Banks as enablers of economic growth: What does empirical evidence show in Africa three biggest economies?[1]

BY

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Abstract

The tale of banking development in Africa's three biggest economies- Egypt, Nigeria and South Africa, raises profound questions on the role of banks in greasing the wheels of economic growth on the continent. Despite collectively controlling more than 70% of banking assets on the continent, they have experienced varied levels of economic growth. Against this backdrop, this paper investigates whether the performance of the economy of these countries is empirically linked to the size and development of their banking sectors. The study uses the Johansen cointegration and vector error correction modelling techniques and measures of banking sector development over the period 1970 to 2017 for the empirical analysis. After carefully controlling for the role of other growth determinants, our results show that in Egypt, although the relationship between banking sector development and economic growth is positive, it is not robust. In Nigeria, evidence shows that neither credit to the private sector nor bank deposits positively influence economic growth. Lastly, evidence obtained in respect of South Africa shows that bank deposits appears to stimulate economic growth more than credit to the private sector. Thus, the paper concludes that the banking sector in Africa is playing a role far below its capabilities in facilitating economic growth. Consequently, the paper offers country-specific policy proposals to ensure that banks effectively grease the wheels of economic growth in the respective countries.

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1.   Introduction

Although it is well postulated in theoretical literature (Pagano, 1993), and tested in empirical literature (Levine, 2004), that banking development promotes economic growth, the tale of banking development in Africa's three biggest economies raises profound questions on the role of banks in greasing the wheels of economic growth on the continent. These countries account for the biggest share of banking assets in Africa. They collectively control 73% of banking assets on the continent (KPMG Africa Limited, 2013). Naturally, this raises a question whether the size and performance of the economies of these countries is empirically linked to the size and development of their banking sectors.

In South Africa, the National Treasury (2017) laments that although financial inclusion and access increased from 55% in 2005 to 85% in 2016, it has not been accompanied by an improvement in the quality of life for the poor. Neither has this translated into viable sources of finance or economic opportunities for SMEs. In Nigeria, despite the nobble objectives of banking sector reforms including universal banking, the weak financial regulatory framework resulted in instabilities in the financial sector as banks pursued arbitrage and rent-seeking activities (Sanusi, 2012). The situation was worsened by the subsequent bank consolidation which created a fertile environment for bank crises as non-performing loans significantly rose to more than 37% in 2009 (Central Bank of Nigeria, 2016). On the contrary, financial sector reforms in Egypt between 2000 and 2010 seem to have led to improved regulation of the sector. Previous studies, suggest that better regulation led to improved efficiency of banks, and thus their contribution to economic growth in Egypt (Elsayed, 2015).

In addition to the scenarios projected above, all the three countries have experienced varying levels of economic growth, and at times flirting with recession over the past decade. Therefore, the question that follows naturally is whether the trend and level of bank development influenced economic growth in each of the respective countries.

Furthermore, while previous studies (Rousseau & Wachtel, 2011; Demetriades & Rousseau, 2015; Sahay, et al., 2015; International Monetary Fund, 2016a; International Monetary Fund, 2016b) still do not agree on the nature and significance of the relationship between bank development and economic growth in Africa, Levine & Renelt (1992) and Sala-I-Martin (1997) observed that the majority of these studies employed structural models whose estimates are 'fragile' as they are susceptible to changes in the set of explanatory variables used.

Therefore the objective of this paper is to employ an econometric procedure that is robust, and produces results that are consistent for both in and out of sample estimation. To achieve this, the paper adopted we adopt a trivariate model following the approach used by Luintel & Khan (1999), Aziakpono (2008) and Arestis, et al. (2010). In this model one of the 22 control variables is added at a time. Economic growth and bank development variables remain constant in the model since they are the variables of interest. This implies that 22 models will be estimated for each of the 3 measures of bank development considered in this paper, namely bank deposits, bank credit to the private sector and bank intermediation ratio. The study uses time series data covering the period 1971 to 2013.

The remainder of the chapter is organised as follows: Section 2 provides the theoretical and empirical link between bank development and economic growth; Section 3 provides an overview of the methodology; Section 4 presents the empirical results; and Section 5 concludes.

2. Bank development and economic growth

This section focuses on two aspects, (i) bank development in Egypt, Nigeria and South Africa, and (ii) previous studies on bank development and economic growth in the three countries.

### 2.1. Overview of bank development in Egypt, Nigeria and South Africa

In this section, we present an overview of the development of banks in Africa and the three countries under study.

Figure 1 show that Nigeria has the least developed banks using both deposits and credit extended to the private sector, compared to Egypt and South Africa. The other observation is that South Africa has the highest level of credit extended to the private sector, while Egypt has the highest level of deposits. Furthermore, we observed that of the three countries, South Africa has the highest intermediation levels, currently more than 100%. This suggests that the banks in South Africa extend more credit than the deposits they mobilise[2]. Egypt has the least intermediation levels, despite having bank deposists and assets comparable to South Africa's. This suggests that banks in Egypt appear to be stricter when it comes to lending.

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[2] This suggests that financial systems in South Africa are more integrated with the global financial systems, and that deposit money banks accordingly do not rely solely on domestic savings for lending, but on international capital inflows as well. It also captures the level of credit extended to the private sector based on deposits mobilised.

