

FINANCIAL LIBERALIZATION AND STOCK MARKET PERFORMANCE: EVIDENCE FROM SELECTED AFRICAN COUNTRIES

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Abstract

This study examined the impact of financial liberalization on stock market performance in selected African countries from the period 1986-2020. The study utilized ARDL bound test approach to analyze the results using both the cross-country comparative and panel data technique. Foreign direct investment, foreign portfolio investment and current account balance were adopted as measures for financial liberalization, while stock market capitalization was used as the stock market performance indicator. The findings showed that foreign direct investment, foreign portfolio investment and current account balance had positive and significant impact on stock market capitalization in Africa. Based on the result, the study recommended that, government and other regulatory agencies, must take proactive steps in ensuring that stringent restrictive policies are relaxed on the ease of doing business, and introduce legislation that promotes the establishment of free trade zone and tax break for investors, and also boost investors' confidence through the instrumentality of transparency in information disclosure.

Keywords: Financial Liberalization, Stock Market Performance, Foreign Direct Investment, foreign portfolio investment, current account balance.

1. INTRODUCTION

Financial liberalization policies implemented in the late 1980s appear to have had a significant impact on boosting internationalization of capital flows and global financial market integration. As a result, it provides better access and optimal allocation of capital (safavi & Yousefi, 2017). Financial liberalization, according to Onuora (2019), is the process of removing impediments from the financial system. Ahmed, (2013) and Ousmanou. (2017) viewed financial liberalization as one of the primary growth strategies of developing economies. However, a quick and unconstrained financial liberalization process, might result in a fragile financial system, structural imbalances, and capital flight issues, which can exacerbate domestic financial market instability and entice an increase in the cost of capital (Umutlu, Akdeniz & Altag-Salih, 2010; Fowowe, 2013). McKinnon (1973) and Shaw (1973), gave theoretical support for the relationship between financial liberalization and stock market performance in their seminar papers. They argue that in a repressed financial system, interest rates are kept below competitive levels. Thus, result to disincentives to savings and investments, which may result in the decrease in both financial and economic activities (Kitchen, 1986).

The theory was substantiated with the adoption of the structural adjustment programme (SAP) in 1986, due to the promptings of the international monetary fund and World Bank, many African countries economy were deregulated. Expectations were that the identified

benefits will accrue to the African economy. Consequently, the actual economic experience of many African countries that adopted financial liberalization policy has been controversial (Fowowe, 2013; Akinsola & Odhiambo 2017; Abdullahi & Fakunmoju, 2019). Nonetheless, some researchers have found that financial liberalization promotes stock market development and growth (Ahmad A., 2018; Hermes & Lensink, 2019; Ousmanou, 2017), while others have found that it is the root cause of financial crises (Ahmad A., 2018; Hermes & Lensink, 2019; Ousmanou, 2017; Kedibonye, 2018; Abere, 2019; Afef, 2016; Marc, 2018). Chile and Argentina in the early 1980s, Mexico in 1994 and 1995, and Turkey in 2001, and the 2008 global financial crises are examples of this. In Africa, a number of studies (Fowowe, 2013; Misati and Nyamongo, 2011) found systemic financial sector crises in a number of African countries, including Cameroon (1988-1991), Nigeria (1991-1995), Ghana (1982-1989), and Kenya (1993-1995), all of which occurred shortly after financial liberalization policies were implemented.

Despite these crises, global stock markets have surged, with developing nations accounting for a major portion of the increase. New securities exchanges have emerged in Lesotho, Uganda, Seychelles, Somalia, and Zambia. There were only five securities exchanges in Sub-Saharan Africa and three in North Africa countries prior to 1989. On the African continent today, there are 30 organized stock exchanges where securities can be listed. These exchanges house the financial markets of 40 African countries, accounting for around 74% of the continent's sovereign nations. Furthermore, the global stock market value is about 133.8 trillion dollars in 2020, and Africa accounts for around 2.9 percent (45.4 billion) of that total (World Bank, 2020). South Africa accounts for roughly 311.39 percent, or around 90%, of the entire market capitalization in Africa as of 2020, according to the 5-year average of selected emerging markets shown in figure 1.1 below. This compares to market averages of 122.62 percent, 47.46 percent, 84.27 percent, 33.96 percent, and 43.53 percent in developing countries like Malaysia, Indonesia, Chile, Mexico, and Peru. With a market capitalization of 4.8 percent, Ghana leads the list.

Figure 1.1: Map representing 5 years average of stock market performance indicators. (World Bank Data, 2020)



Notwithstanding these developments, detractors maintained that stock market might not perform efficiently in developing African region and also impossible for all African countries to promote stock market given the poor investment climate, and unethical practice in Africa's capital markets (Singh, 1999; Asongu & Nwachukwu, 2016; Iginosa & Uhunmwangho, 2019).

Financial liberalization continues to be one of the most contentious policies, according to Misati and Nyamongo (2011), with empirical findings that are largely equivocal. In a recent assessment of the research, Hermes and Lensink (2005) discover that the absence of precise measurement of financial liberalization itself is one important explanation for why the evidence is still ambiguous. In an attempt to provide better measure of financial liberalization, McDonald and Schumacher (2007), using the Dejure approach, underlined that legal and institutional development is critical in developing a better functioning financial system and should thus be prioritized when analyzing the impact of financial liberalization initiatives in SSA. Other research, like Jurdi, Khan, and Said (2017), Chinn and Ito (2002), and Ahmed, A. (2013), used a similar approach to measure financial liberalization. However, a few studies have used the Defacto measures, which assesses the actual flow and stock of capital by applying several capital flow variables (Ozdemir & Ebril, 2008; Aizenman & Noy, 2009). This study seeks to build on prior empirical research in the African region, such as that of Ozdemir and Ebril (2008), by employing financial liberalization indices that adequately capture the actual flow and stock of capital within the African region.

In light of this, it was necessary to investigate the impact of financial liberalization on stock market performance in Africa. This is examined on a cross-country and panel manner in order to determine how the decision of liberalization influences stock market performance in African region. The goal of the research is to find out how foreign direct investment, foreign portfolio investment, and the current account balance affect market capitalization in Africa. The used variables covering a thirty-four (34)-year span (1986-2020), from eleven (11) frontline African countries. The decision became appropriate because in 1986, the structural adjustment program was implemented in many African countries. In addition, data for this study will be gathered from World Bank African development indicators, on the bases of data availability and performing regional frontline market in terms of market capitalization. This study has some value addition.

