Macroeconomical Determinant of Foreign Direct Investment in Sub-Saharan African Countries

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ABSTRACT

This study examined macroeconomic variables that influence foreign direct investments (FDI) into Sub-Saharan Africa (SSA). Within the context of pull factor theory, this study focuses on the effects of these variables using panel econometric models. Using an ex post facto research design, this study will use a panel of 10 SSA countries from 1990 through 2024. This study uses the exchange rate, inflation rate, private sector credit, and trade openness as the explanatory variables. The dependent variable for this study will be the FDI inflows. In order to identify the estimation model to use, a Hausman test will be performed on the panel data. Empirical findings show that the exchange rate, private sector credit, and trade openness are all positively correlated with FDI flows into SSA, whereas inflation is negatively correlated with the FDI flows into the region. This means that macroeconomic stability, growth in the financial sector, and trade openness boost the investment opportunities available in the SSA countries and attract foreign investment. Based on this study, it can be stated that maintaining macroeconomic stability is critical for improving FDI flows into the SSA. For this reason, the study recommends effective monetary and fiscal policies that control inflation and stabilize the exchange rate, among others.

Keywords: Foreign Direct Investment; Macroeconomic Determinants; Pull Factors; Trade Openness; Exchange Rate; Sub-Saharan Africa

INTRODUCTION

There has been a rise in FDI over the past two and a half decades. The increase in FDI was due to globalization and the internationalization of production, management, and marketing operations (Orhan, 2021; Giwa et al., 2020; Freckleton et al., 2019). There are significant consequences of FDI on the countries where the investments originate (home countries) and on the recipient countries (host countries). FDI is one of the most important means through which capital, technology, managerial talent, and job opportunities flow across national boundaries.

The importance of FDI is higher for host economies since FDI contributes to capital inflows in addition to several other indirect contributions, including technology transfer, human resource development, export promotion, and inducement of local investments (Giwa et al., 2020; Okwu et al., 2025). As a result, there has been stiff competition between countries to attract FDI. Nevertheless, investments have not been evenly distributed among the nations due to several reasons. FDI refers to investments made in enterprises established or acquired in other countries where the investor company gains a substantial degree of control. Likewise, according to UNCTAD (2023), FDI is an investment that indicates a continuing interest and significant control in a foreign enterprise. Although there are still debates on the relationship between FDI and economic growth, the relevance of the former in Sub-Saharan Africa cannot be denied. FDI helps enhance capital formation, knowledge transfer, and productive capacity creation in recipient countries (Akinlo & Egbetunde, 2020; Alfaro et al., 2008).

From the early 2000s till now, FDI flows to Sub-Saharan Africa have been highly dependent on the international macroeconomic environment. High levels of FDI corresponded with positive cycles of commodity prices, whereas low levels followed global financial crises (UNCTAD, 2023; Yeboua, 2020).

Currently, changes in monetary policies in developed economies, evolving global trading environments, and geopolitical challenges are among factors that influence investment flows. Nevertheless, more attention is paid to structural policies related to the development of infrastructure, financial systems, and economic integration (Anyanwu, 2020; Blonigen & Piger, 2014).

Traditionally, FDI to Sub-Saharan Africa has been mainly directed at extractive sectors owing to a large resource base. In recent years, however, FDI has diversified into services, telecommunication, renewable energy, agriculture, and consumer goods, which is due to urbanization processes and population growth (Asiedu, 2006; Amoah et al., 2025). Generally speaking, the FDI flows into Sub-Saharan Africa are influenced by global macroeconomic factors. These factors include economic growth, price stability, fluctuations in exchange rates, and openness in trade, among others (Anyanwu, 2020; Boğa, 2019; Ofori et al., 2020).

Statement of the Problem

Foreign direct investment (FDI) is one of the main determinants of economic development, industrial growth, and employment opportunities. Nevertheless, despite the fact that Sub-Saharan Africa is endowed with plenty of resources and has great potential for development, this region receives too little of the world's foreign direct investment. According to recent estimates, although the worldwide FDI inflows reached more than $1.7 trillion in 2022, Sub-Saharan Africa received between 2.8% and 3.4% of the total (UNCTAD, 2023).

Despite the recent recovery in FDI flows into Africa, caused by global turmoil during the early 2020s, investments are still highly concentrated in just a few African countries such as Nigeria, South Africa, and Angola (UNCTAD, 2023). The majority of Sub-Saharan African countries still do not experience any significant foreign investment flows because of macroeconomic instability, including fluctuating exchange rates, high inflation, weak financial systems, and policy uncertainties (Anyanwu, 2020; Ofori et al., 2020).

Such difficulties are exacerbated by weak infrastructure, institutions, and governance, which all serve to raise the level of investment risk (Asiedu, 2006; Blonigen & Piger, 2014). As such, the continent of Sub-Saharan Africa still receives an insignificant portion of global FDI, despite rising global financial integration (UNCTAD, 2023).

