

# FDI – ECONOMIC GROWTH DYNAMICS IN ZIMBABWE

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## ABSTRACT

*The FDI – economic growth nexus is indeed one of the most interesting relationships in economic literature. The main purpose of the study was to examine whether FDI causes economic growth or vice versa. This is an interesting analysis because there is no consensus on the nature of the relationship between these variables. The study used time series data covering the period 1980 to 2014 and employed the Granger causality tests in order to verify the direction of causality. The study established that there is no causal relationship between FDI and economic growth in Zimbabwe. Based on these findings, the Zimbabwean government should target other factors other than FDI that enhance economic growth. There is also a need to look at other variables affecting FDI other than GDP so as to reduce unemployment through the inflows of FDI. To increase FDI inflows there is a need to encourage joint ventures to ensure that FDI stays in the country for longer in particular industries such as agriculture, mining and tourism. There is a need to also revise the investment legislation in the country.*

**Keywords:** - *Economic Growth, FDI, Zimbabwe*

## 1.0 INTRODUCTION

The relationship between FDI and economic growth is one of the most complicated relationships in economic theory. Foreign direct investment (FDI) is defined as the net inflow of investment to acquire a lasting interest in an enterprise operating in an economy other than that of the investor (UNCTAD, 2012). It is derived as the sum of equity capital, reinvestment of earnings, other long term capital and short term capital as shown in the balance of payments (UNCTAD, 2012). The contribution of FDI is shown in the national income accounting equation  $\{Y = C + I + G + (X-M)\}$  represented by I which is the total investment. FDI can be in three forms which are horizontal, vertical and platform. FDI involves participation in management, joint ventures, transfer of technology and enterprise (Moyo, 2013). Countries attracting FDI expect the benefits of FDI to outweigh its negative effects.

The causal relationship between FDI and economic growth is in various ways. On one side there is the “FDI-led growth hypothesis” which states that FDI inflows create economic growth opportunities for the host countries by increasing the capital stock, creating new job opportunities as a result of knowledge transfer and easing the transfer of technology (Mello, 1997, Borensztein et al, 1998). They also argued that by the introduction of advanced technology and new management practices and improved production techniques, FDI positively influences productivity. Growth enhancing factors of FDI depend on the absorptive capacity of country which are determined by factors such as the education levels and the development of financial markets (Gwenhamo, 2009). On the other hand there is the “market size hypothesis” which states that if there is rapid growth in the gross domestic product there is a creation of investment opportunities in the host nation and this would attract larger inflows of foreign direct investment (Mah, 2010). Some studies have also considered the possible existence of a bi-causal link between FDI and economic growth (Bilgic, 2010). There are also schools of thought that propound that the causal link between FDI and economic growth is neutral meaning that there is no relationship between FDI and economic growth.

The IMF (2001) outlined a number of benefits of FDI to less developed countries among them the free flow of capital as it seeks the highest interest rates and the transfer of technology to the host nations thus impacting positively on competition in the domestic input market. Another benefit is the human capital development through the employee training by the multinational companies. The IMF also implied that the host government will gain revenue in the form corporate tax from the foreign companies. Furthermore FDI reduces dependency on aid thus setting free the countries from donor policies. Therefore FDI should positively impact on economic growth in a nation. Adewumi (2006) states that FDI inflows foster job creation, increase productivity, stimulate exports and independence from government involvement from decision making. All these benefits translate into more output.

