Financial Sector Reforms and Output Growth in Manufacturing: Empirical Evidence from Nigeria

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Abstract

Adopting descriptive statistics and Vector Autoregressive Model (VAR) we examined the effect of financial reforms on output growth of the manufacturing sector in Nigeria. The paper is justified given the need to provide empirical evidence on the effectiveness of financial reforms in promoting output growth in the manufacturing sector during the pre and post - reform era in Nigeria. The findings from the statistical and econometric analysis indicate that the financial sector performed better in the post reform era compared to the pre-reform era. Surprisingly, the growth of manufacturing output indicator was low in the post reform era. The correlation coefficient of the financial indicators was likewise low which suggests that the development of the manufacturing sector under financial reforms in Nigeria has not been impressive. Vector Error Correction Model (VECM) results indicate a short run divergence between variables. The paper concludes that Nigeria experienced increase in Gross Domestic Product (GDP) with minimal contribution from the manufacturing sector. This is to say that the increase in GDP does not translate to the development of the manufacturing sector which could have helped to reduce the unemployment problem in the country. Based on the findings the paper suggests the need for proper review of the financial sector reforms introduced to enhance output growth of the manufacturing sector as the sector is critical to the growth of the economy at large due to its multiplier effect on other sectors of the economy. Specific financial concerns through appropriate financial sector reforms should be directed to the reinforcement of the performance of the manufacturing sector. Most of the policies are dynamic in nature, thus the need to ensure consistency through strong and well established institutions (both financial and political) cannot be overemphasized.

Keywords: Financial Sector Reforms, Pre- Reform era, Post-Reform era, Manufacturing Sector, GDP, VAR, VECM and Descriptive Statistics.

Introduction

Attainment of full employment is the goal of every country, whether developing, emerging, or developed. However, no economy is characterized by full employment due to frictional unemployment. In the developed economies, unemployment varied substantially across countries over the last 40 years (Elsby, Hobijn and Sahin, 2011). Nigeria is the most populous country in Africa with high unemployment rate. The unemployment rate in Nigeria for the year 2011 stood at 23.9 per cent in comparison to 21.1 per cent in 2010 and 19.7 per cent in 2009(ILO) Considering the unemployment rates in other African countries, in South Africa unemployment increased from 24.90 per cent in the fourth quarter of 2012 to 25.20 per cent in the first quarter of 2013. In Kenya it was at the rate of 40.0 per cent in 2011 while in Ghana the unemployment rate was 11 per cent in 2012 (National Bureau of Statistics, 2013).

The increased rate of unemployment in Africa has affected political, socio-economic fortunes, peace, and stability of the continent. At various point in time, the Nigerian government has adopted policies/ put in place institutions to reduce the unemployment rate. Such include: National Directorate of Employment (NDE), Small and Medium Enterprises Development Agencies (SMEDAN), the Poverty Alleviation Program, the Subsidy Reinvestment and Empowerment Program (SURE-P), and the Youth Enterprise with Innovation in Nigeria (YOUWIN), Better Life Program, National Agency for Poverty Eradication (NAPEP), the Graduate Job Creation Loan Guarantee Scheme, and Agricultural Sector Employment Program. Despite the implementation of all these policies and programs, unemployment still remains a major challenge to the Nigerian economy.

According to Scott (2008), Naude and Szirmai (2012), the manufacturing sector is one of the vital sectors of an economy that promotes sustainable growth and development coupled with the ability to create jobs. For instance in the United States of America(USA), the manufacturing sector created about 14 million jobs in 2007 and up to about 10.1per cent of total employment . In addition, China had experienced a fast industrialization process that sustains the nation's economic growth for decades now as a result of importance attached to the manufacturing sector as the main driver of economic growth (Guo, 2007). Evidence from India indicates that rapid growth in the manufacturing sector has been accompanied by higher productivity and profitability of Indian manufacturing companies.

In 2009, the manufacturing sector created about 470 million jobs and one in six jobs globally and still creating more. For manufacturing sector to strive there is need for huge investments. For example in the USA there was investment responsible for 60 per cent of all research and development spending in 2003, with total research and development spending of 123 billion dollars (total public, corporate, and other funds) in that year alone. Manufacturing sector is widely considered as the transformational sector, for agricultural workers to move from low skilled to more valuable and better jobs. Economic development takes a transformation pattern of pulling people out of agriculture to non-farm activities such as manufacturing and services. The importance of the role of manufacturing (industrial sector) in absorbing surplus labor from agriculture sector has also been proved by the development experience of many developed countries and lately in various South East Asian countries. The manufacturing sector is critical to the growth of the economy as the sector tends to have a multiplier effect on other sectors of the economy. The manufacturing sector takes the advantage of raw materials and services from other sectors, stimulating demand for raw materials to intermediate goods, influence health, transportation sector and so on.

