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Stock market development and capital formation in selected African economies

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Abstract

Purpose – This study aims to explore the possibility that securities markets in selected African countries of Egypt, Kenya, Nigeria and South Africa play a significant role in capital accumulation using panel data analysis. This is done by exploring the relationship between gross fixed capital formation on the one hand and financial market development indicators on the other hand. Thus, the study aims to examine if stock market size and liquidity are determinants of capital accumulation.

Design/methodology/approach – The analysis is based on annual times series from 1991 through 2017 spanning four African stock markets. The analysis utilizes the fixed-effect and random-effect econometric models. The Durbin–Wu–Hausman test is used to choose between the two models.

Findings – The key results indicate that stock market capitalization is a positive determinant of gross fixed capital formation. The market value traded and turnover have no relationship with capital formation. Therefore, the role of stock African stock markets in promoting capital accumulation and, subsequently, industrial growth in Africa is seriously questioned.

Originality/value – Only a handful of studies have examined the role of the African securities market in promoting capital accumulation. This study is unique in which it focuses on the leading stock markets in the four corners of Africa. The markets are from Egypt in the north, South Africa from the south, Nigeria from the west and Kenya from the east. These four markets account for a significant segment of all African markets.

Keywords Market liquidity, Africa, Market capitalization, Capital formation, Stock market, Economic growth

Paper type Research paper

Introduction

Several financial economists have argued that financial markets are important to the well-being of an economy. One of the early scholars is Schumpeter (1911) who concludes that the importance of financial markets in an economy derives from channeling funds to the most efficient users while fostering entrepreneurial innovation. Dahou *et al.* (2009) opine that an essential ingredient of macro-economic stability is the existence of a vibrant financial market to channel resources into productive projects that can foster economic growth. Stiglitz (1989) shows the relevance of financial institutions to an economy's development process, by focusing on the critical role of capital formation. Thus, capital accumulation is a necessary

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but, not enough condition for economic growth. De Long and Summers (1992) opine that the rate of capital formation is a key determinant of the rate of economic growth in any economy.

Mayer (1988) argues that stock markets are not important for economic growth to take place because not much corporate investment is financed through the issuance of equity. Demirguc-Kunt and Levine (1996) and Mutize *et al.* (2020) document several conceptual arguments which emphasize the potentially positive, neutral or even negative implications of stock market development for economic growth. The authors note the existence of disagreements on the relative importance of the stock market on economic activities, most especially in developing economies with shallow, narrow and grossly imperfect capital markets.

Evaluating the relationship between stock market development and long-run economic growth, Levine and Zervos (1996) report a positive impact but caution that the results should be viewed as suggestive rather than being conclusive findings. Using some indicators of economic development, Ojo (2010) reports that Nigeria and other African countries with stock markets did not fare better than those without stock markets. Iheanacho (2016) documents a statistically negative impact of financial development on real per capita income in Nigeria. The author also records a positive relationship between gross fixed capital formation and real per-capita income. However, Akinlo and Akinlo (2009) report that stock market development has a significant influence on economic growth in Egypt and South Africa.

The literature on the finance-growth nexus is replete with evidence suggesting that financial markets that are deep, broad and better functioning are needed to spur economic growth (Levine *et al.*, 2000; Beck *et al.*, 1999). Fischer (2003) argues that the financial crisis of 2008 reveals that a weak financial system not only exposes a country to international financial flows but also aggravates its exposure to adverse effects of financial crisis. Financial intermediaries operate to reduce costs to participants and facilitate a reduction in asymmetric information. Little wonder, that Bagehot (1873) concludes that the English industrial revolution was made possible by the existence of efficient capital markets.

The structure of a securities market should allow the facilitation of order placement, information to market participants and support the speedy execution of orders. Moss and Kenny (1996) argue that, in the 1990s, the trend in Africa was a pursuit of economic development financing through the establishment of stock markets. Unfortunately, the effectiveness of such markets has not been realized. Matadeen and Seetanah (2015) submit that only a handful of studies have been conducted in Africa. A review of the financial market literature by Carp (2012) highlights that stock markets in emerging markets can influence economic growth through key characteristics such as liquidity, market capitalization, risk-sharing and diversification. Therefore, the objective of this study is to determine if the securities market in selected African countries to play a significant role in capital formation using panel data analysis. This exercise is important given the superior macro-economic performance in countries that are endowed with well-developed securities markets. Thus, it is critically important to explore if the transmission mechanism between financial development and economic growth involves gross fixed capital formation.

Overview of African financial markets

Farid (2013) notes that African equity markets are dichotomized into four categories. The dominant and most sophisticated is represented by South Africa. The medium-sized and relatively aged markets are represented by Egypt, Nigeria and Zimbabwe. The third category is the small but rapidly growing markets such as Botswana, Ghana and Mauritius. The last category is the relatively small but new markets such as Swaziland and Zambia.

