Journal of Economics and Management Sciences: Volume 5, No.2; 2020
ISSN: 2550-732X
Published by Department of Economics, Federal University of Lafia, Nasarawa State, Nigeria

The Interactions between Foreign Direct Investment, Exchange Rate, Domestic Private Investment and the Growth of Sub-Saharan African Economies

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Abstract
Foreign direct investment (FDI) interacts with credit to private sector (CPS) and exchange rate to affect developing economy positively. This study examined the impact of the interactions between FDI, credit to private sector, and exchange rate on the growth of Sub-Saharan Africa economies. Data was collected from World Bank indicators and Bank for International Settlement from 1982 to 2018 for ten (10) selected countries, namely: Botswana, Burkina Faso, Central Africa Republic, Chad, Cote D'Ivoire, Malawi, Mali, Nigeria, Republic of Benin and South Africa. A Fixed Effect panel least squares regression in conjunction with correlation in an interactive framework were analyzed using E-view 9.0 econometric tool. The study finds that FDI through interaction with exchange rate negatively and significantly impact the economies of investigated African countries judging by the regression outcome. The correlation outcome exposes that credit to private sector interact with FDI to positively enhance economic growth in Africa. The study further reveals that gross savings have positive and significant effect on growth in the region. Therefore, the study recommends that African countries and indeed, developing countries should pursue policies and undertake necessary reforms aimed at encouraging inflows of foreign direct investment to their economies, while ensuring foreign exchange rate stability. Also, lending institutions should be motivated and supported to provide substantial portions of their credit assets for private sector investment owing to the potential they hold in promoting economic growth.
Keywords: Foreign Direct Investment, Exchange Rate Interactions, Sub-Saharan Africa

1.0 Introduction

With globalization and great advances in international financial systems coupled with socio-economic and political reforms in several countries, the ease with which international capital flows from developed nations to many developing nations and regions, and motivated primarily by the desire of foreign investors to make comparatively higher returns on their investments in foreign markets, has in contemporary times elevated Foreign Direct Investment (FDI) to an important "eco-financial" instrument of national development strategy in most parts of the world, and none the less Africa. FDI is undeniably an important capital source that combines with domestic private investments through the instrumentality of a stable exchange rate to boost and positively affect growth in national economies. FDI is the used of fund to acquire an ownership interest in an enterprise in a country other than that of the acquirer (World Bank, 1996). FDI is a major

funding source in Sub-Sahara African countries. It is a booster to the growth of the receiving country as it does not only finance commercial and industrial assets, but it helps also in the transfer of innovations and/or technology to host countries; and thus boosts economic activities and promotes competition amongst local industries, which ultimately promote firms' efficiency (Yapatake, Ramadhan & Kyissima, 2015).

FDI intermingles with exchange rate and domestic investment to affect growth in African economies. Obadan (2012) describes exchange rate as the worth of a local currency measured as a unit of its foreign counterpart. A rise in exchange rate representing a reduction in the price of national currency when compared with external money, increases the competitiveness of domestic firms; because aside from increasing foreign demand for domestic goods, it also attracts foreign investors to domestic markets (Khahid, 2017). This suggests that currency depreciation also attracts foreign investments which strengthen the competitive position of local businesses, and this may boost economic activities at the home front. Domestic private investment entails committing resources to business activities by the nationals of a country as against foreign investors. A well-developed financial market assists in mobilizing funds for domestic investments. The financial institutions through their commercial roles, mobilize funds from the surplus units and make them available to the deficit units; thus, enhancing commercial and industrial capital development to facilitate economic growth. Financial advancement is a device that enhances the positive impact of FDI on economic growth (Elya, Abu, Nor & Tamat, 2017). Susic, Stojanovic-Trivanovic and Susic (2017) assert that foreign direct investment is central to growth, particularly in emerging economies because it boosts investment.

