Financial Development And Economic Growth In Emerging Markets: The Nigerian Experience

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INTRODUCTION

The financial systems of most developing countries lack the sophistication required for economic growth. This is because most of the financial systems in these countries are maladapted (Ojo, 2010), highly fragmented and inefficient, protected from competition or are highly segmented and regulated with little deepening (Mohamed, 2006). The finance literature provides support for the argument that countries with better/efficient financial systems grow faster, while inefficient financial systems bear the risk of bank failure (Kasekende, 2008). In order to determine the relationship between financial development and economic growth, several scholars such as Cameron (1967), Mckinnon(1973), Shaw (1973), King and Levine (1993), Rajarn and Zingales (1998), Odedokun (1998), Mohamed (2006), Obamuyi (2008) and Shilyaeva (2009) have used both empirical and theoretical studies to demonstrate how financial development contributes to economic growth of most countries. However, financial system development presupposes that the financial system remains stable to enjoy the confidence of the people. As Egbuna (2008) argues, financial stability relates not only to the absence of actual financial crises, but also to the ability of the financial system to limit, contain, and deal with the emergence of imbalances before they constitute a threat to itself or the economic processes. According to Winkler (1998) and Djoumessi (2009), many new growth theorists have empirically demonstrated that there is a systematic, positive relationship between indicators of financial development and economic growth. Patrick (1966), Mckinnon (1973), Shaw (1973), King and Levine (1993) and Acaravci, Ozturk and Acaravci (2007) proposed the supply-leading hypothesis, in which they claimed that finance is a contributing factor in economic growth. Supply-leading hypothesis implies that the creation of financial services are well in advance of demand for them. However, Robinson (1952), as cited in Ang and McKibbin (2005), argues that finance does not exert a causal impact on growth, and that financial development follows economic growth as a result of higher demand for financial services. While it is almost settled in finance literature that there exists a relationship between finance and economic growth, the main problem is the direction of the causality of the relationship (Oluitan, 2009).

The simple research questions are:

- Does financial development affect economic growth?
- Is there any causal relationship between financial development and economic growth in Nigeria, as studied by Wadud (2009) for some Asian Countries?

Therefore, the paper investigates the relationship between financial development and economic growth in Nigeria. While most of the available studies examined the hypothesis of finance and economic growth on a number of countries using cross section and panel data techniques (Kar and Pentecost, 2000), this study examined the hypothesis using time-series data for a specified country, Nigeria. Thus, the study contributes to the on-going debates by empirically reconfirming the financial development-growth nexus, using recent data to point out new evidence on the relationship. Finally, it will assist the government to formulate policies on those measures that will significantly affect financial development in Nigeria.

LITERATURE REVIEW

A Review Of The Level of Financial Development In Nigeria : A review of the activities of the banking sector in Nigeria revealed the performance of some of the key indicators in the financial system. Table 1 shows the declining average liquidity ratios of banks in Nigeria since 2007, while the aggregate credit to the economy also declined from 74% in 2007 to 40% in 2008. This has the implication of restraining private-sector investment, and ultimately, retarding economic growth (Obamuyi, 2008).

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Table 1: Summary of Deposit Money Banks' Activities (% Change)					
Item	**2004**	**2005**	**2006**	**2007**	**2008**
Reserves	13.3	41.5	-8.5	39.9	38.8
Aggregate Credit (Net)	59.6	24.6	57.1	74.0	40.0
Loans and Advances	53.1	43.7	25.8	92.1	69.3
Total Assets	38.7	20.3	41.8	71.6	44.6
Total Deposit Liabilities	124.7	22.5	-10.8	175.4	58.9
Demand Deposits	44.6	29.9	28.4	89.9	57.9
Time, Savings and Foreign Currencies Deposits	42.8	16.8	59.7	54.8	59.8
Foreign Assets(Net)	16.1	-4.9	36.8	15.7	85.4
Credit from CBN	180.2	-31.2	-61.1	199.7	165.8
Average Liquidity Ratio	-10.7	-25.6	110.3	-30.5	-22.5
Average Loan/Deposit Ratio	9.5	5.4	26.2	-13.9	-0.7
Capital Adequacy Ratio	14.17	17.83	na	na	21.91
Source: Central Bank of Nigeria Annual Report and Financial Statements, 31 December, 2008, p. 188; Obamuyi, 2008					

