

Elections, Foreign Direct Investment, and Economic Growth in Ghana's Fourth Republic: 1993 to 2016

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Abstract

Foreign Direct Investment (FDI) has been seen as an important factor influencing economic growth directly and indirectly in both developed and developing countries. This study assesses the impact of FDI on growth in Ghana since the return to constitutional rule in 1993. The study uses time series data from 1993 to 2016. Using the Autoregressive Distributed Lagged model (ARDL), the study finds a positive impact of FDI on growth both in the short-run and long-run. However, there is a lag period of two. The study equally finds that Gross Saving has a positive impact on growth. On the other hand inflation has a negative effect on growth both in the short and long run. The study also discovered that FDI granger causes growth but GDP does not granger cause FDI. Post-election years with incidence of political uncertainty slow down FDI inflow into Ghana. The study recommends the adoption of stringent fiscal and monetary policies to keep inflation low. It also recommends maintaining and improving the liberal market environment to attract investors, policies to encourage saving, and improving on political transitions to avoid uncertainties for investors.

Keywords: FDI; Economic Growth; Inflation; Election; Saving.



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1. Introduction

The level of Foreign Direct Investment (FDI) inflow into an economy can influence the level of economic growth (Almfraji and Almsafir, 2014). FDI is an important source of capital, particularly for developing economies (Sothan, 2017). The conventional notion of FDI, which drives government policies in many developing countries is that FDI positively influence growth (Durham, 2004; Li and Liu, 2005; Moura and Forte, 2010; Pegkas, 2015; Sothan, 2017; Umoh *et al.*, 2012; Yao and Wei, 2007). However, some research findings have contradicted this conventional view, pointing to the fact that the effect of FDI on economic growth is not always positive. According to some scholars, FDI has no clear impact on growth, which is independent from the other growth determinants (Carbonell and Werner, 2018; Herzer *et al.*, 2008). There is also evidence that FDI has no positive effect on growth (Duasa, 2007; Shaikh, 2010; Tang, 2015). Some even discovered a negative effect of FDI on growth (Mencinger, 2003), (Herzer, 2012). Thus, the relationship between FDI and growth is not certain.

Proceeding from the standpoint of the conventional understanding of FDI on economic growth, successive Governments of Ghana have pursued policies aimed at attracting FDI into the country as an instrument to fuel economic growth. From the mid-1960s, policies for attracting FDI have become indispensable staple on the table of policy makers in Ghana except for those brief periods of military adventurism and populist governments in the 1970s and early 1980s. However, since the adoption of the Bretton Woods sponsored Structural Adjustment Programs (SAP) in the mid-80s, FDI has been prioritized as the means to attracting foreign capital, skills and machinery in order to generate economic growth. Indeed, FDI has consistently flown into Ghana in higher volumes since then. (Asante, 2006), (GIPC, 2017).

In the face of persistence low domestic saving (Quatey, 2014), FDI is regarded as a viable alternative avenue of capital injection into the various sectors of the Ghanaian economy. It is also an important source of technological and managerial transfer into Ghana (Osabutey and Debrah, 2012). The many benefit expected from increased FDI has continue to influence the Government of Ghana to embark on policy initiatives to improve the volume of FDI inflow into the country. It is assumed that increase FDI holds the key to improving economic growth, creating jobs and reducing poverty. It is also seen as a tool for the reforming the economy from one dependent on export of primary commodity to an economy driven by industrial production or manufacturing. Such an assumption underlines the current government's flagship industrial policy of "One District, One Factory".

However, given the mixed empirical findings regarding the role of FDI in economic growth, it is imperative to continuously examine the nature of impact that FDI inflow into Ghana is having on economic growth. Many studies on the influence of FDI on growth in Ghana provide evidence spanning periods prior to the return to democratic governance in 1993 (Antwi and Zhao, 2013; Frimpong and Oteng-Abayie, 2006; Insah, 2013). This study however investigates the impact of FDI on economic growth during the period after the return to electoral democracy. The paper tries to establish the nature of impact of FDI during this period of sustained electoral democracy in Ghana. It

also attempts to investigate the influence of the election cycle on FDI inflow. In specific terms the paper has the following objectives:

