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Banks and Economic Growth in Nigeria

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Abstract

The study examines the contribution of banks in Nigeria to the growth of the economy. It used bank savings mobilization and credit to the real sector as proxy for banks contribution while gross domestic product growth rate proxies' economic growth. Before correlation analysis and regression were used to test hypothesis, diagnostic tests were carried out on the variables to ensure stationarity and examine the cointegration properties of the model. Augmented Dickey-Fuller test was used to test stationarity while Trace statistic and Eigenvalue test were used to assess cointegration. Results show an insignificant impact of banks intermediation variables on economic growth. The study therefore concludes that the poor performance of these variables indicate that other variables such as human resources, social infrastructure, political stability and technology may play more robust role in economic growth in Nigeria than banks. In the light of this, urgent improvement in social infrastructure especially power supply and reversal of the decline in education were recommended.

Keywords: Deposit, Credit, Financial intermediation, Currency outside bank, Prime lending rate, Real interest rate, Interest rate spread

1. Introduction

Economic growth has been a major objective of successive Nigerian governments. During the colonial period, the focus was on the provision of physical infrastructure in the belief, in line with the prevailing economic ideas, that the facilities would induce the private investments that would produce the desired growth. After independence the government became more directly involved in promoting economic growth. The thinking this time was to nurture private entrepreneurs and mobilize needed domestic resources for investment in some preferred sectors. This brought banks and their intermediation function into prominence in the economic history of Nigeria.

Banks as financial intermediaries are expected to provide avenue for people to save incomes not expended on consumption. It is from the savings they so accumulate that they are expected to extend credit facilities to entrepreneurs and other industrialists. Many of the banks that were in existence in the period before independence were foreign owned and did not therefore share in the vision of banks financing local enterprise. This exclusion of Nigerian entrepreneurs was instrumental to the establishment of indigenous banks. The initial indigenous banks were established to address this perceived discrimination against Nigerian borrowers by foreign banks. Their main objectives were to encourage local investors, support budding entrepreneurs and hence foster economic growth. Unfortunately many of them failed, hindering their contribution to the economy (Ekezie, 1997; Onoh, 2002).

Several reasons accounted for the high rate of failure of these early indigenous banks. One of the major reasons was that they operated in an unregulated banking environment. In order to check the incidence of failure among the banks and strengthen them to perform the growth function alluded to earlier the Central Bank of Nigeria (CBN) was established with the principal mandate of regulating the banking industry (Onoh, 2002).

From the rules, guidelines policies and statements issued by the CBN, it is clear the agency sought to promote the contributions of banks to economic growth. Its guidelines, such as those prioritizing agriculture and manufacturing for credit purposes (the Agricultural Credit Guarantee Fund Scheme {ACGFS}-1978 and Microfinance Fund {2005}), and policies like deregulation {1986} and consolidation {2004}, are all aimed at positioning the banks as engines of economic growth.

The policies of liberalization and consolidation of the financial sector are based on the argument of the financial repression school. The school holds that regulations constrain the ability of financial institutions to optimally contribute to economic growth. The repression school therefore suggested the liberalization of the economy to enable these institutions perform this growth function. On the other hand, the objective of consolidation was to increase the size of the Banks. This was based on the belief that with increased size these banks would become stronger, resilient to shocks and capable of funding the real sector and, by extension, enhancing economic growth (Soludo, 2004).

Apart from these compulsory regulatory directives and policies, aimed at ensuring banks' contribution to the economy, banks are known to engage in financial intermediation. Financial intermediation implies banks' mobilization of funds from the surplus economic unit and making same available to the deficit unit as loans. Through this granting of loans banks are able to create credit, finance investment and expand the economy. The objective of this study is to examine if banks though these roles have significantly impacted positively on the growth of the Nigerian economy. To do this the following hypothesis will be tested:

Ho: Nigerian banks are not making significant contributions to economic growth.

Following this introductory section (which ends with the research methodology below) is the section on review of related literature after which data is analyzed. Finally conclusion is drawn and recommendations are made.

1.1 Research Methodology

The study used mainly secondary data in its analysis. Data were obtained from the Central Bank of Nigeria (CBN) and the internet. Data used include those on gross domestic product (GDP), bank deposit(DPS), currency outside banks(COB), prime lending rate(PLR), aggregate deposit (DPS), inflation(IFR), manufacturing capacity(ACR) and bank credit to the real sector(CPS). Other variables computed from these and used in the regression are;

Financial deepening (DP)	=	M_2/GDP
Savings ratio (SR)	=	DPS/GDP
Credit ratio (CPR)	=	CPS/TBC
Currency ratio (CB)	=	COB/M_2

A time frame of 1980-2008 was used in data collection.

