EVALUATING THE EFFECT OF THE FLUCTUATIONS ON THE ACTUAL EXCHANGE RATE ON THE DIRECT FOREIGN INVESTMENT IN UGANDA

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Article history:		Abstract:
Received: **Accepted:** **Published:**	1st November 2021 1st December 2021 5th January 2022	This paper studied the effect of the changes in the exchange rates on direct foreign investment flow in Uganda during the period 1981-2018 by using ARDL model. The study found that the changes in the actual exchange rate had a negative effect on the foreign investment flow in the short term and a positive effect on the foreign investment flow in the long term. The most important recommendations the study reached was the necessity for Uganda to keep the flexibility of the exchange rate to guarantee its stability in the long term and positively reflects on the direct foreign investment flow to the country.

INTRODUCTION:

The continuity of growth and development in the economy requires taking care of its determinants. Investment and making capital is considered the necessary condition for economic growth and development. The position and role of investment in the previously mentioned operations is the limit within which investment is the driving motive for economic growth. Thus, the topics of investment are the vital inseparable parts in economy. Some researchers of growth and development think that the shortage in capital is determined as one of the main reasons of poverty in many developing countries in the current time and the Ugandan economy is considered in a situation where there are no savings and internal resources of sufficient and required capital and the attracting the foreign capital is the only useful and correct method to address the shortage of investment due to the shortage in capital and local savings.

Moreover, one of the most important features of investment in stocks is that the foreign capital is capable of selling stocks and bonds and transferring its capital to its country or a third country every time. Direct foreign investment is a kind of investment that happens in order to make permanent and continuous gains in a corporate located in a country other than the investor's country and as a result will have the actual voting power in the company's board. The different studies emphasize that the direct foreign investment has significant effects on the macro economy variables including the decrease in the interest and the decrease in the exchange rate and the increase in the economic growth and the state tax income, and the decrease in the state debts and growth and income distribution and transferring technology and patterns of economic growth as the driving forces to drive the economic growth and development forward. Thus, put forward a plan to attract sufficient income in order to provide financing resources to fund economic projects which is considered one of the most important challenges that encounter decision makes everywhere in the economy.

The main goal of this study is to evaluate some determinants of internal direct foreign investment especially the changes in the exchange rate in Uganda during the studied period. In this study, there is a review of the related literature in reference to the relationship between changes in the exchange rates and the direct foreign investment, then displaying the policies of rate exchange and foreign investment flow in Uganda. After that, there will be a display of the policies of the exchange rate and the flow of the direct foreign investment in Uganda. Then, there will be a display of the econometric model used in this study. Finally, findings will be discussed and conclusions and recommendations will be presented.

LITERATURE REVIEW

1- Takao Itagak (1981): The Theory of the Multinational Firm under Exchange Rate Uncertainty.

This study presented a theoretical model that dealt with the behavior of multinational companies in light of the lack of certainty in exchange rate. It showed the effect of the size of trading, production, and the trade balance which depends on the risks that the multinational companies encounter in relation to the exchange rate positively or negatively and that the transformation from a fixed exchange rate into floating exchange rate does not affect trade.

2- David O. Cushman (1988): Exchange-Rate Uncertainty and Foreign Direct Investment in the United States"

This study found out that there is a positive correlation between the risks of exchange and the direct foreign investment flow into the USA from five countries (the UK, Japan, Germany, France, and Canada). The risks in the exchange rate led to the flow of foreign investment with about 10% by 1986.

3- Linda S. Goldberg & Charles D. Kolstad (1995): foreign direct investment, exchange rate variability and demand uncertainty"

This study discussed the bilateral direct foreign investment flow between the USA and the UK, Canada, and Japan. It found that there is a positive correlation between investment and the shocks or changes in the exchange rate. It showed that the uncertainty of exchange rate can increase the flow of direct foreign investment to companies in the long term rather than in the short term.

4- Agnes Benassy-Quere et al (2001): Exchange-Rate Strategies in the Competition for Attracting Foreign Direct Investment"

Researchers used panel data from 42 developing countries witnessing a flow of foreign investment from 17 developed countries displayed in OECD during 1984-1996. They found that the changes and fluctuations had negative effect on the flow of direct foreign investment into these developing countries.

