre-SAP activities tended to portray (Jack, 1980).

The 90s witnessed continued efforts to widen, deepen and improve trading condition in the Nigerian stock market. E.g the unit Trust scheme was launched in 1990 as a way to bring small investors indirectly to participate in the fortunes of the market, the period equally recorded a significant increase in the number of market operators (stock brokers). The stock exchange launched the central securities clearing system (CSCS) in 1997 to usher in a more efficient securities settlement or innovation, settlement of trade also improved from T + 14 or more, in some cases in the past, to T + 5, these days settlement has reduced to T + 3. The NSE also introduced automated trading system (ACT) (Dada, 2003).

The Position of Nigerian Capital Market in the Economy, Before the Advent CSCS

The relevance of the capital market stems from the fact that it enables institutions in the economy that are in need of medium to long-term funds for the acquisition of fixed assets and other long-term projects to obtain such funds. Moreover the capital market provides a mechanism by which long-term loans and investments can be liquided. The capital market can be classified into primary (i.e., new issues of securities) and secondary (trading on the old issues of stock) markets. In Nigeria both primary and secondary market are regulated by Securities and Exchange Commission [SEC]. The Nigerian Stock Exchange (NSE) provides both a facilitation role and a partially regulatory function on both markets. It is in line with this that Usman (1998) states that the essence of the securities market is not only to generate the capacity for the supply of long-term capital market by mobbing domestic savings through both the new issues market as a primary source and the trading market as a secondary source, in order to meet the increasing demands by industry and government for long term capital investment. Specifically the capital market performs the following generalized functions:

a. Allocation of resources
b. Creation of a contiguous market in quoted securities and
c. Aiding of new financings.

The growth of the market in term of volume and variety of securities to date, has been inspired largely by government activities through the two indigenization exercise of 1972 and 1977, the provision of the Trustee Investment Act, 1962, the Insurance Act 1979 (which required pension funds and insurance companies to invest part of their funds in quoted securities) to the limited implementation of the privatization and commercialization programme. The market was unable to achieve self-sustaining development after 43 years of existence.

The number of listed securities was much below expectation. Over these years of existence only 269 (183) equities or companies were quoted. This number is relatively small, when compare to emerging stock markets like Asia, Latin and American of comparable age. The smallness of the market has to do with the reluctance of indigenous companies to seek quotation of their companies on the exchange for fear of diluting ownership and loss of control. The issue of the shallowness of the market has been attributed to the lukewarm attitude of the government in providing a favourable regime of tax incentive to potential companies to encourage their quotation on the exchange (Usman, 1998).

The cost or charge for buying and selling shares in the market are enormous, this is also considered as one of the reasons for the low size of the market. The statutory charges for the purchase and sale of shares are:

THE EXCHANGE: PURCHASE

S/N	Charge	Description
1.	Broker's commission	See breakdown below
2.	SEC Fee	1% of consideration
3.	Stamp duty	0.075% of consideration
4.	Value Added tax	5% of broker's commission
		Sales
1.	Broker's commission	see breakdown below
2.	NSE Fee	0.7% of consideration
3.	CSCS Fee	0.3% of consideration
4.	Stamp Duty	0.075% of consideration
5.	Value Added Tax (VAT)	5% of broker's commission

What is common among shareholders is that a lot of them fail to claim their dividends and share certificates as a result of non-notification of changes in address and other relevant information to companies registers. This resulted in the extra burden on the registrars to publish and send along with the annual account, the list of owners of unclaimed dividends and share certificates. This is an additional cost borne by the quoted companies.

Infrastructural inadequate at the market are also hindrance to the development of Nigeria capital market. The delivery and transfer system are inefficient and fail to keep peace with development in information technology. It is interesting to note that the Nigerian stock exchange has introduced, the central securities clearing system (CSCS) which is aimed at addressing some of these shortcomings in payment, delivery and transfer system (Usman, 1998).

2.2. Concept of CSCS

In 1989, the Federation of International Stock Exchange (FISE) of which the Nigerian Stock exchange is a member endorsed the recommendations of the group of thirty (G 30), a private sector organisation, for improved efficiency and effectiveness of the clearing and settlement system of capital markets. FISE recommended that in 1992 each country should operate a central securities clearing system.