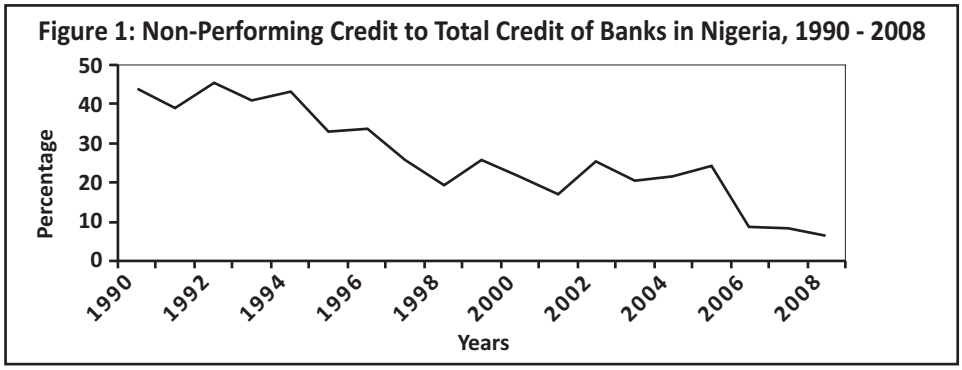
Table 1 reveals that the capital adequacy ratio (CAR) of 21.91% in 2008 for banks operating in Nigeria is satisfactory when compared with the required minimum CAR of 10 percent (CBN, 2004). This improvement was as a result of the significant growth in the operating capital (CBN, 2006).

Another way to gauge the performance of the banking sector is to examine the earnings and profitability of banks. Table 2 contains the results of the interest income, interest expense, operating income and profit after tax, among others, and the analysis shows that the banks did not have impressive performance, especially between 2001 and 2008.

Table 2: Earnings And Profitability of Banks In Nigeria							
Year	**Growth in Interest Income**	**Growth in Interest Expense**	**Growth in Net Interest Income**	**Growth in Non-Interest Income**	**Growth in Operating Income**	**Growth in Operating Expenses**	**Growth in Profit Before Tax**
2000	46.4	43.8	48.6	73.5	n.a	33.9	80.8
2001	50.25	47.19	52.78	39.29	46.88	40.91	60.00
2002	30.41	28.24	32.12	0.85	19.15	34.14	-10.42
2003	-9.59	-8.33	-10.55	34.44	5.95	12.80	-13.95
2004	18.05	22.08	14.87	14.29	17.42	14.18	29.73
2005	-17.48	-21.81	-13.84	-13.59	-15.79	-0.94	-25.00
2006	-0.29	-8.16	5.70	7.55	6.53	-6.90	50.00
2007	247.49	316.30	201.96	237.43	218.13	191.11	287.62
2008	51.70	43.77	58.93	21.32	40.74	36.39	49.14
Source: Central Bank of Nigeria Banking Supervision Annual Reports, 2003, 2005, 2006 and 2008							

As shown in the Table 2, the net interest revenue as a percentage of average assets declined in line with economic theory, as a result of competition emanating from financial liberalization. Another important indicator of financial development to consider is the profit before tax, which deteriorated, especially between 2002 and 2005. This implies that the opportunities for banks in Nigeria to make profits are gradually reducing. Financial development also demands that banks hold quality assets necessary for economic growth. From Figure 1, the ratio of non-performing credits to total credits was far below the trigger level of 35 percent for setting up a Crisis Management Unit, as stipulated in the Contingency Planning Framework for Systemic Distress (CBN, 2004, Vanguard, 2009). The ratio of non-performing credits to total credits which was of great concern to the banks declined progressively, and stood at a very low rate of 6.3 per cent in 2008.

The Figure 1 indicates that the asset quality of the banking sector improved significantly. Theoretically, this rate is



expected to reduce as a country experiences more economic growth. Another important indicator of financial development is the level of corruption in a country. The Transparency International Corruption Perception Index (CPI) measures the perceived levels of public sector corruption in a given country as seen by the international business people. The CPI is on a scale of 0 (perceived to be highly corrupt) to 10 (perceived to be a totally corruption-free country).