5- Joseph D. Alba et al (2009). The Impact of Exchange Rate on FDI and the Interdependence of FDI over Time"

The study dealt with the flow of direct foreign investment into the USA from 32 countries. The analysis was conducted using Markov two-chain model for the unbalanced industry-level panel data. The study found that the exchange rate positively and significantly affected the rate of the foreign investment flow into the USA

6- Maryam Mirfatah and Hosein Sharifi-Renania (2012): The Impact of Exchange Rate Volatility on Foreign Direct Investment in Iran

This study focused on the volatility of exchange rate on the foreign investment in Iran for the period 1980-2006. The researchers used Johansen and Juselius's co-integration and found that the volatility had a negative impact on the direct foreign investment into Iraq.

7- Silvia Dal Bianco and Nguyen Cong ToLoan (2017): "FDI Inflows, Price and Exchange Rate Volatility: New Empirical Evidence from Latin America"

It studied the flow of foreign investment from 10 countries from Latin America for the period 1990-2012. Researchers used Generalized Autoregressive Conditional Heteroscedasticity model. The researchers found that the volatility of exchange rate had a significantly negative impact on the flow of direct foreign investment for these countries. The most important recommendations were the necessity for these countries to keep the stability of the exchange rate in them.

8- Warren Moraghen and et al (2020): ""The impact of exchange rate and exchange rate volatility on Mauritius foreign direct investment: A sector-wise analysis"

The researchers studied Mauritius situation and the impact of volatility of the rate exchange on the flow of foreign investment 1990-2015 for the mid-annual by using ARDL model and they found that the volatility of exchange rate had a little impact on direct foreign investment flow in the short term and the decrease in the rupee to the dollar during several years enhanced the direct foreign investment flow.

2- The development of the exchange rate policies in Uganda.

In the beginning of the eighties, the Ugandan economy suffered from recession and had a problem in the exchange rate and a negative economic development where the average per capita decreased to 3.4% annually during 1979-1980 because the prices of the agricultural products and exchange rate were

kept stable during the seventies of the last century despite the high inflation where the instalments[1] of the foreign exchange market (800-900%) during 1979-1980 and it reached its peak at 2100% in 1981. This increase led to weakening the competitiveness of the economy (Maehle&et al : 2013,46).
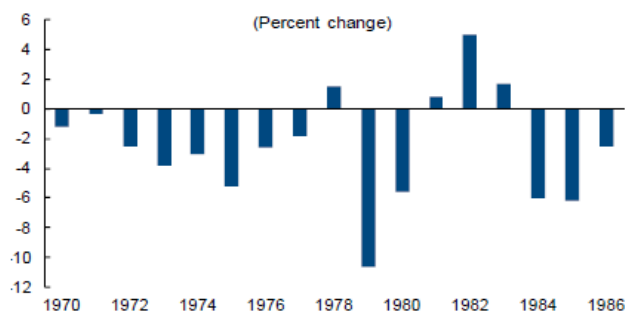

Diagram 1.

The rate of change in the GDP per capita during 1970-1986 in Uganda
Reference: Nils Maehle, Haimanot Teferra, and Armine Khachatryan (2013) Exchange Rate Liberalization in Selected Sub-Saharan African Countries: Successes**,** Failures, and Lessons , working paper 13 /32 , International Monetary Fund **.**

There was an attempt in 1980/1981 after the fall of the Ugandan president Edi Ameen in 1979 and the elections of 1980 to restore the management of the economy as a whole wisely. There was a transition a very systematic and organized economy to the market economy in the late eighties and early nineties after a decade of political instability and economic degradation. The government made reforms in the economy as whole aiming at putting the economy on a sustainable growth track with the assistance of the international funders and donors like the International Monetary Fund and the World Bank through reformation which mainly focused on market reforms and the commitment to a wise comprehensive management. One of the most significant reforms was having a floating exchange rate in 1993 as part of the broad policies aiming at removing restrictions on the market which led to liberating the interest prices, the current accounts, and capital as well as privatization of the government-owned companies.

 The black market system, that the restrictions on the [1] transactions using the official exchange rate leads to initiation of illegal market and there happens transactions * not in parallel with the official exchange rate.

(Akinbobola& et al : 2018,2) www.imf.org

The huge decrease in poverty and the continuous economic growth stem out of the reforms which made the country as one of the fastest developing countries in Africa.