Correlation analysis and regression were used to assess relationship among variables. To ensure that spurious regression results were not obtained, initial diagnostic tests were carried out on the variables. Augmented Dickey-Fuller test was used to test for stationarity in the variables. Trace statistic and Eigenvalue tests were used to examine the cointegration properties of the models. To tie the short run distortion in the models and their long run effects, error correction models (ECM) were estimated. *Eviews 7* Statistical Package was used to obtain results.

2. Literature Review

2.1 Role of Banks

Banks perform many economically beneficial functions. These functions can be classified into primary and secondary functions. Among the primary functions of banks are:

- acceptance of deposit; and
- granting of loans and advances *(www.nios.ac.in/rec).*

Deposit mobilization as noted by Ekezie (1997) is one of the most important functions of a bank. This function enables banks mobilize deposits which otherwise would have remained idle and unproductive in the hands of the surplus economic unit. This fund so mobilized is then made available to the deficit unit for economically and socially desirable purposes.

Incidental to this primary function of financial intermediation is the monitoring function and credit creation ability of banks (Scholtens and Van Wesveen, 2000). Banks with their superior information on clients, usually gathered from their privileged position of holding the current accounts of such clients, are able to efficiently monitor such customers to ensure repayment of loans advanced them.

The other important primary function of banks-money creation-can be better appreciated through an example. A bank that mobilizes N10,000 cannot lend all of it out. This is because of the reserve requirement stipulated by monetary authorities. If we assume 10% reserve requirement, this means the bank in our example can legally lend out N9,000. When it does so the N10,000 deposit liability will still be standing against it, while it has created N9000 asset. The total amount will no longer be N10,000 but N19,000 (Ekezie, 1997; *http:..ehow.com*). Economists take this a step further and use the reserve requirement to calculate theoretical money multiplier, the number by which bank credit activities multiply the money supply. Using the equation 1/r =M.

Where r = reserve requirement expressed as a percentage

M = money multiplier *(http://www.ehow.com).*

This ability of banks to create money has several economic implications, especially with regards to interest rates and prices. This is one of the reasons banks get special regulatory attention.

The secondary functions of banks include the following;

i. Issuing letters of credit
ii. Undertaking safe custody of valuables, important documents, and securities by providing safe deposit vaults or lockers
iii. Providing customers with facilities of foreign exchange
iv. Money transfer
v. Guarantee services
vi. Collecting and supplying business information
vii. Issuing demand draft and pay orders
viii. Providing report on the credit worthiness of customers

A close look at these functions (primary and secondary) reveals that the secondary functions are functions which other financial intermediaries also perform. What then distinguishes banks from the others is their primary functions especially the ability to create money.

2.2 The Concept of Economic Growth

Expansion of economies with intent to improving the welfare of citizens is a desirable goal. This explains why economic literature is replete with theories and studies investigating variables required by economies to achieve sustainable growth. It also explains why governments are interested in such variables. Byrns and Stones (1992) confirmed that economic growth is one of the macroeconomic goals of government; since most governments work hard at growing their economies in order to stem unemployment, increase output, improve industrial capacity utilization, etc.

The concept of economic growth has been viewed by experts from many perspectives. The *Wikipedia* defines it as "a term used to indicate the increase in per capita gross domestic product (GDP) or other measures of aggregate income and often measured as the rate of change in GDP". Further buttressing this, economic growth is said to refer to sustained increase in a country's output of goods and services *(http://www.Economics4developmt.com).* The definition by Global Oneness is much in line with those

above. It states that economic growth refers to an increase in the real output of goods and services which leads to increased income, savings and investment.

A close look at these definitions of economic growth reveals their emphasis on quantitative increases in the productive output. The qualitative dimension which incorporates individual's welfare improvement (in health care, poverty reduction, increased employment, etc.) is normally referred to as economic development *(http://massofa.wordpress.com/2010/02/13/ concept-of-economic-growth/).* It is further noted on this website that economic growth is concerned with expansion of an economy's ability to produce (potential GDP) over time. Such expansion can only occur when natural resources, human resources or capital increases or when technology improves. Increases alluded to above can be catalyzed by availability of funding, which is where banks come in.

