

Effect of External Financing on Stock Markets post-COVID 19 Recovery in Selected African Countries

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Abstract

This study seeks to examine the effect of external financing on stock markets post-Covid-19 recovery in selected African countries using quarterly time series data from 2015Q1 to 2022Q4. This study did a comparative analysis using bivariate model for the individual countries. The Nairobi stock exchange in Kenya had its market capitalization adversely affected by the coronavirus pandemic given that foreign portfolio investment and foreign direct investment also decreased in that period. The Nigeria Stock Exchange capital market capitalization was not significantly affected by the COVID-19 pandemic. Although foreign portfolio investment was not forthcoming in the face of a depreciating currency and a negative governance quality variable in the pandemic era. The Johannesburg Stock Exchange was affected by the COVID-19 pandemic. But, then the inflow of capital inflows into the country did not influence stock market recovery after the pandemic era. The continued fluctuations in external financing will continue to affect global stock markets, so stock markets in Africa must put in place a conducive financial environment to attract these foreign capital inflows for investment.

Keywords: *External financing, Stock market, COVID-19, Stock market capitalization, capital inflows*

JEL Classification Code: E44, G15

1. Introduction

External capital inflows are an important source of financing investments in sub-Saharan African countries (Ndiweni & Bonga-Bonga, 2021). Similarly, literature emphasized that external financing is an essential source of investment flows that supplement the stock market's insufficient financial resources in most developing countries (Tsauroi, 2018; Makoni & Marozya, 2018; Raza & Jawaid, 2014). This is because, external financing facilitates the enhancement of the recipient nation's economic performance as they significantly contribute to their capital accumulation by augmenting the saving-investment gaps (Agbloyor et al, 2016). The Stock market is an important institution in facilitating this capital accumulation in developing economies (Baleseng et al., 2016; Edo, 2018). The sector has attracted long-term investment from individuals and institutions through foreign direct investment, foreign portfolio investment, and foreign public debt in equities and debentures (Edo, 2018). Literature posits that the impact of external financing inflows on economic growth is dependent on the quality of institutional infrastructure of the host economy, of which, sub-Saharan African countries harbor weak institutions (Slesman et al., 2015; Agloyor et al., 2016).

Scholars such as Bayar & Gavriletea (2017), Makoni & Marozva, (2018), and Awolaye & Dada, (2018) posit that external financing is driven by stock market development. Also, financial liberalization, human capital, political stability, and quality of institutions affect the composition and level of external financing to developing countries (Kose et al. 2010; Baleseng et al., 2016; Edo, 2018). For instance, Luca and Spatafora (2012) found large country differences in capital flows due to differences in policy framework and quality of institutions. Foreign investors play a significant role in the buying and selling of stocks in emerging and frontier markets, which causes a significant portion of the stock market fluctuations in many developing economies (Adam & Tweneboah, 2008; Tite, Ogundipe, Ogundipe, and Akinde, 2022). The COVID-19 pandemic caused significant declines in external financing, driven by contractions in the global economy (Ekeocha et al. 2023). Thanh et al. (2017) reported a decline in the stock market performance during that period, but of recent Tite, Ogundipe, Ogundipe, and Akinde, (2022) alleged that the stock market in Africa demonstrated resilience and recovered quickly from the pandemic. This might be attributed to developed stock markets in countries like Africa, South Africa, Kenya, and Nigeria (Edo, 2018). So this study seeks to examine the role of external financing in the quick recovery of selected leading African stock markets in Kenya, Nigeria, and South Africa from the shock of the COVID-19 pandemic.

2. Literature Review

2.1 Conceptual Clarification

This section focused on the various underlying concepts in this study. The Central Bank of Nigeria (CBN) (2016), on its part, defined external financing as the number of resources that a country receives from foreign corporations and economies for investment in both physical and immaterial assets. International Monetary Fund (IMF) (2007) viewed external financing as flows of funds in the form of borrowing, debt relief, technical expertise, and economic programs and policies to correct some macroeconomic fundamentals, such as difficulties in international monetary transactions. The World Bank (2003) viewed external financing as the flow of capital assets such as foreign direct investment, foreign portfolio investment, external loans, official development assistance, and remittances to promote productivity, entrepreneurship, and investment in a domestic economy.

Africa has had to rely on massive foreign investors over the years to carry out several development initiatives across its various economic sectors (Tetteh & Gao, 2020). The low domestic tax bases in sub-Saharan African countries are incapable of financing needed infrastructure, and adequate health and education provision. This failure to promote development has left African economies dependent on external financing that is particularly susceptible to global shocks such as the COVID-19 crisis (Stein & Rowden, 2022). Recall that coronavirus disease (COVID-19), which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first identified in December 2019 in Wuhan, Hubei province, China continued to hurt investment globally and regionally (White, 2021).

Capital markets are organized, highly interconnected, and regulated financial markets in which long-term debts such as bonds, preference shares, equity shares, mutual funds, public deposits, derivatives, foreign exchange, and commodities are traded (Laeven 2014). The stock market,

according to CBN (2016), is a place where shares or stocks can be issued and traded. According to CBN, this market gives businesses access to capital and gives investors the chance to acquire ownership in publicly traded corporations or other companies that are listed on the stock exchange. Bartels, Alladina, and Lederer, (2009), developed stock markets that enables easy linkages between local and foreign markets thereby doing away with entry and exit constraints for foreign investors. Similarly, liquid stock markets also attract foreign portfolio investments as they enable investors to pull out their funds at any time (Tsurai, 2022).

