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Implications of Macroeconomic Performance on Foreign Direct Investment: A Comparative Study between Emerging and Frontier Economies

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ABSTRACT

This paper examines and compares the implications of macroeconomic performance on Foreign Direct Investment (FDI) among thirteen rapidly growing individual-specific Frontier Sub-Saharan African (FSSA) and emerging CIVETS (Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa) countries by deploying the Bootstrap ARDL framework. Using data from the World Development Indicators spanning 1995 to 2019, empirical results indicate that macroeconomic variables namely Gross Domestic Product (GDP) and exchange rate exert varying experiences on FDI, with a higher degree of impact in the FSSA than the CIVETS region. Specifically, GDP is positively related to FDI inflow in Botswana, Cote d'Ivoire, Kenya, Mauritius and Senegal for FSSA. Nonetheless, a weak association was experienced in the CIVETS region, as only Vietnam and Turkey were significant. Additionally, exchange rate reported similar level of disparity as the weakening of host country currency draws high volumes of FDI in Botswana, Ghana, Cote d'Ivoire and Kenya in the short-run for FSSA but only Colombia for the CIVETS region. Nevertheless, the impact of inflation seems to matter in both regions. The study strongly indicates that GDP and exchange rate trigger higher volumes of FDI in FSSA countries than the CIVETS, while the impact of inflation is similar in both regions. This asserts that FSSA countries should implement fiscal and monetary policies to stimulate economic growth and stabilize their economies to spur more FDI, while the CIVETS region should consider other macroeconomic factors to stimulate inward FDI.

Keywords: Bootstrap ARDL, Emerging Markets, Frontier Markets, Foreign Direct Investment, CIVETS (Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa)

I. INTRODUCTION

In contemporary times, the geopolitical and economic balance of power has been a prominent feature of the global market economy, with Foreign Direct Investment (FDI) following suit. Globalization and risk aversion, highlighted by falling returns on investment in developed countries and a move towards innovative market-oriented policies in developing countries, have profoundly caused a paradigm shift in the global investment landscape away from developed economies to emerging and frontier markets, with the BRICS (Brazil, Russia India, China and South Africa) economies emerging as the trailblazers (Nestor, 2015; Adnett, 2017). According to the United Nations Conference on Trade and Development (UNCTAD, 2013), FDI inflow to BRICS rose exponentially from $77 billion to $281 billion between 2003 and 2008, leaving other economic blocs, including the Mexico, Indonesia, Nigeria and Turkey (MINT), Middle East and North Africa (MENA), Association of Southeast Asian Nations (ASEAN), and CIVETS to play catch-up (Goncalves & Alves, 2014). However, Llaudes et al., (2010) and Nistor, (2015) averred that the 2008 economic and financial downturn severely impacted the BRICS economies and relegated their preeminence to the CIVETS (Goncalves & Alves, 2014). This reduced investment returns, and dented the BRICS appeal as an investment hub, and shifted the center of gravity of doing business to new geographic locations, benefiting the CIVETS (Goncalves & Alves, 2014). Additionally, with the BRICS economies among the worst affected by the COVID-19 pandemic, resulting in reduced FDI inflow (Chattopadhyay et al., 2022), the implementation of far-reaching investments and easing of capital inflow restrictions policies at the Washington consensus increased the attractiveness of CIVETS to FDI in emerging markets (Guerra-Barón & Méndez, 2014), with the BRICS and MINT attracting a disproportionately low FDI inflow compared to CIVETS, as depicted in figure 1.

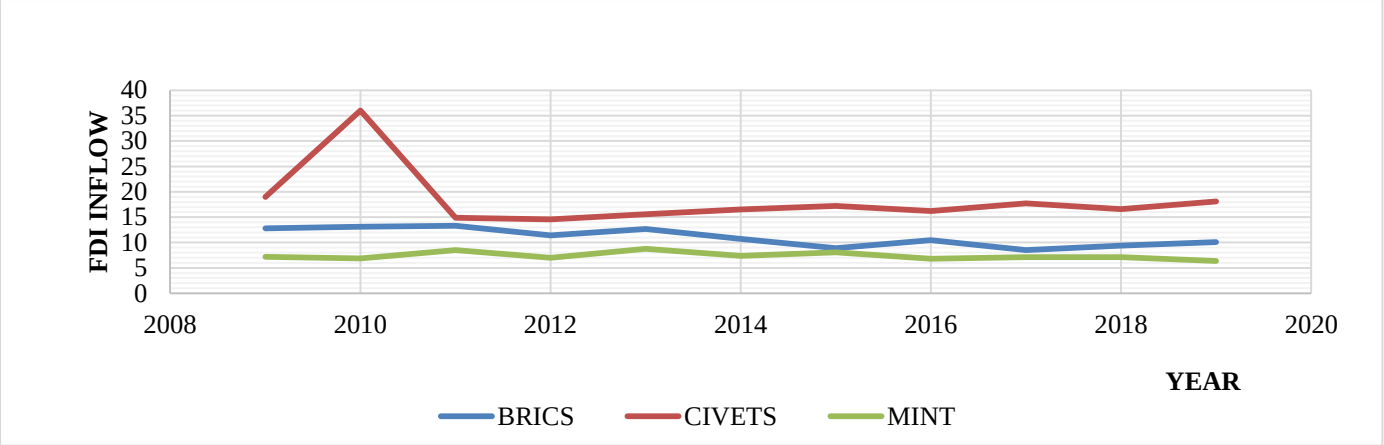

Figure 1
Aggregated FDI Inflow (% OF GDP)
Source of data: Compile by authors based on data from World Development Indicators

Moreover, in the same fashion, the stock of FDI inflow in the Frontier Sub-Saharan African (SSA) countries exhibits behavior resembling that of the CIVETS. In recent decades, robust economic growth and liberalization of FDI regimes, coupled with favourable investment returns in SSA countries, have created favourable conditions for FDI to increase their presence in the region (Pegkas, 2015; UNCTAD, 2018). Stylized facts from the UNCTAD World Investment Report (WIR) (2010) indicate that between 1995 and 2009, global FDI to Africa surged tenfold from US$5.7 billion to US$58.6 billion, while Sub-Saharan Africa averaged a paltry US$4.7 billion in the 1990s to US$20.2 billion in 2010. Additionally, within the same period, FDI inflow to frontier markets in SSA averaged 17.8 percent, eclipsing emerging economies with 16.8 percent and 15 percent for other frontier markets, to become the highest recipient of FDI across other benchmark regions (IMF World Economic Outlook, 2011). Besides, the UNCTAD (2020) report shows that Sub-Saharan African countries continue to sustain FDI flow momentum, averaging US$38 billion from 2010 to 2017, and rising significantly to US$40 billion in 2018.

Furthermore, in recent decades, when examining economic factors and inbound FDI nexus, the Pesaran et al. (2001) cointegration framework has emerged as the overriding solution owing to its advantages over other cointegration frameworks. Nevertheless, McNown et al. (2018) argued that the Pesaran et al (2001) ARDL approach suffers from misspecifications which may lead to wrong results and inferences. They discovered that in the ARDL estimates, most scholars rely exclusively on the overall *F*-test to establish cointegration, violating the underlying premise of running a *t*-test on the lagged endogenous variables to provide information on the chance of degenerate case #1 occurring. Moreover, to prevent the possibility of a lagged regressors degenerate case #2 arising, the Pesaran et al. (2001) framework assumed the order of integration of the dependent variable to be I (1). However, Perron (1989) and McNown et al. (2018) uncovered that the unit root test disreputably has low power problems, leading to inaccurate inferences. The empirical works of (Sam et al., 2019; Caio et al., 2018, Bertelli et al., 2022) support the view that the Pesaran et al. (2001) framework, in many cases, leads to inaccurate conclusions.