Table 3: Corruption Perception Index for Nigeria, 1995 - 2010

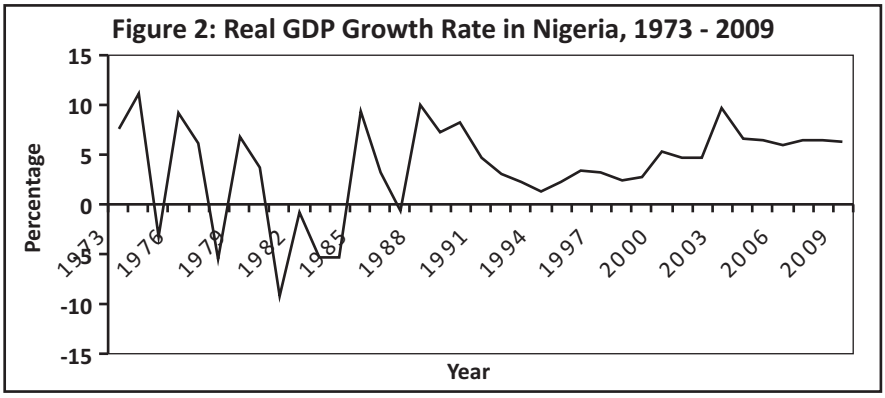
Year	CPI	Country Rank
1995	0.63	Not available
1996	0.69	54
1997	1.76	52
1998	1.9	81
1999	1.6	98
2000	1.2	90
2001	1.0	90
2002	1.6	101
2003	1.4	132
2004	1.6	144
2005	1.9	152
2006	2.2	142
2007	2.2	147
2008	2.7	121
2009	2.5	130
2010	2.4	134

Source: Transparency International (TI) Publications for various years (1995-2010)

Table 3 shows that Nigeria has been one of the most corrupt countries, with a CPI consistently in the range of 0.69 - 2.7. For instance, the country has a CPI of 0.69, 1.0, 2.2 and 2.4 for 1996, 2000, 2006 and 2010 respectively. Theoretically, a country with high level of corruption will experience financial instability more than a country with a lower level of corruption. Mehrez and Kaufmann (2000) reported that the crisis probability is higher in countries with poor transparency than in countries that are transparent.

Additionally, financial development can be measured through the performance of the real GDP. Although, the real GPD is theoretically expected to have a positive relationship with financial development, it had received mixed reactions in Nigeria since 1973, as a result of the pattern displayed in Figure 2.

The real GDP growth rate, which was 7.64% in 1973, recorded negative rates of 3.22%, 5.49%, and 9.25% in 1975, 1978 and 1981 respectively, until 1985, when a positive real GDP growth rate of 9.4% was achieved. Interestingly, Figure 2 shows that the introduction of reforms in 1987 brought a positive change in real GDP growth rate to a peak of



10 % in 1988 (Obamuyi, 2009), but later, reduced it to 9.6% and 6.4% in 2003 and 2008 respectively. As highlighted by Obamuyi (2009), the real GDP growth rate of 6.4% in 2008 is considered to be lower than the average annual GDP growth rate of 7% required in order to meet the United Nations Millennium Development Goals (MDGs) of reducing poverty to half by 2015 (AIAE, 2005).

❁A Review Of The Theoretical Literature : A review of the theoretical literatures revealed that there are three views concerning the potential importance of finance in economic growth (Guryay, Safakli, and Tuzel, 2007 and Acharya, Amanulla and Joy, 2009). These three views, as Guryay, et al., 2007 and Acharya, et al. 2009), reported are: **(i)** Literature that considers finance as a critical element of growth (McKinnon, 1973; Shaw, 1973, King and Levine, 1993 and Odedokun, 1996). **(ii)** Literature that regards finance as a relatively unimportant factor in growth (Robinson, 1952; Lucas, 1998; and Stern, 1989). **(iii)** Literature that concentrates on the potential negative impact of finance on growth (Van Wijnbergen, 1983; and Buffie, 1984).