In an attempt to encourage foreigners to take up investment in domestic home front, many developing national governments have come up with trade liberalization policies thereby opening the economy to the international community. However, FDI was hitherto considered as impediment to the growth of businesses in the home front, hence the indigenization policies that restrained foreigners from participating in businesses in Africa. As an illustration, African nations like Nigeria embarked on trade restrictions between 1970 and 1980 as part of import substitution strategy, targeted at preventing foreign firms from competing with homegrown businesses (Akannegbu & Chizea, 2017). Today, however the situation is different. Indeed, Aboye (2017) revealed that FDI now overshadows domestic private investments in developing nations. Unarguably, the competitive edge of FDI over private domestic investment is due mainly to underdeveloped financial markets which limit investment funds for domestic business activities.

Making more funds available to the private sector in the domestic front could enhance its economic competitiveness/performance and enhance growth. Evidence has shown that financial markets provide the route through which foreign direct investment promotes economic growth (Alfaro, Kalemli-Ozcan & Sayek, 2009, Waliu, 2017). Also, Reid (2010) opines that the exposure of national markets to foreign capital enhances the growth of domestic financial sector. Given that FDI boosts investment; and financial advancement serves as a basis for FDI to engender growth, then the romance between FDI and domestic private investment financing (surrogate by private sector credits in our study) is sure to promote economic growth. On this backdrop, we propose in this study that private sector credits (domestic investment) augments FDI to affect the host economy positively.

Furthermore, Modern theory of economic growth concludes that FDI has a positive influence on economic performance. Nevertheless, the degree to which this occurs is hinged on certain specific indicators of the benefiting country including its economic policy (Waliu, 2017 citing Balasubramanyam, Salisu & Sapaford, 1996). To account for this, we included exchange rate in our investigation. The value of domestic currency of most countries in Africa has been on the decline. For example, the price of Nigerian Naira to the U.S dollar rose by about 82.78% (167 to 305.25) between January 2016 and January 2017 using the official exchange rate. The downward movement in value of domestic money compares to foreign currency, no doubt may serve as an incentive to foreign investors but discourages local investors especially those who relied on foreign nations for their inputs and these ultimately may affect economic growth. Husek and Pankova (2008) advanced reasons why depreciation in local currency may be a motivation for FDI inflow into a host country to include the fact that its lower production cost and reduce the value of an asset in the country, hence the attractiveness to foreign investors. However, if the standard deviation of exchange rate is high, the profit derivable from investment reduces and FDI may decline (Asmah & Andoh, 2013). It is expected that the interaction of FDI with exchange rate will affect economic growth, given that exchange rate in a developing country is favourable to foreign investors and foreign investments. It is against this background, that this study hypothesizes that the joint effects of FDI and exchange rate have a significant influence on growth.

Study on the interaction of FDI, Domestic private investment financing and exchange rate on the growth of African economy using interactive variables is scarce. It is on this backdrop, that this study examines how this interface affects economic growth in Africa focusing on selected Sub-Saharan Africa from 1982 to 2018 using fixed effect panel regression. The main objective of our study is to ascertain if the interactions between FDI and credits to domestic sector; as well as FDI and exchange rate significantly affect African economies.

2.0 Theoretical Insight

The brunt of financial sector on economic growth is well documented in theoretical work. Schumpeter (1911) submitted that an advanced financial system stimulates output and promotes growth because it channels funds to investors and businessowners capable of converting the resources to the production of commodities. It is argued that monetary policy changes of developing countries as well as the generous (liberal) policy stimulate foreign funds inflows (Ituma, 2015). Levine (1997) advanced the supply-led growth hypothesis and offer that finance to the growth of the economy by mobilizing funds from savers to users of funds. The finance led-growth theory envisages a one-way directional relationship flowing from the financial sector to the economy. Indeed, banks and capital markets enable investors to access funds and convert them into productive activities, which eventually promote growth (Awdeh, 2012). Contrarily, the growth-led finance theory developed by Robinson (1952) exposes that growth in the economy arouses financial securities.

