

1.2 Research Objectives

The objective of this paper is to undertake an empirical investigation of macroeconomic stabilization effect of foreign direct investment inflows in Zimbabwe for the period 2009 to 2019. The results of this study will be valuable to economic policy makers, as it would enable them to understand the link between FDI and economic growth in Zimbabwe. Zimbabwe is in the recovery mode from economic crisis and hence requires the rightful policy mix to adequately address its economic challenges.

1.3 Organisation of the Study

To attain its objectives the study is organized into five equally important sections. Section I being the introduction, Section II being a glimpse on theoretical and empirical literature, Section III explains the study methodology, Section IV present data analysis and discussions, and Section V presents the conclusion and policy recommendations.

II. Literature Review

There exist numerous studies on various aspects of FDI in the world. Many models do exist to explain levels, trends and importance of FDI on economic development. Determinants of FDI have been explored both micro-factors and macro-factors. Theories do exist to explain FDI, and the main theoretical perspectives, are the modernisation theory, the dependency theory, the neoclassical growth theory and the endogenous growth theory. However, patterns of FDI have proved to be different for various nations, times and quality. Such differences have led to not be able to generalize some facts on individual nations. Perpetual economic crisis in Zimbabwe calls for deep analysis of some inflows that were originally thought to bail-out the economy, yet no significant turn-around being witnessed. The study acknowledge the theoretical and empirical support that FDI has in bringing about stability and growth. However, the study seeks to empirically determine the level at which FDI inflows contribute to stability and growth relating to economic cycles.

Some studies classifies determinants of FDI in terms of pull and push factors. The studies investigate what pulls a firm to become a foreign investor (Muzurura, 2019). Other studies examines the FDI drivers that are exogenous to investors, classifying FDI factors using supply-side factors, demand-side factors and institutional factors. Another group of studies consider FDI being impacted by three basic economic factors being trade, the exchange market policies and investment climate. Issues of political instability and policy reversal are at the core of these studies among other uncertainties like possibility of property confiscation.

Alfaro (2017), examines the benefits of FDI to host-country at both micro and macro level of activity and concluded that FDI inflows to host country were beneficial in that it brought with it technology, knowledge transfer and improved capital stock that led to an increase in employment and economic growth. Asheghian (2011), employed causality technique on FDI and economic growth and found that FDI had no influence on economic growth in Canada. Jilenga, Xu and Gondje-Dacka (2016), reports that FDI inflows had insignificant effect on economic growth rates in Tanzania. Yan and Pokhrel (2011) could not find a direct way of identifying the linkage between FDI and GDP in Nepal. Lean (2008) also found that FDI in the manufacturing sector of Malaysia and economic growth were independent of each other. Sothan (2017) examined the causal link between FDI and economic growth in Cambodia and concluded that FDI had a strong effect on economic growth in Cambodia. Tsauroi and Odhiambo (2012) examined the dynamic causal relationship between foreign direct investment (FDI) and economic growth in Zimbabwe, their study showed that there is a distinct causal flow from economic growth to FDI. Ekanayake and Ledgerwood (2010) concurred in their study on the issue of the positive and significant impact of FDI on economic growth in developing countries. Wang (2009) discovered that only the manufacturing sector FDI inflows had a positive and significant impact on economic growth, whilst the non-manufacturing sector FDI inflows had a positive but very insignificant influence on the economy. Borensztein *et al* (1998) indicated that the growth-enhancing effects of FDI depend on the absorptive capacity of the recipient country, which in turn depends on educational levels and the development of the financial markets, among other factors. Prasad *et al.* (2003) also narrated that FDI is viewed as relatively stable during financial crises when compared to short-term foreign capital inflows.

In conclusion, studies on the impact of FDI on economic growth rate were inconclusive and that further research remains necessary especially for individual countries. Zimbabwe presents an interesting case to test the macroeconomic stabilization effect of FDI. In support, Tsauroi and Odhiambo (2012) indicated that the relationship

between FDI and economic growth in Zimbabwe, just as in other sub-Saharan African countries, has not received enough and satisfactory attention in the literature. A greater need exist to shed more light on the relationship between FDI and economic growth in Zimbabwe.