Shaw (1973) argues that the financial sector of an economy does matter in economic development, and that it can assist in the break away from plodding repetition of repressed economic performance to accelerate growth. Winkler (1998) and some other researchers (King and Levine, 1993, Djoumessi, 2009) have empirically demonstrated that there is a systematic, positive relationship between indicators of financial development and economic growth. For instance, King and Levine (1993), reported in Winker (1998) and Schmidt and Winker (1999), used variables such as the ratio of liquid liabilities, equalling currency held outside of the banking system, plus demand and interest-bearing liabilities of banks and non-bank financial intermediaries, to GDP, the ratio of credit issued by the banking system to private enterprises to GDP, the ratio of domestic credit issued by deposit banks to domestic credit issued by deposit banks and the central bank, and the ratio of claims on the non-financial private sector to domestic credit, and found that those indicators of financial development prove to be quite robustly associated with growth. The study also finds that countries with well developed financial systems, on an average, grow faster than countries with less developed financial systems. Accordingly, Bayoumi and Melander (2008) demonstrated that a 2.5% reduction in overall credit causes a reduction in the level of United States of America's GDP by around 1.5%. However, Robinson (1952), as cited in Ang and McKibbin (2005), argues that finance does not exert a causal impact on growth, and that financial development follows economic growth as a result of higher demand for financial services.

Guryay et al. (2007) categorized the empirical literature on the relationship between financial development and economic growth into two strands. According to the authors, the first is to examine the hypothesis on a number of countries, using either cross section or panel data techniques, and second, to examine the hypothesis for a particular country using time series techniques (Kar and Pentencost, 2000). This study, while noting various views of the literature on the relationship between financial development and economic growth, adopts the time-series technique of the hypothesis for Nigeria to provide a new evidence for the country.

DATA AND METHODOLOGY

This paper was developed by analyzing secondary data, covering the period from 1973 to 2009 from the Central Bank of Nigeria (the Statistical Bulletin, Annual Reports and Financial Statements, Economic and Financial Reviews) and papers published in Journals were also referred to for preparing the present paper. The specification of the model is based on the empirical work of Odedokun, 1998, Mohamend, 2006 and Guryay, et al., 2007. The modified model

employed both the economic variable, financial development variable and other control variables. The modified growth model is specified as:

$$\text{Economic Growth}_t = \beta_0 + \beta_1\text{Financial Depth}_t + \beta_2\text{Exchange Rate}_t + \beta_3\text{Bank Rate}_t + \beta_4\text{Inflation Rate}_t + \beta_5\text{Fiscal Deficit/GDP}_t + \beta_6\text{Foreign Debt/GDP}_t + \beta_7\text{Domest Savings/GDP}_t + \varepsilon_t$$

Economic growth is defined as the real growth rate of gross domestic product. This is consistent with earlier studies and provides a high indicative power of quality and quantity of economic growth. The financial development (depth) variable measures the relative size of the financial system and hence, the level of financial deepening [broad money (M2)/GDP]. The ratio M2/GDP measures the overall size of the financial intermediary sector and is strongly correlated with both the level and the rate of change of the real GDP per capital (Outreville, 1999). This study also included some control factors that have been empirically shown to be determinants of growth, apart from financial development. The control variables are exchange rate, bank deposit rate, inflation rate, government fiscal deficit as a ratio of GDP, the ratio of total foreign debt to GDP and Domestic savings to GDP. Finally, εt is an error term, which is identically and independently normally distributed with mean zero and constant variance. $\beta_0, \beta_1, \ldots \beta_7$ are parameters to be estimated.

A priori, the coefficients of financial development, bank deposit rate, the ratio of total foreign debt to GDP and Domestic savings to GDP are expected to be positively related to growth, while inflation, exchange rate and government fiscal deficit as a ratio of GDP are expected to be negatively related to growth. High inflation distorts economic activity and reduces investment in productive enterprises, thus reducing growth. Accordingly, the relationship between inflation rates and financial development was investigated and it was found that high-inflation countries do, on an average, have less developed financial systems (Boyd, Levine and Smith, 1996). The fiscal balance variable was used as a proxy for government intrusion in the financial system, which can lead to inflationary pressure. As Cheang (2004) argues, large fiscal deficits may lead to unsustainable boom in the economy. The inclusion of the exchange rate and inflation rate variables has been done because they are important monetary variables necessary for financial and macroeconomic stability. The study proceeded to conduct a test for the time-series properties of all the variables in order to avoid spurious regression, which results from the regression of two or more non-stationary time-series data. Therefore, the presence of a unit root in the series was tested with the Augmented Dickey Fuller (ADF) test (see Dickey and Fuller, 1981) and Phillips- Perron(PP) test (see Phillips and Perron, 1988). The unit root tests determine the stationarity of the variables in questions (Tsui and Ho, 2004) and hence, the need to ascertain the integration level and possible cointegration among the variables. If cointegration is found, it implies that there exists a long-run relationship between some or all of the variables in the system (Meloche, 2009), which additional tests, such as the exclusion test could uncover. Thereafter, a Vector Error Correction model is specified for the analysis of the short-run dynamics. The study also employed the Granger Causality tests to determine the direction of the relationship between financial development and economic growth (Teng and Liang, 2007, Halkos, 2010). The econometric analyses were performed using stata 10.

