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Stock market development and economic growth: Evidence from seven sub-Sahara African countries

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ABSTRACT

The paper examines the long run and causal relationship between stock market development and economic growth for seven countries in sub-Saharan Africa. Using the autoregressive distributed lag (ARDL) bounds test, the study finds that the stock market development is cointegrated with economic growth in Egypt and South Africa. Moreover, this test suggests that stock market development has a significant positive long run impact on economic growth. Granger causality test based on vector error correction model (VECM) further shows that stock market development Granger causes economic growth in Egypt and South Africa. However, Granger causality in the context of VAR shows evidence of bidirectional relationship between stock market development and economic growth for Cote D'Ivoire, Kenya, Morocco and Zimbabwe. In Nigeria, there is a weak evidence of growth-led finance using market size as indicator of stock market development. Based on these results, the paper argues that stock markets could help promote growth in Africa. However, to achieve this goal, African stock markets need to be further developed through appropriate regulatory and macroeconomic policies.

1. Introduction

The relationship between financial development and economic growth has been debated quite extensively in the literature, yet the direction of causality relationship remains unresolved. The debate has focused on whether financial development causes economic growth or economic growth causes financial development or whether a two-way relationship exists. While some studies found

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a unidirectional causality running from financial development to economic growth; others reported the obverse. Few other studies found evidence of bidirectional relationship while a handful provided evidence of neutrality of finance and economic growth[1]. However, the general observation from the literature is that most studies on the causal relationship between financial development and economic growth have focused on developed economies. Although few studies, based exclusively on African data, exist on the finance–economic growth puzzle, none has considered the relationship between the stock market of financial development and economic growth. For most of the studies on stock markets in Africa, the emphasis has been on testing for market efficiency, development of the stock markets and the impact of economic variables on stock markets[2]. Moreover, none of the known existing studies have used the autoregressive distributed lags (ARDL) bounds test in examining the causal relationship between stock market development and economic growth[3]. Hence, the objective of this paper is to investigate the cointegration and causality relationships between stock markets development and economic growth using the ARDL bounds test and the Granger causality (GC) test based on vector error correction model (VECM). The paper contributes to empirical literature in many ways. First, it investigates the long run link between stock markets and economic growth focusing exclusively on Africa. This is important considering the characteristics of the African stock markets. They are relatively recent in origin, small by world standards and faced with low price earnings multiplier as well as inadequate regulatory framework. Secondly, the application of the ARDL and the GC test based on VECM is an innovation that helps to obviate the problem associated with the estimation of short time series data.

The structure of the paper is organized as follows. Section 2 provides a brief summary of theoretical and empirical issues on relationships between stock markets and economic growth. Section 3 gives the methodology adopted in the work. Section 4 provides the discussion of the results. The last section contains the concluding remarks.

2. Literature review

2.1. Theoretical issues

The idea that financial development promotes growth was first put forth by Schumpeter as early as 1911 (Schumpeter, 1912). Several other economists have investigated this relationship and hold the view that financial development is a necessary condition for achieving high rate of economic growth (Goldsmith, 1969; Mckinnon, 1973; Shaw, 1973). This is what Patrick calls the 'supply leading' role of financial development. Financial development is seen as contributing to economic growth through various channels: (i) efficient allocation of capital as the proportion of financial saving in total wealth rises, (ii) mobilization of savings by providing attractive instruments and saving vehicles, (iii) provision of vehicles for trading, pooling and diversifying risk, (iv) lowering of cost of gathering and processing information and thereby improve the allocation of resources and (v) increased specialization in production, development of entrepreneurship and adoption of new technology. In short, it is argued that the existence of a well functioning financial sector will assist in the mobilization of limited resources from the surplus units to the deficit units thereby promoting efficient allocation of resources and thus lead other economic sectors in their growth process.