2.2 Theoretical Framework

This study is anchored on the Solow and Swan theory (the first neoclassical growth theory) in 1956, where the model of economic growth was based on the amounts of capital stock (K), labor levels (L), and technology. The neoclassical growth model predicts that financial globalization would cause capital to migrate from countries with abundant capital to those with scarce capital because the latter is expected to have higher returns on capital (Slesman, et al., 2015; Okafor, Ugochukwu and Chijindu, 2016; IMF, 2019). Contrary to this notion, it has been discovered that capital frequently flows upstream from developing nations that are capital-scarce to established economies that are capital-abundant. This phenomenon is known as the Lucas Paradox (Ndiweni & Bonga-Bonga, 2021). Notwithstanding, capital inflows supplement savings in nations with a lack of capital, lower the cost of capital, and ultimately raise domestic investment (Kose et al. 2010; Edo, 2018).

Corroborating with Solow-Swan's theory, the financial market theory put forward by the World Bank's World Development Report (2000), emphasized that the stock market boosts economic growth by luring capital from the global capital market, where prospective investors hunt for chances to expand their wealth (Edo, 2018). As a result, the stock market offers direct access to international capital, encouraging enterprises to grow more quickly through the sale of equity or borrowing from overseas investors, which usually leads to faster economic growth than relying on the cumbersome process of domestic capital accumulation (Edo, 2018). On the whole, technology, expertise, managerial skills, competition, and increase in employment are also transferred as a result of private equity flows (Kose et al. 2010, Calderón & Nguyen 2015; Okafor et al., 2016; Agbloyor et al., 2016). Improvements in institutions, stronger macroeconomic policies, and the growth of the domestic financial sector are further indirect advantages of capital inflows that spur economic expansion (Kose et al. 2010).

2.3 Empirical Review

This section provides an overview of the empirical literature that explains the relationship between external financing and stock markets and thus provides a guide to the research on this nexus. Using quarterly data, Muhammad, Muhammad, Shamila, and Shujahat (2017) used the auto-regressive distributed lag technique to study the nexus between foreign portfolio investments and capital market performance in China. The findings revealed a positively significant relationship between foreign portfolio investments and stock market performance. The generalized method of moment (GMM) system estimator was used by Edo (2018) to demonstrate the stock market's direct positive impact on all the elements of private capital inflows, an impact that is noticeably amplified by return on investment in the market. Thanh et al. (2017) used the two-way Generalized Method of

Moments to analyze equities market development in 36 developing nations and found that while domestic investment and FDI are statistically significant, they have a negative impact on the equity market. To determine the factors that influence foreign portfolio investment in the BRICS (Brazil, Russia, India, China, and South Africa), Tsaurai (2022) uses pooled ordinary least squares (OLS). The finding shows that the growth of the stock market had a favorable and considerable impact on foreign portfolio investment inflows.

The study by Tite, Ogundipe, Ogundipe, and Akinde (2022) utilizing ARDL short-run analysis shows a negligible link between FDI and stock market performance, however, a reversed relationship was observed for FPI, as it exerts a positive and significant impact on stock market performance. Abubakar and Danladi (2018) used the ARDL Bounds cointegration to evaluate the impact of FDI on the growth of the Nigerian equities market. The conclusion shows that foreign direct investment has a somewhat beneficial impact on the growth of the equities market. Similar research was conducted by Nzenwata (2017), who investigated the impact of FPI on the performance of the Nigerian stock exchange market and discovered that FPI had a favorable and significant impact on stock market performance. Using the Vector Error Correction (VECM) method, Omorokunwa (2018) assessed the impact of foreign capital on the performance of the Nigerian stock market. The results revealed that while the impact of foreign capital inflows on stock market development is not felt in the short run, the effects start to manifest over the long run period, and only FDI has strong, significant effects on stock market development in Nigeria.

Using a multiple regression model, Njane (2017) investigated how FDI affected market growth in Kenya and found that the equities market was not significantly impacted. In the study on the impact of portfolio flows on the performance of the Nairobi Securities Market, Nyang'oro (2013) used a multifactor pricing model and empirical results demonstrate that the stock market attracted foreign investment and that as capital inflow increased, return on investment and market performance both significantly improved. Omorokunwa and Mbaka (2021) used an autoregressive distributed lag approach and their finding revealed that FDI and FPI have a significant positive relationship with market capitalization rate among the countries in Africa, however, FDI and FPI have an insignificant relationship with stock market volatility in African countries.

Klagge and Zademach (2018) used exploratory research through the adoption of the UN-supported Sustainable Stock Exchanges Initiative (SSEI) to investigate international capital flows, stock markets, and uneven development in Sub-Saharan Africa. Findings reveal that initiative not only promotes and facilitates new global investment opportunities, but also functions as a tool for sustainable development. The desire of multinational and institutional investors to diversify and expand their portfolios. Using dynamic stochastic general equilibrium (DSGE) models, the study by Makrelov, Davies, and Harris (2019) examines the impact of capital flow reversal shocks in South Africa. The empirical findings indicate that a change in capital flows can have an impact on the domestic economy by affecting local liquidity, the financial sector's risk-taking behavior, and asset demand. Aregbeshola (2016) uses a VECM-conditioned Impulse to study the relationship between the growth of the capital market and FDI influx. The results show that FDI inflow has both negative and positive reactions to the stock market capitalization and turnover rate.