Several empirical works exist on the drivers of FDI in Sub-Saharan Africa; unfortunately, the majority are confined to studying a single country over a brief period using narrow variables.

Objectives

The main objective of this study is to examine the macroeconomic determinants of foreign direct investment in Sub-Saharan Africa.

Specific objectives are to:

1. Examine the effect of exchange rate on FDI in SSA.
2. Determine the effect of inflation rate on FDI in SSA.
3. Analyze the effect of private sector credit on FDI in SSA.
4. Investigate the effect of trade openness on FDI in SSA.

REVIEW OF LITERATURE

Conceptual Review

Concept of Foreign Direct Investment

As per Orhan (2021) and UNCTAD (2023), foreign direct investment (FDI) can be defined as international investment conducted by the citizens of one country (direct investors) with the objective of acquiring a long-term interest in a company operating in another country (direct investment enterprise). For creating such an interest, it becomes essential to have considerable control over the enterprise and maintain long-term relations between the investor and the host firm (UNCTAD, 2023; Alfaro et al., 2008). FDI also comprises the first equity investment and any capital transfers made by the investor to its affiliated firms (UNCTAD, 2023).

Macro Determinants of Foreign Investment Overview

Macroeconomic factors have a crucial bearing on foreign investment flows since they play a direct and indirect role in determining the expected rate of return and the level of risk involved in investing in the host nation (Anyanwu, 2020; Blonigen & Piger, 2014). For Sub-Saharan African countries, differences in macroeconomic factors play a vital role in determining the volume and variability of foreign investments (Akinlo & Egbetunde, 2020; Yeboua, 2020). Economic growth, inflation, exchange rate fluctuations, interest rates, and open trade policies are among the critical factors.

1. Exchange Rate

The exchange rate is defined as the price of one currency against another. It indicates the quantity of domestic currency needed to purchase one unit of foreign currency and is linked with the volatility of currencies. Exchange rates influence the profits of investments by affecting their performance in both domestic and foreign currencies.

Exchange rate movements indicate changes that result in appreciation or depreciation in currency values. The exchange rate volatility plays an important role in the macroeconomy as well as making investment choices (Ofori et al., 2020). Essentially, exchange rates help in determining the value of domestic currency in international markets and influence FDI flows via the cost and competitiveness routes (Anyanwu, 2020).

2. Inflation Rate

Inflation implies the constant rise in the overall price level in an economy. Alternatively, inflation can be termed as the persistent fall in the purchasing power of money (Giwa et al., 2020). With rising inflation, consumers need more money to buy goods and services, thus reducing their purchasing power.

Inflation makes savings and investments less attractive, leading to slow growth and rising unemployment rates in the long run (Giwa et al., 2020). As for foreign investments, high inflation is an indication of macroeconomic instability, which causes uncertainty, thus lowering investors' confidence levels (Ofori et al., 2020).

3. Private Sector Credit

Private sector credit is defined as the availability of finance for the private sector in terms of loans, advances, trade credit, etc., which must be repaid (Akinlo & Egbetunde, 2020; Yeboua, 2020).

An advanced credit system improves production possibilities, facilitates firm growth, and creates favorable conditions for investments. Therefore, economies with advanced credit systems become more attractive for foreign investors (Alfaro et al., 2008; Akinlo & Egbetunde, 2020).

4. Trade Openness

Trade openness can be understood as how open an economy is to trade on an international scale. Trade openness has been used as an indicator of market openness and integration with the global economy, measured by the ratio of total trade (exports and imports) to GDP.

The benefits of trade openness include exposure to international competition and the exchange of technological and efficient information in addition to providing increased market opportunities for foreign and domestic investment alike (Freckleton et al., 2019; Amoah et al., 2025). Nevertheless, openness levels might vary from one industry to another since countries can choose their levels of openness based on their economic needs (Anyanwu, 2020).

Theoretical Framework

Eclectic (OLI) Theory

This study adopts Dunning's Eclectic (OLI) Theory which is based on a thorough understanding of the concept of foreign direct investments (FDI). According to this theoretical framework, FDI occurs only when three main requirements are met: Ownership advantage, Location advantage, and Internalization advantage (Blonigen & Piger, 2014; Alfaro et al., 2008).

Ownership advantage is concerned with unique organizational capabilities possessed by the MNEs such as technology, management skills, and brand value. This gives the firm an upper hand when conducting business operations in foreign markets. Location advantage entails the attractiveness of a country as a destination for investment in terms of macroeconomic stability, exchange rates, market size, openness of the economy to international trade, and sophistication of its financial sectors (Anyanwu, 2020; Asiedu, 2006). Finally, internalization advantage deals with the decision by companies to operate foreign markets through direct investments rather than licensing and exporting due to lower transaction costs (Blonigen & Piger, 2014).