In contrast, is the view called 'demand following' argument. According to this view, financial development is viewed as the handmaiden of economic development, reacting passively to the demand for financial services by a growing economy (Robinson, 1952; Romer, 1990; Stem, 1989). The development in the financial sector is facilitated by growth in the real sector of the economy. The argument is that

[1] The pioneer work on the causal relationship between financial development and economic growth by Gurley and Shaw (1955), Goldsmith (1969), Shaw (1973) and Mckinnon (1973) concluded that the development of the financial markets was significantly connected with the level of per capita income. However, Robinson (1952), Stem (1989) and Romer (1990) found that growth causes finance.

[2] Some of the studies include Bundoo (2000), Osei (2002); Mlambo and Biekpe (2003) and Jefferis and Okeahalam (2000).

[3] Most existing studies have adopted either simple OLS regression (Levine & Zervos, 1993); Instrumental variables procedure (Beck et al., 2000); difference panel estimator (Rousseau & Wachtel, 2000); Generalized method of moment technique (Beck & Levine, 2002). Some have equally used cointegration and error correction approach (Arestis et al., 2001; N'zue, 2006; Rousseau & Sylla, 2005).

high economic growth creates demand for certain financial instruments and arrangements and that financial markets effectively respond to these demands and changes.

The third view called 'feedback' hypothesis suggests a two-way relationship between financial development and economic growth, with the nature of the relationship depending on the stage of economic development. The proponents of the model assert that a country with a well-developed financial system could promote high economic expansion through technological changes, product and services innovation (Schumpeter, 1912). In turn, this economic expansion will create high demand on the financial arrangements and services (Levine, 1997). However, as the financial institutions effectively respond to these demands, then these changes will stimulate a higher economic growth. In short, both financial development and economic growth are positively interdependent and their relationship could lead to feedback causality[4] (Luintel & Khan, 1999).

Specifically, with respect to stock markets, the various ways through which they affect growth have been noted in the literature. One they assist in domestic savings mobilization by enhancing the set of financial instruments available for savers to diversify their portfolios. Secondly, they provide opportunities for share ownership thereby providing individuals with a relatively liquid means of sharing risks. Thirdly, they not only engender efficient allocation of capital to productive investments but also provide investment outlets for both domestic and foreign investments. All the same, there are alternative views about the role stock markets play in economic growth. Some have argued in the literature that stock market development may hurt economic growth. The argument is that due to their liquidity, stock markets may hurt growth as saving rate may be reduced due to externalities in capital accumulation. Moreover, diffuse ownership may negatively affect corporate governance and invariably the performance of listed firms thereby impeding the growth of the stock markets (Bhide, 1993; Shleifer & Vishny, 1986; Stiglitz, 1985, 1994).

In general however, the extent to which stock markets contributes to growth might be affected by such factors as the size, liquidity and efficiency of the market as well as the quality of the environment. The quality of the environment relates to the social and economic conditions of the countries involved. The effect of the stock markets would no doubt be constrained in countries with high political instability and perceived risks.

2.2. Empirical evidence

Several empirical studies have been conducted on the impact of financial development on economic growth. However, only few of these have focused specifically on stock markets. These include Levine and Zervos (1993, 1998), Atje and Jovanovic (1993), Rousseau and Wachtel (2000), Beck and Levine (2002) and Caporale, Howells, and Soliman (2004) among others. The study by Atje and Jovanovic (1993) using cross-sectional regressions concludes that stock markets have long-run impacts on economic growth. Harris (1997) equally shows, within a cross-sectional framework, that stock markets promote growth though this occurs for developed countries. Levine and Zervos (1998) study of 48 countries (1973–1993) concludes that stock market liquidity positively predicts growth, capital accumulation and productivity improvements. In addition, they show that stock market size, volatility and international integration are not robustly linked with growth. Rousseau and Wachtel (2000) and Beck and Levine (2002) using cross country regression framework show that stock market development is strongly correlated with growth rates of real GDP per capita. More importantly, they find that stock market liquidity and banking development both predict the future growth rate of the economy when the two variables both enter the growth regression. Studies by Arestis, Demetriades, and Luintel (2001) using time series data on five industrialized countries indicate that stock markets play a role in growth whilst Caporale et al. (2004) using techniques developed by Toda and Yamamoto (1995) show that well-developed stock markets can foster economic growth in the long run. In addition, they provide support for theories that a well functioning stock market can promote economic growth by fuelling the