Consequent to the above, this paper adopts a novel and robust estimation perspective, the bootstrap version of the ARDL framework associated with McNown et al. (2018)**,** to examine the problem. Unlike Persaran et al., (2001) narrow statistical ARDL strategy, which depends on the overall significance of the model and does not examine the specific integration properties of every data set; the bootstrap ARDL technique relaxes the unit root premise and proposes determining the lagged regressors through an additional *t* or *F*-test. This averts the prospect of wrong inferences and delivers a robust and superior understanding of cointegration situations. Consequently, the outcome may also instigate a change in findings relative to previous studies, which is imperative for policymakers.

In addition, over the last decade, the wave of research on the problem has increased exponentially; yet, the academic literature is replete with comparative studies on individual countries (see Guzowska & Quang, 2017; Hanh, 2020; Parashar, 2015; Adelakun & Ogujiuba, 2023). Aside the individual studies, scholars including Kechagia and Metaxas, (2022) for BRICS and CIVETS; Sahoo et al. (2022) for BRICS and MINT; Kumar and Raman (2020) for BRICS and ASEAN have empirically examined the problem in inter-regional geopolitical comparative studies in emerging markets and; Anyanwu and Yameogo, (2015) for African sub-regional comparison, Bahati and Mbithi (2022) for Central and Eastern Africa in developing African countries. In intra-geopolitical comparative studies, researchers such as Saini and Singhania (2018), Sabir et al. (2022), Baci et al. (2022), Agudze and Ibhagui (2021), Izadi et al. (2021) and Alshubiri (2022) have also analyzed the problem in developed and developing countries.

Palpably, the empirical comparative study on essential drivers of FDI in emerging and frontier countries has been undermined. Additionally, a fraction of studies adopted the ARDL framework, whose modeling procedure stumbles upon spurious regression, and results from other frameworks on the problem are far from unanimous. In essence, this paper has three essential objectives or repercussions for the extant literature. First, a paradigm shift in global inbound FDI, away from advanced countries to optimistic investment prospects in emerging and frontier economies, offers a rare opportunity to contribute to the scientific debate by comparing two geopolitical regions, the CIVETS and FSSA, to examine their similarities and stark disparities in factors driving FDI, which has seen scanty empirical study. Second, findings from the study are imperative for policymakers for the two groupings for identifying effective determinants driving FDI flow and fashion out future policy responses to stimulate FDI inflow and finally, the study uses the novel bootstrap ARDL technique, which provides a better understanding of the problem, unlike the ARDL, which may lead to inaccurate estimations and inferences.

The rest of the paper is structured as follows: Section 2 presents the trends of FDI inflows in emerging and frontier markets and empirical literature on macroeconomic factors and FDI inflows. Subsequently, in Section 3, we describe the data and empirical frameworks of the study and the materials and methods in section 4. Section 5 contains the study's results and discussions. Finally, Section 6 presents the study's conclusion and policy recommendations.

II. LITERATURE REVIEW

2.1 FDI Trends in Emerging and Frontier Markets

Emerging and frontier markets have wrought their investment policies in favour of FDI, making them the new frontlines for international investors. In the CIVETS, (Guerra-Barón & Méndez, 2014) avowed that market-oriented policies in accordance with the Washington consensus and strong economic growth have increased FDI inflow, reinforcing Jorgenson's (1963), market size hypothesis of high GDP growth luring higher FDI inflow. Specifically, the implementation of the Doi Moi' policy in Vietnam, the Infitah policy in Egypt, the market-oriented strategies, and the ratification of Law 4875 in Turkey have invigorated their investment policies, bringing with them a burgeoning number of inbound FDI into the region (Kechagia & Metaxas 2022; Deichmann, 2021). For example, British companies alone have over 900 firms operating in Egypt, injecting US$20.8 billion into the economy, making Egypt the top FDI destination in Africa (UNCTAD, 2018), while the Department of Business and Innovation enhanced the competitiveness of 50,000 businesses into the CIVETS (Gonclaves & Alves, 2014; UNCTAD, 2018).

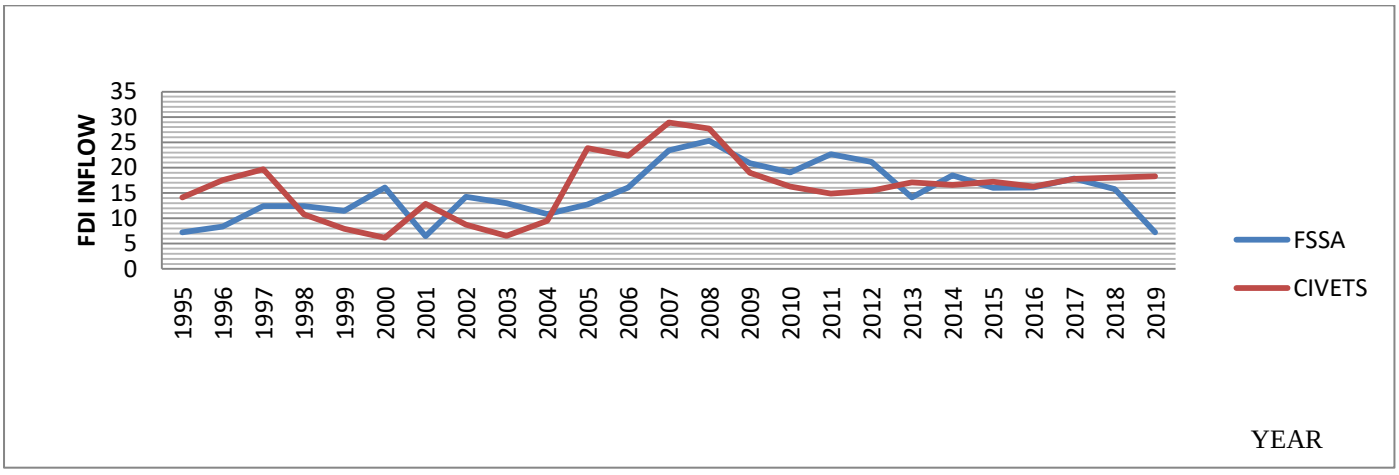

Figure 2
Trend of FDI inflow in FSSA and CIVETS
Source of data: Compile by authors based on data from World Development Indicators

Moreover, the quantum of FDI inflow in Colombia in 2021 reached US$7.7 billion, putting it among the top destinations in Latin America and the Caribbean, while inflow to Turkey grew by 60.2% to US$12.5 billion, ranking it among the top 20 worldwide (World Investment Report, 2022). Similarly, the pace of Indonesia inflow increased five folds to a new record of US$23 billion in 2017, the highest recipients in developing Asia and ranked among the top 20 recipient globally (UNCTAD, 2018). Additionally, the trend of FDI in the CIVETS in Figure 2 reveals a gradual average increase from USD$14.1 billion in 1995 to USD$19.7 billion in 1997, followed by a steep fall to US$6.1 billion in 2000, the lowest inflow. The region regained momentum in 2001, reaching a peak of US$ 28.8 billion in 2007.

