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EDITORIAL COMMENT

The Ilorin Journal of Finance is a bi-annual publication of the Department of Finance, Faculty of Management Sciences, University of Ilorin, Ilorin, Nigeria. This edition of the journal consists of one (1) issue; with the articles focusing on several topical issues in finance, banking, business and related areas in economics.

This issue consists of eight (8) articles discussing various topics such as the financial performance of Banks, financial deepening, and domestic investment, insecurity in Nigeria, pecking order and signaling theories, market efficiency and volatility, and financial soundness.

The issue presented in this edition reflect the aim of the journal.

I wish to thank the various contributors and anonymous reviewers whose constructive reviews and criticisms have ensured the success of the journal. The unflinching support and efforts of the editorial members of the journal are also acknowledged.

I wish the readers a happy reading.

Dr. Rihanat I. Abdulkadir
Editor-in-Chief
Ilorin Journal of Finance

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Aim and Scope: The aim of the journal is to publish original and quality research targeted at contributing to the development of theory and practice of finance, and growth of economics across the world. The scope covers areas in banking, finance, economics, accounting, business administration and other related fields in management sciences.

Editorial Policy: The Ilorin Journal of Finance is a Bi-annual publication aimed at contributing towards development of finance and banking research in Nigeria and beyond. The journal accepts original and quality research contributions from finance, banking, economics, accounting, management and other related disciplines. The journal adopts a blind-peer review policy and articles are accepted strictly on the recommendation of reviewers. Final decision on publication is taken by the editorial board.

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NEXUS BETWEEN FINANCIAL DEEPENING AND DOMESTIC INVESTMENT IN SUB-SAHARAN AFRICAN COUNTRIES

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Abstract

Financial institutions play a key role in the mobilization and allocation of savings for productive use. However, the financial institutions of Sub-Saharan African countries are still punctuated with cases of under-performance of these roles. Hence, the study evaluated the impact of financial deepening on domestic investment in Sub-Saharan African countries from 1990 to 2019. The dynamic panel Generalized Method of Moments (GMM) estimator and Dumitrescu and Hurlin panel causality Tests were employed in the study. The findings of the study revealed that the banking sector is a significant determinant of domestic investment in Sub-Saharan African countries with coefficient value of 0.070 and at 1% significant level. The study concluded that financial deepening promotes domestic investment in Sub-Saharan African countries. The study therefore, recommended that banking regulators in Sub-Saharan African should encourage financial institutions to be efficient in their financial intermediation function by ensuring that funds from the surplus sector is efficiently channeled for domestic investment in the region.

Introduction

Deepening of financial institutions play an important role in advancement of any economy by channeling funds from savers to borrowers in an efficient way that facilitates investment in physical capital and spur innovation. It has been acknowledged globally that financial deepening plays a catalytic role in the economic development of nations (Sanusi, 2009). The role of deepening financial institutions in the saving-investment process by both banking institutions and non-banking institutions cannot be overemphasised, where money, whether defined narrowly or broadly, forms a part of a wide spectrum of financial assets in the portfolio of wealth-holders (Goldsmith, 1958). Developed countries (such as Japan, the United States and the United Kingdom) have continued to experience growth in financial deepening over years with high saving rates and developed stock markets. These developed countries have also enjoyed improved regulation of the financial sector and increased accesses to the financial services by majority of their population.

It is therefore necessary to point out that the concept of financial deepening has been a priority on the policy agenda in developed market economies for over a decade. However, in most developing economies (such as Nigeria, Ghana and Cameroon), their financial sector is dominated by small number of commercial banks and the inefficient allocation of financial resources to the deficit sector of the economy (Mohammed, 2008; Akinlo, Yunusa & Adejumo, 2020). Although since the end of the 1980s, Sub-Saharan African (SSA) countries have been interested in fostering financial deepening, for example, by reducing governmental involvement in financial sectors or by privatizing banks. These policies are expected to promote growth through mobilization of savings or a rise in domestic and foreign investments (Reinhart & Tokatlidis, 2003).