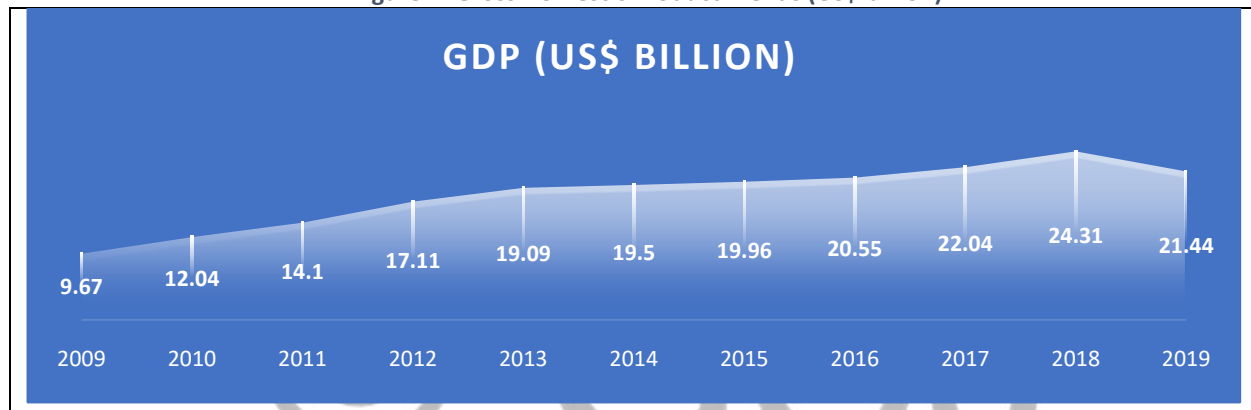
III. Methodology

To attain study objectives, the study utilized the trend analysis and the correlation analysis. Data used in the study was obtained from reliable sources such as Reserve Bank of Zimbabwe publications and also handlers of data like Macro trends. Annual data was gathered for GDP and FDI for analysis from 2009 to 2019, being the most current data in existence. The study covered the multi-currency era that started in 2009 after the formation of the Government of National Unity in an effort to stabilize the economy from various economic and political upheavals that have bedeviled the country for a long period.

IV. Data Analysis and Discussion of Results

The main variables in the study are GDP and FDI. Figure 1 below shows the trend of GDP for the period 2009 to 2019.

Figure 1: Gross Domestic Product Trends (US\$ billion)

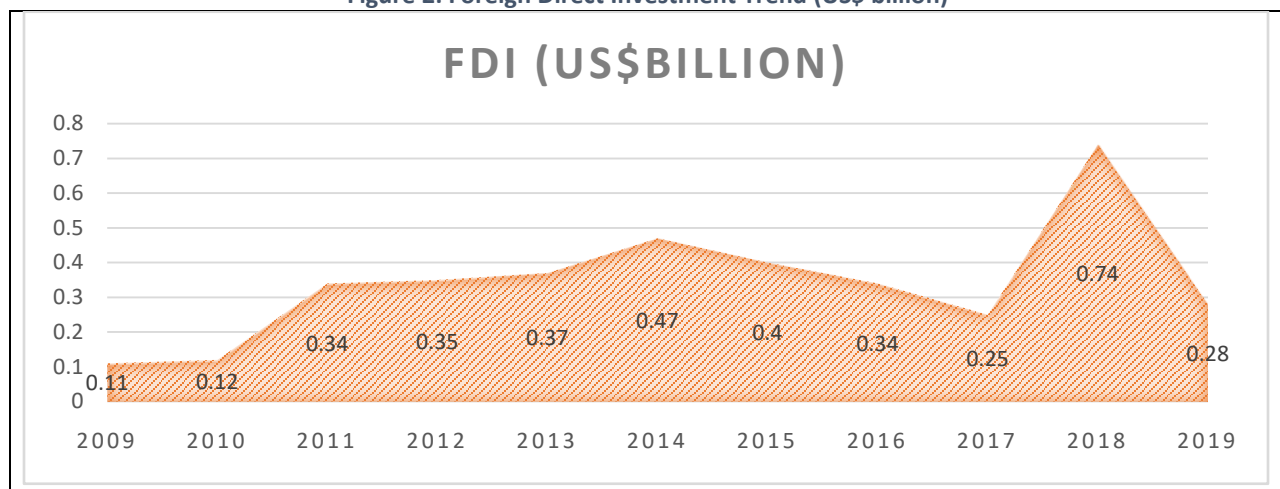


Source: www.macrotrends.net

As shown in Figure 1 above, there is a rising trend for GDP from year 2009 reaching a peak in 2018 (US\$24.31 billion), and a drop in year 2019 (US\$21.44 billion). The trend from 2009 to 2019 is not an even trend, it changes the gradient between periods.