Availability of capital stands as a sure guarantee to achieve a well-developed manufacturing sector, the financial market forms the major source of capital for manufacturing in developing economies. It is pertinent to note that substantial capital is required either to develop or import technological know-how which is needed for development of the manufacturing sector. It is the financial sector that has the capacity to provide short and long term capital which enables the manufacturing sector to survive the relative long gestation periods in most capital investment projects. The manufacturing sector is expected to dominate, shape, and define the core path of industrialization all over the world. The sector is reputed to be an important engine of growth, an antidote for unemployment; a creator of wealth, and the threshold for sustainable development. In order to achieve efficient allocation of resources, the financial sector has to be well developed (Eichengreen *et al.,* 2009). The financial sector in an economy promotes specialization, since it makes it easier to obtain the required funds for investments in productive projects, allowing borrowers to concentrate on their own areas of expertise.

In Nigeria, the financial sector reforms have evolved in response to the challenges posed by developments in the system. Such include: high non-performing loans, insolvency, and illiquidity, low capital base, overdependence on public sector deposits, poor asset quality, and weak corporate governance. Furthermore, the sector depicted a system with low depositors' confidence and a banking sector that could not support the real sector of the economy at 25per cent of GDP compared to Africa's average of 78per cent and 272per cent for developed countries (Okorie and Agu, 2015). All these challenges if not addressed could lead to economic crises in the nearest future with attendant effects on the various sectors of the economy. Responding to these identified challenges, the Central Bank of Nigeria unveiled a ten-year reform blue print anchored on four cardinal reform programs for the stabilization of the banking and financial sector in general. The transformation of the financial sector was based on four cardinal programs which include: enhancing the quality of banks, establishing financial stability, and ensuring that the financial sector contributes substantially to the real sector of the economy.

Financial development in Nigeria dates back to 1952 when the first banking Ordinance was enacted. The deregulation of the banking industry in 1986 provided the impetus for the Structural Adjustment Program. The 1986 reform of the financial system saw a policy shift from direct control to a market - based financial system, especially as regards monetary management, risk management, and asset holding capabilities of the institutions. A number of other reforms to develop the financial sector followed. These include reform of the financial structure(this included the consolidation policy in the banking sector from the year 2004 in which the monetary authority came up with a 13- point reform agenda centered on consolidation and recapitalization. This reform focused on further liberalization of the banking business thus ensuring competition and safety of the system.

It was also meant to proactively position the industry to perform the role of intermediation and playing a catalytic role in economic development). There were also monetary policy, foreign exchange market, liberalization of capital movement and capital market reforms. The recapitalization of the insurance sector came up in 2007 (CBN, 2010). Evidence from empirical literature indicates conflicting results on the link between financial sector reforms and the growth of manufacturing sector. More importantly, most of the existing literature focuses mainly on the link between financial sector reforms and the Nigerian economy as a whole. In recent years, most literatures have focused more on the relationship between economic growth and financial development than the effect of the latter on the manufacturing sector.

For example, Audu (2013) examines the relationship between absorptive capacity, credit market development and economic development, when Donwa and Odia (2010); Odeniran and Udeaja (2011); Olorunfemi, Obamuyi, Adekunjo and Ogunleye (2013); Maduka and Onuka (2013); Adulsalum and Ibrahim (2013) and Tottuam, Chiawa and Abur (2013); Akingunola and Adekunle (2013) also focus on financial sector development and economic growth. (Also see: Nkoro and Uko, 2013; Torruam, Oriavisotwe and Eshenake, 2014; Nzotta and Okereke, 2009; Akpansory and Babalola, 2010, Ogege and Boluopremo, 2014; Saibu, Nwosa and Agbeluyi, 2011; Ewetan and Okodua ,2013; Ogunmuyiwa and Ekone, 2010; Olofin and Afanjideh, 2008 and Abu, 2009). However, Ogun and Akinlo (2011) examine the relationship between financial sector reforms and performance of the Nigerian economy while Ese and Ogiji (2013) examine the impact of fiscal policy on manufacturing sector output in Nigeria. Shittu (2012) examines the relationship between financial intermediation and economic growth in Nigeria. This study is different from others as it attempts to examine the effect of financial sector reforms on growth of manufacturing sector. In order to achieve this objective the period of 1970 to 2012 is considered. The rationale for choosing this period is primarily on data availability, fortunately however the period enables us to examine the effect of the financial sector reforms pre (1970 to 1985) and post reforms era (1986 to 2013), in order to know the effectiveness of the reforms on the manufacturing sector. Given the dynamics of reforms by Nigerian government, there is the need to examine the effect of the financial sector reforms on the manufacturing sector in Nigeria. This is the main thrust of this study.

Following this Introduction, this paper is divided into four other sections, as follows: Stylized facts on the structure of the Nigerian economy, brief Literature Review and Theoretical Framework, Methodology and Presentation of Results. Finally, the study rounds off with Conclusion and Recommendations. It is noteworthy that this research work is justified on the basis that it will put forward some policy thrust capable of promoting the manufacturing sector through financial development. It will add to existing literature in the area of improving the limitations or potentials that the financial sector faces in an increasingly competitive regional and international market.