The CSCS limited was licensed by the security and exchange commission as a self – regulatory organization, to perform central depository, clearing and settlement agency to facilitates the delivery (transfer of shares from sellers to buyer) and settlement (payment of shares) of securities transacted on the floor of the exchange. To enable stock to be processed in an electronic book entry form thereby substantially reducing the period it took a transaction to commence and end (Asinobi, 2004).

CSCS was commissioned on April 8, 1997 and commenced operations April 14, 1997, it operates a computerized depository, clearing, settlement and delivery system for transactions of shares listed on the Nigerian Stock Exchange.

CSCS is a private company with shareholders who do not run the company themselves. It is a profit making institution that can enter into binding contracts and can therefore sue and be sued in its corporate name. Efficiency and effectiveness required by the system is assured. Its ownership structure according to Frans-Maggie (nd) is indicated below:

Ownership Structure of CSCS

	INVESTOR	TOTAL HOLDINGS	%
a.	The Nigerian stock exchange	272,421, 790	30.43
b.	Settlement banks (19)	427,780 000	47.78
c.	RNST Nominee Ltd	11,150 000	1.25
d.	DNSE Nominee Ltd	46257,142	5.15
e.	DNSE Investors Ltd	37,782,85	4.25
f.	DNSE Dealers Ltd	5,990 000	0.67
g.	DNSE Digital Invest Ltd	25,920 000	2.90
h.	DNSE Multiple invest Ltd	20,260 000	2.11
i.	Other institutional investors (NSTTF)	48,183330	5.38
	Total	**894,911,219**	**100**

Source: Questions and answers on CSCS

2.3. The Role of CSCS

The demerits of paper-based (share certificates) system for the transfer of securities include, labour intensive, transaction delays, high cost of certificate production risk of loss share certificates among others, led to the introduction of dematerialization of share certificates and the electronic book-entry of investments in CSCS Ltd. The roles of the CSCS are no doubt meant to confirm the benefits of the new system as they are meant to obviate the weaknesses of the old system stated above.

According to Dada (2003) CSCS was set up to provide central position for share certificates of companies quoted on the Nigerian stock exchange and serve as sub-registry for all quoted securities in conjunction with the registrar of quoted companies. It also issues central securities indentification numbers to stock brokers and investors.

Moreover, Asinobi (2004) states that the role of CSCS Ltd in the Nigerian capital market is primarily therefore, that of clearing and settlement service. Stock are deposited under the various accredited stock broking firms in custody of the CSCS system which renders a distinct commercial activity that required a significant expenditure on information technology and highly skilled staff to deliver services according to the demand of customers at the dictates of regulation.

In addition to the custody or electronic safe keeping aspect of stock investment in CSCS system, a significant element of the operations of custody of investment often consists of administration which encompassed recoding, valuation, reporting, accounting and performance measurement. In exerting its role, CSCS Ltd is like a conduit pipe concerned with the receipt protecting its basic integrity and enabling owners have access to their investment through their agent stock broking firms.

In a related development, Sain-Paul (1992) suggests that as custodian of investments, CSCS Ltd knows what is in its charge and is empowered to act in relation to enhance the monetary value of socks by prompt settlement of trades, which is the primary reason for setting up the company. The stock custodian role of CSCS is employed for benefit they hold on the users and for the increased efficiency offered to the capital market.

The growth of participants in the capital market and ever increasing volume of assets traded have been reflected in the increased of CSCS services for the following reasons:

- Reduced the risk of theft and accident distraction investment.
- Enhanced settlement system to facilitate the transfer of interest in investment.
- Avoid the risk of delays, loss or destruction in the transfer process.
-

3. Methodology

The study used descriptive statistics to assess the impact of CSCS to the development of capital market. Secondary data was the major source of data which covers the stock market development indices. That is, market size and market liquidity of the Nigerian stock exchange from 1990 to 1997 and also from 1998 to 2005 that is, the period before and after CSCS operations.