EMPIRICAL RESULTS

The descriptive statistic of the data series employed in the study were first examined. These include the descriptive statistics of real growth rate of gross domestic product, which is a proxy for economic growth, financial sector development as measured by M2/GDP, exchange rate, bank deposit rate, inflation rate, government fiscal deficit as a ratio of GDP, the ratio of total foreign debt to GDP and Domestic savings to GDP. Table 4 shows that exchange rate has the largest standard deviation, while the domestic savings to GDP has the lowest standard deviation. All the variables were positively skewed, except exchange rate and government fiscal deficit, that were negatively skewed. Table 5 shows the correlation matrix, depicting the degree of association among all the variables. The first column shows the degree of association between growth variables, financial development variable and the control variables. The results indicate that the gross domestic product has a positive relationship of 34.12%, 27.05%, 14.88%, 37.09% and 14.13% with financial development, exchange rate, bank deposit rate, government fiscal deficit and ratio of total foreign debt to GDP respectively. It also shows that gross domestic product has a negative relationship of 15.87%, and 26.11% with inflation and domestic savings respectively.

The stationary test on each of the variables was performed with Dickey-Fuller and Pillips-Perron (P-P) tests. The tests were performed with various combinations of lag lengths (up to 4) and inclusion and exclusion of a constant in the

Table 4: Results of the Descriptive Statistics								
	Growth Variable	Financial Development Variable	Control Variables					
	Economic growth	Financial Depth	Exchange Rate	Bank Rate	Inflation Rate	Fiscal Deficit/GDP	Foreign debt/GDP	Domestic Savings/GDP
Mean	3.7261	25.9416	45.4903	10.9383	21.2777	-4.3552	40.4902	11.1105
Median	4.6500	24.3000	8.97365	9.9800	13.4000	-4.4100	24.1050	10.1000
Maximum	11.1600	39.6000	134.0378	23.9900	72.8000	9.5400	111.6000	20.2200
Minimum	-9.2500	12.5000	0.5464	2.0000	4.6000	-15.7500	1.1600	5.0000
Std. Dev.	4.8360	7.5378	53.6394	5.9255	18.1918	4.9669	38.4823	4.1345
Skewness	-0.8885	0.2950	0.5986	0.5100	1.3300	0.1786	0.5796	0.6669
Kurtosis	3.3066	2.1984	1.5818	2.5907	3.6466	3.5694	1.8666	2.3585
Observa-tions	36	36	36	36	36	36	36	36
Source: Author's Computation								

Table 5: Correlation Matrix								
	Growth Variable	Financial Development Variable	Control Variables					
	Economic Growth	Financial Depth	Exchange Rate	Bank Rate	Inflation Rate	Fiscal Deficit/GDP	Foreign debt/GDP	Domestic Savings/GDP
Economic Growth	1.0000							
Financial Depth	0.3412	1.0000						
Exchange Rate	0.2705	-0.3312	1.0000					
Bank Rate	0.1488	0.0705	0.1451	1.0000				
Inflation Rate	-0.1586	-0.0313	-0.1860	0.4008	1.0000			
Fiscal Deficit/GDP	0.3709	-0.5572	0.2986	-0.4749	-0.1953	1.0000		
Foreign debt/GDP	0.1413	0.1068	-0.0503	0.8645	0.3301	-0.5758	1.0000	
Domestic Savings/GDP	-0.2610	0.9426	-0.3837	0.1150	-0.0213	-0.4911	0.1739	1.0000
Source: Author's Computation								