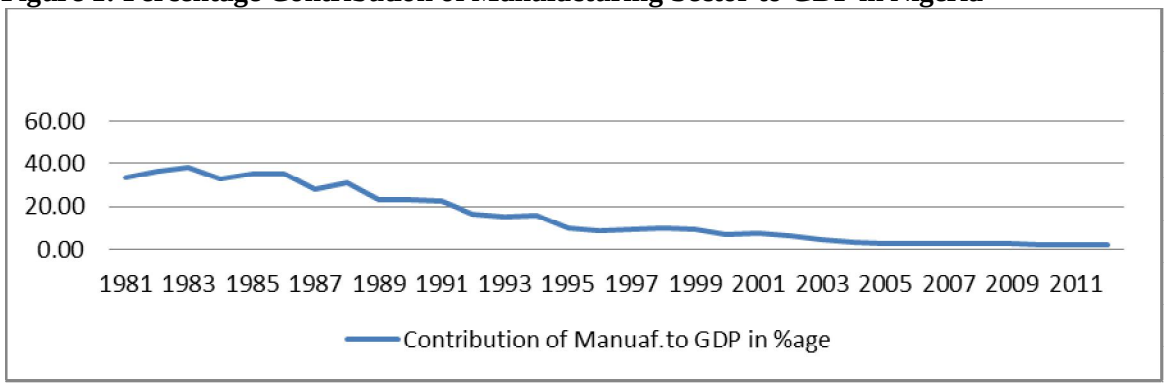
Stylized Facts on Structure of the Nigerian Economy

Nigeria's economy is one of the rapidly growing economies in the world and has an average growth rate of 7 per cent in the last ten years (World Bank 2013). Evidence from Nigeria's National Bureau of Statistics showed that GDP growth rate was 7.43per cent in December 2011 (FSDH 2013), which then made Nigeria to be the second largest economy in Africa and also one of the fastest growing economies in the globe. The primary production is oriented around agriculture; mining and quarrying (include oil and gas). The oil and gas accounts for more than 65 per cent of real gross outputs and more than 80 per cent of foreign exchange revenues in the year 2011 (National Planning Commission 2011). The non-oil sector which includes agriculture, mining, manufacturing, building and construction and so on account for 4.14 per cent of foreign exchange and government revenue in 2011(National Planning Commission, 2011).

The manufacturing sector in Nigeria includes cement, iron, steel and oil refining. Evidence from the National Bureau of Statistics indicate that the subsector accounts 10 per cent of total GDP annually and about 12 per cent of the labor force in the formal sector (NBS 2010). The re – benchmarking/rebasing of Nigeria's GDP has placed the country as Africa's largest economy and has exposed its investment potentials to the world. The exercise reveals that the nominal GDP in 2010 was reversed from 33.9 trillion naira to 54.2 trillion recording an increase of 59.5per cent. In 2011, GDP was recorded as 34.4 trillion and this was reversed to 63.3 trillion naira, an increase of 69.1per cent. For 2012, the GDP was reversed from 40.5 trillion to 71.1 trillion, recording an increase of 75.58per cent. Estimates show that for 2013, the GDP was reversed from 42.3 trillion naira to 80.3 trillion, recording an increase of 89.22per cent. Industry on the other hand when rebased dropped from 46.08per cent to 25.81per cent, while service has more than doubled to over 50per cent from 23per cent (World Bank, 2014). According to NBS (2012), the Nigerian economy revealed strong GDP growth from the period of 2004 to 2013 that averaged over 8per cent. This means that the size of the Nigerian economy is 170per cent times larger today than at the beginning of the decade. It is however clear from this statistics that the structure of the Nigerian economy has changed significantly.

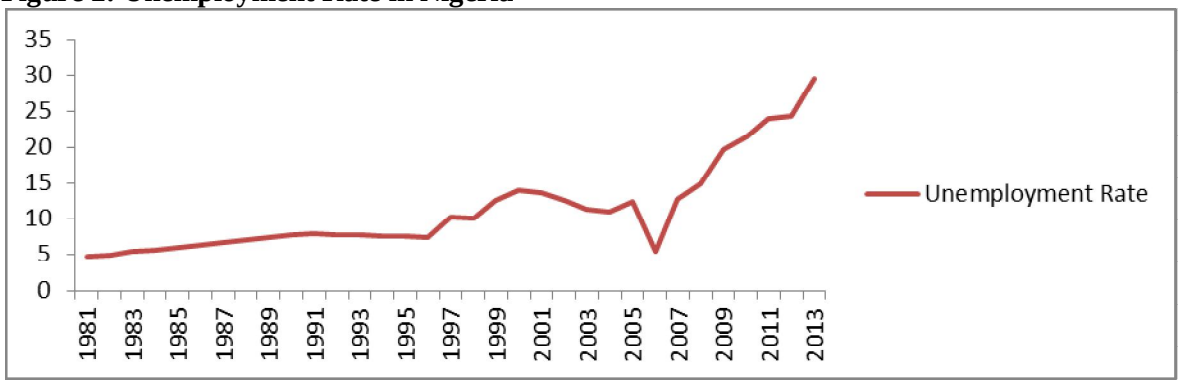
Nigeria has experienced steady growth rate but the growth rate has not improved the unemployment rate. Unemployment rate in Nigeria continues to increase; both the private and public sector were unable to create job opportunities to cope with the increasing labor force. Available statistics indicate that as population increases, there are difficulties for both young and old to get gainful employment. So the type of unemployment in Nigeria can be referred to as underemployment. Despite the increased economic growth that the country witnessed in the last 10 decades, the unemployment rate has worsened for a long period of time. Evidence from NBS (2011) survey shows that in the years 2009 and 2010, some sectors which include wholesale/ retail and manufacturing (cement industries not included) showed an increase in the number of paid services while cement industries and professional services showed declines in number of paid services. The country is yet to find an appropriate mode of translating its resource wealth to promoting economic development and welfare improvements of the general populace.

