Full Length Research

Impact of foreign direct investment and inflation on economic growth of five randomly selected Countries in Africa

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Foreign Direct Investment (FDI) has been viewed as a major source of finance for developing countries and it has gained significant momentum since the sweep of globalization in the early 1990. This is because most of the developing countries see FDI as important in their strategy for growth. In this study, the impact of FDI and inflation on economic growth was examined. Five countries in Africa were selected randomly for the study. The variables used for this study are inflation rate, GDP per capita (economic growth), and FDI inflows. The study relied on IMF Data Mapper and UNCTAD stat for a period of 23-year time series 1996 to 2018 as the source of data for the study. Lastly unit root test and regression analysis were employed to estimate the objective of the study and output showed that FDI has a positive impact on economic growth in all the five countries under review. Except Egypt, Inflation has a negative impact on economic growth in four out of the five countries reviewed. This study recommended that Government should endeavor to create conducive environment that will enable FDI to thrive and also look into policies that will regulate money supply to encourage low and stable inflation rate, in order to absorb the maximum benefits of FDI inflows.

Key words: Economic growth, FDI, inflation, 5 randomly selected countries in Africa.

INTRODUCTION

The contribution of foreign direct investment (FDI) to economic growth in host countries has long been the subject of intense debate. The contribution of foreign direct investment (FDI) to economic growth in host countries cannot be overemphasized. Most countries highly sought after FDI because it has been viewed as a major stimulus to economic growth in developing countries. According to Owusu-Antwi et al. (2013), FDI’s ability to deal with two major obstacles; namely, shortages of financial resources and technology and skills, has made it the center of attention for policymakers in low-income countries in particular’. Most of the emerging countries in Africa, experience shortage in capital supply hence, the need for...
FDI. Foreign Direct Investment (FDI) can also be seen as cross-border financial investments between firms belonging to the same multinational group (Jannick et al., 2019).

FDI stimulates growth, create job and boost productivity through transfers of capital, skills, and technology (Jannick et al., 2019). It increases national savings, enhances access to internationally available technologies and management know-how, raises efficiency and expand output so that the inward spiral turns to a trajectory of economic growth and prosperity (Chaudhuri and Mukhopadhyay, 2014). The level of economic growth in a country can be increased if the host country implements policies that provides conducive environment for FDI inflows to thrive.

FDI can be said to be different from other major types of external private capital flows in that it is motivated largely by the investors’ long-term prospects for making profits in production activities that are being directly controlled by them (Parma and Karl, 1999). Despite the essential contribution of FDI to economic growth, there are areas in which the impact of FDI are negative, especially in cases where competition is stifled, restrictive business practices are used or transfer prices are manipulated (UNCTAD, 1999).

On the other hand, Inflation is generally used to describe a situation of high and sustained increase in the general price level of an economy. Where there is inflation, the currency loses purchasing power.

Why does inflation matter? A widely accepted concept in macroeconomics is that low inflation is essential for economic growth. Although the debate about the exact relationship between inflation and economic growth remains open, there are questions about the existence and nature of this link (Munir et al., 2009). High and sustained economic growth in combination with low inflation is the most important objective of macroeconomic policy. But can the two co-exist? Different schools of thought offer diverse evidence on the linkage between inflation and economic growth. For instance, structuralists believe that inflation is essential for economic growth, whereas the monetarists see inflation as detrimental to economic progress’ (Girijasankar and Chowdhury, 2001). In view of the above, there is need to examine the impact of FDI and inflation on economic growth.

**Research question**

This study would be guided by the following research questions:

1) To what extent does FDI impact economic growth?
2) To what extent does inflation impact economic growth?

**Objectives of the study**

The main objective of this paper is to assess the impact of FDI and Inflation on economic growth in emerging market countries in Africa for the period of 1996-2018 using time series data. Other specific objectives are:

1) To assess the impact of FDI on economic growth.
2) To assess the impact of inflation on economic growth.

**Research hypotheses**

The hypothesis to be tested in the study is stated below:

H$_{0a}$: There is no significant relationship between FDI and economic growth in emerging market countries in Africa.

H$_{1a}$: There is a significant relationship between FDI and economic growth in emerging market countries in Africa.