Autoregressive equations (AR). The results of the stationarity tests are discussed in the forthcoming paragraphs. The Table 6 shows that only the real growth rate of GDP, inflation rate and government fiscal deficit as a ratio of GDP were stationary at levels. This indicates that the means and variances of the variables are constant over time (Dargay, Goodwin and Hanly, 2002). However, the other variables (level of financial development, exchange rate, bank deposit

Table 6: Test Of Order Of Integration Or Unit Root Test	
Series	Order of Integration
Economic Growth	I(0)
Financial Depth	I(1)
Exchange Rate	I(1)
Bank Rate	I(1)
Inflation Rate	I(0)
Fiscal deficit /GDP	I(0)
Foreign debt/GDP	I(1)
Domestic savings/GDP	I(1)
Source: Author's Computation	

rate, ratio of foreign debt to GDP were stationary at first difference (integration of order 1). Since the study deals with a multivariate case, the Vector Error Correction Model (VECM) is used. The VECM is used to examine the relationship between variables indicative of financial sector and economic growth Ramlal and Watson (n.d). The exchange variable was removed from the model because it is insignificant when included, and it affects the performance of the model as a whole. Furthermore, the data had undergone a series of transformations by taking the squares of all the variables. The study proceeded to establish whether or not there is a long-run cointegrating relationship among the variables by using the Johansen cointegrating test. The results reported for the trace and maximum eigenvalue statistics (Table 7) show that the null-hypothesis of no-cointegrating vector linking economic growth and its determinants is rejected at the 5 per cent level of significance.

Table 7: Johansen Maximum Likelihood Cointegration Test Results

Rank maximum	Parms	LL	Eigenvalue	Trace statistic	5% critical value
0	105	1377.4	-	291.4908	124.24
1	118	-1324.8	0.95888	186.1784	94.15
2	129	-1292.3	0.86011	121.2696	68.52
3	138	-1269.6	0.74714	75.8977	47.21
4	145	-1248.9	0.71453	34.5286	29.68
5	150	-1239.2	0.44657	15.0052*	15.41
6	153	-1232.7	0.32399	2.0842	3.76
7	154	-1231.7	0.06121		

Source: Author's Computation "*" indicates significance of the test

The trace test statistics reveal that there are, at most, five cointegrating relationships among economic growth and its determinants. Since the trace statistics takes into account all of the smallest eigenvalues, it possesses more power than the maximum eigenvalue statistics. Johansen and Juselius (1990) cited in Owoye, and Onafowora (2007) recommend the use of trace statistics when there is a conflict between the two statistics. The results indicated that there exists a unique long run relationship between growth variable and the financial development variable and the control variables of bank deposit rate, inflation rate, government fiscal deficit as a ratio of GDP, the ratio of total foreign debt to GDP and Domestic savings to GDP. Once cointegration is tested and confirmed, then the optimal lag order of the variable is specified (Din, 2004). The lag selection criteria employed are Likelihood Ratio (LR) test or Final Prediction Error (FPE) or Akaike Information Criterion (AIC) or Hanna and Quinn Information Criterion (HQIC) or the Schwarz Bayesian Criterion (SBIC). The decision for this study was made based on LR (Likelihood ratio) test. The Table 8 below shows the details of optimal Lag from the Likelihood Ratio (LR) test. The result of the likelihood Ratio (LR) test shows that the optima lag length is 2.

Table 8 : Likelihood Ratio (LR) Test

Lag	LL	LR	Df	p	FPE	AIC	HQIC	SBIC
0	-1568.1				4.10E+31	92.6582	92.7654	92.9724
1	-1447.7	240.8	49	0	6.60E+29	88.4583	89.3157	90.9723*
2	-1370.5	154.39*	49	0	1.8e+29*	86.7997*	88.4072*	91.513

Key: LR means Likelihood Ratio, FPE (Final Error of Prediction), AIC (Akaike Information Criterion), HQIC (Hanna and Quinn Information Criterion) and the SBIC (Schwarz Bayesian Criterion).