Unarguably, financial services as well as innovations are fall out of development of the economy. Meaning that as the economy improves the agitation for new financial activities also grows (Tyavambiza & Nyagara, 2015). McKinnon (1973) and Shaw (1973) identify savings and investment stimulated by government policy as the channels through which finance drive economic development. The central point of the study was that

government should undertake liberal financial policy because of its potential to stimulate growth. A two-way association between growth and finance has been documented (Dimitriades & Hussein, 1996). Bahri, Nor and Nor (2018) confirmed the existence of a causal link between FDI, financial development and growth in Asian countries. Waliu (2017) attributed the positive influence of FDI on growth in Nigeria to financial development.

2.1 Review of Empirical Literature

2.1.1 Foreign Direct Investment and Economic Growth

The link between FDI and growth has been investigated in different region of the world. John (2016) examined the effect of FDI on economic growth in Nigeria from 1981 to 2015, using multiple regression. The result reveals a positive and significant effect of FDI on economic growth. Iwedi and Igbanibo (2015) examine the influence of foreign investment on economic growth in Nigeria from 1970 to 2010. The econometric tools engage are vector autoregression, cointegration and causality. It was revealed that FDI as well as foreign private investment, positively and significantly impact growth in the long-run. Jugurnath, Chuckun and Fauzel (2016) inspected FDI and economic growth in Africa, focusing on Sub-Saharan African region covering 2008 till 2014, using dynamic panel regression. the study exposed a positive and significant impact of FDI on growth. Saibu and Akinbobola (2014) X-ray the effect of globalization and FDI on Sub-Sahara African economy applying Vector Autoregressive procedure for the period 1986 to 2004. The result indicates that FDI significantly account for growth only in three out of the eleven sub-Saharan African countries. Adedeji and Ahuru (2016) probed how FDI affects growth in Sub-Saharan Africa from 2008 till 2013 engaging panel least square regression. The fixed effect regression revealed a positive but not significant effect of FDI on economic growth in the region.

Ojewumi and Akinlo (2017) inquire into the association of FDI, environmental quality, and economic growth from 1980 to 2013, focusing on in Sub-Saharan African continent and making use of panel autoregressive and error correction techniques. The result showed that a dynamic association subsists amidst FDI and growth in the region. Ndiaye and Xu (2016) investigate the connection between FDI and growth in West Africa covering 1990 till 2012, utilizing fixed effect technique. The study reported a positive and significant association between FDI and economic growth. Faruk (2013) used least square regression as well as correlation to examine the link between FDI and growth in a developing country, particularly in Bangladesh from 1980 to 2011. It was found that FDI has a significant influence on growth (surrogate by GDP). However, Tabassum and Ahmed (2014) evaluate how foreign direct investment impact on the economy of Bangladesh from 1972–2011, using regression. The study exposes that the influence of FDI on the growth of the economy is not robustly remarkable.

Argiro (2003) explored the brunt of FDI on growth covering fourteen (14) European Union countries, applying the OLS tool and pooled data from 1980-1996. The result indicates that foreign investment significantly determines growth. Anwar, Arfan and Fandziah (2015) inspected how inflow of funds from foreign nations affects Togolese economy for the period 2000 till 2013, engaging regression technique. The result showed that GDP growth rate was negatively affected by FDI. Susic, Stojanovic-Trivanovic and Susic (2017) determine whether FDI impact the economy of Bosnia and Herzegovina from

2009 to 2015, applying correlation and regression on monthly data. The study documents that FDI positively and significantly drives economic growth.

2.1.2 Domestic Private Sector Funding and Economic Growth

Credits to private investment have been used as financial development indicators when examining its impact on economic growth (Levine, Loayza & Beck, 2000; Abubakar & Gani, 2013). Ogwumike and Salisu (2012) examined financial development (surrogate by credit to private sector) and economic>growth in Nigeria from 1975 to 2008, using bound test technique. The study revealed that credits to private sector (CPS) positively determine the economic outcome. Garba (2014) investigated how financial development indicators such as bank credits, market capitalization and FDI on growth in Nigeria (1990 to 2009), applying OLS along with ECM. The outcome demonstrates a positive effect of the indicators on growth. Abubakar and Gani (2013) also reported a negative impact of private sector funding on economic>growth in Nigeria from 1970 to 2010, when Vector Error Correction model was employed.