Firstly, the uniqueness of this study's analytic framework sets it apart. To begin with, unlike previous research of this nature, it is not a panel study. Panel models are often used in cross-country studies. Such approaches, while convenient and advantageous, have been criticized because they tend to neglect cross-sectional nuances, leaving them vulnerable to aggregation bias. To avoid falling into the trap of panel analysis, this study explores the regions of Africa on a country-specific basis, allowing for the obvious disclosure of previously overlooked traits. Lastly, the pre-estimate test results (descriptive statistics and stationarity tests) are used to determine which estimation model to use. Although it is evident that no model can be deemed the best, good practice requires that

statistical rationale for model selection be supplied. Efforts are made to guarantee that the produced results are consistent with the assumptions underpinning the estimating method of choice.

The study is structured as follows; section 2 focuses on the review of theoretical and empirical literature, while section 3 dwells on the methodology. The results are presented and discussed in section 4, while section 5 concludes the study and makes some vital policy recommendation.

2. THEORETICAL AND EMPIRICAL LITERATURE

The theoretical arguments of McKinnon (1973) and Shaw (1973) enthused the evolution of financial liberalization. Both McKinnon's complementarity model and Shaw's debt accumulation hypothesis illustrate that financial repression reduces savings incentives, capital accumulation, allocation, and investment growth potential (Wurgler, 2000). This suggests that the financial market stimulates both financial and economic performance. Other schools of thought, such as Neo-classical-counterrevolution frameworks and Neo-classical global efficiency theory, bolstered (McKinnon, 1973; Shaw, 1973)'s position, arguing that any government intervention that interferes with the automatic self-regulated market will distort prices and impede stock market development. Balogun, Dahalan, and Hassan (2016) upheld the financial growth theory of McKinnon-Shaw framework.

However, in developing African region, there are few empirical literatures on financial liberalization and stock market performance. Nevertheless, there are as many research on this issue as there are different results, methods, and conclusions. As a result, there has been no agreement in the literature on the nature, direction, or degree of the association. Some research has looked into the relationship between financial liberalization and stock market performance. Barnor and Wiafe (2015); Olabisi, (2016); Balogun et al, (2016); Jurdi, Khan and Said (2017); Astin and Ocran (2018). Financial liberalization policies were found to have a positive impact on Stock market activity in some studies. For examples, in the MENA region of Africa, Jurdi et al (2017) discovered a positive and significant relationship between financial liberalization and stock market development. Anyango (2019), who researched the effects of financial liberalization on the liquidity of Kenya's securities exchange market, came to similar conclusions. Yao, Shujie, Hongbo, Shuo, and Jinfghua, (2018) and Ogbabor et al, (2018) used OLS techniques to support the findings, whereas Astin and Ocran, (2017) used the Bayesian Var model to investigate four (4) SSA stock markets using quarterly data from 1975 to 2014. Zemel and Zhang (2018) used a diff-in-diff model and found a positive and significant relationship between stock market return and liberalization in China between 2014 and 2015. Using the Pooled Mean Group (PMG) and Mean Group (MG) methodologies, Olabisi (2016) discovered a positive impact of financial liberalization on stock market development in seven SSA nations from 1990 to 2013. Conversely, Ahuru et al. (2016) discovered that financial liberalization and stock market return in Nigeria have a negative association. While Imegi (2014) and Agbaeze and Onwuka (2015) found

negative results in their research. In a study of the Kuwaiti stock market by Al-kandari and Abul (2020), it was discovered that the leverage effect of negative shocks produces more volatility in the KSE than positive shocks. Emna (2021) examined the impact of financial liberalization and global financial crises on stock market volatility in Asian nations and discovered that financial instability has a deleterious effect on Asian market integration.

However, studies have explored the financial liberalization nexus utilizing the ARDL approaches as models for estimating the short and long run relationship have expanded (see, Barnor & Wiafe, 2015; Abdullahi & Fakunmoju, 2019). Despite the abundance of research on financial liberalization and stock market activities, studies focused on regionally based African countries are minimal and rare. Meanwhile, majority of the studies have either utilized panel or time series analytical approach. Thus, this study combined the benefits of both panel and country-specific analysis while also addressing the shortcomings of each technique. However, to the best of the researcher's knowledge, the distinctiveness of our approach contributes to knowledge.

3. METHODOLOGY

3.1 Estimation method

In estimating the model, we carried out a preliminary check of the basic statistical and time series properties of the series, which is the major step in combining them in an estimation model form. This takes the form of measuring the aggregative average, measures of spread and variation, test for linear association and the test for stationarity (unit root tests). The Autoregressive Distributed Lag (ARDL) bound testing developed by (Pesaran and Shin, 1999; Pesaran et al., 2001), was used to establish the long run and short run impact of financial liberalization on stock market performance. The ARDL is appropriate since it's applied irrespective of the underlying variables being integrated of order $I(0)$, $I(1)$ but not $I(2)$. ARDL approach is found to be more robust and performs better for finite sample than other co-integration techniques (Kalim & Shahbaz, 2008). Further, ARDL adjusted with an Unrestricted Error Correction Model (ECM) is applied in testing for both long run and short run dynamics simultaneously (Abubakar & Danladi, 2018). This technique has been used by Pesaran, et al (2001); Owusu (2012); and Iriobe, Obamuyi and Abayomi (2018).

The generalized ARDL (p, q) model is specified as:

$$Y_t = \alpha_0 + \sum_{t=1}^p \beta_i Y_{t-1} + \sum_{t=1}^q \delta_i X_{t-1} + \epsilon_{it} \dots\dots\dots (i)$$

Where Y_t is the dependent variable and the variables in X_t are independent variables and are allowed to be purely $I(0)$ or $I(1)$ or co-integrated; β and δ are coefficients; α is the constant; $i = 1, \dots, k$; p is the optimal lag order for the dependent variable while q is the optimal lag order for the exogenous variables. The lag lengths of p, q may not necessarily be the same; ϵ_{it} is the white noise error term. This test follows FPSS critical values are as provided by Pesaran (1997) and Pesaran et al. (2001) as well as the decision rules contained in Table 2 below

Table 1: Summary of FPSS Decision rule

State	Inference	Remark
FPSS > I(1)	Ho is rejected	Co-integration is inferred
FPSS < I(0) and I(1)	Ho cannot be rejected	No Co-integration
FPSS within I(1) and I(0)	Inconclusive Results	Results is inconclusive