Similarly, FSSA governments have bolstered FDI inflows through promising policies and favourable investment returns, aligning with Agarwal (1980) different rate of returns hypothesis which suggests that movement of international capital is a function of different rates of returns. FDI would therefore gravitate towards countries with high rate of returns. Nigeria, the top most placed destination in West Africa, saw US$ 3.5 billion inflow in 2017, accelerating to US$ 4.8 billion in 2021. Further, driven by robust growth in the extractive sector, Ghana's inflow surged to US$ 3.3 billion in 2017, with a 39% rebound after the COVID-19 influx fragilities (World Investment Report, 2022). Besides, inflow in Senegal and Cote d'Ivoire grew by 12% and 67% to USD$ 532 million and USD$ 675 respectively, with Kenya inflow increasing by 71% to USD$ 672 million in 2017 (UNCTAD, 2018). These countries along with Ghana, Mauritius, and Nigeria are among the top ten host of FDI in Africa, receiving over US$300 billion from 2011 to 2020, according to the World Bank (Larnyoh, 2021). Furthermore, Inflow to Africa is essentially concentrated in the primary sector, receiving a disproportionally low inflow in the secondary sector (25%), relative to 45% for Latin America and the Caribbean and 52% for Asia (UNCTAD, 2018).

In addition, the average inflow to FSSA was USD$7.2 billion in 1995, rising dramatically to USD$16.09 billion in 2000 and to a record high of USD$25.3 billion in 2007 (see Figure 2). Inflows plummeted from 2008 to 2010, occasioned by the 2008 global financial crisis; however, the region recovered in 2011 before inflows tumbled to US$14.1 billion in 2013. Inflow relatively stabilized from 2014 and fell in 2018. Finally, figure 2 demonstrates a close relation between the CIVETS and FSSA, as FDI inflow fluctuates in a comparable fashion, with modest rises from 1995, fell, and reached a peak in 2007, but decelerated underpinned by the 2008 global financial crisis, steadied over a long period but failing to rise to the pre-crisis levels. Therefore, the steady rise of FDI to the two regions deserves a critical examination of the implication of macroeconomics factors on the inflow and whether the variables driving inflows in emerging countries are different from FSSA, which is imperative for policy makers in shaping their investment policies.

2.2 Empirical Review

The economic balance of power and the geopolitical shift of FDI have piqued the interest of several scholars. Consequently, a burgeoning number of studies have therefore explored and compared the implications of macroeconomic variables on FDI between and among various regions.

2.2.1 GDP and FDI

This study used three regressors namely GDP, inflation and exchange rate drawn on previous literature, owing to availability of data and economic theory, to predict and compare inbound FDI by drawing pieces of evidence from emerging CIVETS and Frontier SSA countries. Among the large numbers of empirical studies, Paul et al. (2021) made comparative determinants of FDI in 14 global regional alliance countries. They uncovered that GDP encourages FDI inflow in all economic groupings except the EU, G7 and the Arab league with inflation directly related in GATT and SAFTA, but negatively correlated in African Union and APEC countries. Also, adopting data from 2001 to 2011, Asongu et al. (2018) showed that the main factors driving FDI inflow in the BRICS and MINT were comparable. They concluded that GDP triggers FDI in the two economic groupings. Also, Sarker and Khan (2020), employing the newly developed bootstrap ARDL technique, concluded that GDP has a favorable effect on FDI in Bangladesh. Likewise, De Agelo et al. (2010), adopting the Two-step Least Squares framework to explore data drawn from 2000 to 2007, avowed that growth of the local market, fall in value of the local currency and high interest rate spurs FDI inflow in Brazil. Moreover, Mehrara et al. (2010) utilized the Generalized Method of Moment (GMM) and using data drawn from 1981 to 2006, claimed that GDP is significantly related to FDI inflow for 57 developing countries. Also, adopting panel GMM for 111 countries to estimate the nexus between a nation's income level and FDI**,** (Baiashvili & Gattini, 2020) showed that GDP exert higher influence on FDI in middle income economies than low and advanced economies**.** In contrast, Mottaleb and Kalirajan (2010) relying on data spanning from 2005 to 2007 for 68 developing nations, claimed that inbound FDI were skewed towards nation with high GDP. Nonetheless, in a sub-regional comparison studies in Africa, and employing panel data set from 1970 to 2010. Anyawu and Yameogo (2015) observed that GDP deters inwards FDI in all the five African regions. Similarly, Xaypany et al. (2015) and Appiah-Kubi et al. (2019), found an indirect linkage between GDP and FDI inflows, whereas Ghahroudi and Chong, (2020) found no significant association between GDP and FDI inflows in Iran.

2.2.2 Inflation and FDI

The domestic rate of inflation has a significant effect on the price of a country's produce and is therefore a crucial factor driving cross border investment (Ghahroudi & Chong, 2020). As a result, Sahoo et al. (2022) employed

the Pool OLS and unveiled that inflation stifles inbound FDI in the MINT but a trifling effect was observed for the BRICS. Likewise, Appiah-Kubi et al. (2019) investigated the potential effect of economic indicators on FDI inflow to least developed West African countries. They observed that inflation, exchange rate, the financial sector and GDP exert a negative and statistically significance effect on FDI inflow into the region. Agudze et al. (2021) also confirmed that rising inflation deters FDI inflows in industrialized and developing economies with a higher impact in developing countries than developed countries. Furthermore**,** Izadi et al. (2021), using the Ordinary Least Square and GMM to estimate data for 33 developing and advanced economies, gave credence to the idea that inflation discourages FDI. In stark contrast, Ezirim et al. (2006) concluded that exchange rate and inflation are the most important indicators stimulating inward FDI in Nigeria using the ARDL technique. Al-Matari et al. (2021) also adopted balanced data panel between 1995 and 2018 for Gulf Cooperation Council (GCC) countries. They asserted that FDI inflow is positively related to inflation in the GCC countries. Recently, Shaari et al. (2023) also used the ARDL framework to show that inflation and GDP per capita have no significant influence on FDI into ASEAN. Other studies including those by Shahzad and Al-Swidi, (2013) and Alshamsi and Azam (2015), employing the ARDL procedure showed no connection between inflation and FDI influx.

2.2.3 Exchange Rate and FDI

In addition, a country's exchange rate is a strong driver of the competitiveness of firms. As a result, a burgeoning number of studies (Froot & Steing, 1991; Suliman et al., 2015) revealed that the stability of a country's exchange rate draws more foreign direct investors into recipient countries. Nonetheless, Nduati, (2018) figured out that the real exchange rate has no significant influence on foreign direct investment in Kenya. Additionally, Rasheed and Khan (2019) employed the ARDL estimation procedure to examine the real exchange rate and foreign direct investment inflow nexus in Pakistan. The result produced evidence that the real exchange rate suppresses foreign direct investment in the long-run. Likewise, Adopting the fully panel modified least square; Alshubiri (2022) avowed that exchange rate deters FDI inflows in the G7, but the influence in GCC countries is insignificant. In a comparative study to determine whether exchange rate triggers FDI in India and China, Khandare (2016) found a significant varying effect in the two emerging countries. He concluded that there is a positive correlation for India, but negative for China. Jaiblai & Shenai (2019) also employed the ARDL technique to examine panel data from 10 SSA countries between 1990 and 2017. They acknowledged that a falling currency rate regime, efficient infrastructural network and high income levels stimulate FDI inflow. Lily et al. (2014), working on exchange rate and FDI nexus in the ASEAN using the ARDL approach, showed that the appreciation of the local currency in Malaysia, Singapore and the Philippines draws high quantum of FDI but is insignificant for Thailand in the long-run. Other studies, including Lindstrom and Sten (2018) and Huong et al. (2021) also show that the depreciation of the local currency hampers FDI inflow.

Consequently, on the basis of the preceding literature review, there is evidence of a significant number of studies on drivers of FDI in the geopolitical regions in comparative studies. Nonetheless, there is a dearth of studies on drivers of FDI inflow in the CIVETS and FSSA. Furthermore, a large number of studies adopted varied estimation techniques with empirical findings far from unanimous. Additionally, most scholars adopted the ARDL framework, whose estimation procedure stumbles on spurious regression, hence the varied outcome in the extant literature. Furthermore, most scholars used cross country panel studies to examine countries spread across the globe with distinct geographical structure and characteristics. This paper set off from previous studies as we adopt country specific factor analysis owing to the factor that the countries under study are spread across the globe with significant structural differences and the novel bootstrap ARDL estimation technique which estimate cointegrations from a broader perspective.