Yet, Uganda has not succeeded until now in developing the exchange price systematically. According to the Bank of Uganda, the exchange rate of dollar in Uganda , like in many other countries, has witnessed many pressures in the previous years because the dollar itself has enhanced its place in relation to the global demands in the markets. For example, it has increased by 13% in relation to Euro since 2015. Second, the demand on dollar has increased in Uganda strongly and mainly in the companies sector to finance the imports and paying the profits of foreign shareholders after the improvement of companies profits in 2015. The following diagram shows the direction of estimation and consumption of exchange rate in Uganda from 2004 to 2015.
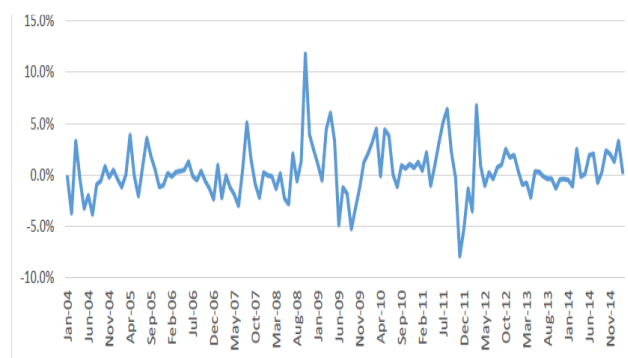

Diagram 2

The rate of consumption/ UGX estimation in American Dollar- January 2004 to February 2015
Source : Atany James Lopwonya(2017) Real Exchange Rate and its Impact on Uganda's Economic Growth (1999-2015),MAKERERE of UNIVERSITY, http://makir.mak.ac.ug/bitstream/handle/10570/7043/ Atany-cobams-maepm.pdf?sequence=1&isAllowed=y

Diagram 2 above shows that we clearly that the exchange rate in Uganda was stable between January 2004 and August 2008 when it reached a peak in 10% at the end of that year and the decrease in January 2009 of that year where the rate exchange was fluctuating in Uganda which recorded the second highest decrease in exchange rate to -5% and this fluctuation continued in that period until December 2010 and become stable for six months only and then became fluctuating for a second time till we see the second and third highest exchange rate with 6% in addition to the lowest exchange rate that the country witnessed ever with -8% then it became stable and

there became slow and gradual growth (Lopwonya, 2017, 3-4).

The development of direct foreign investment in Uganda (1990-2018): many developing countries attracted and encourage direct foreign investment in attempt to develop their economies. Yet, Uganda is still exceeding many developing countries in Africa in providing incentives and creating an environment for foreign investors. Despite the failure that emerged due to the dictatorship of Aodia Ameen in 1970 to 1978, foreign investors find Uganda as a suitable place for investment. This view has been enhanced by the government efforts to attract and encourage foreign investors through several policies and thus the direct foreign investment has huge effects on the economy and mainly the Ugandan one.

3- The status of foreign investment in Uganda (1990-2018):

There was an increasing perspective to direct foreign investment in Uganda since 1990. In 2008, there was a notable increase in the direct foreign investment to 799 million American dollar. This growth continued to reach 1.67 billion American dollars in 2010 (UNCTAD, 2008). This perspective goes back to 1991 and the end of 1996 where there was an increase in jobs where the foreign companies 38% of the emerging jobs and the partnered projects between national and international companies 24% (UNCTAD, 2009). The investment board in Uganada expects 7% increase in the direct foreign investment in 2011. In 2010, all foreign companies employed 65000 person directly and this had an impact on the economy. In general, the local and foreign investments led to 149000 jobs in Uganada in 2010. The direct foreign investment represented 47% of the jobs in the country and 53% jobs were for the local companies (Riddervold, 2011). Among 60 companies taken samples from, the British companies had the highest share of investments in Uganda, followed by the Canadian, Kenyan, American, South African, and Indian ones. During 2010, 150000 persons were employed directly through the direct foreign investment (Riddervold, 2011). The Indian multinational companies continued working in Uganada despite the difficulties due to the dictatorship by Aydi Ameen. The direct foreign investment in telecommunication in Uganada witnessed rapid growth and directly employed 6000 person and indirectly affected 320000. Agriculture supported 80% of the Uganada. Foreign companies participated in investing in the agricultural sector mainly in producing flowers for exportation and oil seeds and their final processing, growing cotton and its processing, knitting, and