In empirical estimation and testing of hypothesis an econometric technique of student T-Test was used as principal tool of analysis. For the T-Test analysis all the elements for the study were used as variables or predictors, their values were used to determine the validity of the hypothesis. The data used comprises of volume of shares traded, value of trade, number of listed securities, market capitalisation, all-share index number of quoted companies. According to Inanga and Emenuga (1997) stock market development is measured based on three basic characteristics viz: stock market size is measured by stock market capitalisation, and stock market liquidity measured by total value traded and turnover ratio. The estimation and analysis was done using statistical package for social sciences (SPSS version 20) computer software.

3.1. Model Specification

Specifically t-test was used to test the statistical significance of each of the explanatory variables on the dependent variables. To test the null hypotheses, H_o against the alternative hypotheses H_1, we reject H_0 and accept H_1, if t* calculated is greater than the theoretical value of t-statistics at 95 percent at confidence level with n-k degree of freedom, otherwise we accept H_o at 95 percent level of confidence.

In analysing the following steps were used.

$$S_1^2 = \frac{n_1 \Sigma x_1^2 - (\Sigma x_1)^2}{n(n_1 - 1)}$$

$$S_1^2 = \frac{n_2 \Sigma x_2^2 - (\Sigma x_2)^2}{n_2(n_2-1)}$$

$$S_p^2 = \frac{(n_1-1)S_1^2 + (n_2-1)S_1^2}{n_2 + n_2 - 2}$$

Where = $\frac{\sqrt{(n_1-1)S_1^2 + (n_2-1)S_1^2}}{n_1 + n_2 - 2}$

3.2. Computation of the t-value and Decision Rule

The test statistics is

$$= \frac{(x_1-x_2)-0}{\sqrt{\frac{S_p^2}{n_1} + \frac{S_p^2}{n_2}}} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

Degree of freedom = $[n_1 + n_{2-2}]$

Level of significance α 5%

N.B in a two-tailed test, the null hypotheses H_o is rejected if the competed;

t= value, t ≥ t $\alpha/2$ or if t ≤-t $\alpha/2$ for $n_1 + n_2 - 2$ degree of freedom.

Take decision as follows

Reject Ho if t ≥ t $\alpha/2$ or if t ≤-t $\alpha/2$

Otherwise accept H_o

Where:

n_1 and n_2 = The sample size of the study in the pre and post CSCS, ie number of years covered.

x_1 and x_2 = The sample mean of the period covered (1989-2005)

Σ = summation (sigma)

S_1^2 and S_2^2 t = The sample variance in the two periods, pre and post CSCS.

S_p^2 = The pooled or population variance for the years covered under the two period.

S_p = The pooled standard deviation of pre and post CSCS for the period covered under the study.

α = Level of significance of the study

4. Data Presentation, Analysis and Test of Hypotheses

This section mainly discusses the presentation, analysis and test of hypotheses. The secondary data collected were analysed using the statistical package for social sciences (SPSS). The table below gives vivid descriptive statistics of the computed results.

Descriptive Statistics

	N	Mean	Std Deviation	Variance
Volume of shares traded (pre-CSCS)	8	467.500	235.180	55309.429
Volume of shares traded (post-CSCS)	8	10349.250	8665.036	75082852.8
Value of shares traded (pre-CSCS)	8	1531.750	2290.362	5245755.929

Value of shares traded (post-CSCS)	8	66789.500	74161.261	5499892648
The NSE all-share index (pre-CSCS)	8	2321.063	2425.753	5884275.671
The NSE all-share index (post-CSCS)	8	1370.651	7798.183	60811657.1
market capitalization (pre-CSCS)	8	81.525	97.354	9477.834
Market capitalization (post-CSCS)	8	1002.512	759.254	57646.933

Source: SPSS output, version 20.

Test of Hypotheses

Hypothesis One

There is no significant difference between the NSE all-share index movement in the pre-CSCS era and the post CSCS era.