H$_{0b}$: There is no significant relationship between inflation and economic growth in emerging market countries in Africa.

H$_{1b}$: There is a significant relationship between inflation and economic growth in emerging market countries in Africa.

**Conceptual reviews and theoretical reviews**

Economic growth, FDI and Inflation are key concepts in this study. A review of these concepts helps to understand the possible interrelationship among them.
FDI and economic growth

The neoclassical growth model (NGM) developed in the 1950s by Solow and Swan is the starting point for almost all analyses of growth. Neoclassical growth theory emphasises on capital accumulation and its connection to savings decisions (Hernández, 2003). The theory states that, long-run growth in income and physical capital per worker is entirely driven by productivity growth (more precisely, by the rate of labor-saving technological progress). However, neoclassical growth models treat this growth rate as exogenous (Grossmann and Steger, 2007). It argues that technology changes have a major influence on an economy, and the economic growth cannot continue without technological advances. While the focus of NGM was primarily on the growth of productive inputs; savings, capital accumulation (associated with depreciation) in determining economic growth, the ‘Endogenous growth theory (EGM) builds upon postulates of NGM and focuses on how innovations and technology can lead to economic growth in the long run’ (Onyimadu, 2015, p.500).

Endogenous growth theory holds that economic growth is primarily the result of endogenous and not external forces also, that investment in human capital, innovation, and knowledge are significant contributors to economic growth.

Inflation and economic growth

The Keynesians’ view on the theory of inflation is that increase in production costs as the reason for inflation especially when the extra costs of the goods and services are incorporated into the prices. Keynesian theorists believe wages and salaries of workers who are part of the production process affect the prices of the products. Where there is an increase in the salaries and wages of these workers the cost of production albeit increases hence inflation. The purchasing power of money reduces as inflation increases significantly, also savings decrease in value as the rate consumer price index increases over the preceding year. ‘The Keynesian school of thought insists that the value of money during inflation can be further enhanced where investments are made’ (John and Obioma, 2017). According to Jahan et al. (2014), an economy’s output of goods and services is the sum of consumption, investment, government purchases, and net exports. Any increase in demand has to come from one of these four components.

Empirical literature review

FDI is often seen as an important catalyst for economic growth in the developing countries. It is primarily Motivated with long-term realization of returns from an enterprise in a foreign country’. (Chaudhuri and Mukhopadhyay, 2014) and affects the economic growth by stimulating domestic investment, increasing human capital formation and by facilitating the technology transfer in the host countries (Nuzhat, 2009). It can also influence growth by raising total factor productivity (OECD, 2002). Investments in firms in which a foreign investor acquires a controlling stake are classified as Foreign Direct Investments (Alfaro and Chauvin, 2017) and this can be seen as an important driver for genuine international economic integration, and for boosting productivity through transfers of capital, skills, and technology (Jannick et al., 2019). Anochie et al.(2015 p. 84) asserts that FDI has emerged as the most important source of external resource flows to developing countries over the years.FDI also contributes to host country economic growth not only through capital, but also via spillover, competition, and productivity effects (Alfaro and Chauvin, 2017)

On the other hand, the economic growth of an economy is affected by the level of its inflation. High inflation rate has negative impact on the economic growth. High rate of inflation makes firms and households channel their resources from productive activities to nonproductive activities (Idalu, 2015).For instance, investors may decide to invest in free-risk areas (Treasury bill and Bond) rather than real sector that can generate more employment opportunity. Akinsola and Odimbamo (2017) claimed that the impact of inflation on economic growth varies from county to country and over time and that there is a negative relationship between inflation and growth, especially in developed economies. However, Aminu and Anono (2012) argued that inflation possessed a positive impact on economic growth through encouraging productivity and output level. There are three major types of inflation according to neo-Keynesians. The first is the demand-pull inflation, which occurs when aggregate demand is in excess of available supply (capacity), cost-push inflation occurs in the event of a sudden decrease in aggregate supply, owing to an increase in the price/cost of the commodity/production where there are no suitable alternatives and structural inflation, is built-in inflation, usually induced by changes in monetary policy in Aminu and Anono (2012: 185).