3. Methodology

The study adopted an ex post facto research design. Quarterly data was obtained from the Central Bank of Nigeria, Central Bank of Kenya, South African Reserve Bank, and the World Bank Development Indicators for the period from Q1 2015 to Q4 2022. The specific kinds of data required from the selected Stock market included Market capitalization, flows of foreign portfolio investment, foreign direct investment, governance, and exchange rate. However, in this study, only the stock exchange markets of South Africa (Johannesburg Stock Exchange), which date back to 1887, Kenya (Nairobi Stock Exchange) in 1954, and Nigeria (Nigeria Stock Exchange) in 1960 were studied because they are regional hubs of Southern Africa, West Africa, and East Africa respectively. Also, these stock exchanges have a long history dating back to colonial times or the early years of independence (Klagge & Zademach, 2018). The methods of data analysis employed were both descriptive and inferential statistics. To model the theoretical linkage between external financing and the stock market, this study follows the arguments of the World Bank (1997), Nakagawa and Psalida (2007), Weber et al. (2013), and Edo (2018). However, extant literature emphasized that government policy, economic environment, corruption, and value of local currency determine the inflows of external financing to the recipient countries (De Mello, 1997; Borensztein et al. 1998; Ralhan, 2006; Mody & Murshid, 2011; Ncube & Mingiri 2015; Edo, 2018). This is capable of making stock exchanges in Africa unattractive for most international and institutional investors (Edo, 2018). The model in this study is therefore built upon the neoclassical theory of capital flows which emphasizes the rate of return on capital as a factor in production as presented below:

$$Y_t = A_t f(K_t, L_t) \quad [1]$$

The neo-classical model as extended by various scholars to examine the nexus between external financing and the stock market is modified with the inclusion of the determinants of stock markets as mentioned by various scholars are brought together in the study and used to specify the appropriate model as shown in the functional form and expressed in equation 2.

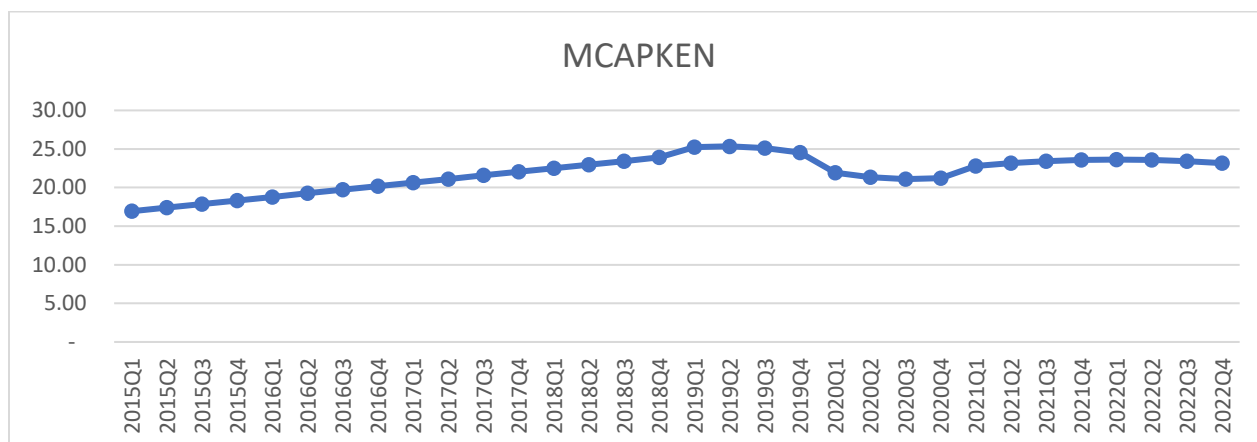
$$MCAP_t = f(FPI_t, FDI_t, EXR_t) \quad [2]$$

Where: $MCAP_t$ = Market Capitalization ((current US\$), FPI_t = Foreign Portfolio Investment (US\$ Million), FDI_t = Foreign Direct Investment (US\$ Million), EXR_t = Exchange Rate in US Dollar.