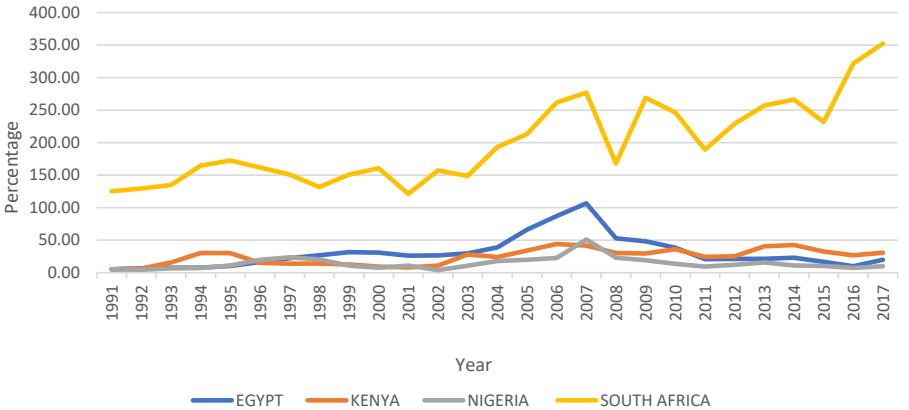
In the context of African countries, Ndikumana (2001) reports that the limited evidence suggests that financial markets exert a positive impact on economic growth. Marwa (2015) opines that the fragmented nature of African financial markets as well as the risk level has

limited the investment capacity of institutional investors. Consequently, the allocation mechanism inherent in African financial markets is described as small, narrow and illiquid. However, Marwa (2015) notes that African securities markets still lack liquidity with a thin turnover ratio pointing to less than 0.05% of the global equity turnover. With a relatively low liquidity, African equity markets are finding it difficult to support local market participants. The poor nature of equity markets infrastructure creates an impediment to trading, clearing and the settlement process which can be very slow to the extent that some exchanges resort to manual operation.

Andrianaivo and Yartey (2009) and Dahou *et al.* (2009) identify the obstacles to the existence of efficient financial markets in Africa and they include inadequacy of regulatory framework, an underdeveloped capital markets, insufficiency of innovative financial instruments and a banking system that fails to intermediate finance. To increase investment opportunities for domestic as well as foreign investors, a financial market must be adjudged to be efficient. Dahou *et al.* (2009) argue that African securities markets are traditionally narrow and illiquid. The factors identified for this condition include investors' low level of income, ineffective system of collateral registration, weak judicial institutions, exposure to external shocks and a shortage of human and financial infrastructure. A shortage of investment opportunities is a huge impediment to the development of dynamic securities markets in Africa. For example, a 2006 United Nations Economic Commission for Africa (UNECA) report cites the case of Mozambiquan stock exchange which listed only the national brewery. The same UNECA report cites the profitability of African securities markets with an average return of 34%.

Market size

Hearn (2009) notes that the average market capitalization ratio in many OECD countries is more than 200%. Yartey (2007) also reports a ratio of 135% for Malaysia, an emerging market. Figure 1 reveals maximum values of 352.29%, 106.74%, 44.06% and 51%, respectively, for South Africa, Egypt, Kenya and Nigeria. The ratio is also as low as 4.02% in Nigeria in 2002. It is evident in the values shown that the regional securities markets in Africa represent an insignificant proportion of economic output in their respective countries. This is consistent with the report by Farid (2013) that the securities market in Africa represent less than 2% of the world market capitalization.



Source(s): World Bank (World Development Indicators), CEIC, Nairobi Stock Exchange

Figure 1.
Market capitalization to GDP (%)

The size of the stock market relative to the rest of the economy is reflected in the market capitalization to GDP. The Johannesburg Stock Exchange which is ranked 19th largest exchange in the world accounts for 75% of Africa's market capitalization. Figure 2 shows the stock market total value traded relative to GDP. In South Africa, the ratio varies from a low of 5.35% in 1993 to a high of 136.07 in 2016. The ratio in Egypt varies from 0.32% to 66.10%, while the ratio in Kenya varies from 0.12% to 11.97%. Finally, the Nigerian ratio is from 0.07% in 1991 to 10.71% in 2003. Moss and Kenny (1996) are very much right to note that the Johannesburg Stock Exchange dwarfs all the other exchanges in Africa.

