

Financial System Broadening and Economic Performance

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Abstract

A considerable amount of scholarly works have examined the link between financial system broadening and economic performance using varieties of econometric models. Although, most of these studies have concentrated attention on the developed economies, very few have examined the impact on emerging economies. In Nigeria, some efforts have been made, though not comprehensive enough to model this nexus. This has created gap in the literature which needs to be filled. It is in view of this that this study examines the tie between financial system broadening and economic performance. The time series data was collected from the Central Bank of Nigeria Statistical Bulletins covering a period of 55 years (1960 – 2014) and analyzed using descriptive statistics, Pearson's correlation using SPSS 22, and multiple regression analysis using Eviews 8.0. The findings reveal that financial system broadening via aggregate money supply has positive effect on the economic performance. However, financial system broadening via credit to private sector has a negative effect on the economic performance. The study also finds that money supply is positively correlated with economic performance. Private sector credit also shows a positive relationship with economic performance. The study was limited by including only fifty-five years in the selection of period covered, making this possibly biased selection and it may not be adequate to generalize the results for Nigeria. The study has contributed to the economic performance literature with a better understanding of the role of financial system deepening and its association with economic performance. This study provides valuable knowledge to policy makers and economic managers, to refine their current policies and subsequently improve financial system broadening and economic performance.

Keywords: Economic performance, financial system broadening, Nigeria.

1. Introduction

There is no gainsaying that sound financial systems are essential for macro-economic stability, as demonstrated by the global financial crisis. It is also true that vibrant financial markets also play a critical role in channeling resources into productive investment and fostering economic growth. The performance of the economy has become sine qua non with global influence and competitive advantage. The case of US, China, Japan, Germany and the rest of the world top ten rankings by economic growth is a case in point. Nigeria ranks number twenty-two in the global ranking by economic performance by the World Bank in 2014. It is the goal of every country, therefore, to join this enviable position of economic performance. Countries go to any length to improve their economic performance. The recently negotiated Iran nuclear deal has been linked to economic interests of the parties involved. Iran economy has been terribly hurt by the economic sanctions imposed by the US and Europe. Europe led by Germany, France and UK need Iran economic potentials. The rest is history. There is no one-size-fits-all way to measure country economic performance. Rather, translating the complex forces responsible for the performance of any economy into quantifiable indicators of performance requires an in-depth examination of hundreds of underlying factors. However, several scholars have accepted financial system broadening as a driver of economic performance in both developed and developing economies. It has become one of the commonly adopted strategies for improving performance. To put it succinctly, financial system broadening (FSB) refers to

the art of increasing the ratio of money supply relative to the gross domestic product or some other index such as interest rate, unemployment rate and poverty rate. It simply refers to liquid money, suggesting that the more liquid money is available in an economy, the more opportunities exist for continued economic performance. Effective financial system broadening strategy is, therefore, desirable in both short and long term.

FSB is fast becoming a competitive economic policy or strategy for both developed and developing economies. It leads to improvement or increase in the pool of financial services that are tailored to all the levels in the society. It ensures continued and sustainable growth and supports the notion that development in the financial system leads to development of the economy as a whole. FSB has continued to assume increasing recognition across the globe among policy makers, scholars and development oriented agencies. Its importance derives from the promise it holds as a tool for economic development, particularly in the areas of poverty reduction, employment generation, wealth creation, improving welfare, and general standard of living. In Nigeria, the major tools for FSB are (a) Agent Banking (b) Tierred Know-Your-Customer Requirements (c) Financial Literacy (d) Consumer Protection (e) Linkage Banking (f) Implementation of the MSME Development Fund and (g) Credit Enhancement Programmes. According to the Central Bank of Nigeria, the global pursuit of financial broadening as a vehicle for economic development had a positive effect in Nigeria as the access to liquidity rate increased from 20 % in 2008 to 46.3 % in 2010 and to 53.0 % in 2012 to 60 % in 2014. Financial systems represent a cornerstone of economic development. To ensure that resources are efficiently mobilized and allocated among different players, financial systems must be adequately regulated and also expanded to offer a wide range of instruments and services. Financial system broadening has been a very important topic in Nigeria. However, despite this attention, very limited progress has been made in this area.

