

Does Bank Financial Intermediation Cause Growth in Developing Economies: The Nigerian Experience

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Abstract

Whether banks through their financial intermediation activities (savings mobilization and lending) cause economic growth is the theme on which this study was based. Data on gross domestic product (GDP), credit to private sector (CPS) and total bank deposit (DPS) were obtained from Central Bank of Nigeria (CBN) statistical bulletin and used to compute savings ratio (SR) and credit ratio (CPR). A time frame of 1980-2008 was adopted. The hypotheses that no causal relationship exist between savings mobilization and credit on one hand and economic growth on the other were tested. The Granger Causality Test was used to test these hypotheses. It could not identify any significant causal relationship between banks' savings/credit and economic growth. The absence of such a relationship was conjectured to be due to the economies developmental stage characterized by infrastructural decay and the inefficient utilization of mobilized deposits. The study therefore recommended improvement in infrastructure such as roads and power supply. It also suggested close regulatory monitoring to ensure that mobilized deposits are used mainly in funding the productive sector.

Key words: Financial intermediation; Economic growth; Savings; Credit; Liberalization

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INTRODUCTION

In performing their intermediation function, banks mobilize savings from the surplus economic unit for on-lending to the deficit economic unit. It has been argued that by virtue of this function that banks generate economic growth by providing needed resources for real investment (Shaw, 1973; McKinnon, 1973). It is this line of thinking that led to the acceptance and implementation of financial liberalization by many developing economies.

In spite of the popularity liberalization and similar policies have enjoyed, economists remain divided in their opinions concerning the relationship between financial institutions and economic growth. An investigation into the different sheds of opinions in this regard reveals a long and contentious history. Bagehot (1873) and Hicks (1969) argued that the financial system played a critical role in igniting industrialization in England by facilitating the mobilization of capital. In line with this thinking, Schumpeter (1934) contends that well-functioning banks spur technological innovations by identifying and funding entrepreneurs assessed to have brighter chances of successfully implementing innovative products and production processes. Several empirical studies support the position that financial factors play important role in economic growth. They categorically state that a first-order relationship exists between financial development and economic growth (Gerschenkron, 1962; McKinnon, 1973; Shaw, 1973; King & Levine, 1993a&b, Levine, 1997; Montiel, 2003).

There are others that view finance-growth relationship as unimportant, for example, Lucas (1988) asserted that economists "badly over-stress" the role of financial factors in economic growth. Beyond this middle position are several economists who hold that finance plays no

role in economic growth. Robinson (1952) stressed this point by stating that “where enterprise leads finance follows”. In this view, economic growth creates demand for particular types of financial arrangements and the financial system responds automatically to these demands. This school of thought holds that the financial system is an inconsequential side show, responding passively to economic growth and industrialization. (Dornbusch and Reynoso, 1989; Stiglitz, 1994 & 2000).

Empirically, they argue that the results obtained using a financial development indicator as a regressor and achieving a statistically positive coefficient in the equation of economic growth have been interpreted to confirm the theory that financial development promotes economic growth. They fault this conclusion as failing to distinguish between statistical association and causation. They further hold that evidence of a significant positive correlation is also consistent with Robinson’s opinion that financial development follows economic growth (Abu-Baden and Abu-Qarn, 2005).

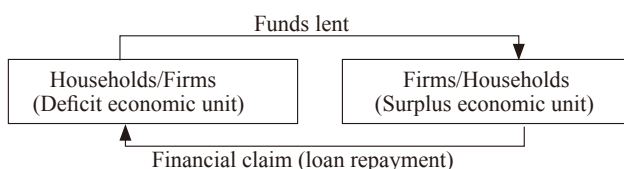
Considering the important growth role ascribed to banks in many developing countries including Nigeria, the dissenting views that banks do not cause economic growth cannot be overlooked. That is why this study investigates the causal link between financial intermediation activities of banks and economic growth.

To achieve this objective, this paper is divided into the following sections; introduction, theoretical framework, methodology, data analysis and interpretation of results, conclusion and recommendations.