[4] However, there is the fourth view that argues that three is no systematic long run relationship between financial development and economic growth. This view is anchored on the argument that economists tend to exaggerate the role of financial factors in economic growth (see Lucas (1988)) among others.

engine of growth through faster capital accumulation, and by improving economic efficiency through better resource allocation.

Essentially, the consensus from few empirical studies on the relationship between stock markets and economic growth seems to be that the latter is positively related to the former. The big question is: will the same result obtain in the case of sub Saharan African countries given the recent origin, relatively small size, and low liquidity level of their stock markets as well as the quality of environment? this is an empirical issue which this study attempts to explore.

3. Methodology

3.1. Data and data sources

The study is carried out for seven African countries for the period 1980–2004. The seven African countries covered in the study are Cote D'I voire, Egypt, Kenya, Morocco, Nigeria, South Africa, and Zimbabwe[5]. The choice of countries was determined primarily with the year of establishment of the stock market and the availability of data. Essentially, those selected for the study were those whose stock markets were established on or before 1980 and have data for the variables introduced in the model estimated.

In the study, we measure economic growth by per capita nominal GDP denoted as *Y*. We measure stock market development by the size and the liquidity level of stock market. The size is measured by the market capitalization ratio, which equals the value of listed shares divided by the GDP (MK). The second indicator used is the value traded ratio, which equals the total value of shares traded on the stock exchange divided by GDP (VT).

It is believed that other variables could have great impact on economic growth. The omission of these variables could bias the direction of causality between stock market development and economic growth. In view of this, we included two control variables discount rate (DR) and openness ratio (OR) to avoid simultaneous bias (Gujarati, 1995) in our regressions[6]. It has been noted in the literature that the intervention of government or monetary authority could affect the relationship between financial development and economic growth. Government through Central Bank can adjust the liquidity level in the equity market and then influence the ability of banking institutions in supplying their funds. Three instruments namely reserve requirements (RR), open market operation (OMO) and discount rate (DR) can be used to control the market liquidity and economic growth. We, however, choose discount rate as monetary authority's tool in adjusting banking and economic activities. When the discount rate is increased, the level of market liquidity is expected to reduce with adverse effect on economic growth. The reverse holds when discount rate is reduced[7]. We incorporate openness variable measured as the ratio of total exports and imports to nominal GDP (OR) to reflect the openness of the economy.

The stock market data were obtained from World Bank data base World Bank Development Indicators Data (CD-ROM 2005) on per capita GDP, export and import, and GDP were obtained from International Financial statistics (IMF). However, data for stock market data for the period 1980–1985 for these countries were obtained from Reuter's services, Emerging Stock Markets Fact books and individual country's financial data base[8].

[5] For detailed information on origin, size, turnover, value-added, number of listed companies, etc. of the stock markets in Africa, one may consult (Adjasi & Biekpe, 2006; Akinlo, 2003) among others.

[6] The incorporation of two control variables equally helps to make our analysis multivariate as against bivariate. This is important because some studies have shown that two variables might not be cointegrated under bivariate analysis but cointegrated when control variables are included (see the work of N'zue, 2006).

[7] The introduction of discount rate obviates the need to incorporate domestic price in the model. Indeed, this rate actually provides the link between the monetary sector and the real sector of the economy. Also with the liberalization of the financial markets in the most African countries since early 1980s discount/interest rates become the appropriate variable as against domestic price level that should be incorporated in the model.