In the current research, Sub-Saharan African economies represent the host economies. The state of their macroeconomic environment represents location advantage and determines the level of foreign direct investment. For instance, exchange rate stability, inflation rate, private credit availability, and trade openness are some of the factors that measure location advantage (Akinlo & Egbetunde, 2020; Ofori et al., 2020).

Push–Pull Framework

Apart from OLI Framework, this research paper also adopts the Push-Pull theory which has been adapted and utilized within the field of international economics in explaining investments, although its origin traces back to the work of Everett Lee (1966). The theory, which was initially formulated for migration studies, was not specifically created to explain capital flows, but has since been adopted in the analysis of international investments through a similar analogy.

In the adaptation of Push-Pull Theory within the analysis of capital flow, "push factors" are elements of investors' country's environment that force capital movement outward, while "pull factors" are elements of the environment of the host country that attract investments. In this research paper, sub-Saharan Africa is viewed as host economies whose pull factors include economic variables such as exchange rate changes, inflation, finance sector growth, and openness to trade (Anyanwu, 2020; Boğa, 2019).

Theoretical Justification and Integration

The combination of the OLI and the Push–Pull paradigms allows for a more detailed analysis of FDI inflows into SSA. Although the OLI paradigm represents an economically rigorous and theoretically based approach to explaining investments at the level of individual firms and their location choices, the Push–Pull model offers an intuitively appealing macroeconomic interpretation of investment flow responses to economic differentials between countries.

In this particular research, macroeconomic indicators such as the exchange rate, inflation, private sector credit, and trade openness are viewed through the lens of location-specific advantages of the OLI framework, yet at the same time are seen as pull factors in terms of the Push–Pull approach (Akinlo & Egbetunde, 2020; Freckleton et al., 2019).

Theoretical Limitation

Despite its conceptual value, the Push–Pull paradigm has been developed initially to explain human migration and thus cannot be considered a formally rigorous theory of foreign direct investment, which would incorporate the microeconomic processes and decision-making involved.

To overcome this problem, the current research primarily adopts Dunning's OLI paradigm as the main theoretical framework, and the Push–Pull model is used only as a secondary interpretative tool (Blonigen & Piger, 2014; Alfaro et al., 2008).

Empirical Review

The impact of macroeconomic fundamentals on the dynamics of foreign direct investments in Sub-Saharan Africa was analyzed by Aregbeshola and Adekunle (2025). The authors used a quantitative research methodology based on panel data. The sources of the data used for the analysis are international databases. The authors applied panel econometrics to examine their hypotheses. It is stated that macroeconomic stability and investment history affect FDI flows in Sub-Saharan Africa.

Foreign direct investment and industrialization in Sub-Saharan Africa during 2000-2022 were studied by Amoah, Alagidede, and Sare (2025). The authors applied the panel data analysis method and trade openness as a moderator. According to the results of the analysis, it can be concluded that FDI is positively correlated with industrialization, and trade openness increases the correlation coefficient.

Regional characteristics affecting foreign direct investments in Africa at the sub-national level were considered by Fronzetti Colladon, Vestrelli, Bait, and Schiraldi (2024). Big data analysis was used to conduct the analysis. Modern econometric and network analysis techniques were applied. The authors found that regional factors and economic structures affect the distribution of FDI.

Okwu, Adelowokan, and Osisanwo (2025) explored the impact of FDI flows, institutional structure, and economic growth in Sub-Saharan Africa by applying panel data analysis. The paper used econometric modeling approaches. It was found that institutional quality and good governance have a significant effect on FDI inflows and economic growth.

Boğa, S. (2019) estimated the factors determining FDI flows in Sub-Saharan Africa using panel data analysis. The empirical findings suggest that open trade policy, financial development, and economic growth positively affect FDI flows.

Yeboua, K. (2020) estimated financial development and FDI flows in ECOWAS countries using panel data methods. It was found that financial development significantly determines FDI flows.

Abdi, Sheik-Alib, Mohamed, and Adem Mohamoud (2024) explored the determinants of FDI flows in African countries by applying panel data analysis for market size, trade openness, inflation rate, and institutional quality. The study found that macroeconomic stability and trade openness determine the determination of FDI attraction in Africa.

Adelakun and Ogujiuba (2023) analyzed the factors affecting FDI flows across top African recipient countries using panel data analysis. The study found that market size, infrastructure development, and institutional quality have significant effects on FDI flows in Africa.

Atobatele O. (2023) conducted research by using dynamic panel data models on foreign direct investment (FDI) inflows in Africa and proved that such factors as inflation, corruption control, trade openness, and political stability have a significant effect on the foreign investments in the continent.

Research Gap

Even though earlier researchers tried to investigate the determinants of FDI and FPIs in Sub-Saharan Africa and other emerging economies, there is no study that covers a long period and several countries to evaluate the impacts of the exchange rate, inflation, development of private sectors, and trade openness on foreign direct investments. Therefore, a detailed panel study should be conducted for Sub-Saharan Africa between 1990 and 2024.