In specifying our model, we followed the theoretical and empirical specification of previous research. The study also utilizes a panel and comparative cross-country analysis. In line with the work of Raza and Jawid (2012) who utilized the following models;

$$\text{SMC} = f(\text{FDI, REM}) \dots \dots \dots (ii)$$

The ARDL model for the study is given in model 3.1

$$\begin{aligned} \Delta \text{SMCGDP}_{it} &= \beta_0 + \sum_{i=0}^p \alpha_i \Delta \text{SMCGDP}_{it-1} + \sum_{i=0}^p \vartheta_i \Delta \text{FDIGDP}_{it-1} + \sum_{i=0}^p \beta_j \Delta \text{FPIGDP}_{it-1} \\ &+ \sum_{i=0}^p \beta_j \Delta \text{CABGDP}_{it-1} + \sum_{i=0}^p \sigma_i \Delta \text{EXCRGDP}_{it-1} + \sum_{i=0}^p \sigma_i \Delta \text{INTGDP}_{it-1} + \delta_0 \Delta \text{SMCGDP}_{it-1} \\ &+ \delta_1 \Delta \text{FDIGDP}_{it-1} + \delta_1 \Delta \text{FPIGDP}_{it-1} + \delta_1 \Delta \text{CABGDP}_{it-1} + \delta_1 \Delta \text{EXCRGDP}_{it-1} + \delta_2 \Delta \text{INTGDP}_{it-1} \\ &+ \varepsilon \dots \dots \dots (iii) \end{aligned}$$

Where:

- SMCGDP = Stock Market capitalization ratio
- FDI = Foreign Direct Investment
- FDI = Foreign Direct Investment
- CAB = Current Account Balance
- EXCR = Exchange Rate (Moderating variable)
- INT = Interest Rate (Moderating variable)
- β_0 = Regression Constant
- α_i, ϑ_i = Coefficient of Variables
- ε = Error Term

Table 2: Description of model variables

Variables	Definition	Previous Studies
Stock Market Capitalization	This ratio is known as Market Size and equals the total market value of listed shares divided by GDP. $\frac{\text{Total market value of listed shares}}{\text{GDP}} \times \frac{100}{1}$	In line with the works of Ogbebor (2015), Abdullahi and Fakunmoju (2019).
Foreign Direct investment	FDI is seen as an investment made by a company based in one country, into a company or entity based in another country (Akprien & Umoffiong, 2020). $\frac{\text{Foreign Direct Investment}}{\text{GDP}} \times \frac{100}{1}$	Arikpo & Ogar (2018), Omodero & Ekwe (2017)
Foreign Portfolio Investment	FPI is seen as the purchase of shares in a foreign country where the investing party does not seek control over the investment (Agu, Ogu & Ezeanyej, 2019). $= \frac{\text{Foreign Portfolio Investment}}{\text{GDP}} \times \frac{100}{1}$	Aizenman and Noy (2009), Marc (2018), Makoni (2018) Adebisi, Adesola & Arikpo (2017).
Current account Balance	CAB measures cross-border investment in financial instruments and changes in Central Banks reserves. Calculating a country's current account balance (CAB) will tell us if it has a deficit or a surplus. $\frac{(X-M) + (NY + NCT)}{\text{GDP}} \times \frac{100}{1}$	Yoshihiro, (2009)
Moderation Variables		
Exchange Rate	Official Rate of exchange as previewed by central banks of selected countries statistical bulletin.	Iriobe, Obamuyi & Abayomi (2018)
Interest Rate	Official lending rate as previewed by CBN statistical bulletin proxied by prime lending rate.	Eniekezimene (2013).

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4. RESULTS AND DISCUSSION

4.1 Preliminary statistical Test

As seen in Table 1.2 are the results of the descriptive statistics, pairwise correlational matrices and unit root test for the studied variables in both country specific and panel form. The standard measures of central tendency like the mean are reported in a manner that compares average market capitalization in the respective countries with the average market capitalization for all African countries. Namibia and Ghana present a mean market capitalization that are far below the African average of 36.38, while South Africa and Mauritius exceed the African average posting a mean SMC of 201.94 and 41.48, respectively. For foreign direct investment all the African countries fall below the group panel average used with the exception of Egypt and South Africa. The coefficient of variance which measures the dispersion of a probability distribution were normally

distributed as it tends to hover around the mean. In the correlation analyses, we find a mixture of positive and negative correlation between financial liberalization and the stock market performance variables. In about 90.9% of the countries, foreign direct investment showed positive linear association with market capitalization while foreign portfolio investment is positively linked with market capitalization in 72.72% of the investigated countries. In almost 81.81% of the investigated countries, current account balance, showed negative correlation between market capitalizations in studied countries. There is no evidence of significant multicollinearity as indicated by the correlational matrices. Given that the ARDL estimation technique tolerate only I (1) and I (0) variables, (order two I(2), variables are not accepted) the unit root properties of the series as reported were investigated. From the result, it could be observed that all variables are integrated of order I (1) and I (0), for both the panel and time series. By this, the null hypothesis of I (2) is rejected for all the variables at the 0.05 percent level of significance. However, the results provide a justification for the use of the ARDL estimator without worries of data misspecification and spuriousness.