Ahmed and Malik (2009) investigated whether advancement in financial sector (surrogate by CPS) affect growth in developing economies from 1970 to 2003. The study which engaged generalized method of moments, revealed that CPS influence growth measured by GDP per capita. Puatwoe and Serge (2017) assessed the influence of growth in financial sector on economic growth in Cameroon using an autoregressive distributive lag and found that CPS amongst other impact economic growth positively in the long-run. Musamali, Nyamongo and Moyi (2014) examined the brunt credit to private sector surrogate for financial development has with growth in Africa from 1980 to 2008, using causality and panel least squares regression tools. The result showed that credit to private sector amidst others determines economic growth in Africa. Igbal, Ahmad and Hussain (2012) applied ARDL along with ECM on time series data in Pakistan from 1973 to 2007 to inspect the nexus between CPS and economic growth. The result revealed a positive and significant influence of CPS on economic growth. Korkmaz (2015) probed into the link credits to domestic sector has with economic growth used to account for macroeconomic forces in selected European countries from 2006-2012, using fixed effect panel regression. It was evidenced that domestic credits by banks affect economic growth significantly. Rashti, Araghi and Shayeste (2014) desired to know if financial development affects economic growth in OECD countries, high and low average income countries. The study which engaged the generalized method of moments from 1990 to 2010 revealed that the banking sector indicator of development (private sector credits) has a negative effect in the countries investigated.

2.1.3 Exchange Rate and Economic Growth

Obi, Oniore and Nnadi (2016) engaged GMMs technique from 1970 to 2014 and reported inverse association to exist amidst exchange rate and growth in Nigeria both for the fixed exchange rate regime and the entire period investigated. Ndu-Okereke and Nwachukwu (2017) evaluated the connection between exchange rate volatility and Nigerian domestic output, employing two-stage least squares from 1987 to 20001. It was reported that exchange rate negatively affected economic growth. Bariat, Nasirpour and Jorjorzadeh (2014) considered the impact of exchange rate fluctuations on economic growth in developing countries using panel least squares for the period 1986 to 2010. Amassoma and Odemiyi (2016) used regression alongside cointegration and ECM

techniques to examine the impact of exchange rate on output growth in Sub-Sahara Africa focusing on Nigeria covering 1970 to 2013. Kkogid, Asid, Lily, Mulok and Loganathan (2012) employed auto regressive distributive lag to x-ray the influence of exchange rate on Malaysian economy from 1971 to 2009. The result indicates that exchange rate positively influences economic growth. Jakob (2016) examined the link exchange rate has with economic growth in developed and developing countries in 2012 using OLS and reported that exchange rate affects growth positively but not significantly.

The empirical reviews aptly demonstrate that there is no agreement from empirical literature on the effect of FDI, private sector credits and exchange rate on economic growth. Many studies reviewed reported positive and significant influence on growth, while many others discovered mere positive effect, and yet a few other revealed negative effects on growth. Again, many of the studies were on national economic growth while a lot were on regional economies using diverse methods of data analysis. It is against this backdrop, that this study investigated the effect of the interactives between FDI, private sector credits, and exchange rate on the growth of African economies using the interactive panel data and fixed effects regression methods.

3.0 Methodology

This study engages cross-sectional panel research design to inspect the interactions between FDI, private sector credits and economic growth in Sub-Saharan African countries. Data were collected from World Bank development indicators and Bank for International Settlement from 1982 till 2018 covering ten African countries- namely Botswana, Burkina Faso, Chad, Central Africa Republic, Cotedivoire, Malawi, Mali, Nigeria, Republic of Benin and South Africa. The choice of the countries was informed by recent development in some of the economies, especially the variabilities in economic growth as well as exchange rate, and the need to have a wide geographical scope. The correlation and fixed effect regression were applied on panel data to ascertain the effect of the interactive variables on economic growth. This was achieve with the aid of E-view 9.0 econometric software.

3.1 Model Specification

This study adopts Ndiaye and Xu (2016) model with modifications thus:

$K = f(FDIER, FDICPS, GS)$ ………………………………………… (1)

Where: K stands for economic output (proxy by GDP per capita), FDIEXR used in place of the interactions between FDI and exchange rate, FDICPS represents the interactions among FDI and credit to private sector and, GS equals gross savings.