Economic growth is an increase in the productive capacity of an economy with a resultant effect of which the economy can produce additional quantities of goods and services. Economic growth therefore is synonymous with an increase in the general standard of living as standard of living is measured by the quantity of goods and services available to us (Benis and Olayiwola, 2018, p.23). One of the most complex and empirically unsettled subject in economics is the importance for the welfare of most people around
the world and there some controversies in growth analysis which is the relative role of capital accumulation and productivity growth in driving output’ (Shimelis, 2014, p.1). New evidence is showing that growth is a volatile phenomenon for most countries except probably high per capita income economies (Gutierrez and Solimano, 2007 as cited in Shimelis, 2014, p.1). FDI and inflation are important determinant of economic growth. This study will examine the impact of FDI and inflation on Economic growth.

There is a widespread realization and belief among researchers, practitioners and policy makers that FDI has the ability to boost economic growth (Khamis et al., 2015). Koojaroenprasit (2012) analyzed the relationship between FDI and economic growth in South Korea, he used a sample period of 29 years for the period 1980-2009 with annual time series. His research anchored on endogenous growth theory and his finding shows that FDI has a positive and significant impact on economic growth. Khun (2018) while investigating the impact of foreign direct investment (FDI) on economic growth in Cambodia he asserted that in general, positive influence of FDI is explained by ‘technological diffusion’ originating from firms accepting foreign capital and spreading to related companies in a form of technical support. The analysis covered the period between 1998 and 2010 revealed that there is a positive relationship between economic growth (GDP) and FDI. Other studies such as Alfaro et al. (2004) and Anyanwu and Andrew (2004) claim, in their findings, that FDI promotes economic growth in economies with sufficiently developed financial markets.

Khamis et al. (2015) use the ARDL (auto regressive distributed lag) model to examine the relationships between the Inflation, FDI and economic growth between the period 1980 – 2013 and concluded that inflation rate did not have a significant impact on FDI while GDP per capita had a significant positive relationship with FDI. The researchers further stated that FDI increases capital stock and also the employment, it stimulates technology changes through technological diffusion and it also generate technology spillovers for local firms within the country.

On the other hand, despite the fact that FDI is one of the most dynamic resources flowing into developing countries which can be an important component for economic growth, in terms of domestic savings, capital accumulation, employment generation, and growth. Worku (2017) contended that some researchers had come out with findings that suggest minimal impact of FDI on economic growth. Muhia (2019) reviewed the impact of FDI on economic growth on major sector of Kenya’s economy. In his article, he examines the influence of foreign direct investment on Kenya’s economic growth using Quantitative data. The researchers collected level two data from the World Bank and the Kenya National Bureau of Statistics KNBS from 2000 to 2017. The result of their findings revealed that foreign direct investment in the infrastructure sector has a significant impact on economic growth while FDI invested in manufacturing and Agricultural sector has no significant impact on economic growth.

Okeke et al. (2014) examined the impact of FDI on economic growth in Nigeria between 1977 and 2011. After testing for the unit root in the set of data used for the study, econometric result shows that Foreign Direct Investment has no significant effect on Nigeria economy. This suggests that FDI inflows into Nigeria may not have been an economically viable investment or properly channeled to productive economic activities. Olawunmi and Olufemi (2016), in their study, investigated the effect of FDI on economic growth in some randomly selected African economies from 1980 to 2013, using a modified growth model. The ordinary least squares regression (OLS) and the generalized method of moments (GMM) were the two-estimation technique used. They observed that except for Central African Republic, the estimate of FDI was positive and significant for both OLS and GMM in all the selected countries. However, despite the significant and positive coefficients of FDI, yet the most important feature of the coefficients is the extremely small magnitude which implied a minimal or negligible impact of FDI on economic growth. In the same vein, Adedeji and Rolle (2016), in their findings, suggested that though FDI has the tendency to stimulate growth in Africa, but it is not a critical factor in Africa’s growth process. The researcher stated that SSA’s receipt of global FDI has been quite unimpressive reflecting a case of global financial marginalization.