Liquidity

Liquidity creates an avenue for securities market to have an impact on the economy. Matadeen and Seetanah (2015) note that a liquid stock market can potentially facilitate the selection of profitable long-term investments and reduce the associated risk. Matongela and Karodia (2015) also note that African securities markets are relatively small and illiquid. Figure 3 reveals the turnover ratios in the selected stock exchanges. The turnover ratio is the proportion of traded value to market capitalization. This ratio is considered a measure of

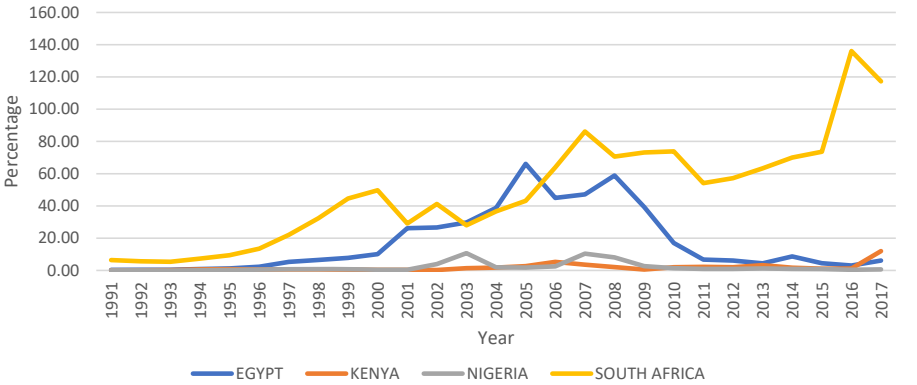


Figure 2.
Total value traded to GDP (%)

Source(s): World Bank (World Development Indicators), CEIC, Nairobi Stock Exchange

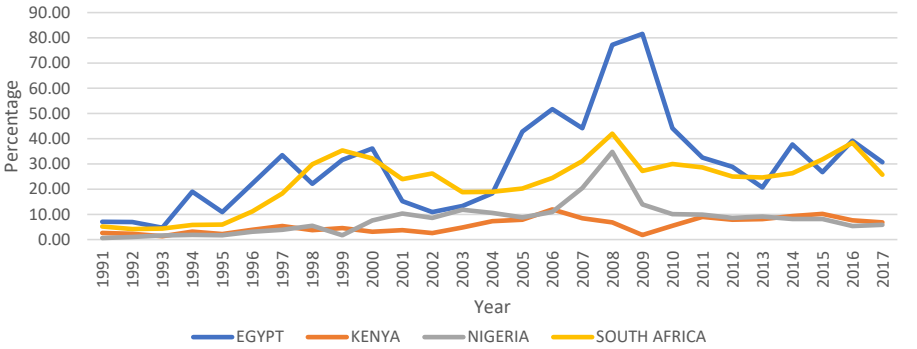


Figure 3.
Market turnover ratio (%)

Source(s): World Bank (World Development Indicators), CEIC, Nairobi Stock Exchange

liquidity. A higher ratio indicates more liquidity and a lower ratio reflects lesser liquidity. A more liquid market suggests that more savings are channeled through it in the capital formation process. Yartey (2007) reports a liquidity ratio of 29% for Mexico and 190% for India. The author notes that the low level of liquidity in African securities markets is due to relatively low trading volume, lack of information flow about securities to investors and a lack of investor education. Yartey further argues that a low level of liquidity is an indication that a local market will find it harder to support its own trading system, market analysts and brokers due to low volume. The Egyptian equity market seems to have recorded significant turnover ratios ranging from a low of 4.73% to a high of 81.54%. The turnover ratios for the Nigerian stock exchange range from 0.62% to 34.79%, while South African ratios are from a low of 4.16% to a high of 41.98%. Kenya data range from 1.34% to 11.99%.

Elliott (2015) connects liquidity to volatility by asserting that illiquid markets are more volatile. The author argues that at the extreme, volatility can trigger a financial crisis. Volatility is generally considered in the determination of rates return that investors demand and interest rates that borrowers pay. Elliott (2015) opines that a key determinant of the fundamental value of securities is investors' perception which can be affected by how rapidly prices change. With many market participants, transactions can be concluded quickly, easily and cheaply when prices move in a smoother many with no extreme volatility. Higher volatility is associated with uncertainty about the economic environment. The Egyptian securities market exhibit the highest level of volatility during the period 2001 through 2017 with a low of 21.79 and a high of 40.18. The Nigerian equity exchange also records volatility ranging from 11.89 to 27.53. The values for South Africa and Kenya cannot be fully ascertained because of incomplete data.

The annual rates of return if one invests in the selected stock markets between 2001 and 2017 are quite revealing. The rates for the same time period in Egypt are from negative 33.11%–169.91%. As for Nigeria, the rates vary from negative 55.02% to 71.52%. Kenya's values are from a negative 25.4% to 45.9% in 2011 and 2012, respectively. The South African equity market reported the lowest rate of return of a negative 1.6% in 2016 and a highest return of 31.7% in 2009. An interesting finding is that almost all African equity markets recorded negative rates of return in the period 2009 through 2011. Opromolla and Bini (2014) report that, between 2011 and 2012, the Nigerian stock exchange had an outstanding 34% rate of return which surpassed South Africa's 23%. The authors conclude that almost all African securities markets gained positive strength after the worldwide financial crisis.