The purpose of this study, therefore, is to examine the extent to which financial system broadening dynamics have implications for economic performance of Nigeria. In order to achieve this objective, the following hypotheses are formulated and tested:

H₁: Financial system broadening through aggregate money supply (AMS) and economic performance are positively correlated.

H₂: Financial system broadening through credit to private sector (CPS) and economic performance are positively correlated.

H₃: Aggregate money supply and economic performance are positively correlated.

H₄: Credit to private sector (CPS) and economic performance are positively correlated.

The remaining part of this study is dedicated to literature review, data and methodology, results and discussions, conclusions and recommendations. The literature review section is further divided into conceptual and empirical review. Data and methodology is also further divided into data, variable measurement and conceptual model.

2. Literature Review

2.1 Conceptual Review

2.1.1 Financial system broadening

According to Nguena and Abimbola (2013), financial system deepening is a multi-faceted process that involves the interaction of a number of markets, instruments and stakeholders. Put it in simple terms, financial system broadening refers to a process in which institutions and financial markets: (i) facilitate goods and services exchange (ii) mobilize and pool savings of a large number of investors (iii) acquire and process information about the companies and the potential investment projects and therefore allocating public savings to the most productive uses, (iv) follow investments and exert corporate governance, and (v) diversify and reduce liquidity risk and inter-temporal risk (Levine, 2005; King and Levine, 1993). In other words, financial deepening can be understood as a process by which the range of products and players widens, deadlines extend and services play a role in risk coverage and diversification. FSB is often classified into two categories: FSB through aggregate money supply and FSB through credit to private sector. According to the CBN Statistical Bulletin (2014), between 1960 and 2014, aggregate money supply stood at ₦109,824.15 trillion and credit to private sector stood at ₦99,087.86 trillion. Thus, total liquid asset available to the economy between 1960 and 2014 stood at ₦208,912.01 trillion. Meanwhile, within the same period, aggregate GDP at current prices stood at ₦489,163.34 trillion.

2.1.2 Economic performance

Economic performance is measured traditionally by (a) economic growth (b) inflation (c) unemployment (d) current account. However, of these indicators, economic growth is usually the most importance and given the greatest credence for economic performance. It is frequently used for comparisons and is probably the most prominent statistic. For all its limitations, GDP is widely used across the world for measuring economic growth. It gives a rough guide to the level of economic activity in the country. For all its faults, GDP gives a useful guide to the economic cycle and is an indicator for monetary policy and fiscal policy of the country. The support for the use of GP to measure economic performance is that GDP is measurable, that is, it is objective. Perhaps, the

negative side of GDP comes when it is relied on too much. For example, a rise in GDP signals improvement in economic performance, and yet there is a rise in poverty because the growth does not translate into development (reduction in poverty, unemployment and gap between the rich and the poor). This is often the case in Nigeria and in quite a number of developing economies, where economic growth does not take into account income distribution and therefore does not lead to economic development (reduction in poverty, unemployment and gap between the rich and the poor). Thus, growth in GDP could primarily benefit the top income strata, a situation often described as the 10/90 rule in Nigeria, where 90 % of the country's wealth is in the hands of 10 % of the people. This scenario explains why Nigeria is often referred to as paradox because of the rising poverty in the midst of rising economic growth. A good economic performance, therefore, should result in reduction in poverty, unemployment and the gap between the have and have not.

2.1.3 Money Supply

Money supply exerts considerable influence on economic activity in both developed and developing economies. The low level of money supply in Nigeria has been responsible for the state of the economy. Nigeria ranks 22 on the world economy ranking according to the World Bank in 2014. It is in this light that the recapitalization in the banking sector in 2005 must be commended. However, despite that the Nigerian financial system remained by and large relatively underdeveloped because of lack of sufficient financial intermediation and financial deepening which the economy requires for sustainable economic growth. According to the statistics provided by the CBN, between 1960 and 2014, total money supply stood at ₦109,824.15 trillion. This is small relative to other emerging economies like Brazil, Russia, India, Indonesia, and China. In an attempt to tie money supply to economic growth, scholars are examining the role of financial structure, which presupposes that the level of money supply drives economic growth. Montiel (2005), Emenuga (2006) and Osikoya (2012) examine the effect of financial depth (money in circulation) on economic growth and suggest (a) improved efficiency of financial intermediation (b) improved efficiency of capital stock and (c) increased national savings rate.