2.3 Banks and Economic Growth

Writing on the role of banks in economic growth, Steiner, et al (1963) opined that banks are important to the economy because they influence the level of economic activities in two ways, namely: by expansion and contraction of loans and investment. These activities alter the nation's money supply, and by extension affect the size of loans, influence what is produced, how much is produced and where it is produced. Similarly, Ubom (2009) identified banks as agents of economic development. This is because they invest directly in the economy (e.g. by buying the shares of other companies) and also grant loans to others for investment and purchase of securities.

Azege (2009) holds that banks contribute to the economy by mobilizing savings from the surplus economic unit and making these funds available to the deficit economic unit. By so doing, banks are able to finance investments. Many scholars share in the opinion that savings mobilized by banks are utilized by the deficit economic unit for investment which improves capital accumulation, expands output and invariably leads to economic growth (Hakenes, Schmidt & Xie, 2009, Badun, 2009, Montiel, 2003, Merton & Bodie, 1995, Levine, 2001, Levine, 2005, Miwa & Ramseyer, 2000, Offiong, 2005).

To explain the link between financial development and economic growth, Levine (1997) used a functional approach. He attributed the need for financial intermediaries to market frictions in form of information costs and transactions cost. He proceeded to identify five functions of financial institutions through which they aid economic growth, these are:

1. Facilitating trading, hedging, diversifying and poling of risks
2. Allocating resources
3. Monitoring managers and exerting corporate control
4. Mobilizing savings
5. Facilitating exchange of goods and services

He posited that "these functions performed by these institutions affect steady-state growth by influencing the rate of capital formation". He further stated that "financial system affects capital accumulation either by altering the savings rate or by reallocating savings among different capital producing technologies. This relationship can be illustrated thus:

Insert Figure I

3. Presentation, Analysis and Interpretation of Results

3.1 Analysis of Integration Properties

Insert Table1

3.2 Analysis of Cointegrating Properties of the Variables

The ADF test showed that some of the variables became stationary only after first differencing. It became expedient to investigate whether these non-stationary variables were cointegrated. This implies testing the hypotheses about the rank of the cointegrating relationships among the variables. The Johansen cointegration test procedure was adopted. Both Trace test statistic criterion and maximum Eigenvalue criterion were used to draw conclusion on the rank of cointegrating relationships. The decision criterion is that when the Trace statistic is greater than the 5% critical value, we reject the hypothesis of no cointegrating relationship among the variables and conclude that there is cointegrating relationship among them.

The cointegration test results presented below are carried out in a systematic manner. Tests are run for variables constituting each of the regression equations to ensure that a long-run relationship exists between them before the equations are estimated.

Insert Table 2

3.3 Test of Hypothesis

Tested Hypothesis is:

Ho: Nigerian banks are not making significant contributions to economic growth.

H_1: Nigerian banks are making significant contributions to economic growth.

Equation estimated

$GDPG_t = D_0 + D_1SR_t + D_2DP_t + D_3CB_t + D_4CPR_t + D_5ACR_t + D_6PLR_t + D_7IFR + e$

From *Eviews* the model obtained is:

$GDPG_t$ = 66.71 – 0.02SR + 0.002DP – 0.96CB + 0.75CPR + 1.16ACR–0.14PLR–0.28IFR + e

S. E	(36.18)	(0.14)	(0.07)	(0.77)	(0.37)	(0.35)	(0.63)	(0.19)
t-statistic	-1.84	-1.11	0.03	1.25	0.21	3.35	-0.23	0.14
Probability	0.08	0.90	0.97	0.22	0.84	0.00	0.82	0.89

R^2	=	0.42
Adjusted R^2	=	1.79
Durbin Watson Stat	=	1.79
F-Statistic	=	1.98
Probability (F-Stat)	=	0.11

Excerpt from the ECM Results

R^2	=	0.39
Adjusted R^2	=	0.12
ECM Coefficient	=	0.41
F-Statistic	=	1.45
Probability (F-statistic)	=	0.24

The theoretical position according to Harold-Domar model is that increased savings leads to the expansion of credit and investment and ultimately to increased economic output. The negative sign by the savings ratio (SR) in the obtained model is contrary to this. This implies that banks may not be efficiently transforming savings into credit and that most of the credit they grant may not be for productive purposes. However, financial deepening variable (DP) fared just a little better. Though it was positively signed, at 0.002 its coefficient is so small indicating a negligible impact on growth. The positive sign by the ratio of

currency outside banks confirms the existence of a large informal sector (an indictment on the bank's deposit mobilization ability). The ratio of credit to the private sector (CPR) and capacity utilization rate (ACR) were positively signed showing their positive influence on economic growth. On the other hand, the lending rate (PLR) and inflation (IFR) bore negative signs upholding the theory that increased interest rate discourages borrowing, stifles investment and retards economic growth.