Figure 2 below shows the trend for FDI.

Figure 2: Foreign Direct Investment Trend (US\$ billion)

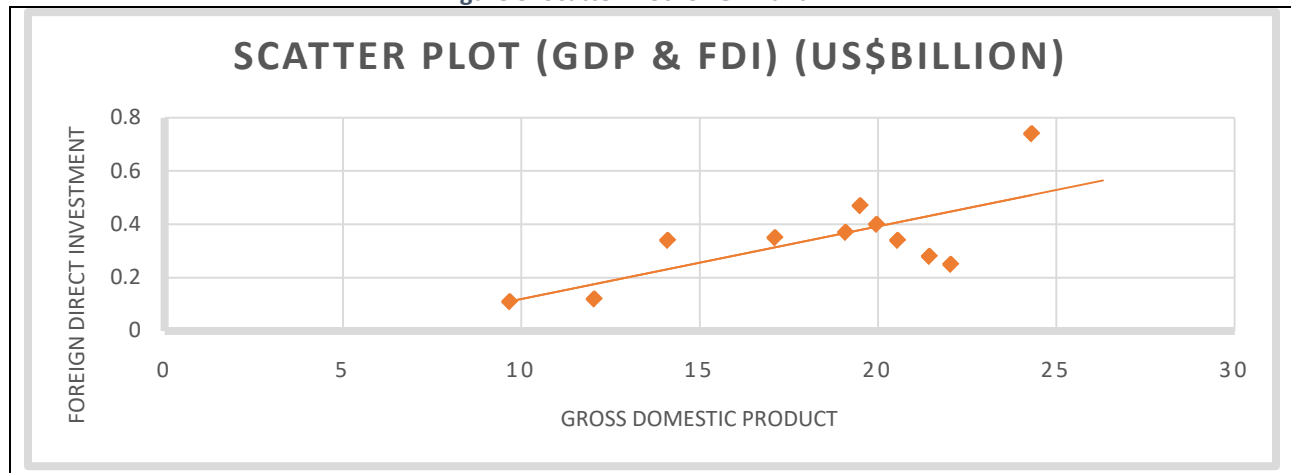


Source: www.macrotrends.net

Figure 2 above shows the trend of FDI inflows in the country for the period 2009-2019. Visible fluctuations are seen over the period. Years 2009 and 2010 have almost similar magnitude, with a sharp rise in 2011 to US\$0.34 billion, there after a gentle rise through years 2012, 2013 and 2014. A gentle decline was also noticed from 2014 (US\$0.47billion) through years 2015, 2016 and 2017 (US\$0.25billion). There was a very significant rise from 2017 to reach an all-time peak in 2018 (US\$0.74billion) and a significant drop again in 2019 (US\$0.28billion). FDI inflows are just volatile for the period under study.

A scatter plot for observed values of FDI and GDP for the period 2009-2019 is shown in Figure 3 below;

Figure 3: Scatter Plot for GDP and FDI



Source: Microsoft Excel

Figure 3 above shows the relationship between FDI and GDP for the study period 2009-2019. From the scatter plot a positive relationship is observed as shown by the positive linear trend line.

The summary statistics for the two variables are shown in Table 1 below;

Table 1: Summary Statistics (GDP and FDI)

	GDP	FDI
Mean	18.16455	0.342727
Median	19.50000	0.340000
Maximum	24.31000	0.740000
Minimum	9.670000	0.110000
Std. Dev.	4.498536	0.171586
Skewness	-0.648644	0.836087
Kurtosis	2.337240	3.891590
Jarque-Bera	0.972679 (0.614873)	1.645921(0.439130)
Anderson-Darling (A2)	0.430529 (0.3072)	0.507393 (0.2001)

Source: Eviews Software

For the period under study average GDP stands at US\$18.16 billion, while average FDI flows stand at US\$0.343 billion. GDP has a higher variability as reported by the standard deviation of 4.498 as compared to FDI with a standard deviation of 0.172. Both data values can be said coming from a normal distribution, since their skewness fall within the acceptable range of between -3 and +3, and their kurtosis ranges between -10 and +10. The distribution of the variable is normal as explained by the p-values of the Jarque-Bera statistics, being 0.614 for GDP and 0.439 for FDI. For the Jarque-Bera statistic, if p-value is greater than 0.05 it means the data follows a normal distribution. The Anderson-Darling normality test indicated that for both GDP and FDI no significant departure from normality was found, the p-values are 0.3072 and 0.2001 respectively and are greater than 0.05 for normality to be rejected.

