



Financial Development, Trade and Stock Market Performance: Evidence from selected West African Countries

Ben Ukaegbu¹, Jimoh Olakunle Saka^{2*}, Kunle Bankole Osinusi³, Dayo B. Olanipekun⁴

¹ Institute of Chartered Accountants of Nigeria.

^{2*} Associate Professor, Department of Economics, Faculty of Social Sciences, Lagos State University , Ojo,Lagos , Nigeria.

³ Department of Economics, Tai Solarin University of education.

⁴ Department of Economics, Ekiti State University, Ado-Ekiti, Nigeria.

*Corresponding Author

Jimoh Olakunle Saka

Associate Professor, Department of Economics, Faculty of Social Sciences, Lagos State University , Ojo,Lagos , Nigeria.

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Abstract: *This paper empirically evaluates the relationship between stock market performance and trade and financial development in selected countries in Africa. Thus, whether such level of development could be fostered through trade and financial development is an interesting issue. Again, the paper observes how the region's endowment level facilitates both stock market and financial developments. The theoretical idea is rooted from the endowment theory in which a region endowed with natural resources is expected to promote its financial development and the estimation technique based on the panel least squares. Stock value traded as a measure of stock market performance is fostered by a more efficient financial development either through financial depth or credit to the private sector as against using the stock market capitalization measure. The natural resource endowment appears to hamper stock market growth and financial development in the region.*

Keywords: Financial Development, Trade, Stock Market, West Africa.

I. Introduction

The performing role of financial system in mobilization of funds from surplus to deficit ends makes it stand out in the economic development process. In this case savings and investment become relevant and remain the main target of macro and development economists over time (Olagunde, et. al., 2006). These sterling roles have initiated various financial sector reforms across the region. By implication, an improved financial sector either through bank-based or market-based or both do not only stimulate mobilization of economic resources but equally enhance growth (Gurley and Shaw 1955) as cited in Qamruzzaman and Wei (2018). Financial development may be explained as a channel that fosters financial intermediaries' services in terms of quantity, quality and efficiency. The capital market raises stock in trade through varying available instrument under the guidance and monitoring of a well regulatory system. While stocks are readily available in the stock market, the market ensures that both borrowers and lenders can be linked through major intermediaries such as banks or insurance companies based on what observes in some studies. This point to the fact that it is not always the case that investors are rational in making investment decisions; other factors tend to influence them in their decisions (Thaler, 2015). While a well developed financial market be it the money or capital market contributes greatly to optimal allocation of financial development process, investment diversification (Wong and Zhou 2011), and efficient allocation of capital, either is dependent on a well-developed financial market through financial innovation system. While stock returns are distributed largely in varieties of way in a less or more developed

capital market system, literature has focused more on what determine the differences in stock returns for a specific market across countries rather than for different markets. The small size of African financial market is a demonstration of the relevance of trade openness as the latter improves the supply of external finance. Similarly, new demand for external source on the demand side tends to be motivated through diversification of risk to external demand shocks and cash flow problem being facilitated by international trade (Svaleryd & Vlachis, 2002). While financial sector development has been on the agenda of policy makers in Africa, it is still characterized by low level of development due to inconsistent policy framework, macroeconomic management and corruption in comparison with other emerging economies. This has deprived the vast population the degree to which they can benefit from financial services. For example, based on statistics, the liquid liabilities as scaled by GDP, was 30% in 2007 for SSA compared to 4% for other developing region. Private credit and financial intermediation took a more disappointing dimension. The average ratio of credit to the private sector scaled by GDP was 17% for SSA wherein average for other developing countries was between 32% and 34%. The stock market has been characterized in a similar version. Even though these indicators have been fairly better over the years following the dynamics of regulatory and economic environments, their performances are still below expectation. Stock market in Africa, West Africa inclusive, faces series of challenges in relation to debt captured by market capitalization and listing. In terms of size, stock markets are small either based on listed companies or market capitalization compared to other regions. For instance, based on available statistics,