Figure 1: Indicators of bank development in Egypt, Nigeria and South Africa: 1971-2013
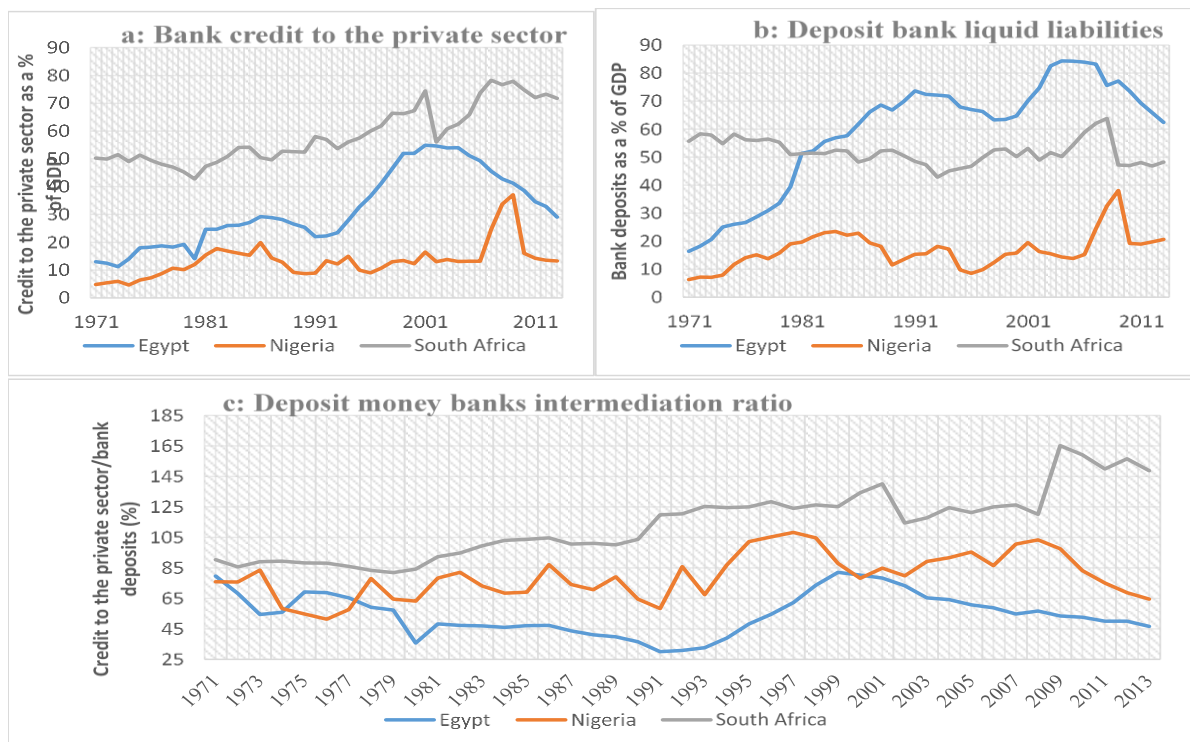
Source: World Development Indicators (2015) and the International Financial Statistics

The following paragraphs present some of the historical context which might have contributed to such trends.

Egypt

In the 1990s, a time that coincided with the Economic Structural Adjustment Programme (ESAP), Egypt adopted a more liberal regulatory regime for its banking sector. Credit controls and portfolio restrictions were eliminated. At the same time, the regulatory authorities adopted the Basel Accord in order to improve the stability of the banking sector (Elsayed, 2015). This period concided with a decline in interest rate spread and participation of government in credit markets. At the same time, credit to the private sector started to increase.

Between 2000 and 2010, Egypt witnessed another set of financial sector reforms, which led to improved regulation of the sector. Better regulation led to improved efficiency of banks. It is interesting to note that a study on the impact of changes in regulation between 2004 and 2010 found that regulatory reforms led to improved efficiency of the banking sector, wherein public banks performed better than private banks (Elsayed, 2015). Ultimately, the regulatory reforms

helped insulate Egypt's banking sector from the ruinous asset bubbles that rattled global financial markets.

Nigeria

Figure 2 below shows the relationship between the number of banks, number of branches and the occurance of banking crises in Nigeria. The occurence of a crisis is shown by 50, while the absence is shown by a zero.

Figure 2: The number of commercial banks, the number of branches and the occurrence of banking crises in Nigeria
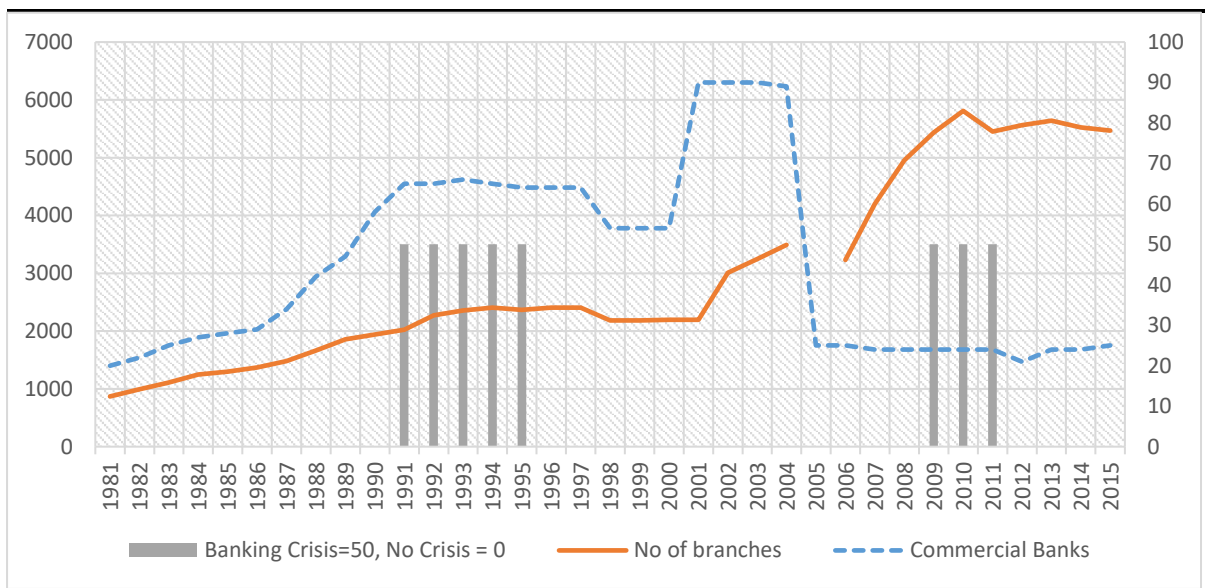
*Source: WDI (2016) and GDF Database (2013)*