For the attainment of study objectives the study works with stationary data. Time series analysis requires working with stationary variables to avoid spurious results. Taking away the trend help in separating fluctuations

around the trend of each time series thereby allowing the examination of the statistical properties of the co-movements of deviations of real GDP and real FDI. The initial variables data are in billions. To manage data behavior the study logs the variables. When logs are applied, the distributions are better behaved, and taking logs also curtails the effects of outliers.

The results of unit root test are shown in Table 2 below;

Table 2: Augmented Dickey-Fuller Test (GDP and FDI)

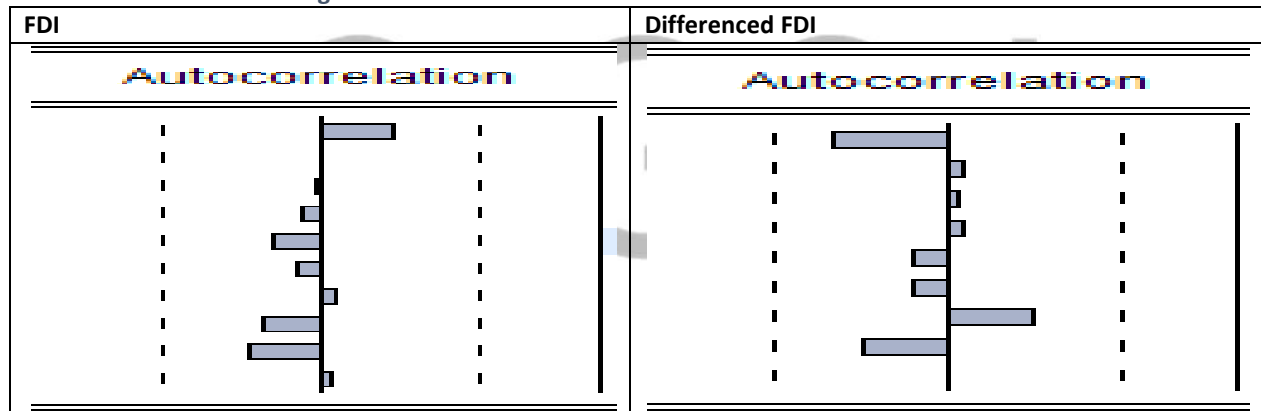
Logged variables	Augmented Dickey-Fuller test statistic	Probability
GDP	-3.386331	0.0418
FDI	-2.734900	0.1019
DFDI	-4.115236	0.0151

Source: Eviews Software

Table 2 above, report the ADF-statistics for GDP and FDI. The ADF-statistic for GDP is -3.386 which is significant at 5 percent level, implying the variable is stationary. The ADF statistic for FDI is -2.735 with a p-value of 0.1019 which is marginally insignificant at 10 percent level. By rounding off the ADF-statistic for FDI fall in the 10% acceptable region. Differencing the variable leads to stationarity with an ADF-statistic of -4.115 significant at 5% level. Since FDI is marginally insignificant at 10% level, the study to avoid over-differencing the variable will accept stationarity at 10% level. The right order of differencing is the minimum differencing required to get a near-stationary series which roams around a defined mean and the ACF plot reaches to zero fairly quick (Prabhakaran, 2018).

Comparison of the ACF for logged values of FDI and the differences series is shown in Figure 4 below;