between 1980 and 2017, Nigeria's stock market capitalization of listed companies attained 51% only in 2007 and ranged from 13%-35% for other years. The growth here indicated the effect of deregulation and privatization exercises which exposed investors further. However, there was a significant drop in 2015, 2016 and 2017 to about 10.4%, 7.4% and 9.9% respectively in connection with the lingering financial crisis. Ghana's stock market capitalization was lower compared to Nigeria with the highest of about 34.9% recorded in 1993. Number of listed companies appears generally low with Nigeria having some relatively high number of listed companies (215 in both 2005 and 2010). Highest stock valued trade was about 10.4% in 2007 for Nigeria compared to other countries like Ghana with relatively low values. These along side with unstable investment environment have not evolved a good return from the relationship between stock market and the financial sector. Apart from the unstable environment, ignorance and negative communion attitude trigger low level of transactions. The symbiotic relationship between financial development and financial market has well been emphasized. Money and capital market can influence financial development process by diversifying financial services and reducing investment risks. Given the small size of the market within West Africa, the extent of diversification and promotion of investment through financial markets is worth understanding. Moreover, given also the ugly experience of the African business environment in relation to financial system and stock market developments, low confidence and general drop in trade indices, it is important to examine the extent of relationship now that some degree of expositions such as openness to trade is in place within the region. Thus, it becomes a strong motivation to evaluate the role of trade in financial-stock market development relation as a source of external financing particularly given the low level of technological advancement in the region. The discussion above makes the following research questions relevant: Does the region financial system history important for current state of financial development? What impact does external financing have on financial development? Is there a causal relationship between financial development and stock market performance? Subsequently, the objectives of the study are to (i) examine role of financial development indicators on stock market performance (ii) evaluate the role external financing plays in stock market development in the region and (iii) To test the resource cause hypothesis on both the stock market performance and financial development indicators.

II. Relevant Literature Review

Sustainable financial development requires the development of efficient stock market to foster economic growth. The financial market especially stock market channels a substantial volume of capital flows into the economy and with this exploits great economic potentials. On a general note, financial development explains the ease with which financial system provides funding for entrepreneur activities and extent of availability of services. According to Huang (2006, p. 2), it is the increase in financial resource allocation efficiency and capital project monitoring via encouragement of competition and the efficient recognition of the financial system. Hence, the financial development denotes an improvement in the quantity, quality and efficiency of the financial system (Abu-Bader & Abu-Quan, 2008). Development of financial market derives financial innovation and changes with technological development. This enhances more efficiency in the financial

institutions and subsequently better products and services (Bilyk 2006; Ajide 2015; Nagayasu 2012). Theory and adequate evidence that link financial development to economic growth, research has since paid attention on the determinants of financial development. It has been observed that capital accumulation emerging from stock market is driven by diversified investment opportunities which call for both large and small investors' demand. Extent of financial market development influences positively financial assets availability in the market together with the investors' preferences on investment diversification. Financial innovation role in stock market development in particular is given recognition across the globe following important services accrued to financial markets such as derivatives for risk management, efficiency of institution and services characterized by minimum costs. Convergence of the financial market has been highly beneficial and has gained large body of literature supports. Accordingly, financial market integration appears to be more efficient compared to the divergent markets on the basis of capital allocation efficiency. Based on the views of Kim et al. (2005), convergence of financial market fosters flow of funds across various borders, reduces capital costs for corporations, and while increasing trade flows, it also eases investors' costs of transactions. In the case of financial stability, it lowers the probability of asymmetric shocks and eases the risk of financial contagion associated with cross –borders due to shock absorbing capacities of economies. Financial openness tends to reduce the costs of capital so that this can be available to borrowers (McKinnon, 1973; Shaw, 1973) as cited in the article "explaining weak financial development in Africa". From theories, trade openness is seen to benefit financial market development together with stock market through the supply and demand sides (Niroomand et al., 2014). It has been noted that in the endowment views, differences in opportunities seem to impact on equality in distribution. Inequality, financial openness, trade openness and remittances are potential determinants of Africa's financial development and stock market. Aside from this, studies have linked development in stock market to macroeconomic factors including economic development, development in the banking sector, rate of inflation, exchange rate, foreign direct investment, openness to trade and stock market liquidity. However, in the literature, such link between these factors and stock market development has generated a huge debate (see Ho & Iyke, 2017).