However, this study implements the fixed effect regression procedures because of the nature of the data which cover a long period. Fixed effect is activated when each entity differs in characters and are not perfectly correlated with each other. Fixed effect model usually takes the following form:

$K_{it} = b_i Z_{it} + A_{it} + U_{it}$ ………………………………………………….(2)

Where:

K_{it} = the dependent variable, Ai is the unknown intercept of each entity, Z_{it} represents the explanatory variables and, U_{it} stands for the error term.

To eliminate the unobservable (unknown) individual effect, the variables are differenced. Therefore, the econometric form of our model is represented thus:

$\Delta \text{GDPP}C_{it} = b_0 + b_1 \Delta \text{FDIE}R_{it} + b_2 \Delta \text{FDICP}S_{it} + b_3 \Delta \text{G}S_{it} + U_{it}$ ………(3)

Where:
$GDPPC_{it}$ = GDP per capita (in US dollar) in country at time t (a surrogate for growth in our study).
$FDIER_{it}$ = The product of Foreign direct investment and exchange rate of countryi at time t (used as an interactive variable in this study to proxy the interaction between FDI and exchange rate).
$FDICPS_{it}$ = The product of FDI and CPS of country at time t (the second interactive variable of the study). It is used to indicate the fact that finance led to growth by passing-through investment funds (Levine, 1997), and to account for the claim that the significant influence of FDI on growth is subject to financial advancement (Waliu, 2017).
GS_{it} = Gross domestic savings as a percentage of GDP for countryi at time t (used in this study to proxy the fact that finance mirror savings to affect growth (Shaw, 1973; Mckinnon, 1973).
U_{it} = The error term, b_0 = intercept, and
Δ = differenced value of the variables
b_1-b_3 = Coefficients of the model that are being estimated.
Apriori expectations of the model, b1 – b3 > 0
NOTE:
i. FDI = Foreign direct investment net inflows as % of GDP of country
ii. CPS = Credit to private sector by banks as % of GDP of country
iii. ER = US dollar Period end official exchange rate of country

4.0 Data Analysis and Interpretation of Results

This study investigates the impact of the interactions between FDI, exchange rate and private sector credits on the African economy. The analysis was done in the order of correlation and Fixed effect panel regression. The Fixed effects regressions were applied on panel data for the period 1982 to 2018 using E-view 9.0 econometric software.

4.1 Correlation Matrix

To ascertain the nature of the relationship between the variables under investigation, it was necessary to conduct correlation. Table 1 displays the correlation matrix of the variables. As reveals in the table, none of the indicators are perfectly (100%) correlated, suggesting that they are capturing individual unit (different from the other variables in the series). This tends to indicates that fixed effect regression will be suitable for the analysis. The result also shows that the interactions between foreign direct investment and credit to private sector (FDICPS) positively relates to economic output. The relationship which is significant at 5% level, implies that international fund inflows are complemented by domestic credits to positively drive growth in Sub-Sahara Africa. On the contrary, the alliance between FDI and exchange rate (FDIER) negatively and significantly influence growth in the Sub-region. This may not be unconnected with the instability witness recently in exchange rate, particularly the high rate of US dollar to domestic currency. Table 1 further indicated that gross savings is a positive driver of economic growth in the continent, owing to the significant association between the two variables. This tends to validate the claim that domestic savings is instrumental to development in emerging Sub-Saharan African economies.

Table 1: Correlation Matrix

Variables	GDPPC	FDICPS	FDIER	GS
GDPPC	1			
FDICPS	0.417(0.0000)	1		
FDIER	-0.139(0.0106)	0.317(0.0000)	1	
GS	0.389(0.0000)	0.089(0.1023)	-0.207(0.0001)	1

Source: Researchers' Computation, 2019 (P. value reported in parenthesis)

4.2 Fixed Effect Regression

First, this study take cognizance of the effect large size of a variable may have on regression outcome, as such the logarithm of variable with large size in it namely GDP per capita (proxy for economic growth in our study) was taken. It is alleged that panel data may not be stationary. That is, the variables may contain trend element. Therefore, to escape spurious regression estimates, the panel unit root procedures were applied on the data series. The outcome of Levin, lin and Chu (2002) ADF-Fisher chi2 and Philip Peron (1988)-Fisher Chi2 panel unit root assessments are presented in table 2.