III. METHODOLOGY

3.1 Research Design

In line with the objectives of this paper, which examines and compares the implications of FDI on CIVETS and FSSA countries, this study employs a quantitative technique to examine the problem. This technique is suitable for the study because it uses statistical hypothesis tests to measure the strength and significance of economic variables on FDI in CIVETS and FSSA countries, while a descriptive and inferential statistical approach will be adopted to examine the association between the economic variables and FDI inflows.

The current study is obtained from an annual data set of six emerging countries known collectively as the CIVETS, which are Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa and seven frontier Sub-African

countries comprising Botswana, Cote d'Ivoire, Ghana, Kenya, Mauritius, Nigeria and Senegal. In this study, the seven frontier Sub-Saharan African countries were selected based on an overlap of at least two of the major index providers: Morgan Stanley Capital International (MSCI), the Financial Times Stock Exchange (FTSE Russell) and Standard and Poor (S&P), which have attempted to formalize the classification of market economies based on a range of economic and market-specific indicators (Behar & Hest, 2011). The study extensively relies on data from World Development Indicators for thirteen countries and takes into account a sample period of 25 annual observations spanning from 1995 to 2019.

3.2 Theoretical Model Specification

This study adopts the Arbitrage Pricing Model by Stephen Ross (1976)**,** which suggests that; the rate of return on assets (R_i) is linearly related to a variety of macroeconomic risk factors. However, investors are prepared to receive a constant expected return on assets (E_i), unrelated to any form of risk. The general form of the Asset Pricing model is given as:

$$E(R) = Rf + f(F_1, F_2, F_3, \ldots F_N) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where *E(R)* is the expected return on asset *i*, *Rf* is the constant return on asset, *F* is risk factor 1, 2, 3, and *N* is the number of risk factors. The transformed econometric model is captured as:

$$R_i = E_i + \beta_{1,1}F_1 + \beta_{1,2}F_2 + \cdots + \beta_{1,N}F_N + u_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where R_i is the rate of return on asset, E_i is constant or the expected rate of return, which is risk free, F_1 is systematic factors such as macroeconomic variables, $\beta_{1,}$=the sensitivity of the i-*th* asset to the *n-th* factor. Modifying the Arbitrage Pricing Theory model to suit the objective of this study, the model can be re parameterized as;

$$FDI_t = \beta_0 + \beta_1 Inf_t + \beta_2 Xr_t + \beta_3 Y_t + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

$\beta_1 < 0 \quad \beta_2 > 0 \quad \beta_3 > 0$

Where; $\mathbf{FDI}_t$ = foreign direct investment is the parameter to be estimated; $\mathbf{Inf}_t$ = inflation rate; $\mathbf{Xr}_t$ = exchange rate; $\mathbf{Y}_t$ = GDP; $\boldsymbol{\beta_0}$, $\boldsymbol{\beta_1}$, $\boldsymbol{\beta_2}$, $\boldsymbol{\beta_3}$, are computed regression coefficients; and $\boldsymbol{\varepsilon}_t$ is the random error term' in the model measured in time *t*.

3.3 Empirical Model Specification

The empirical model specification for the current study is premised on the McNown et al. (2018) bootstrap ARDL technique, which was adopted to examine the problem. The bootstrap ARDL technique was chosen for the current study because this version produces appropriate size and power properties and adequate conditions to avoid degenerate cases, obviates the prospect of interdependency and erroneous inference as it offers an extra test on the significance of coefficients on lagged levels of independent variables, therefore overcoming the pitfalls in the traditional ARDL. The implications of economic variables on FDI were modeled as follows:

$$\Delta FDI_t = \gamma + \sum_{i=1}^{a} \alpha_i \Delta FDI_{t-i} + \sum_{j=0}^{b} \beta_j \Delta Inf_{t-j} + \sum_{l=0}^{b} \rho_l \Delta Xr_{t-l} + \sum_{m=0}^{b} \Psi_m \Delta Y_{t-m} + e_t \ldots\ldots (4)$$

Where *i, j,l* and *m* represent lag indices: i = 1, 2, 3,…., a; j = 0, 1, 2, …, b; l = 0, 1, 2, …, b; m = 0, 1, …, c; t signifies the time periods t = 1, 2, …, T;; $\mathbf{FDI}_t$ is the endogenous variable, while $\mathbf{Inf}_t$, $\mathbf{Xr}_t$ and $\mathbf{Y}_t$ are the regressors;; $\boldsymbol{\alpha_i}$ is the coefficient on the lags of the endogenous variable; $\boldsymbol{\beta_j}$, $\boldsymbol{\rho_l}$, and $\boldsymbol{\psi_m}$ illustrate coefficients on lags of regressors;; Δ and $\boldsymbol{e_t}$ are the first difference machinist and the disturbance term, respectively.

3.3.1 Bootstrap or Augmented ARDL Approach for Cointegration Test

According to McNown et al. (2018), cointegration between FDIt, Inft, Xrt, and Yt necessitates rejecting each of the following three null hypotheses:
F-statistic test on all ECT (illustrated as F_1):

$$H_0: \lambda_0 = \lambda_1 = \lambda_2 = \lambda_3 = 0 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

t-statistic test on lagged endogenous variable (illustrated as *t*):
H_0: $\lambda_0 = 0$……..... (6)
F-statistic test on lagged regressors (illustrated as F_2):
H_0: $\lambda_1 = \lambda_2 = \lambda_3 = 0$……..... (7)

McNown et al.'s (2018) bootstrap ARDL technique offered critical values for all the triumvirate tests, and they must simultaneously reject their individual null hypotheses to establish cointegration. Nonetheless, evidence of degenerate cases ensues when we fail to reject either the lagged endogenous variable or the lagged level of the regressors. Thus, degenerate case #1 arises when F_1 and F_2 are both significant but the *t*-test on the lagged endogenous variable is not. In contrast, degenerate case #2 occurs when both the F_1 and F_2 null hypotheses are rejected but fail to reject the t-test on the lagged endogenous variable. To examine the short-run dynamics, we re-parameterized equation (4) and expressed it in the following error correction model (ECM):

$$\Delta \mathrm{FDI}_t = \varphi + \sum_{i=1}^{a-1} \alpha_i \, \Delta \mathrm{FDI}_{t-i} + \sum_{j=0}^{b-1} \beta_j \Delta Inf_{t-j} + \sum_{l=0}^{b-1} \rho_l \Delta \mathrm{X}r_{t-l} + \sum_{m=0}^{b-1} \Psi_m \Delta Y_{t-m} + \mathfrak{G} ECT_{t-1} + \varepsilon_t \ldots\ldots\ldots (8)$$

Where $\boldsymbol{\alpha_i}$, $\boldsymbol{\beta_j}$, $\boldsymbol{\rho_l}$, and $\boldsymbol{\psi_m}$ denote short run dynamics, and ECT is the error correction term that explains the speed of adjustment towards equilibrium. That is, it determines the velocity of change needed to find equilibrium in the events of shock(s) to the structure. The value of the coefficient $\mathfrak{G}$ is expected to be negative and significant. This implies that the higher the coefficient values of $\boldsymbol{ECT_{t-1}}$, the higher the speed of adjustment to equilibrium.