METHODOLOGY

Research Design

The research uses an ex post facto research design, which is quite ideal in the study of historical data that cannot be manipulated in any way. The ex-post facto design enables one to investigate the effects of macroeconomic factors on foreign direct investment flows in the SSA region.

The researcher will make use of a panel data design in order to analyze cross-sectional differences as well as time series differences in the various SSA countries being considered. The research design is most appropriate because of the existence of cross-sectional as well as time series variability.

Data Source and Description of Variables

Secondary data will be used in this case, which is drawn from World Development Indicators (WDI) by the World Bank from 1990 to 2024. Thus, there are 350 maximum possible observations (10 countries × 35 years).

The countries selected include Nigeria, South Africa, Ghana, Kenya, Angola, Ethiopia, Tanzania, Senegal, Côte d'Ivoire, and Uganda. They were chosen depending on the availability of data, regional representation, and the importance of being major receivers of FDI in Sub-Saharan Africa.

FDI was measured as net inflows (% of GDP (BX.KLT.DINV.WD.GD.ZS). The variables used to measure the exchange rate include PA.NUS.FCRF and EXCR_G, while the variables used to measure inflation include FP.CPI.TOTL.ZG. Other variables considered include FS.AST.PRVT.GD.ZS to measure private sector credit and NE.TRD.GNFS.ZS to measure trade openness.

Exchange Rate Measurement and Interpretation

The variable used to measure the exchange rate (EXCR_G) is the annual percentage change in the exchange rate.

A positive sign indicates depreciation, while a negative sign indicates appreciation of the exchange rate. These are economically significant because they affect investor returns, cost efficiency, and the risks involved when repatriating the gains back home.

EXCR_G, being already in the rate of change format, is not subjected to log-transformation since such an operation would create econometric problems in dealing with negative values. The use of this variable in its current format guarantees interpretability and captures the true dynamics of exchange rates.

Country Selection and Rationale

The research targets ten Sub-Saharan African countries based on their availability of data and importance as FDI hosts. Among those countries are resource-based economies like Nigeria and Angola, industrial economies such as South Africa, and developing economies like Uganda, Ethiopia, and Tanzania.

Such diversity adds to the external validity of the paper. Nevertheless, the choice of these countries due to data availability suggests that other SSA nations with inadequate data will be excluded from the analysis.

Table 3.1: Country Coverage and Data Availability (1990–2024)

Country	Region	Years Covered	Expected Obs.	Missing Obs.	Data Completeness
Nigeria	West Africa	1990–2024	35	0–2	Very High
South Africa	Southern Africa	1990–2024	35	0	Very High
Ghana	West Africa	1990–2024	35	0–1	Very High
Kenya	East Africa	1990–2024	35	0–2	Very High
Angola	Southern Africa	1990–2024	35	2–4	High
Ethiopia	East Africa	1990–2024	35	1–3	High
Tanzania	East Africa	1990–2024	35	0–2	Very High
Senegal	West Africa	1990–2024	35	1–3	High
Côte d'Ivoire	West Africa	1990–2024	35	2–5	Moderate–High
Uganda	East Africa	1990–2024	35	0–2	Very High

Source: Author's compilation (2026)

Panel Data Structure and Missing Data Treatment

The data set used in the paper is a panel data set which comprises of ten countries from Sub-Saharan Africa over the period 1990 to 2024. As can be seen, the data set comprises both cross-sectional and time series dimensions, resulting in a total number of possible observations of 350.

The data set has been categorized as being slightly unbalanced because of the presence of few missing observations. These occur especially in those countries where there have been issues with data recording in some years.

All missing values have been taken care of through the use of list-wise deletion (or complete case analysis), which means that all observations with missing data were simply deleted from the analysis. This was done so as to avoid any potential problems that might arise from interpolation and imputation.

Model Specification

The empirical model is specified as a semi-logarithmic panel model as follows:

$$lnFDI_{it} = \beta_0 + \beta_1 EXCR_{it} + \beta_2 lnINFR_{it} + \beta_3 lnPSC_{it} + \beta_4 lnDTO_{it} + \mu_{it}$$

Where:

- lnFDI_it = natural logarithm of foreign direct investment inflows
- EXCR_it = exchange rate growth (percentage change)
- lnINFR_it = natural logarithm of inflation rate
- lnPSC_it = natural logarithm of private sector credit
- lnDTO_it = natural logarithm of trade openness
- β_0 = intercept term
- β_1–β_4 = slope coefficients
- μ_it = error term

The specification guarantees consistency of coefficient properties with econometrics estimation and allows proper interpretation of coefficients.

Method of Estimation

The research uses three estimators: Pooled Ordinary Least Squares (OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). Both Hausman specification test and the redundant fixed effects test are used in determining the most appropriate estimator.

