The Impact of China’s FDI on Central African Country Economic Growth

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ABSTRACT

Foreign Direct Investment is generally considered a vital source of economic growth for Central African Country, bringing in employment opportunities, capital investment, and business knowledge needed for economic growth. This research paper postulates to study the relationship between FDI and economic growth of Afghanistan for the period of 2005 – 2016 using time series data. Real GDP annual growth rate is taken as a dependent variable and inflation rate, unemployment rate also shows a negative significant relationship with the economic growth rate of Central African Republic and the null hypothesis was rejected, whereas, the interest rate, inflation rate and the exchange rates have positive but insignificant relationship with the dependent variable and the null hypothesis for all these three variables were retained. The study recommends that the government should bring modifications in the domestic market to draw attention of more FDIs in Central African Country.

Keywords: FDI, INFLATION, EXCHANGE RATE, IMPACT, ECONOMIC GROWTH, UNEMPLOYMENT RATE

1. Introduction

Foreign direct investment (FDI) is the key element of the globalization and of the world economy. FDI is important as a driver of employment, technological progress, productivity improvements, and ultimately economic growth. It plays the critical roles of filling the development, foreign exchange, investment, and tax revenue gaps in developing countries. FDI plays a key role in the development of developing countries. One reason is that FDI helps in transferring advance technologies know-how and increases employment levels to the host countries. Economists believe that FDI through new technologies and high standard managements puts pressures on domestic firms while making the markets competitive. Furthermore, FDI brings significant and positive externalities to the developing economies such as labor managements, training opportunities and thus increases the standard of the production function. By technology transfer, it boosts the economies of the developing countries to stand there on feet by technology spill over. According to the world investment report (World Bank. 2008), FDI boosts the economy by creating employment opportunities, transfers skills and technologies, upturns in productivity, and continuous long-
term development in the developing countries. It also helps as a major basis of the external capital inflow for the host countries. It entices innovation technology transfers, stimulates international trades and management skills and withstands economics development in the host countries. Foreign direct investment is becoming more important for developing countries; which are often based on the assumption that greater inflows of (FDI) will bring certain benefits to their economy. FDI has great social, cultural, economic and political effects for the host countries. There are numerous studies done on foreign direct investment and economic growth. Their findings differ from diverse methods used on their research, some of the researchers found that FDI has a positive outcome on economic growth. For instance, (Balasubramanian. 1996) examines how FDI affects economic growth in developing economies? Using cross-section data and OLS regressions he finds that FDI has a positive effect on economic growth in host countries using an export promoting strategy but not in countries using an import substitution strategy. (Olof and dotter. 1998) provides a comparable analysis by using cross sectional data and it was too impressive. She finds that an increase in the stock of FDI is positively associated to growth and that the result is stronger for host countries with a higher level of institutional capability as measured by the degree of property rights protection and organizational efficiency in the host country. Foreign Direct Investment (as a catalyst for accelerating the economic growth of developing countries. It is not only an important source of capital inflows but also a major source of technology transfers in the host country. The capital inflows and technology transfer are considered as accelerators for economic growth, so foreign direct investment (FDI) is more likely to promote the economic growth of the host country. Therefore, (DeMello. 1997) only finds frail signs of a positive relationship between FDI and growth rate regardless of using both time series and panel data fixed effects approximations for a sample of 32 developed and developing countries. Even with the fact that many studies recognized the idea that FDI has a positive impact on the economic growth of a host country, there are some studies that claim that the relationship between FDI and economic growth is abstruse. For instance, Aitken and Harrison state that the net impact of foreign direct impact on the host country is very small. Bornstein et al is of the view that FDI can only contribute in the economic growth, if the host country has sufficient absorptive capacity of advanced technology. Although, there is no consensus on the effects on FDI on the economic growth of the host country but the number of studies that show the positive effects of FDI is much higher than those which focus on the negative effects (Vesak. 2005).