Empirically, various studies have utilized econometric techniques in the analysis of stock market. Azeez and Obalade (2019) examine the macroeconomic determinants of stock market for Nigeria from 1986-2016 using autoregressive distributed lag approach. The study finds that banking sector development, stock market liquidity, foreign direct investment and partially income are key determinants both in the short and long run. Relationship between trade openness and stock market development is negative as observed in studies such as Kim et al. (2011), and Ho (2017) among others.

III. Theory and the model

The theoretical framework is based on the endowment theory and emphasizes the roles which geography and disease environment play in shaping institutional development (Beck et al. 2003a, p. 139). It is seen that inequality through political channel may impact on financial development; in which case inequality paves way for the manipulation of the financial systems (Perotti & Volpin, 2007). In the views of Claessens and Perotti (2007, p.

749), unequal opportunities in political influence results in varying access to finance and thus varying opportunities. With unequal access to resources, de facto political power is affected (Acemoglu & Robinson, 2005) in which case the elites tend to manipulate financial regulatory process (Rajan & Zingales, 2003) on the basis of their connections. A more prominent indicator of inequality is limiting access to finance. Based on Chakraborty and Ray (2006, p. 2920), access to credit and the type of finance is dependent on the distribution of wealth based on moral hazard. This is linked to the fact that financial markets are polluted through credit frictions. Therefore level of wealth and initial endowment can influence how individual and firms could assess credit opportunities (Chakraborty & Ray, 2006). The foregoing discussion may be linked with natural resource endowment. Thus, abundant natural resource may likely have negative influence on financial development and stock market development accordingly through the popular resource curse syndrome. In line with this, Sachs and Warner (1995, 2001) find that resource-rich developing economies are seen growing more slowly since the 60s compared to other developing ones. Here we attempt to employ trade indicators rather than the popular oil exports. The basic natural resource specification is

$$\sum_k \frac{X_k - M_k}{Pop_{15-64}} \quad (1)$$

Where X is exports, M is imports and Pop_{15-64} is active population within the 15-64 age bracket. k belongs to petroleum, forest, tropical animal, cereal and raw materials. In the present case, the natural resource impact is explored alongside other variables on stock market and financial development. The baseline models are as follows:

$$Mcap = \alpha_0 + \alpha_1 Findev + \alpha_i \sum_i^n X_i + \varepsilon_1 \quad (2)$$

$$Strad = \beta_0 + \beta_1 Findev + \beta_i \sum_i^n X_i + \varepsilon_2 \quad (3)$$

$$M - Gdp = \lambda_0 + \lambda_1 \sum_i^n X_i + \varepsilon_3 \quad (4)$$

$$Cr - Gdp = \theta_0 + \theta_1 \sum_i^n X_i + \varepsilon_4 \quad (5)$$

Equations (2) and (3) indicate stock market performance measures. Here $Mcap$ and $Strad$ represent stock market capitalization and total value of stock traded. These measure the stock market performance as they respectively indicate the depth and liquidity in the stock market. Data issue precludes the use of other efficient measures. $Findev$ is the financial development variable and is also split into money-Gdp ratio ($M - Gdp$) and credit to the private sector ($Cr - Gdp$). The ($M - Gdp$) is usually taken to measure liquidity in the system and referred most often as financial depth. However, it may not effectively measure efficiency of the financial sector in easing asymmetries and the costs of transactions. The ($Cr - Gdp$) indicates the value of credits through the financial intermediaries to the private sector. Based on Levin et al (2000), this measure is an improvement over other known indicators as it excludes government, public enterprise and

central bank participations. $\sum_i^n X_i$ describe other key variables

including inflation (Inf), a measure of macroeconomic stability, gross capital formation ($Gcf - Gdp$) ratio to Gdp, active population variable (Pop), trade-Gdp ratio

($T - Gdp$), a measure of openness to trade and Natural resource ($Nat. Res$) measure. The natural resource measure is to test the validity of the so called resource curse on the stock market and financial development. Due to data issue, analysis is carried out on 7 West African countries including those in the West African Monetary Union (UEMOA). These include Nigeria, Ghana, Guinea-Bissau, Mali, Niger, Senegal and Togo. The reason for this is their role in financial development of the region as banking and financial sectors are mainly concentrated in these countries and serving as avenues for potential investors. Even at that missing observations on specific finance and stock market variables are inevitable. This results in the study period of 1975-2017 for which missing observation still existed.