It is of no doubt that the level of economic growth in a country can be increased if the host country implements policies that provides conducive environment for FDI inflows to thrive (OECD, 2002). However, the level of inflation in an economy might determine the extent of such growth. The question on whether or not inflation is harmful to economic growth has recently been a subject of intense debate to policy makers and macroeconomists. Several studies have estimated a negative relationship between inflation and economic growth. Specifically, the bone of contention is that whether inflation is necessary for economic growth or it is detrimental to growth (Shailender and Amar, 2015).

Anidiobu et al. (2018) conducted a research on the Analysis of Inflation and Its Effect on Economic Growth in Nigeria using secondary source of data for the period 1986 – 2015. In their study, they asserted that inflation is known to diminish the purchasing power of currency as a result of a rise in prices across an economy and that one of the primary objectives of macroeconomic factors is to gauge the health condition of a domestic economy as a whole with regard to how a specific factor affects overall performance of such economy. For this reason, they considered it sufficiently beneficial to dis-aggregate
the factors with the ultimate goal of exploring how inflation has influenced the RGDP. This study found that inflation had a positive but non-significant influence on RGDP. Girijasankar and Chowdhury (2001) examined the relationship between inflation and GDP growth for four South Asian countries. The authors used cointegration and error correction models to empirically examine long-run and short-run dynamics of the inflation-economic growth relationship for four South Asian countries using annual data collected from the IMF International Financial Statistics and they find evidence of a long-run positive relationship between GDP growth rate and inflation for all four countries. In their findings, it was revealed that moderate inflation is helpful to growth, but faster economic growth feeds back into inflation.

The findings of the study done by Mark et al. (2004) suggest a negative inflation-growth effect, and one that is stronger at lower levels of inflation. The empirical evaluation of their model is based on a large panel of OECD and APEC member countries over the years 1961-1997 and a hypothesized negative inflation effect is found comprehensively for the OECD countries to be significant. Muhammad and Saleem (2018) examined the effects of inflation on rate of economic growth of the Five Asian countries for the period 1973 to 2016. They employed the Least Squares and traditional panel estimation techniques and the result revealed that inflation has negative and statistically significant impact on economic growth in all sampled countries. They further stated that inflation is not helpful but harmful to the rate of economic growth. Their findings suggest that an effective macroeconomic policy mix needs to be devised to control inflation and encourage the process of economic growth and development.

Today it is more important to review the level of inflation that can affect economic growth and not just the simple impact of inflation on economic growth. Masiyandima et al. (2018) attempt to estimate a threshold level of inflation above which inflation is inimical to growth using Zimbabwe as a case study. The authors estimated threshold inflation for Zimbabwe during the stable period when Zimbabwe had its own currency that is from 1980 to 1997. The results suggest the threshold level of inflation of 8.7% for the period 1980 to 1997. In the same vein, Khairul and Sazib (2017) forecasted a threshold level of inflation and examined empirically the relationship between inflation and economic growth in Bangladesh using annual data set from 1986 to 2016. 8% was forecasted as a threshold level of inflation and any rate beyond this, will not significantly influence the growth rate also, the authors confirm that there is statistically significant positive relationship between inflation and economic growth.

**METHODOLOGY**

The empirical study focused on the 5 randomly selected counties in Africa. They include South Africa, Tanzania, Nigeria, Kenya and Egypt. In this study, the IMF Data Mapper, UNCTADstat for a period of 23 years starting from 1996 to 2018, constitute the source of data for the already variables identified. In order to achieve the objective of this study, the OLS technique will be used to measure the impact of FDI and Inflation on economic growth after testing for stationary using Unit Root Test. Hence the model for the study is presented below:

\[
Y = f(X_1, X_2)
\]

The model employed in the study includes the following:

\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \mu
\]

Where, \(Y=\sum \text{of Gross Domestic Product}; X_1=\sum \text{of Foreign Direct Investment}; X_2=\sum \text{of Inflation}; U=\text{Stochastic error term}; \beta_1=\text{Slope of the regression equation and} \beta_2=\text{Intercept or constant.}

**Method of data collection and estimation techniques**

Data used mainly are secondary time series data sourced from the International Monetary Fund Data Mapper and UNCTADstat. The data collected was tested and analyzed adopting the regression technique of ordinary least square method (OLS).

