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Empirical Analysis on the Influence of Interest Rates on Foreign Direct Investment in Sierra Leone

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ABSTRACT

For the past few years, foreign direct investment (FDI) has become the indicator to economic growth, especially in developing economies. However, statistics have shown that Sierra Leone has been receiving fluctuating and low level of FDI inflows. It is against this backdrop that this research seeks to find the relationship and impact of interest rates on FDI inflows. It also sought to find out other determinants that significantly influenced FDI inflows in Sierra Leone for the period 1990-2016. Secondary data was collected from the World Development Indicators and the Ordinary Least Square method was adopted in the analysis. The results showed that interest rates had a significant impact on FDI inflows and hence can be used for policy making purposes. The research further discovered that trade openness and GDP growth are the major determinant of FDI in Sierra Leone. Policies that promote trade and facilitate GDP growth should be encouraged if the economy is to realize long term inflows of FDI.

Keywords: *Foreign direct investment, Interest rate, Trade openness, GDP growth, Sierra Leone.*

INTRODUCTION

Foreign Direct Investment (FDI) has been renowned over the years as a key engine that ignite economic growth in developing countries by promoting the host country's economic growth indicators like market development, labour training, financial inflow, technology transfer and skills. It can impact the host economy through a variety of channels such as principally adding to the resources available for investment and capital formation, innovative capacity and organizational and managerial practices.

Sierra Leone as a government that is thriving for rapid growth has made tremendous effort over the years after the civil war and other out breaking epidemics to attract foreign investment through the implementation of favorable foreign investment policies. As shown in the investment code of 2005, there are non-economic or industrial policies or practices that have discriminatory effects on foreign investors. There is all but one formal obstacle on foreign ownership which is exploitation of the country's vast mineral wealth in order to protect small scale local artisan miners. The policies are relatively open and non-tariff barriers have been eliminated. Import and export licenses have been abolished for all but a small number of products, making the policies and tariffs not better but equal to member neighboring Economic Community of West Africa States (ECOWAS) and West African Economic and Monetary Union (WAEMU) countries.

World Bank indices indicate that Sierra Leone's laws on investment protection are strong. Investors' rights are covered across a range of areas such as: Open access to all sectors of the economy to foreign investment; Rights to 100 percent foreign ownership of companies; Freedom to use foreign managerial, technical and unskilled workers; No exchange restrictions; Guarantees on capital repatriation, loan remittance, and against expropriation.

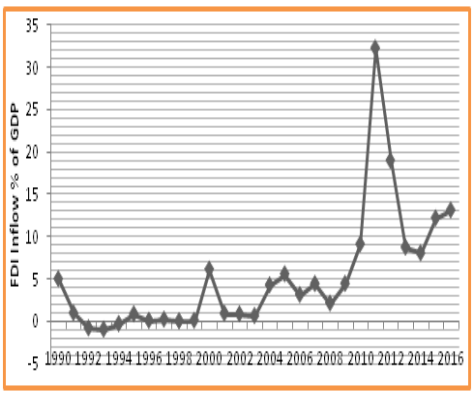

Figure1. *Trend of FDI inflows in Sierra Leone (% of GDP) 1990-2016.*

The most recent United Nations Conference on Trade and Development statistics indicate that Inward FDI Flows for Sierra Leone in 2011 reached $49 million, Inward FDI Stocks: $313 million and Outward FDI Stocks: $316 million.

In Sierra Leone, there has been a much more liberalized regime for FDI, addressing investor concerns, privatizing public enterprises and actively promoting investment, all of which are aimed at creating a good environment to boost investor confidence. Again, the government of Sierra Leone has expanded the scope for FDI by reducing the number of industries closed to foreign investors. Given the growing importance of FDI in Sierra Leone, therefore it is vital to explore the impact of interest rate on FDI flows.

With all privileges given to FDI in Sierra Leone, to see the influence it portrays to the economy in the vast investment opportunity in the country which ranges from agriculture, mining, tourism, financial market, labour abundances etc. The FDI continues to show no significance of that and still remain low (figure 1) it only skyrocketed between the periods 2009-2012. This can be attributed largely to the surge of mining industries between those periods. However, due to the fall in commodity prices in the world market and the recent Ebola outbreak there has been a sharp decline between the periods 2013-2014. This paper intends to unearth factors leading to the low inflow of FDI especially to examine how interest rate influences FDI in the country so as to proffer solid policy recommendations to policy makers.