Except ACR, all other variables going by their probability values were insignificant at 5% level of significance. This position is further buttressed by the coefficient of determination (adjusted R^2) which indicates that the financial intermediation variables are poor predictors of economic growth in Nigeria. The adjusted R^2 of 0.21 implies that the variables constituting the model can only explain 21% of the variations in economic growth (GDPG) between 1980 – 2008. The value of the Durbin Watson statistic (1.79) is indicative of the absence of autocorrelation among variables in the model. Furthermore, the F-statistic of 1.98 and probability (F-statistic) of 0.11 shows that the null hypothesis cannot be rejected. The conclusion can therefore be drawn that Nigerian banks are not contributing significantly to economic growth.

The models predictive powers were further hampered when the error correction model was estimated. From the adjusted R^2 of 0.21 in the original model, the ECM's adjusted R^2 deteriorated to 0.12. This indicates that short term distortions in the variables are of enormous importance in their long term relationship. Forty-one percent of this disequilibrium is corrected in the current period. This ECM's probability (F-Statistic) of 0.24 indicates the overall predictive insignificance of these variables at 5% level of significance. This implies that other variables not included in the model explain about 89% of the changes in economic growth. Some of these other factors may include political stability, quality and availability of human resource, standard of education, level of technology and state of social and economic infrastructure.

4. Conclusion and Recommendations

The study made an assessment of banks contribution to economic growth in Nigeria. It approached banks contribution from the financial intermediation role these institutions play. From this perspective it related the savings mobilization and lending functions of banks to the growth rate of the gross domestic product, which was adopted as proxy for economic growth. The result of the analysis led to the conclusion that banks' contribution to economic growth within the period 1980-2008 is insignificant. This led to the deduction that other factors (human resource, standard of education, political stability, power supply and other social infrastructure) may be playing more important role in growing the Nigerian economy.

With the above deduction in mind the following recommendations are made:

i. Government should urgently address the infrastructural challenges of the country especially concerning energy availability and power supply.
ii. The decadence in the education sector should be paid immediate attention to improve the quality of human resource in the economy.
iii. Banks should be encouraged to lend more to the productive sector (real sector) if their impact on economic growth is to be felt.
iv. A holistic approach should be adopted in tackling the near non-existence and collapse of social infrastructure such as road networks, portable water and medical care.

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Appendix I

Data Set Used for Analysis

YEARS	Real Gross Domestic Product (GDP)	Currency Outside Banks (COB)	Total Bank Deposit (DPS)	Total Bank Credit (TBC)	Inflation (IFR)	Prime Lending Rate (PLR)	Credit to Private Sector(CPS)	Manufacturing Capacity Utilization (ACR)
				₦'m		%	₦'m	%
1980	31546.8	3185.9	5382.9	6349.1	10.0	7.50	3795.3	70.1
1981	205222.1	3861.9	6124.1	8582.9	21.42	7.75	5088.9	73.3
1982	199685.3	4222.5	7029.5	10275.3	7.16	10.25	6003.5	63.6
1983	185598.1	4842.8	8876.6	11093.9	23.22	10.00	6372.4	49.7
1984	183563.0	4883.5	10361.9	11503.6	40.71	12.50	6674.9	43.0
1985	201036.3	4909.9	11869.1	12170.2	4.67	9.25	7272.2	38.3
1986	205971.4	5177.9	13227.4	15701.6	5.39	10.50	9353.9	38.8
1987	204806.5	6298.6	17911.5	17531.9	10.18	17.50	10527.0	40.4
1988	219875.6	9413.6	22380.0	19561.2	56.04	16.50	12379.9	42.4
1989	236739.6	9760.6	21784.0	22008.0	50.47	26.80	13640.5	43.8
1990	267550.0	14951.1	27486.5	26000.1	7.50	25.50	15678.3	40.3
1991	265379.1	23120.6	35366.7	31306.2	12.70	20.01	20039.0	42.0
1992	271365.5	36755.5	51781.3	42736.8	44.81	29.80	27201.9	38.1
1993	274833.3	57845.1	80192.7	65665.3	57.17	18.32	40692.9	37.2
1994	275450.6	90601.0	87443.6	66127.6	57.03	21.00	57279.6	30.4
1995	281407.4	106843.4	104428.9	114883.9	72.81	20.18	95441.0	29.29
1996	293745.4	116121.0	130858.5	169437.1	29.29	19.74	120551.7	32.46
1997	302022.5	130668.0	173820.0	385550.5	10.67	13.54	131373.4	30.4
1998	310890.1	156716.1	192233.4	272895.0	7.86	18.29	146761.6	32.4
1999	312183.5	186456.0	266314	1265984.4	6.62	21.32	667091.8	34.6