The significant increase in capital requirements from N2 billion to N25 billion in 2004 led to a wave of bank consolidation through mergers and acquisitions. According to Sanusi (2010), the consolidation of banks increased the amount of capital available to them, thus aiding the speed of credit creation. In addition, poor fiscal management policies allowed excess liquidity arising from the oil sector into the banking system. This resulted in bank deposits and credit mirroring the oil price and its volatility. Specifically, between 2004 and 2009, bank deposits and credit grew at an average of 76% per annum (Sanusi, 2010). The other factors affecting the ability of Nigerian banks to effectively intermediate funds are poor corporate governance and weak regulation in the sector. Commenting on the capability of the Central Bank of Nigeria before the 2008 banking crisis, Sanusi explained that, "critical gaps in the regulatory framework and regulations, uneven supervision and enforcement, unstructured governance & management processes at the CBN" were a major concern (Sanusi, 2012).

South Africa

South africa has one of the biggest financial systems on the continent. The introduction of the Financial Services Charter led to an increase in financial inclusion from 55% in 2005 to 85% in 2016 (National Treasury, 2017). However, such access to financial services did not translate into an improvement of the quality of life of low income households or viable sources of funding for small business. The National Treasury laments that the reason for such a disconnection is that most of the financial products are inappropriate, and there is rampant customer abuse by financial institutions. In addition, most households are so over-indebted that they withdraw all their salary on pay day (National Treasury, 2017).

Figure 3 below shows that the savings to disposable income (STDI) ratio has declined significantly over the long term, from more than 10% in the 1970s to -0.5% in 2016. A negative STDI implies that households' disposable income is now less than their expenditure basket, and thus they have to rely on borrowing in order to survive. Conversely, over the same time, the debt service cost to disposable income (DSTI) ratio doubled from around 4% to more than 9%. An increase in the DSTI ratio reflects the increasing debt burden on households. While this may be explained by increasing interest rates, in this case it is also probably attributable to excessive exposure to debt by households.

Figure 3: Savings to disposable income and the debt service cost to disposable income ratios expressed as a percentage: 1965-2014
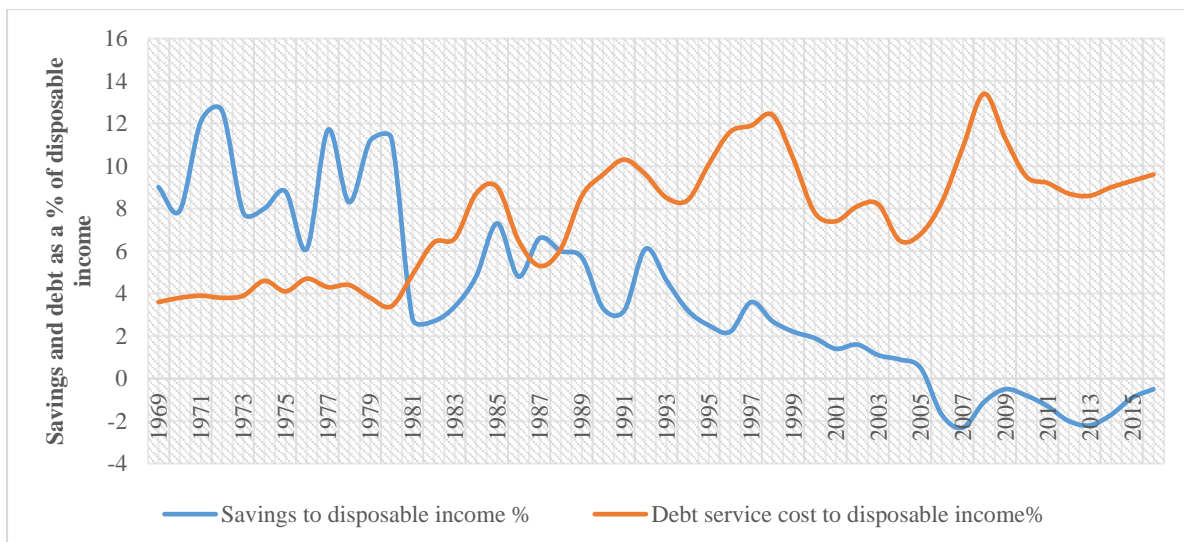
Source: SARB, 2017

The natural question that follows is whether the trend and level of bank development also influenced economic growth in each of the respective countries.

2.2. Selected studies investigating the relationship between bank development and economic growth in Egypt, Nigeria and South Africa

In the following paragraphs, we provide a review of studies that previously attempted to investigate the influence of banks on economic growth in more detail; starting with Egypt, Nigeria and South Africa.