producing and manufacturing animal products like milk. They also participated in fruits and vegetables production. In addition, there was a participation in producing coffee, flowers, fish. The direct foreign investment focused a little on mining even though it contributed with 30% of exports in the fifties (the Uganada Bearu of Statistics, 2011). The flow of direct foreign investment was the highest flow. Most of the direct foreign investment was from developing countries, followed by developed countries. The direct foreign investment reached 1.02 billion dollar by the end of 2010 mainly focusing on cheap projects by countries like the UK, China, India, South Africa, Kenya, Denmark, etc. (Riddervold, 2011). The region reached its peak in direct foreign investment in 2013 with 3650 million US dollars. The direct foreign investment. That investment in East African region was of high growth and increased from 3.1% in 2001 to 3.8% in 2013. The main part of that investment was in Uganda where the mean reached 87% from the total flow of direct foreign investment making the Ugandan economy the strongest. In 2007, due to privatization in the telecommunication sector (direct foreign investment flow, among the fifth adding economies, 2018), and led to an increase in the direct foreign investment flow in Uganda since 2001 with an increase in the direct foreign investment with comparison to the gross domestic production from 12.9% in 2001 to 19.4% in 2013, in comparison with direct foreign investment. There is still a space for increasing direct foreign investment flow in Africa in general, and Uganda in particular. The average of direct foreign investment compared to the GDP was 19.4% in 2013, in comparison to 33.2% on the African level. Yet, the percentage of direct foreign investment to the GDP in 2013 in Uganda and Tanzania, EAC, that attracted the majority of of direct foreign investment for the company EAC with 39.1 and 38.3% respectively, which exceeded Africa with an average 33.2%. The direct foreign investment reached 729 million dollars and this is the level that was failed to be reached in the subsequent years. The discovery of oil in the country led foreign investors because Uganda was not able to industrialize it. Companies like Tullow Oil (British) and TOTAL (French, and CNOOC (Chinese), and plan for oil processing and refining with millions of dollar and exporting these products. The East Africa region has witnessed a decrease in the direct foreign investment flow in 2014 with 11% to reach 6.8 billion dollars (the World report of Investment, 2015). The direct foreign investment in Uganda reached a high level in 2018. At the same time, there were investments with 9 billion dollars in

East Africa, which is the highest in Africa in that year while other regions witnessed a decrease in the investment. Moreover, some regions had an advantage in terms of services mainly in the North and South Africa regions. As some East African countries like Uganda had a relative advantage in production processes, it is expected that this region changes into an emergent production center, and a development in oil and gas fields as well as in the industries associated with this, and developing the oil fields in the country under a consortium of TOTAL. In the World Investment Report of 2016 issued by the UNCTAD, the direct foreign investment in Africa in 2015 reached 54 billion dollar and it is expected to have an increase in the flow in 2016 due to liberation procedures and privatization expected to be activated in relation to the government-owned companies. Africa has witnessed

an increase in the direct foreign investment. In 2011, the flow of investment coming to Africa was 42.7 billion dollars, and in 2012, there was an increase with 15% and in 2013, it reached 52 billion dollars and it sprang to 58 billion dollars in 2014 before it decrease to 54 billion dollars in 2015 due to the decrease of prices of main goods that led to a kind of recession in the direct foreign investment flows associated with economies based on natural resources, and thus the direct foreign investments increased between 2011 to 2015 with a growth of 21%. The report expected that in 2016, the amount of investments would exceed the quarter of flow in 2011 (UNCTAD, 2018) (see Figure 1) Figure 3