IV. FINDINGS & DISCUSSION

4.1 Unit Root

To circumvent spurious regression, unit root tests were performed on each time series property using the Augmented Dickey-Fuller (ADF) test for all countries. Outcome from the stationarity test in Tables 1 and 2 reveal that most of the series are stationary at levels since their probability values are statistically significant. Nonetheless, all series were non-stationary for Botswana, Cote d'Ivoire, Indonesia and Vietnam, yet became stationary after first differencing. It is important to note that, after employing the ADF to perform the unit root test, it was established that the series are integrated at different orders, that is a combination of 1(0) and 1(I). Therefore, the unit root properties of the factors necessitate the adoption of the ARDL and the Augmented ARDL models for the study.

Table 1
Results of Unit Root Test for Frontier Sub-Saharan Africa countries

ADF												
	AT LEVEL				FIRST DIFFERENCE				ORDER OF INTEGRATION			
Variables / **Countries**	**FDI**	**GDP**	**INFL**	**EXR**	**FDI**	**GDP**	**INFL**	**EXR**	**FDI**	**GDP**	**INFL**	**EXR**
Botswana	-2.611	-2.611	-0.945	-0.470	-5.786*	-4.582*	-8.293*	-4.161*	I (1)	I (1)	I (1)	I (1)
CIV	-2.964	-1.485	0.271	-2.133	-3.877*	-3.031**	-8.366*	-3.377**	I (1)	I (1)	I (1)	I (1)
Ghana	-1.348	-4.343*	-4.150*	-0.267	-0.267			-3.243**	I (1)	I (0)	I (0)	I (1)
Kenya	-2.898	0.665	-4.353*	-1.207	-5.374*	-3.793*		-4.064*	I (1)	I (1)	I (0)	I (1)
Mauritius	-3.516**	0.048	- 2.173	-2.203		-4.677*	5.441*	-4.677*	I (0)	I (1)	I (1)	I (1)
Nigeria	-1.187	-2.554	-12.32*	-0.524	-7.514*	-5.658*		-3.551**	I (1)	I (1)	I (0)	I (1)
Senegal	-2.278	0.387	-4.738*	-2.133	-8.341*	-4.045*		-3.377**	I (1)	I (1)	I (0)	I (1)

Source: Authors' computation
*Note *, ** and ***, shows the level of significance at 1%, 5% and 10% respectively. CIV stands for Cote d'Ivoire*

Table 2
Results of Unit Root test for emerging CIVETS countries

ADF												
	AT LEVEL				FIRST DIFFERENCE				ORDER OF INTEGRATION			
Variables	**FDI**	**GDP**	**INFL**	**EXR**	**FDI**	**GDP**	**INFL**	**EXR**	**FDI**	**GDP**	**INFL**	**EXR**
Countries												
Colombia	-3.870*	-0.672	-2.498	-1.228		-3.286**	-3.134**	-3.154**	I (0)	I (1)	I (1)	I (1)
Indonesia	-1.885	0.726	-2.058	-2.832	-4.617*	-3.191**	-5.725*	-5.814*	I (1)	I (1)	I (1)	I (1)
Vietnam	-2.173	-2.347	-2.963	-1.162	-3.788*	-5.396*	-5.854*	-3.758**	I (1)	I (1)	I (1)	I (1)
Egypt	-3.005**	-0.396	-2.629	-0.443		-2.709***	-3.008*	-3.623**	I (0)	I (1)	I (1)	I (1)
Turkey	-2.136	-1.250	-3.10**	-1.032	-4.401*	-4.133*		-6.174**	I (1)	I (1)	I (0)	I (1)
SA	-5.045*	-0.953	3.767*	-0.605		-3.671*		-3.708**	I (0)	I (1)	I (0)	I (1)

Source: Authors' computation
*Note *, ** and ***, shows the level of significance at 1%, 5% and 10% respectively. SA for South Africa.*

4.2 Bounds Test to Cointegration

As a sequel to the empirical estimates, the study employs the bootstrap ARDL bounds test to determine whether the endogenous and exogenous factors cointegrate in the long-run. Tables 3 and 4 present the results of the bounds tests for FSSA and CIVETS countries, respectively. As presented in the table 3, all the three tests (F_1, *t*-test and F_2) show that series in Cote d'Ivoire, Ghana, Kenya, Nigeria and Senegal for FSSA cointegrate. There is therefore strong evidence to reject the null hypothesis of series in these countries. Moreover, for the CIVETS countries in Table 4, all the three tests show that only series in Indonesia, Vietnam and Turkey exhibits long-run cointegration. Nonetheless, degenerate case #2 was reported in Botswana for FSSA and Colombia, Egypt and South Africa for the CIVETS. In these countries, even though the overall significance of the model and the lagged dependent variable were significant, the lagged regressors were not. Moreover, degenerate case #1 was reported in Mauritius; all though the overall significance of the model and the lagged regressors were significant, the *t*-test on the lagged dependent variable was not.

Table 3
Results of cointegration test for Frontier Sub-Saharan African countries

Countries	F_1	SIG	I(0)	I(1)	*Tdep*	F_2	RESULTS
Botswana	29.104	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	2.895 (0.008)	0.567(0.642)	No Cointegration
Cote d'Ivoire	9.605	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	2.599 (0.037)	4.645(0.008)	Cointegrated
Ghana	5.327	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	8.476 (0.000)	8.066(0.001)	Cointegrated
Kenya	13.064	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	5.601 (0.027)	3.963(0.022)	Cointegrated
Mauritius	6.964	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	1.495(0.149)	3.702 (0.0287)	No Cointegration
Nigeria	6.33	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	4.002(0.000)	4.029(0.012)	Cointegrated
Senegal	5.767	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	0.539(0.014)	3.478 (0.0234)	Cointegrated

Table 4
Results of cointegration test for emerging CIVETS countries

Countries	F_1	SIG	I(0)	I(1)	T_{dep}	F_2	RESULTS
Colombia	10.795	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	-3.871(0.008)	0.1433 (0.933)	No Cointegration
Indonesia	4.135	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	4.854 (0.000)	3.071(0.035)	Cointegration
Vietnam	5.052	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	4.992 (0.00)	3.261(0.029)	Cointegration
Egypt	14.870	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	7.208 (0.000)	1.168 (0.370)	No Cointegration
Turkey	4.648	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	4.456 (0.000)	8.5706 (0.000)	Cointegration
South Africa	7.009	10% 5% 1%	2.27 3.23 4.29	3.77 4.35 5.61	-5.045 (0.000)	0.215(0.986)	No Cointegration

Source: Authors' own computation

Note: The values in parenthesis are the probability values for the t-statistic and the F-statistic; F_1 signifies the overall significance of the model; T_{dep} is the t-statistic for the lagged endogenous variable and F_2 is the second F-statistic for the lagged regressors

4.3. Long Run Coefficients

The results of the long-run estimates for FSSA and CIVETS countries are reported in Tables 5 and 6, respectively. Results from Table 5 show that, in conformity to apriori expectation, instant and lag GDP exert a positive effect on FDI in Cote d'Ivoire, Senegal, and Kenya, but not significant for Kenya in FSSA countries. Moreover, in emerging CIVETS countries, outcome of Table 6 indicates that only in Vietnam and Turkey does GDP significantly trigger FDI inflow at 10%. This suggests that in these countries, rising GDP is construed as rising income and a potential surge in demand for foreign products attracting high quantum of FDI, as corroborated by Agarwa's (1963) market size hypothesis and the empirical works of Asongu et al., (2018) in BRICS and MINT regions. Nonetheless, for FSSA countries, GDP has a significant adverse effect in the current year in Nigeria and a second and third-year lag effects in Cote d'Ivoire and Senegal, respectively. Ghana also reported a momentous adverse effect but not significant. The negative association is congruent with the study of Anyanwu & Yameogo, (2015) in all the five regional sub-groupings in Africa and Paul et al. (2021) who confirmed that GDP growth hurts FDI inflow in African Union and APEC countries.