[8] All variables are in logarithm form and none of the variable used was found to be I(2).

3.2. Bounds test (unrestricted error correction model)

The study employs the autoregressive distributed (ARDL) bounds test proposed by Pesaran, Shin, and Smith (2001) to investigate the cointegration relationship between stock market development and economic growth[9]. The error correction version of the ARDL model pertaining to the four variables incorporated in our study is stated below.

$$\Delta \ln Y_t = \lambda_0 + \sum_{i=1}^{n} \lambda_{1i} \ln \Delta Y_{t-i} + \sum_{i=0}^{n} \lambda_{2i} \Delta \ln DR_{t-i} + \sum_{i=0}^{n} \lambda_{3i} \Delta \ln OR_{t-i}$$
$$+ \sum_{i=0}^{n} \lambda_{4i} \Delta \ln FI_{m,t-i} + \lambda_5 Y_{t-1} + \lambda_6 DR_{t-1} + \lambda_7 OR_{t-1} + \lambda_8 FI_{m,t-1} + \varepsilon_t \quad (1)$$

where Δ is the difference operator; $\mathrm{Fl}_{mi}(m = 1, 2)$ is the financial development indicators with Fl_1 and Fl_2 denoting MK and VT, respectively, ε_t is white noise error term.

There are two steps in testing the cointegration relationship between economic growth and the explanatory variables. First, we estimate Eq. (1) by ordinary least squares (OLS) technique. Second, the presence of cointegration is traced by restricting all estimated coefficients of lagged level variables equal to zero. That is, the null hypothesis $\lambda_5 = \lambda_6 = \lambda_7 = \lambda_8 = 0$ against the alternative hypothesis $\lambda_5 \neq \lambda_6 \neq \lambda_7 \neq \lambda_8 \neq 0$. If the computed F-statistic is less than lower bound critical value, then we do not reject the null hypothesis of no integration. However, if the computed F-statistics is greater than upper bound critical value, then we reject the null hypothesis and conclude that there exists steady state equilibrium between the variables under study. However, if the computed value falls within lower and upper bound critical values, then the result is inclusive.

We equally conduct the Granger causality test in the vector error corrective model framework to examine the causality relationship between the stock market development and economic growth. The VECM regresses the changes in the variables (both dependent and independent variables) on lagged deviations and in general can be express as:[10]

$$\Delta Z_t = \Pi Z_{t-1} + \Gamma_1 \Delta Z_{t-1} + \Gamma_2 \Delta Z_{t-2} + \cdots + \Gamma_{p-1} \Delta Z_{t-p+1} + e_t \quad (2)$$

where $\Delta Z_t = [\Delta \Gamma Y, \Delta \mathrm{DR}, \Delta \mathrm{DO}, \Delta \mathrm{Fl}_m]'$

$$\Pi = -\left(1_m - \sum_{i=1}^{p} A_i\right) \text{ and } \Gamma_i = -\left(1 - \sum_{j=1}^{i} A_j\right)$$

For $i = 1, \ldots, p-1.\Gamma$ measures the short run effect of the changes in Z_t. Meanwhile, the (4×4) matrix of Π $(=\alpha\beta')$ contains both speed of adjustment to equilibrium (α) and the long run information (β) such that the term $\beta' Z_{t-k}$ represents the $(n-1)$ cointegrating vector on the multivariate model.

A test statistic is calculated by taking the sum of the squared F-statistics of Γ_i and t statistic of Π. The Granger causality is implemented by calculating the F-statistics (Wald test) based on the null hypothesis that the set of coefficients (Γ_i) on the lagged values of independent are not statistically different from zero. If the null hypothesis is not rejected, then it can be concluded that the independent variables do not cause the dependent variables. On the other hand if Π is significant (that is, different from zero) based on the t-statistics, then both the independent and dependent variables have a stable relationship in the long run.