In view of the analyses above, African stock markets are far from reaching maturity. Senbet and Otchere (2010) conclude that the flow of investment information in Africa is not smooth and that this has a significant consequence on market efficiency. African stock markets lack depth, breadth and liquidity. They suffer from infrequent trading, a lack of supervisory regulation as well as experienced institutional investors. Jalloh (2009) identifies the key characteristics of African capital markets which include the existence of a high bid-ask spread. According to the author, the high spread is a reflection of the cost of trading and the illiquidity of the markets. The reasons given by Jalloh (2009) for the high bid-ask spread include the order-handing costs incurred by dealers who supply liquidity to the market. Other reasons include the presence of non-competitive pricing in the markets, the existence of inventory risk and the effect of asymmetric information.

Model

In line with Donghan *et al.* (2014) the role of private investment in economic growth can be explored within the Solow–Swan-modified aggregate production function which in growth rate terms is of the form:

$$y = \alpha + \alpha k^{p} + \beta k^{g} + \gamma z \quad (1)$$

In Equation (1), y is the growth rate in output (economic growth), k^p is the growth rate in private total physical capital stock, k^g is the growth rate in government total physical capital stock (capital accumulation) and z is the growth rate in labor adjusted for human capital development. The parameters, α, β and γ represent output elasticities with respect to private, government and human capital stocks. Romer (1994) reports that $(\alpha + \beta)$, the elasticity of output with respect to capital is closer to unity. Newell (2019) implies that the sustainability of economic growth is dependent on the accumulation of inputs. Hall (2001) explores the role of securities markets in the determination of accumulated produced capital. The author reports that the productivity of capital does not rest sensitively on the speed of adjustment but on the accumulation of capital is associated with higher productivity, especially in the 1950s. Bencivenga *et al.* (1996) conclude that as a country's financial market records a higher level of efficiency, market participants make longer-term investments. In a similar vein, Carp (2012) argues that stock markets in emerging economies influence economic growth through liquidity, market capitalization, risk sharing and diversification. Levine (2005) notes that the stock market can stimulate economic development by increasing capital investment liquidity thereby encouraging investors to easily buy and sell shares.

Pagano (1993) employs the endogenous growth model to explain the role of stock markets in capital formation by changing the proportion and rate of savings in the economy. The stock market is argued by the author to lower transaction cost, information asymmetry and provide liquidity. In order words, the author notes that financial development can affect growth through the proportion of savings channeled into investment, an increase in the marginal productivity of capital and an increase in the private saving rate. In support of the view expressed by Pagano (1993), Osaze (2007) argues that the new issues of securities that go into the investment in fixed assets represent a contribution to the stock of capital otherwise referred to as capital formation. In view of the aforementioned, one expects the stock market to influence capital formation in the economy and consequently affect economic growth.

According to El-Wassal (2013), the stock market serves as a conduit for transforming savings into capital formation for the real sector. Thus, stock markets do accelerate economic growth through capital mobilization to boost the quantity and quality of investment. The mobilization role is enhanced when stock markets become more sophisticated in allocating savings to investment projects yielding higher returns.

Methodology and data analysis

The analysis of the relationship between capital formation and stock market measures of market development is done with the use of annual times series from 1991 through 2017 spanning four African stock markets. To have a balanced panel, the sample period could not be extended beyond 1991 through 2017 due to data constraints. The sample markets are from the dominant and medium-sized and relatively dominant stock markets in Africa based on the classification done by Farid (2013). The stock markets in South Africa represent the Southern part of Africa, Egypt in the North, Nigeria in the West and Kenya in the East. According to Schiereck *et al.* (2018), these four exchanges account for 76.38% of the total market capitalization of all African stock markets. The data employed are gross fixed capital formation as a proportion of GDP, turnover ratio, total value traded as a proportion of GDP and market capitalization as a proportion of GDP. The data are sourced from the World Development Indicators database, CEIC-Global Economic Data and the Nairobi Stock Exchange.

The panel equation is of the form:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + U_{it} \quad (2)$$

where α_i ($i = 1, 2, \ldots, n$) is the unknown intercept for each country (n country-specific intercepts);

Y_{it} is the dependent variable with i = country and t = time (Capital Formation);

X_{it} represents the independent variables (Turnover, Total Value of Stocks and Market Capitalization);

β_1, β_2 and β_3 represent the coefficients;

U_{it} are the error terms.

While Equation (1) shows the importance of capital accumulation in enhancing economic growth, Equation (2) shows the relevance of market sophistication in generating capital accumulation (Dudley and Hubbard, 2004). According to Dudley and Hubbard (2004), a firm foundation is required for a capital market to be effective. The effectiveness of a securities exchange can be viewed from the key features of transparency, accounting reporting, promotion of good corporate governance and ability to promote market participation. The authors conclude that a well-developed market serves as a catalyst to economic growth and better macroeconomic performance. In view of the aforementioned, one can examine the level of stock market characteristics in driving capital formation within a panel data analysis.