The net direct foreign investment in Uganda as a percent to the GDP for the period 1990-2018
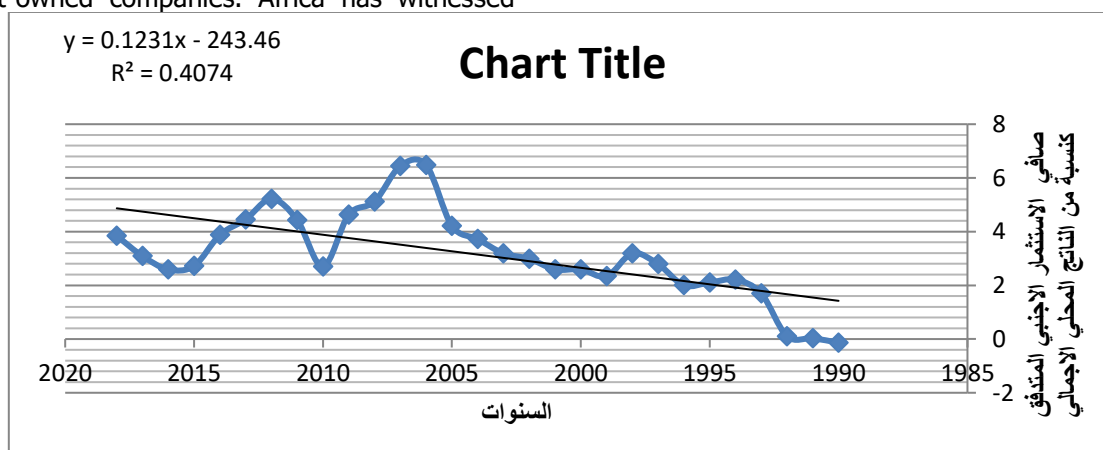
Reference: Based on the data of the World Bank

https://data.albankaldawli.org

The estimation of the effect of the real exchange rate on the direct foreign investment in Uganda

2- The measurement part of the effect of the fluctuations on the real exchange rate on the direct foreign investment.

2-1- The characteristics of the model and the controlling variables: In order to explore the effect of the fluctuations on the real exchange rate on the flows of the direct foreign investment coming to Uganda as a function for the following variables: growth in the GDP, the real exchange rate, financial development. The data were selected to test the most effective variables according to the characteristics that Uganda has and that create huge effect on its economy. The data of the direct foreign investment flow to Uganda were collected from the indicators and

indexes of the World Bank. The following is the used model in this study:

$LnY = \beta 0 + \beta 1 Ln(X1) + \beta 2 Ln(X2) + \beta 3 Ln(X3) + \mu$ ....(1)

Where

LnY= represents the natural logarithm for the net flows of the direct foreign capital as a percentage of the GDP

LnX1= represents the natural logarithm for the real actual exchange rate

LnX2= the natural logarithm of the monetary supply with a broad sense as a percentage of the GDP

LnX3= the natural logarithm of the of the growth average in GDP

μ = The error margin

The method used in the current study is based on the study of Pesaran and Shin (1997), Pesaran (1997), Pesaran, Shin, & Smith (1997). The current study will measure and analyze the effects of the total economic and financial variables in Uganda on its flows of direct foreign capital. The current study the follows this order:

ARDL model (Autoregressive distributed lag)
- A- Boundaries tests
- B- The diagnostic tests
- C- Long term estimations
- D- Short term estimation
  (Martins, 2015, 34)

Doing co-integration tests like Engle and Granger (1987) and Johansen (1988), and Johansen and Juselius (1990) require that the integrated variables are of the same degree. In this case, it is not possible to do that when having integrated variables of different degrees. That is, I(0) ,I(1), thus the autoregressive model emerged (ARDL) as the best alternative because it does not require having variables of the same integrated rank (Hawas and Zarwat, 2016, 213).

2-3- The econometric analysis findings

3-1 Unit root test: This test aims at test time chains and despite having several unit root tests, we used Dickey-Fuller augmented test shown in appendix 1 that displays the findings of this test where we note that the variable LnY as a stable variable at the level through its value (t) calculated and that was bigger than the value of (t) scheduled which means that the chain does not contain a unit root and this is shown in the case of the stable limit and the time direction. The same can be said for the variables (X1, X3) where they are stable at the basis in the case of the stable limit and the status of the stable limit and direction. The exception here is the variable (X2) which is not stable and it is shown through its value (t) calculated which was smaller than the value of (t) scheduled which means that the chain contains a unit root and this is shown in the cases of the stable limit and the stable limit and time direction. The findings of the stability varied test of the variables allow the use of ARDL model in light of what was stated by Pesaran et al (2001) with the necessity of having the highest level of stability for the variable to have balance (Pesaran and et al, 2001, 315).