- i. Ascertain any trend in FDI inflow into Ghana, particularly relating to election years;
- ii. Determine the causal relationship between economic growth and FDI
- iii. Estimate the long and short run influence of FDI on growth

2. Theoretical Framework (The Harrod-Domar Model)

The paper is based on the Harrod-Domar model. The model emerged from the works of [Harrod \(1948\)](#) and [Domar \(1957\)](#). Although the two economist worked on their models separately, they share basic ideas about growth, hence, they works became integrated and commonly referred to as the Harrod-Domar Model. The model presents a Keynesian view and postulates economic growth as the product of an equilibrium between saving and investment. According to the model, economic growth results from the combination of saving and investment in an economy. Thus, the growth rate of an economy positively relates to investment, which is derived from national saving and is inversely related to the capita-output ratio, which is a product of the level of technology and the quality of human resource.

Economic growth in developing countries is obstructed by low level of capital accumulation or formation due to low saving and high capita-out ratio resulting from the low level of technology and abundant of unskilled labour with limited pool of skill labour. The essence of FDI in this direction is to bring additional capital for investment and the technical expertise and technology needed to reduce the capita-output ratio. The model may be represented as: Economic Growth Rate (Y) = Savings (s) / capital output ratio (k).

The logic of this model is that economic growth can be stimulated through government economic policies that encourage national savings. Increase national saving will make capital available for investment. With advances in technology leading to reduced capita-output ratio, more investment will lead to higher levels of economic growth.

3. Literature Review

Foreign direct investment (FDI) has been considered as an important contributor to growth in Ghana. Various studies using diverse approaches try to estimate the relation between FDI on growth. A study on the impact of FDI on growth from 1980 to 2010 using time series data and Cointegration methodology to estimate the relation between FDI, GDP and GNI by [Antwi and Zhao \(2013\)](#) established that a long-run equilibrium and causal relationship exists between FDI (dependent variable), and GDP and GNI (independent variables). [Asafu-Adjaye \(2005\)](#) employs ordinary least square technique to test annual time series data from 1973 to 2003 and concludes that FDI has a positive effect on economic growth.

Another study by [Abdulai \(2004\)](#) assessed the inflow and distribution of FDI in Ghana. He noted that in spite of the increased inflow of FDI and its importance to growth, FDI is concentrated in the Mining sector and that Greater Accra has disproportionately higher levels than other parts of the country ([Abdulai, 2004](#)). Focusing on FDI and infrastructure development in Ghana, [Aheto \(2014\)](#) noted that FDI has contributed to the growth of the infrastructure sector of the economy. The study showed that there is less FDI going to the rail and inland water infrastructure sectors. [Iddrisu et al. \(2015\)](#) also studied the impact of FDI on the performance of the agricultural sector in Ghana with data over the period 1980-2013 using Johansen cointegration test. They found that FDI negatively impacts on agricultural sector productivity in the long run but with positive relationship in the short run. They also found that the depreciation of the cedi negatively impacts the growth of the agricultural sector in the long run. Trade openness on the other hand had positive and significant long run impact on the agricultural sector. [Djokoto et al. \(2014\)](#), investigated the effects of foreign direct investment (FDI) into agriculture on domestic investment in agriculture. They found that foreign direct investment into agriculture crowd-in domestic investment into agriculture.

[Immurana et al. \(2015\)](#) investigated the impact of FDI on economic growth and service sector value additions in Ghana. They employed the Johansen Cointegration technique. Their study shows that FDI has a positive significant impact on economic growth both in the long-run and short run. However, they found that FDI has only a positive significant impact on the service sector in the short run.

This study assesses the authenticity of these studies by employing data since the return to democratic rule in 1993. It tries to ascertain the relationship between FDI and economic growth within the context of democratic rule in Ghana from 1993 to 2016.

4. Methodology

This study is based mainly on secondary sources of data. Subsequently, data for the study on economic growth rate (which is represented by the proxy GDP), Foreign Direct Investment (FDI), and Inflation was sourced from the World Bank Development Indicators (WDI) Database. In addition, existing publications such as journal articles, books, magazines, policy documents and internet document on the subject also provided useful information for the study.