Table 3: Preliminary Test Result

Average	Panel	Egypt	Morocco	Tunisia	South A.	Botswana	Namibia	Kenya	Mauritius	Nigeria	Ghana	Cote d iv
Standard Mean ($\bar{x}$)												
$\bar{x}$ Market Cap	36.383	24.923	35.639	12.762	201.942	19.036	8.282	20.691	41.488	13.223	8.084	14.490
$\bar{x}$ Foreign direct investment	2.116	2.657	2.076	2.658	1.082	2.127	3.703	0.961	1.910	1.913	2.513	1.624
$\bar{x}$ Foreign portfolio investment	2.112	-0.460	-0.686	-4926	-2.523	2.287	1.721	2.080	3.038	-2.609	-4.540	-3.641
$\bar{x}$ Current account balance	-1.020	-0.520	-1.799	-4.684	-1.270	6.741	1.775	-5.450	-3.340	3.083	-3.819	-1.941
Standard Deviation (σ)												
σ Market Cap	59.013	22.882	25.552	7.017	66.546	13.324	6.419	12.532	26.885	6.682	7.094	11.794
σ Foreign direct investment	2.000	2.171	1.422	1.686	1.250	2.592	2.993	1.140	1.580	1.006	2.506	1.046
σ Foreign portfolio investment	8785.9	1.416	2.861	29139.81	4.947	5.305	8.118	5.790	10.867	11.482	9.658	9.740
σ Current account balance	6.298	3.777	3.263	3.168	2.888	9.255	9.031	4.181	4.615	5.540	2.545	4.943
Cumulative variance												
C-V Market Cap	1.621	0.918	0.716	0.549	0.329	0.699	0.742	0.605	0.648	0.505	0.877	0.813
C-V Foreign direct investment	0.947	0.817	0.685	0.634	1.155	1.218	0.808	1.187	0.827	0.525	0.996	0.644
C-V Foreign portfolio investment	-17.99	-3.077	-4.165	-5.915	-1.960	2.319	4.714	2.783	3.576	-4.400	-2.127	-2.675
C-V Current account balance	-6.172	-7.260	-1.813	-0.676	2.274	1.373	5.088	-0.767	-1.381	1.797	-0.666	-2.547
Correlation Matrices												
$I_{SMC \text{ VERSUS } FDI}$	-0.089	0.621	0.451	0.138	0.094	0.240	-0.018	0.546	0.623	0.287	0.151	0.123
$I_{SMC \text{ VERSUS } FPI}$	0.031	0.325	0.329	0.316	-0.018	0.044	-0.183	-0.030	0.181	0.254	0.044	-0.429
$I_{SMC \text{ VERSUS } CAB}$	-0.091	0.105	-0.451	-0.596	-0.499	-0.329	-0.591	-0.229	-0.630	0.175	-0.076	0.538
Unit root Test												
SMC	-10.828 I(1)	-3.676 I(1)	-3.738 I(1)	-4.939 I(1)	-7.995 I(1)	-4.692 I(1)	4.487 I(1)	-5.002 I(1)	-6.350 I(1)	-6.711 I(1)	-3.443 I(1)	-4.975 I(1)
FDI	-15.791 I(1)	-4.200 I(1)	-16.75 I(1)	-9.803 I(1)	-7.304 I(1)	-7.459 I(1)	-6.078 I(1)	-10.00 I(1)	-9.326 I(1)	-10.07 I(1)	-6.642 I(1)	-7.554 I(1)
FPI	-19.631 I(0)	-6.336 I(1)	-7.268 I(1)	-18.586 I(1)	-7.006 I(1)	-7.868 I(1)	-7.442 I(1)	-8.047 I(1)	-7.074 I(1)	-8.461 I(1)	-7.444 I(1)	-12.800 I(1)
CAB	-14.889 I(1)	-5.456 I(1)	-6.097 I(1)	-5.930 I(1)	-3.861 I(1)	-11.32 I(1)	-7.488 I(1)	-6.141 I(1)	-5.339 I(1)	-5.290 I(1)	-5.689 I(1)	-9.267 I(1)

Authors Compilation, 2022

4.2 Short run and long run ARDL Model

Table 5: encompasses the short and long -run estimates of the observed variables. However, a regional country-by-country discussion approach is adopted as our analyses model.

North African Region

The north African economy, have shown persistent increase over the years with Egypt, Morocco and Tunisia, topping the chart in term of economic performance within the region. The region saw the emergence of the first exchange house in Africa, the Egyptian Exchange lunched in 1883, and also within 1929 and 1969 two additional exchange houses were established in Morocco and Tunisia (Casablanca Exchange and Bourse de Tunis). However, to further strengthen global economic integration within the region, Liberalization policy took effect in 1986 in Egypt, 1988 in Morocco and 1989 in Tunisia. This study took a sample of the most active and performing market within the region in term of market capitalization. The results of the short and long run ARDL estimation are discussed below.

Egypt

From the ARDL approach, we found out that both foreign direct investment, foreign portfolio investment and current account balance had positive and significant impact on stock market capitalization in Egypt. This showed that a unit positive change in foreign direct investment, foreign portfolio investment and current account balance, will result in a 6.80, 8.09 and 3.11-point rise in SMC (see table, 5). However, using the ARDL bound test approach confirmed the existence of long-run Co-integration between observed independent variables with stock market capitalization, as the FPSS (6.09) is greater than the 1(0) and 1 (1) respectively. The short-run parameter of interest error correction terms (ECT) which shows how the system adjust toward long-run equilibrium at the speed of 92% for SMC. This shows that it takes about one (1) year for full equilibrium to be restored for the SMC model. The diagnostic tests prove that the ARDL model have good fit (SMC $R^2 = 96\%$), is stable (RESET p-value: SMC = 0.85), have no autocorrelated residual (LM p-value: SMC= 0.289) and the variance of the residual is constant (HET p-value: SMC= 0.195).

Morocco

For Morocco, we found positive but non-significant impact in both foreign direct investment and foreign portfolio investment on stock market capitalization. This indicates that a unit positive change in foreign direct investment and foreign portfolio investment will result in a slight increase in stock market capitalization. While the current account balance was negative and non-significant on stock market capitalization, indicating that a unit change in current account balance will result in a (-27.57) decrease in stock market capitalization. Using the bound test approach, we confirmed no long-run cointegrating relationship exist between the dependent and independent variables, since the FPSS (SMC < 1.52) is less than the 1(1) and 1(0) respectively. The short-run parameter of

interest error correction terms (ECT), which shows how the system adjust toward long-run equilibrium at the speed of 6% in SMC. In terms of velocity of return to equilibrium from short-run deviations, it will take about 16year for the SMC to return to equilibrium. The diagnostic tests prove that the ARDL model have good fit SMC $R^2 = 94\%$), is stable (RESET p-value: SMC = 0.08), have no autocorrelated residual (LM p-value: SMC= 0.31) and the variance of the residual is constant (HET p-value: SMC= 0.06).

Tunisia

The result obtained from the ARDL analysis showed that foreign direct investment and current account balance had positive and significant impact on stock market capitalization. This indicated that a unit increase in foreign direct investment and current account balance will result in 3.09 and 1.16-point rise in stock market capitalization. While foreign portfolio investment showed a positive but non-significant impact on stock market capitalization. The bound ARDL test result showed the existence of long-run Co-integration amongst the independent variables with both stock market capitalization. The short-run parameter of interest error correction terms (ECT). The speed is adjusted at 38% in SMC. As regards the velocity of return to equilibrium from short-run deviations, it will take over two (2) year for the SMC to return to equilibrium. The diagnostic tests prove that the ARDL model have good fit (SMC $R^2 = 96\%$), is stable (RESET p-value: SMC = 0.57), have no auto correlated residual (LM p-value: SMC= 0.19) and the variance of the residual is constant (HET p-value: SMC= 0.26).