### **1.1 Statement of the Problem**

The main problems that the research seeks to work on are low economic growth and unemployment. Over the past three decades the country has experienced company closures and this has escalated the unemployment rate in the country. Most firms in the economy have been operating below capacity due to lack of adequate funding, some have even been forced into closure. This has been as a result of very low investment levels and with the country using the multicurrency system development has been stifled by the liquidity crisis which has made it very difficult for private investment to take place in the face of the very high interest rates prevailing in the economy. Due to lack of investor confidence the Foreign Direct Investment levels have been very low thus limiting economic growth in the country. The GDP levels for the country have been very low as compared to other countries on the African continent and also the amount of foreign direct investment inflow into Zimbabwe has been low relative to other countries such as Mozambique South Africa with each getting \$4.9 billion and \$5.7 billion respectively against Zimbabwe’s \$544 million in the year (World Bank, 2015) in terms of Foreign Direct Investment. This large gap between Zimbabwe and its counterparts is a cause for concern. The research seeks to establish the causal relationship between FDI and economic growth in Zimbabwe so that sound economic policies can be set in place as to help reduce the level of unemployment and increase the economic growth rates. These policies can either be policies that induce development through FDI attracting mechanisms or policies that induce economic growth through an increase in the Foreign Direct Investment.

## 1.2 Research questions

- i. Does FDI cause economic growth?
- ii. Does economic growth cause FDI?

## 1.3 Research objectives

- i. To test empirically find whether FDI causes economic growth.
- ii. To test empirically find whether economic growth causes FDI.

## 1.4 Relevance of the Study

The relationship between FDI and economic growth is an important part of economics literature and studies have been carried out on the relationship but they yield different results. Anfofum et al (2013) found a unidirectional causal relationship running from Economic Growth to FDI. Maliwa and Nyambe (2015) found no causal link between FDI and economic growth in Zambia and Iqbal (2010) found bidirectional causality between FDI and GDP in Pakistan. These differences from the results bring about the need for country specific studies to ensure sound policy formulation. Attempts have been made to try and unpack the relationship between FDI and GDP in Zimbabwe by the likes of Moyo (2013) and others but the possibility of endogeneity of FDI and economic growth was overlooked thus creating a gap in literature which this study intends to fill. This study attempts to answer the question on whether FDI inflows trigger economic growth or economic growth trigger FDI inflows or if there exists a causal relationship at all in Zimbabwe.

## 2.0 LITERATURE REVIEW

### 2.1 Theoretical Literature

#### 2.1.1 Endogenous Growth Theory

This is a growth theory that emphasises on factors such as economies of scale and induced technological changes as factors that speed economic growth. Romer (1990) and Grossman and Helpman (1991) modeled the endogenous growth theory to explain the relationship between Foreign direct investment and economic growth. These models are based on technological advancements as the main determinant of economic growth. The focus is on creation and transfer of knowledge. Economic growth of the developing country is dependent on the country's ability to accept and utilise innovations by countries thus has an emphasis on human capital accumulation. They view FDI as the driving force to the technology transfer as the developing countries can't speed up the technological advancements on their own.

#### 2.1.2 The Internalisation Theory

Coase first developed the theory and there were later modifications to the theory by scholars like Buckley and Casson (1976), Hymer (1976) and Hennart (1982). Buckley and Casson demonstrated that multinational companies organize themselves in a way that creates a comparative advantage in the production of a good and service. Hymer stated that FDI is a firm level strategic decision rather than a capital market financial decision. He went on to say that some multinational firms face some adjustment costs when the investments are made abroad.

#### 2.1.3 The Multiplier Investment Model

The Multiplier Model indicates the total income creating effects of an autonomous increment of investment on the basis of certain highly simplifying assumptions which include the absence of time lags, no induced investment, constant marginal propensity to consume, and a closed economy. Multiplier effects can be seen when new investment and jobs are attracted into a

particular town, city or region. The final increase in output and employment can be far greater than the initial injection of demand because of the inter-relationships within the circular flow. The Multiplier Model of investment is therefore based mainly on the feedback effect that output (production) has on investment. The basic notion is, aggregate income increases as the producers of the new investment goods enjoy higher sales and incomes. Thus an increase in investment sets off a never-ending sequence of ever-smaller increases in consumption demand that augment or multiply the effect of investment on income. This model shows that there is a multiplier effect on economic growth in a country as a result of foreign direct investment inflows.

#### **2.1.4 Solow Growth model**

Solow in 1956 put forward the neoclassical growth theory. Increases in the capital stock in a country will result in an increase in production which then corresponds to an increase in the growth rate of output. Foreign direct investment inflows will translate into an increase in the capital stock in the form of both physical and financial capital. This will in turn increase the economic growth rate.