Furthermore, in FSSA, inflation has an instant negative association with FDI in Ghana for FSSA and Vietnam and Indonesia for CIVETS countries; however, only in Indonesia is the relationship significant at 10%. Also, an inverse and significant first-, second- and third-year lag impact is reported in Turkey for the CIVETS and Senegal FSSA in and Kenya, respectively. This inverse effect is consistent with a prior expectation, and is also confirmed by Valli et al., (2014) in South Africa and Sahoo et al. (2022) who found that rising inflation suppresses inbound FDI in the MINT but a trifling effect in the BRICS. Nonetheless, only in frontier country in Cote d'Ivoire does a third-year lag impact positively draw FDI inflow in the long-run, affirming the suggestion by Mostafa (2020) that moderately rising inflation spurs FDI into Bangladesh in the long-run. Finally, differing expectations, the estimated coefficients of exchange rate for most countries in FSSA, were negative and statistically significant, instantaneously for Kenya and Nigeria and in the past first and second-years in Senegal and Cote d'Ivoire, respectively. Among the CIVETS countries in Table 6, instant and second-year negative effects were reported in Vietnam, Indonesia and Turkey, respectively, but the effects were not significant.

Table 5

Long-Run Estimates for Frontier SSA Countries

Countries	Cote d'Ivoire	Ghana	Kenya	Nigeria	Senegal
Variables	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
C	-1.977 (0.645)				1.076 (0.509)
D(FDI (-1)					0.629 (0.006)
D(FDI (-2)					0.358 (0.054
GDP		-6.60E-10 (0.941)	1.71E-11 (0.339)	-2.50E-11 (0.002)	
GDP (-1)	2.93E-10 (0.073)				
GDP (-2)	-566E-10 (0.030)				8.62E-10 (0.037)
GDP (-3)					-7.53E-10 (0.002)
INFL	0.067 (0.665)	-0.444(0.757)	-0.257 (0.398)	0.054 (0.153)	
INFL (-2)	0.149 (0.334)				-0.278 (0.04)
INFL (-3)	0.190 (0.023)				-0.002 (0.025)
EXR		0.677 (0.916)	-0.467 (0.039)	-0.007 (0.000)	
EXR (-1)	0.019 (0.025)				-0.115 (0.064)
EXR (-2)	-0.029 (0.035)				0.027 (0.013)
EXR (-3)	0.014 (0.169)				-0.016 (0.025)

Source: Authors' own computation

Note: The values in parenthesis are the probability values

The negative long-run outcome is similar to the works of Rasheed (2019) and aligns with the risk aversion theory, which assumes that depreciation of host country's currency suppresses FDI inflow. The negative association may suggest foreign firms rely heavily on imported inputs for manufacturing; therefore, depreciation of the domestic currency adversely affects FDI. However, among the FSSA countries, a significant positive association was found in Cote d'Ivoire and Senegal with lags of one and two periods, respectively. The positive outcome is consistent with the study of (Ellahi, 2011) in Pakistan.

Table 6

Long-run Estimates for Emerging CIVETS countries

Countries	**Indonesia**	**Turkey**	**Vietnam**
Variable	Coefficient	Coefficient	Coefficient
C		3.523 (0.014)	-9.796 (0.029)
D (FDI (-1)		0.412 (0.097)	0.6390 (0.177)
D (FDI (-2)			
GDP	-1.18E-11 (0.494)		7.13E-11(0.055)
GDP (-1)		2.93E-10 (0.073)	4.51E-11 (0.385)
GDP (-2)		-5.66E-10 (0.030)	
INFL			-0.15 (0.289)
INFL (-1)	-0.378 (0.022)	-0.0005 (0.978)	
INFL (-2)		-0.034 (0.194)	
EXR			-0.0003 (0.246)
EXR(-1)	-0.0003 (0.245)	- 0.412 (0.481)	
EXR (-2)		-0.026(0.963)	-0.0002 (0.151)

Source: Authors' own computation

Note: The values in parenthesis are the probability values

4.4 Short-Run Estimates

Results for short-run estimates are highlighted in Tables 7 and 8 for FSSA and CIVETS economies respectively. The coefficients of GDP of most countries are positive as expected, implying that GDP triggers FDI inflows instantaneously for FSSA countries in Botswana and Kenya and has a one-year lag effect in Cote d'Ivoire, Mauritius, Nigeria and a third-year lag in Senegal. In emerging CIVETS countries in Table 8, a significant

Table 7: Short-run Estimates for FSSA countries

COUNTRIES	**Botswana**	**Cote d'Ivoire**	**Ghana**	**Kenya**	**Mauritius**	**Nigeria**	**Senegal**
VARIIABLES	Coefficient		Coefficent	Coefficient	Coefficent	Coefficient	
C	23.314 (0.004)	-0.024(0.945)	0.382 (0.291)	8.026 (0.000)	-0.636 (0.072)	3.005 (0.000)	4.047 (0.002)
D(FDI(-1)	2.189 (0.006)	0.003(0.993)	1.318 (0.011)	0.950 (0.004)			-0.198 (0.099)
D(FDI(-2)	3.655 (0.004)	-0.204(0.253)		1.278 (0.001)			
D(GDP)	1.02E-09 (0.019)			2.37E-10 (0.001)		-1.20E-11(0.036)	1.47E-10(0.335)
D(GDP(-1)	-2.27E-09 (0.015)	2.34E-10 (0.069)		1.13E-10 (0.013)	1.26E-09 (0.014)	1.70E-11 (0.003)	1.58E-10(0.437)
D(GDP(-2)	-7.40E-09 (0.004)	-4.36E-10 (0.044)	-2.66E-10 (0.082)	9.61E-11 (0.064)			9.36E-10(0.002)
D(GDP(-3)	-9.52E-09 (0.009)		-8.45E-10(0.009)				
D(INFL)	0.974 (0.009)		-0.009 (0.703)	-0.189 (0.000)		0.034 (0.056)	-0.088(0.090)
D(INFL(-1)	2.575 (0.005)		-0.099 (0.0165)		-0.218(0.120)	0.045 (0.002)	0.385(0.009)
D(INFL(-2)	3.813 (0.003)	0.202(0.079)		-0.104 (0.003)			
D(INFL(-3)	2.719 (0.004)	0.165(0.042)	0.130 (0.006)				
D(EXR)	-3.733 (0.017)		6.389 (0.042)	-0.040 (0.102)			
D(EXR(-1)	-10.584 (0.005)	0.013(0.070)	-4.560 (0.019)	0.035 (0.233)			-0.004(0.418)
D(EXR(-2)	-12.647 (0.004)	-0.021(0.043)	2.408 (0.166)	-0.081 (0.016)			0.020(0.003)
D(EXR(-3)	-10.734 (0.004)		-29.910 (0.004)				
ECM(-1)	-3.951 (0.003)	-0.987(0.052)	-0.0943 (0.007)	-1.436 (0.000)	-1.078(0.000)	-0.912 (0.0000)	-0.148(0.003)
R- Square	0.989	0.908	0.963	0.964	0.663	0.669	0.926
Adj. R-Square	0.958	0.739	0.877	0.910	0.612	0.573	0.827
F-stats.	31.34	5.356	11.17	17.914	13.091	6.899	9.384
Prob (F.Stats)	0.000	0.016	0.004	0.000	0.000	0.001	0.001
DW	3.077	1.295	1.683	1.593	1.892	2.279	2.676

Source: Authors' own computation
Note: The values in parenthesis are the probability values

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Table 8: Short-run Estimates for CIVETS countries