Table 2: Panel Unit Roots Test at levels

Variable	Levin, lin and Chu Statistic	Remark	ADF-Fisher Chi^2 Statistic	Remark	PP-Fisher Chi^2 Statistic	Remark
LGDPPC	2.359(0.9908)	Not Stationary	4.586(0.9994)	Not Stationary	4.160(0.9997)	Not Stationary
FDICPS	-3.504(0.0002)*	Stationary	38.513(0.0033)*	Stationary	59.161(0.0000)*	Stationary
FDIER	-2.876(0.0020)*	Stationary	36.784(0.0056)*	Stationary	56.897(0.0000)*	Stationary
GS	-2.372(0.0000)*	Stationary	35.419(0.0084)*	Stationary	39.706(0.0023)*	Stationary

* = Significant at 5% level; Probability reported in parenthesis

Source: Researchers' Computation, 2019

The result in the table 2 reveals that one of the variables is not stationary at levels, judging by the P.value at 5 percent, meaning the variable trends. To detrend the data, we repeated the test procedure on the data series, this time around in their differenced form. The result of the test is depicted in table 3.

Table 3: Panel Unit Roots Test on Variables at First Difference

Variable	Levin, lin and Chu Statistic	Remark	ADF-Fisher Chi^2 Statistic	Remark	PP-Fisher Chi^2 Statistic	Remark
LGDPPC	-5.343(0.0000)*	Stationary	109.677(0.0000)*	Stationary	160.276(0.0000)*	Stationary
FDICPS	-9.771(0.0000)*	Stationary	158.865(0.0000)*	Stationary	293.729(0.0000)*	Stationary
FDIER	-8.455(0.0000)*	Stationary	165.660(0.0000)*	Stationary	268.14(0.0000)*	Stationary
GS	-7.907(0.0000)*	Stationary	138.756(0.0000)*	Stationary	229.696(0.0000)*	Stationary

* = Significant at 5% level (Probability reported in parenthesis)

Source: Researchers' Computation, 2019

The variables were all stationary this time around as displayed in table 3, applying that they cointegrate and have no trend element in them. However, the variables were treated at their level of integration. Given, that the variables are stationary at their respective levels, we proceeded to apply the fixed effect regression on data set (dependent variable and its regressors) as stated in equation 3. The outcome of the fixed effect regression is highlighted in table 4.

Table 4: Fixed Effects Regression Estimation Result (DLDGPPC as dependent variable)

Variables	Ceofficient	T.Statistic	Probability.
DFDICPS	0.0002	0.6294	0.5229
DFDIER	-1.9105	-2.7582*	0.0062
DGS	0.0002	1.1819	0.2383
R^2	0.9410		
Adj R^2	0.9312		
F.Stat.	96.*0722		
Prob. F.Stat	0.0000		
DW	1.1938		

* = Significance at 5% level.

Source: Researchers' Computation, 2019

The Fixed Effects panel regression estimation results in table 4 revealed that the interactions between FDI and private sector credit (DFDICPS) have positive effect on economic output. This suggests that a rise in FDI inflows at the given domestic credits to private sector influence economic growth in Sub-Saharan Africa, implying that credit to private sectors complements FDI to affect growth in Africa positively. However, the outcome is not significant at 0.05 level to substantiate this claim. The result corroborates

the correlation outcome above and tends to provide support for Waliu (2017) who reported that the interaction of FDI with financial advancement positively accounts for growth in Nigeria. It is also in line with Levine (1997) who opined that finance led to growth by mobilizing funds from savers to those in need of funds.