Table 1: Review of previous studies in bank development and economic growth

Country	Authors	Methodology	Indicators of financial development	Findings
Egypt	(Abu-Bader & Abu-Qarn, 2005)	VECM - structural model	• Credit to the private sector • M2 (less currency in circulation)	• Credit to the private sector and M2 (less currency in circulation) promotes economic growth. • There was no positive relationship between M2 and economic growth.
	(Abosedra, et al., 2016)	VECM - structural model	• credit to the private sector	• Credit to the private sector promotes economic growth.
	(Kamal, 2013)	VECM - structural model	• credit to the private sector	• Credit to the private sector promotes economic growth.
	(AbdelazizTouny, 2014).	Johansen cointegration - structural model	• credit to the private sector	• Long-run relationship between credit to the private sector and economic growth is negative
Nigeria	(Adamu, et al., 2015)	ARDL - structural model	• credit to the private sector	• When using contemporaneous levels financial development is negatively associated with long-run economic growth. • The relationship changes to positive when the lag of financial development is used. • Direction of causality was not tested
	(Gabriel, et al., 2016)	Pairwise Granger causality	• credit to the private sector • M2	• Economic growth positively influence credit to the private sector. • M2 is negatively associated with economic growth.
	(Hassan, et al., 2016)	Johansen cointegration - structural model	• credit to the private sector • M2	• M2 positively influences economic growth • Credit to the private sector exerts a negative influence on economic growth.
South Africa	(Ndako, 2010)	Johansen cointegration - structural model	• credit to the private sector	• The relationship between bank development and economic growth is positive and bi-directional.
	(Chibvongodze, et al., 2014)	ARDL - structural model	• credit to the private sector	• The relationship is positive and bi-directional
	(Nyasha & Odhiambo, 2015)	ARDL - structural model	• An index combining of M2, M3, and credit to the private sector	• Bank development promotes economic growth

Source: Compiled by author

From analysis conatined in the table above, we observe that, despite the differences in methodologies, all the studies (except one) adopt a structural model to estimate the relationship. This suggests that one of the major source of the difference between the studies is the composition of the conditioning set of variables. As indicated above, this is a major weakness of structural models which lie in the selection of control variables, and that varies from study to study. A change in the control variables will significantly change the direction, size and significance of the coefficients of the variables of interest, making the results fragile. The analysis demonstrates the need for a methodology that overcomes problems associated with selecting the set of control variables to include in the model. In this regard, this paper adopts a trivariate model which adds one of the 22 control variables is added at a time in order to test the consistency and robustness of the relationship between financial development and economic growth.

In addition, we observe that bank intermediation ratios and bank deposits are often not included in the studies. Exclusion of such indicators may have the effect of over or underestimating the influence of bank development on economic growth. The most used indicator of bank development is credit to the private sector and M2. The weakness of using M2 as an indicator of bank development is that it is not a good indicator of bank intermediation, especially in cases where the component of currency in circulation is significant.

3.   Methodology

2.1.   Model Specification

The study adopted the traditional approach to investigate the finance-growth nexus by regressing economic growth (Y) on bank development (BD) together with other control variables, that is, $Y = f(BD, control\ variables)$ (Levine, 2004). Bank development will be proxied by credit to the private sector, deposits of commercial banks (expressed as a percentage of GDP in nominal terms) and the ratio of credit to the private sectors to deposits of commercial banks (the intermediation ratio).

However, instead of developing one structural model for each variable of interest, we adopt a trivariate model following the approach used by Luintel and Khan (1999), Aziakpono (2008), and Arestis, Luintelc and Luintel (2010). In this model one of the 22 control variables is added at a time. Economic growth and financial development variables remain constant in the model since they are the variables of interest. This implies that 22 models will be estimated for each

of the 3 models based on 3 measures of bank development. Our choice in this regard is guided by literature:

- The main advantage of using this approach is that adding one variable at a time helps to address model identification problems, which may result in erroneous causal inferences (Luintel & Khan, 1999; Odhiambo, 2008).
- Secondly, it helps to test the consistency and robustness of the long-run relationship between economic growth and financial development indicators after controlling for the effects of other variables (Loizides & Vamvoukas, 2005; Aziakpono, 2008).
- Thirdly, a trivariate model reduces the risk of muilticolinearilty, which undermines statistical significance of the regression estimates (Levine & Renelt, 1992).

Economic growth is proxied by the log of *per capita* real GDP. Our decision to use the log of *per capita* real GDP is consistent with most time series studies (Arestisa, *et al.*, 2010; Ndako, 2010; Yeh, *et al.*, 2013), while cross-country studies often use the growth rate of *per capita* GDP (Demetriades & Rousseau, 2015; International Monetary Fund, 2016b; Sahay, *et al.*, 2015).

In the following section, we present the data sources used in the study.

2.2. Data and sources

Annual data covering the period 1971-2013 are used in estimating the model, but in some cases data were not available for the entire period for some of the variables. The period of study was chosen solely because of data limitations, a problem characteristic of African countries. GDP data for the three countries were obtained from the World Development Indicators (WDIs) and the United Nations Statistics (UN Stats). Banking sector and stock market development data were obtained from the IMF International Financial Statistics (IFS), the WDIs and the World Federation of Exchanges (WFE). Data on the control variables were obtained from the IFS and the WDIs. Gaps in the data were filled by data obtained from the central banks and stock market markets in Egypt, Nigeria and South Africa. See Table 2 below for the full description of variables and period of coverage.

Table 2: Description of variables

Variable	Definition
Y	Real GDP per capita.
Agric	Agriculture corresponds to ISIC divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production.