However, despite the various reforms in the financial sectors in Africa, the sector still has not addressed the financial lacunas in the system. According to Gulde, Pattillo and Christensen (2006), financial deepening is still low, and by some measures has even declined. The SSA countries average private sector credit to GDP

increased from 38.82% in 1984 to 59.42% in 1999 but declined to 55.18% (2000-2004) and declined further to 46.97% (2010-2014). Unfortunately, the decline has continued unabated till recent years (World Bank, 2017). Furthermore, few large banks in Sub-Saharan Africa are controlling the greater segment of the market in terms of total assets, total liabilities and total credit in the system (Torruam, Chiawa & Abur, 2013). Sub-Saharan Africa is the region that recorded the highest level of stagnation of domestic investment and underdeveloped financial system in the world. Domestic investment in Sub-Saharan Africa has been fluctuating over the last decade. By 2000, domestic investment to GDP was 17.443; in 2010, domestic investment to GDP had risen to 20.313 (World Bank, 2011). However, by 2015, domestic investment to GDP fell to 19.684. In 2016, domestic investment to GDP fell further to 19.449. This unpleasant scenario has continued over time such that in 2019 it fell to 4.3% (World Bank, 2020).

Therefore, the domestic investments in Sub-Saharan Africa have remained stagnated. Also, financial sector in the region had remained largely oligopolistic and uncompetitive. Insurance sector in Sub-Saharan African countries has been underdeveloped and penetration of insurance is less than 1% of the GDP. There has been minimal growth in written premium over the last decade in real terms and more than 90% of premium written is for commercial risk (IMF, 2013).

Based on the foregoing, the study examined the effect of banking related financial deepening variables on domestic investment in Sub-Saharan African countries as well as evaluated the effect of capital market related financial deepening variables on domestic investment in Sub-Saharan African countries. In addition, the study examined the impact of insurance companies' related financial deepening variables on domestic investment in Sub-Saharan African countries and investigated the direction of causality between financial deepening and domestic investment in Sub-Saharan African countries. The next section is literature review. Section three presents the methodology which is followed by data presentation and discussions of

findings. The last section covers the conclusions and recommendations of the study.

LITERATURE REVIEW

Concept of Financial Deepening

Financial deepening involves the transformation of mobilised deposits by financial institutions into assets, loans or overdrafts. It is simply the process whereby financial institutions collect financial resources from depositors and give out same as loans and advances to borrowers for economic development activities (Andrew & Osuji, 2013). According to Nwaogwugwu (2016), financial deepening can be defined as provision of financial services with a wider choice of services geared towards the development of all levels of society.

Financial deepening means improved performance of financial system of any economy. It incorporates advancements in diversification opportunities, access to financial services, quality information and attractive incentives for sound lending and monitoring (Ewetan & Ike, 2014). By and large, financial deepening measures the simplicity with which the monetary framework provides funding for entrepreneurial activities as well as the extent to which financial services are made available (Gwama, 2014).

In numerous International Monetary Fund conversation notes (IMF 2011), financial deepening happens when "sectors and agents use a range of financial services for savings and investment purposes; financial intermediaries and markets deploy larger volumes of capital and handle larger turnover while financial sectors create assets for risk-sharing purposes". This definition covers the entire cycle of financial deepening as it considers all methods of financing, while cash supply is given through various financial institutions (bank and non-bank establishments) using different financial instruments (money market, capital market, debt market).

Concept of Domestic Investment

Domestic investment is the total quantum of capital acquisition made in any economy at any point in time, which in most

occasions come from aggregated domestic savings (Adetiloye, 2012). Domestic investment is a tool of unrestricted viable monetary framework which serves as a significant factor that influences economic growth of most economies of the world.

As indicated by Akinsulire (2011), investment in any form is considered reversible and irreversible. Independent investment is service-based which often times is neither influenced by demand nor directly influenced by returns of factors of production, while induced or dependent investment is often profit motivated. Autonomous investment is in the purview of the public sector and therefore more propelled by the government due to the quantum of required resources. It leads to capital formation, improves the productive activities of the economy, and is the most stressed and significant (Arabi & Abdalla, 2013). Domestic investment increases the total capital stock in any economy. This is done by acquiring capital-producing assets that can generate income within the domestic economy rather than abroad.

Theoretical Review

This study is hinged on supply leading hypothesis. This theory was advanced by Schumpeter (1911) and later upheld by the works of McKinnon (1973), Shaw (1973), Gupta (1984), among others. The conventional perspective of the supply-leading hypothesis expects that financial development leads to economic growth. In a world with frictionless transaction, information and monitoring costs as well as no financial intermediaries are needed. If transaction, information and monitoring costs are sufficiently high, no exchange among financial specialists will occur.

The desire to reduce those monitoring costs and enable exchanges led to the development of financial institutions and markets that make up the financial sector. The hypothesis sets that a sound and developed financial sector offers critical services to reduce transaction, information and monitoring costs and improve the efficiency of intermediation. It mobilises investments, identifies and finances great business projects, monitors the performance of managers, facilitates trading and

the diversification of risks, and fosters exchange of goods and services.