Figure 1: Percentage Contribution of Manufacturing Sector to GDP in Nigeria



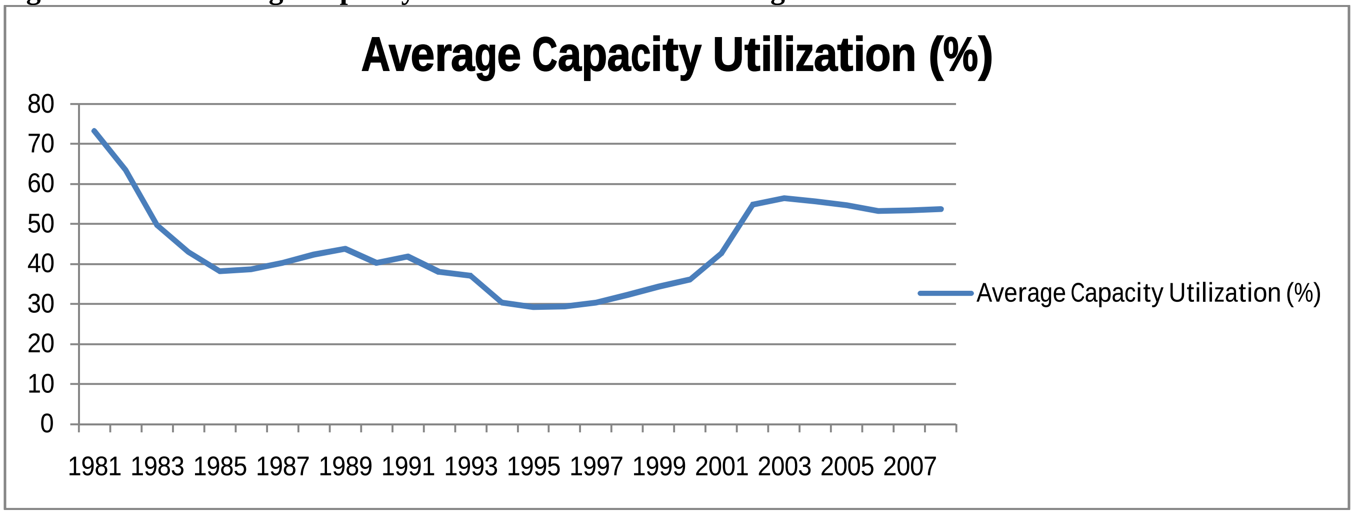
Source: Compiled from Central Bank of Nigeria (CBN) data

Figure 2: Unemployment Rate in Nigeria



Source: Compiled from National Bureau of Statistics data

Figure 3: Average Capacity Utilization in Manufacturing



Source: CBN, 2014

Many studies have researched on the determinants of capacity utilization. They include: real exchange rate, real interest rate, and government expenditure in manufacturing, capital intensity, trend of demand growth among others.

Trend of Industrial Capacity Utilization Rates (1981 – 2008)

The average capacity utilization rate (ACUR) in the Nigeria's manufacturing sector was 76 per cent in 1975. Following the worldwide recession of 1981 and 1982, the ACUR fell sharply to 73.3 per cent and 63.6 per cent in both years respectively. However, from 1983-1985, the trend worsened as ACUR nose-dived to 49.7, 43.0 and 38.3 per cent respectively. This commenced the onset of destabilization in the manufacturing sector performance. From 1987-1991, ACUR ranged between 40 and 42 per cent. This trend appeared somewhat stable during this period. 1992 to 1996 recorded ACUR of 33.5 per cent. This is relatively poor within the five – year period when compared to earlier years. This decline in manufacturing activity continued until 2001 when the sector recorded a 42.7 per cent ACUR. This trend explains the shape of the ACUR curve in figure 3. 2002 to 2008 record negligible growth in ACUR with capacity utilization at 54.6 per cent on the average. The overall performance of the manufacturing sector has been below expectation as a supposed engine of growth of the economy.

Theoretical Framework and Empirical Overview

On theoretical perspective the link between financial sector and the real sector has been established in the endogenous growth model [see Acemoglu *et al* (2006); Acemoglu and Zilibott (1997); Benciverga *et al* (1995); Allen and Gale (1997); Levine (1997), (2005); Bencivenga and Smith (1991); King and Levine (1993); Pagano (1993); Greenwood and Jovanovic (1990); Grossman and Stiglitz (1990); Romer (1986), Lucas (1988) and Diamond and Dybvig (1983)]. Besides, concerning the role of financial development on the manufacturing sector, researchers have studied the comparative importance of bank-based and market based financial systems (see Allen and Gale, 2000; Demirguç-Kunt and Levine, 1996; Demirguç-Kunt and Maksimovic, 2002; Beck and Levine, 2004). The endogenous growth model can be used to explain the path in advancing the real sector to promote growth on a long run basis. The growth model is central to investment and services like risk diversification, savings mobilization and liquidity generation offered by financial intermediaries. According to Ghali (1999) endogenous growth model proposes that through these services there is an implied positive relationship between financial intermediation and economic growth. Impact of reforms in the model can occur as the result of government intervention which can either worsen off or improve the financial institutions (Schumpeter, 1911 and Ghali 1999).The theoretical framework for this study is thus built on the standard model of growth (AK endogenous growth model). The model takes the form of:

$$Y = AK \quad \ldots\ldots 1$$

In the AK endogenous growth model, the production function is assumed not to exhibit diminishing returns to

scale in the process of the growth system. The positive spillover from investment on capital is given as rationale for the return to scale. In equation 1 above, Y is the output, A is the level of technology and K is the capital. Also, in the model it is assumed that A>0. To determine the level of output per capita we have

$$y = Ak$$

……
…..2

Equation two is divided by the population (N) log (in order to express per capita). Then k is output per capita and y is the output/income per capita. Using the transitional dynamics of Solow-Swan model, we have:

$$\gamma K = \frac{\dot{k}}{k} = \frac{s.f(k)}{k} - (n + \delta)$$

……3

Substituting the level of technology into equation 3, we have

$$\gamma K = sA - (n + \delta)$$ ……..…….4

In equation 4, if $sA > (n + \delta)$ then $\gamma K > 0$.

Finally the per capita can be given as

$$\gamma^* = sA - (n + \delta)$$ ……....5

In the model above, technology shows a positive long run per capita growth which depends on the saving rate and population. It can be deduced that there is a positive relationship between output and capital which shows that outside the steady state variation in investment rate (source of capital through financial sector) and variation in the output sector (including manufacturing sector) are positively related.

On empirical review both on developed and developing economies, most studies focused more on financial development and economic growth than financial reform and the manufacturing sector growth. In the Nigerian context, it is also the same, some of the few existing literatures that focused on financial reforms include; Iganiga (2010) who assesses the effect of Nigerian macroeconomic reforms on the effectiveness and efficiency of Nigerian institution with emphasis on the banking sector. The study concluded that the performance of financial sector had been influenced by the reforms which resulted in improvement in the indicators such as financial deepening. It stresses further that the interest rate deregulation in Nigeria was followed by the decline in the bank credits due to negative and high lending rate, the implication can be on the crowding out effect on investment. Duro and Kehinde (2012) examine the relationship between financial sector reforms and the growth of small and medium scale enterprises (SMEs) in Nigeria and conclude that the indicators of financial sector have positive and significant impact on the output performance of SMEs in Nigeria.

Umejiaku (2011) examines the impact of the financial sectors reforms on some financial and real sector variables using graphical illustration while Ogun and Akinlo (2011) examine financial sector reforms and the performance of the Nigerian economy using both descriptive and Vector Autoregressive model (VAR). Their results indicate that the mean of performance indicators (saving rate, investment level and growth of real GDP) were very low relative to the pre – reform period. Their correlation with the financial indicators was mostly low or negative under reform. In addition, the VAR analysis indicate that shocks of financial indicators either had negative or insignificant positive effect on saving rate, investment and economic growth during the reform. In contrast to these identified existing literatures, this study examines the effect of financial sector reforms on the growth of the manufacturing sector in Nigeria with the aim of providing a lasting solution to the unemployment problem.

Methodology

To examine the effect of financial sector reforms on output growth of the manufacturing sector in Nigeria, this paper utilizes both the statistical and econometric approach adopted from the work of Ogun and Akinlo (2011) which was modified to reflect the effect of financial sector reforms on output growth of the manufacturing sector in Nigeria.

Model Specification

$$M_1 = f(CRPSY, BM_2Y, SMCY, IRS, LLY)$$

……..1

Where M_I is the output of the manufacturing sector as percentage of total GDP (is the subset of output in real sector of the economy reflected in the country's GDP), CRPSY is credit to private sector referred to as the financial resource provided to the private sector by financial corporations, it is expected to be higher during post reform era than the pre reform era. The increase shows the effective allocation of the surplus resource by the financial system. BM_2Y is the ratio of broad money to GDP. It measures the financial depth, and the higher the ratio of broad money to GDP, the higher the financial depth and it is expected to be higher during the reform era than the pre reform era. IRS is the prime interest rate. This is also an important indicator of financial liberalization. SMCY is the ratio of market capitalization to GDP. This is used as proxy for the market development. Finally, LLY is the ratio of reserve money to deposit. This captures how effective the financial intermediaries are. If the ratio of reserve money to deposit is lower under post reforms era than pre reform era, then the more efficient the financial intermediaries are assumed to be.

$$M_1 = a_o + b_1 CRPSY_t + c_2 BM_2Y_t + d_3 SMCY_t + e_4 IRS + f_5 LLY_t + \varepsilon_t \quad \text{…….....2}$$

To achieve the objective of this study, we proceed to test for the importance of the shocks to indicators of financial sector reforms on the variances of performance indicator of the manufacturing sector by specifying a Vector Autoregressive Model (VAR) as:

$$M_{1t} = a_o + \sum_{i=1}^{n} b_1 CRPSY_{t-1} + \sum_{i=1}^{n} c_2 BM_2Y_{t-1} + \sum_{i=1}^{n} d_3 SMCY_t + e_4 \sum_{i=1}^{n} e_4 IRS + f_5 \sum_{i=1}^{n} f_5 LLY_{t-1} + \varepsilon_t \quad \text{…..3}$$