CPI	Consumer Price Index (2010 as base year).
DepositR	Deposit interest rate is the rate offered by commercial banks on three-month deposits.
Elec	Electric power consumption measures the production of power plants and combined heat and power plants less transmission, distribution, and transformation losses and own use by heat and power plants.
ElecPecapita	Electric power consumption per capita.
ERav	National Currency per U.S. Dollar, period average.
ERend	National Currency per U.S. Dollar, end of period.
Exports	Exports of goods and services represent the value of all goods and other market services provided to the rest of the world.
GasRent	Natural gas rents are the difference between the value of natural gas production at world prices and total costs of production.
GCF	Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories.
GvtCons	Government consumption – final consumption expenditure includes all current government expenditures for purchases of goods and services (including compensation of employees).
Imports	Imports of goods and services represent the value of all goods and other market services received from the rest of the world.
Industri	It comprises value added in mining, manufacturing, construction, electricity, water, and gas.
LendingR	Lending rate is the rate charged by banks on loans to the private sector.
Mrents	Mineral rents are the difference between the value of production for a stock of minerals at world prices and their total costs of production.
NEREExRate	Nominal Effective Exchange Rate.
NetTaxes	Net taxes on products (net indirect taxes) are the sum of product taxes less subsidies. Product taxes are those taxes payable by producers that relate to the production, sale, purchase or use of the goods and services.
OilRent	Oil rents – the difference between the value of crude oil production at world prices and total costs of production as a percentage of GDP.
OPP	Openness to trade is the total value of exports and imports, expressed as a percentage of GDP.
PDensity	Population density is midyear population divided by land area in square kilometers.
Pop	Number of people in a particular country.
Spread	It is the difference between the deposit and the lending rates.
Tel	Telephone lines are fixed telephone lines that connect a subscriber's terminal equipment to the public switched telephone network and that have a port on a telephone exchange. Integrated services digital network channels and fixed wireless subscribers are included.
Tel100	Telephone lines per every 100 people.
UrbanPop	Population in urban agglomerations of more than one million is the country's population living in metropolitan areas that in 2000 had a population of more than one million people.

Source: Compiled by author

4.   Estimation results

This section presents the nature of the sign and economic significance of the coefficients of the long-run relationship between bank development and economic growth.

4.1. Long-run relationship between bank development and economic growth

The long-run coefficients and the coefficients of the error correction term (ECM) are presented in Tables 3-5, separately for the three indicators of bank development used in this study. The coefficients of the ECM describe the "proportion of disequilibrium from one period that is corrected in the next period" after a shock (Engle & Granger, 1987). Therefore, a low ECM suggests inefficiencies in the banking sector in facilitating economic growth or structural rigidities within the economy to correct past disequilibrium (Rateiwa & Aziakpono, 2017). Thus the focus of policy intervention must be to improve the efficiency of the banking sector and to reduce existing rigidities within the economy.

Table 3: Parameters of the long-run relationship between bank credit and economic growth

		Long-run parameters: Slope Coefficients of PC on Y						
Egypt	CV	Y (Y→FD)	PC(Y←FD)	CV	ECM Term	Ad. R²	S.Cor.	Hetero.
	Imports		0.18[4.11]***	0.41[8.18]***	-0.23[-5.97]	0.76	6.88[0.65]	56.23[0.19]
	OilRents		0.09[2.74]***	0.06[5.92] ***	-0.28[-4.22]	0.67	5.41[0.80]	56.64[0.18]
	NetTaxes		0.18[2.98]***	0.33[5.03] ***	-0.19[-4.62]	0.69	5.20[0.82]	58.40[0.14]
Nigeria	GasRents	1.13[4.26]***		0.43[5.00] ***	-0.46[-3.26]	0,32	16.95[0.06]	60.71[0.10]
	NetTaxes		0.41[3.70]***	-0.31[-3.84] ***	-0.55[-3.11]	0,30	5.39[0.80]	159.03[0.42]
	OilRents	1.98[3.50]***		1.68[3.50] ***	-0.33[-3.15]	0,34	8.22[0.51]	115.63[0.60]
South Africa	Agric		2.21[3.39]***	-3.51[-4.98] ***	-0.03[-2.20]	0.30	8.97[0.44]	73.78[0.78]
	CPI		-0.15[-3.37]***	-0.38[-25.22] ***	-0.44[-3.22]	0.46	10.30[0.33]	46.93[0.52]
	DepositR		0.03[0.36]	-0.38[-6.57] ***	-0.14[-3.81]	0.59	10.31[0.33]	53.93[0.26]
	GvtCons		8.20[3.31]***	-14.34[-4.56] ***	-0.00[-1.91]	0.34	4.83[0.85]	85.11[0.45]
	LendingR		-0.43[-1.45]*	-0.52[-5.38] ***	-0.10[-3.05]	0.61	9.80[0.37]	86.09[0.42]
	NetTaxes		0.03[0.17]	-0.22[-1.29]	-0.90[-4.00]	0.30	11.48[0.24]	120.84[0.46]

Notes: Y (Y→PC) – the coefficient of Y when causality runs from economic growth to FD. PC (Y←PC) – coefficient of FD when causality runs from FD to economic growth. CV – Control variable. ECM – Error Correction Model. Ad.R² – Adjusted R. S.Cor. – Serial Correlation. Hetero. – Heteroscedasticity. Significance: *** -1%; ** - 5%; and * - 10%

Source: Estimation by author

In Egypt, the results presented in Table 3 show that the relationship between credit to the private sector and economic growth is positive and economically significant. Table 3 shows that the relationship between credit to the private sector and economic growth in Nigeria is weak and mixed. Of the 22 models estimated for South Africa, only four show a significant relationship between credit to the private sector and economic growth. Of these four models, two show a negative relationship, while the other two show a positive effect.