**Techniques of estimation**

This study employed appropriate Econometric techniques to estimate its stated objectives. They include ordinary least square technique and the unit root test.

**Ordinary least square**

It is being used to assess the effect of FDI and Inflation on Economic growth. It further identifies statistical tools that judge the statistical significance of each independent variable. The choice of OLS is that it closely ‘fit’ a function with the data by minimizing the sum of squared errors from the data. It also has some other advantages such as consistency, minimum variance, unbiasedment. It is generally known for property of BLUE (Best, Linear, Unbias, Estimate).

**Unit root test**

It is a tool used to test whether time series data for the variables are stationary because the stationarity of a series can strongly influence its behaviour.

**RESULTS AND DISCUSSION**

The purpose of applying the unit root test is empirically examining whether a time series contains a unit root. If the series has a unit root, it is said to be non-stationary; otherwise, the series is considered as stationary (Dogan, 2013). To investigate the stationary and determine the integration level of the selected variables, this study employed ADF test. The testing results obtained in Table 1 suggest that all the variables were found to be...
Table 1. Unit root test result.

| Country     | Parameter | GDP      | FDI       | Inflation |
|-------------|-----------|----------|-----------|-----------|
| Tanzania    | Variables |          |           |           |
| t- Statistics |          | -5.924772 | -7.655244 | -7.562233 |
| 1% Critical value |          | -3.808546 | -3.78803  | -3.831511 |
| 5% Critical value |          | -3.020686 | -3.012363 | -3.02997 |
| 10% Critical value |         | -2.650413 | -2.646119 | -2.655194 |
| Prob        | 0.0001    | 0.000    | 0.000    |
| Remark      | At 2\(^{nd}\) Diff | At 1\(^{st}\) Diff | At 2\(^{nd}\) Diff |
| South Africa | Variables |          |           |           |
| t- Statistics |          | -5.025548 | -4.457227 | -4.527785 |
| 1% Critical value |          | -3.831511 | -3.769597 | -3.78803 |
| 5% Critical value |          | -3.02997  | -3.004861 | -3.012363 |
| 10% Critical value |         | -2.655194 | -2.646119 | -2.642242 |
| Prob        | 0.0008    | 0.0022   | 0.0001   |
| Remark      | At 2\(^{nd}\) Diff | At Level  | At Level |
| Nigeria     | Variables |          |           |           |
| t- Statistics |          | -4.45151  | -6.858467 | -5.685287 |
| 1% Critical value |          | -3.78803  | -3.831511 | -3.769597 |
| 5% Critical value |          | -3.012363 | -3.004861 | -3.004861 |
| 10% Critical value |         | -2.646119 | -2.655194 | -2.642242 |
| Prob        | 0.0023    | 0.000    | 0.0001   |
| Remark      | At 1\(^{st}\) Diff | At 2\(^{nd}\) Diff | At Level |
| Egypt       | Variables |          |           |           |
| t- Statistics |          | -5.201076 | -4.190573 | -5.659556 |
| 1% Critical value |          | -3.808546 | -3.857386 | -3.78803 |
| 5% Critical value |          | -3.020686 | -3.040391 | -3.012363 |
| 10% Critical value |         | -2.650413 | -2.660551 | -2.646119 |
| Prob        | 0.0005    | 0.0051   | 0.0002   |
| Remark      | At 2\(^{nd}\) Diff | At 1\(^{st}\) Diff | At 1\(^{st}\) Diff |
| Kenya       | Variables |          |           |           |
| t- Statistics |          | -7.358786 | -6.935763 | -4.416663 |
| 1% Critical value |          | -3.808546 | -3.78803  | -3.769597 |
| 5% Critical value |          | -3.020686 | -3.012363 | -3.004861 |
| 10% Critical value |         | -2.650413 | -2.646119 | -2.642242 |
| Prob        | 0.000     | 0.000    | 0.0024   |
| Remark      | At 2\(^{nd}\) Diff | At 1\(^{st}\) Diff | At Level |

significant at either level, first difference or at second difference, respectively.

