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Yakubu, Ibrahim Nandom and Bunyaminu, Alhassan and Abdulrahman, Nuhu Alhassan

Ankara Yildirim Beyazit University, Ankara, Turkey, University of Professional Studies, Accra, Ghana, University of Professional Studies, Accra, Ghana

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Ibrahim Nandom Yakubu[*]
Department of Finance and Banking
Ankara Yildirim Beyazit University, Turkey

Alhassan Bunyaminu
Department of Banking and Finance
University of Professional Studies, Accra, Ghana

Nuhu Alhassan Abdulrahman
Department of Banking and Finance
University of Professional Studies, Accra, Ghana

Abstract: This study investigates the impact of stock market development and foreign private investment on economic growth in Sub-Saharan Africa (SSA) over the period 2000-2017. The study controls for the impact of trade openness and inflation. Using the pooled estimated generalized least squares (EGLS) technique, we establish that there exists a negative relationship between stock market development and economic growth in Sub-Saharan Africa. We note that foreign private investment positively and significantly influences economic growth. The study further reveals that inflation negatively affects growth. We present key implications for policy based on the findings.

Keywords: Stock market development, Foreign private investment, Economic growth, SSA

JEL Classification: E22, F21, F23, O16

1.0 Introduction

In recent decades, considerable efforts have been made to unearth the key factors driving economic growth. In the lens of finance, financial sector development is noted to impact significantly on economic growth. In examining the finance-growth relationship, the

[*] Corresponding author: kassiibrahim@gmail.com

development of the banking sector is widely used as the main proxy for financial development. Nevertheless, financial sector development goes beyond the development of only the banking sector. As few studies have noted, stock market development contributes significantly to building a resilient financial system with an ensuing positive effect on economic growth.

For most developing economies where domestic investment is low for achieving sustainable growth, stock markets play a crucial role in attracting foreign private investment which supplements domestic investments to achieve the desired growth. Foreign private investment comes in the form of foreign direct investment or foreign portfolio investment, and the perceived benefits include transfer of technology, higher productivity, higher incomes, more revenue for government through taxes, employment generation, diversification of the industrial base and expansion, modernization and development of related industries.

Against this background, this study is focused on analyzing the impact of stock market development and foreign private investment on economic growth in Sub-Saharan Africa.

The novelty of this study is that we construct an index of stock market development based on different dimensions which reflect the operations of the stock market. With this, we provide a comprehensive measure of stock market development. This also allows us to overcome the use of a single measurement or inadequate proxies of stock market development as in the case of existing studies (see Usman and Alfa, 2013; Adusei, 2014; Azam et al., 2016; Razmi et al., 2020; Nguyen et al., 2021).

The rest of the article is structured as follows: The next section reviews the literature. Section three discusses the methodology. The fourth section presents the analysis and discussion of findings. Finally, the fifth section provides the conclusion and recommendations.

2.0 Literature Review

Our work is theoretically based on endogenous or modern growth theory. One of the key arguments of the theory is that financial intermediaries and securities markets allow business owners and investors to undertake innovative activities, which affects economic growth. The theory also contends that economic growth occurs within a system as a direct outcome of internal processes. Specifically, the idea states that improving a nation's human capital will lead to increased economic growth through the creation of new technologies and efficient production methods.

Empirically, ample studies have discussed how stock market development and foreign private investment affect economic growth. Nevertheless, the evidence on how these variables influence growth is inconclusive as findings differ across countries and regions. While some evidence a positive impact of these variables on economic growth, others document a negative effect.

For instance, Alajekwu and Achugbu (2012) indicated the relevance of stock market development on economic growth in Nigeria based on time series data from 1994 to 2008. The study employed the simple OLS ordinary least square regression analysis. The outcome of the study revealed that stock market capitalization and value traded have a negative impact on economic growth in Nigeria. Kolapo and Adaramola, (2012) showed that the stock market has a positive impact on economic growth with stock market granger producing economic growth in Nigeria. Antonios (2010) looked at the causal relationship between stock market development and economic growth from 1965 to 2007 in Germany. The study used the vector error correction model (VECM) and the Johansen co-integration analysis based on the classical unit roots tests. The outcome of the granger causality test indicates that there is a unidirectional causality between stock market development and economic growth with direction from stock market development to economic growth. Usman and Alfa (2013) examined the effect of stock market development on economic growth in Nigeria. Using market capitalization as an indicator of stock market development, the results showed a long-run positive effect of stock market development on growth. With a similar proxy of stock market development, Wang and Ajit (2013) found a negative impact of stock market development on economic growth in China. Employing the GSE All-Share Index to indicate stock market development, Adusei (2014) reported a negative relationship between stock market development and economic growth in Ghana. Bilal e al. (2016) used the value traded ratio, market capitalization ratio, and turnover ratio as measures of stock market development and analyzed their influence on economic growth. Their findings indicated that all the variables directly drive economic growth in Lower Middle-Income countries. Azam et al. (2016) found that market capitalization has a long-term positive effect on economic growth in Asian countries. Osaseri and Osamwonyi (2019) reported a positive link between stock market development indicators and economic growth in the BRICS economies. Kapaya (2020) evidenced that in the long-run, market capitalization and turnover ratios as stock market development indicators negatively influence economic growth in Tanzania.