The study primarily estimated the impact of FDI on Ghana's economic growth. We consider, FDI as a source of investment that result in capital accumulation leading to higher economic growth. To investigate this, the following variables are included in the econometric model for the estimation: Real Gross Domestic Product (RGDP), which serves as the dependent variable or regressand, while net foreign direct investment inflow as percentage of GDP (NFDI) serves as the dependent variable, Gross Saving (GS), and Rate of inflation (INF) are included as controlling variables. In consideration of this, the first empirical model to be estimated can be written in its general form as:

Equation 1..... $RGDP_t = (NFDI, INF, GS)$

In specific terms, equation (1) can be rewritten as:

Equation 2..... $LnRGDP_t = b_0 + b_1 LnNFDI_t + b_2 LnINF_t + b_3 LnGS_t + U$

Where: b_0 denotes the numerical constant, b_1 , b_2 and b_3 represents the coefficients of the regressors, $RGDP_t$ denotes the regressand, $NFDI_t$, INF_t , GS_t are the regressors, t denotes time period Ln represents natural logarithm, and U denotes the disturbance term.

RGDP is a macroeconomic measure of the value of economic output in respect of a country for a given period adjusted for price changes. INF refers to the sustained increase in the general level of prices for goods and services in a county. The study employs the annual consumer price inflation. NFDI is used to describe the difference between capital inflows and outflows. The study uses FDI as percentage of GDP. GS represents Gross Saving as percentage of GDP. To ensure uniformity in unit of measurement, the variables to the study are express in their log form.

The study uses the unit root tests to check for the presence of unit roots or stationarity in the time series of each variable. This is necessary because using non-stationarity time series data in the estimation process has the potential to produce spurious results. The unit root test is to determine the integration order, which will allow for the selection of the appropriate estimator and avoid spurious estimates. The augmented Dickey-Fuller (ADF) procedures was adopted because it is simple and easier to understand. The ADF test is estimated by the equation:

Equation 3..... $\Delta Y_t = \delta_0 + \delta_1 Y_{t-1} + \sum_{r=1}^j \theta_r \Delta Y_{t-r} + \mu_t$

In the above equation, Y represents the series of the variable under investigation, t denotes time trend, Δ , j , and μ denotes difference operator, optimal lag-length and error term respectively.

Cointegration test allows us to test for the existence of any long-run relationship between the economic variables. There are many procedures for testing cointegrating relationships. This study however employs the Auto-Regressive Distributed Lag (ARDL) Bounds test approach. The ARDL framework can be represented as:

Equation 4..... $\Delta Q = \alpha_0 + \alpha_1 t + \alpha_2 q_{t-1} + \alpha_3 X_{t-1} + \sum_{t=1}^j \alpha_5 \Delta q_{t-1} + \sum_{t=1}^j \alpha_t \Delta P_{t-i} + U_t$

Where Q denotes the dependent variable, P denotes the vector of regressors and t denotes the time trend. After establishing cointegrating relation among the variables, the long-run equation and the short-run error correction model can be estimated. Error Correction Model (ECM) helps in reconciling the short-run and long-run economic variables incorporated in a model. It ECM equally includes the error-correction term in the independent variables in the estimation procedure. This is to help address all the long-run information that may be lost in the original estimation process.

The pairwise granger causality test (Granger, 1969) is used to establish or estimate the causal relationship between economic growth (G_t) and foreign direct investment (F_t). This test allows us to present the effect of the past value of economic growth (G_t) on the current values of foreign direct investment (F_t). It also permits us to present the effect of the past values of foreign direct investment (F_t) on the current values of economic growth (G_t), holding all other variables constant or equal. In order to proceed with the Granger causality test, VAR model is proposed as:

Equation ...1. $\Delta G_t = v_0 + \sum_{t=1}^p v_1 \Delta F_{t-1} + \sum_{i=1}^q v_{2i} \Delta G_{t-1} + \varepsilon_t$
 Equation ...2. $\Delta F_t = z_0 + \sum_{t=1}^p z_1 \Delta G_{t-1} + \sum_{i=1}^q z_{2i} \Delta F_{t-1} + \mu_t$