#### **2.1.5 Japanese FDI theories**

They were initially developed in the 1970s mainly by Terumoto Ozawa. He analysed the relationship of FDI, competitiveness and economic development based on the ideas of Michael Porter. He identified three main phases of development when he analysed the waves of FDI inflow and outflow from a country. There is the first phase of economic growth where a country is underdeveloped and is targeted by foreign companies aiming to use its potential advantages. There is almost no outgoing FDI at this stage. In the second stage of economic growth new FDI is drawn by the growing internal markets and by growing standards of living. Outgoing FDI is motivated by rising labour costs. In the third stage of economic growth competitiveness of the country is based on innovation. The incoming and outgoing FDI are motivated by market factors and technological factors.

### **2.2 Empirical Literature**

Abbes and Mosteffa (2014) studied the causal relationship between Foreign Direct Investment and economic growth in 65 countries. They employed the co-integration and the panel Granger-Causality tests in panel data for the 65 countries. There was a disparity in the relationships between the cointegration of the panel data. A unidirectional Causality relationship running from FDI to GDP was established from the study. In a related research Moudatsou et al (2009) carried out Granger causality tests for the European Union and ASEAN (Association of Asian Nations). The results obtained from the heterogeneous panel data analysis showed that for the EU growth is driven by FDI. For the ASEAN there was evidence of two way causality in the cases of Indonesia and Thailand while in the cases of Singapore and the Philippines FDI in the host country is GDP growth motivated. The study also came to a conclusion that there is a strong positive relationship between economic growth of the host country and FDI inflows both in developed and developing countries. These studies point out that the causal relationship between FDI and economic growth is country specific thus creating the need for a specific study on Zimbabwe. Tintin (2012) conducted a study to establish the degree of the effect of FDI on economic growth taking into account the institutional factors in the countries under study over a period of 30 years(1980-2010). A sample of 125 countries was examined (38 developed, 58 developing and 29 LDCs). The results showed that FDI spurs economic growth in developing , developed and less developed countries but the effects differ from country to country. The study

also came up with the conclusion that high quality institutions are important for economic growth and development.

Anfofum et al (2013) studied the relationship between Economic Growth and Foreign Direct Investment in Nigeria for a period of 25 years using time series data. The OLS equation was broken down into 5 equations. The Granger-Causality outcome revealed the presence of a unidirectional causal relationship running from Economic Growth to FDI. In a related study carried out in Zambia on the impact of FDI on economic growth by Maliwa and Nyambe (2015). No causal link between Foreign Direct Investment and economic growth was found. These differences from the results bring out the need for country specific studies to ensure sound policy formulation. Iqbal (2010) studied the causality relationship between FDI, Trade and Economic Growth in Pakistan making use of quarterly time series data from 1998 to 2009. The Vector error correction mechanism in the VAR model established a bidirectional causality between FDI and GDP, FDI and exports and GDP and exports. A unidirectional causality running from imports to FDI and GDP. Shawa and Shen (2013) also studied the causal relationship between FDI, GDP and exports for Tanzania for the period 1980 to 2012. The granger causality test showed a unidirectional causality running from FDI to exports and bidirectional causality between FDI and GDP.