Literature Review

It is a fact that there is hardly a scholarly work that could be completed without making reference or drawing from the ideas of similar works that already exist. As researchers continue to build their ideas on previous works, the knowledge bank continues to flourish. The present study is not an exemption. A research by Eicher et al., in 2012 proved that some determinants of FDI are actually not affecting the behavior of FDI although it has been proven for a long time ago. The research was conducted in 36 OECD countries. They deducted that these behaviors or characteristics may have changed as time goes by. Then they concluded that among many determinants of FDI, only few turned out to be significant in their research. These determinants are from the perspective of the host country, which are: the currency union used; preferential trade agreement (PTA) membership (to measure the openness and the partnership of trade and investments); market size; tax rates; productivity rate; and economic growth, which measured by the GDP growth (Eicher et al., 2012). Another study proved that the determinants of FDI inflows are trade openness and exchange rates. The researcher found that other economic variables, such as inflation, GDP, and interest rate were insignificant to be called as the determinants of FDI inflows (Faroh & Shen, 2015). In another study, it was proven that the exchange rates, trade openness, and inflation significantly affect the FDI inflows (Kizilkaya, Ucler, & Ay, 2015). Other study has shown that trade openness, investment climate (the previous or past behavior of the FDI), and political factor (in this research the researchers used democracy as the measurement) are the determinants of FDI. Other variables, such as the market size, potential growth, policy distortions (measured by exchange rate) have no impact to FDI inflows (Nyarko et al., 2011). A Japanese researcher conducted a study in India and proved that FDI in India is related positively with its GDP and other market size variables, service sector variables, and infrastructure measured by telephone lines per population (Tsuchiya, 2015). In one of Routledge's publication, Handbook of Southeast Asian Economics, the research shown that the economic stability and geographical factors of the host country has been playing as major factors of FDI inflows. The economic stability refers to the economic risk, such as exchange rates fluctuations and inflation (Sjoholm, 2015). In addition, another research proved that the main determinants of FDI inflows are the market size and supportive infrastructure of the host country (Rehman, et al., 2011). A research was once conducted towards Association of Southeast Asian Nations (ASEAN) top five countries, which are Indonesia, Malaysia, Singapore, the Philippines, and Thailand. The research found that exchange rates, interest rates and GDP have significant impact on FDI inflows in Thailand, Malaysia, and Indonesia. Inflation significantly affected the FDI inflows in Thailand, Indonesia, and Singapore (Siddiqui & Aumeboonsuke, 2014).

However since our main focus in this study is to establish the relationship between interest rate and FDI, few words regarding this are in order; Real interest rate (Chingarande, et al., 2012; Singhania, 2011) Interest rate is return on investment; investor will channel their investments from low interest rates to higher interest rate, because it provides incentive to

foreign investors looking for higher returns therefore high interest rate can lead to increased FDI. Furthermore, Interest rate adjusted for inflation is good measure and important variable of FDI inflows (Singhania, 2011). Interest rate is cost of borrowing and return on savings. Investors will look for low cost funding sources or lower rates and will invest in higher return or higher interest rates. It means capital will move from low rate country to high rate country. Chakrabarti, (2001) found positive relation between interest rate and FDI in India, while Chingarande, et al., (2012) did not found any significant impact on FDI in Zimbabwean economy.

According to Gross and Trevino (1996) a relatively high interest rate in a host country has a positive impact on inward FDI. However the direction of the impact could be in a reverse if the foreign investors depend on host countries capital market for raising FDI fund.