2.1.4 Credit to Private Sector

Credit to the organized private sector refers to the financial resources provided to the organized private sector by financial institutions, such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. Credit facilities to the organized private sector are very important for economic growth. According to the CBN, total credit to the organized private sector over the study period amounts to ₦99,087.86 trillion. Granting credits to the organized private sector will transfer funds that are created by banks to real sector of the economy, thereby creating job opportunities and reducing poverty level. This requires consistent and vigorous efforts and strategies on the part of the CBN and deposit money banks. Okorie (2013) finds increase in private sector credit leads to increase in private domestic investment by 6% in Nigeria. Also, Mamman and Hashim (2013) find that credit to private sector contributes about 96.1% to real sector growth in Nigeria. Kolawole and Omobitan (2014) find significant and positive impact of credit to private sector in Nigeria.

2.2 Empirical Review

Three scholarly positions emerged from empirical studies on the link between financial system broadening and economic performance. In the first position are scholars who argued that financial system broadening and economic performance are positively correlated. Ndebbio (2004) identifies the range of financial assets that can adequately approximate financial deepening. FD is represented by two variables: the degree of financial intermediation/development (M2/Y) and the growth rate in per capita real money balances (GPRMB). Estimations were done with ordinary least squares (OLS) multiple regression procedure. Three modelled equations, with justifications for each, were estimated and analyzed. A cross-country regression was used for 34 SSA countries. Two policy implications derive from the study: that SSA countries should strive hard to make real money balances grow, and that these countries should also come up with policies to improve financial development/intermediation. Financial deepening positively affects economic growth. Also, Hasan, Wachtel and Zhou (2006) use panel data for the Chinese provinces to study the role of financial deepening on growth rates. They suggest that the development of financial markets, legal environment, awareness of property rights and political pluralism are associated with stronger growth.

Odeniran and Udejaja (2010) examine the relationship between financial sector development and economic growth in Nigeria over the period 1960-2009. Four variables, namely; ratios of broad money stock to GDP, growth in net domestic credit to GDP, growth in private sector credit to GDP and growth in banks deposit liability to GDP were used to proxy financial sector development. The empirical results suggest bidirectional causality between some of the proxies of financial development and economic growth variable. Specifically, they find that the various measures of financial development granger cause output even at 1per cent level of significance with the exception of ratio of broad money to GDP. Additionally, they find that net domestic credit is equally driven by growth in output, thus indicating bidirectional causality. The variance decomposition shows that the share of deposit liability in the total variations of net domestic credit is negligible, indicating that shock

to deposit does not significantly affect net domestic credit. Chang and Wu (2012) investigate the threshold cointegration effect of financial deepening on economic growth in Taiwan over the period from 1981 to 2010. The results show that a threshold cointegration effect exists in relationship between financial deepening and economic growth. In short-run, economic growth has a significant and positive effect on financial deepening in the high-growth regime. In addition, the impact of financial deepening on economic development has a significant and positive effect in the high- and low- growth regimes. Thus, financial deepening can increase economic growth in Taiwan.

Idris (2012) examines the relationship between financial development and economic growth in Nigeria using data from 1981 to 2010. All the variables are stationary at first difference using the Augmented Dickey Fuller (ADF) and Phillip Perron (PP) tests. The Johansen Cointegration test result showed that there exist a positive relationship between financial development and economic growth. Shittu (2012) examines the impact of financial intermediation on economic growth in Nigeria using time series data from 1970 to 2010 were used and were gathered from the CBN publications. For the analysis, the unit root test and cointegration test were done accordingly and the error correction model was estimated using the Engle-Granger technique. The paper establishes that financial intermediation has a significant impact on economic growth in Nigeria. Nkoro and Uko (2013) empirically examine the financial sector development-economic growth nexus in Nigeria. In doing this, the study employed the cointegration/Error Correction Mechanism (ECM) with annual dataset covering the period, 1980-2009. Five variables, namely; ratios of broad money stock to GDP, private sector credit to GDP, market capitalization-GDP, banks deposit liability to GDP and Prime interest rate were used to proxy financial sector development while real gross domestic product proxy growth. The empirical results show that there is a positive effect of financial sector development on economic growth in Nigeria. Balago (2014) examines the relationship between Financial Sector Development and Economic Growth in Nigeria using time series data from 1990-2009 were fitted into the regression equation using various econometric techniques such as Augmented Dickey Fuller (ADF) test, Johansen Multivariate Co-integration Test, Ordinary Least Square Regression and Vector Error Correction Model (VEC). The result shows that development in financial sector variables viz: banking sector credits, total market capitalization and foreign direct investment positively affect economic growth variables. Rahay ... Yousefi (2015) offer the following findings on the financial deepening and economic growth nexus: (a) economic growth is guaranteed from financial deepening in most emerging markets, (b) the effect of financial deepening on economic growth is bell-shaped, and (c) the pace of financial deepening matters.