4. Results and Discussion

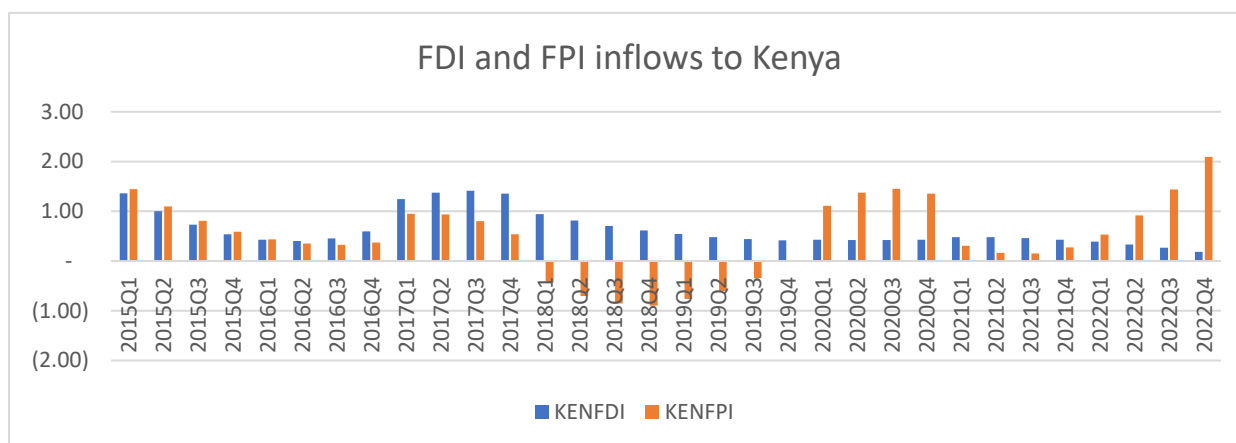
4.1.1 Trend Analysis

(a) Kenya



Source: World Bank's Development Indicators 2023

Figure 1: Trends in Market Capitalization in Kenya from 2015Q1 to 2022Q4



Source: World Bank's Development Indicators 2023

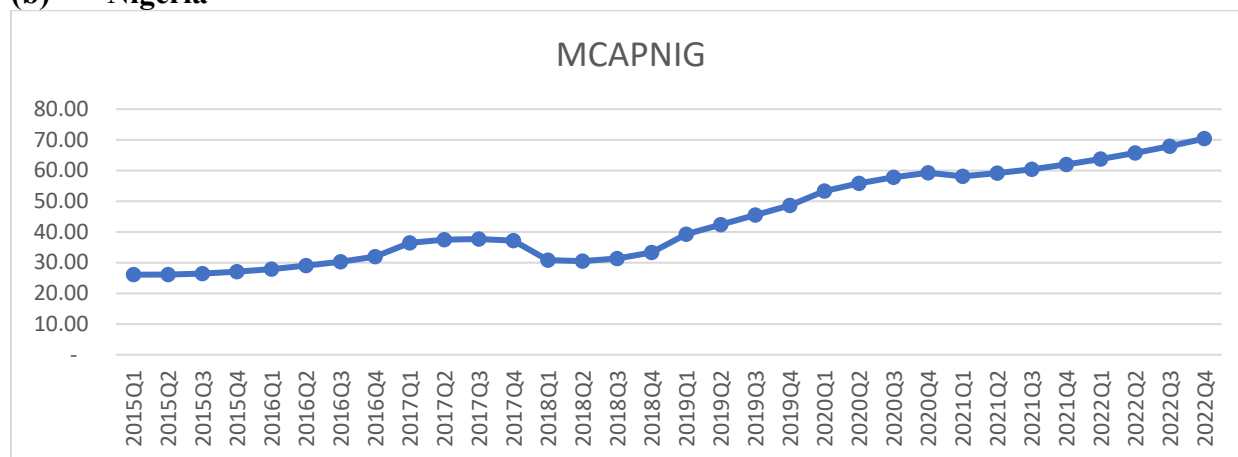
Figure 2: Trends in External Financing in Kenya from 2015Q1 to 2022Q4

Figure 1 shows that from Q1 2015 to Q2 2019, the Kenya Stock market capitalization grew smoothly from 16.94 billion to 25.34 billion (a growth rate of 49.5%). By Q3 2019, this increase dipped from 25.12 to 24.55 (a decrease of 2.27%). This decline continued into the year 2020, and became worse in Q1 2020, at 10% when it recorded its index coronavirus disease case in Nairobi. Foreign direct investment (FDI) inflow into Kenya from Q1 2015, followed an undulating path, declining steadily from 1.36 billion until Q4 2016, when it witnessed an inflow of 0.59 billion in Q1 2017. The Nairobi Stock Exchange continued on this positive note when it declined again in Q4 2019. Ironically, the reverse of growth started in Q1 2020 when it started reporting cases of the COVID-19 pandemic in other cities such as Mombasa, apart from Nairobi. It had an average of 40 billion through the pandemic period and only returned to decrease after the pandemic beginning from Q4 2021 to Q4 2022. On Foreign portfolio investment (FPI), in Q1 2015, the country witnessed an inflow of 1.45, and from then, it was a free fall up to Q4 2017. In Q1 2018, this became worse as the inflow of FPI went into a negative trend up to Q4 2022, except in Q1 to Q4 2020 when it had some measured positive inflow in nominal terms, as in growth terms, both the

FDI and FPI were in the negative, including the control variables of governance and the exchange rate that depreciated in the period of the pandemic.