METHODOLOGY AND DATA ANALYSIS

The ordinary least square (OLS) estimation is used in this study. The choice of this model is based on the fact that OLS is best suited for testing specific hypothesis about the nature of economic relationship (Guajarati 2003). The time series properties of the variables are examined in the process. The methodology involves estimating an econometric model where the factors that influence foreign direct investment in Sierra Leone are investigated with special reference to interest rate. In this study we employ a multiple linear regression model to estimate the relationship between FDI, and interest rate (IR), trade openness (TOP), GDP growth (GDP), inflation (INF) and exchange rate (EXR). Hence we specify our empirical model as:

$$FDI = f(IR, GDP, INF, TOP, EXR) \quad (1)$$

Transforming equation (1) to reflect an econometric model specification gives:

$$FDI_t = \alpha + \beta_1 IR_t + \beta_2 GDP_t + \beta_3 INF_t + \beta_4 TOP_t + \beta_5 EXR_t + \mu_t \quad (2)$$

Where α is an intercept/slope coefficient, β_1 to β_5 are coefficient parameters to be estimated. The A priori expected signs of the coefficients are: β_1, β_2 and $\beta_4 > 0$, β_3 and $\beta_5 < 0$. The estimation is done using E-Views software. All the data were obtained from the World Development Indicators 2017 (WDI).

Unit Root Test Analysis

In compliance of current development in macroeconomic time series regression, unit root test is required (Granger and Newbold, 1974; Ong, 1994; Huang, 1995). Under existing practice the unit root test is conducted to check the stationarity of data series. This step is very vital because if non-stationary variables are not identified and used in the model, it will lead to a problem of spurious regression, whereby the results suggest that there are statistically significant relationships between the variables in the regression model when in fact all that is evidenced is contemporaneous correlation rather than meaningful causal relationships. This The Augmented Dickey-Fuller test was used and the test relation is depicted by the equation:

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{i=1}^{n} \alpha \Delta Y_i + \varepsilon_t \quad (3)$$

Where Δ is the difference operator, t is a time trend, Yt is the variable under deliberation, n is the number of lags and εt is the stochastic error term. The null hypothesis is that the series is non-stationary against alternative hypothesis that the series is stationary. If the absolute value of the ADF test statistic is greater than the critical values, we reject the null hypothesis of non-stationary and conclude that the series is stationary. On the other hand, if the absolute value of the ADF is less than the critical values (in absolute terms), we fail to reject the null hypothesis and conclude that the series is non-stationary. These test results are presented in table 1.

Table1. *Results of the Test for Stationary: Using Augmented Dickey Fuller Test*

Variables	Level/ΔLevel	ADF Statistics	ADF critical value 5%	Probability Values	Inference
FDI	Level	-3.469934	-3.595026	0.0640	I(1)
	ΔLevel	-3.848667	-3.644963	0.0340	
IR	Level	-2.019217	-3.632896	0.5594	I(1)
	ΔLevel	-5.401275	-3.632896	0.0013	
GDP	Level	-3.595026	-4.356068	0.0820	I(1)
	ΔLevel	-4.553749	-3.622033	0.0033	
INF	Level	-3.735104	-4.356068		I(1)
	ΔLevel	-6.092154	-3.612199	0.0002	
TOP	Level	-2.228562	-3.595026	0.4553	I(1)
	ΔLevel	-5.622172	-3.603202	0.0006	
EXR	Level	-2.813357	-3.595026	0.2052	I(1)
	ΔLevel	-6.266017	-3.612199		

Source: *Computed by Author Using E-Views Software*

The unit root test result reveals that all the variables in the Foreign Direct investment equation are non-stationary at their levels but become stationary after first differencing. This suggests the use of co-integration analysis since the concept of co-integration requires variables must be stationary after differencing at least once.

Co-integration Test Analysis

The stationary linear combination is called the co-integrating equation and may be interpreted as a long run equilibrium relationship between variables. The common objective is to determine the most stationary linear combination of the time series variables under consideration. Consequently, Johansen and Juselius (1988, 1990) co-integration technique has been employed for the investigation of stable long run relationships between foreign direct investment, interest rate, GDP growth inflation, exchange rate and trade openness in Sierra Leone by using both the Trace and Maximum-Eigen tests statistics depicted by the following equations:

$$\lambda_{trace}(r) = -T\sum_{j=i+1}^{n} \ln(1-\hat{\lambda}_i) \quad (4)$$

$$\lambda_{max}(r, r+1) = -T\ln(1-\hat{\lambda}_{r+1}) \quad (5)$$

Where T = number of usable observations

$\boldsymbol{\lambda}_i$ = Eigen values or estimated characteristics root

$\boldsymbol{\lambda}_{trace}$ test the null hypothesis

r = 0 against the alternative of r > 0

$\boldsymbol{\lambda}_{max}$ test the null hypothesis

r = 0 against the alternative of r =1

If the null hypothesis of no co-integrating vector is rejected, it indicates that there is a long-run relationship among the variables in the model. The results are presented in table 2 and 3.