These financial sector services lead to efficient allocation of resources; lead to a more rapid accumulation of physical and human capital; and in-turn lead to quicker technological innovation. This eventually results into faster and long-term economic growth (Schumpeter, 1911). This hypothesis is related to this study since it provides one of the possible explanations of how development in the financial sector affects economic growth.

Empirical Review

Several studies had been conducted on financial deepening on economic growth with divergent results. Onwumere, Ibe, Ozoh and Mounanu (2012) examined the impact of financial deepening on economic growth in Nigeria for the period of 1992-2008. Adopting the supply-leading hypothesis, the study revealed that broad money velocity and market liquidity promote economic growth in Nigeria while money stock diversification, economic volatility and market capitalization did not promote economic growth in Nigeria.

Mehrara and Ghamati (2014), Sharmiladevi (2015) and Ho, Huang, Shi and Wu (2017) found out that there was a positive effect of financial deepening on economic growth in the sampled countries, but that the extent of economic growth depend on the level of each country's financial sector development and economic condition. Contrary to the reported findings, Nyamongo, Misati, Kipyegon and Ndirangu (2012) observed that financial development is found to be weak in boosting economic growth for the selected countries. Contrary to the prediction of Schumpeter that finance promotes growth. The empirical results suggested that financial development did not promote economic growth in either the short run or the long run. John and Ibenta (2017) also reported that the ratio of money supply to Gross Domestic Product (M2/GDP) had a positive but in significant relationship with entrepreneurial growth; the ratio of credit to private sector to GDP (CPS/GDP) had a positive (not significant) relationship with entrepreneurial growth.

Previous literature on effects of financial deepening was often focused on economic growth as opposed to domestic investment. The empirical evidence on effects of financial deepening on domestic investment is mixed. Ndikumana (2000) and Asante (2000) argued that there existed a positive relationship between domestic investment (total investment and private investment) and various indicators of financial development.

Okpara (2010) and Obafemi, Oburota and Amoke (2016) reported that the stock variables had a positive and significant impact on investment, while the credit market variable had a negative and significant impact on domestic investment. It was, therefore, concluded that financial deepening influences domestic investment in Nigeria. Sineviciene and Deltuvaite (2014) used hierarchical cluster analyses, descriptive statistics and correlation analysis. The analysis showed that countries with higher GDPs per capita have more developed financial systems, whereas countries with lower developed financial systems had higher private investment growth rates and private investment GDP ratios. Furthermore, the study found that private investment was more volatile in countries with less developed banking sectors and financial markets.

Research Gap

Having reviewed several studies, it was discovered that the independent variables used are banking based financial deepening measures and capital-market-based financial deepening measures while neglecting the possible impact of insurance companies on domestic investment. Hence, this study adopted the banking-based variables of previous researchers and also included the neglected independent variables. The previous studies also neglected interest rates which influences the deepening of financial services.

Furthermore, the previous studies ignored the direction of causal relationship between financial deepening and domestic investment in Sub-Sahara African. Hence, all these constitute the research gaps which this current study duly considered. Finally, the previous study made use of ordinary least square

(OLS) method, fully modified OLS (FMOLS) and autoregressive distributed lags model (ARDL) to estimate the multiple regression model. However, this study is based on a Generalized Method of Moments (GMM) unbalanced panel data of 42 Sub-Saharan countries over a period of 1990 to 2019.

Methodology

This study examined financial deepening and domestic investment in Sub-Saharan Africa. The secondary data was used in this study and were sourced from World Bank Indicators and International Monetary Fund over a period of thirty (30) years from 1990 to 2019. To analyse the obtained data, the study employed GMM panel data and Dumitrescu and Hurlin Panel Causality Tests. Generalized Method of Moment (GMM) technique was considered appropriate for this study because it is capable of controlling for unobserved individual heterogeneity, endogeneity problem, Nickell bias, simultaneity bias/reverse causality, measurement error, omitted variable bias, and heteroskedasticity. However, Dumitrescu and Hurlin Panel Causality Tests were adopted because it accounts for latent confounding effects and does not capture instantaneous and non-linear causal relationships.