This study further showed that exchange rate interactions with FDI (DFDIER) negatively and significantly affect growth in the region. The negative impact of the interactions on economic outcome in the continent is occasioned by an unprecedented rise in the US dollar to the local currencies in recent time. The result is in line with Argiro (2003) who documented that FDI significantly drives growth in the European Union. The result is also provided support for Ndiaye and Xu (2016) who exposed that FDI affects growth in West African countries.

Finally, gross savings positively and significantly drives growth in Sub-Saharan African continent. The T-statistic value of gross savings (DGS) with the value of 0.0026 is not significant at 0.05. The implication is that the current level of savings is not sufficient to stimulate economic growth. The outcome tends to lead credence to Mckinnon (1973) and Shaw (1973) claim that finance affects growth viz savings.

The R-squares which measures the goodness of fit statistic of the model impressively stood 0.9410, meaning that the systematic changes in DLGDPPC in the past is regularized in the current year by the regressors up to about 94.10%. The F-statistic value which is significant at 0.05 levels, shows that the model can be relied on for policy purposes. The Durbin Watson statistic of 0.1938 is relatively low. However, this does not invalidate the result as panel least square accommodate low value. Indeed, one of the advantages of fixed effect regression is that it accommodates time constant (unobserved) variable and allow serial correlation (Kudaisi, 2014).

To authenticate the appropriateness of the fixed effect regression for the study, the regression outcome was subjected to the redundant fixed effect test. The result is presented in table 5.

Table 5: **Outcome of Redundant Fixed Effects Tests**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	217.143270	(8,277)	0.0000
Cross-section Chi-square	642.794337	8	0.0000
Period F	22.913663	(35,277)	0.0000
Period Chi-square	440.559730	35	0.0000
Cross-Section/Period F	53.445687	(43,277)	0.0000
Cross-Section/Period Chi-square	722.406989	43	0.0000

Source: Researchers' Computation, 2019

The redundant fixed effect test in table 5 shows that the Fixed Effects estimation is suitable for the investigation due to the significance of all the effects diagnostic tests Statistic value at 0.05, judging by the probability. This impressive result validates the acceptance of the model for the study.

4.3 Discussion of Result

The findings the correlation and regression analysis revealed that FDI interact with credit to private sector to determine economic growth in Sub-Saharan Africa. This

means that attracting foreign investment alone is not sufficient to attain the desired economic growth, there must be enhanced domestic private sector investment. Therefore, policy should be in place to encourage banks to extend more credits to the private sector, especially the small and medium enterprises. Furthermore, FDI complements the exchange rate to significantly drive growth in Sub-Saharan African countries. The implication is that FDI inflows into the continent stimulate growth only after adjusting for exchange rate. This probably accounts for the incessant devaluation of domestic currency against a major international currency like the US dollar by most countries in the region. The continuous reduction in the value of local currency vis-à-vis foreign money may be responsible for the negative impact of FDI-exchange rate interactions in the continent. Result also shown that gross savings boost economic growth in Sub-Saharan Africa. This is an indication that as savings grows, more funds will be available for economic activities, this will ultimatley lead to better economic performance. In general, the result is in line with Levine (1997) who asserts that finance drives growth through investment funds; and Mckinnon (1973) and Shaw (1973) who claim that finance affects growth viz savings.

5.0 Conclusion and Recommendations

This study inspected FDI, exchange rate and credit to private sector impact on African economies, focusing on the Sub-Saharan region from 1982 till 2018. Ten Sub-Saharan African countries investigated are Botswana, Burkina Faso, Chad, Central Africa Republic, Cotedivoire, Malawe, Mali, Nigeria, Republic of Benin and South Africa. The Fixed Effect panel regression as well as correlation econometric tools were activated to examine the effect of the regressors (explanatory variables) on economic growth. The study found that FDI interacts with exchange rate and credit to private sector to significantly affect economic growth in Sub-Saharan Africa. Another driver of growth in the continent includes savings. The study concludes that foreign direct investment inflows interact with exchange rate, domestic private credits to drive African economies.

This study recommends that African countries and indeed developing countries should pursue policies aimed at encouraging inflows of foreign direct investment, ensure stable exchange rate market, while influencing credit institutions to provide a considerable percentage of their funds to private sector because they are capable of driving economic growth.

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