1. THEORETICAL FRAMEWORK

1.1 The Concept of Financial Intermediation

In human societies since the evolution of money, there have always existed those who possess money in excess of their immediate needs (surplus economic unit) and those whose current possessions cannot finance their economic activities (deficit economic unit). The realization by the surplus economic unit, that their excess can be used beneficially to meet the shortfall experienced by the deficit economic unit led to the introduction of a credit system. This system was initially characterized by lenders (surplus unit) and borrowers (deficit unit) having to search out themselves and deal directly, a process known as direct financing (Akpan, 2009; Akpanuko and Acha, 2010). This process is illustrated below;



Source: Adapted from Buckle & Thompson (1998), p.15

Figure 1
Direct Financing

As economies expanded and the needs of the deficit economic unit grew, the inadequacies of the system of direct financing became obvious. Some of the shortcomings of direct financing as identified by Buckle and Thompson (1998) are;

- i. Different requirements by lenders and borrowers
- ii. Transaction costs
- iii. Problems arising out of information asymmetries.

Expanding this strand of reasoning, it can be shown that while lenders generally want to hold assets which have low risk and are liquid, borrowers will want to repay the borrowing over the expected life of the investment. In addition, this extended time and the nature of the business could increase the risk of default. In other words, the lender wants a low risk short term asset while the borrower is interested in the acquisition of a long term liability, which is inherently risky.

Compounding the dilemma of lenders and borrowers are transaction costs which makes it difficult for potential lenders to find appropriate borrowers. The main forms of transaction costs are;

- i. Search costs
- ii. Verification costs
- iii. Monitoring costs
- iv. Enforcement costs

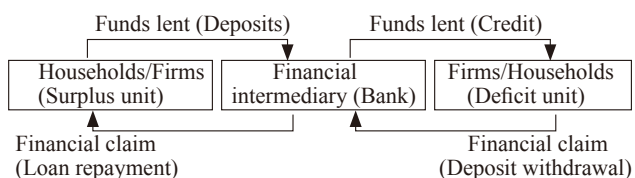
In the absence of intermediaries both lenders and borrowers will incur costs searching for and finding suitable counterparties. It will be difficult for instance to find a counterparty with the exact requirements of the other party with regard to loan size and maturity. In the course of the interaction leading to the loan contract, the borrower will make representations to convince, the lender to lend. The verification of such information made available by the borrower could be costly. On the other hand not verifying it could even be more expensive as it could lead to total loss of the loan through default assuming the unverified information is wrong. The cost of lending on the lender does not end with the disbursement of the loan but continues until repayment is made. The lender hence incurs monitoring costs to ensure that the loan is not misapplied and that payment dates are not missed. Also, the lender needs to enforce the terms of the contract and take steps to recover debt when repayment is in arrears. This gives rise to enforcement costs (Benston & Smith, 1976).

Another key problem faced by direct financing is that arising from asymmetric information. Usually, the borrower has more information about the potential returns and risks of the investment project for which funds are borrowed compared to the lender. This creates problems for the lender, both before the loan is made, at the verification stage, and after, at the monitoring/enforcement stages. When the lender is verifying borrowers, borrowers who are likely to default may be selected. This is known as adverse selection. Also, after the loan is made (monitoring/enforcement stages), there is the possibility

that the borrower could engage in undesirable activities. That is activities that will increase the likelihood of default. This is known as moral hazard and could manifest in the borrower engaging in riskier activities than would have been engaged in if personal funds were invested. Indirect financing, also known as financial intermediation, therefore evolved to address these observed flaws in direct financing.

1.2 The Process of Financial Intermediation

Financial intermediation is “a process which involves surplus units depositing money with financial institutions which then lend to deficit units” (Mathews & Thompson, 2008). In other words, financial intermediation is a system of channeling funds from lenders (surplus economic unit) to borrowers (deficit economic unit) through financial institutions. From the above view, financial institutions exist to broker the relationship between lenders and borrowers. They intervene to smoothen the flaws of direct finance. With financial intermediaries, lenders and borrowers need no longer transact directly as financial institutions act as a link between these units.



Source: Adapted from Buckle & Thompson (1998) p.15.