[9] The choice of this approach is based on its various advantages over the conventional multivariate cointegration procedure. This includes its suitability for small sample size like ours (for details of its advantages and application, one may consult Akinlo (2006), Pesaran and Pesaran (1997), Pesaran et al. (2001), Vita and Abbot (2002), Chang et al. (2005), Narayan and Smyth (2005), Narayan and Narayan (2005), Narayan (2005a,b), Squalli (2007) among others).

[10] For a detailed discussion of this approach, one may consult Engle and Granger (1987), Irandoust and Ericsson (2004) among others.

Table 1
Bound test for cointegration analysis and elasticities of growth function in selected African countries

Country	Financial indicator	Null hypothesis no cointegration computed *F*-statistic	Estimated coefficient of financial indicator	
			Long run	Short run
Cote D'Ivoire	MK	2.37	0.0299	0.313
	VT	0.84	0.2431	0.064
Egypt	MK	11.29***	0.133**	2.784**
	VT	8.81***	0.067**	0.478
Kenya	MK	0.13	0.363	5.709**
	VT	1.61	0.032	6.614***
Morocco	MK	0.09	0.039	0.013
	VT	0.21	0.015	0.021*
Nigeria	MK	1.44	0.0495	0.009
	VT	2.04	0.0055	0.018
South Africa	MK	15.29***	0.57	0.015
	VT	14.60***	0.027	0.012**
Zimbabwe	MK	0.55	0.111	0.030
	VT	0.59	0.102	0.067**

Critical values (%)[a]	Lower bound	Upper bound
10	2.676	4.306
5	3.586	4.614
1	3.272	5.996

The asterisks indicated the level of significance: ***1%, **5%, *10%.

[a] *Source*: Narayan (2005a) p. 187, Appendix: Case II: Unrestricted intercepts and no trend.

4. Empirical results

4.1. Empirical results and discussion

The results of the ADRL bounds tests are shown in Table 1[11]. According to the computed *F*-statistics, we have enough evidence to reject the null hypothesis of no cointegration at 1% significance level for both the market size (MK) and market liquidity level (VT) indicators for only two countries namely Egypt and South Africa. This simply means that the computed *F*-statistic for these models is above the upper critical value. Besides, both financial indicators have a strong and positive significant impact on economic growth in Egypt. However, for the remaining countries considered in the study namely; Cote D'Ivoire, Kenya, Morocco, Nigeria and Zimbabwe there was no enough evidence to reject the null hypothesis of no cointegration between stock market development and economic growth at even 10% significant level. The computed *F*-statistics fall below the lower critical bound even at 10% significant level[12]. The results from the ARDL bounds test for Egypt and South Africa that there is long run relationship between the two indicators of stock market development and economic growth are quite consistent with the findings of Demetriades and Hussein (1996) for 16 developing countries, Rousseau and Wachtel (2000) for 47 countries; and Adjasi and Biekpe (2006) for 14 African countries.

[11] In selecting the lag length (k), we used both the Akaike Information Criterion (AIC) and Schwartz Criterion (SC) and the two agreed on lag length of one (i.e. $k = 1$).

[12] The lack of significant long run relationship between stock market and economic growth in these countries might be attributed to many factors. One, the low level of development of stock markets in many of these countries. For some of these countries, stock market may not be an important factor in complementing other factors of production and may not be used extensively in the production process. Indeed, African stock markets are still considered small by world standards. Together, the 19 markets excluding South Africa accounted for less than 0.5% of the world stock market capitalization as at the end of the year 2001, and less than 5% of the emerging market capitalization. Two, the level of integration of African stock markets into their economies is still weak (see Adjasi & Biekpe, 2006).