According to Gujarati (2003), panel data analysis enhances the quality and quantity of data in ways that are not achievable under one-dimensional data analysis. Vijayamohanan (2016) reports that panel data analysis makes it possible to control for variables that are not observed or variables that change over time but across entities. The fixed-effect model is employed to explore the relationship between the predictor and associated variables within an entity. However, each entity has its individual characteristics that may or may not affect the predictor variable.

The rationale for the model in this study relies on the premise that capital formation is necessary for economic growth to occur. The research approach employs the fixed-effect and random-effect econometric models. The Durbin–Wu–Hausman test is then employed to select a valid model. The null hypothesis under the Durbin–Wu–Hausman test is that the preferred model is the random effect model. The null hypothesis is a test of whether the unique errors are correlated with the regressors. The results of the Chi-square statistic reported in Table 1 show that the null hypothesis is rejected in favor of the alternative. The null hypothesis is rejected mainly because of the discrepancy in the estimation of market capitalization between the fixed and random models. Given that the null hypothesis is rejected, the fixed effect model is the appropriate model to employ.

Correlated random effects – Hausman test
Test cross-section random effects

Test summary	Chi-sq. statistic	Chi-sq. d.f	Prob
Cross-section random	44.034935	3	0.0000

Cross-section random effects test comparisons

Variable	Fixed	Random	Var (Diff.)	Prob
Market Cap	0.005097	−0.034551	0.000746	0.1466
Turnover	−0.102374	−0.166617	0.001197	0.0633
Value Traded	0.050190	0.110328	0.001151	0.0763

Source(s): Results generated by authors

Table 1.
Durbin–Wu–Hausman test results

The initial fixed-effect model is analyzed for residual cross-section dependence. The results in Table 2 (Panel A) show the presence of residual cross-section dependence at the 10% significance level using various tests such as Pesaran scaled LM and Breusch–Pagan LM tests. To correct for the residual cross-section dependence, the panel EGLS (with cross-section SUR) is employed. The results of the adjusted fixed-effect model are reported in Table 3. The results show that total stock value traded as a percentage of GDP is negatively related to gross fixed capital formation as a percentage of GDP. However, this result lacks statistical significance. The stock market turnover ratio is positively related to capital formation. Again, the result lacks statistical significance at the conventional levels. Market capitalization as a percentage of GDP has a positive relationship with capital formation at the 10% significance level. A 1.00% increase in market capitalization results in a 1.83% increase in capital formation. The F-statistic of 10.070 and the probability of the *F*-statistic of 0.000 indicate that the chosen model is statistically valid. Table 2 (Panels B and C) also reveals that the model is free of first-order autocorrelation and heteroscedasticity. The result of the relationship between market capitalization and capital formation is consistent with the Saudi Arabian results reported by Ali *et al.* (2016). The results relating to value traded and turnover are also consistent with the results reported by Sarkar (2007) and Biedny (2012).

Conclusion, discussion and policy recommendations

The research on the role of African stock markets in capital accumulation is scant, due to the non-availability of adequate data. The key results reported in this study indicate that market size represented by market capitalization is a positive determinant of capital formation. Both stock value traded and turnover are incapable of explaining gross fixed capital formation. It should be noted that the statistical significance of the role of market size is at the 10% level suggesting, a relatively weak result. African markets are struggling to find investors because

Table 2.
Residual cross-section dependence test

Null hypothesis: No cross-section dependence (correlation) in weighted residuals			
Test	Statistic	d.f	Prob
Breusch–Pagan LM	12.06992	6	0.0604
Pesaran scaled LM	1.752236		0.0797
Bias-corrected scaled LM	1.675313		0.0939

Source(s): Results generated by authors

Table 3.
Parameter estimates of the fixed-effect model

Method: Panel EGLS (cross-section SUR)				
Dependent variable: Capital formation (%GDP)				
Variable	Coefficient	Std. Error	*t*-statistic	Prob
C	19.54740	0.727562	26.86698	0.0000
Market Cap	0.018306	0.010139	1.805530	0.0740
Turnover	0.017083	0.027503	0.621116	0.5359
Value Traded	−0.002858	0.020394	−0.140156	0.8888
R-squared	0.374304	Mean dependent var		6.798694
Adj. *R*-squared	0.337134	S.D. dependent var		1.350308
S.E. of regression	0.928760	Sum squared resid		87.12219
F-statistic	10.07004	Durbin–Watson stat		0.815367
Prob(*F*-statistic)	0.000000			

Source(s): Results generated by authors

of legacy issues of poor macroeconomic management, corruption, weak institutions and lack of fiscal discipline (Ojo, 2010; Osakwe and Ananwude, 2017). Most countries in Africa rely on funds from international bond issues.