3-2- The co-integration test according to bounds

Moving to the bounds test ARDL, appendix 2 shows the statistical findings (F) where the calculated value was (F) was larger from the value of upper bound for the critical values in the model and the critical values that were obtained from the tables that were suggested by Pesaran et al (2001) at the significance value 1%, 5%, and 10%. The findings of the=is model supports the rejection and refutation of the null hypothesis at the significance levels 1%, 5%, and 10%. This shows that there is a long-term balance relationship between the direct foreign investment and the real actual exchange rate and other independent variables for Uganda.

3-3- The model in the long-term

After making sure of the co-integration relationship among the selected independent variables and the direct foreign investment variable, the long-term relationship was measured in light of ARDL model. This stage included having the amounts of the parameters in the long-term and as shown in appendix 3. Some of the parameters appeared in accordance with the expected signals for the economic theory while some others appeared in contrary to what the previous studies stated; some of them were significant and some others were not.

Appendix 3 shows:

- The fluctuation of real exchange rate (LnX1) variable showed a positive sign at the significance value 5%. This effect in the long term contradicts the expectations of the economic theory which states that the relationship should be inverse. That is, any increase in the fluctuations of the real exchange rate leading to a decrease in the flow of the direct foreign investment. That is, any increase in the fluctuation in exchange rates increases the costs and the producers consider the fluctuations in the exchange rate as costs and this adds pressure on the prices to increase. Thus, the increase in the currency will lead to an increase in imports and this leads the government to put more restrictions or following a closing policy or adding more taxes which might lead foreign investors to increase investment in expectation for having such procedures in the long term.

- The variable of monetary demand (LnX2), it showed a positive effect in increasing the flow of direct foreign investment in the long term and this agrees with the logic of the economic theory that states that the increase in financial development will lead to an increase in the flow of direct foreign investment and is achieved at a higher significant statistical value.

- The variable (LnX3) that stands for the average of economic growth, it showed a positive sign in the flow of direct foreign investment in the long term. This agrees with the economic theory in that the increase in the economic growth rate will attract more direct foreign investments and there was a high significant value at the 1%.

3-4- The model in the short term:

In the short-term analysis shown in appendix 4, we note that the fluctuations of exchange rate variable (LnX1), it showed a positive relationship about the flow of the direct foreign investment in the real period (0). Yet, during the first and second period, it showed that the variable has a negative effect on the flow of direct foreign investment and this means that the increase in the fluctuations in the real exchange rate will lead to a decrease in the flow of direct foreign investment.

the variable (LnX2), standing for the money supply, shows a positive sign in relation to the flow of direct foreign investment. That is, there is an increase in the financial development leading to the flow of direct foreign investment and that the obstruction is not of a significance value in the three periods.

For the economic growth variable (LnX3), it showed a negative sign in relation to the flow of direct foreign investment in the short term in all the periods and this negative relationship reflects the economic fluctuations and this effect rapidly disappear in the long term where the relationship becomes positive again.

The parameter of correcting the error margin (CointEq/-1) equals (-0.645119) and it is statistically significant and has a negative sign and this adds the accuracy and correctness of the balance relationship in the long term and that the error correction mechanism is available in the model and it measures the parameter of error margin correction and the speed of returning to the balance situation in the long term and this speed comes to about 64.511%.

2-3- The Diagnostic tests

First- the non-homogeneity of variance test. This test is done based on Breusch-Pagan-Godfrey and the findings shown in appendix (5) and we note that the value of Prob.Chi-Square equals (0.9442) and it is larger than (0.05) and the sample does not suffer from the problem of non-homogeneity of variance according to the test of hypotheses.

Second- the serial correlation test through LM test as in appendix (6). We note that the value of Prob. Chi-Square (2) is (0.5276) and it is larger than (0.05) and thus accepts the null hypothesis that emphasizes that there is no serial correlation.

Third- Stability test

In order to make sure that the used data in the current study does not have any main changes, we needed to use one of the appropriate tests like: cumulative sum control chart (CUSUM) and cumulative sum control chart of squares (CUSUM of Squares). These two tests are considered of the most important tests in this field because they show two important things: the variance of having any internal change in the data, and the extent of stability and harmony of the parameters of the long term with those of the short term. Several studies showed that these tests are always associated with ARDL model and achieve internal stability of the estimated parameters for the correction of the error margin for the autoregressive distributed lag model where the charts of the tests for both CUSUM and CUMSUM of Square within the critical bounds at 5% and as shown in diagram (1 and 2) respectively. In light of most studies, we used CUSUM and CUSUMQ suggested by Evans, Dublin, and Brown (Adrwish and Abd Al Kadir, 2013, p. 24).