In the second position are scholars who argued that financial system broadening and economic performance are negatively correlated. Ardic and Damar (2006) analyze the effects of financial sector deepening on economic growth using a province-level data set for 1996-2001 on Turkey. Their results indicate a strong negative relationship between financial deepening and economic growth. Oriavwote and Eshenake (2014) examine empirically, the implications of financial development for economic growth in Nigeria using time series data covering the period between 1990 and 2011. The cointegration technique with its implied Error Correction Mechanism (ECM) was applied. This commenced with the ADF unit root test, followed by the Johansen cointegration test. The Overparameterize and Parsimonious ECM was next and this was followed by the Vector Error Correction, diagnostic tests and Cholesky variance decomposition. The variables included Real Gross Domestic Product, Financial deepening which is a ratio of money supply to Gross Domestic Product, liquidity ratio, interest rate and credit to the private sector. Financial sector development has not significantly improved private sector development.

In the final position are scholars who find no relationship or mix relationship. Thorton (1995) finds no lead-lag relationship financial deepening and economic growth in eight countries. Nzotta and Okereke (2009) empirically examine the nexus between financial deepening and economic growth in Nigeria between 1986 and 2007. They find that financial deepening index is low in Nigeria. Rousseau and Wachtel (2009) show that the nexus between financial deepening and economic growth is not as strong in more recent data as it was in the original studies with data for the period from 1960 to 1989. First, they find that the incidence of financial crises is related to the dampening of the effect of financial deepening on growth. Excessive financial deepening or too rapid growth of credit may have led to both inflation and weakened banking systems which in turn gave rise to growth-inhibiting financial crises. Excessive financial deepening may also be a result of widespread financial liberalizations in the late 1980s and early 1990s in countries that lacked the legal or regulatory infrastructure to exploit financial development successfully. However, they find little indication that liberalizations played an important direct in reducing the effect of finance. Similarly, there is little evidence that the growth of equity markets in recent years has substituted for debt financing and led to a reduced role of financial deepening on growth. Onwumere, Ibe, Ozoh, and Mounanu (2012) examine the impact of financial deepening on economic growth in Nigeria. Adopting the supply-leading hypothesis using variables such as broad money velocity, money stock diversification, economic volatility, market capitalization and market liquidity as proxies for financial deepening and gross domestic product growth rate for economic growth, they find that broad money velocity and market liquidity promote economic growth in Nigeria while money stock diversification, economic volatility and

market capitalization did not within the period studied (1992-2008).

Adekunle, Salami and Adedipe (2013) examine the impact of financial sector development and economic growth in Nigeria. The OLS method of the regression analysis was employed; the financial development was measured by ratio of liquidity liabilities to GDP (M2GDP), real interest rate (INTR), ratio of credit to private sector to GDP (CPGDP) while the economic growth was measured by the real GDP (RGDP). The study finds that only the real interest rate is negatively related. All the explanatory variables are statistically insignificant. Nkoro and Uko (2013) also find credits to private sector and financial sector depth to be ineffective and failed to accelerate economic growth. Ohwofasa and Aiyedogbon (2013) examine the level of development of financial deepening in the banking sector and the extent it has impacted on economic growth over the last two decades. Vector autoregressive (VAR) methodology and its derivatives, impulse response function and variance decomposition, were employed. The results of the VAR estimates revealed among other things that a one year lag of economic growth, gross national saving as a ratio of GDP (lag 1) and exchange rate (lag 1) have significant positive impact on current economic growth while the impact of GCF (lag 1) on the current level of economic growth was negative and statistically significant. It was also empirically discovered that PSC/GDP (lag 2) and GNS/GDP (lag 2) happened to be key determinants of M2/GDP. Similarly, the key determinants of PSC/GDP include its year 1 and 2 lagged values and GNS/GDP (lag 2) with GNS/GDP (lag 2) and PSC/GDP (lag 2) exhibiting negative impact. Finally, on the current level of GNS/GDP, it is observed that M2/GDP (lag 1) and PSC/GDP (lag 2) exhibit significantly negative determining influence while PSC/GDP (lag 1) and the past value of GNS/GDP (lag 2) were also seen as its key determinant. Aye (2015) investigates the role of financial deepening in economic growth in Nigeria. Bootstrap rolling window approach was used to account for potential time variation in the relationship with annual data on money supply as a ratio of nominal GDP and real GDP per capita from 1961-2012. Results indicate no causality between the two.