2. Literature review

Foreign direct investment represents an out-and-out source of foreign exchange and technological transfer, particularly to a developing economy like Afghanistan. It can be studied in terms of inflow of new equity capital (change in foreign share capital), re-invested earning (unremitted profit), trade and supplier's credit, net inflow of borrowing and other obligations from the parent company or its affiliates. (Dogan, E. 2014) found the relationship between FDI and economic growth rate of Zambia. The findings indicate that the relationship was positive and showed a significant relationship between them. Similarly, (Caves. 1971) also perceived that the justification for increased determinations to attract more FDI twigs from the acceptance that
FDI has numerous positive effects. Among these are productivity gains, technology transfers, and the introduction of new processes, managerial skills and know-how in the domestic market, employee training, international production networks, and access to markets. (Carkovic and Levine. 2002) analyses the impact of FDI on the economy growth and their study came up with the conclusion that foreign direct investment has adverse effects on the economic growth of the host country. Moreover, (Buckley. 2002) and (De Mello. 1997) articulated in their studies that the impact of FDI is dependent on the economic and social conditions and its environmental quality of the host country. The environmental quality includes savings and financial development, trade openness, human capital development and technological development of the host country. (Adams, S. 2009) examined the impact of FDI and trade openness on economic growth of Sub-Saharan Africa. By using time series data from 2008-2013, the study resolved that FDI, trade openness and domestic capital positively affect the economic growth. Higher FDI replaces outdated technology by advanced technology and instructs the labor force of the country. (Tahir. 2015) examined the relationship between foreign remittances, foreign direct investment, foreign imports and economic growth by using time series econometric techniques covering the data over the time period of 1977 to 2013. The result found that foreign settlements and foreign direct investment have significantly positive role in the economic growth process of Pakistan. The prevailing literature highlights the impact of foreign direct investment on the economic growth of a developing country mainly Central African Republic. The existing literature also outhouses light on the channels through which FDI underwrites significantly to a country's economic growth. The Government of Central African Republic distinguishes that the development of an effervescent private sector is crucial to the reconstruction of an economy emaciated by decades of conflict and mal administration. Per se, it has taken momentous steps toward nurturing a business-friendly environment for both foreign and domestic investment. Security threats sometimes bound investors' opportunities to develop businesses in some regions, and certain sectors (such as mining and hydrocarbons) still lack a regulatory environment that fully supports investment. In the face of these challenges, Central African Republic investment climate has shown astounding levels of dynamism in recent years. The private sector is in all papers called “the engine of growth. After reaching its lowest level in the last 10 years in 2013 (USD 39.6 million), FDI inflows have increased substantially to reach USD 163 million in 2015. This figure is still low compared to the inflow levels the country received between 2004 and 2007 (with an all-time high inflow of USD 271 million in 2005) as a significant share of FDI was linked to the intervention of NATO armed forces and associated development projects (Buckley. 2002). Inflows dropped once again in 2016 to USD 100 million (UNCTAD World Investment Report, 2017). According to the most recent data provided by UNCTAD, FDI stock represented 7.2% of the country's GDP in 2016. Central African law guarantees foreign companies the same investment opportunities as domestic enterprises, and official support for open markets and private sector participation is restated in the Central African Republic. Development Strategy (ANDS) for foreign investors are not required to have a Central African partner, but due to the restriction on land ownership, they almost always choose to work with one. Private investors have the right to transfer their capital and profits out of Central African Republic, including for debt service for off-shore loans. However, political violence, weak regulations regarding property
protection, a substantial lack of skilled workforce, under-developed financial markets and insufficient infrastructure limit the country's potential for attracting foreign investors. Corruption is rampant in the country, as that the World Bank ranked the state 183rd (out of 190 countries) in its Doing Business 2017 classification, losing six positions in comparison with the previous year.

3. Research methodology
The main type of data used in this study is secondary; obtained from the online publication of World Bank Indicators – Central African Republic Database published by (World Bank. 2008). The study analysis time series data over the period of 2005 to 2016 for the following variables; Foreign Direct Investment (FDI), inflation rates, exchange rates, interest rates and unemployment rates. The multiple regression analysis of the ordinary least square (OLS) is the estimation technique that is being employed in this study to determine the relationship between Foreign Direct Investment on economic growth represented by Gross Domestic Product (GDP). The summary of the statistics of all variables is given below in Table 2.