Furthermore, the study used the tool of regression to indicate the impact of FDI and inflation on economic growth for each country (Egypt, South Africa, Nigeria, Tanzania and Kenya). From the regression result, it shows that FDI has a positive impact on economic growth in all the five (5) countries, that is, a unit increase in FDI for these five countries will stimulate economic growth by 25.8, 23.7, 73.2, 65.4 and 29.2%, respectively. In other
words, inflow of FDI is favourable to all the five countries but more favourable to Nigeria and Tanzania. This contradicts the findings of some exiting studies reported in our literature (Okeke et al., 2014; Olawunmi and Olufemi, 2016; Adedeji and Rolle, 2016). The reason for this contradiction might be as a result of a more favourable macroeconomic environment, for instance, as observed in this study the inflation rate experienced in most African countries has been relatively low and stable in the recent times.

There are several studies on the impact of inflation on economic growth. Evidence revealed that there has been mixed up so far, while a strong support can be found for the negative impact of inflation on the economy (Fischer, 1993; Akinsola and Oudhambo, 2017). Other studies revealed positive impact (Marjan and Najeeb, 2013; Anidiobu et al., 2018). However, the result of our study shows that inflation has a negative impact on economic growth in 4 of the selected 5 countries. For instance, a unit increase in the inflation of these 4 countries results into 3.6, 0.3, 0.4 and 1.1% reduction in economic growth except for Egypt, where there exists a positive relationship between Inflation and economic growth; a unit increase in inflation will lead to a 0.9% increase in economic growth.

The R squared shows that FDI and Inflation accounts 53.3% of the variation in the economic growth of Egypt; 35.1% variation in the economic growth of South Africa; 51.4% of the variation in the economic growth of Nigeria; 76.3% of the variation in the economic growth of Tanzania and lastly, 77.0% of the variation in the financial performance of Kenya. In other words, these two variables impact one economic growth of Tanzania and Kenya much more than that of other three countries. Statistically, the outcomes of this study show both positive and negative impact and they are all significant as indicated by the F-stat in the Table 2.

| Variable | Egypt         | South Africa | Nigeria       | Tanzania      | Kenya          |
|----------|---------------|--------------|---------------|---------------|----------------|
| C        | 1.190294      | 1.790401     | -0.175091     | -0.444914     | 0.902028       |
| FDI      | 0.258563      | 0.237848     | 0.732016      | 0.654279      | 0.292022       |
| INF      | 0.009822      | -0.036996    | -0.003657     | -0.004413     | -0.011788      |
| Rsquared | 0.533337      | 0.351622     | 0.514527      | 0.763392      | 0.770295       |
| Adj,Rsquared | 0.484215 | 0.286784     | 0.465980      | 0.739731      | 0.747324       |
| F-stat   | 10.857300     | 5.423105     | 10.598480     | 32.263960     | 33.534040      |
| P-value  | 0.000717      | 0.013131     | 0.000727      | 0.000001      | 0.000000       |

Source: Computed by the author.

CONCLUSION AND RECOMMENDATION

In this study, an attempt was made to examine the impact of FDI and Inflation on economic growth in 5 randomly selected countries in Africa. Regression analysis result showed that FDI has strong and positive impact on economic growth in all the 5 countries, while inflation has an inverse but significant relationship with economic growth in 4 of the selected countries except for Egypt. This suggests that FDI has the tendency to stimulate growth while high inflation has the tendency of hindering growth in Africa. FDI is an important factor for economic growth especially for emerging and developing economies. It is also important for developing countries to know that, contrary to expectations, FDI may not automatically lead to economic growth, as is insinuated by many policy makers in the region (Akinlo, 2004 as cited in Awolusi and Adeyeye, 2016) as it depends on characteristics of the investment resulting from FDI, such as type, sector, scope, duration, proportion of domestic businesses in the sector, and so on.

African countries should endeavor to create conducive environment that will enable FDI to thrive by establishing favourable economic and political policies (Okonkwo et al., 2015): encouraging political stability, putting in place policies to improve the quality of human resources and labor skills (Trang et al., 2019). Since FDI cause major technology transfer from developed countries to developing countries, there is need for highly skilled labour in order to effectively and efficiently utilize the new technology for economic growth. In addition, governments should look into policies that will regulate money supply to encourage low and stable inflation rate, in order to absorb the maximum FDI benefits.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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