Figure 4: Auto-Correlation Function for FDI and Differenced FDI

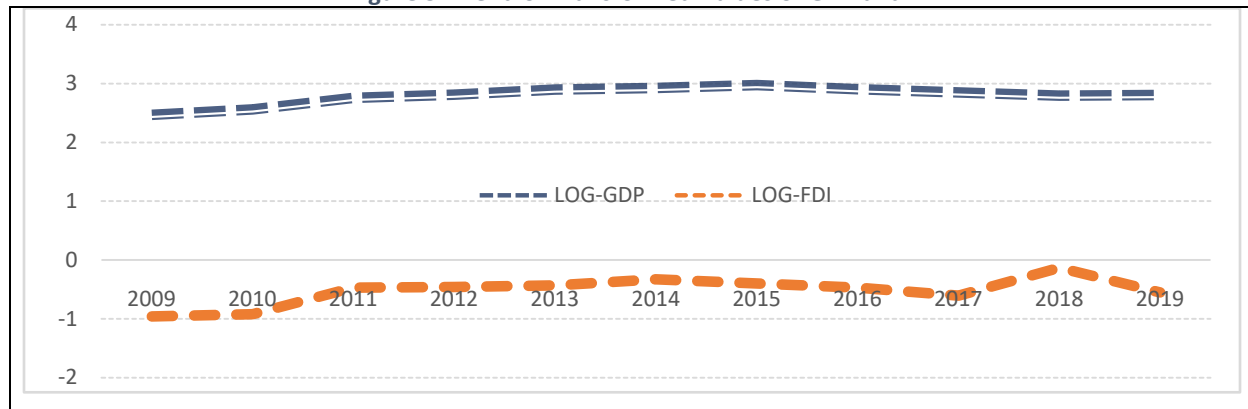


Source: Eviews Software

From Figure 4 above, the ACF favors logged values of FDI to differenced values. The ACF approaches zero fairly quickly for level FDI, hence differencing the variable will not be statistically efficient.

The study transformed GDP and FDI values from billions in levels through logging. The logged variables can be compared better as compared to the data in levels. The trend of GDP and FDI after taking logs is shown in Figure 5 below;

Figure 5: Trend of Transformed Values of GDP and FDI



Source: Microsoft Excel

From Figure 5 above the two variable GDP and FDI shows almost the same pattern until 2016, and thereafter significant differences can be noticed in the trends, with FDI having greater fluctuations. The country may have some policy changes that have led to significant changes in the flow of FDI. Such structural break may be caused by new economic developments, changes in political landscapes and/or changes in resources availability. According to Figure 5 above the break-point is 2017, and in 2017 Zimbabwe has witnessed change in leadership, removal of Robert Mugabe, the log-time president, and this might have affected the flow of FDI into the country.

The study calculates the correlation between GDP and FDI. GDP and FDI are linearly related. Two series have been used, data in levels and the logged variables. Correlation results are presented in Table 3 below.

Table 3: Correlation Statistic (GDP/FDI)

	Data in Levels	Variables in logs (Stationary)
Correlation		
<i>GDP/FDI</i>	0.714168 (71.42%)	0.788689 (78.87%)

Source: Eviews Software

From Table 3 above a positive correlation is reported between GDP (national income) and FDI. A correlation of 71.42% is reported for untransformed data, while a correlation of 78.87% is reported using transformed data. The transformed data shows a stronger relationship between the two variables. A positive correlation of 78.87% means that **foreign direct investment inflows are pro-cyclical**.

Pro-cyclicity implies that FDI inflows would be expected to move in the same direction with periodically observed fluctuations of national income (GDP), decreasing whenever there is an economic crisis, and increasing whenever there is a boom in the country. FDI inflows are not macroeconomic stabilizers since results shows that they do not help in smoothening out large fluctuations in national income during economic episodes.

V. Conclusion and Policy Recommendations

The study examined the macroeconomic stabilization effect of FDI inflows in Zimbabwe. The study aim was to check whether FDI is counter-cyclical or pro-cyclical. The study attained its objectives by using two variables in its analysis; the national income as measured by GDP and FDI. The study used annual data for the multi-currency era (2009-2019). The study relied on the correlation analysis as its main tool after appropriate data transformation. A positive correlation between national income and FDI of 78.87% was obtained. The correlation results have been consistent with the observed trend of the transformed data. A positive correlation derives the study to conclude that FDI inflows are pro-cyclical.

The pro-cyclicity nature of FDI inflows means that they follow the same trend with national income; in times where national income is high (low), FDI inflows are also high (low). FDI inflows do not help in stabilizing the economy. As has been noted by World bank (2013), challenges exist that affect both FDI and economic growth in the country, causing both variables to fall together - the economy is fragile, owing to political uncertainties, debt distress, downside risks in agriculture, low domestic liquidity and high real interest rates, high wages, the dilapidated infrastructure, and an unreliable power supply.

In literature increased FDI inflows are crucial for the development of the economy. The efficiency of the financial system of the host country is a prerequisite to realising the economic benefits from FDI (Ang, 2009). To

receive more FDI inflows, the study recommends improvement in the macroeconomic environment. A more stable economy and/or a growing economy promotes increased FDI inflows. The country should work on issues of property rights, and this help in boosting investor confidence and attracts more of the much needed FDI. The country should as well work to rely on inward-looking policies to back up inflows from foreigners to build the economy. FDI alone do not help in stabilizing fluctuations in national income, rather it falls (rise) with the fall (rise) in national income.

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