2000	329178.7	274010.6	369788.3	1795768.3	6.94	17.98	798395.4	36.1
2001	356994.3	338671.2	451963.1	2796112.2	18.87	18.29	1140868.9	42.7
2002	433203.5	386942.3	556011.7	3606229.1	12.89	24.85	1410885.8	54.9
2003	477553.0	412155.2	655739.7	4339443.0	14.03	20.71	1569088.7	56.5
2004	527576.0	458586.5	797517.2	5686669.4	15.01	19.18	2087749.8	55.7
2005	561931.4	563232.0	1316957.4	7468655.1	17.85	17.95	2270961.3	54.80
2006	595821.6	650943.6	1739636.9	2524297.9	8.24	17.26	746663.1	53.30
2007	634251.1	737867.2	2693554.3	4813488.8	5.38	16.49	1127867.8	53.80
2008	674889.0	892907.8	4118172.8	7725818.9	11.60	16.08	7909783.8	Na

Source-Central Bank of Nigeria Statistical Bulletin, 2008

Appendix II

Regression Variables

YEARS	GDPG	SR	DP	CB	CPR	*IRS	**RIR	IFR
1980	-	17.1	47.90	21.10	59.70	1.50	-4.0	10.0
1981	84.6	2.98	7.87	23.90	59.30	1.75	-15.42	21.42
1982	-2.77	3.52	9.10	23.30	58.40	2.75	0.34	7.16
1983	-7.59	4.78	11.20	23.20	57.40	2.50	-15.72	23.22
1984	-1.11	5.64	12.70	20.70	58.00	3.00	-31.21	40.71
1985	8.69	5.90	13.10	18.70	59.80	-0.25	4.83	4.67
1986	2.40	6.42	13.30	18.90	59.60	1.00	4.11	5.39
1987	-0.57	8.75	16.40	18.70	60.00	3.50	3.82	10.18
1988	6.85	10.20	20.70	20.70	63.30	2.00	-41.54	56.04
1989	7.12	9.20	19.90	20.70	62.00	10.40	-34.07	50.47
1990	11.52	10.30	25.70	21.80	60.30	6.7	11.3	7.5
1991	-0.82	13.30	33.00	26.40	64.00	5.72	1.59	12.70
1992	2.21	19.10	47.60	28.50	63.60	13.70	-28.71	44.81
1993	1.26	29.20	72.20	29.10	61.90	15.36	-40.51	57.17
1994	0.22	31.70	96.90	33.90	86.60	7.50	-43.53	57.03
1995	2.12	37.10	113.30	33.50	83.10	7.57	-60.20	72.81
1996	4.20	44.50	126.10	31.40	71.10	8.05	-17.60	29.29
1997	2.74	57.60	142.30	30.40	34.10	8.74	-5.87	10.67
1998	2.85	61.80	169.10	29.80	53.80	12.8	-2.37	7.86
1999	0.41	85.30	224.10	26.60	52.70	15.99	-1.29	6.62
2000	5.16	112.30	314.70	26.40	44.50	12.69	-1.65	6.94
2001	7.79	126.60	398.70	23.80	40.80	12.80	-13.38	18.87

2002	17.60	128.30	443.00	20.20	39.10	20.70	-8.74	12.89
2003	9.29	137.30	441.00	19.60	36.20	16.60	-9.92	14.03
2004	9.48	151.10	486.80	17.90	36.70	14.99	-10.82	15.01
2005	6.11	234.40	497.00	20.20	30.40	14.12	-14.02	17.85
2006	5.69	292.00	676.00	16.20	44.60	14.12	-5.10	8.24
2007	6.06	424.70	916.00	12.70	23.40	13.25	-2.14	5.38
2008	6.02	610.20	1358.30	9.70	10.90	12.51	-8.03	11.60