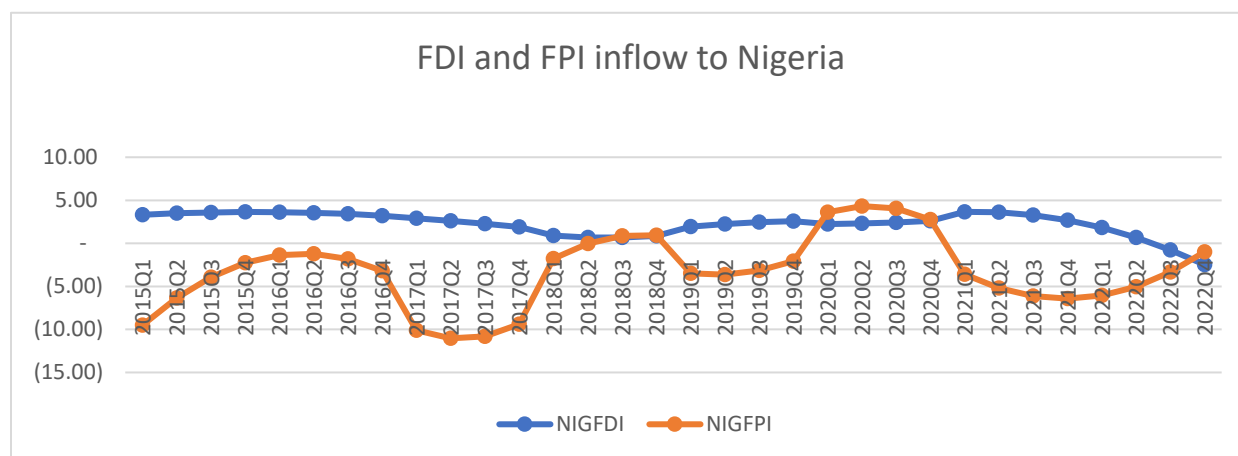
The Nairobi stock exchange was adversely affected by the pandemic. This saw the market capitalization decline more than it did before the pandemic, and the foreign direct investment and foreign portfolio investment only grew in nominal terms in the period of the pandemic, but this was a decline in growth terms. Hence, it can be concluded that the Kenya stock exchange was affected by the coronavirus pandemic, and the foreign capital inflows (foreign direct investment and foreign portfolio investment) did not spur the recovery of the stock market during and after the pandemic.

(b) Nigeria



Source: World Bank's Development Indicators 2023

Figure 3: Trends in Market Capitalization in Nigeria from 2015Q1 to 2022Q4



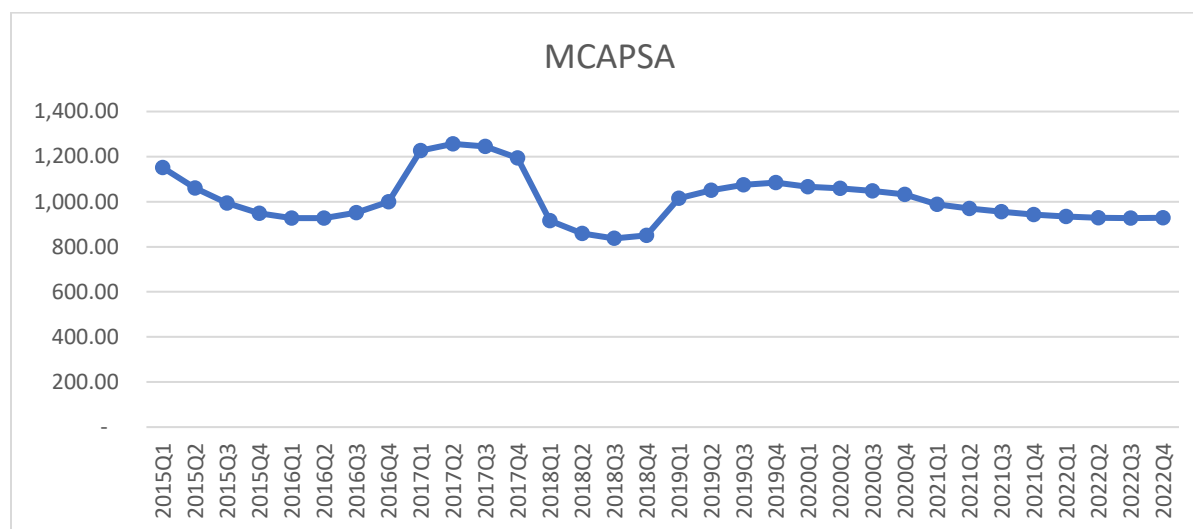
Source: World Bank's Development Indicators 2023

Figure 4: Trends in External Financing in Nigeria from 2015Q1 to 2022Q4

Figure 4 presents the case of the market capitalization of the Nigerian stock exchange. From Q1 2015 when market capitalization was N26.07 trillion, the exchange witnessed steady growth in it up to Q4 2017 when it had a decline of 1.6% from its Q3 2017 level of N37.13 trillion. After that, it was consistent growth all through to Q4 2022. Even the report of its index case in Q1 2020 did not affect the growth. In terms of foreign direct investments, the country had an inflow of \$3.3 billion in Q1 2015, this was the average figure until Q1 2017 when it declined to \$2.91 (a decline of 10%) from its Q4 2016 level. There was no recovery until Q1 2019 when the inflow was \$1.96 billion. This recovery continued through the period of the pandemic, such that it averaged \$2.4 billion in the heat of the pandemic in 2020, and surged immediately to an average of \$3.52 billion in the first three quarters of 2021, before declining and getting into negative figures in Q3 and Q4 2022 respectively that is after the pandemic. Within the same period, ironically, the inflow of FPI was negative almost in all quarters of the period of the COVID-19 pandemic and even in the entire period of the study. The governance variable within the period was also low to motivate any policy options that could enhance the flow of foreign capital, and the value of the naira depreciated through the period of the study.