Domnic (2014) studied the impacts of FDI and oil export on economic growth in Nigeria for the period 1970 to 2011. The results of the Johansen cointegration showed that there was a long run equilibrium relationship among all the variables GDP, FDI, oil exports, exchange rate and the rate of inflation. The results pointed out that FDI was insignificant in determining economic growth. In line with these results a previous study by Bilgic (2007) conducted in Pakistan on the causal relationship between FDI and economic growth revealed that there was no existence of a causal relationship between the two variables. On the contrary Rininta (2011) explored the causal relationship between FDI inflow and GDP growth in Indonesia from the period 1970–2010. Despite using a similar methodology the results showed a positive impact of FDI on economic growth. Durnel (2012) studied the effect of Foreign Direct Investment on the Turkish on a sectorial level. The study employed the panel data techniques. A positive and significant effect of economic growth was found. Labour and exports were used as control variables. The short time span is a limitation of the study although it avoids structural breaks. Alkhasawneh (2013) investigated the causality relationship between the inflows of Foreign Direct Investment and economic development as measured by Gross Domestic Product (GDP) per capita in the State of Qatar during the period 1970 - 2010. He also investigated the direction of the causal relationships between the two variables using several tests, the Augmented Dickey-Fuller (ADF), Johansen cointegration and Granger Causality tests. Robust empirical findings drawn from the Johansen cointegration analysis suggested the existence a long-run equilibrium relationship between FDI and GDP. Furthermore, causality test indicated that there is bidirectional causality on the FDI-GDP relationship for one, two and three year lags, strongly indicating that foreign capital penetration stimulates economic growth in Qatar. The test results show that foreign direct investment in the short-run is affected mainly by gross domestic product and government spending which implies that the government should continue its efforts to create the economic environment which is attractive to foreign direct investment. The findings confirm that there is a strong and positive relationship between economic growth of Qatar and FDI inflows.

Gwenhamo (2009) studied the role of institutional factors on foreign direct investment. The main aim of the study was to examine the impact of property rights on FDI inflows for the period 1960 to 2005. He used FDI stocks rather than flows as he considered flows to be volatile. The cointegration test results were in line with the priori expectations of a long run relationship. Property rights were found to have a significant and positive influence on foreign direct investment. He also found out that lagged real GDP has a positive effect on foreign direct investment. Debt and capital intensity had a negative impact on the FDI inflows. Using the ARDL approach to cointegration Makova (2010) studied the impact of FDI and economic growth in Zimbabwe for the period 1980-2006. This methodology is capable of revealing the existence of a long term relationship regardless of the level of integration of the variables. The results showed that in the long run FDI has no direct influence on economic growth in Zimbabwe but its influence is reflected through trade openness. Human capital had an insignificant effect on economic growth in Zimbabwe. Moyo (2013) studied the impact of FDI on economic growth in Zimbabwe for the period (2009-2012). His analysis was based on two models, one linking economic growth and FDI only and the other linking economic growth with other macroeconomic variables including FDI. FDI from the second model had a positive effect on economic growth. The effect of external debt was inconclusive. Government expenditure and private investment also had a positive influence on economic growth. Net exports effect was inconclusive. However the study had a limitation in that the period of study was too short.

With the need for the causal relationship between investment and economic growth Mandishekwa (2014) carried out a study for Zimbabwe for the period 1980 to 2005 using annual time series data. The study found a missing link between investment and economic growth in Zimbabwe. This study produced the need for breaking down the components of investment to find their individual causal relationship with economic growth. Mahembe and Odhiambo (2014) studied the relationship between FDI and economic growth in the SADC region basing on six low income countries, but the major focus is on the observations the made on Zimbabwe. The paper brought out the strategies in attracting FDI and challenges faced in doing so. In the 1980s the FDI inflows were relatively low due to the bureaucratic administration processes. In the 1990s there was a rise in the FDI inflows due to the introduction of the ESAP and ZIMPREST programs. The study also showed that the country's FDI inflows quickly responded to the government of national unity with an increase in FDI from \$51.6 million in 2008 to \$387 million in 2011. This was due to political and economic stability. The study concluded that although the economy had shown signs of recovery it was still fragile.

### **3.0 METHODOLOGY**

#### **3.1 Model specification**

The model used by Akhasawneh (2013) and will be adopted for the purpose of the establishing the direction of causality between FDI and economic growth in Zimbabwe.