Therefore, the importance of stock market development in promoting capital accumulation and, subsequently, industrial growth in Africa is seriously questioned. A major challenge facing African stock markets revolves around a significant number of shareholders who are not trading because of several reasons identified by Osamwonyi and Imasuen (2006). These include the maladministration of the register of shareholders and the existence of inactive stocks in the markets evidenced by the huge size of unclaimed dividends. The Punch (2021) reports the size of unclaimed dividends in Nigeria at NGN170bn ($413.75mn). The Business Daily (2021) estimates the size of unclaimed funds in Kenya at KES 50bn ($450.45mn). In South Africa, one firm, Vodacom, reports the size of unclaimed dividends of ZAR 73mn ($5.21mn), while Phuthuma Nathi reports ZAR 207mn ($14.79mn) in unclaimed dividends (BusinessTech, 2020; Multichoice, 2021). Therefore, a country may have a huge stock market, but if most of the stocks are not actively traded, both turnover and stock value traded will not count for much. The results in this paper reflect the presence of inactively traded stocks.

The results shed some light on the impact of financial development on economic growth. The results are somewhat consistent with the conclusion reached by Matadeen and Seetanah (2015) that stock market development does not boost economic growth in the short run in Mauritius. This tallies with the conclusion of Levine (2005) that stock market development does not directly translate to greater economic growth. Sarkar (2007) reports that stock market capitalization, an indicator of stock market development, does not explain cross-country variations in gross fixed capital formation. There are several issues to be resolved within African securities markets to become relevant in fostering economic growth through capital accumulation. On the issue of liquidity, the African securities market should imbibe a culture of technological innovation which is common in many countries of the world. Management of stock exchanges should as a policy, monitor liquidity on a regular basis.

The authors agree with the proposal put forward by Dahou *et al.* (2009) to bring about more effective securities markets in Africa. There is a need for regional integration to take advantage of economies of scale. The management of African securities markets should strive to promote transparency and accountability. There are documented cases of listed firms failing to disclose information on a timely basis (Masry, 2015). Masry notes that inadequate provision of information is detrimental to the functioning of a stock market because it can lead to market responses that are considered irrational and thereby threatening economic efficiency. African governmental institutions should also ensure that investors are protected to enhance the stock market participation rate. Allied to this is the issue of investor education. There is a need to aggressively institute educational programs to motivate individuals to participate as investors in African stock markets.

Finally, African governments should continue to support stock markets by privatizing public enterprises using stock exchanges. In Nigeria, the federal government still owns shares in electric companies. There is no reason for the government to be involved in such a business other than to create an enabling environment through regulation. Pension funds should be encouraged to expand their investment horizons in terms of more product choices including equities. Small- and medium-sized enterprises should be encouraged to list on African exchanges. African countries with sovereign wealth funds should use African stock markets as investment outlets. Therefore, it is imperative that African governments must, as a matter of urgency, put in place measures to address the shortcomings of the African stock markets in order to reap the benefits of economic growth and development.

References

Akinlo, A.E. and Akinlo, O.O. (2009), "Stock market development and economic growth: evidence from seven Sub-Sahara African countries", *Journal of Economics and Business*, Vol. 61 No. 2, pp. 162-171.

Ali, N., Rehman, M.Z. and Nasir, N.M. (2016), "Stock market capitalization, capital formation and growth: evidence from Saudi Arabia", *International Review of Management and Business Research*, Vol. 5 No. 3, pp. 1163-1174.

Andrianaivo, M. and Yartey, C.A. (2009), "Understanding the growth of African financial markets", IMF working paper # WP/09/182, International Monetary Fund, Washington, DC.

Bagehot, W. (1873), *Lombard Street*, Henry S. King and Company, London.

Beck, T., Levine, R. and Loayza, N. (1999), "Finance and the sources of growth", University of Minnesota, Working Paper 9907.

Bencivenga, V.R., Smith, B.D. and Starr, R.M. (1996), "Equity markets, transactions cost, and capital accumulation: an illustration", *The World Bank Economic Review*, Vol. 10 No. 2, pp. 241-265.

Biedny, C. (2012), "Financial development and economic growth: does stock market openness matter?", *Journal of International Business and Law*, Vol. 11 No. 1, pp. 224-238.

Business Daily (2021), "Unclaimed cash, shares, dividends cross Sh50bn", (March 2, 2021), available at: https://www.businessdailyafrica.com/bd/markets/capital-markets/unclaimed-cash-shares-dividends-cross-sh50bn-3308988 (accessed 21 October 2021).