The rationale for using the VAR model is due to the strength of the model which allows for and gives the ability to describe the dynamic structure of the variable (that is, all variables treated as endogenous variable). For the statistical approach there are two periods (pre reform era/ economic regulation- 1970 to 1985 and post reform era/economic deregulation – 1986 to 2012). The analysis involves the comparison of the important indicators earlier identified and conventional descriptive statistics is applied to examine the effect of the financial reforms on the manufacturing sector. Data used in this study were obtained from Central Bank of Nigeria Statistical Bulletin and the International Financial Statistics (IFS). Various models as well emphasize the importance of reforms in developing the financial sector and its relation to output (see Goldmith, 1969; Boot and Thankur, 1997; Allen and Gale, 2000; Demirgue – kunt and Levine, 2001) which emphasized improvement in the following areas: pooling of capital and ease of making transaction. Others include; acquisition of information on firms, intensity with creditor exerts corporate control and provision of risk reducing arrangement. Garcia and Lin (1999) stress that with higher degree of market development a country has more and well developed stock market. IRS is the prime interest rate; this is also an important indicator of financial liberalization. In the post era of the reform the financial sector should be able to transform the negative interest rate to positive interest rate during this period (Ogun and Akinlo, 2011).

Empirical Results.

The statistical approach adopted basically shows the pre reforms/regulation era (Table 1) and post reform/ deregulation era (Table 2). The variables used are indicators of financial reform as well as indicator of output growth in the manufacturing sector. This approach involves the comparison of the indicators in both era (pre and post) which assess the effectiveness of financial reforms.

Table 1 Descriptive Statistics from 1970 to 1985

	M_I	CRPSY	SMCY	LLY	IRS	BM_2Y
Mean	0.066971	0.015134	0.067811	0.053177	0.077969	0.140464
Median	0.065396	0.000000	0.072661	0.053514	0.070000	0.146411
Maximum	0.104009	0.054841	0.125608	0.130254	0.125000	0.238889
Minimum	0.041947	0.000000	0.020265	0.000000	0.060000	0.063985
Std. Dev.	0.017384	0.023367	0.036509	0.044182	0.018033	0.056401
Skewness	0.501000	0.858404	0.049869	0.111433	1.315791	0.223782
Kurtosis	2.468212	1.803166	1.708984	1.822276	3.948900	1.861099
Jarque-Bera	0.857867	2.919895	1.117780	0.957802	5.217091	0.998273
Probability	0.651203	0.232248	0.571843	0.619464	0.073642	0.607055
Sum	1.071536	0.242146	1.084973	0.850839	1.247500	2.247428
Sum Sq. Dev.	0.004533	0.008190	0.019993	0.029281	0.004878	0.047716
Observations	16	16	16	16	16	16

Source: Author's computation with E-views 7.0.

Table 2 Descriptive Statistics from 1986 to 2013

	M_I	CRPSY	SMCY	LLY	IRS	BM_2Y
Mean	0.040680	3.476698	4.260220	0.343848	0.191131	4.191962
Median	0.041367	1.096821	0.778284	0.190433	0.182925	1.599951
Maximum	0.049795	16.48036	20.96110	2.331851	0.298000	15.63224
Minimum	0.033584	0.059148	0.026379	0.003763	0.105000	0.092350
Std. Dev.	0.004726	4.932043	6.062128	0.499768	0.040260	5.162823
Skewness	0.226228	1.493153	1.382034	2.825650	0.710916	1.190427
Kurtosis	2.084213	3.748674	3.680323	11.06785	3.992798	2.917363
Jarque-Bera	1.173804	10.66335	9.115775	109.1558	3.383159	6.384706
Probability	0.556047	0.004836	0.010484	0.000000	0.184228	0.041075
Sum	1.098365	93.87085	115.0259	9.283884	5.160546	113.1830
Sum Sq. Dev.	0.000581	632.4512	955.4843	6.493977	0.042142	693.0232
Observations	28	28	28	28	28	28

Source: Author's computation with E-views 7.0.

The descriptive statistics presented in tables (1 and 2) establishes the effect of financial reforms on the manufacturing sector in Nigeria. Evidence from the analysis indicate that the mean ratio: credit to private sector / GDP (CRPSY); market capitalization / GDP, liability deposit to GDP, interest rate (IRS) and broad money supply / GDP depict an increment during the reform era than the pre reform era from 0.015134 per cent to 3.476698 percent, 0.067811 percent to 4.260220 percent, 0.053177 percent to 0.343848 per cent, 0.077969 percent to 0.191131 percent and 0.140464 per cent to 4.191962 per cent respectively). Also the standard deviation for these ratios increased in the post reform era than what it was in the pre reform era. The economic implication of the increment implies that for the ratio of broad money supply to GDP (BM_2Y) means that the financial sector reforms has led to financial depth; the ratio of private sector to GDP (CRPSY) means that there is high level of credit to the government sector, which its allocation improved under the reform.