COUNTRIES	**Colombia**	**Indonesia**	**Vietnam**	**Egypt**	**Turkey**	**South Africa**
VARIIABLES	Coefficient	Coefficient	Coefficient	Coefficent	Coefficient	Coefficent
C	2.592(0.000)	5.714 (0.000)	-9.850 (0.000)	-0.308 (0.522)	4.396 (0.000)	0.096(0.954)
D(FDI(-1)	0.241(0.091)	-0.244 (0.107)		1.977 (0.000)	0.369 (0.038)	-0.233(0.576)
D(FDI(-2)				-0.992 (0.000)		
D(GDP)	-1.84E-11(0.170)	-6.71E-12 (0.376)	7.03E-11 (0.005)			
D(GDP(-1)	-3.95E-11(0.011)			8.34E-12(0.740)		2.88E-11(0.450)
D(GDP(-2)				1.58E-11(0.528)		-1.78E-11(0.748)
D(GDP(-3)						-1.42E-11 (0.727)
D(INFL)		- 0.064 (0.059)	-0.149 (0.031)		0.014 (0.385)	
D(INFL(-1)		0.117 (0.006)	-0.122 (0.023)	0.326 (0.002)	0.036 (0.120)	0.045(0.900)
D(INFL(-2)		0.034 (0.119)		0.141 (0.029)		0.370(0.260)
D(INFL(-3)						
D(EXR)	-0.004 (0.019)		0.001(0.087)		0.071 (0.867)	
D(EXR(-1)	- 0.006(0.003)		0.001 (0.053)	-0.549 (0.203)		0.691(0.548)
D(EXR(-2)				0.473 (0.259)		-0.698(0.656)
ECM(-1)	-1.456(0.000)	-0.633 (0.000)	-0.387 (0.000)	-2.076 (0.000)	-0.978 (0.000)	-1.070 (0.003)
R- Square	0.800	0.764	0.780	0.821	0.648	0.778
Adj. R-Square	0.726	0.670	0.691	0.687	0.545	0.365
F-stats.	10.709	8.112	8.838	6.114	6.281	1.885
Prob (F.Stats)	0.000	0.000	0.000	0.002	0.002	0.003
DW	2.179	2.555	2.408	1.749	2.385	2.065

Source: Authors' own computation
Note: The values in parenthesis are the probability values

positive effect was established instantaneously in Vietnam, confirming the long-run outcome, and there was a first-year lag effect in Egypt and South Africa, though insignificant. The positive outcome empirically aligns with the study of Das, (2018) in developing countries and Kechagia and Metaxas (2022) in the BRICS but contrasted by Baiashvili & Gattini, (2020) who avowed that GDP stimulates FDI in middle income economies than low and advanced economies. However, a significant negative effect with contemporaneous and one-year lag was reported in Nigeria and Ghana at 10% respectively, for FSSA. However, for the CIVETS, only Colombia, out of the six countries, experienced a first-year lag adverse effect on FDI, though Indonesia and South Africa also experienced negative effect but were not significant. The adverse effect concurs with the works of Appiah Kubi et al. (2019) in West African Countries.

Furthermore, inflation is observed to immediately stifle FDI among FSSA countries in Ghana, Kenya, Senegal and a first-year lag in Mauritius though not significant for Ghana and Mauritius while Indonesia and Vietnam in the CIVETS also reported a negative impact. The negative result lends support to the empirical studies of Coban et al. (2019) in Ghana and Agudze et al. (2021) who unveiled that inflation exerts a higher impact in developing countries than developed countries. Nevertheless, an instant and significant positive impact was recorded in Botswana and Nigeria for frontier SSA, as well as a first-year lag in Egypt and South Africa for the CIVETS, but not significant for South Africa. The positive outcome is congruent with the study by Al-Matari et al. (2021)**,** which discovered that FDI inflow is positively impacted by low inflation rates in Gulf Cooperation Council (GCC) countries.

Finally, for FSSA, instantaneous exchange rate is significant and positively related to FDI in Ghana, as well as first-year lags in Cote d'Ivoire, and a third-year lag in Senegal, which align with apriori expectations. In CIVETS countries, Vietnam, Turkey and South Africa also recorded positive effects, but only significant at 10% for Vietnam. The positive effect concurs with Mundell & Fleming (1963) purchasing parity theory and the empirical works of Suliman et al. (2015) in SSA countries and Zakaria, (2017) in Nigeria, who earlier discovered that currency depreciation in recipient countries increases FDI inflow. Conversely, the weakening of the real exchange rate draws a significant volume of FDI for FSSA, instantaneously in Botswana and Kenya, though not significant in Kenya and a first-year lag in Ghana and Senegal, as well as a second-year lag in Cote d'Ivoire, and Kenya. By contrast, for CIVETS, only Colombia observed an immediate adverse effect, although Egypt and South Africa also observed first and second-year effect but not significant. The highly sensitive of FDI respond to exchange rate in FSSA than CIVETS reflects presumably the high volatility of the real exchange rate in least developing countries since they are import dependent economies. The negative outcome is congruent with the study of Houng et al. (2021) in Vietnam.

Then again, the magnitude of the lagged error correction term (ECM(-1)) for the first period is negative as required and statistically significant for all countries at one percent, except for Cote d'Ivoire, Colombia and South Africa, which were significant at 10%, 5% and 5%, respectively, therefore affirming the presence of cointegration among variables. The ECM shows the speed of convergence from disequilibrium to equilibrium and from the short-run to long-run whenever there is a disturbance in the model. The high coefficient values of the ECM indicate a high response of the variables to the long-run equilibrium when there is an imbalance in the short-run.

4.5 Diagnostic and Stability Test

The diagnostic statistics and stability tests to validate the results in the model (bootstrap ARDL) are displayed in Table 9. Evidence from the table reveals that the framework does not suffer from serial correlation, heteroscedasticity problems; and the residuals are normally distributed. Additionally, the graphs in Appendix A show that all the plotted CUSUM and CUSUMQ squares for all series in the bootstrap framework are stable, except the CUSUMSQ for Colombia. However, the negative coefficient and statistical significance of the error correction term for Colombia signify that any short-run disturbance will eventually converge to its zero mean in the long run.

Table 9
Result of Residual Diagnostic Test

TEST	BREUSCH-GODREY LM		BREUCH-PAGAN-GODREY		JARQUE-BERA	
Countries	**F-Stats**	**Sig**	**F-Stats**	**Sig**	**F-Stats**	**Sig**
Botswana	0.201	0.6593	0.4327	0.7832	2.685	0.261
Cote d'Ivoire	0.4043	0.7555	1.0816	0.4631	1.0060	0.6047
Ghana	22.558	0.1473	3.079	0.1925	1.356	0.5077
Kenya	0.2194	0.8148	1.0738	0.5117	0.4810	0.7862
Mauritius	0.1625	0.8515	1.6095	0.2049	0.7327	0.6932
Nigeria	0.7372	0.4989	1.1105	0.4122	2.3415	0.3101
Senegal	0.1568	0.8578	1.7892	0.1941	0.9347	0.6266
Colombia	0.3265	0.7282	1.1495	0.3972	0.4248	0.8086
Indonesia	2.4948	0.1262	0.2193	0.9852	5.637	0.0569
Vietnam	2.5467	0.1388	0.9319	0.5736	3.147	0.2072
Egypt	0.1494	0.8631	0.2229	0.9805	3.471	0.1762
Turkey	0.2163	0.8085	0.6626	0.7157	0.8584	0.6510
South Africa	0.2775	0.8397	0.2447	0.9861	0.6687	0.7157

Source: Authors' own computation.