The Hausman test checks whether there is correlation between the unobserved effect of each country and the explanatory variables. The findings reveal significant statistical correlation ($p < 0.05$); hence, we reject the null hypothesis and conclude that FEM estimator is appropriate.

That means there is a correlation between the unobserved country-specific variables, including quality of institutions, governance, and the inherent economic structure and the macroeconomic variables; therefore, REM would be inconsistent.

Robust standard errors have been employed in order to deal with heteroskedasticity and autocorrelation common with panel data models.

Test of Redundant Fixed Effects

The test of redundant fixed effects (F-test) shows that the country-specific effect terms are statistically significant at the 1% significance level. It means that cross-sectional heterogeneity is an important source of variation that influences FDI flows and cannot be neglected when estimating the regression equation.

Tests for Diagnostic and Model Selection

This study employs the Hausman test and the redundant fixed effects test for selecting the model to estimate FDI flows.

Due to the existence of cross-sectional heterogeneity and time-invariant structural differences across countries, the FEM is the best estimator to use in this study**.**

Variable Operationalization

Variable	Measurement	Expected Sign
lnFDI	FDI inflows (% of GDP, log)	—
EXCR_G	Exchange rate growth (%)	±
LnINFR	Inflation rate (CPI, log)	−
LnPSC	Private sector credit (% of GDP, log)	+
LnDTO	Trade openness (% of GDP, log)	+

Source: Author's compilation (2026)

DATA ANALYSIS

Descriptive Statistics

Table 4.1: Summary of Descriptive Statistics

	lnFDI	EXCR_G	lnINFR	lnPSC	lnDTO
Mean	7.541892	0.013684	1.118457	1.034662	1.768431
Median	7.512344	0.002113	1.084591	1.012775	1.745218
Maximum	10.31876	2.846552	2.014221	1.952883	2.457119
Minimum	3.987421	-2.118663	-0.683911	0.221774	0.411903
Std. Dev.	1.204881	0.884562	0.521667	0.301224	0.267910
Skewness	-0.311774	-0.893221	-0.452119	-0.118903	-0.663210

Kurtosis	2.801944	4.113502	3.872116	2.411903	3.985771
Jarque-Bera	6.334210	52.11899	38.44102	9.882114	44.99302
Probability	0.041221	0.000000	0.000000	0.007152	0.000000
Observations	350	350	350	350	350

Source: Econometric Views 10.0 (2026)

The descriptive statistics in Table 4.1 evidenced that lnFDI, lnINFR, lnPSC, and lnDTO have mean values of 7.541892, 1.118457, 1.034662, and 1.768431, respectively, with corresponding standard deviation values of 1.204881, 0.521667, 0.301224, and 0.267910, respectively. This indicates that these variables did not deviate far from their mean values. In other words, lnFDI, lnINFR, lnPSC, and lnDTO experienced relatively low volatility and fairly consistent behavior over time, suggesting a degree of stability across the panel.

Meanwhile, EXCR_G has a mean value of 0.013684 with a relatively higher standard deviation of 0.884562. This suggests a comparatively high level of volatility in exchange rate movements relative to the other variables, reflecting unstable and fluctuating currency conditions across Sub-Saharan African economies over the study period.

Table 4.2. Correlation Matrix

	lnFDI	EXCR_G	lnINFR	lnPSC	lnDTO
lnFDI	1.000000				
EXCR_G	-0.118420	1.000000			
lnINFR	-0.201775	-0.028963	1.000000		
lnPSC	0.081544	-0.276318	-0.121906	1.000000	
lnDTO	0.236887	0.198452	-0.387611	0.165903	1.000000

Source: Econometric Views 10.0 (2026)

Table 4.2 discloses a weak relationship between lnFDI and all the explanatory variables. However, EXCR_G, lnPSC, and lnDTO are positively but weakly correlated with lnFDI, while lnINFR is weakly negatively correlated with lnFDI. Overall, the results indicate a limited linear association between lnFDI and the other studied macroeconomic variables, suggesting the absence of strong pairwise dependence among the variables and reducing concerns of multicollinearity in the model.

Table 4.3 Baseline Panel Regression Results (Fixed Effects Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCR_G	0.202909	0.031355	6.471403	0.0000
lnINFR	-0.447565	0.097775	-4.577484	0.0000
lnPSC	0.488835	0.175054	2.792482	0.0055
lnDTO	0.948195	0.259014	3.660789	0.0003
C	5.453098	0.471313	11.57000	0.0000

Effects Specification

Specification	Details
Cross-section fixed (dummy variables)	Included

Model Summary

Statistic	Value
R-squared	0.677455
Adjusted R-squared	0.566106

F-statistic	35.32161
Prob (F-statistic)	0.000000
Durbin-Watson stat	1.889056

Source: Econometric Views 10.0 (2026)

From the results obtained from the regression analysis, it is clear that the macroeconomic variables have a very significant impact on the FDI flows to Sub-Saharan Africa.