Table 4: Parameters of the long-run relationship between bank liquidity and economic growth

				Long-run parameters: Slope Coefficients of LL on Y				
	CV	Y (Y→FD)	LL(Y←FD)	CV	ECM Term	Ad. R²	S.Cor.	Hetero.
Egypt	Agric	0.22[0.32]		0.50[0.47]	-0.07[-2.68]	0.43	3.99[0.91]	105.07[0.06]
	Elec		1.26[3.48]***	-2.21[-3.10]***	-0.10[-3.20]	0.43	9.06[0.43]	102.44[0.08]
	Exports	-0.08[-0.18]		-0.86[-1.56]*	-0.06[-2.88]	0.38	3.37[0.95]	96.11[0.17]
	Industr	0.45[0.79]		-1.82[-1.65] *	-0.06[-2.18]	0.35	12.60[0.18]	99.95[0.11]
	OPP	-0.30[-0.60]		-1.61[-2.13] **	-0.05[-2.86]	0.39	2.06[0.99]	99.39[0.12]
	PDensity	8.54[3.71]***		-17.39[-4.03] ***	-0.06[-3.02]	0.42	11.37[0.25]	94.91[0.20]
	Pop	8.54[3.71]***		-17.39[-4.03] ***	-0.06[-3.02]	0.42	11.37[0.25]	94.91[0.20]
	Spread	-0.08[-0.37]		-0.49[-2.09] **	-0.20[-4.13]	0.58	13.59[0.14]	135.65[0.16]
	UrbanPop		0.07[1.01]	0.89[6.96] ***	-0.25[-3.73]	0.53	5.11[0.82]	120.80[0.46]
Nigeria	Agric	1.70[7.71]***		0.42[0.98]	-0.73[-2.13]	0,31	3.79[0.92]	118.85[0.51]
	CPI	0.29[0.66]***		0.06[1.41]*	-0.30[-4.08]	0,30	10.29[0.33]	40.523[0.77]
	GasRents	1.17[4.36]***		0.26[6.29] ***	-0.34[-3.32]	0,30	8.10[0.52]	42.54[0.70]
	UrbanPop	0.09[0.28]		1.06[3.87] ***	-0.46[-4.23]	0,31	5.70[0.77]	41.28[0.74]
South Africa	Agric	0.21[0.85]		0.11[2.51] **	-0.53[-3.62]	0.30	7.27[0.61]	87.40[0.38]
	DepositR		0.59[2.82]***	-0.36[-6.19] ***	-0.14[-3.82]	0.60	11.89[0.22]	54.13[0.25]
	ER_end	0.26[1.20]		-0.05[-3.45]***	-0.61[-3.26]	0.30	13.72[0.13]	117.54[0.55]
	GvtCons	-0.06[-0.24]		-0.11[-0.86]	-0.50[-3.88]	0.30	9.98[0.35]	104.61[0.06]
	Imports		1.13[2.76]***	0.24[1.36]*	-0.21[-2.83]	0.30	8.38[0.50]	141.84[0.78]
	Industr	1.74[0.44]		6.27[3.47] ***	-0.02[-2.41]	0.30	7.37[0.60]	99.94[0.11]
	LendingR	0.18[0.78]		-0.04[-0.44]	-0.76[-4.14]	0.30	7.77[0.56]	137.40[0.13]
	NetTaxes	-0.05[-0.14]		-0.17[-1.72] *	-0.46[-3.26]	0.30	3.15[0.96]	94.83[0.20]

Notes: Y (Y→FD) – the coefficient of Y when causality runs from economic growth to FD. PC (Y←FD) – coefficient of FD when causality runs from FD to economic growth. CV – Control variable. ECM – Error Correction Model. Ad.R² – Adjusted R. S.Cor. – Serial Correlation. Hetero. – Heteroscedasticity. Significance: *** -1%; ** - 5%; and * - 10%

Source: Estimation by author

Despite Egypt having the highest level of deposits among the three countries used in this study, the results show a weak relationship between deposits and economic growth. A similar result was also observed for Nigeria and South Africa, where the relationship between deposits and economic growth is weak. This implies that deposits are not extended to the private sector for investment in productive sectors, resulting in a weak relationship between deposits and economic growth.

Table 5: Parameters of the long-run relationship between bank intermediation and economic growth

				Long-run parameters: Slope Coefficients of BI on Y				
	CV	Y(Y→FD)	BI(Y←FD)	CV	ECM Term	Ad. R²	S.Cor.	Hetero.
Egypt	DepositR		-0.16[-0.76]	-1.22[-5.18] ***	-0.04[-3.41]	0.33	6.48[0.69]	60.46[0.11]
	Exports		0.73[1.98]**	1.74[4.40] ***	-0.03[-5.10]	0.56	5.21[0.82]	57.45[0.16]
	GasRents		0.44[1.98]**	0.14[4.30] ***	-0.05[-4.67]	0.49	7.74[0.56]	54.46[0.24]