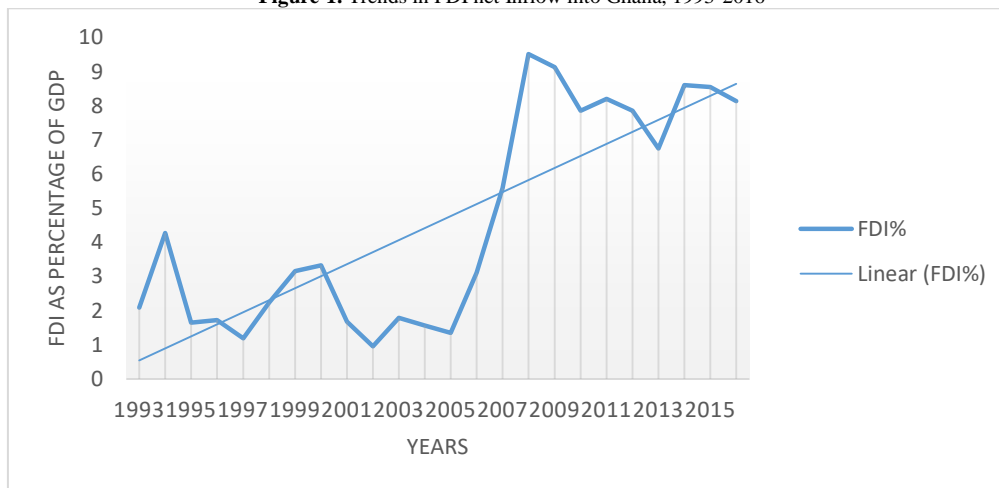
Where G_t represents GDP, F_t represents FDI, p and q denotes the optimal lag length, and ε and μ represent the error terms.

We test for serial correlation using Breusch-Godfrey LM test and for for heteroskedasticity using Breusch-Pagan / Cook-Weisberg test. We also test for normality using the Jarque-Bera normality test.

5. Results

5.1. FDI Inflow Trends in Ghana, 1993 -2016

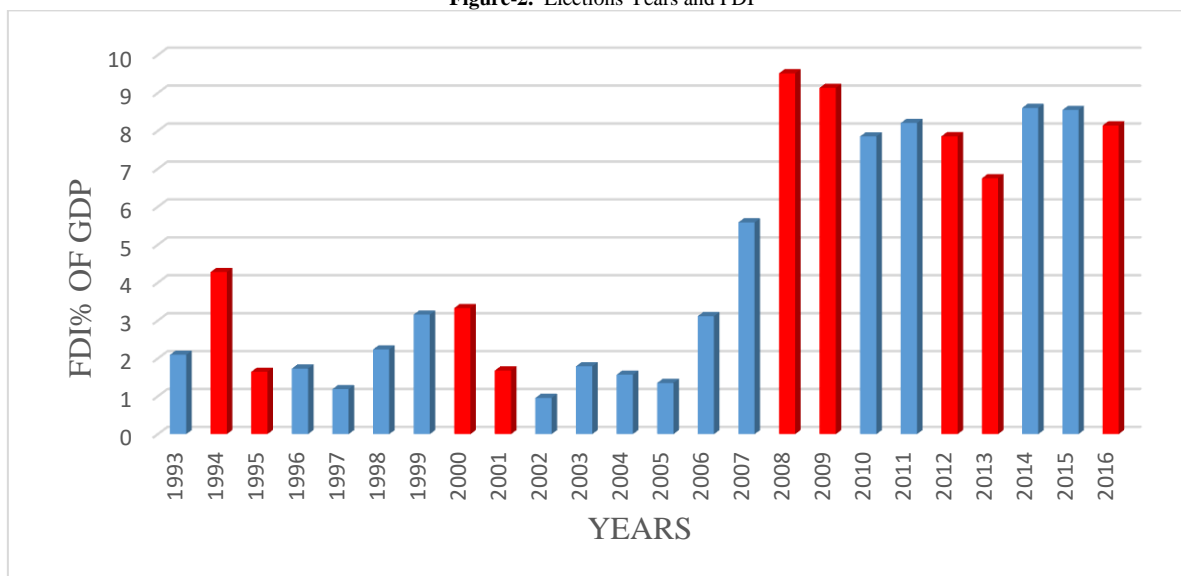
This section presents the results of the analysis of the trends in FDI inflow into Ghana within the study period (1993 to 2016). From the data displayed in figure 1 below, FDI trends within the period can be divided to two periods. The first period can be described as the period of slow growth, which span from 1993 to 2005. Within the period, the highest net inflow of FDI into Ghana was in 1994 (4.3%). FDI increased from 2.1% in 1993 to 4.3% in 1994 representing the highest increase in FDI inflow within this period. After 1994, FDI inflow declined and remained relatively low for three successive years averaging lower than 2% from 1995 to 1997, thereafter, it took an upward trend, averaging above 2% for the next three years (1998-2000). After 2000, FDI inflow remain persistently low (less than 2%) until 2006, where it increased to some 3.1%.