Model Specification and Estimation OLS framework
GDP = a + βFDIi+ βInfRi+ βIntRi+ βExcRi + βUnemRi + i
Where:
Dependent variable is = GDP annual growth rate
Explanatory variables are:
FDI = Foreign Direct Investment
InfR = Inflation Rate
IntR = Interest Rate
ExcR = Exchange Rate
UnemR = Unemployment Rate
β = Coefficients of the Independent variables
a = Constant
i = Random error term
i= time period

4. Hypothesis
Hypothesis No.1: \( \frac{\partial \text{FDI}}{\partial \text{GDP}} > 0 \) This study expects that FDI inflows should have a positive impact on GDP. If, there is an increase in FDI then it will enhance the economic growth in Central African Republic. In contrast, if the FDI is negative correlation to GDP, it will not help in economic growth in a country.

Hypothesis No. 2: \( \frac{\partial \text{InfR}}{\partial \text{GDP}} > 0 \) This study expects that inflation rate has a positive effect on economic growth rate. If there is an increase in inflation rate, there will lead and enhance the GDP in Central African Republic and vice versa.
Hypothesis No. 3: \( \frac{\partial \text{InfR}}{\partial \text{GDP}} > 0 \) This study expects that there is a significant relationship between real interest rate and GDP.

Hypothesis No. 4: \( \frac{\partial \text{UnempR}}{\partial \text{GDP}} < 0 \) This study expects that FDI inflows should have a negative impact on GDP. If there is an increase in GDP, there will be a decrease in the unemployment rate in Central African Republic. In contrast, if the GDP is positive correlation to unemployment rate, it will not help in economic growth and alleviation of unemployment rate in a country.

### 5. Results and discussions

**Table 1: Descriptive statistics**

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDI</td>
<td>376 385 86</td>
<td>27100000</td>
<td>120294311.32</td>
<td>86008078.88</td>
</tr>
<tr>
<td>IR CPI %</td>
<td>-8.28307840</td>
<td>30.55494061</td>
<td>6.8252188975</td>
<td>9.40293068492</td>
</tr>
<tr>
<td>R GDP A %</td>
<td>1.11255752</td>
<td>21.02064874</td>
<td>7.5583191683</td>
<td>6.34278936608</td>
</tr>
<tr>
<td>EX. RATE %</td>
<td>46.45246100</td>
<td>67.86608577</td>
<td>52.9759980742</td>
<td>6.34597292337</td>
</tr>
<tr>
<td>INT. RATE %</td>
<td>-8.58837138</td>
<td>17.47530159</td>
<td>8.2103590303</td>
<td>6.49051976756</td>
</tr>
<tr>
<td>Unem rate %</td>
<td>8.18000</td>
<td>8.54000</td>
<td>8.3538334</td>
<td>12952001</td>
</tr>
</tbody>
</table>

**Source: SPSS**

The above findings in Table 1 depicts that the mean value of FDI over the periods 2005 – 2016 is 120.294 million U.S. dollars. Moreover, the mean value for the inflation is 6.82% with 9.4% std. deviation, which is a very big value comparing with mean. Similarly, the unemployment rate average over the aforementioned period is 8.3% having a very low std. deviation of 0.129.

![Central African's GDP over the period 2006-2018](image)

**Source: World Bank Indicator**

Hence, std. deviation of 0.129 is important in the above Fig. 1. It shows the trend of real GDP over the period 2005 – 2016. The minimum value of GDP growth rate is 1.113% in 2015 while the maximum value...
of GDP is calculated as 21.021% in 2009. There is a high increase seen in the year 2008 – 2009, this is because the foreign aid was instilled in the economy of Central African Republic that brought a high inflationary wave in 2008. There is an up and down trend seen in the GDP rate of Afghanistan over the period 2005 -2016.