Country	Variable	Y (Y→FD)	PC (Y←FD)	CV	ECM	Ad.R²	S.Cor.	Hetero.
	Tel	2.59[3.11]***		-0.22[-1.36]*	-0.58[-2.97]	0.62	10.71[0.30]	167.38[0.25]
	Tel100	2.41[2.72]***		-0.24[-1.15]	-0.57[-3.18]	0.62	11.19[0.26]	167.25[0.25]
Nigeria	Exports	-0.57[-2.77]***		0.17[1.01]	-0.63[-4.09]	0,30	12.37[0.19]	151.15[0.59]
	LendingR	0.04[-0.22]		0.30[3.49] ***	-0.61[-3.32]	0,38	6.47[0.69]	126.31[0.33]
	Spread	-0.50[-2.83]***		0.04[0.65]	-0.65[-4.04]	0,31	4.76[0.85]	162.13[0.35]
	UrbanPop		0.19[0.70]	-3.88[-6.78] ***	-0.23[-3.54]	0,30	4.90[0.84]	57.28[0.17]
South Africa	DepositR		0.02[0.27]	-0.34[-6.17] ***	-0.15[-3.71]	0.59	9.73[0.37]	50.99[0.36]
	ER_av	-0.96[-2.77]***		-0.46[-3.18] ***	-0.74[-3.60]	0.30	8.88[0.45]	149.73[0.63]
	LendingR		-0.46[-2.70]***	-0.14[-1.08]	-0.08[-1.92]	0.57	2.36[0.98]	152.97[0.55]
	NetTaxes		-2.23[-3.55]***	-1.75[-4.24] ***	-0.07[-2.92]	0.32	10.22[0.33]	76.72[0.70]
	Tel		-0.79[-5.40]***	-0.33[-7.93] ***	-0.30[-2.39]	0.30	11.96[0.22]	104.79[0.84]
	UrbanPop		-1.33[-2.42]***	0.87[2.89] ***	-0.07[-2.81]	0.30	7.98[0.54]	79.074[0.63]

Notes: Y (Y→FD) – the coefficient of Y when causality runs from economic growth to FD. PC (Y←FD) – coefficient of FD when causality runs from FD to economic growth. CV – Control variable. ECM – Error Correction Model. Ad.R² – Adjusted R. S.Cor. – Serial Correlation. Hetero. – Heteroscedasticity. Significance: *** -1%; ** - 5%; and * - 10%

Source: Compiled by author

The results presented in Table 5 show that the relationship between bank intermediation and economic growth in Egypt is positive and significant regardless of the direction of causality. In Nigeria, the relationship between bank development and economic growth remains weak, regardless of the measure used. No model was reported showing the relationship between economic growth and bank development when causality runs from banks to economic growth. Table 5 shows that, in South Africa, the bank intermediation matters for economic growth more than in Egypt and Nigeria. When taken as a measure of efficiency, the results imply that the banking sector in South Africa is inefficient in carrying out its intermediation, which is retarding economic growth.

4.2. Discussion of findings

Our results show that in Egypt there is a stronger relationship between credit to the private sector and economic growth compared to bank deposits. This was also reflected in the intermediation ratio, which showed that credit to the private sector is likely to stimulate economic growth more compared to bank deposits. The positive influence, although small, of banks on economic growth in Egypt is likely to have emanated from successful financial sector reforms in the 1990s. Studies by Gebba and Ahmed (2013) and Elsayed (2015) on the performance of banks before and after privatisation concluded that implementation of bank privatisation in 1994 significantly improved the performance of banks regarding capital adequacy, earnings, liquidity, risk and quality of assets. This implies that improved bank performance enabled them to efficiently intermediate funds to productive sectors of the economy, thus enhancing economic growth.

As shown in Figure 1Figure 1 above, Egypt has the highest level of savings. However, when such savings are compared to credit that is extended to the private sector, Egypt has the lowest intermediation ratio. The low level of lending shows that Egyptian banks are very conservative lenders, despite sitting on large sums of deposits. While the cautiousness of the Egyptian banks might have helped to insulate the banking sector from the financial crisis, it might have adversely affected investment in SMEs and SMMEs and the development of the financial sector, which ultimately affects their ability to promote economic growth (Egyptian Financial Supervisory Authority, 2017). This observation is in line with findings by Beck and Cull (2013), who concluded that banks in Africa have large sums of liquid funds, but are not willing to lend to the private sector. Such unwillingness may be a result of both perceived and actual risks arising from information asymmetry, which is a major problem with most banks in Africa.

Furthermore, our analysis revealed that oil, natural gas, intrastructure, exports and the level of population growth matter for economic growth, which factors may also influence the relationship between bank development and economic growth. Therefore, given that these factors are currently hindering economic growth (as shown by the sign of their coefficients), there is need for policy commitment to improve the governance systems in the extractive industries, infrastructure and the macroeconmic environment in order to encourage lending to the private sector by banks.

In Nigeria, the evidence shows that neither credit to the private sector nor bank deposits positively influences economic growth. Rather, the evidence suggests that it is economic growth that stimulates savings and encourages banks to lend more. Analysis based on the bank intermediation ratio shows that neither bank credit nor deposits are likely to stimulate economic growth. Economic growth is likely to encourage mobilisation of deposits more than lending. This suggests that the relationship between bank development and economic growth in Nigeria is *demand-following*, wherein bank deposits grow only in response to the demand for financial assets by the real economy.

The weak results in respect of Nigeria are not surprising for a number of reasons. Firstly, as shown above, the Nigerian banking system has the lowest level of bank deposits, and also lends the least to the private sector in comparison with Egypt and South Africa. According to a threshold modelling study on the influence of banks' development on economic growth in Nigeria, Adeniyi, *et al.* (2015) explained that banks may only start influencing economic growth once they have reached a certain level of development. These findings suggest that

Nigeria's banking system may not have reached the necessary threshold wherein the banks are capable of stimulating economic growth.

Secondly, the occurrence of banking crises in Nigeria during the periods 1991-1995 and 2009-2011 could have affected the ability of banks to promote economic growth. Banking crises create costs to the economy through fiscal outlays required to bail out distressed banks and output losses (Laeven & Valencia, 2012). During crisis periods, banks tend to reduce lending or to increase the interest rate spreads. Analysis showed that the highest interest rate spread in Nigeria was between the period 1989 and 1993, the period which coincided with the crisis. The two crisis periods were also associated with high levels of fluctuations of the amount of credit extended to the private sector (see Figure 1 above).