Test Statistic

The adopted test statistic is t_ distribution, a parametric model. The level of significance chosen for this hypothesis is 5% (0.05) the t-test also allows a t- distribution with 8+8 -2 = 14 degrees of freedom. The critical values for this two-tailed test are +2.145 and -2.145. The decision rule is that:

Reject H_o if $t > t_{14} + 2.145$

Or if $t < -t_{14} = -2.145$

Otherwise do not reject Ho.

The above hypothesis was tested to determine whether the mean between the NSE all share index during the pre-CSCS and post-CSCS differ statistically at a significant degree. The computation is shown below

Table 4.2: Test of NSE all share index

	Mean	N	Std deviation	Std error mean
NSE all-share index (Pre-CSCS)	2321.063	8	245.753	857.633
The NSE all-share index (post-CSCS)				

Paired samples correlations

		N	Std Deviation
Pair 1.	The NSE all-share index (pre-CSCS)		2425.753

	The NSE all-share index (post-CSCS)	8	7798.183

Paired samples Test

Paired differences						t	Dr	Sig. (2-tailed)
The NSE all-share index (pre-CSCS)	Mean	Std deviation	Std Error mean	95% confidence interval of the difference				
				Lower	Upper			
The NSE all-share index (post-CSCS)	-11449.6	5690.365	2011.848	-16206.9	-6692.325	-5.69	7	.001

Source: SPSS output, version 20

T-test

T-test gives t-values as -5.691, df = 7, p = 001. Using a. 05 level of significance, the null hypothesis is rejected because t= -5.691 <-t_{14} – 2.145 it is rejected also on the reason that the test statistic t has fallen into the region of rejection, based on this, the researcher concludes by accepting the alternative hypothesis which therefore state that "there is significant difference between the NSE all-share index, in the pre-CSCS and post CSCS era'

Hypothesis Two

H_o There is no significant difference between the volume/value of shares traded at the Nigerian stock market during the pre-CSCS era and the CSCS era.

As clearly mentioned above, the t-test computation in respect of volume of shares traded during the pre-CSCS and post-CSCS and the value of shares traded at the NSE in the like manner is stated in the following tables:

Volume of shares traded during pre and post CSCS compared. Table 4.3

	Mean	N	Std deviation	Std error mean
volume of shares traded (pre-CSCS) and Volume of shares traded (post-CECS)	467.500 10349.250	8 8	235.180 8665.036	83.149 3063.553

Paired sample correlations

		N		Std Deviation
Pair 1.	Volume of shares traded Volume of shares traded (post-CSCS)	8	579	.132

Paired differences						t	Dr	Sig. (2-tailed)
Volume of shares traded index (pre-CSCS) Volume of (post-CSCS)	Mean	Std deviation	Std Error mean	95% confidence interval of the difference				
	-9881.75	8530.931	3016.147	Lower	Upper			
				-1701.38	-2749.697			

						-3.27	7	.0014

Source: SPSS output, version 20

Paired Samples Tests

Table 4.4 Values of shares trade during pre and post compared paired samples statistics

		mean	N	Std Deviation	Std Error
Pair 1.	Value of shares traded (pre-CSCS) Value of shares traded (Post-CSCS)	1531.750 66789.500	8 8	2290.362 74161.261	809.765 26219.965

Paired sample correlation

		N	Correlation	Std Deviation
Pair 1.	Value of shares traded (pre-CSCS) Value of shares traded (Post-CSCS)	8	-.015	.972

Paired Samples Test

Paired differences						t	Dr	Sig. (2-tailed)
Value of share index (pre-CSCS) Value of	Mean	Std deviation	Std Error mean	95% confidence interval of the difference				
	-65257.8	74231.167	26244.681	Lower	Upper			

shares (post-CSCS)				-127317	-3198.941	-2.487	7	.042

Source: SPSS output, version 20

T-test

From the foregoing tables, T-test gives t-value = -3.276, df=7p = 0.014, and t-value = -2.487, df=7, p = 0.042 representing paired sample test of volume and value of shares traded at the NSE respectively. Since in both computations, p<0.05, we reject the null hypothesis and infer that there is significant difference between the means of the pre-CSCS and the post-CSCS in respect of the volume and value of shares traded at the Nigerian stock exchange, on this premise, the alternative hypothesis which therefore, states that "There is significant difference between volume/values of shares traded at the stock market during the pre-CSCS era and the post-CSCS era is accepted.