##### **3.1.1 Theoretical model**

$$GDP = f(FDI)$$

$$FDI = f(GDP)$$

##### **3.1.2 Empirical model**

The model for the Granger causality test is specified as follows:

$$GDP_t = \alpha_1 + \beta_1 \sum_{i=1}^n FDI_{t-i} + \lambda_1 \sum_{i=1}^n GDP_{t-i} + \mu_{1t} \dots \dots \dots (1)$$

$$FDI_t = \alpha_2 + \beta_2 \sum_{i=1}^n GDP_{t-i} + \lambda_2 \sum_{i=1}^n FDI_{t-i} + \mu_{2t} \dots \dots \dots (2)$$

Where,

$FDI_t$  is the foreign direct investment net inflows

$GDP_t$  is the economic growth rate

$\mu_{1t}$  and  $\mu_{2t}$  are the error terms

$\alpha_1$  and  $\alpha_2$  are constants

### 3.2 Granger Causality Testing

Time series data does not move backwards in time thus we can make statements about causality. If Event 1 takes place before Event 2 it is possible to say that Event 1 caused Event 2 but it is impossible to say Event 2 caused Event 1. Therefore the application of Granger causality is done to determine whether one economic variable can explain the other. By saying A granger causes B it means that the past values of A has some properties that can help explain B. If granger causality holds it does not guarantee that A causes B but it suggests that A may be causing B. Granger causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another. While some theorists are of the belief that FDI causes economic growth others there are others who believe that economic growth cause FDI. Granger causality may have to do with precedence, or prediction than with causality in the usual sense.

The hypotheses to be tested are as follows:

- $H_{01}$ : FDI does not Granger cause GDP
- $H_{02}$ : GDP does not granger cause FDI

Rejection criterion: Reject the null hypothesis if the p value is less than 0.05 and accept the alternatives.

Alternative hypotheses:

- $H_{11}$ : FDI granger causes GDP
- $H_{12}$ : GDP granger causes FDI

### 3.3 Impulse Response Functions

Impulse Response functions are used to produce a time path of dependent variables in the model, to shocks from all explanatory variables. If the system equation is stable, any shock should decline to zero and an unstable system would produce an explosive path. The impulse response function analysis traces the time path of the effects of shocks of other variables contained in the VAR on a particular variable. In other words, this approach is designed to determine how each variable responds over time to an earlier shock in that variable and to shocks in other variables.

### 3.4 Data type and data source

Annual time series data for FDI and economic growth the period 1980 to 2014 was employed in the study. The data was obtained from the World Bank.

## 4.0 DATA PRESENTATION AND INTERPRETATION

### 4.1 Descriptive statistics

The descriptive statistics (**Table 1**) show the measures of central tendency and the dispersion measures as obtained from the E-views software package.

**Table 1: Descriptive Statistics**

	GDP_GWT	FDI
Mean	1.874715	91065805
Median	2.634297	25900000
Maximum	14.42068	5.45E+08
Minimum	-17.66895	-30506684
Std. Dev.	7.670326	1.51E+08
Skewness	-0.713440	1.792351
Kurtosis	3.344473	4.916754
Jarque-Bera	3.142194	24.09756
Probability	0.207817	0.000006
Sum	65.61502	3.19E+09
Sum Sq. Dev.	2000.353	7.79E+17
Observations	35	35

The negative value on the skewness coefficient for GDP (-0.71344) shows that the GDP growth rate is negatively skewed. Foreign direct investment is positively skewed as shown by the positive skewness coefficient (1.792351). FDI has a relatively small standard deviation while GDP has a relatively high standard deviation.

### 4.2 Stationarity

The Augmented Dickey Fuller Tests (ADF) test was used for the unit root test. The null hypothesis that a unit root exist was tested against the alternative hypothesis that there is no unit root, of which the presence implies that the variables are non-stationary. Only probability values have been considered for uniformity. All the probability value of ADF statistic was compared to 0.01 and 0.05, meaning any probability value of a variable below these two values the variable is considered to be stationary.

**Table 2: Unit root test results**

Variable	ADF Probability	Order of integration	Level of stationarity
DFDI	0.0000	One	**
GDP	0.0088	Zero	**

\*\* implies stationary at 1%

### Interpretation of the stationarity test results.

GDP was stationary in level at 1% and this means that it did not contain a unit root thus the null hypothesis that GDP has a unit root was rejected. On the other hand the variable FDI contained a



unit root and had to be differenced once to become stationary. Both variables were now stationary so the granger causality test was carried out.