Table 2
Granger causality results based on vector error correction model

Country	Financial indicator	Lag	Finance-led growth		Growth-led finance	
			Short run[a]	ECT[b]	Short run[a]	ECT[b]
Egypt	MV	1	5.672**	−0.381** (−2.209)	2.759	−3.028 (−1.056)
	VT	1	5.672**	−0.286* (−1.878)	2.759	−11.299* (−1.897)
South Africa	MV	1	17.68**	−1.191** (−2.809)	2.004	−0.675** (−2.313)
	VT	1	14.81***	−9.148 (−1.181)	2.208	−3.05 (−1.089)

[a] The Wald statistic, which tests the joint significance of the lagged values of the independent variables is reported. The Wald test follows a χ^2 distribution.

[b] The *t*-statistic reported in parenthesis. The asterisks indicate the following levels of significance ***1%, **5%, *10%.

The presence of cointegration in the case of Egypt and South Africa suggests that there exists a long run relationship between these variables. This simply means that causality must exist by definition in at least one direction (Engle & Granger, 1987). Engle and Granger (1987) show that in the presence of cointegration there always exists a corresponding error correction representation which implies that changes in the dependent variables are a function of the level of disequilibrium in the cointegration relationship, captured by the error correction term (ECT), as well as changes in other explanatory variables. Accordingly, Eq. (2) is estimated to examine the possible short and long run causality between these variables. The causality relationship between stock markets and economic development in the case of Egypt and South Africa is summarized in Table 2. The results in Table 2 show that the Wald test statistics are significant for the two indicators of stock market development in South Africa and Egypt (column 3). This means that the null hypotheses that stock market development does not Granger cause economic growth in the short run has been rejected in favour of finance-led growth hypothesis. On the other hand, there is no evidence in line with the growth-led finance hypothesis in the case of South Africa and Egypt. This simply means that there is unidirectional causality running from stock market development to economic growth.

This finding provides support for the results obtained by Surya and Suman (2006) that changes in real GDP is Granger-caused by changes in market capitalization for Nepal. The results show that from the lagged dynamic terms, the short run changes in the financial development indicators are in part responsible for future changes in the growth rate. That is, a faster rate of financial sector (specifically the stock market) evolution promotes a higher growth rate. In addition, each variable has a crucial impact on growth through the adjustment of the error correction terms, which are significant and have a correct sign except in the case of volume of trade for South Africa. The implication of this finding is that measures taken to further enhance the efficiency of the stock market will help to stimulate economic growth. Also, the results suggest that in these countries, low price earnings multiplier, inadequate information about listed companies and inadequate regulatory framework and flow settlement systems so rampant among African markets can jeopardize their social and economic progress.

The ECTs in Table 2 indicate that there exists a mechanism in correcting the dis-equilibrium between financial development variable and economic performance. They have the right sign and are significant even though some at 10%. The significant negative sign of the ECT terms indeed supports cointegration between stock market development and economic growth.

As the results from ADRL show lack of cointegration between financial indicators and economic growth for Core D'Ivoire, Kenya, Morocco, Nigeria and Zimbabwe, we therefore estimate vector autoregressive model (VAR) in the first differences for Eq. (2) and calculate the Wald test to test the short run joint significance of the lagged values of the independent variables. The result obtained is as shown in Table 3[13]. The results in Table 3 show a bidirectional relationship between the two indicators of stock market development and growth in the case of Cote D'Ivoire, Morocco and Zimbabwe[14]. In case

[13] It has been pointed out in the literature that where there is no cointegration, it is better to estimate vector autoregressive model (VAR) as against vector error correction model (VECM).

[14] Compairing our results from causality test with that of N'zue (2006) for Cote D'Ivoire we found that our study show bidirectional relationship for Cote D'Ivoire while N'zue (2006) show unidirectional relationship from stock market development

Table 3
Granger causality results based on vector autoregressive model (VAR)

Country	Financial indicator	Lag	Finance-led growth (short run[a])	Growth-led finance (short run[a])
Cote D'Ivoire	MK	1	5.578**	5.512**
	VT	1	4.806*	5.643**
Kenya	MK	1	5.023**	12.242***
	VT	1	4.004	3.024
Morocco	MK	1	7.304**	0.775
	VT	1	6.905**	6.744**
Nigeria	MK	1	2.550	11.673***
	VT	1	2.313	2.946
Zimbabwe	MK	1	19.234***	6.032**
	VT	1	7.394**	6.616**

The asterisks indicate the following levels of significance ***1%, **5%, *10%.