3. Data and Methodology

3.1 Data

The study collected data from the CBN Statistical Bulletins covering a period of 55 years from 1960 – 2014. Data on GDP, aggregate money supply and credit to private sector are lagged to reduce heteroskedasticity, multicollinearity problems and improve normality (Lazarides, Drimpetas & Dimitrios, 2009). However, data on the financial system broadening are in percentages.

3.2 Variable Measurement

Three types of variables are used in this study, which are economic performance as dependent variable (measured by GDP), financial system broadening as independent variable (measured by aggregate money supply over GDP and credit to private sector over GDP) and control variables (measured by aggregate money supply and credit to private sector). The following scholars use GDP to proxy economic performance: Yahaya and Andow (2015), Yahaya, Lamidi, Kutigi, and Ahmed (2015), Aye (2015), Ohwofasa and Aiyedogbon (2013), Adekunle, Salami and Adedipe (2013), and Nkoro and Uko (2013).

3.3 Conceptual Model

Park and Jang (2013), Nirajini and Priya (2013), Javed, Younas and Imran (2014) and Yahaya and Alexander (2015) used conceptual model. The conceptual model for this study is given below:

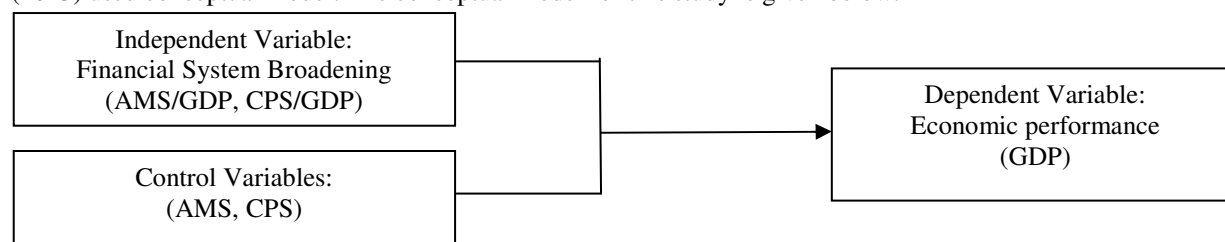


Figure I: Conceptual model showing independent and control variables affecting dependent variable

For analysis of sample data, regression model is used as in Raheman, Zulfiqar, and Mustafa (2007), Chowdhury and Chowdhury (2010), Muritala (2012), Park and Jang (2013), Mitani (2014), Yahaya and Andow (2015), Yahaya, Lamidi, Kutigi and Ahmed (2015). For measurement of the dependent variable, a multiple regression model is as follows:

$$GDP_t = \alpha + \beta_1 FSD1_t + \beta_2 FSD2_t + \beta_3 AMS_t + \beta_4 CPS_t + \epsilon_t$$

Where:

GDP = Gross domestic product over time t (1960-2014) as the dependent variable, measurement of economic performance is defined as GDP at current prices as used by Yahaya and Andow (2015), Yahaya, Lamidi, Kutigi, and Ahmed (2015), Aye (2015), Ohwofasa and Aiyedogbon (2013), Adekunle, Salami and Adedipe (2013).