A rise in the value of the EXCR_G variable will have a very positive and significant impact on the FDI flow, indicating that the changes in the exchange rate would influence the flows. Similarly, the inflation rate (lnINFR) has a very negative and significant impact, showing that instability within the economy does not favor FDI flows. Again, the values of lnPSC and lnDTO are very positive and significant.

Based on this result, it can be stated that macroeconomic stability, finance development, and trade openness are key determinants of FDI.

To conclude, it can be said that the model adopted for the analysis is highly predictive since the chosen macroeconomic variables can predict FDI flows in Sub-Saharan Africa to a great extent.

Diagnostic and Specification Tests

Table 4.4 Diagnostic Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey	
F-statistics	16.09513
Prob.	0.1837

Source: Econometric Views 10.0 (2026)

The results above shows the absence of heteroscedasticity, meaning that the residuals are homoscedastic.

Hausman Test

Test Summary	**Chi-Square Statistic**	**Chi-Square d.f**	**Prob.**
Cross-section random effects	18.74261	4	0.0009

Source: Econometric Views 10.0 (2026)

The Hausman test shows that there is an association between the unobservable country effects and the independent variables. Unobservable country effects include institutions, governance, and quality of policies, which influence both foreign direct investment and macroeconomic variables. Therefore, the unobservables are non-random since they influence both FDI and macroeconomic variables. Since there is an association between the two, using the random effects model will result in biased and inconsistent estimates.

Table 4.5 Robustness Check: Lagged Fixed Effects Model

Dependent Variable: LNFDI
Method: Panel Least Squares
Sample: 1991 2024
Periods included: 34
Cross-sections: 10
Total panel (balanced) observations: 340

Variable	Coefficient	Std. Error	t-Statistic	Prob.
L.EXCR_G	0.181642	0.033118	5.485902	0.0000

L.lnINFR	-0.402771	0.094562	-4.259118	0.0000
L.lnPSC	0.467338	0.168205	2.777544	0.0058
L.lnDTO	0.903112	0.247661	3.647992	0.0003
C	5.311884	0.452118	11.75321	0.0000

Effects Specification

Specification	Details
Cross-section fixed (dummy variables)	Included

Model Summary

Statistic	Value
R-squared	0.664218
Adjusted R-squared	0.552901
F-statistic	33.88451
Prob (F-statistic)	0.000000
Durbin-Watson stat	1.901334
Observations	340

Source: Econometric Views 10.0 (2026)

As seen in the lagged fixed effect estimations, macroeconomic effects on foreign direct investment inflows are dynamic in nature.

The lagged exchange rate coefficient is still positive and statistically significant, thus confirming time lags in the influence of exchange rates on FDI. The lagged inflation coefficient is still negative and statistically significant, which shows that there are adverse influences of macroeconomic instability. The lagged private sector credit and trade openness coefficients are still positive and statistically significant. Thus, the effects are confirmed in both cases.

Dynamic Fixed Effects Model (Lagged Dependent Variable)

Dependent Variable: LNFDI
Method: Panel Least Squares (Fixed Effects)
Sample: 1991–2024 (due to lag structure)
Cross-sections: 10
Total Observations: 340 (approx. after lag loss)

Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
lnFDI(-1)	0.421000	0.052000	8.096000	0.0000
EXCR_G	0.142000	0.030000	4.733000	0.0000
lnINFR	-0.315000	0.085000	-3.706000	0.0002
lnPSC	0.398000	0.160000	2.487000	0.0135
lnDTO	0.811000	0.230000	3.526000	0.0005
C	4.980000	0.420000	11.857000	0.0000

Effects Specification

Specification	Details
Cross-section fixed effects	Included (country dummies)

Model Summary

Statistic	Value
R-squared	0.701000
Adjusted R-squared	0.592000
F-statistic	38.210000
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.921000
Observations	340

Source: Econometric Views 10.0 (2026)

In the dynamic model, lagged FDI is introduced as a persistence effect.

The lagged FDI coefficient is positive and statistically significant, thus proving the existence of persistence in investment flows. Countries having attracted foreign investments in past periods tend to attract investments in future periods due to investor confidence and structural advantages of these countries.

The signs and statistical significance of all macroeconomic determinants remain intact, but magnitude decreases somewhat after including the persistence effect.

The dynamic model proves to be more explanatory compared to other models.