Source- Author's computation

*IRS-Interest Rate Spread, **RIR-Real Interest Rate

CPR- CPS/TBC

SR- DPS/GDP

DP- M_2/GDP

CB- COB/M_2

GDPG-GDP growth rate

Table1 Summary of ADF Unit Root Test

	Levels	1st Difference		
Variable	**Intercept**	**Intercept**	**Critical level**	**Conclusion**
ACR	-3.59	-	-2.98	I(0)
CB	0.22	-3.63	-2.97	I(1)
CPR	-1.50	-5.98	-2.97	I(1)
DP	4.51		-2.99	I(0)
GDPG	-5.83	-	-2.97	I(0)
IFR	-3.20	-	-2.97	I(0)
PLR	-2.74	-7.99	-2.97	I(1)
SR	11.7	1.92	-2.97	I(0)

Source: Author's computation using *Eviews 7* software

The results of the integration tests conducted on all the variables are presented in Table 1. Augmented Dickey-Fuller (ADF) unit root test was applied on all the variables. Schwartz Information Criterion (SIC) was used to select the optimal lag length, which was a maximum of 6 lags.

The results of the unit-root test indicate that 6 out of the 10 variables were stationary at their levels, i.e., they are integrated in the first order or I(0) stationary. The variables that are I(0) stationary are ACR, DP, GDPG, IFR and SR. The remaining three (CPR, CB, and PLR) after transforming them to their first differences and applying the ADF test they became stationary. These later variables are hence I(1) stationary.

Table 2 : Unrestricted Cointegration Rank Test (Trace and Eigen) on GDPG, SR, DP, CB, CPR, ACR, PLR and IFR

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**

None *	0.987679	315.3008	159.5297	0.0000
At most 1 *	0.886863	200.9940	125.6154	0.0000
At most 2 *	0.849637	144.3359	95.75366	0.0000
At most 3 *	0.715720	95.07360	69.81889	0.0001
At most 4 *	0.598644	62.37093	47.85613	0.0012
At most 5 *	0.502032	38.63533	29.79707	0.0037
At most 6 *	0.392505	20.50760	15.49471	0.0081
At most 7 *	0.251993	7.548928	3.841466	0.0060

Trace test indicates 8 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.987679	114.3068	52.36261	0.0000
At most 1 *	0.886863	56.65814	46.23142	0.0028
At most 2 *	0.849637	49.26230	40.07757	0.0036
At most 3	0.715720	32.70267	33.87687	0.0685
At most 4	0.598644	23.73559	27.58434	0.1442
At most 5	0.502032	18.12773	21.13162	0.1251
At most 6	0.392505	12.95867	14.26460	0.0796
At most 7 *	0.251993	7.548928	3.841466	0.0060

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Author's computation using *Eviews 7* software

The trace statistic denotes the rejection of the null hypothesis that there is no cointegrating relationship among the variables. To buttress this Trace statistics identified 8 cointegrating equations at 5% level of significance. The confirmatory test using maximum Eigenvalue test was affirmative as this test also identified 3 cointegrating relationships.

Market frictions
- Information costs
- Transaction costs

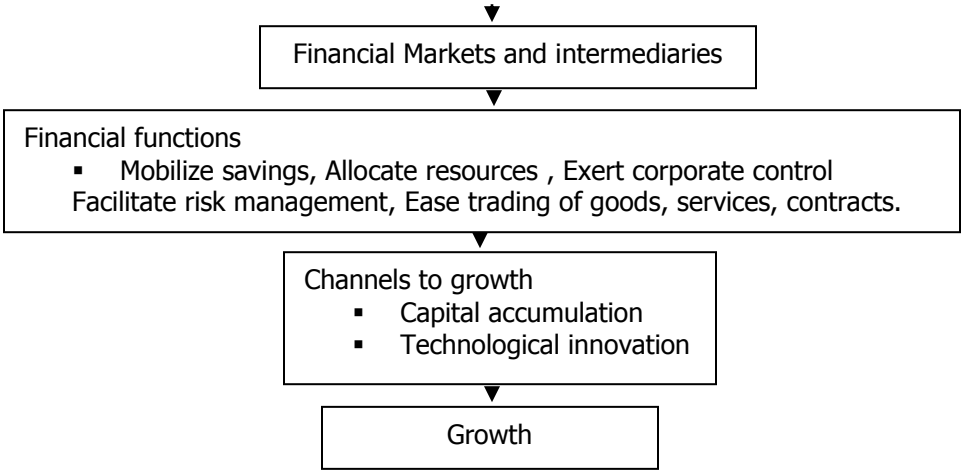

Figure I: A Theoretical Approach to Finance and Growth

Source: Levine (1997: 691).