Figure 2
Indirect Financing/Financial Intermediation

The process depicted in figure 2 indicates that households instead of lending directly to firms, as in the case of direct financing deposit their excesses with a financial intermediary. This financial intermediary aggregates deposits from various households for on-lending to the deficit unit. The repayment of the loan is made to the intermediary, which also stands ready to redeem deposit withdrawals by the surplus unit. Mathews and Thompson (2008) identified four criteria that distinguish financial intermediaries especially banks from other financial institutions, these are;

- i. their main category of liabilities (deposits) are specified for a fixed sum which is not related to the performance of the portfolio
- ii. the deposits are typically short-term and of a more shorter term than their assets
- iii. a high proportion of their liabilities are chequeable (can be withdrawn on demand)
- iv. their liabilities and assets are largely not transferable.

It is these characteristics of financial intermediaries that enable them reduce or eliminate the problems associated with direct financing.

1.3 Financial Intermediaries and Problems of Direct Financing

The first problem which we identified is the difference in the requirement of lenders and borrowers. It was noted that while lenders want low risk liquid assets, borrowers are interested in long-term liabilities. Financial intermediaries resolve this problem through their asset transformation function. This, they do by transforming large denominations of financial assets into smaller units. They are also able to transform the characteristics of the funds that pass through them. This it does by mismatching the maturity of the assets it holds with the maturity of the liabilities it issues. They borrow funds that are short-term (deposits) and lend them with long-term maturity (loans). Thus, a financial intermediary is able to hold high-risk, long-term claims issued by borrowers and finance this by issuing low-risk and short-term deposits. This is a process known as qualitative asset transformation (QAT) (Bhattacharya & Thakor, 1993; Mishkin & Eakins, 1998; Buckle & Thompson, 1998 and Saunders & Cornett, 2006). Diamond and Dybvig (1983) confirm this by opining that “...banks provide better risk sharing among agents who need to consume at different (random) times”. This liquidity to them provides the rationale for the existence of banks and by extension financial intermediation.

Financial intermediaries address the risks associated with maturity transformation by diversifying funding sources. On the other hand, risk associated with transformation of default risk can be reduced by obtaining information on potential borrowers and selecting those that have the highest repayment potentials. In this regard, Buckle & Thompson point out that banks have advantage over direct lender in obtaining useful information on potential borrowers since most of these borrowers use banks’ payment services.

Transaction costs were also cited as one of the problems that the existence of financial intermediaries solves. Mathews and Thompson (2008) explain that intermediaries are able to reduce search costs through their distribution channels. By spreading out their branches and adopting products like automated teller machine (ATM), internet banking and telephone banking, intermediaries reduce search costs by borrowers. Furthermore, Allen and Santomero (1977) point out that, intermediaries also reduce verification costs by developing expertise in certain business lines. In-depth knowledge of client and their businesses by intermediaries make verification quicker, more effective and cheaper. Monitoring a borrower refers to “information collection before and after a loan is granted”, including screening of loan applications, examining the borrowers ongoing credit worthiness and ensuring that the borrower adheres to the terms of the contract. This implies enormous costs in monitoring and enforcement. Since banks’ possess privileged information

regarding the borrowers' current account and can observe the flows of income and expenditure, these costs can be ameliorated (Diamond, 1984; Mathews & Thompson, 2008). Diamond (1996) further buttresses this point by stating that:

The means by which banks are able to perform as delegated monitors and to transform loans that require costly monitoring into deposits that do not, depend crucially on the use of portfolio diversified across independent loans with expected repayments in excess of the value of deposits, then the probability of the bank defaulting on its deposits approaches zero. This theory shows that diversifying the loan portfolio enables low-cost delegated monitoring.

The third and final problem of direct financing giving rise to the need for intermediaries is information asymmetry. The information asymmetry problem arises because borrowers usually possess insider information about investment projects that lenders may be unaware of. According to Claus and Grimes (2003) information asymmetry can occur "ex ante" or "ex post". It is ex ante when lenders can not differentiate between borrowers with different credit risks before providing loans leading to adverse selection problem. On the other hand, ex post information asymmetry arises when only borrowers, but not lenders, can observe actual returns after project completion. This gives rise to moral hazard problems, where borrowers engage in activities that increase the likelihood of default. To resolve these problems, information is needed. Unfortunately information is a "public good". Even when privately produced at great cost there is a tendency that other agents could access it at lower costs. That is the "free rider problem". This discourages the direct financier from investing in "publicly optimal information" (Hirschleifer & Riley, 1979). Financial intermediaries, on the other hand, can obtain information at lower cost than individual lenders because they avoid duplication in production of information. Leland and Pyle (1977) buttress this by showing that banks can communicate information to investors about potential borrowers at lower cost than can individual borrowers. To mitigate the moral hazard problem, banks introduce restrictive covenants which restrict the borrowers' activity and increase the probability of repayment. It can also be said to encourage borrowers to undertake desirable behaviour, for example, mortgage loans requiring the borrower to obtain life assurance (Buckle & Thompson, 2008).