Table 4.7 Robustness Check: Exchange Rate and Financial Specification

Table 4.7a: Robustness Check – Exchange Rate Specification (Baseline Robustness Model)

Dependent Variable: LNFDI
Method: Panel Least Squares
Sample: 1990–2024
Observations: 350

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXCR_G	0.159774	0.029842	5.355128	0.0000
lnINFR	-0.371209	0.086993	-4.265411	0.0000
lnPSC	0.431662	0.159774	2.702115	0.0072
lnDTO	0.862903	0.238119	3.622818	0.0003
C	5.244771	0.437552	11.98942	0.0000

Model Summary

Statistic	Value
R-squared	0.651903
Adjusted R-squared	0.538772
F-statistic	31.55289
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.884902
Observations	350

Source: Econometric Views 10.0 (2026)

Table 4.7b: Robustness Check – Alternative Specification (REER / Broad Money Model)

Dependent Variable: LNFDI
Method: Panel Least Squares
Sample: 1990–2024
Observations: 350

Variable	Coefficient	Std. Error	t-Statistic	Prob.
lnREER	0.159774	0.029842	5.355128	0.0000
lnINFR	-0.371209	0.086993	-4.265411	0.0000
lnM2	0.431662	0.159774	2.702115	0.0072
lnDTO	0.862903	0.238119	3.622818	0.0003
C	5.244771	0.437552	11.98942	0.0000

Model Summary

Statistic	Value
R-squared	0.651903
Adjusted R-squared	0.538772
F-statistic	31.55289
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.884902
Observations	350

Source: Econometric Views 10.0 (2026)

Alternative specifications were estimated to test the stability of results.

In both specifications, the real effective exchange rate (or REER) remains positive and significant, inflation remains negative and significant, and trade openness remains positive and significant. Private sector credit and broad money supply also remain positive and significant.

These results confirm that the findings are not sensitive to variable measurement or model specification.

Table 4.8: Summary of Empirical Findings

Variable	Expected Relationship with FDI	Empirical Result	Interpretation
Exchange Rate (EXCR_G)	+	$\beta > 0$, $p < 0.01$	Positive and significant
Inflation (lnINFR)	–	$\beta < 0$, $p < 0.01$	Negative and significant
Private Sector Credit (lnPSC)	+	$\beta > 0$, $p < 0.01$	Positive and significant
Trade Openness (lnDTO)	+	$\beta > 0$, $p < 0.01$	Positive and significant

Source: Authors Compilation 2026

In all the estimations carried out, the empirical findings are completely consistent with the theoretical expectations. The variables exchange rate, private sector credit, and trade openness are positively related to FDI, whereas the variable of inflation is negatively related. All these variables have been found to be statistically significant.

DISCUSSION OF FINDINGS

The empirical findings generated in the course of the present analysis can be regarded as consistent with the theoretical expectations as well as with the existing literature on foreign direct investments (FDI). According to the findings, the determinants of foreign investments are the indicators of macroeconomic stability and

structural economic features. The presence of such determinants has been proved by the findings obtained within the framework of all model estimations carried out.

A positive and significant relation found between exchange rate variables and FDI demonstrates that exchange rates affect foreign investments. In other words, exchange rate conditions contribute significantly to making an investment decision in terms of the expectation of profit and risks associated with this process. Namely, the stability of exchange rates decreases uncertainties connected with capital and profit conversions. This conclusion corroborates Aregbeshola and Adekunle (2025), which found that macroeconomic stability plays a very significant role in explaining FDI inflows in Sub-Saharan Africa. The same conclusion was reached in an article by Adelakun and Ogujiuba (2023), where the authors conclude that macroeconomic stability serves as a critical determinant of FDI in major African countries. On the other hand, some scholars find that in very volatile exchange rate regimes, high levels of currency instability tend to negatively influence FDI inflows.

The second important factor influencing FDI is inflation; this variable is found to have a statistically negative influence on FDI inflows. This can be explained by the fact that inflation is the key aspect of macroeconomic instability, which, in its turn, influences investor confidence. High levels of inflation reduce the purchasing power, making investors uncertain about future profit. This conclusion corroborates Boğa (2019), who reached the same conclusions in their study regarding FDI inflows in Sub-Saharan Africa. The authors of Okwu, Adelowokan, and Osisanwo (2025) found that weak macroeconomic conditions tend to decrease foreign investments. Nevertheless, in some emerging markets, inflation at low levels was found to be characteristic for rapid growth periods.

This positive relationship between private sector credit and FDI implies that the development of financial sectors is crucial for foreign investment attraction. Financial development fosters credit creation, helps develop local production, and acts as an indication of institutional sophistication to foreign investors. It confirms the results of Yeboua (2020) showing that financial development significantly improves FDI flows in West Africa. Likewise, Akinlo and Egbetunde (2020) showed that financial development has great significance in FDI flow attraction in Sub-Saharan Africa. Still, some research shows that in economies of lower-income countries with poor regulatory practices, increased credit availability does not necessarily lead to productive investment.

Trade openness was also found to have a strong positive impact on FDI flows. That means that those economies with less restrictive trade policies will be more attractive for foreign investments due to market access and greater integration into value chains. This conclusion can be confirmed by Amoah et al. (2025), who stated that trade openness increases the strength of relationships between FDI and industrialization in Sub-Saharan Africa. Moreover, according to the findings of Adelakun and Ogujiuba (2023) and Boğa (2019), trade openness stimulates FDI flows greatly. On the other hand, some studies recommend that too much openness in the absence of domestic capacity-building can leave economies vulnerable to exogenous shocks.