Table2. *Unrestricted Co-integration Rank Test Result (Trace)*

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.900287	158.1495	95.75366	0.0000
At most 1 *	0.824959	100.5130	69.81889	0.0000
At most 2 *	0.646338	56.94462	47.85613	0.0056
At most 3 *	0.588363	30.95927	29.79707	0.0366
At most 4	0.288739	8.768956	15.49471	0.3872
At most 5	0.009992	0.251063	3.841466	0.6163

*Trace test indicates 4 cointegrating eqn(s) at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level. **MacKinnon-Haug-Michelis (1999) p-values.*

Source: *E-views output*

Table3. *Unrestricted Co-integration Rank Test Result (Maximum Eigenvalue)*

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.900287	57.63656	40.07757	0.0002
At most 1 *	0.824959	43.56835	33.87687	0.0026
At most 2	0.646338	25.98534	27.58434	0.0789
At most 3 *	0.588363	22.19032	21.13162	0.0354
At most 4	0.288739	8.517893	14.26460	0.3285
At most 5	0.009992	0.251063	3.841466	0.6163

*Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level. * denotes rejection of the hypothesis at the 0.05 level. **MacKinnon-Haug-Michelis (1999) p-values*

Source: *E-views output*

The results of both the trace test (table 2) and the maximum-eigen test (table 3) indicate that co-integrating equation exists at the 5% significance level. Therefore the null hypothesis of no co-integrating equation is rejected. Consequently, it can be concluded that there is a significant long run relationship between the given variables. Since variables can either have long run or short run effects, then an error correction model (ECM) is used to disaggregate this effect. The result of the long-run co-integrating relationship in the Foreign Direct Investment model shows that interest rate, GDP growth and trade openness have significant positive effects on foreign direct investment inflow in Sierra Leone whereas inflation has a negative effect. Exchange rate was also found to be statistically significant in the long run with a negative effect on foreign direct investment inflows. This outcome is not surprising as Sierra

Leone has a long history of exchange rate depreciation against foreign currencies and thus negatively impacts the inflow of FDI.

Short run dynamics (ECM)

The vector error correction model (ECM) is a restrictive vector auto regressive (VAR) that can be use to estimate time series that were identified to be co-integrated. It is designed in such a way that it restricts the long-run behavior of the independent variables to meet to their co-integrating relationship and at the same time allow for short-run correction. This can also be explained with the help of the equation:

$$\Delta FDI_t = \beta_0 + \sum_{i=1}^{q} \beta_1 \Delta IR_{t-1} + \sum_{i=1}^{q} \beta_2 \Delta GDP_{t-1} + \sum_{i=1}^{q} \beta_3 \Delta INF_{t-1} + \sum_{i=1}^{q} \beta_4 \Delta TOP_{t-1} + \sum_{i=1}^{q} \beta_5 \Delta EXR_{t-1} + \lambda ECM_{t-1} + \varepsilon_t \quad (6)$$

Table4. *Result of the long run co-integrating relationship*

Dependent variable: FDI

Independent variables	coefficient	Standard error	t-statistics	conclusion
IR	0.273581	0.08206	3.3339	Significant
GDP	0.348749	0.06322	5.5164	Significant
INF	-0.119684	0.03560	-3.3619	Significant
TOP	0.197984	0.03236	6.1182	Significant
EXR	-0.000951	0.00020	-4.7550	Significant
Log likelihood	-603.6648	…..	…..	… . .