2. METHODOLOGY

The study uses data obtained from the Central Bank of Nigeria. The time frame of 1980-2008 was adopted. Data used include those of gross domestic product (GDP) from which the gross domestic product growth rate (GDPG), which served as a proxy for economic growth was computed. Others include, savings ratio (SR) obtained by

indexing bank deposit (DPS) by GDP. On the credit side bank's credit to the private sector (CPS) was indexed by total bank credit (TBC) to obtain the credit ratio (CPR). Two models (equations 1a&b and 2a&b) were developed, which were used to test the direction of causality between savings and economic growth and between credit and economic growth respectively.

2.1 The Direction of Causality Between Bank Intermediation and Economic Growth

Using deposit as intermediation proxy

$$GDPG = a_0 + a_1 GDPG_{t-1} + a_2 SR_{t-1} + e_t \dots \dots \dots 1a$$

$$SR = b_0 + b_1 SR_{t-1} + b_2 GDPG_{t-1} + e_t \dots \dots \dots 1b$$

Where:

$$GDPG_{t-1} = \text{Lagged GDPG}$$

$$SR_{t-1} = \text{Lagged savings ratio}$$

Using Credit as intermediation proxy

$$GDPG = a_0 + a_1 GDPG_{t-1} + a_2 CPR_{t-1} + e_t \dots \dots \dots 2a$$

$$LLTBC = b_0 + b_1 CPR_{t-1} + b_2 GDPG_{t-1} + e_t \dots \dots \dots 2b$$

Where:

$$GDPG_{t-1} = \text{Lagged GDPG}$$

$$CPR_{t-1} = \text{Lagged ratio of credit to private to total bank credit}$$

2.2 Analytical Procedure

To determine the direction of causality, the Granger causality test is adopted. The hypotheses for the Granger test are as follows:

$$H_0: X \text{ does not Granger cause } Y$$

$$H_1: X \text{ does Granger cause } Y$$

$$H_0: Y \text{ does not Granger cause } X$$

$$H_1: Y \text{ does Granger cause } X$$

The Granger causality test is based on the following bivariate model:

$$Y_t = a_{10} \sum_{j=1}^k a_{1j} Y_{t-j} + \sum_{j=1}^k b_{1j} X_{t-j} + u_t \dots \dots \dots 3a$$

$$X_t = a_{20} \sum_{j=1}^k a_{2j} X_{t-j} + \sum_{j=1}^k b_{2j} Y_{t-j} + u_t \dots \dots \dots 3b$$

In conducting the Granger causality test, the econometric software Eviews 5.0 is used.

3. DATA ANALYSIS AND INTERPRETATION OF RESULT

Table 1
Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Probabilit
SR does not Granger Cause GDPG	27	0.37803	0.54445
GDPG does not Granger Cause SR		0.01174	0.91462
Pairwise Granger Causality Tests			
Date: 12/18/10 Time: 16:39			
Sample: 1980 2008			
Lags: 1			

To be continued

Continued

Null Hypothesis:	Obs	F-Statistic	Probability
CPR does not Granger Cause GDPG	27	0.06464	0.80147
GDPG does not Granger Cause CPR		0.00034	0.98536

Source: Author's computation using Eviews 5.0 software

The results of the Granger Causality test indicate that the hypotheses, financial intermediation does not Granger cause economic growth and that economic growth does not Granger cause financial intermediation, cannot be rejected. This result was the same for both savings and credit as intermediation proxies. Going by the probability values of 0.54 and 0.91 for SR and GDPG and 0.80 and 0.98 for CPR and GDPG, at 5% level of significance all the null hypotheses are accepted.