[a] The Wald test, which test the joint significance of the lagged values of the independent variables is reported. The Wald test follows a χ^2 distribution.

of Kenya, bidirectional relationship is evidenced in the case of market size (MK). In the case of Nigeria, the null hypothesis that the financial development indicators do not Granger cause economic growth in the short run can be rejected. The result in Table 3 using market size alone suggests that economic growth Granger causes financial development in the short run.

The bidirectional causality found Cote D'voire, Morocco, Zimbabwe and Kenya shows that economic growth demands greater stock market development and greater stock market activity induces economic growth. Since stock market activity stimulates economic growth and in turn stock market development is stimulated by economic growth, investment and other efficiency measures that induce greater liquidity and active trade can be implemented with prospect of increased economic growth. The weak evidence that economic growth Granger causes stock market development in case of Nigeria might be attributed to the huge revenues from oil over the years. The huge revenues form oil possibly has some positive impacts on growth which in turn affects stock market development. This is only suggestive as evidence shows that oil revenues have not been judiciously utilized in the Nigerian economy. Indeed, what these results seem to suggest is that if the oil resources have been properly utilized, the economy might have witnessed significant stock market development[15].

5. Concluding remarks

The paper investigates the long run and causal relationship between stock market development and economic growth for seven African countries using the ARDL bounds test and Granger causality test within the context of VECM framework. Long run cointegrating relationship between the series could be detected only for two countries Egypt and South Africa, while causality for the seven countries.

Granger causality test within the VECM framework shows unidirectional relations running from stock market development to economic growth. However, Granger causality within VAR framework shows short run bidirectional causality between stock market development and economic growth. In the case of Nigeria, a weak evidence of unidirectional causality running from economic growth to stock market development was found. What lessons can be drawn from these results? One, in countries where bidirectional Granger causality or feedback between stock market development and economic growth was found, policies designed to enhance efficiency of the stock markets and economic growth will be mutually beneficial. Such policies could entail consolidation and improvement

to economic growth. The difference in result for this country might be due to the different approaches adopted and the time frame.

[15] Over the years, the Nigerian government realized a lot of revenues from oil. Unfortunately, the oil resources have been wasted with very little impact on economic growth. If anything, the oil wealth has led to unusually high corruption rates coupled with high state inefficiency.

on current growth and investment patterns in these economies to infuse higher demand for capital market activities which in turn will engender economic growth.

However, the bidirectional causality found in some of these selected countries calls for caution in the use of single equations regressions of income on financial development for making econometric forecasts.

In countries where evidence shows unidirectional granger causality running from stock market development to economic growth, policies formulated to enhance higher demand for capital market activities will lead to increase economic growth. Also, policies designed to enhance efficiency of the stock markets will possibly lead to increase in economic growth. However, in country where Granger causality runs from economic growth to stock market, policies designed to enhance growth will lead to improvement in stock market development.

In general, the evidence from the study suggests that policy makers in the continent should encourage stock market development through appropriate mix of taxes, legal and regulatory policies to remove barriers to stock market operation and thus enhance their efficiency. Moreover, appropriate mix of policies to encourage savings and investment might infuse higher demand for capital market activities and engender greater integration of African stock markets into the economies.

Finally, it is important to note that the reasons advanced for the different directions of causality in our work are only suggestive. Hence, ascertaining and finding those factors that help to explain the disparity is no doubt another line of inquiry that will help us understand better the relationship between stock markets and economic growth.

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