Source: *Computed By Author from E-Views Output*

Table5. *Error Correction Model.*

Dependent variable FDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.	VIF
C	-0.591138	0.748106	-0.790179	0.4392	NA
D(IR)	0.241723	0.073778	3.276354	0.0040	1.557429
D(GDP)	0.506211	0.203131	2.492038	0.0299	1.591252
D(INF)	-0.002171	0.000566	-3.836361	0.0011	1.517743
D(TOP)	0.663644	0.228092	2.909547	0.0142	1.090384
D(EXR)	0.016586	0.029435	0.563462	0.5797	1.411453
ECM(-1)	-0.585659	0.223299	-2.622759	0.0168	1.560101
R-squared	0.755397	Mean dependent var		0.312909	
Adjusted R-squared	0.678154	S.D. dependent var		6.251744	
S.E. of regression	3.546706	Akaike info criterion		5.594719	
Sum squared resid	239.0033	Schwarz criterion		5.933438	
Log likelihood	-65.73135	Hannan-Quinn criter.		5.692258	
F-statistic	9.779491	Durbin-Watson stat		1.863082	
Prob(F-statistic)	0.000057				

Source: *E-views output*

Where Δ is the first difference operator, q is the lag length, **λ** is the speed of adjustment and ECM_{t-1} is the lagged error term and all other variables are described as earlier. The result of the Vector Error Correction Model (ECM) is presented in table 5 below.

The coefficient of interest rate (0.241723) has a positive and statistically significant impact on FDI inflows. There is a direct relationship between interest rate and Foreign Direct Investment flows. This implies that a 1% increase in the interest rate leads to approximately 0.24% increase in FDI inflows in Serra Leone. This outcome is in line with theories and previous studies that the real interest rate in the host country which captures the host country's return on investment, serves as an attracting factor for FDI (Gross & Trevino, 1996). This result is also in conformity with findings by Singhania, (2011) and Chakrabarti, (2001).

Similarly, the coefficient of the variable representing economic growth (0.506211) has a positive and significant impact on Foreign Direct Investment inflows. There is a direct relationship between GDP growth and Foreign Direct Investment inflows. This implies that a 1% increase in GDP can lead to approximately 0.50% increase in FDI inflows to Sierra Leone. This finding is also in conformity with theories

and findings from previous studies that there exist a positive relationship between GDP growth and Foreign Direct investment. Similar results were found by Tsuchiya, (2015) and Siddiqui & Aumeboonsuke, (2014).

Unlike GDP growth, the coefficient of inflation (-0.002171) has a negative and significant impact on Foreign Direct Investment inflows. There is an inverse relationship between inflation and Foreign Direct Investment inflows. This implies that a 1% increase in inflation may result to approximately 0.002% decrease in FDI inflows to Sierra Leone. This finding is not surprising as the high rate of macroeconomic instability may scare foreign investors away.

With regards trade openness, the coefficient (0.663644) has a positive and statistically significant impact on Foreign Direct Investment inflows. There is a direct relationship between trade openness and Foreign Direct Investment inflows. This implies that a 1% increase in trade openness can leads to approximately 0.66% increase in FDI inflows to Sierra Leone. This finding is also in conformity with theories and findings from previous studies that there exist a positive relationship between trade openness and Foreign Direct investment. This outcome has been supported by previous empirical studies (see for e.g Eicher et al., 2012; Faroh & Shen, 2015; Nyarko et al., 2011).

However, exchange rate was not found to have any significant impact on FDI inflows to Sierra Leone given a probability value greater than 5%.

The coefficient of the error correction term indicates the speed of adjustment in eliminating deviation from the long run equilibrium. It shows how much time would be taken by the economy to reach at long run equilibrium. Its coefficient is statistically significant with t-value of -2.622759. This shows that the speed of adjustment is approximately 58.5% implying that if there is a deviation from the equilibrium, approximately 58.5% of FDI inflow is corrected annually as the variable moves towards restoring equilibrium.

The R-square express in coefficient of correlation which shows the strength of linear relation among the variables. The adjusted R-squared value is 0.678154 implying that approximately 67.8% of the variation in the Foreign Direct Investment is explained by the independent variables, which is an indication of a very good fit. The Durbin-Watson statistic is very close to 2 suggesting that there is no first order autocorrelation which implies that the regression has an economic meaning. The overall equation is highly statistically significant as shown by the probability value of the F-statistic (0.000057).