South African Region

The southern African region boosts of one of the largest African economies, with South Africa ranking top in terms of financial and economic performance in Africa. The Johannesburg exchange was the first exchange house established within the region in 1887, followed by the Namibia stock exchange in 1992 and Botswana exchange in 1995. However, with the introduction of the liberalization policy in South Africa, Botswana and Namibia in 1995, 1991 and 1992 respectively, the region was open for economic and financial integration. This study selected the most performing stock market within the region. The result of the short and long-run estimation are discussed below.

South Africa

In the case of South Africa, the ARDL result showed evidence of the existence of a long-run Co-integration relationship amongst the independent variables with stock market capitalization, as the FPSS (4.16) is greater than the 1(0) and I (1) respectively. However, the result obtained showed that FDI, FPI and CAB had positive and significant impact on stock market capitalization in South Africa. This implies that a unit positive rise in FDI, FPI and CAB will lead to a spontaneous increase in both SMC. The short-run parameter of interest error correction terms (ECT). The speed is adjusted to equilibrium in the long-run at 86% in SMC. In terms of the velocity of return to equilibrium from short-run deviations, it will take over one (1) year for the SMC to return to equilibrium. The diagnostic tests prove that the ARDL model have good fit (SMC $R^2 = 78\%$), is stable (RESET p-value:

SMC = 0.17), have no autocorrelated residual (LM p-value: SMC= 0.49) and the variance of the residual is constant (HET p-value: SMC= 0.32).

Botswana

In Botswana, we discovered that a unit positive rise in both foreign direct investment and foreign portfolio investment will result in a 3.23 and 2.39-point rise in stock market capitalization and also a unit rise in current account balance will result in a 0.16-point slight increase in stock market capitalization (see, Table 5). The ARDL model showed a long-run co-integrating relationship between the independent variables and stock market capitalization, as the FPSS (SMC > 4.36) is greater than the $I(0)$ and $I(1)$ respectively. The short-run parameter of interest error correction terms (ECT). The speed of adjustment in time dimension for SMC is 25% which will take about four (4) years to reach equilibrium. Further tests prove that the ARDL model have good fit (SMC $R^2 = 96\%$), is stable (RESET p-value: SMC = 0.67), have no auto correlated residual (LM p-value: SMC= 0.59) and the variance of the residual is constant (HET p-value: SMC= 0.12).

Namibia

The finding in Namibia showed no long-run co-integrating relationship exist between the independent variable stock market capitalization, as FPSS (SMC < 1.04) is less than the $I(0)$ and $I(1)$ respectively. However, from the result FDI and CAB showed a positive and significant impact on stock market capitalization, while FPI had negative and non-significant impact on stock market capitalization. The short-run parameter of interest error correction terms (ECT), showed a speed of adjustment of 32% in SMC. In terms of the velocity of return to equilibrium from short-run deviations, it will take about (3) year for the SMC to return to equilibrium. Our diagnostic test affirms that the ARDL model have good fit (SMC $R^2 = 92\%$), is stable (RESET p-value: SMC = 0.24), have no auto correlated residual (LM p-value: SMC= 0.09) and the variance of the residual is constant (HET p-value: SMC= 0.33).

East African Region

The East African drive toward economic integration led to the adoption of the liberalization policy in Kenya and Mauritius in 1991 and 1990 respectively. However, stock market activities got a booster with the listing of the exchange houses in 1954 and 1988 in both Kenya and Mauritius respectively. Today, the markets are classified among the most outstanding stock markets in Africa. It was based on this condition both countries were selected. The result of the short and long-run estimation are discussed below.

Kenya

In Kenya, the result showed that foreign direct investment and foreign portfolio investment had positive and significant impact on stock market capitalization. It observed that a unit positive rise in FDI and FPI will result in 7.02 and 1.60-point increase in stock market capitalization. Conversely, current account balance had negative and non-significant impact on stock market capitalization. However, further result showed the existence of

long-run cointegrating relationship between the variables of interest (see, Table 5). The short-run parameter of interest error correction terms (ECT), which shows how the system adjust toward long-run equilibrium at the speed of 41% for SMC which is above two (2) years. The diagnostic tests prove that the ARDL model have good fit (SMC $R^2 = 92\%$), is stable (RESET p-value: SMC = 0.24), have no auto correlated residual (LM p-value: SMC= 0.09) and the variance of the residual is constant (HET p-value: SMC= 0.33).

Mauritius

For Mauritius, foreign direct investment showed a negative and non-significant impact on stock market capitalization. This indicated that a unit rise in foreign direct investment will result in a -11.26 drop in stock market capitalization. Foreign portfolio investment revealed a positive but non-significant impact of SMC in Mauritius. This suggests that a unit rise in FDI will result in a 0.32-point rise for SMC in Mauritius. Current account balance was seen to be positive and significant for SMC in Mauritius. This goes to show that a unit increase in current account balance will lead to a 4.75-point rise in SMC. The bound test using the ARDL approach confirmed the existence of Co-integration between the independent variables and stock market capitalization in Mauritius (see, Table 5). The error correction term for ARDL is negatively significant and lies within a predictable limit of 51% for SMC. In terms of the velocity of return to equilibrium from short-run deviations, it will take about (2) year for the SMC to return to equilibrium. The diagnostic tests further proved that the ARDL model have good fit (SMC $R^2 = 86\%$), is stable (RESET p-value: SMC = 0.66), have no auto correlated residual (LM p-value: SMC= 0.09) and the variance of the residual is constant (HET p-value: SMC= 0.20).

West African Region

The West African region established its first exchange house, the Nigeria stock exchange in 1960, which is among the biggest exchange houses in African. However, other exchange houses were established, e.g., the Ghanaian stock exchange in 1990, the UEMOA (Bourse Regionale des Value's Mobilizers) in 1998, which consist of several Africa countries including Cote d Ivoire. Thus, for the region to be fully integrated economically, liberalization of its economies took effect in several countries within the region e.g., Nigeria, Ghana and Cote d Ivoire in 1995, 1988 and 1989 respectively. The region currently ranked among the most performing regions in Africa. The result of the short and long-run estimation are discussed below.