V. CONCLUSIONS & RECOMMENDATIONS

5.1 Conclusions

The steady rise of FDI to emerging CIVETS (Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa) countries and Frontier Sub-Sahara African (FSSA) countries deserves a critical examination. Therefore, this paper sets out to explore the macroeconomic factors driving FDI and whether factors influencing influx in the CIVETS countries impact FSSA differently. Empirical results from the novel bootstrap ARDL frame work from 1995 to 2019 in the thirteen selected countries, show varying experiences, with the degree of impact in the FSSA region being higher than the CIVETS region. Specifically, the dominant views of earlier works are that FDI is related to GDP growth, congruent with the notion that economic prosperity and domestic consumption predominate. Empirical outcomes in Botswana, Cote d'Ivoire, Kenya, Mauritius and Senegal corroborate this result. However, a weak association was experienced in the CIVETS regions, as only Vietnam and Turkey in the long-run and Vietnam in the short-run were significant, with most countries insignificant. Nonetheless, GDP suppresses FDI inflow in Nigeria and Ghana for FSSA and only Colombia for the CIVETS. Additionally, exchange rate reported similar level of disparity as the weakening of the currency draws a significant volume of FDI for FSSA in Botswana, Ghana, Cote d'Ivoire and Kenya in the short-run but only Colombia for the CIVETS region. This seemingly reflects high volatility of exchange rate in FSSA region since most member countries are import dependent. Nevertheless, the impact of inflation seems to matter for both FSSA and CIVETS regions.

5.2 Recommendations

As policy recommendations, the palpable implications of the macroeconomic series on FDI in the FSSA calls for governments and policy makers within the region to design sound economic policies, including investment in human capital, technological and infrastructure enhancements, and exploitation and efficient use of natural resources to foster economic growth and induce high quantum of FDI inflow. Moreover, in economies where rising inflation hampers FDI inflows, the central banks can adopt inflation targeting monetary policies such as open market operations and bank rates as well as fiscal measures such as surplus budgeting, subsidies and reductions of indirect taxes to control inflation and induce FDI inflows. Moreover, in Cote d'Ivoire, Botswana, Colombia, Kenya and Nigeria, where currency depreciation suppresses FDI inflow, exchange rate control is essential for minimizing the impact. Therefore, as a policy option, monetary authorities should design and implement effective exchange rate control policies such as imposing taxes, such as Tobin tax to discourage speculation and stabilize the financial markets. Finally, since GDP and exchange rate have a weaker effect in luring inbound FDI to the CIVETS, governments and policymakers in the region should turn their attentions to other macroeconomic variables such as interest rate, trade openness, investment in infrastructure and non-economic factors such as political stability, governance and institutional quality to draw high volumes of FDI.

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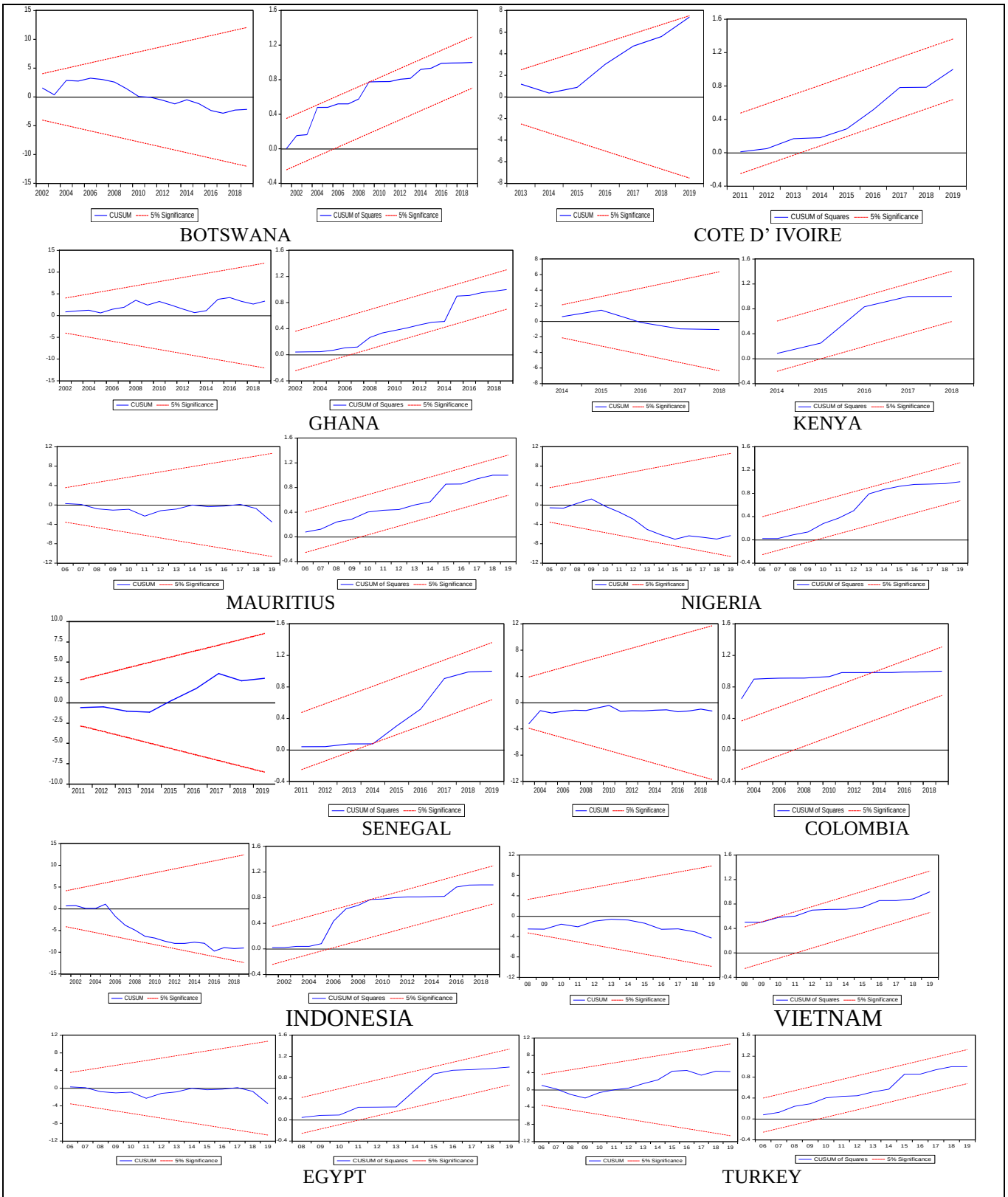
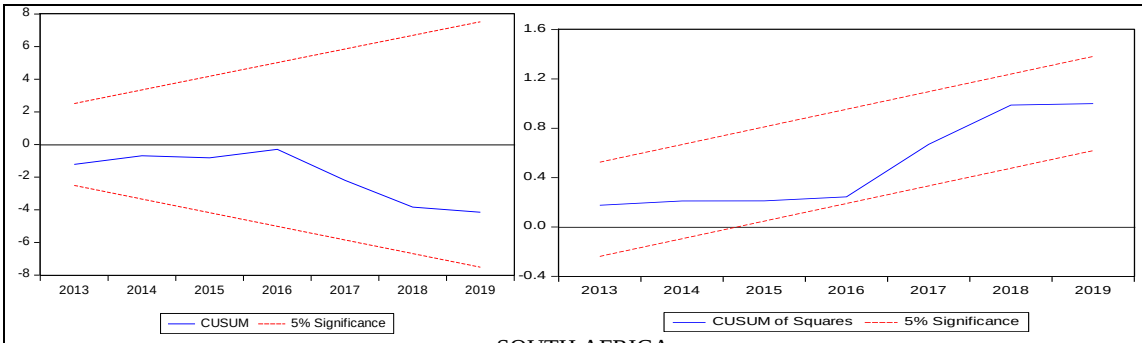
Appendix A: CUSUM AND CUMSUMSQ



CUSUM AND CUMSUMSQ



SOUTH AFRICA

CUSUM AND CUMSUMSQ