Model Specification

Following the in-depth review of literature, particularly the supply leading hypothesis where developed financial sector offers critical services to reduce transaction, information and monitoring costs and improve domestic investment, it is obvious that derivation of a domestic investment model for Sub-Saharan African countries is possible. Therefore, the model specification for this study was specified as:

$$DOI = f(BMV, CPS, MCGDP, ISS, INTR, EXRA) \dots \dots \dots (3.1)$$

Econometrically, it can be written thus:

$$\Delta \ln DOI_{it} = \beta_0 + \beta_1 \Delta \ln DOI_{it-1} + \beta_2 \Delta BMV_{it} + \beta_3 \Delta CPS_{it} + \beta_4 \Delta MCGDP_{it} + \beta_5 \Delta ISS_{it} + \beta_6 \Delta INTR_{it} + \beta_7 \Delta EXRA_{it} + \mu_i + \varepsilon_{it} \dots \dots \dots (3.2)$$

Where:

DOI= Domestic Investment

BMV = Broad Money to Velocity (Proxy with the ratio of M2 to nominal GDP)

CPS = Credit to private sector to GDP

MCGDP = Market Capitalization (Proxy with the ratio of listed shares to GDP)

ISS= Insurance Services (Proxy with the ratio of insurance services transacted to GDP)

INTR= Interest Rate

EXRA= Exchange Rate

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ and β_7 are the coefficients to be estimated

μ = The unobserved country-specific effect

ε = error term

The subscripts i and t indicate country and time period, respectively

the model. The Dumitrescu and Hurlin Panel Causality Tests for financial deepening granger cause DOI were specified as:

$$DOI_t = \alpha + \sum_{i=1}^n \beta_i FD_{t-i} + \sum_{i=0}^{b_1} \theta_i \ln DOI_{t-i} + \Omega t \dots \dots \dots (3.3)$$

So also, the Dumitrescu and Hurlin Panel Causality Tests for DOI granger cause FD were specified as

$$FD_t = \alpha + \sum_{i=1}^n \beta_i DOI_{t-i} + \sum_{i=0}^{b_1} \theta_i \ln FD_{t-i} + \Omega t \dots \dots \dots (3.4)$$

Following the model specified above, the granger causality method was adopted to capture the hypothesis.

Model Specification Two

The Dumitrescu and Hurlin Panel Causality Tests were used to test for the direction of causality between domestic investment and component of financial deepening specified in

Data Presentation and Analysis

Table 1: Impact of Financial Deepening on Domestic Investment for Sub-Sahara Africa Countries

Dependent variable: Domestic investment	
Independent variables	Coefficients (standard errors)
Lagged domestic investment	0.070*** (0.026)
Credit to private sector to GDP	0.069** (0.016)
Market Capitalization (the ratio of listed shares to GDP)	22.2 (17.5)
Insurance Services (ratio of insurance services transacted to GDP)	0.47 (0.45)
Broad Money to Velocity (ratio of M2 to nominal GDP)	0.20*** (0.037)
Interest Rate	-0.75*** (0.060)
Exchange Rate	0.00063 (0.00060)
Observations	1,083
Number of countries	42
Diagnostic tests	
Wald chi2 statistic	38.98 (0.000)
Sargan test statistic	369.01 (1.000)
Autocorrelation test (Arellano-Bond test) AR(2)	-75443 (0.4506)

Source: Author's computation. Note: Standard errors in parentheses, ***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Table 1 contains the result of the Dynamic System GMM panel regression estimates of the impact of financial deepening on domestic investment for all the Sub-Sahara African countries considered. The dependent variable was Domestic investment while the independent variables were first Lag of domestic investment, Credit to private sector to GDP, Market Capitalization (Proxy with the ratio of listed shares to GDP), Insurance Services (Proxy with the ratio of insurance services transacted to GDP), Broad Money to Velocity (Proxy with the ratio of M2 to nominal GDP), Interest Rate and Exchange Rate. The result showed that all the variables except interest rate were positively related to Domestic investment. That is, increase in each of the variables except interest rate would bring about increase in domestic investment, while decrease in each of the variables, except interest rate leads to decrease in domestic investment in Sub-Sahara Africa. Nevertheless, increase in interest rate would bring about decrease in domestic investment, while decrease in interest rate leads to increase in domestic investment in Sub-Sahara African countries.

However, the results of regression showed that lagged domestic investment, credit to private sector to GDP, Broad Money to Velocity (ratio of M2 to nominal GDP), Interest Rate were the significant determinant of domestic investment in Sub-Sahara Africa countries. This was indicated by the coefficients of lagged domestic investment, credit to private sector to GDP, Broad Money to Velocity (ratio of M2 to nominal GDP) and interest rate which were 0.070, 0.069, 0.20 and 0.75 with their standard error 0.026, 0.016, 0.037 and 0.060, respectively. Since half of the co-efficient of the variables were greater than standard errors, then the variables were statistically significant.