Nigeria

For the Nigeria economy, foreign direct investment and foreign portfolio investment had a positive and significant impact on stock market capitalization. This shows that for every unit rise in FDI and FPI, the market will react positively, thereby boosting stock market capitalization. However, current account balance showed positive but non-significant impact on SMC in Nigeria. This implies that an increase in CAB will lead to a 0.02-point increase for SMC in Nigeria. In the ARDL approach the model found no long-run Co-integration exist between the independent variables and SMC (see, Table 5). The short-

run parameter of interest error correction terms (ECT). Which shows how the system adjust toward long-run equilibrium at the speed of 121% for SMC which is less than a (1) years. The diagnostic tests prove that the ARDL model have good fit (SMC $R^2 = 68\%$), is stable (RESET p-value: SMC = 0.25), have no autocorrelated residual (LM p-value: SMC= 0.19) and the variance of the residual is constant (HET p-value: SMC= 0.24).

Ghana

In the case of Ghana, we found that a unit positive rise in both foreign direct investment and foreign portfolio investment will result in a 6.09 and 8.25-point rise in stock market capitalization and also a unit rise in current account balance will result in a -5.09-point decrease in stock market capitalization (see, Table 5). The bound test of the ARDL approach show the existence of no Co-integration as the FPSS (SMC < 0.75) is less than the I(0) and I(1). The short-run parameter of interest error correction terms (ECT), showed a speed of adjustment of 11% for SMC and 43% for TVST. In terms of the velocity of return to equilibrium from short-run deviations, it will take about nine (9) year for the SMC and over two (2) year for TVST to return to equilibrium. Following the model validity/reliability check, the model have good fit (SMC $R^2 = 82\%$), is stable (RESET p-value: SMC = 0.16), have no auto correlated residual (LM p-value: SMC= 0.97) and the variance of the residual is constant (HET p-value: SMC= 0.88).

Cote d Ivoire

Finally, in Cote d Ivoire, our result showed that both foreign portfolio investment and current account balance positively and significantly impact on stock market capitalization. Which indicate that a unit rise in FPI and CAB, will result in a 0.67 and 2.30-point rise in SMC. While foreign direct investment revealed a positive but non-significant impact on stock market capitalization. The bound test using the ARDL approaches confirms the existence of no Co-integration between the independent variables and stock market capitalization in Cote D Ivoire (see, Table 5). The error correction term for ARDL is negatively significant and lies within a predictable limit of 27% in SCM. In terms of the velocity of return to equilibrium from short-run deviations, it will take about four (4) year for the SMC to return to equilibrium. The diagnostic tests prove that the ARDL model have good fit (SMC $R^2 = 87\%$) is stable (RESET p-value: SMC = 0.39), have no auto correlated residual (LM p-value: SMC= 0.96) and the variance of the residual is constant (HET p-value: SMC= 0.60).

Table 4: Short run and long run ARDL Model

VAR	Panel ARDL	Egypt	Morocco	Tunisia	South Africa	Botswana	Namibia	Kenya	Mauritius	Nigeria	Ghana	Cote D Ivoire	% of compliance against apriori expectation
DEPENDENT VARIABLE – SMC													
FDI	2.76 (9.88) 0.000	6.80 (5.96) 0.000	4.19 (0.23) 0.817	3.09 (2.90) 0.009	52.56 (2.44) 0.041	3.23 (2.88) 0.008	1.31 (2.34) 0.027	7.02 (3.01) 0.013	-11.26 (1.47) 0.153	6.53 (1.99) 0.031	6.09 (2.33) 0.006	5.67 (1.34) 0.191	72.73%
FPI	1.98 (6.97) 0.000	8.09 (4.50) 0.000	2.13 (0.27) 0.783	0.27 (0.66) 0.521	14.32 (2.72) 0.021	2.39 (2.41) 0.024	-0.13 (0.78) 0.440	1.60 (1.98) 0.031	0.32 (0.73) 0.471	0.16 (1.97) 0.041	8.25 (1.99) 0.031	0.67 (2.18) 0.038	63.64%
CAB	0.81 (2.82) 0.005	3.11 (7.25) 0.000	-27.57 (-0.74) 0.465	1.16 (0.85) 0.041	23.94 (7.35) 0.000	0.16 (0.54) 0.596	0.55 (2.03) 0.042	-0.14 (0.24) 0.818	4.75 (2.55) 0.017	1.18 (2.82) 0.011	-5.09 (1.23) 0.240	2.30 (2.91) 0.007	63.64%
EXCR	0.21 (1.98) 0.049	6.58 (11.00) 0.000	53.02 (0.58) 0.581	-3.22 (0.92) 0.370	18.52 (9.42) 0.000	8.22 (4.66) 0.000	0.59 (1.39) 0.177	0.36 (4.85) 0.000	2.55 (3.16) 0.004	-0.01 (-0.63) 0.537	32.84 (2.02) 0.067	0.07 (1.80) 0.083	
INF	1.85 (5.69) 0.000	-0.96 (2.49) 0.031	-0.96 (-0.06) 0.946	0.96 (1.21) 0.240	19.04 (4.50) 0.002	7.14 (3.66) 0.001	0.98 (2.34) 0.027	1.05 (2.49) 0.030	-0.76 (0.49) 0.611	0.56 (2.55) 0.020	0.63 (1.94) 0.071	-0.55 (0.91) 0.373	
R²	NA	0.96	0.94	0.96	0.78	0.96	0.92	0.89	0.86	0.68	0.82	0.87	
F-STAT	NA	80.17 (0.00)	67.674 (0.00)	30.83 (0.00)	11.12 (0.00)	67.71 (0.00)	46.48 (0.00)	19.55 (0.00)	19.28 (0.00)	3.00 (0.01)	8.20 (0.00)	31.45 (0.00)	
FPSS	NA	6.09	1.52	8.12	4.16	4.36	1.04	5.13	4.12	3.27	0.75	0.097	
ECMt-1	-0.14 (4.02)	-0.92 (3.03)	-0.06 (0.65)	-0.38 (1.54)	-0.86 (5.01)	-0.25 (2.89)	-0.32 (2.71)	-0.41 (3.52)	-0.51 (3.09)	-0.81 (5.07)	-0.11 (0.79)	-0.27 (2.62)	
LM	NA	1.31 (0.289)	1.22 (0.31)	1.81 (0.19)	0.72 (0.49)	0.54 (0.59)	3.72 (0.09)	1.85 (0.18)	3.80 (0.09)	1.75 (0.19)	0.02 (0.97)	0.04 (0.96)	
HET	NA	1.54 (0.195)	2.32 (0.06)	1.36 (0.26)	1.24 (0.32)	1.81 (0.12)	1.19 (0.33)	2.04 (0.07)	1.52 (0.20)	1.40 (0.24)	0.45 (0.88)	0.76 (0.60)	
RESET	NA	0.18 (0.85)	2.86 (0.08)	0.57 (0.57)	1.39 (0.17)	0.43 (0.67)	1.21 (0.24)	0.54 (0.59)	0.44 (0.66)	1.19 (0.25)	1.48 (0.16)	0.87 (0.39)	