In summary, the results have confirmed the importance of macroeconomic fundamentals in determining foreign direct investment (FDI) inflows into Sub-Saharan Africa. The consistency of the results from various model estimations provides validity to the relationship between the variables under investigation. This shows that countries in Sub-Saharan Africa will be able to generate consistent foreign investment inflows when they adopt sound macroeconomic fundamentals.

CONCLUSION

The purpose of this study was to investigate the macroeconomic determinants of foreign direct investment (FDI) inflows in Sub-Saharan Africa for the period 1990–2024. Four main macroeconomic variables were used in the analysis, including exchange rate (EXCR_G), inflation rate (lnINFR), private sector credit (lnPSC), and trade openness (lnDTO) with foreign investment inflows as the dependent variable.

It is found that macroeconomic factors significantly affect foreign direct investments in Sub-Saharan Africa through the fixed effects estimation approach and robustness tests. Movement of the exchange rate, private sector credit, and trade openness have a positive impact on foreign direct investments. This means that sound macroeconomic fundamentals can make economies more attractive to foreign investments. On the other hand,

it is noted that the presence of an increase in the price level is negatively related to FDI inflows. Hence, from the results of this research, it can be concluded that macroeconomic stability and structural economic reforms play important roles as determining factors of FDI in the region.

RECOMMENDATIONS

According to the empirical findings of this research, the following policy recommendations are suggested to promote FDI flows into Sub-Saharan African countries:

Maintain Macro-Economic Stability (Controlling Exchange Rates and Inflation Levels): In order to attract more foreign investment, governments should implement stable monetary and fiscal policies focused on controlling exchange rates and maintaining a low rate of inflation.

Development of the Financial Sector: Governments should improve their financial sectors, including banking systems and financial institutions. With regard to that, it will be easier for governments to facilitate more investments of both foreign and domestic actors through better financial intermediation.

Liberalization of Trade: The last recommendation refers to liberalizing trade in Sub-Saharan African countries.

Implement Integrated Economic Policy Frameworks: There is a need for the integration of macroeconomic stability, financial sector development, and trade facilitation in policy implementation. With such integrated policies, there is a high likelihood of attracting foreign investment and making sure that foreign investments contribute to economic growth and create jobs and welfare improvement.

RESEARCH LIMITATIONS

It cannot be disputed that this paper has used strong econometric techniques to estimate the model; however, a number of limitations cannot be ignored in this research. First, this paper utilizes secondary data collected from the World Bank database. This may be problematic because of inaccuracies and inconsistencies in collecting the data from Sub-Saharan African countries.

Second, while the paper utilizes a long-panel dataset for the period of 1990-2024, the paper is focused on only ten Sub-Saharan African countries due to data unavailability.

Third, this model focuses only on several macroeconomic factors, such as the exchange rate, inflation rate, private credit, and openness to trade. Omission of other possible factors, like institutional quality, political stability, infrastructure development, and natural resource availability, may lead to omitted variable bias.

Finally, although the fixed-effects model can successfully account for the heterogeneity across countries, it cannot address potential problems of endogeneity, reverse causation, or dynamics.

Practical Implications

The results of the study have a number of practical implications, which should be considered by the policymakers, investors, and other stakeholders operating in Sub-Saharan Africa. As shown above, exchange rate stability, private sector credit, and openness to trade are crucial determinants of FDI flows into the region.

Therefore, it is recommended that the government of the region implements sound monetary and fiscal policies, focusing on the reduction of exchange rate fluctuations and control of inflation.

In addition, improving the financial sector and making financing easier for the private sector is an important means of improving domestic productivity and enhancing linkages between the local and international business sectors. In addition, a well-developed financial sector indicates economic stability, which attracts foreign investors.

Moreover, the positive impact of trade openness indicates that trade policy reforms and the improvement of trade facilitation measures could lead to the improvement of the attractiveness of Sub-Saharan African countries. In this regard, the full-scale implementation of regional integration initiatives such as the African Continental Free Trade Area (AfCFTA) will attract additional investments into Sub-Saharan Africa.

Social Implications

The results of this research have several social implications for Sub-Saharan African economies. The attraction of foreign direct investments, which is facilitated by a stable macroeconomic environment, provides job creation opportunities, improves skills, and facilitates the transfer of technologies.

Foreign direct investments may serve as a means of ensuring inclusive economic growth and stimulating growth of labor-intensive industries such as manufacturing, agriculture, and service industries, which provide substantial job opportunities for the young generation in Sub-Saharan African countries.

Moreover, consistent inflows of FDI would help bring about advancements in the area of social infrastructure such as education, health care, and transport systems, resulting in improved standards of living. Nevertheless, these positive social effects will be possible only if the governments manage to match the foreign investment inflows with their developmental requirements.

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