Figure-1. Trends in FDI net Inflow into Ghana, 1993-2016

Source: Compilation from WDI database

The second period marks a period of higher growth in FDI. That period roughly starts in 2007 where FDI grew by 5.6%. From that period till 2016 FDI has grown on the average more than 6% with 2008 and 2009 recording the highest values of 9.5% and 9.1% respectively. Periods of low inflow within this period recorded even higher growth than ever recorded within the period of slow growth. The lowest growth within the period was recorded in 2013 with rate of 6.8%. Given this trend, it is likely that FDI inflow into Ghana may continue to grow at rates above 6% annually. The impact of this trend on economic growth will be assessed in other sections of the study.

In relation to elections years and FDI inflow during the study period, it has been observed that FDI inflows do not decline in election elections but rather the year immediately after an election year. From figure 2 below, FDI marginally declined in 1997, 2001, 2005, 2009, and 2013 corresponding to the year after 1996, 2000, 2004, 2008, and 2012 elections respectively. This is contrary to studies on other economic indicators, for instance on capital flight, which suggest a higher level of capital flight in election years in developing countries (Frantz, 2018; Gwatidzo, 2017). This trend in FDI inflow after election years may be due to uncertainties about new government economic policies after the elections. It takes time for governments to recruit political heads into public office after elections. This may adversely impact FDI inflows.

Figure-2. Elections Years and FDI

Note-1. Red Bars represent election years and the years immediately after elections

Source: Author Compilation from WDI database

The largest decline within the period under observation was in 2001 with FDI falling from 3.3% in 2000 to 1.6%. The next largest fall within the period was observed in 2013 when FDI fell from 7.9% in 2012 to 6.8%. These two periods correspond to periods of relatively high political uncertainty in Ghana. In 2001, the first ever peaceful transition of political power from one party to another occurred with the NPP replacing the NDC in government. It marked the end of the almost two decade rule of ex-president Rawlings who had been in power since 1982. The fall in FDI can be explained as a reaction of investors to this uncertainty as investors were not certain about the direction of the then newly elected government. In 2013, the uncertainty about the outcome of the presidential elections and several months of legal battles that ensued had the tendency to adversely influence investor decisions.

5.2. Stationarity or Unit Root Test

The Argument Dickey-Fuller (ADF) Test was applied to all variables at levels and first difference to establish the order of integration. The ADF test measures the null hypothesis that the series of a given variable have unit roots (non-stationarity) ($H_0 = 0$) against the alternative hypothesis that the series of the variable is stationary ($H_1 < 0$). The results of the unit roots test using the ADF test is displayed in table 1 below. Only models with constant, and trend and constant are included at levels and first difference. At levels, all the variables are non-stationary both when the models include constant and constants and trends. However, all the variables became significant at first difference both for models with constant and trend and constant at 1% of error except FDI, which was significant at 5%. All the variables are therefore of the order of integration one, 1(1).