Hypotheses Three

There is no significant difference between market capitalization during the pre-CSCS and post-CSCS era.

Table 4.5 market capitalisation of pre and post CSCS compared

Paired Samples Statistics

		mean	N	Std Deviation	Std Error
Pair 1.	Market capitalization of (pre-CSCS)	81.525	8	97.354	34.420
	Market capitalisation of (post-CSCS)	1002.513	8	759.254	268.437

Paired Samples Correlations

		N	Correlation	Std Deviation

Pair 1.	Market capitalization of (pre-CSCS) Market capitalisation of (post-CSCS)	8	.908	.002

Paired Samples Test

Paired differences						t	Dr	Sig. (2-tailed)
Market capitalization of (pre-CSCS) Market capitalisation of (post-CSCS)	Mean	Std deviation	Std Error mean	95% confidence interval of the difference				
				Lower	Upper			
	-920.988	672.088	237.619	-1482.867	-359.108	-3.87	7	.006

Source: SPSS output, version 20

T-test

From the table above, it is apparent that the mean difference between market capitalization during pre-CSCS and Post-CSCS are clearly shown, that is, 81.525 and 1002.513 respectively. Also from the paired sample test, we can also see that the t-value = -3.876, df= and p=0.006.

In the light of the above, the null hypothesis is rejected due to the following reasons:

Using a 0.5 level of significance, $t=-3.876 < t_{14}=-2.145$, $P < 0.05$. the researcher conclude that there is evidence of the significant difference between market capitalization of the pre-CSCS and Post-CSCS eras and therefore, the alternative hypothesis accepted which states that “there is significant difference between market capitalization during the pre-CSCS and Post-CSCS eras.

5. Findings, Conclusion and Recommendations

Central securities clearing system has opened avenue for modernization of the operations of the Nigerian capital market. The study reveals that the development of the Nigeria financial system is determined to a reasonable extent by the impact of CSCS on local domestic and international economy. The Nigerian capital market is investor friendly during the CSCS operations unlike the period before CSCS.

5.1. Findings

1. The result has shown that the NSE, all shares index movement follows a regular pattern of development as the market adopted the CSCS operations.
2. The adoption of central securities clearing system (CSCS) to replace the call over system shows a significant difference in operations of the stock market as the market capitalisation increase in the geometrical progression.
3. The study also reveals that the current trading operations are more attractive unlike the era of pre-CSCS which was more of frauds and other risks incidentals as evidence essentially by the volume/value of shares traded at the period of post CSCS era.

5.2. Conclusion

The capital market is a good barometer for measuring the pulse of a country's economy. The trend in the volume/value of securities traded at the market. The market capitalization, and the all-share index are the important indicators which proved beyond-doubt that the introduction of the Central Security Clearing System (CSCS) helped to enhance the efficiency in the stock market operations. The system is an innovation in the transfer of shares between sellers and buyers of security timely and this culminates into the development of Nigeria capital market to an enviable degree.

5.3. Recommendations

1. Central securities clearing system (CSCS) services should be extended to capital trade points centers, in order to enhance the same efficient services.
2. The problem of macroeconomic instability has continued to be a hindrance to the development of the capital market. A macro-economic policy that would ensure long-term stability which essential attracts sustainable long-term investments is not stable. Frequent reversals of policies have often forced investors to disinvest by way of capital flight. The problem of lack of adequate coordination and harmonization of fiscal and monetary policies must be fully addressed by the fiscal monetary authorities. Moreover, the problem of political instability and as well as the issue of economic meltdown must be tackled using appropriate economic measures.
3. Government should give more attention to the poor state of public infrastructure such as power, telecommunications and inadequate information technology, which has to be provided by operations, which leads to higher operating cost.
4. Multiple Stock Exchange should be introduced in the country like other countries: USA, Hong Kong, South Africa, India etc.

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