![Central African's FDI over the period 2006 - 2018](image)

Source: World Bank Indicator

The findings of Table 2 and Fig. 2 shown above indicate the trend of FDI values over the period of 2005-2016. The minimum value is calculated as USD 37.639 million in 2013 while the maximum value is calculated as USD 271 million in 2005. The findings clearly indicate rising and falling trend in the values of FDI during the last 12 years, but a bit steady movement from the period 2010 – 2014. The standard deviation for the FDI over the period 2005 – 2016 is calculated and was found USD 86.008 million. Higher value indicates that there is a variation over the yearly values of foreign direct investment.

![Central African’s inflation rate over the period 2006 - 2018](image)

Source: World Bank Indicator

The findings in Table 3 and Fig. 3 are given above which shows the trend of annual inflation CPI rate values over the period 2005 – 2016. The minimum value of inflation is recorded as -8.2832 in the year 2009 while the maximum value is 30.55 in 2008. The findings show that there is a rising and falling seen in the values of inflation with steady decrease in the last 12 years. The findings as shown in Table 4 and Fig. 4 above indicate the trend of exchange rate values of Afghanistan to US dollar over the period 2005 – 2016. The minimum exchange rate value is calculated as 46.45 in the year 2010 while the maximum exchange rate value is
calculated 67.87 in the year 2016. The above data indicates that there is a rise in the values of exchange rate over the period 2005 – 2016. The findings represented in the above Table 5 and Fig. 5 indicates the trend of real interest rate values over the period of 2005 – 2016. The minimum interest rate value is calculated is - 8.588 in 2007 while the maximum value is 17.475 in 2009. The findings clearly indicate there is a rising and falling trend in the values of real interest of Central African Republic over the period 2006– 2018.

**Table 2: Descriptive statistics**

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Real GDP Annual%</th>
<th>FDI in Million $</th>
<th>Inflation Rate</th>
<th>Exchange Rate</th>
<th>Interest Rate</th>
<th>Unemployment Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.000</td>
<td>.396</td>
<td>-.283</td>
<td>-.526</td>
<td>-.156</td>
<td>-.516</td>
</tr>
<tr>
<td>2</td>
<td>.396</td>
<td>1.000</td>
<td>-.212</td>
<td>-.102</td>
<td>-.096</td>
<td>.420</td>
</tr>
<tr>
<td>3</td>
<td>-.283</td>
<td>-.212</td>
<td>1.000</td>
<td>-.274</td>
<td>-.134</td>
<td>-.109</td>
</tr>
<tr>
<td>4</td>
<td>-.526</td>
<td>-.102</td>
<td>-.274</td>
<td>1.000</td>
<td>.239</td>
<td>.718</td>
</tr>
<tr>
<td>5</td>
<td>-.156</td>
<td>-.096</td>
<td>-.134</td>
<td>.239</td>
<td>1.000</td>
<td>.125</td>
</tr>
<tr>
<td>6</td>
<td>-.516</td>
<td>.420</td>
<td>-.109</td>
<td>.718</td>
<td>.125</td>
<td>1.000</td>
</tr>
<tr>
<td>7</td>
<td>.</td>
<td>.101</td>
<td>.186</td>
<td>.039</td>
<td>.315</td>
<td>.043</td>
</tr>
</tbody>
</table>

**Fig.4 Central African's Real interest rate over the period 2006 - 2018**

Source-World Bank Indicator
5.1. Correlation matrix

Table 2: Correlations

The correlation matrix in Table 2 shows that FDI is positively related to GDP growth rate, meanwhile unemployment rate is negatively related to GDP. This indicates that both the variables are significant.

Multi regression Analysis

The research study conducts a multi regression analysis (OLS model) to find out the relationship between the GDP growth rate with the inflation rate, interest rate, unemployment rate and FDI (dependent variables). The findings of the study are presented in the Table 3 below:

Table 3: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.898</td>
<td>.806</td>
<td></td>
<td>3.78525578365</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Unemployment Rate, Inflation Rate, Interest Rate, Exchange Rate, FDI in Million $, Exchange Rate. The five independent variables FDI, inflation rate interest rate, exchange rate and unemployment rate that were analyzed, indicate, 64.4% of variance in economic growth of Central African Republic as represented by Adjusted R Square. It means that other factors not included in this study contribute 35.6% variance in the dependent variable.