#### 4.3 Lag length selection

The generated estimates are only reliable if the model being estimated represents the true relationship generating the data. The VAR lag length test was carried out using the lag length selection criterion and was found to be one (see Appendix C).

#### 4.4 Granger causality results and interpretation

**Table 3: Granger Causality results at one lag**

Null Hypothesis:	Obs	F-Statistic	Prob
GDP does not Granger Cause FDI	33	0.99761	0.3259
FDI does not Granger Cause GDP		0.34641	0.5606

#### Interpretation of the granger causality results

The Granger causality tests are used to determine whether one variable can help improve the forecast of another. The concept involves the effect of past values of one variable on current values of another. Pairwise Granger causality Tests were carried out using E-Views 7 and results were as shown in Table 3. Basing on the probability outcome of the Granger Causality test of 0.3259, we may accept the null hypothesis that GDP does not granger cause FDI and conclude that GDP does not granger cause FDI in Zimbabwe. Also basing on the probability outcome of 0.5606 we may accept the null hypothesis that FDI does not granger cause GDP and conclude that FDI does not granger cause GDP in Zimbabwe.

#### 4.5 Interpretation of the Impulse response functions

GDP growth responds positively to own shocks but the effect declines over the ten year period. GDP growth responds positively to shocks in FDI but the effect starts declining after period 2. For FDI its response to own shocks is positive in the first year and negative in the second year and becomes positive the third year but moving towards zero. The response of FDI to economic growth is positive in the first two years declines to zero the following years.

#### 4.6 Summary of the Granger causality results

The results of the granger causality test showed that there is no causal relationship between FDI and economic growth in Zimbabwe. These results are in line with the study by Maliwa and Nyambe (2015) who also concluded that there was no causal relationship between FDI and economic growth in Zambia.

### 5.0 CONCLUSION AND POLICY RECOMMENDATIONS

#### 5.1 Conclusion

To determine the causal relationship between FDI and economic growth time series data was obtained from the World Bank for the period 1980 to 2014. The study used the granger causality methodology to establish the relationship between FDI and GDP and used FDI net inflows and the GDP growth rate. The unit root test showed GDP was stationary in levels and FDI was

stationary after first differencing. The granger causality test showed that there is no causal relationship between FDI and economic growth. This implies that neither FDI nor GDP can be used to explain the other thus there are other factors that can be used to explain the two in Zimbabwe. The impulse response functions showed that economic growth reacts positively to own shocks, FDI has both positive and negative responses to own shocks. GDP response to FDI positive and likewise FDI responds positively to GDP.

## 5.2. Policy recommendations.

The study set out to solve the problems of unemployment and low economic growth rates and having observed that FDI economic growth have no causal relationship in Zimbabwe the Zimbabwean government should target other factors other than FDI that enhance economic growth. There is also a need to look at other variables affecting FDI other than GDP so as to reduce unemployment through the inflows of FDI. To increase FDI inflows there is a need to encourage joint ventures to ensure that FDI stays in the country for longer in particular industries such as agriculture, mining and tourism. There is a need to revise the investment legislation in the country. The consistent and transparent application of the Indigenisation Act in the country is very critical in attracting both foreign direct investment and domestic private investment as it limits the scope of discretion and reduces uncertainty with regards to the regulatory framework. Local private investment is an enabler of economic growth the government has to create a conducive environment for sound local private investment to take place. The government needs to ensure that confidence in the banking sector is restored so as to encourage savings which will then increase the money available for private investment in the country. The government should also ensure that it puts in place measures that will increase confidence in the banking sector so as to improve on liquidity. This would translate into an increase in aggregate demand in the economy and this will stimulate production thus leading to economic growth. High quality infrastructure is a huge driver of economic growth thus there should be the development of the current infrastructure in the country if the country is to achieve its growth objectives. The government can facilitate infrastructural development through build own operate and transfer agreements. The government should also reduce its expenditure on non-revenue generating activities. Property rights are another major issue that the government has to look into especially in the agricultural sector. A high national debt has a negative influence on economic growth and the government has to reduce its national debt if it is to meet its economic growth targets.

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