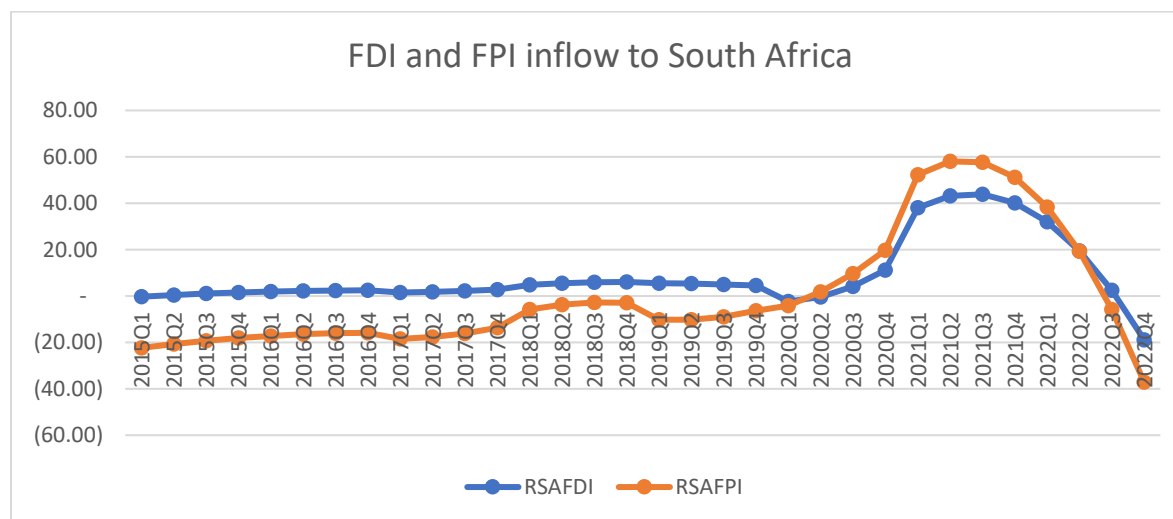
It can be concluded that Nigeria's market capitalization was not affected much by the pandemic, possibly as a result of the inflow of foreign direct investment, although FPI was not forthcoming in the face of a depreciating currency and a negative governance variable in the period of the study.

(c) South Africa



Source: World Bank's Development Indicators 2023

Figure 5: Trends in Market Capitalization in South Africa from 2015Q1 to 2022Q4



Source: World Bank's Development Indicators 2023

Figure 6: Trends in External Financing in South Africa from 2015Q1 to 2022Q4

In Q1 2015, the market capitalization of the Johannesburg stock exchange was 1151.66, this quickly declined in Q2 2015 to Q4 2016 when it was 998.85. a return to growth of 5.07% was witnessed in the four quarters of 2017, followed by another decline all through the period of 2018 where it declined by an average of 7.64%. Q1 2019 saw a return to growth that continued up to Q1 2020, when the country had its index case, and MCA fell slightly from its Q4 2019 figure by 1.74% to (1066.22). This declining trend remained through the rest of 2020, although slightly in 2020, it became more pronounced in Q1 2021 through to Q4 2022.

The inflow of foreign capital, witnessed FDI on a slow growth from Q1 2015 to 5.01 in Q3 2019, before it declined by 8.91% to 4.62 in Q4 2019. The country witnessed a negative decline in Q1 and Q2 2020 when it reported its COVID-19 pandemic index case in the country to 2.31% and 0.36% respectively. But, it quickly rebounded to an inflow of 4.16 in Q3 2020, a growth path that saw it attain its maximum of 43.86 in Q3 2021 and an average of 41.30 in 2021 during the recovery path from the pandemic. It maintained this growth in Q1 and Q2 2022 with 32.02 and 19.49, then took a deep dip in Q3 2022 of 2.53 and a negative of 18.83 in Q4 2022. FPI virtually remained in the negative path through the period of the study, but ironically, witnessed significant growth during the period of the pandemic with more than proportionate growth in the period Q3 2020 to Q1 2021, but still decreased to negative figures in Q3 2021, a trajectory it followed up to Q4 2022. The exchange rate during the period witnessed about 100 basis point growth per period, such that it was steady. And during the pandemic, it depreciated slightly from 15 in 2019 to 16 in 2020, then appreciated from 16 to 14 in 2021, before depreciating to an average of 17 in Q4 2022. The governance variable witnessed the country in a positive index all through from 2015 to Q1 2021, before declining into the negative from Q2 2021 to Q4 2022.

It can be concluded that the Johannesburg stock exchange in South Africa was affected by the COVID-19 pandemic, which witnessed the decline of the market capitalization. But, then the inflow of foreign direct investment into the country did influence recovery during the pandemic, this is despite the negative inflow of the FPI.

4.2 Descriptive Statistics

Table 1: Descriptive Statistics

	Mean	N_Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Prob.
MCAP_KEN	21855610.000	0.106	-0.521	2.358	1.995	0.369
MCAP_NIG	44043656.000	0.334	0.326	1.588	3.227	0.199
MCAP_SA	1010000000.000	0.110	0.710	2.831	2.729	0.256
FPI_KEN	476305.600	1.619	-0.141	2.324	0.715	0.700
FPI_NIG	-3292622.000	-1.272	-0.078	2.475	0.400	0.819
FPI_SA	-58443.730	-434.579	1.231	3.404	8.298	0.016
FDI_KEN	642900.100	0.550	1.147	3.004	7.013	0.030
FDI_NIG	2245684.000	0.626	-1.492	5.381	19.430	0.000
FDI_SA	8612299.000	1.701	1.337	4.074	11.076	0.004
EXR_KEN	105.547	0.053	1.519	4.388	14.867	0.001
EXR_NIG	326.394	0.187	0.368	1.880	2.395	0.302
EXR_SA	14.682	0.000	0.590	2.596	2.074	0.354