Regarding the impact of foreign private investment, the literature is divided in terms of its measurement and how these measures affect economic growth. In Central and Eastern Europe, Albulescu (2015) assessed the impact of foreign private investment on economic growth. the study employed foreign direct investment and portfolio investment as

measures of foreign private investment. The study found that both indicators of private investment have a positive influence on economic growth. In Asian and European emerging markets, Tsaurai (2017) evidenced that foreign portfolio equity investment positively but insignificantly affects economic growth. Anthony-Orji et al. (2018) found that foreign direct investment as a measure of foreign private investment impacts positively on economic growth in Nigeria. Using a sample of developing countries, Kuzucu (2018) established that while foreign direct investment impacts positively on growth, the impact of portfolio investment on growth is negligible. Adem and Guvercin (2020) noted that foreign direct investment and foreign portfolio investment are complements and they have a positive significant impact on economic growth.

In a nutshell, the literature has demonstrated that the impact of stock market development on economic growth is mixed. This may be attributed to the different variables used as measures of stock market development. To overcome the varying effect of stock market development indicators on economic growth, this study employs an index of stock market development that captures different activities of the stock market. It is also noted from the literature that the effect of foreign private investment on economic growth is scantly studied. Hence, our study adds to the few attempts on foreign private investment-economic growth relationship.

3.0 Methodology

3.1 Sources of Data

The study uses country-level data from 12 Sub-Saharan African countries over the period 2000-2017. Data are gleaned from the Global Financial Development Database of the World Bank. Economic growth serves as the dependent variable. The independent factors include stock market development and foreign private investment. The study also controls for the effect of trade openness and inflation.

3.2 Description of Variables

Economic growth (gdpg): Economic growth in this study is measured by gross domestic product (GDP) per capita growth.

Stock market development (smd): We use three widely employed indicators of stock market development in the study. These include stock market capitalization ratio (SMC), market total value traded ratio (SMV), and stock market turnover ratio (STOV). A composite index of stock market development based on these three indicators is constructed using the principal component analysis (PCA). For the PCA, the index for the *j*th factor is specified as:

$$smd_j = W_{J1}X_1 + W_{J2}X_2 + W_{J3}X_3 + \ldots\ldots + W_{JP}X_P \quad (1)$$

where smd_j is stock market development. The weight of the factor score is represented by W_j. X shows the original figure of the specific components and the number of factors included in the equation is indicated by *P*. In this study, a positive impact of stock market development on economic growth is anticipated.

Foreign Private Investment (fpi): Foreign direct investment and foreign portfolio investment usually constitute foreign portfolio investment. Foreign direct investment is employed in this study as a measure of foreign private investment. Foreign direct investment, as opposed to foreign private investment, has the advantage of transferring sophisticated technology and managerial competencies. Likewise, evidence suggests that foreign direct investment flows are more stable than foreign portfolio investment flows (Lipsey, 1999). We expect a positive effect of foreign private investment on economic growth.

Trade openness (top): Trade openness is defined as the sum of exports and imports of goods and services (expressed as a percentage of GDP. Through economies of scale, as well as increased competition, trade integration provides for more efficient resource allocation which enhances growth. Hence, a direct relationship is expected between trade openness and economic growth.

Inflation (inf): Consumer prices (annual percentage) measure inflation. The impact of inflation on economic growth is inconclusive in the literature. A positive or negative influence of inflation on growth is anticipated.

3.3 Model specification

This study takes a panel approach that involves pooling observations on a cross-section of units over several periods. The panel data model can be generally specified as:

$$Y_{it} = \alpha + \beta' X_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

To examine the effect of stock market development and foreign private investment alongside the other factors on economic growth, the model can be further expanded as:

$$gdpg_{it} = \alpha_0 + \beta_1 smd_{it} + \beta_2 fpi_{it} + \beta_3 top_{it} + \beta_4 inf_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

The study applies the pooled estimated generalized least squares (EGLS) with cross-section. This method has the advantage of accounting for cross-sectional heteroscedasticity when estimating model coefficients. Furthermore, the standard errors

generated by this method are robust to serial correlation. The EGLS is assumed to be more efficient than the ordinary least squares (Verbeek, 2008; Yakubu and Bunyaminu, 2021).