IV: Empirical analysis and Discussion

Table 1: Descriptive statistics

Var	Mean	Median	Std dev	J-B prob	Obs
Inf	1.25	1.90	2.17	0.00	274
Cr-Gdp	2.45	2.58	0.72	0.00	286
Gcf-Gdp	-3.73	1.76	11.18	0.00	187
M-Gdp	3.03	3.02	0.39	0.81	289
Mcap	2.43	2.31	0.70	0.83	60
Pop	15.44	15.38	1.33	0.11	301
T-Gdp	-1.87	1.55	7.43	0.00	195
Nat.Res	-297.14	-232.57	59.87	0.00	301
Strad	1.15	0.59	3.74	0.00	43

Source: Authors' computation using E-views

We begin with the discussion of the descriptive statistics presented in table 1 above. The number of observations appears different for each variable due to inevitable missing values particularly for cross country analysis as this. The population mean value is highest (15.44) for the period; this is in connection with the alarming regional population growth rate. However, the endowment variable takes the lowest value (-297.14) demonstrating a high level of resource curse, dependency and low degree of integration. Same

trend follows for the median and across same variables. The endowment variable has the highest fluctuation (59.87) demonstrating the inconsistent utilization of natural resources. The financial depth variable is with the lowest spread (0.39); this could be linked to the low liquidity flows in the region. Only the financial depth (0.81), stock market capitalization (0.83) and the population variables (0.11) are normally distributed.

Table 2: Panel Unit Root

Var	Test Method	Test Equation	Prob.	OI	Decision
Inf	Levin, Lin& Chu t*	None	0.00	I(0)	Stationary
Cr-Gdp	Levin, Lin& Chu t*	None	0.00	I(1)	Stationary
Gcf-Gdp	Levin, Lin& Chu t*	None	0.00	I(0)	Stationary
M-Gdp	Levin, Lin& Chu t*	None	0.00	I(1)	Stationary
Mcap	Levin, Lin& Chu t*	None	0.02	I(0)	Stationary
Pop	Levin, Lin& Chu t*	None	0.00	I(2)	Stationary
T-Gdp	Levin, Lin& Chu t*	None	0.00	I(0)	Stationary
Nat.Res	Levin, Lin& Chu t*	None	0.00	I(1)	Stationary
Strad	Levin, Lin& Chu t*	None	0.00	I(0)	Stationary
Lisc	Levin, Lin& Chu t*	None	0.00	I(1)	Stationary

Source: Authors' computation using E-views

Next is the panel unit root test using the Levin, Lin & Chu t* test method due to it is a high power of test. The test equation for each variable is neither based on a constant nor intercept. Inflation rate, gross capital formation, stock market capitalization, degree of

openness and stock value traded variables are stationary in their levels as shown in table 2. However, only the population variable is stationary its second difference. Being one of the important variables, it is still retained.

Table 3: Panel Least Square Estimation: Stock Market Performance Regression

3a: Dep.var: Mcap

3b: Dep. Var: Strad

Var	Coeff.	Prob.	Coeff.	Prob.	Var	Coeff.	Prob.	Coeff.	Prob.
C	6.62	0.05	6.16	0.02	C	30216.76	0.70	-110.52	0.72
Inf	0.14**	0.03	0.06	0.00	Inf	0.32	0.71	-0.07	0.92
M-Gdp	-1.30**	0.01			M-Gdp	9.44**	0.01		
Cr-Gdp			-1.62**	0.00	Cr-Gdp			6.64**	0.00
Gcf-Gdp	0.01	0.35	0.01	0.54	Gcf-Gdp	-0.02	0.53	0.004	0.53
Pop	-0.01	0.92	0.03	0.80	Pop	-334.14	0.33	5.46	0.76
T-Gdp	-0.03**	0.01	-0.03**	0.01	T-Gdp	-0.04	0.30	-0.05*	0.09
Nat.Res	0.001	0.44	-0.0002	0.74	Nat.Res	-0.003	0.21	-0.004	0.49
AR(1)	0.27	0.13	0.30*	0.09	AR(1)	0.999	0.00	0.96	0.00
R ²	0.59		0.66		R ²	0.81		0.85	
DW	1.11		1.28		DW	2.43		2.35	
F-prob.	0.00		0.00		F-prob.	0.01		0.00	