BusinessTech (2020), "Vodacom says it has R73 million in unclaimed YeboYethu dividends belonging to 12,000 shareholders", (August 19, 2020), available at: https://businesstech.co.za/news/mobile/426958/vodacom-says-it-has-r73-million-in-unclaimed-yeboyethu-dividends-belonging-to-12000-shareholders/ (accessed 21 October 2021).

Carp, L. (2012), "Can stock market development boost economic growth? Empirical evidence from emerging markets in Central and Eastern Europe", *Procedia Economics and Finance*, Vol. 3, pp. 438-444.

Dahou, K., Omar, H.I. and Pfister, M. (2009), "Deepening African financial markets for growth and investment", Ministerial and Expert Roundtable of NEPAD-OECD Africa Investment Initiative, November 11-12.

De Long, J.B. and Summers, L. (1992), "Equipment investment and economic growth: how strong is the nexus?", *Brookings Papers on Economic Activity*, Vol. 1992, pp. 157-211.

Demirguc-Kunt, A. and Levine, R. (1996), "Stock markets, corporate finance, and economic growth: an overview", *The World Bank Economic Review*, Vol. 10 No. 2, pp. 233-239.

Donghan, C., Hui, Y. and Longfei, G. (2014), "A generalized Solow-Swan model", *Abstracts and Applied Analysis*, Vol. 2014, pp. 1-8.

Dudley, W.C. and Hubbard, R.G. (2004), *How Capital Markets Enhance Economic Performance and Facilitate Job Creation*, Goldman, Sachs, NY.

El-Wassal, K.A. (2013), "The development of stock markets: in search of a theory", *International Journal of Economics and Financial Issues*, Vol. 3 No. 3, pp. 606-624.

Elliott, D.J. (2015), *Market Liquidity: A Primer. Economic Studies at Brookings*, The Brookings Institution, Washington, DC.

Farid, S. (2013), "Financial integration in African emerging markets", *African Economic Conference*, Johannesburg, October 28-30.

Fischer, S. (2003), "The importance of financial markets in economic growth", *Paper presented at the International Derivatives and Financial Market Conference*, Campos do Jordao, August 20-23.

Gujarati, D. (2003), *Basic Econometrics*, 4th ed., McGraw-Hill, New York.

Hall, R.E. (2001), "The stock market and capital accumulation", *American Economic Review*, Vol. 91 No. 3, pp. 1185-1202.

Hearn, B. (2009), "Liquidity estimation in major African equity markets", Working Paper, City University of London, Sir John Cass Business School, London.

Iheanacho, E. (2016), "The impact of financial development on economic growth in Nigeria: an ARDL analysis", *Economies*, Vol. 4 No. 4, pp. 1-12.

Jalloh, M. (2009), "Microstructure of capital markets in West Africa: issues and challenges", WAIFEM Regional Course on Operations and Regulation of Capital Market, July 27-31, Accra.

Levine, R. (2005), "Finance and growth: theory and evidence", in Aghion, P. and Durlauf, S.N. (Eds), *Handbook of Economic Growth*, Elsevier B.V, Vol. 1A, pp. 865-934.

Levine, R. and Zervos, S. (1996), "Stock market development and long-run growth", *The World Bank Economic Review*, Vol. 10 No. 2, pp. 323-339.

Levine, R., Loayza, N. and Beck, T. (2000), "Financial intermediation and growth: causality and causes", *Journal of Monetary Economics*, Vol. 46 No. 1, pp. 31-77.

Marwa, M. (2015), *Financial Markets in Africa: Opportunities and Challenges*, Dar Es Salaam Stock Exchange, Dar Es Salaam.

Masry, M. (2015), "Measuring transparency and disclosure in the Egyptian stock market", *Journal of Finance and Bank Management*, Vol. 3 No. 1, pp. 25-36.

Matadeen, J. and Seetanah, B. (2015), "Stock market development and economic growth: evidence from Mauritius", *Journal of Developing Areas*, Vol. 49 No. 6, pp. 25-36.

Matongela, A.M. and Karodia, A.M. (2015), "An evaluation of factors contributing to the stock market liquidity constraints or companies listed on the Namibian stock exchange", *International Journal of Accounting Research*, Vol. 2 No. 8, pp. 29-64.

Mayer, C. (1988), "New issues in corporate finance", *European Economic Review*, Vol. 32, pp. 1167-1188.

Moss, T. and Kenny, C. (1996), *Africa's Emerging Stock Markets, CSIS Africa Notes Number 190*, CSIS, Washington, DC.

Multichoice (2021), "R207 million in Phuthuma Nathi dividends unclaimed", (February 15, 2021), available at: https://www.multichoice.com/media/news/r207-million-in-phuthuma-nathi-dividends-unclaimed (accessed 21 October 2021).

Mutize, M., Tefera, E.t and Nkhalamba, M. (2020), "The development of financial markets in Africa: trends, challenges and prospects", *Journal of Economics and Behavioral Studies*, Vol. 12 No. 1, pp. 46-54.