Source: *Extract from E-view 12*

Table 1 provides the descriptive statistics of the variables employed in this study. It reveals that except MCAP_NIG, MCAP_SA, FPI_SA, FDI_KEN, FDI_SA, EXR_KEN, EXR_NIG, EXR_SA, the other variables (MCAP_KEN, FPI_KEN, FPI_NIG, FDI_NIG) exhibit negative skewness, while most of the series have kurtosis values below 3, indicating a normal distribution. The results of the Augmented Dickey-Fuller (ADF) unit root test in Table 2, Panel A indicate that only SAV is stationary at the level [I(0)], while the remaining variables, namely RGDP, INV, RDIR, MPR, and GOV, are stationary at first difference [I(1)]. To validate the ADF test outcomes, the results of the Elliott-Rothenberg-Stock DF-GLS test statistic in Panel B also confirm that the series is stationary at first difference [I(1)]. For the impact analysis objective of this study, lag 2 was selected based on the Schwarz information criteria, as illustrated in Table 3. Additionally, the influence of governance quality on monetary policy implementation was incorporated in the model estimation to determine whether governance quality plays a role in the implementation of monetary policy, as highlighted in previous studies (Olaniyi & Oladeji, 2020; Sule, 2020).

4.3 Empirical Results

4.3.1 Table 2: Unit root test results

Country	Panel A: ADF unit root test				
	MCAP	FDI	FPI	EXR	d _{max}
Kenya	<0.05**	<0.01*	<0.01*	<0.01**	I(1)
Nigeria	<0.01**	<0.05*	<0.05*	<0.05**	I(1)
South Africa	<0.05*	<0.01**	<0.01**	<0.05**	I(1)
Panel B: DF-GLS unit root test					
Kenya	<0.01**	<0.01*	<0.01*	<0.01**	I(1)
Nigeria	<0.01*	>0.05**	<0.05**	<0.01**	I(1)
South Africa	<0.01**	<0.01**	<0.01*	<0.01**	I(1)

Source: Extract from E-view 12

Note: Probability values are reported using a 5% level of significance while *, **, and *** denote stationarity at level (I(0)), first difference (I(1)), and second difference (I(2)), respectively. The d_{max} gives us the maximum order of integration for the individual countries.

From the result in Table 2, Panel A holds the ADF unit root test while Panel B represents the Dickey-Fuller GLS unit root to validate the ADF result. The results reveal that all the series were stationary at both levels [i.e., I(0)] and first difference [i.e., I(1)], thus exhibiting a mixed order of integration among the variables under consideration and this outcome spread across the selected countries. At this point, the rule of thumb must be observed by considering that all the series are of different orders of integration. Given the outcome of the stationarity test discussed above, the appropriate technique is Autoregressive Distributive Lag.

4.3.2 ARDL Bounds Test

Table 3 presents a summary of the ARDL Bounds test for the sample countries involved in the analysis. Using the comparison of the F-Statistic and the lower and upper bounds estimates respectively, the study infers the following. Given the F-Statistic at 1 percent is higher than the upper bounds for the 3 countries, the study rejects the null hypothesis of no cointegration between the variables in the models. Therefore, there is a long-run relationship between all variables in the relationship being estimated.

Table 3: Bounds Test

Country	F-Statistics	Signif.	Lower Bound I(0)	Upper Bound I(1)
Kenya	26.21652	5%	2.79	3.67
Nigeria	9.958467	5%	2.79	3.67
South Africa	4.761628	5%	3.23	4.35

Source: Extract from E-view 12

ARDL Short-Run and Long-Run Estimates

In Panel A of Table 4, the short-run estimates of the ARDL model are presented at 10%, 5%, and 1% respectively.

Table 4: ARDL Results

Panel A: Short-Run Estimates						
Country	FPI	FDI	EXR	ECM	Constant	Fixed Regressors Pegged/Fixed (FIX)
Kenya	0.016633 (0.0005)	0.084937 (0.0001)	-2.162096 (0.0007)	-0.112895 (0.0000)	-2.448900 (0.0135)	0.035105 (0.0108)
Nigeria	0.015012 (0.0207)	-0.047112 (0.0790)	0.383128 (0.0258)	-0.482757 (0.0000)	9.202877 (0.0000)	0.163536 (0.0000)
South Africa	0.043128 (0.0138)	-0.056413 (0.0016)	-0.549299 (0.0039)	-0.499892 (0.0001)	15.46554 (0.0004)	0.135505 (0.0039)
Panel B: Long-Run Estimates						
Kenya	0.147329 (0.0739)	0.195537 (0.0193)	8.348701 (0.0674)			
Nigeria	0.031097 (0.0330)	-0.001747 (0.9606)	0.793624 (0.0003)			
South Africa	0.086275 (0.01606)	-0.112851 (0.0008)	-1.098834 (0.0174)			

Source: Extract from E-view 10 (2023)

Note: The first figure in each cell is the estimated coefficient while the second is its probability value. This study uses 10%, 5%, and 1% levels of significance upon which the statistical significance of the estimated variables can be examined. The (*) denotes rejection of no statistical significance.