Table-1. Augmented Dickey-Fuller Test

Variables	Levels		First Difference	
	constant	Constant &Trend	constant	Constant &Trend
FDI	-1.061	-3.046	-3.383 **	-3.196
GDP	-1.886	-1.452	-3.596 **	-3.761 **
GS	-1.744	-2.266	-4.723 ***	-4.630 ***
INF	-1.061	-3.046	-4.293 ***	-4.443 ***

Note: *** Significance @ 1%, ** Significance@ 5%, *Significance @10%

5.3. Cointegration Test (Auto-Regression Distributed Lag (ARDL) Bounds Test)

Since the study has established the existence of integration order 1(1), it proceeds with cointegration test using the Auto-Regression Distributed Lag Bounds Test. The results of the test is displayed in table 2 below. The result of the test shows that there is a long run stable relationship among the variables in the study. The F-statistics of 4.679 is higher than the lower bound (3.23) and the upper bound (4.35). This leads to the rejection of the null hypothesis that there is no stable long run relationship among the variables. On the contrary, the alternative hypothesis of cointegration among the variables is accepted indicating the existence of long run stable relationship among the variables.

Table-2. Result of the ARDL Bound Test (Cointegration)

F-Statistics	Lower Bound	Upper Bound
4.679	3.23	4.35

Source: Author's Compilation with Stata

5.4. Long-Run Estimates

The estimated long-run relationship among the variables is displayed in table 3 below

Table-3. Estimated Long-run Coefficient

ARDL (1,2,3,0) regression based on Akaike information criterion				
Dependent Variable: GDP				
Ind. Variables	Coef.	Std. Err.	t	P> t
FDI	0.4082314	0.2093755	1.95	0.077*
GS	0.3862261	0.2743341	1.41	0.187
INF	-0.4371669	0.1483995	-2.95	0.013***

*** Significance @ 1%, ** Significance@ 5%, *Significance @10%

Source: Author's Compilation

From the table, FDI has a positive but moderate effect on economic growth and is statistically significant at 10%. The coefficient of the estimate is 0.4082314, which implies that a percentage increase in FDI will lead to 0.41% increase in growth all things being equal in the long run. Increase FDI inflow is therefore important to growth. This confirms the position of previous studies (Ayanwale, 2007; Choi and Baek, 2017; Immurana *et al.*, 2015; Otto and Ukpere, 2014), (Asafu-Adjaye, 2005), (Djurovic, 2012) that FDI has a positive impact on growth.

Gross Saving however on the aggregate level has no impact on growth in the long run. Inflation has an adverse impact on economic growth in the long run and is statistically significant at 5% error margin. The coefficient of the estimate is -0.4371669, which shows that a percentage increase in inflation will drive economic growth down by - 0.42%.

5.5. Short-Run Estimates

The results of the short run estimates are displayed in table 4 below. The second lag of FDI has a positive impact on growth and is statistically significant at 1%. A percentage increase in FDI at the second lag leads to a corresponding 0.55 percent increase in growth. All things being equal, higher FDI inflow leads to higher growth with the lag period of two. Gross Saving also has a positive effect on growth at the second and third lags. At the second lag, Gross Saving has a moderate impact on growth with coefficient of 0.2222256 and significant at 10%. At the third lag, Gross Saving still has a positive impact on growth with a coefficient of 0.3199295 and is significant at 1%. This implies that saving is essential to economic growth, although the impact is moderate. Higher level of saving

will result in higher growth since saving makes capital available for investment. This is in line with the Harrod-Domar theory of growth, which hypothesized that an increased saving will result in higher economic growth.

On the contrary, inflation has a negative effect on growth similar to its effect in the long-run. A percentage increase in inflation drives growth down by -0.46 percent all things being equal. Higher levels of inflation will adversely affect the growth of the country. The rate of adjustment to shocks in the short run is estimated at -1.062 and significant at 1% level. This shows that there is high level of convergence following disturbances.