Authors Compilation, 2022

5. CONCLUSIONS AND RECOMMENDATION

In this paper, we adopted a unique approach by utilizing both panel and time series ARDL technique to investigate the influence of financial liberalization on stock market performance in Africa regions from 1986-2020. However, the empirical findings of this research give more robust value addition to the body of empirical literatures through the instrumentality of our extensive reviews in this area of research. The main evidence of our study reveals a positive and significant impact exist between foreign direct investment, foreign portfolio investment and current account balance on stock market capitalization in both panel and time series result across the regions of Africa. The study showed that about 72.72% of studied countries agrees that the activities of foreign direct investors significantly influence market capitalization in Africa. This correlate with the results of Adigun, Sakariyahu and Lawal, (2017), and Akrikpo and Ogar (2016). For foreign portfolio investment, about 63.64% of selected African countries concur with the fact that foreign portfolio investment contributes immensely to the development of the capital market, through the improved growth in market size. This is in line with the works

of Iriobe, Obamuyi & Abayomi, 2018; Olotu & Oliogu, 2019; Gachanja & Kosimbei, 2018; Boboye, Oluwakemi & Alamu, (2017). While for the current account balance, which gives a clear picture about the economic activities of countries gave an overwhelming signal of a robust influence on stock market activities in Africa. The result showed that about 63.64% of African countries agrees that African stock market performances better as a result of an improved economic activities. This finding provides a clear part for others to follow. Therefore, this study recommends that, government and other regulatory agencies, must take proactive steps in ensuring that stringent restrictive policies are relaxed in the ease of doing business, introduce legislation that promotes the establishment of free trade zone and tax break for investors, and also boost investors' confidence through the instrumentality of transparency and information disclosure. The conclusions drawn in this study are considered momentous as it opens new research frontiers in the area of discovering the degree to which Africa countries are embracing financial liberalization with emphasis on policy initiatives and practice.

References

- Abdullahi I. B., & Fakunmoju S. K. (2019). Stock Market Development and Economic Performance of West-African Countries: Dynamic Panel Data Analysis. *Journal of Management, Economics, and Industrial Organization*, 3(3), 12-26.
- Abere, B., O. (2019). Financial Liberalization and Bank Performance in Nigeria: A Panel Data Analysis. *Journal of Research in Humanities and Social Science*, 7(4), 42-50.
- Adebisi, A., & Arikpo O. (2017). Financial Market and Foreign Portfolio Inflows to Nigeria: Autoregressive Distribution Lag Approach. *International Journal of Research Granthaalayah*, 5(6), 673-685.
- Adeusi, S. Azeez O., Bolanle A., & Olanrewaju, H. A. (2012). Effect of Financial Liberalization on the Performance of Informal Capital Market. *Research Journal of Finance and Accounting*, 3(6), 63-77.
- Adigun, R., Sakariyahu, O. R., & Lawal, R. Y. (2017). Foreign capital inflows and stock market development in Nigeria: A Post-Structural Adjustment Programme Analysis. *Journal of Economics and Finance*, 6(3), 135-152.
- Afef, T. (2016). Does financial liberalization affect negatively emerging stock market stability? *High School of Commerce of SFAX, University of Tunis, Tunisia*, 4(2), 1-8. <http://dx.doi.org/10.20944/preprints201607.0053.v1>
- Agbaeze E., & Onwuka I. (2014). Financial liberalization and investments: The Nigeria experience. *Journal of Research in Economics and International Finance*, 3(1), 12-24.
- Ahmad, A., A. (2018). Effect of Liberalization of Amman Stock Market on the Prices Fluctuation. *Asian Journal of Finance & Accounting*, 10(1), 274-294.
- Ahmed, A. (2013). Effects of financial liberalization on financial market development and economic performance of the SSA region: An empirical assessment. *Economic Modelling*, 30(1), 261-273. <https://doi.org/10.1016/j.econmod.2012.09.019>
- Ahuru, R., & Olaposi, O., J. (2016). The Impact of Financial Liberalization on Stock Price Volatility in Nigeria. *International Journal of Advances in Management, Economics and Entrepreneurship*, 3(7), 1-6.
- Aizenman, J. & Noy, J. (2009). Endogenous Financial and Trade Openness. *Review of Development Economics*, 13(1), 175-189.