The higher prime interest (IRS) means that there was higher inflation in the post reform era than the pre reform era and more importantly, borrowers found it difficult to access loans during the post reform and deregulation era due to increased cost of borrowing. For the ratio of reserve money to deposits (LLY) and ratio of market capitalization to GDP (SMCY) the increased mean and standard deviation during the post reform era indicate that the financial intermediaries were inefficient while there was improvement in stability of the stock market in the post reform era compared to the pre reform era.

The mean of the ratio of manufacturing sector to GDP declined during the post era compared to the pre reform era and this is contrary to the a priori expectation. The financial reform is expected to increase growth in the output sector which includes the manufacturing sector. The decline in the contribution of manufacturing to GDP in the post reform era may be attributed to mismanagement and inefficient allocation of resource, high inflation rate, high cost of borrowing, instability in the macroeconomic indicators, and severe balance of payment deficits. These will lead to a non-availability of an enabling environment that would encourage production to thrive.

Table 3: Estimated Correlation Matrix of Variables (Sample 1970 – 1985)

	M_I	CRPSY	SMCY	LLY	IRS	BM_2Y
M_I	1.000000					
CRPSY	-0.579377	1.000000				
SMCY	0.685644	-0.828247	1.000000			
LLY	0.555143	-0.831513	0.904578	1.000000		
IRS	-0.393071	0.868100	-0.632045	-0.709220	1.000000	
BM_2Y	0.599887	-0.759183	0.967745	0.947123	-0.584271	1.000000

Source: Author's computation with E-views 7.0.

Table 4: Estimated Correlation Matrix of Variables (Sample 1986 – 2013)

	M_I	CRPSY	SMCY	LLY	IRS	BM_2Y
M_I	1.000000					
CRPSY	-0.027336	1.000000				
SMCY	-0.054754	0.849445	1.000000			
LLY	-0.095120	0.862061	0.694005	1.000000		
IRS	0.104582	-0.306819	-0.337445	-0.241121	1.000000	
BM_2Y	-0.094254	0.988007	0.885182	0.829010	-0.316776	1.000000

Source: Author's computation with E-views 7.0.

Tables 3 and 4 present the estimated correlation matrix of variables from 1970 to 1985 and 1986 to 2012. From 1986 to 2012 result shows that the correlation of the ratio of manufacturing sector to GDP (M_I) with various indicators of financial sector reforms (CRPSY, SMCY, LLY, IRS and BM_2Y) indicate that the financial deepening measured by SMCY is negatively related to the ratio of manufacturing sector to GDP (M_I). Also a negative correlation in the other variables (CRPSY, LLY and BM_2Y) was observed while a positive correlation was observed with IRS. All variables as well have low coefficients which suggest that the development of the manufacturing sector under financial reforms in Nigeria has been very poor. In table 4, the contribution of the manufacturing sector is positively correlated to the variables SMCY, LLY and BM_2Y but negatively correlated to the variables CRPSY and IRS, also with low coefficients. The robustness of the findings is as well tested by the econometric approach. Specifically, the VAR methodology was employed while the impulse response functions (IRFs) were used as analytical tool. The need for this arises since recent innovation in econometric modeling has shown that most macroeconomic variables are non-stationary in their levels but most adequately represented by first difference (Ogun and Akinlo, 2011). The study therefore proceeds to employ the Augmented Dickey-Fuller (ADF) unit root test to test for non-stationarity or otherwise of the variables. The equation can be written in the form:

Where Y_t is the time series, Δ is the first difference operator, α is a constant and εt is the error term. The null hypothesis of existence of unit root is β is 0. Table 5 below presents the results of the stationarity test for each of the variables.

Table 5 Augmented Dickey-Fuller (ADF) Unit Root Test

Series	ADF at Levels	ADF at First Difference	ADF at Second Difference	Order of Integration
M_I	-4.132553*	-4.401662	-8.580544	2
LLY	5.315743*	4.662557	-4.637029	2
CRPSY	5.984064*	-5.853586	-7.876034	2
IRS	-3.230870**	-8.675398*	-9.744157	2
BM_2Y	1.226907	-2.588232	-7.663292*	2
SMCY	-0.565147	-5.820455*	-7.227660	2

Source: Author's computation with E-views 7.0.

Note: A variable is stationary when the ADF t-stat istic is greater than the critical values at a given level of significance. When * and ** signifies stationarity at 1 percent and 5 percent level of significance respectively.

From table 5 above, it can be observed that only the contribution of manufacturing to GDP (MI), deposit liability to GDP (LLY) and credit of private sector to GDP (CRPSY) were stationary at levels at 1 percent and 5 percent level of significance respectively, the others were found not to be stationary at level. However, the variables prime interest rate (IRS) and ratio of market capitalization to GDP (SMCY) are stationary after the first differencing at one percent level of significance while finally the variable ratio of broad money stock to GDP(BM2Y) was stationary after the second differencing; in other words, all the variables were integrated of order 2 that is I(2). Thus, the null hypothesis of the presence of a unit root is rejected at second difference as the absolute values of the ADF statistics were greater than the critical values at 1 percent level of significance.