FSD1 = Financial system broadening through aggregate money supply, independent variable, measurement of financial system broadening is defined as aggregate money supply over GDP as used by Odeniran and Udeaaja (2010) and Nkoro and Uko (2013)

FSD2 = Financial system broadening through credit to private sector, independent variable, measurement of financial system broadening is defined as credit to private sector over GDP as used by Odeniran and Udeaaja (2010) and Nkoro and Uko (2013).

α = constant coefficient (intercept)

β = slope coefficient of independent and control variables

t = 1, ..., T, where T is the number of years in the sample (55 years in this case)

ε = is an idiosyncratic error term

4. Results, Discussions and Tests

4.1 Descriptive Statistics

Table I shows descriptive statistics of sample study, which includes the number of observations, mean values of variables, minimum and maximum values and standard deviation from the mean.

Table I Descriptive Statistics

VARIABLE	N	Minimum	Maximum	Mean	Std. Deviation
FSB1 (%)	55	9.32	38.14	20.84	7.31
FSB2 (%)	55	4.78	36.89	13.81	6.94
AMS (₦) billion	55	267.60	17680520.00	1996802.73	4307581.44
CPS (₦) billion	55	109.33	17128980.00	1801597.46	4203037.28
GDP (₦) billion	55	2233.00	89043620.00	8893878.87	20401443.19
Valid N (listwise)	55				

Source: IBM SPSS 22 Output from study data

From table I, the number of observations is 55 and the mean value of financial system broadening through aggregate money supply (FSB1) is 20.84 per cent, with standard deviation statistic value of 7.31 per cent. Its mean ranges from a minimum of 9.32 per cent to a maximum of 38.14 per cent. Financial system broadening through credit to private sector (FSB2) has a mean of 13.81 per cent, with a standard deviation statistic value of 6.94 per cent. Its mean ranges from a minimum of 4.78 per cent to a maximum of 36.89 per cent. Aggregate money supply (AMS) has a mean value of ₦1,996.80 trillion, with a standard deviation statistic value of ₦4,307.581 trillion. Its mean ranges from a minimum of ₦267.6 billion to a maximum of ₦1,768.052 trillion. Similarly, credit to private sector (CPS) has a mean value of ₦1,801.60 trillion, with a standard deviation statistic value of ₦4,203.03728 trillion. Its mean ranges from a minimum of ₦109.33 billion to a maximum of ₦1,712.898 trillion. The gross domestic product (GDP) has a mean value of ₦8,893.878 trillion, with a standard deviation statistic value of ₦20,401.443 trillion. Its mean ranges from a minimum of ₦2.23333 trillion to a maximum of ₦8,904.362 trillion.

4.2 Correlation Analysis

The results of the correlation analysis are reported in table II.

Table II Correlations

VARIABLE	GDP	FSB1	FSB2	AMS	CPS
GDP Pearson Correlation	1	.098	.412**	.971**	.973**
GDP Sig. (2-tailed)		.477	.002	.000	.000
GDP N	55	55	55	55	55
FSB1 Pearson Correlation		1	.896**	.222	.205
FSB1 Sig. (2-tailed)			.000	.103	.134
FSB1 N		55	55	55	55
FSB2 Pearson Correlation			1	.550**	.537**
FSB2 Sig. (2-tailed)				.000	.000
FSB2 N			55	55	55
AMS Pearson Correlation				1	.995**
AMS Sig. (2-tailed)					.000
AMS N				55	55
CPS Pearson Correlation					1
CPS Sig. (2-tailed)					
CPS N					55

** Correlation is significant at the 0.01 level (2-tailed).

Source: IBM SPSS 22 Output from study data

From table II, FSB1 and GDP are positively correlated ($t = 0.098$), although, not significant ($p = 0.477$). Also, FSB2 and GDP are positively correlated ($t = 0.412$) and significant ($p = 0.002$). Similarly, aggregate money supply and GDP are positively correlated ($t = 0.971$) and significant ($p = 0.000$). Credit to private sector and GDP are positively correlated ($t = 0.973$) and significant ($p = 0.000$).