From the above, it can therefore be deduced that financial intermediation does not cause economic growth neither does economic growth cause financial intermediation. This result is quite surprising considering the economic growth responsibilities bestowed on banks in many developing economies. It also brings to question the utilization of the enormous deposit mobilized by banks and tends to corroborate the opinion that banks do not cause economic development. It can therefore be deduced that for developing economies, bank intermediation (savings and credit) is not a sufficient economic growth condition. It also suggests that other factors such as social infrastructure, roads, power supply, economic and political stability may play fundamental roles in economic growth of such economies.

CONCLUSION AND RECOMMENDATIONS

This study was instigated by the economic growth function assigned banks in many developing economies and strengthened by the lack of consensus among experts as to whether banks cause economic growth. The study therefore assessed whether banks through their intermediation activities cause economic growth. From the result of the Granger Causality Test it is deduced that from 1980-2008 that the intermediation activities of banks were not the cause of the growth in the economy.

This therefore is indicative of the presence of more influential economic growth factors, which the study conjectured to include social infrastructure, roads, power supply, economic and political stability. In the light of the above it is suggested that the governments of developing economies should pay attention to infrastructural development. They should ensure improvement in road network, transportation and power supply. They should also pay due attention to economic and political stability. Considering the fact that a lot of deposit is mobilized by banks, the regulatory authorities may begin to show a little more than passing interest in what banks use these deposits for. The channeling of these deposits to the

productive sector may bring desired results.

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APPENDIX DATA SET USED FOR ANALYSIS

YEARS	Total Bank Deposit (DPS)N' m	Real Gross Domestic Product (GDP)N' m	Total Bank Credit(TBC)N' m	Credit to Private Sector(CPS)N' m	GDPG	SR*	CPR**
1980	5382.9	31546.8	6349.1	3795.3	-	17.1	59.70
1981	6124.1	205222.1	8582.9	5088.9	84.6	2.98	59.30
1982	7029.5	199685.3	10275.3	6003.5	-2.77	3.52	58.40
1983	8876.6	185598.1	11093.9	6372.4	-7.59	4.78	57.40
1984	10361.9	183563.0	11503.6	6674.9	-1.11	5.64	58.00
1985	11869.1	201036.3	12170.2	7272.2	8.69	5.90	59.80
1986	13227.4	205971.4	15701.6	9353.9	2.40	6.42	59.60
1987	17911.5	204806.5	17531.9	10527.0	-0.57	8.75	60.00
1988	22380.0	219875.6	19561.2	12379.9	6.85	10.20	63.30
1989	21784.0	236739.6	22008.0	13640.5	7.12	9.20	62.00
1990	27486.5	267550.0	26000.1	15678.3	11.52	10.30	60.30
1991	35366.7	265379.1	31306.2	20039.0	-0.82	13.30	64.00
1992	51781.3	271365.5	42736.8	27201.9	2.21	19.10	63.60
1993	80192.7	274833.3	65665.3	40692.9	1.26	29.20	61.90
1994	87443.6	275450.6	66127.6	57279.6	0.22	31.70	86.60
1995	104428.9	281407.4	114883.9	95441.0	2.12	37.10	83.10
1996	130858.5	293745.4	169437.1	120551.7	4.204	4.50	71.10
1997	173820.0	302022.5	385550.5	131373.4	2.74	57.60	34.10
1998	192233.4	310890.1	272895.0	146761.6	2.85	61.80	53.80
1999	266314	312183.5	1265984.4	667091.8	0.41	85.30	52.70
2000	369788.3	329178.7	1795768.3	798395.4	5.16	112.30	44.50
2001	451963.1	356994.3	2796112.2	1140868.9	7.79	126.60	40.80
2002	556011.7	433203.5	3606229.1	1410885.8	17.60	128.30	39.10
2003	655739.7	477553.0	4339443.0	1569088.7	9.29	137.30	36.20
2004	797517.2	527576.0	5686669.4	2087749.8	9.48	151.10	36.70
2005	1316957.4	561931.4	7468655.1	2270961.3	6.11	234.40	30.40
2006	1739636.9	595821.6	2524297.9	746663.1	5.69	292.00	44.60
2007	2693554.3	634251.1	4813488.8	1127867.8	6.06	424.70	23.40
2008	4118172.8	674889.0	7725818.9	7909783.8	6.02	610.20	10.90

Source- Central Bank of Nigeria Statistical Bulletin, 2008 and Author's computation

*SR- DPS/GDP

**CPR- CPS/TBC