4.0 Empirical Results

4.1 Descriptive Statistics

The summary statistics of all the variables are reported in Table 1. The averages of the stock market development indicators (market capitalization, total value traded, and market turnover) are 43.111, 7.983, and 7.757 respectively. Among these indices, stock market capitalization has the highest standard deviation showing greater volatility. The average value of economic growth is 2.987% ranging from -9.442% to 12.457%. Foreign private investment measured by FDI has a mean of 2.822%. While the average value of trade openness is 73.457%, inflation shows a minimum value of -0.692% and a maximum of 32.905% with a mean of 8.866%.

Table 1: Descriptive Statistics

	gdpg	smc	smv	stov	fpi	top	inf
Mean	2.687	43.111	7.983	7.757	2.822	73.457	8.866
Maximum	12.457	328.080	123.151	50.359	10.154	170.407	32.905
Minimum	-9.442	0.611	0.001	0.014	-2.739	20.723	-0.692
Std. Dev.	2.949	66.098	20.888	9.211	2.345	31.057	5.954
Obs.	155	155	155	155	155	155	155

4.2 Correlation Analysis

Table 2 shows how the independent factors included in the study are correlated. Kennedy (2003) postulated that for variables to show free multicollinearity, the correlation coefficients should not exceed 0.80. It can be seen from the results that there exists a weak correlation among the factors and based on the benchmark of Kennedy (2003), we conclude that there is no multicollinearity problem in the study.

Table 2: Correlation Analysis

	smd	fpi	top	inf
smd	1.000			
fpi	-0.220	1.000		
top	-0.154	0.029	1.000	
inf	-0.201	0.188	-0.124	1.000

4.2 Regression Results

The regression results on the impact of stock market development, foreign private investment, and the control factors are outlined in Table 3 based on the pooled estimated generalized least squares (EGLS). The R^2 value suggests that the independent factors only predict 26.9% of economic growth. The F-statistic and its probability value shows the overall significance of the model.

Table 3. Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
smd	-0.300	0.092	-3.277	0.001***
fpi	0.376	0.068	5.539	0.000***
top	0.004	0.005	0.841	0.402
inf	-0.091	0.026	-3.566	0.001***
c	2.469	0.513	4.811	0.000***
Diagnostics				
R-squared	0.269			
Adjusted R-squared	0.250			
F-statistic	13.813			
Prob(F-statistic)	0.000			
Durbin-Watson stat	1.599			
Wald test, χ^2	516.464			
Prob. (χ^2)	0.000			

Notes: *** denote significance at 1%

From the analysis, stock market development shows a negative significant effect on economic growth. This depicts the underdeveloped nature of stock markets in the region. The negative effect could be due to stock market inefficiency faced by most developing countries emanating from factors such as difficulties involved in trading shares resulting from high transaction costs, delays in share issuance, heavy insider trading, and high levels of information asymmetry. This result is also consistent with the finding of Wang and Ajit (2013), who pointed out that if stock markets are not positively contributing to economic growth, then they are mainly administratively driven markets.

Foreign private investment proxied by foreign direct investment (FDI) has a positive significant effect on economic growth at 1% level of significance implying that FDI inflows stimulate growth in Sub-Saharan Africa. This finding is not surprising given the significant role FDI plays in developing countries. Due to inadequate domestic investments, FDI always serves as an external financing mechanism for most developing

economies. Likewise, FDI provides several benefits in the form of employment, transfer of capital and technology, as well as encourages exports which are vital for economic growth. The result essentially confirms some previous studies (John, 2016; Sunde, 2017; Dinh et al., 2019).

The results suggest a positive effect of trade openness on economic growth. A percentage increase in trade triggers a 0.004% growth in per capita GDP. This finding is in line with prior studies (Das and Paul, 2011; Nowbutsing, 2014; Kim et al., 2016; Keho, 2017). The result however is statistically insignificant.

In line with Fischer (1993), we document a negative significant impact of inflation on economic growth. As inflation magnifies, growth is inhibited. We argue that inflation deters investors from committing their investable funds into the domestic market given the surrounded macroeconomic uncertainties. Also, in periods of high inflation, investable resources are diverted to consumption, contributing to low domestic output.

5.0 Conclusion and Policy Recommendations

This study examines the impact of stock market development and foreign private investment on economic growth in Sub-Saharan Africa for the period 2000-2017. The study also controlled for the impact of trade openness and inflation. Using the pooled estimated generalized least squares (EGLS), we concluded that there exists a negative relationship between stock market development and economic growth in Sub-Saharan Africa. This supports the argument that the stock market development in developing countries generally does not contribute positively to economic growth (Harris, 1997). We also found that foreign private investment positively and significantly influences economic growth and the effect of inflation on growth is negative. Based on the findings, we recommend that policymakers in Sub-Saharan Africa and developing economies, in general, need to improve the functioning of the stock markets to avert the negative effects on growth. For the stock market to positively contribute to economic growth, trading mechanisms in the stock markets need to be enhanced. Transparency, information flow, and regulatory processes must be improved as well. These will encourage active participation in the stock market to foster its growth. Such restructurings will also contribute to attracting capital flows, particularly from foreign investors.

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