4.3 Regression Analysis

Regression analysis is a statistical tool for the investigation of relationships between variables. Usually, the scholar seeks to ascertain the causal effect of one variable upon another, for example, in this study, the effect of financial system broadening upon economic performance. In order to explore such relationship, the scholar assembles data on the underlying variables of interest and employs regression to estimate the quantitative effect of the causal variables upon the variable that they influence. The scholar also typically assesses the statistical significance of the estimated relationships, that is, the degree of confidence that the true relationship is close to the estimated relationship. Furthermore, economic performance is affected by a variety of factors in addition to financial system broadening, factors that were aggregated into the noise term in the regression model under data and methodology. Therefore, multiple regression is most appropriate for the study and is a technique that allows additional factors to enter the analysis separately so that the effect of each can be estimated. It is valuable for quantifying the impact of various simultaneous influences upon a single dependent variable. The results of the multiple regression analysis are reported in table III.

Table III Regression Matrix

Dependent Variable: GDP

Method: Least Squares

Date: 10/05/15 Time: 15:25

Sample: 1960 2014

Included observations: 55

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FSB1	636211.8	219107.9	2.903646	0.0055
FSB2	-1230691.	267719.6	-4.596940	0.0000
AMS	2.337961	1.124172	2.079718	0.0427
CPS	3.206270	1.158817	2.766847	0.0079
C	2182262.	1728318.	1.262650	0.2126
R-squared	0.972340	Mean dependent var		8893879.
Adjusted R-squared	0.970127	S.D. dependent var		20401443
S.E. of regression	3526120.	Akaike info criterion		33.07580
Sum squared resid	6.22E+14	Schwarz criterion		33.25829
Log likelihood	-904.5846	Hannan-Quinn criter.		33.14637
F-statistic	439.4199	Durbin-Watson stat		1.019779
Prob (F-statistic)	0.000000			

Source: EViews 8.0 Output based on study data

From table III, the Durbin-Watson statistic is 1.0198, which is slightly higher than 1.0, suggesting that there is no serious autocorrelation problem in the data (Durbin & Watson, 1951). The F-statistic is 439.42 and the Probability F-statistic is 0.000, which suggests significant relationship between financial system broadening and economic performance. All the beta coefficients are positive, except FSB2, which confirms the validity of the study hypotheses 1, 3 and 4. However, based on these results, hypothesis 2 is not supported and is hereby rejected. Also, each of the variables had a probability value of less than 0.05, which suggests significant relationship between the independent variables and the dependent variable at 5% level of significance.

From these analyses, the study concludes that multiple regression model of this study meets all the assumptions required to ensure validity of its significance test (Ooi et al., 2007a, b, 2012). However, in order to judge the magnitude of effects in this study, Cohen's rules for effect size is used. According to Cohen (1988), R^2 between 1.0 and 5.9 percent is considered as small, between 5.9 and 13.8 percent is medium, and above 13.8 percent is large. From table III, it can be observed that R^2 is 0.9723. Thus, the effect size for this study is large and hypotheses 1, 3 and 4 are fully supported, while hypothesis 2 is rejected. Furthermore, the adjusted R^2 is 0.97, meaning that 97 per cent of the variations in economic performance measured by the Gross Domestic Product is explained by financial system broadening, aggregate money supply and credit to private sector.

5. Conclusions and Recommendations

This study has achieved its objectives having analyzed the association between financial system broadening and economic performance in Nigeria. The study finds financial system broadening through aggregate money supply to have significant and positive influence on economic performance (t-statistic = 2.903646, p-value = 0.0055). The findings also indicate that financial system broadening through credit to private sector has negative significant association with economic performance (t-statistic = -4.596940, p-value = 0.0000). The findings also indicate the importance of aggregate money supply to the economy (t-statistic = 2.079718, p-value = 0.0427). Also, results indicate that credit to private sector is equally important to the economy (t-statistic = 2.766847, p-value = 0.0079). Furthermore, the study provides a useful framework for understanding financial system broadening and economic performance nexus in Nigeria. With regard to the policy implications, the findings suggest that management needs to be more effective to boost economic performance. In addition, the findings of this study serve as a valuable guide for scholars, managers, and other stakeholders. This study offers immense relevance for understanding the effectiveness of regulators in economic performance discourse. However, a great deal more of insightful and detailed research would be required to extend the conclusions of this study. The following refinements and extensions of the present problem may thus be undertaken: A large time series data may be included in the study. The study may have a broader picture if more time period is considered. As financial system broadening is a major topic for research, more variables that affect financial system broadening can also be studied.

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