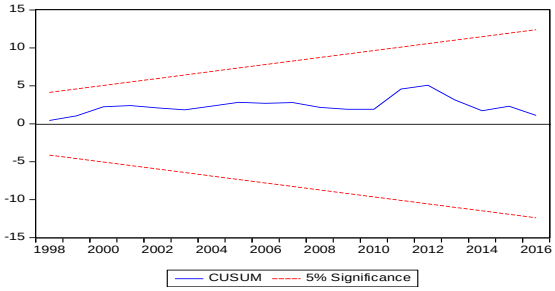

Figure2. *Plot of Cumulative Sum (CUSUM)*

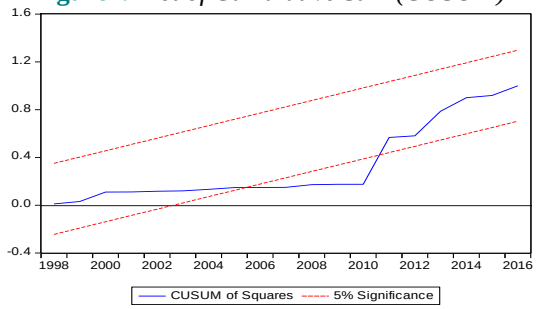

Figure3. *Plot of Cumulative Sum of Squares (CUSUMQ)*

Diagnostics and Stability Test Results

Diagnostic tests were performed in order to validate the parameter evaluation of the outcomes achieved by the model adopted in this research. The goodness of fit of the model was tested in five main ways, i.e. the langrage multiplier (LM) test for serial correlation, the ARCH effect on the model's error, the Breusch-Godfrey test for heteroscedasticity, Ramsey RESET test for correct specification of the model and the Jarque-Bera for normality test. These tests results are presented in table 6.

The results presented in table 6 suggest that there is no serial correlation, there is no ARCH effect on the model's error, there is no heteroscedasticity, there is a normal distribution and the model is correctly specified. We therefore fail to reject the null hypothesis and conclude that the model has a very good fit.

With regards stability test, evidence from the figures below show that the CUSUM plot lie within the 5% critical bound. However the CUSUMQ plot does not, thus providing support that the parameters of the model have suffered from structural instability over the period of study. This can largely be attributed to the long civil war that the country suffered and series of reform measures that have taken place during the scope of the study.

Table6. *Diagnostic test results*

Test	Null Hypothesis	Statistics	Probability
Langrage Multiplier (LM)	No serially correlated errors	0.752757	0.6863
ARCH	ARCH effect does not portray model's errors	0.204840	0.6508
Ramsey RESET	Model is correctly specified	6.977535	0.0166
Breusch-Godfrey	No heteroscedasticity	1.966511	0.9228
Jarque-Bera (JB)	There is a normal distribution	0.326463	0.8493

Source: *Author's computation using E-views*

Conclusion And Recommendation

The objective of this study was to develop an empirical framework to identify the effect interest rate has on FDI inflows to Sierra Leone by using time series data for the period of 1990–2016. Based on the literature reviewed, we have identified five important indicators that generally influence the FDI inflows. They are real interest rate, trade openness, GDP growth, rate of inflation and exchange rate. Our empirical analysis of the data reveals that trade openness positively influences FDI inflows into the economy and is statistically significant. This implies that greater trade liberalization policies increase FDI inflows into Sierra Leone. GDP growth has a positive effect on FDI and is statistically significant. As strong GDP growth leads to larger market size, maintaining the momentum in GDP growth is necessary for Sierra Leone to attract FDI inflows. The rate of inflation (which is used as a proxy for the indicator of economic stability) in Sierra Leone negatively impacts FDI and is statistically significant. This means that in order to increase FDI inflows, low rate of inflation is vital for Sierra Leone. Exchange rate has a negative impact on FDI. However, it is statistically insignificant in the short run model. The evidence suggests that exchange rate-led FDI hypothesis is not supported by the study.