Some other variables were not statistically significant. It was indicated that a

unit increase in Broad Money to Velocity will lead to 0.20 unit increase in domestic investment. The reverse would be the case when there was a reduction in Broad Money to Velocity. The previous level of domestic investment affects the current level of domestic investment by 0.07 units. Likewise an increase in credit to private sector will lead to 0.069 unit increase in domestic investment. However, an increase in interest rate will lead to 0.75 unit decrease in domestic investment and vice versa. Therefore, the result showed that banking related financial deepening had a significant impact on domestic investment in Sub-Sahara African countries. Conversely, capital market related financial deepening and insurance companies' related financial deepening did not have any significant impact on domestic investment when all the Sub-Sahara African countries were jointly considered over the period 1990-2019.

The diagnostic tests including Wald test, Sargan test of validity of instruments, and Arellano-Bond test for higher order serial correlation (AR(2)) were conducted; the results are displayed in the lower portion of Table 1. The Wald chi2 statistic 38.98 with probability value 0.000 indicates that the model has a good fit. The Sargan test statistic is 369.01 with probability value 1.000. The null hypothesis of the test that was valid and cannot be rejected, this means the instruments were valid. Also, the Arellano-Bond test for zero autocorrelation in first-differenced errors showed that the Z-statistic of the second order (AR 2) is -0.75443 with probability value 0.4506. So, the null hypothesis of the test, No autocorrelation, cannot be rejected. Hence, there was no problem of autocorrelation in the model. Therefore, the diagnostic statistics show that the result was valid for policy inference.

Table 2 Dumitrescu-Hurlin Panel Causality Tests for Sub-Sahara Africa Countries

Null Hypothesis:	W-Stat.	Zbar-Stat.	P-Value
BMV does not homogeneously cause DOI	8.35677	2.66258	0.0078
DOI does not homogeneously cause BMV	6.67048	0.66322	0.5072
CPS does not homogeneously cause DOI	9.06165	3.49833	0.0005
DOI does not homogeneously cause CPS	5.09916	-1.19983	0.2302
DOI does not Granger Cause MCGDP	6.06165	0.21407	0.4566
MCGDP does not Granger Cause DOI	5.09916	0.20641	0.3598
DOI does not Granger Cause ISS	2.06165	1.02633	0.4007
ISS does not Granger Cause DOI	3.0016	0.16341	0.9759

Source: Author's computation

To investigate the direction of causality between financial deepening and domestic investment in Sub-Sahara African countries, Dumitrescu and Hurlin (2012) Granger causality test were used and the result for all the countries considered in the study is presented in Table 2. The table presented the results of the causality relationship of all the variables with domestic investment in Sub-Sahara Africa. The result reveals that there was a unidirectional causality between Broad Money to Velocity and Domestic investment. It indicates that the causality runs from Broad Money to Velocity to Domestic investment.

Discussion of Findings

The results of this study revealed that there was a positive and significant relationship between credit to private sector and domestic investment across countries in Sub-Sahara Africa countries. Therefore the null hypothesis that banking related financial deepening variables have no significant effect on domestic investment in Sub-Sahara African countries should be rejected. The outcome of this study was consistent with the work of (Okpara, 2010 & Obafemi; Chukwuedo, Oburota & Amoke, 2016). Furthermore, the study revealed that Broad Money to Velocity was a significant determinant of domestic investment in Sub-Sahara Africa. The study also revealed that interest rate had a significant impact on domestic investment in Sub-Saharan African. This study is

consistent with supply leading hypothesis which stated that financial sector services lead to efficient allocation of resources; lead to a more rapid accumulation of physical and human capital; and in-turn lead to a quicker technological innovation. Finally, the study revealed that there existed a uni-directional causality between financial deepening and domestic investment in Sub-Saharan African countries.

Conclusions and Recommendations

Based on the empirical findings of the study, the study concluded that: banking-related financial deepening variables impacted on domestic investment in Sub-Saharan Africa; interest rate had a significant relationship with domestic investment in Sub-Saharan Africa; capital market and insurance sector-related financial deepening variables significantly influenced domestic investment in Sub-Sahara Africa countries; and, causality existed between financial deepening and domestic investment in Sub-Saharan Africa. The study, therefore, recommended that banking regulators should encourage banks to be efficient in their financial intermediation function by ensuring that funds from the surplus sector is efficiently channeled for domestic investment in the region. Furthermore, government of Sub-Sahara African countries should strive to improve the performance of their capital market thereby

pursuing competitive market policies. Finally, banking regulatory bodies should ensure that a relative low interest rate finances are provided to private investors in Sub-Saharan African countries so as to enhance domestic investment in the region.

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