The Econometric Approach

Table 6 Variance Decomposition of MI (From VECM)

Period	S.E.	M_I	CRPSY	SMCY	LLY	IRS	BM_2Y
1	0.012901	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.016855	93.55332	5.821055	0.592848	6.05E-05	0.032003	0.000711
3	0.020953	84.97736	9.903020	0.395558	3.770248	0.891582	0.062235
4	0.032054	49.22255	46.20582	0.666606	3.088829	0.380952	0.435251
5	0.049362	25.26309	60.47602	5.282430	7.777582	0.952992	0.247885
6	0.103196	7.489102	84.00669	5.687279	2.010898	0.298158	0.507870
7	0.198418	2.194482	83.86147	9.459686	3.785806	0.509762	0.188790
8	0.427538	0.715272	89.84366	7.796968	0.904758	0.244434	0.494909
9	0.864395	0.178361	87.71497	9.494217	1.909688	0.309831	0.392937
10	1.827674	0.117963	90.10407	8.160989	0.878062	0.228639	0.510277

Table 6 above shows the Variance Decomposition of M_I. From the table it can be observed that in period one, the variable M_I variation is explained by about 100 percent variation in the forecast error shock of itself. In period two, the variation of the forecast error shock M_I (Manufacturing Sector to GDP) is explained by about 5.8 percent

of the variation in the variable CRPSY (credit to private sector). In period three, the variation of the forecast error shock in M_I (Manufacturing Sector to GDP) is explained by about 3.77 percent variation in LLY (deposit liability to GDP). In period 6 about 0.29 percent variation of the forecast error of the shock in M_I (Manufacturing Sector to GDP) is explained by the variation IRS (Prime interest rate). In period 7, about 2.2 percent variation in the forecast error of the shock in MI (Manufacturing Sector to GDP) is explained by the variation of itself. In period 9, about 1.9 percent in the variation of the forecast error shock in MI (Manufacturing Sector to GDP) is explained by the variation LLY (deposit liability to GDP). In period 10 about 0.11 percent variation in the forecast error shock is explained in the variation of MI.

Conclusion and Recommendations

The results from descriptive statistics indicate that the mean ratio of the financial indicators: credit to private sector to GDP (CRPSY); market capitalization to GDP, liability deposit to GDP, interest rate and broad money supply to GDP (BM2Y) depict an increment during the reform era than the pre reform era. Also the standard deviation indicates increases in the post reform era. The economic implication of the increment implies that for the ratio of money supply to GDP (BM_2Y), the financial sector has led to financial depth; for the ratio of private sector to GDP (CRPSY), there is high level of credit to the government sector, with its allocation improving under the reform. The higher prime interest (IRS) means that there is high inflation in the post reform era than the pre reform era and the cost of borrowing for manufacturing purposes will thus be high. For the ratio of liability deposit to GDP (LLY) and ratio of market capitalization to GDP (SMCY) implies that the financial intermediaries were inefficient while there was improvement in stability of the stock market in the post reform era relative to the pre reform era.

Also, the impact of these financial sector variables on the manufacturing sector in Nigeria depicts that the mean of the ratio of manufacturing sector to GDP declines during the post reform era than the pre reform era. This is contrary to the a priori expectation in which the financial reform is expected to increase the output sector including the manufacturing sector. The result from the correlation matrix of variables from 1986 to 2013 shows the correlation of the ratio of manufacturing sector to GDP (M_I) with various indicators of financial reform (CRPSY, SMCY, LLY, IRS and BM_2Y). The financial deepening indicated by SMCY is negatively related to the ratio of manufacturing sector to GDP (MI). Also a negative correlation in the other variables (CRPSY, LLY and BM_2Y) was observed, while a positive correlation was observed with IRS. All variables as well have low coefficients; this result suggests that the developments in the manufacturing sector under financial reforms in Nigeria have not been impressive. This could further explain the low and unstable average capacity utilization in the manufacturing sector. The result from the econometric approach depicts a short run divergence between variables.

Based on these findings, this paper concludes that Nigeria experienced increase in GDP but with minimal contribution from the manufacturing sector. This implies that the increase in GDP does not imply growth of the manufacturing sector which can help to reduce the unemployment problem in the country. So the growth in GDP can be regarded as jobless growth since unemployment level is still high in the country. Secondly, since an improved manufacturing sector will lead to sustainable growth, then, a well-developed manufacturing sector will promote inclusive growth. To achieve this, the financial sector, both the capital and the money markets have vital roles to play. Most of the financial indicators have low co-efficient in relation to the manufacturing sector indicator. Thus the financial indicators need to be integrated efficiently into the manufacturing sector. The high prime rate of interest will discourage growth of output and capacity utilization in the manufacturing sector. This paper therefore suggests the need for proper review of the policies introduced to enhance output growth in the manufacturing sector through financial sector reforms. This is because the inefficiency of the financial sector reforms may be responsible for the poor performance of the manufacturing sector. Most of the policies are dynamic in nature, thus there is the need to ensure consistency in these policies through strong and well established institutions (both financial and political). Finally the need arises for government to create incentives and awareness in terms of encouraging and attracting both local and foreign investors through its policies. Foreign investment will serve as an alternative source of fund which will help to improve economic activity and capacity utilization in the manufacturing sector thus reducing the unemployment rate in the country.

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Appendix

Impulse Response