Ndikumana, L. (2001), "Financial markets and economic development in Africa", Working Paper Series #17, Political Economy Research Institute, University of Massachusetts, Boston, MA.

Newell, G.D. (2019), "Capital flow dynamics: theory and evidence", PhD Thesis, And Florida State University, Tallahassee, FL.

Ojo, A.T. (2010), *The Nigerian Maladapted Financial System: Reforming Task and Development Dilemma*, The CIBN Press, Yaba, Lagos.

Opromolla, D. and Bini, F. (2014), *A Comparative Analysis of Volatility, Returns, and Regulation of the Nigerian and South African Stock Markets*, Master's Dissertation, University of Lugano, Switzerland.

Osakwe, C.I. and Ananwude, C.A. (2017), "Stock market development and economic growth: a comparative evidence from two emerging economies in Africa-Nigeria and South Africa", *Archives of Current Research International*, Vol. 11, pp. 1-15.

Osamwonyi, I.O. and Imasuen, O.C. (2006), "Incidence of unclaimed dividends in quoted companies: the Nigerian economy in perspective", *Journal of Financial Management Research*, Vol. 19 No. 2, pp. 59-73.

Osaze, E.B. (2007), *Capital Markets – African and Global, History, Systems, Practices, Operations, Procedures and Investment Techniques*, Book House, Lagos.

Pagano, M. (1993), "Financial markets and growth: an overview", *European Economic Review*, Vol. 37, pp. 613-622.

Punch (2021), "Nigeria's unclaimed dividends now N170bn -SEC", (August 13, 2021), available at: https://punchng.com/nigerias-unclaimed-dividends-now-n170bn-sec/ (accessed 20 October 2021).

Romer, P.M. (1994), "The origins of endogenous growth", *Journal of Economic Perspectives*, Vol. 34, pp. 3-22.

Sarkar, P. (2007), "Stock market development and capital accumulation: what the time series evidence shows", *AISSEC Conference*, 21-23 January 2007, University of Parma.

Schiereck, D., Freytag, A., Grimm, M. and Bretschneider, W.H. (2018), "Public corporations in Africa: a continental survey on stock exchanges and capital markets performance", Jena Economic Research Papers, No 2018-013, Friedrick Schiller University Jena.

Schumpeter, J.A. (1911), *A Theory of Economic Development*, Harvard University Press, Cambridge, MA.

Senbet, L.W. and Otchere, I. (2010), "African stock markets", in Quintyn, M. and Verdier, G. (Eds), *African Finance in the 21st Century*, International Monetary Fund volume, Palgrave, pp. 104-142.

Stiglitz, J.E. (1989), "Financial markets and development", *Oxford Review of Economic Policy*, Vol. 5 No. 4, pp. 55-68.

Vijayamohanan, P.N. (2016), "Panel data analysis with stata part 1: fixed effects and random effects models", MPRA Paper No 76869.

Yartey, C.A. (2007), "Well-developed financial intermediary sector promotes stock market development: evidence from Africa", *Journal of Emerging Market Finance*, Vol. 6 No. 3, pp. 269-289.

Further reading

Aig-Imoukhuede, A. (2014), *Future of African Exchanges, Seminar on Building African Financial Markets*, September 11-12, 2014, RSA, Johannesburg.

Amihud, Y. and Mendelson, H. (1991), "Liquidity, asset prices and financial policy", *Financial Analyst Journal*, Vol. 47 No 6, pp. 56-66, November-December.

Gaston, G. and He, D. (2015), "Market liquidity: resilient or fleeting", *Global Financial Stability Report: Vulnerabilities, Legacies and Policy Challenges –Risk Rotating to Emerging Markets, IMF*, International Monetary Fund, Washington, DC.

Grossman, G.M. and Helpman, E. (1991), "Trade, knowledge spillovers, and growth", *European Economic Review*, Vol. 35, pp. 517-526.

Ikhide, S. (2015), *The Finance and Growth Debate in Africa: what Role for Financial Inclusion?*, Inaugural Lecture Delivered at the University of Stellenbosch, Stellenbosch, November 26, 2015.

Levine, R. and Zervos, S. (1998), "Stock markets, banks, and economic growth", *American Economic Review*, Vol. 88 No. 3, pp. 536-558.

Ogbebor, P.I. and Siyanbola, T.T. (2018), "Financial development and economic nexus in Nigeria: the role of the stock market", *International Journal of Research and Methodology in Social Science*, Vol. 4 No. 3, pp. 29-47.

O'Hara, M. (2003), "Liquidity and price discovery", *Journal of Finance*, Vol. 58, pp. 1335-1354.

PWC (2018), "2017 Africa capital markets watch", available at: www.pwc.co.za/capitalmarketswatch (accessed 15 May 2020).

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