"*" indicates significance of the test

However, in the short run, deviations from this relationship could occur due to shocks to any of the variables. Therefore, Soyibo and Olayiwola (2000) suggest that the short-run interactions and the adjustment to long-run equilibrium are important because of the policy implications. Thus, the vector error correction model (VECM) was estimated for the short-run dynamics. As Oreiro, et al. (2010) reported, the error correction model makes the

connection between aspects related to short-run dynamics and long-run ones, which allows combining the advantages of modelling in differences and in levels. The Table 9 reveals that the model is significant at 1%, as shown by the chi-square statistics. The R-squared is equally satisfactory at 76.96%. This means that the independent variables explained about 77% of the variations in the dependent variables.

Table 9: Regression Results of the Chi-squared Statistics and Model Parameters

Equation	Parms	RMSE	R-sq	chi2	P>chi2
First Difference of Economic Growth22	16	27.2444	0.7698	56.85067	0.0000
	Beta Coefficient	Std. Error	z	P>z	
Error Correction Model ECMt-1					
Lag value of ECM	-0.60461	0.269496	-2.24	0.025*	
Economic Growth22					
Lag difference of economic growth	-0.52342	0.238823	-2.19	0.028*	
Second lag difference of economic growth	-0.08185	0.172666	-0.47	0.635	
Financial Depth2					
Lag difference of financial depth	0.097674	0.067386	1.45	0.147	
Second lag difference of financial depth	0.103143	0.080313	1.28	0.199	
Foreign Debt/GDP2					
Lag difference of foreign debt/GDP	0.008862	0.004556	1.95	0.050*	
Second lag difference of foreign debt/GDP	0.001591	0.003568	0.45	0.656	
Domestic Savings/GDP2					
Lag difference of domestic savings/GDP	-0.88231	0.415431	-2.12	0.034*	
Second lag difference of domestic savings/GDP	-0.50041	0.488225	-1.02	0.305	
Bank Rate2					
Lag difference of bank rate	-0.10518	0.113378	-0.93	0.354	
Second lag difference of bank rate	0.11979	0.092757	1.29	0.197	
Inflation Rate2					
Lag difference of inflation rate	0.019463	0.009085	2.14	0.032*	
Second lag difference of inflation rate	0.008037	0.005499	1.46	0.144	
Fiscal Deficit/GDP					
Lag difference of fiscal deficit/GDP	-0.59915	0.196956	-3.04	0.002*	
Second lag difference of fiscal deficit/GDP	-0.45341	0.15335	-2.96	0.003*	
Constant	-1.12285	4.851504	-0.23	0.817	

The regressor appears first followed by the lagged difference and the second lagged difference. The optimal lag length turns out to be 3, the variables are with 2 or 22 e.g bdr2 to indicate that the square was taken. Again the variables marked with * are significant. ECMt-1: is the error correction parameter; LD is the lagged difference of the variable above it; L1 is the lag value of the variable above it; L2D is the second lag of the differenced variable; _cons is the constant term

From the Table 9, all the financial development and control variables have a very significant relationship with the growth variable. Based on the analysis in the Table 9, the conclusion to be drawn from the findings are as follows: First, the coefficient of the long-run relationship is negative, meaning that when there is a shock in the system, it returns quickly to the equilibrium. The absolute value of the coefficient of the error-correction term (ECMt-1) indicates that deviations from the long-run growth rate in the economy are corrected by 60 percent between two successive periods. As Bannerjee, Dolapo and Mestre (1998), and cited in Shahbaz, Rehman and Hussain (2008) observed, a highly significant error correction term is further proof of the existence of a stable long run relationship. Second, the error correction co-efficient is significant, which confirms that there is a long-run equilibrium relationship

between the variables in the model (Wickramanayake, 2004). The error correction model measures the speed of adjustment to restore equilibrium in the dynamic model. Third, the lagged value of real gross domestic product squared enters the model and is significant at 5%. This implies that a change in the growth rate of gross domestic product (GDP) is auto regressive. Fourth, the first lags of the squares of government fiscal deficit as a ratio of GDP, inflation, domestic savings to GDP and ratio of total foreign debt to GDP variables are significant at 5%. Fifth, the second lag of government fiscal deficit as a ratio of GDP squared is also significant. This can be taken as an evidence of Granger causality. Sixth, bank deposit rate is not significant at both lags, and this supports the result of the Granger causality test, where it was concluded that bank deposit rate does not Granger cause gross domestic product.