Given the above which confirms the long-run dynamic of the empirical estimates of the variables under consideration, the study then proceeds to analyze and discuss the elasticities of the coefficients with a focal point on the shocks and their impact on the capital market. Starting with Table 4, the coefficients on the impact of external financing pre-COVID-19 as a fixed regressor on the capital market for Kenya was positively signed at 0.035105. Essentially, the coefficient of external financing post-COVID-19 captured by the constant value of -2.448900 is negative and statistically significant at the 1% level. However, the choice of constant dummy approach requires the summation of post covid 19 (using constant value) and pre covid 19 coefficients thus arriving at -2.413793, which further affirms that the Nairobi stock exchange capital market witnessed decreasing effect under pre covid 19 than post covid 19.

For Nigeria, the coefficients on the impact of external financing pre-COVID-19 as a fixed regressor on the capital market for Nigeria was positively signed at 0.163536. Essentially, the coefficient of external financing post-COVID-19 captured by the constant value of 9.202877 is positive and statistically significant at the 1% level. However, the choice of constant dummy approach requires the summation of post covid 19 (using constant value) and pre covid 19 coefficients thus arriving at 9.366413, which further affirms that Nigeria's stock exchange market capitalization witnessed an increasing effect pre COVID-19 than the post-pandemic period.

For South Africa, the coefficients on the impact of external financing pre-COVID-19 as a fixed regressor on the capital market for South Africa was positively signed at 0.135505. Essentially, the coefficient of external financing post-COVID-19 captured by the constant value of 15.46554 is positive and statistically significant at the 1% level. However, the choice of constant dummy approach requires the summation of post covid 19 (using constant value) and pre covid 19 coefficients thus arriving at 15.601045, which further affirms that South Africa's stock market capital market witnessed increasing effect under pre covid 19 than post covid 19.

Also, Table 5 holds the Error Correction Term (ECT), the values of -0.11 (11%) for the model on Kenya, -0.48 (48%) for Nigeria, and -0.49 (49%) and for South Africa are observed to be substantial based on the rule of thumb. Accordingly, if there is a short-term disturbance, the balance can be regained by 11%, 48%, and 49% in the current year for all the significant relationships.

Table 6 holds the results of the post-estimation tests. The Linearity RESET test is used to confirm that the models' specifications are accurate. The linearity null hypothesis is upheld and the ARDL models are accurately described as a result of the small F-values and probability values for the models. The F-statistics for the findings of the serial correlation are not significant since the likelihood exceeds the level of significance of 5% and the null hypothesis of no serial correlations is accepted. Furthermore, it shows that there is a continuous spread of the residual in the models because the test does not reject the null hypothesis that heteroscedasticity exists.

4.3.3 Post-Estimation Results

Table 6: Post-Estimation Results

	Linearity Test Ramsey RESET	Autocorrelation test Arch Test	Heteroscedasticity test Breusch-Pagan-Godfrey
Kenya	2.043860 (0.0603)	0.175241 (0.6791)	0.146266 (0.8653)
Nigeria	1.623654 (0.1201)	0.620803 (0.4376)	0.695498 (0.5111)
South Africa	0.442926 (0.6618)	0.941003 (0.3403)	1.960010 (0.1215)

Note: The values in parenthesis are probability values associated with each of the tests.

4.3.4 Summary of Findings

The Nairobi stock exchange in Kenya had its market capitalization adversely affected by the coronavirus pandemic. The inflows of foreign direct investment and foreign portfolio investment also decreased in that period. Hence, it can be concluded that foreign direct investment and foreign portfolio investment did not spur growth in the Nairobi stock exchange during the COVID-19

pandemic era. The Nigeria Stock Exchange capital market capitalization was not significantly affected by the COVID-19 pandemic. This can be attributed to the inflow of foreign direct investment, although foreign portfolio investment was not forthcoming in the face of a depreciating currency and a negative governance variable in the pandemic era. The Johannesburg Stock Exchange was affected by the COVID-19 pandemic. But, then the inflow of foreign direct investment into the country did influence recovery during and after the pandemic era, although this has not been complete. This is despite the negative inflow of foreign portfolio investment.

5. Concluding Remarks

The Stock markets in Africa are considered institutionally weak with narrow and limited trading options to adequately mobilize sustainable funds for economic development. It is based on this that at the onset of the COVID-19 pandemic concerns were raised about their performance and survival. This paper examined the effect of external financing on Stock Markets post-COVID-19 recovery in selected African Countries of Kenya (Nairobi Stock Exchange), Nigeria (Nigeria Exchange Group), and South Africa (Johannesburg Stock Exchange). The findings of the study have policy implications, and these are relevant to the Stock markets in Africa given their task of effectively mobilizing funds for long-term economic growth and development. These will involve setting appropriate policies and interventions in the stock market, using appropriate instruments to accumulate funds, and hedging against uncertainties like the COVID-19 pandemic. Furthermore, if the consequences of external financing are identified, appropriate strategies will be put in place to curb such occurrences. It will lead to identifying other structural factors to be addressed to successfully hedge external financing and to drive domestic investment in Africa. Another recommendation is that continued fluctuations in external financing will continue to affect global stock markets, so stock markets in Africa must put in place a conducive financial environment to attract these foreign capital inflows for investment.

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