Table-4. Estimated Short-run Coefficient

ARDL(1,2,3,0) regression based on Akaike information criterion				
Dependent Variable: GDP				
Ind. Variables	Coef.	Std. Err.	t	P> t
FDI	.0190214	.1709181	0.11	0.913
L1	-.1362281	.2152608	-0.63	0.540
L2	.550927	.1863066	2.96	0.013*
GS	-.1698077	.1171325	-1.45	0.175
L1	.0379937	.1377233	0.28	0.788
L2	.2222256	.116964	1.90	0.084*
L3	.3199295	.1329124	2.41	0.035**
INF	-.4644625	.1855413	-2.50	0.029 **
Constant	1.581462	1.165419	1.36	0.202
ADJ	-1.062438	.2759624	-3.85	0.003*
Number of obs = 21				
F(9, 11) = 3.55				
Prob > F = 0.0259				
R-squared = 0.7439				
Adj R-squared = 0.5345				
Log likelihood = 6.4998011				
Root MSE = 0.2453				

*** Significance @ 1%, ** Significance @ 5%, *Significance @ 10%

Source: Author's Compilation

5.6. The Results of the Granger causality tests

Using the first log difference of the variables, the study estimates the Granger causality between FDI and GDP. The use of the first log difference is because Granger causality test proceeds on the assumption that all variables are stationary. The null hypothesis for the first test is that FDI does not Granger cause GDP. And the null hypothesis for the second test is that GDP does not Granger cause FDI. If the probability value of any given test is less than 5 percent, then the null hypothesis is reject leading to the acceptance that Granger causality exists.

Table-5. Granger causality Wald test

Equation	Excluded	chi2	df	Prob > chi2	Remark
GDP	FDI	28.399	4	0.000	FDI Granger Cause Growth
FDI	GDP	1.4826	4	0.830	GDP does not granger cause FDI

Source: Author's compilation

From the table above, FDI granger causes GDP but GDP does not granger cause FDI. This implies that there is unidirectional causal granger effect of FDI on growth with no feedback effect. While increase FDI granger causes growth, past growth does not cause granger FDI. This finding confirms [Frimpong and Oteng-Abayie \(2006\)](#) who finds there is a causal relationship between FDI and economic growth in the post structural adjustment period in Ghana. It, however, contradicts the findings of [Antwi and Zhao \(2013\)](#) that the causality between FDI and GDP is a unidirectional one with GDP affecting FDI and no feedback effect of FDI on GDP.

6. Diagnostic and Stability Test

The diagnostic test was also carried out to check if there is the existence of time series problems such as serial correlation and heteroskedasticity.

Table-6. Serial correlation and heteroskedasticity test results

	chi2	Prob > chi2
Breusch-Godfrey LM test	1.477	0.2242
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	1.47	0.2256
Jarque-Bera normality test	.797	.6713

Source: Authors Compilation

The results of the diagnostic test displayed in table 6 above reveals that the series has no serial correlation in the residual of the variables used in the study. The Breusch-Godfrey LM test results shows that the p-value (0.2245) is higher than the 0.05 hence Breusch-Godfrey statistic is insignificant. This implies that the series has no autocorrelation or the variables to the study have no autocorrelation. The Breusch-Pagan / Cook-Weisberg test also shows that the model has no heteroskedasticity. As show in table 6, the p-value of the Breusch-Pagan / Cook-Weisberg statistics is insignificant (0.2256). In addition, the normality test using the Jarque-Bera normality test shows that the study has no normality issues. From table 6, Jarque-Bera values of 0.797 is insignificant with a p-value of 0.671.

7. Conclusion

FDI remains an important source of capital inflow into Ghana. This study has confirmed that in both the short and long runs, increase FDI will have a positive impact on growth in Ghana. There is, however, a lag period of one year on the effect of FDI on growth. The findings of these study confirms earlier studies, which postulate a positive effect of FDI on growth. (Ayanwale, 2007; Choi and Baek, 2017; John, 2016; Mehic *et al.*, 2014; Otto and Ukpere, 2014). Thus the efforts of successive governments of Ghana to encourage more FDI inflows hold good prospects and should be encouraged.

In promoting FDI, political actors must be conscious and manage political transitions without tension and acrimony. Political uncertainty adversely influences investor confidence and slows down FDI inflows into Ghana. Periods of political uncertainty are likely to slow FDI inflows into the country. Given the relationship between FDI and growth, political uncertainty during post-election years may reduce growth. Inflation is injurious to economic growth and must be kept at low levels. Higher inflation will erode the gains of growth. Hence, fiscal and monetary policies necessary to keep inflation low must be emphasized in the overall growth strategy. Policies aim at attracting FDI such as the free zones concept and the One District One factory should be aggressively pursued on sustainable basis.

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