Source: Authors' computation using E-views

Sensitivity analysis is carried out for both stock market performance and financial development regressions (See tables 3 and 4). Table 3a shows a scenario in which the market capitalization is used as a measure of stock market performance (dependent variable). It shown that both financial depth and credit to the private sector. Level of financial development captured by financial depth (-1.30) and credit to the private sector (-1.62) relates negatively with stock market performance and is significant. By implication, the inefficiency of the financial sector in the selected countries appears not play the expected role of spurring stock market growth. Openness to trade (-0.03) does not also appear to favour stock market performance in countries selected. This also relate to the low degree of trade integration in these countries as the level so far attained is not sufficient to improve stock market performance. The endowment variable captured by natural resource demonstrates the resource course syndrome as it has very negligible impact on stock market improvement. Where the credit to private sector is included as explanatory variable, the population positively (0.03) impact on

stock market performance. Hence, population plays a major role to facilitate stock market growth where credit passes from private sector to private sector. Gross capital formation in the two cases shows that investment is key to stock market development.

Using the total value of stock traded as a measure of stock market performance, both the financial depth (9.44) and credit to the private sector (6.62) independently positively and significantly relate to total value of stock traded. This implies that increasing liquidity flows through high level financial depth and credit to private sector can foster stock market growth compared with the stock market capitalization measure. Hence, the financial development responds more to the overall trading activity in relation to the size of the economy and the stock market. The natural resource and the degree of openness do not favour stock market growth. The resource course syndrome and poor trade diversification impeded stock market development. Fluctuations in the rate of inflation for the two scenarios seem to improve the stock market.

Table 4: Panel Least Square Estimation: Financial Development Regression

4a: Dep. Var: M-GDP

4b: Dep. Var: Cr-Gdp

Var	Coeff.	Prob.	Coeff.	Prob.
C	6.22	0.00	5.56	0.00
Inf	-0.003	0.51	-0.05	0.49
Gcf-Gdp	-0.001	0.13	-0.003**	0.00
Pop	-0.18	-0.18	-0.18*	0.05
Nat.Res	-0.000002	0.99	-0.0003	0.10
R ²	0.89		0.92	
DW	2.18		2.14	
F-Prob.	0.00		0.00	

Source: Authors' computation using E-views

In the financial development model, two key measures-financial depth and credit to the private sector are employed. The intention here is to point out the resource cause issue within the financial sector. Generally in both measures and not surprising, the natural resource endowment effect on financial development is negligible and negative (-0.00). This is clearly pointing at the resource cause syndrome that continuously hampers financial development and overall growth and development. Inflation coefficient indicates that financial development can be enhanced in an unstable economic environment. Generally in the models, the explanatory variables have high explanatory power. Autocorrelation is within a controllable range based on the Durbin-Watson value although regulated by the first order autoregressive model.

V. Conclusion

This paper empirically evaluated the relationship between stock market performance and trade and financial development. The general prominent issue is the poor performance of stock market with selected countries in Africa in terms of the depth of operation and overall liquidity. Thus, whether such level of development could be fostered through trade and financial development became interesting. Again, it was also pertinent to observe the how the

region's endowment level could facilitate both stock market and financial developments. The theoretical idea is rooted from the endowment theory and the estimation technique based on the panel least squares. The major hint here is that using stock value trade as a measure of stock market performance could be fostered by a more efficient financial development through either financial depth or credit to the private sector. The natural resource endowment appeared to hamper stock market growth and financial development in the region

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