Table 4: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Name</th>
<th>Sum of Squares</th>
<th>Numbers df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>356.572</td>
<td>5</td>
<td>71.314</td>
<td>4.977</td>
<td>- .038</td>
</tr>
<tr>
<td>2</td>
<td>Residual</td>
<td>85.969</td>
<td>6</td>
<td>14.328</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Total</td>
<td>442.541</td>
<td>11</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Real GDP Annual %
b. Predictors: (Constant), Unemployment Rate,
Inflation Rate, Interest Rate, FDI in Million $, Exchange Rate

The findings represented that the significance value is less than 0.05, thus the model is statistically significant to predict how FDI, inflation rate, interest rate, exchange rate and unemployment rate affect GDP growth rate of Central African Republic. The ‘F’ calculated value is greater than the F critical value which shows that the overall model was significant having significance value of 0.038.

**Table 5: Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sr. No</th>
<th>Unstandardized Coefficients</th>
<th>Errors</th>
<th>Standardized Coefficients</th>
<th>Time</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
<td></td>
</tr>
<tr>
<td>FDI in Million $</td>
<td>-.076</td>
<td>.147</td>
<td>-.112</td>
<td>-.514</td>
<td>.626</td>
<td></td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>.408</td>
<td>.398</td>
<td>-.029</td>
<td>-.157</td>
<td>.880</td>
<td></td>
</tr>
<tr>
<td>Exchange Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-.58.925</td>
<td>20.319</td>
<td>-.029</td>
<td>-.157</td>
<td>.880</td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Real GDP
b. Annual %

The findings from the regression coefficient in Table 5 indicate that we substitute the values in the regression equation;

\[ Y = A + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + \epsilon \]

It becomes

\[ Y = 470.823 + 0.068X_1 - 0.076X_2 + 0.408X_3 - 0.029X_4 - 58.925X_5 + \epsilon \]

Where, Y represents GDP, which is dependent variable, X1 is FDI, X2 is inflation rate, X3 is unemployment rate. The findings of the data disclose that a unit increase in foreign direct (Choe, J. 2003) observed that foreign direct investment has significant effect on economic growth and it acts as a dynamic force in economic growth process. (Podrecca and Carmeci 2001) came up with the findings that investment is the most important element of economic growth. Therefore, (Borensztein, E. 1998) found out that FDI has a positive impact on economic growth rate. (Hermes, N. 2003) found that FDI had a positive impact on Gdpmsisir, M. (2014) observed that FDI has a significant effect on economic growth rate (Baracaldo. 2005) that productive FDI usually results in long lasting and stable capital flows as they are invested in long term assets. Similarly, (Obwona, M. 2001) and (Johnson, A. 2006) found in their studies that FDI has positive impact on the economic growth both in the short run and long run. investment (FDI) will lead to 0.068 rise in GDP; a unit increase in inflation rate will result in 0.076 decrease in GDP; a unit rise in exchange rate will lead to 0.408 increase in GDP; a unit increase in interest rate will result in 0.029 decrease in GDP; while a
unit increase in unemployment will result in 58.925 decrease in GDP. At 5% level of significance and 95 % level of confidence, FDI had a 0.022 level of significance inflation rate had a 0.626 level of significance; exchange rate had a 0.345 level of significance, interest rate had a 0.880 level of significance and unemployment rate had a 0.027 level of significance.

6. Conclusions and recommendations

The study purposes to analyze the effect of foreign direct investment (FDI) on the economic growth of Afghanistan over the period 2005 - 2016. The study applied correlation and multiple regression analysis to determine the impact of FDI on the economic growth of Afghanistan. The results of the study expose that FDI has a positive impact on the economic growth of Afghanistan. Correlation analysis also suggests that FDI and GDP are positively related to each other and unemployment rate is negatively related to GDP growth rate of Afghanistan. So, in conclusion, the findings of the study divulge that FDI positively affects the economic growth in Afghanistan. Consequently, the study recommends that government policy makers should bring reforms in the domestic market in order to attract more FDI in Afghanistan.

References


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