- Akinsola F., & Odhiambo N. (2017). The impact of financial liberalization on economic growth in sub-Saharan Africa. *Cogent Economics & Finance*, 4(5), 1-11.
- Akporien F., & Umoffiong, N., J. (2020). Foreign Direct Investment and Stock Market Performance in Nigeria. *Journal of Business and African Economy*, 6(1), 45-54.
- Arikpo, O. F., & Ogar, A. (2018). Empirical examination of foreign direct investment and stock market performance in Nigeria. *International Journal of Economics and Financial Management*, 3(2), 68-92.
- Asongu, S. A., & Nwachukwu, J. C. (2016). Political regimes and stock market performance in Africa. *Munich Personal Repec Archive*, 6(4), 3-20.
- Balogun, W., Dahalan, J. & Hassan, S. (2016). Stock Market Development, Liberalization and Financial Development in the Selected Sub-Saharan African Countries. *Romanian Economic and Business Review*, 11(2), 52–65.
- Barnor., & Wiafe, (2015). Financial Sector Openness and Stock Market Development in Ghana. *Research Journal of Finance and Accounting*, 6(24), 2-14.
- Boboye, A.L, Oluwakemi, A.A and Alamu, A.O. (2017). Impact of Foreign Private Investment on the Development of Nigerian Capital Market. *International Journal of Economics, Business and Management Research*, 1(2): 120-132.
- Emiekezimene, A.F. (2013). The impact of foreign portfolio investment on capital market growth: Evidence from Nigeria. *Global Business and Economics Research Journal*, 2(8), 13-30.
- Emna Bensethom, (2021). Assessing the Effects of Financial Liberalization and Global Financial Crisis on Stock Market Volatility: Evidence from Smooth-Transition GARCH Models. *Journal of Business Finance Aff*, 10(1) 380
- Engle, R. F. & Granger, C.W. (1987). Co-integration and Error Correction, Representation, Estimation and Testing. 55(2), 251-276.
- Fowowe, B. (2013). Financial liberalization in sub-Saharan Africa: What do we know? *Journal of Economic Surveys*, 27(1), 1–37. <https://doi.org/10.1111/j.1467-6419.2011.00689>.
- Gachanja, S. N., & Kosimbei, G. (2018). Dynamic Linkage Between Foreign Equity Flows and Stock Market Returns at the Nairobi Securities Exchange. *The Strategic Journal of Business & Change Management*, 5(3), 201-215.
- Hermes, N.,& Lensink, R. (2014). Financial liberalization and capital flight: evidence from the African continent. *Centre of International Banking, Insurance and Finance*, University of Groningen, Netherlands.
- Hermes, N., Lensink, R., 2005. Does financial liberalization influence saving, investment and economic growth? Evidence from 25 emerging market economies. *UNU-WIDER Research*, 1(2), 73-96.
- Igbinosa, S. O., & Uhunmwangho, M. (2019). Macroeconomic aggregates and stock market liquidity: Evidence from African stock markets. *International Journal of Economics and Financial Management*4 (1), 18-27.
- Imegi, (2014). Impact of financial liberalization on stock market volatility in Nigeria. *Journal of Business and Retail Management Research*, 8(2), 80-87.
- Iriobe, G. O., Obamuyi, T. M., & Abayomi, M. A. (2018). Foreign Portfolio Equity Investment and the Performance of the Nigerian Stock Market: A Sectoral Distribution Analysis. *International Business and Management*, 16(1), 29-38.
- Jurdi, D., Khan, H., & Said, R. (2017). Financial Liberalization and Stock Market Development in the Mena Region. 19th International Scientific Conference on Economic and Social Development Melbourne, Australia, 9(10), 324-344.

- M, Umutlu. L, Akdeniz. Altag-Salih A. "The degree of financial liberalization and aggregated stock-return volatility in emerging markets", J. Bank. Finance, 34 (2010): 485-696.
- Marc, S. (2018). Impact of Financial Liberalization on the Financial Development of Eight Countries Member of SADC. Journal of Global Economics, 6(1), 1-7. DOI:10.4172/2375-4389.1000287.
- Mckinnon, R., I. (1973). Money, capital and banking. Washington D.C: Brooklyn Institution.
- Misati, R. N., & Nyamongo, E., M. (2012). Financial liberalization, financial fragility and economic growth in sub-Saharan Africa. Journal of Financial Stability, 7(2), 26–37.
- Olabisi, Balogun Wakilat (2016) Effects of financial liberalization on stock market development, FDI inflows and TFP in selected African countries. PhD. Thesis, Universiti Utara Malaysia.
- Olotu, M. E., & Oliogu, O. (2014). Decomposition of capital inflows and capital market development of emerging economies: Evidence from Nigeria. Jorind, 12(1), 164-170.
- Omodero, C. O., & Ekwe, M., C (2017). Impact of Foreign Direct Investment on the Stock Market Performances in Nigeria (1985-2014). Applied Finance and Accounting, 3(1), 36-48. URL: <http://dx.doi.org/10.11114/afa.v3i1.1932>
- Onuora, O. G. (2019). Effect of Capital Market on Economic Growth and Development of Nigeria. International Journal of Academic Research in Business and Social Sciences, 9(2), 211– 220.
- Orj, A., Jonathan E. Ogbuabor, I., Onyinye I., & Anthony, O. (2015). Financial Liberalization and Economic Growth in Nigeria: An Empirical Evidence. International Journal of Economics and Financial Issues, 5(3), 270-283.
- Ousmanou, N. (2017). Financial liberalization on growth in Africa economies: The roles of policy complementarities. Review of Development Finance, 7(17), 73-84.
- Owusu, E. L., & Odhiambo, N.M. (2012). Efficacy of Financial Liberalization in Ivory Coast. Economics, Management and Financial Markets Journal, 7 (2), 105–117.
- Ozdemir, D. & Erbil, C. (2008). Does Financial Liberalization Trigger Long-Run Economic Growth?: Evidence from Turkey and Other Recent EU Members. EcoMod International Conference on Policy Modelling, 23(2), 32-45.
- Ozdemir, D. and Erbil, C. (2008). Does Financial Liberalization Trigger Long-Run Economic Growth? Evidence from Turkey and Other Recent EU Members. EcoMod International Conference on Policy Modelling, 23(2), 32-45.
- Pesaran M.H., Sin Y., & Smith, R., J. (2001). Bound testing approaches to the analysis of level relationships. Journal of Applied Econometrics, 16(3), 289-326.
- Pesaran, M. H., & Shin, Y. (1999). An Autoregressive Distributed Lag Modelling Approach to Co-Integration Analysis." In Econometrics and Economic Theory in the Twentieth Century: The Ragnar Frisch Centennial Symposium, edited by S. Strom. Cambridge: Cambridge University Press
- Raza SA, & Jawaid S.T. (2012). Foreign Capital Inflows, Economic Growth and Stock Market Capitalization in Asian Countries: An ARDL Bound Testing Approach. Qual Quant, 48(1), 375–385.
- Safavi, B., & Yousefi, A. (2017). Examining the Effect of Financial Liberalization on the Performance of Tehran Stock Market. International Journal of Development and Economic Sustainability, 5(5), 11-21.
- Shaw, E., S. (1973). Financial deepening in economic development. New York: Oxford University Press.
- Shrestha, M. B., & K. Chowdhury. (2006). Financial Liberalization Index for Nepal. International Journal of Applied Econometrics and Quantitative Studies, 3(1), 41– 54.

Sulaiman, L.A., Oke, M.O & Azeez, B.A. (2012). Effect of financial liberalization on economic growth in developing countries, 1(12), 16-28.

Yao, Shujie, Hongbo He, Shou Chen, & Jinghua O. (2018). Financial liberalization and cross-border market integration: Evidence from China's stock market. *International Review of Economics & Finance*, 23(2), 34-45.

Yoshihiro, K. (2009). The Current Account and Stock Returns. *Research in International Business and Finance* 23(2009), 302–321.

Zemel & Zhang (2018). The effect of the liberalization of the Chinese stock market on returns, *Applied Economics Letters*, 5(3), 23-35. DOI: 10.1080/13504851.2018.1528054.