The study went further to conduct a Lagrange-multiplier autocorrelation test on the residuals, and the results are presented in the Table 10.

Table 10: Lagrange-multiplier Test For Autocorrelation

Lag	chi2	df	Prob > chi2
1	65.6974	49	0.05573
2	61.5407	49	0.10776

Note: Test for no autocorrelation in the error terms

Table 10 shows that the test on the residual to check for the problem of autocorrelation indicates no evidence of the presence of autocorrelation at 10% (lag 1) and 5% (lag 2) respectively. The study further determines the direction of causality, which is germane to our understanding of the relationship between financial development and economic growth. The results of the causality test are presented in the Table 11 .

Table 11: Granger Causality Wald Tests

Hypotheses	Chi^2	Probability
Economic growth does not Granger cause financial development.	27.492	0.00
Financial development does not Granger cause economic growth.	12.427	0.01
Economic growth does not Granger cause foreign debt/GDP.	16.907	0.00
Foreign debt/GDP does not Granger cause economic growth.	93.947	0.00
Economic growth does not Granger cause domestic saving/GDP.	20.504	0.00
Domestic savings/GDP does not Granger cause economic growth.	22.417	0.00
Economic growth does not Granger cause bank rate.	3.313	0.51
Bank rate does not Granger cause economic growth.	14.528	0.01
Economic growth does not Granger cause inflation.	10.711	0.03
Inflation does not Granger cause economic growth.	70.695	0.00
Economic growth does not Granger cause fiscal deficit/GDP.	13.433	0.01
Fiscal deficit/GDP does not Granger cause economic growth.	49.634	0.00

Source: Author's Computation

The results in Table 11 confirm that there exists a significant positive relationship between financial development and economic growth. This corroborates the work of Djoumessi (2009) for Cameroon and South Africa. Accordingly, a bi-directional causality was established between financial development and economic growth in Nigeria. Interestingly, the results show that bi-directional causality exists between economic growth and financial development. This indicates that both growth and finance exert an influence on each other.

This finding is consistent with most empirical studies, either using cross-sectional data or panel data on a number of countries or for a particular country, using time-series data. Additionally, bi-directional causality exists between economic growth and inflation rate, government fiscal deficit as a ratio of GDP, the ratio of total foreign debt to GDP and Domestic savings to GDP. That is, the results showed that GDP Granger cause all the variables in the equation. Meanwhile, there exists a unidirectional causality between economic growth and bank deposit rate, and the causality

runs from bank deposit rate to economic growth at 5%.

CONCLUDING REMARKS

The study investigated the relationship between financial development and economic growth in Nigeria. While it is almost settled in finance literature that there exists a relationship between finance and economic growth, the main problem is the direction of the causality of the relationship.

The unit root, cointegration and vector error correction model (VECM) was employed on a time-series data from 1973 to 2009. The Granger causality test was also used to test the direction of the relationship existing between financial development and economic growth in the country. The proxy of economic growth is defined as the real growth rate of gross domestic product. This is consistent with earlier studies and provides a high indicative power of quality and quantity of economic growth. The financial development variable measures the relative size of the financial system and hence, the level of financial deepening (M2/GDP). The ratio M2/GDP measures the overall size of the financial intermediary sector, and is strongly correlated with both the level and the rate of change of the real GDP per capita (Outreville, 1999). This study also included that some control factors have been empirically shown to be determinants of growth, apart from financial development. The control variables include exchange rate, bank deposit rate, inflation rate, government fiscal deficit as a ratio of GDP, the ratio of total foreign debt to GDP and Domestic savings to GDP. The results of the study show that there exists a bi-directional causality between the growth and financial development variables. This indicates that both growth and finance exert influence on each other. The results of the cointegration and Likelihood Ratio also established that there is a long-run relationship between financial development and economic growth in Nigeria. Based on the results of the study, the government is encouraged to identify those financial development and growth variables that contribute to the overall economic performance of the country. This implies that the government must formulate and implement policies that have influence on those factors that will significantly affect financial development in Nigeria. Thus, the study contributes to the on-going debate by empirically reconfirming the financial development-growth nexus, using recent data to point out new evidence on the relationship. The findings of the study are also relevant to those other developing counties in a similar growth process.

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