Thirdly, the country suffered from weak regulatory systems and poor governance of the financial sector. Sanusi (2012: 2) explained that "*critical gaps in the regulatory framework and regulations, uneven supervision and enforcement, unstructured governance & management processes at the CBN*" were a major concern. Consequently, instead of facilitating intermediation of funds from depositors to borrowers, banks pursued arbitrage and rent-seeking activities such as stock exchange, foreign currency and commodities (Barros & Caporale, 2012; Sanusi, 2010). At the same time, non-performing loans significantly rose to more than 37% in 2009, affecting the sustainability of banks (Central Bank of Nigeria, 2016). Moreover, the adoption of universal banking also created a haven for speculative activities by banks, and made it difficult for the Central Bank of Nigeria to monitor and regulate banking activities. Banks ventured into private equity and venture capital at the expense of core banking functions (Sanusi, 2012).

Lastly, given the fact that one of the sectors consuming the bulk of bank credit to the private sector is the oil industry, which has a limited feedback effect on the economy, the relationship between bank development and economic growth is likely to be weak. This could be a result of the natural resource curse (Sala-i-Martin & Subramanian, 2003). This is supported by a study by Barajas, *et al*. (2016), who found that the effect of bank development on economic growth is weakest in oil-exporting countries. As mentioned above, the natural resource curse occurs when reliance on natural resources fails to promote economic growth, but inhibits it. This was further illustrated by the recent reports that the wellbeing of the biggest Nigerian banks is being threatened by bad loans to the oil industry. As a result, the stock of five of the top ten banks in

Nigeria lost more than 40% in 2016, as their most attractive assets during the oil boom have turned into liabilities on their balance sheets (Fick, 2016).

In South Africa, evidence on the influence of bank credit to the private sector on economic growth is mixed, while that of bank deposits is weak, but positive and significant. A number of findings arise from the results in South Africa, namely, the quality of credit, over-indebtedness and the need to mobilise more deposits. Firstly, analysis has revealed that in South Africa, household credit, which is consumptive in nature, makes up more than 52% of bank credit to the private sector (South African Reserve Bank, 2017). Secondly, as shown in Figure 1 above, South African banks lend far more than the deposits they mobilise. This may suggest that the economy is living beyond its means, given that household debt is currently more than 77% of their disposable income (South African Reserve Bank, 2016). Such a situation may have adverse consequences for the economy if not properly managed. Lastly, analysis using bank intermediation ratios show that bank deposits are likely to stimulate economic growth more than credit to the private sector, given the negative relationship between the bank intermediation ratio and economic growth. These results suggest that what South Africa needs is not extending more credit to the private sector, but mobilising more savings (bank deposits).

Our findings are in line with the recent observations by the National Treasury of South Africa that weaker growth of disposable income and high indebtedness are likely to retard economic growth (National Treasury South Africa, 2016). This implies that instead of households using their funds to buy more goods, which increases aggregate consumption, they use them to finance borrowing. These findings were also supported by the findings of the South African Reserve Bank in its financial stability report, that rising interest rates have put pressure on household finances (South African Reserve Bank, 2016). The report explained that this has resulted in deteriorating debt-servicing capabilities of households, which force financial institutions to increase provision for bad debts.

5.   Summary of findings and conclusion

In this paper, we have not only reinvestigated the long-debated question of the role deposit money banks play in contributing to economic growth, but also investigated which aspect of

bank development is likely to stimulate economic growth more than the other. We summarise our findings below.

Firstly, in Egypt, although the relationship between bank development and economic growth is positive, it is not robust. The weak relationship may arise from the low volume of credit to the private sector, despite the banks' ability to mobilise deposits. While there is need for the authorities to improve the macro environment in order to encourage lending by banks, there is greater need for banks to reinforce their lending department to be able to screen potential borrowers and monitor approved loans. By doing this, banks will also be able to collect more information that is useful for the credit bureaus.

Secondly, in Nigeria, evidence shows that neither credit to the private sector nor bank deposits positively influence economic growth. One of the major reasons is a series of crises which affected the functioning of the sector, underlined by poor corporate governance. In this regard, there is need to inmprove the regulatory capacity of the central bank, both off-site and surveillance. The central bank should reinforce its regulatory capabilities and reach in line with the size (assets and branch network) of banks in Nigeria. There are also pointers for a need to transform the oil sector through value addition, in order to increase positive linkages with other sectors of the economy.

Lastly, evidence obtained in respect of South Africa shows that bank deposits are likely to stimulate economic growth more than credit to the private sector. Two of the main factors affecting the ability of the banking sector in South Africa to effectively intermediate funds is the quality of debt and level of indebtedness. There is need for the central bank to provide guidelines to closely monitor development of household debt in the sector to avoid the risk of instability associated with overindebtedness. Secondly, the recently enacted credit assessment regulations seem not to abate the rise in unsecured and consumptive lending in the country. The authorities must improve credit regulation mechanisms in order to manage credit growth. Such regulation will improve the stability of the sector, and its contribution to the economy.

Thus, despite its proven ability to grease economic growth, the banking sector in Africa is playing a role far below its capabilities in facilitating economic growth. This suggests urgent need by the authorities to erradiate barriers preventing banks from effectively greasing the wheels of economic growth. The regulatory framework, and the level and quality of banking

requires urgent attention, if Africa is to reap benefits associated with banking sector development.

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