Finally, it can be concluded that there is long run equilibrium between the FDI and five explanatory variables. However, exchange rate is not statistically significant in the short run. This demonstrates that exchange rate has not been an important factor in attracting FDI in Sierra Leone. Furthermore, the major factors influencing FDI in Sierra Leone are interest rate, trade openness, GDP growth, and the rate of inflation. As a recommendation for future FDI policy planning and implementation, the government of Sierra Leone has to consider developing policies especially monetary policy that will focus on maintaining a well-balanced interest rate, and to curtail on the rate of inflation, to improve the trade openness and. GDP growth. This will enhance the FDI inflows into Sierra Leone.

References

[1] Eicher, T. S., Helfman, L. & Lenkoski, A., (2012), Robust FDI Determinants: Bayesian Model – Averaging in the Presence of Selection Bias. Journal of Macroeconomics, pp. 637-651.

[2] Faroh, A. & Shen, H., (2015), Impact of Interest Rates on Foreign Direct Investment: Case Study Sierra Leone Economy. International Journal of Business Management and Economic Research (IJBMER), pp. 124-132.

[3] Kizilkaya, O., Ucler, G. & Ay, A., (2015), the Interaction between Exchange Rate and Foreign Direct Investments: Evidence from Turkey. Journal of Business and Economics, pp. 337-347.

[4] Nyarko, P. A., Nketiah-Amponsah, E. & Barnor, C., (2011), Effects of Exchange Rate Regimes on FDI Inflows in Ghana. International Journal of Economics and Finance, pp. 277-286

[5] Tsuchiya, Y., (2015). Determinants of Foreign Direct Investment in India: Region Sector Wise Analysis, Tokyo: Tokyo University of Foreign Studies.

[6] Sjoholm, F., (2015), Foreign Direct Investment in Southeast Asia. s.l., Routledge, pp. 1-36.

[7] Siddiqui, H. A. A. & Aumeboonsuke, V., (2014). Role of Interest Rate in Attracting the FDI: Study on ASEAN 5 Economy. International Journal of Technical Research and Applications, pp. 59-70.

[8] Singhania, Monica, and Akshay Gupta (2011), "Determinants of foreign direct investment in India." Journal of International Trade Law and Policy 10(1); 64-82.

[9] Chakrabarti, Avik. (2001), "The determinants of foreign direct investments: Sensitivity analyses of cross-country regressions." Kyklos 54(1); 89-114.

[10] Chingarande, Anna, Roseline T. Karambakuwa, Denhere Webster, Felix Tafirei, Zivanai Onias,

[11] Dickey D., W. A. Fuller (1981), "Likelihood ratio statistics for autoregressive time series with unit root", Econometrica, vol.49, No.4, Evanston, Illinois.

[12] Dickey, D.A., W.R. Bell, and R.B. Miller (1986), "Unit Roots in Time Series Models:

Tests and Implications," The American Statistician, 40, 12-26.

[13] Engle, Robert F. and Granger, C.W.J (1987), "Cointegration and Error Correction: Representation, Estimation, and Testing," Econometrics, 55, 251-76.

[14] Granger, C.W.J (1986). Developments in the Study of Cointegrated Economic Variables. Oxford Bulletin of Economics and Statistics, 48(3), 213-228.

[15] Granger, C.W.G, and J.L Lin, (1995), "Causality in the Long run, Econometric Theory" 11(1): 530-536.

[16] Gross and Trvino (1996). Determinants of Foreign Direct Investment, Journal of International Economics, Volume 45, 115-135.

[17] Groose, R. and L.J. Trevino (1996). "Foreign direct investment in the United States: An analysis by country of origin." Journal of International Business Studies 27(1): 139- 155.

[18] Rehman, A., Ilyas, M., Alam, H. M. & Akram, M., (2011), the Impact of Infrastructure on Foreign Direct Investment: The Case of Pakistan. International Journal of Business and Management, pp. 268-276.

[19] Lovemore Muchingami, and Victoria Mudavanhu. (2012). "The impact of interest rates on foreign direct investment: A case study of the Zimbabwean economy (February 2009-June 2011).

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