CONCLUSIONS AND RECOMMENDATIONS:

First: Conclusions:

1- The analysis showed that the variable of fluctuation in the real exchange rate has a negative effect on the flow of direct foreign investment in the short term while it has positive effect in the long term.

2- The financial development has a positive effect on the on the increase of financial flow through the development of the financial market that enables the foreign investors in managing their investments easily and enhances the investment environment in the country.

3- There was a positive effect on the economic growth in encouraging the foreign investment as that reflects on the economy and the investment environment and is appropriate for investment and that showed positive effect on the economic growth on attracting foreign investment in the short and long terms.

Second: Recommendations

1- Allowing the flexibility in determining the exchange rates as decided by the market powers and this gives real price indicators to the investments and contributes to guaranteeing stable exchange rates in the long term.

2- Increasing the degree of the financial development is one of the factors that attracts direct foreign investments to the developing countries and these countries have to work on enhancing and developing these markets that work as a medium between the savers and investors and facilitating using the local savings for the sake of investment and growth.

3- Enhancing the sustainable economic growth is the main goal for many countries around the world and this happens through providing several factors such as the infrastructures and rational governance and facilitating management procedures associated with new economic projects and removing the abnormalities of prices and enhancing human capital.

REFERENCES:

1- Ameen Hawas and Fatima Al Zahra Zarwat (2016). The imports of capitalist goods and economic growth in China: ARDL model. Journal of Economy and Applied Statistics, issue 25, vol. 1, Algeria.

2- Dahmani Mohammad Darweesh and Nasoor Abd Al Khadir (2013). Econometric study of the parameters of private investment in Algeria using the autoregressive distributed lag model. The proceedings of the International Conference 11-12 March, Universite de Setif. College of Economic Sciences.

3- UNCTAD (2008). World Investment Report. United Nations Conference on Trade and Development. Geneva, Switzerland.

4- UNCTAD (2009). World Investment Report. United Nations Conference on Trade and Development. Geneva, Switzerland.

5- UNCTAD (2018). World Investment Report. United Nations Conference on Trade and Development. Geneva, Switzerland.

6- Sindre Riddervold(2011) The Effects of Foreign Direct Investment on the Ugandan Economy: A case study of the impact of foreign direct investment in Uganda with an emphasis on employment, Thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. Faculty of Economics and Social Sciences Department of Development Studies.

7- Nils Maehle, Haimanot Teferra, and Armine Khachatryan (2013) Exchange Rate Liberalization in Selected Sub-Saharan African Countries: Successes, Failures, and Lessons , working paper 13 /32 , International Monetary Fund .

8- Atany James Lopwonya(2017) Real Exchange Rate and its Impact on Uganda's Economic Growth (1999-2015),MAKERERE of UNIVERSITY,

9- M. Hashem Pesaran, Yongcheol Shin, Richard J. Smith(2001) Bounds testing approaches to the analysis of level relationships, Journal of Applied Econometrics, Volume 16, Number 3.

10- José Filipe de Sousa Martins(2015) IMPACT OF REAL EXCHANGE RATE VOLATILITY ON FOREIGN DIRECT INVESTMENT INFLOWS IN BRAZIL, Project submitted as partial requirement for the conferral of MSc. in Finance,ISCTE Business School –Instituto Univertario de Lisboa.

11- Takao Itagaki(1981) The Theory of the Multinational Firm under Exchange Rate Uncertainty, The Canadian Journal of Economics / Revue canadienne d'Economique, Vol. 14, No. 2.

12- David O. Cushman(1988) Exchange-Rate Uncertainty and Foreign Direct Investment in the United States, Review of World Economics, Bd. 124, H. 2.

13- Goldberg, L., & Kolstad, C. (1995). Foreign direct investment, Exchange rate variability and Demand uncertainty. International Economic Review, 36(4),

14- Bénassy-Quéré, A., Fontagné, L., & LahrÈche-Révil, A. (2001). Exchange-Rate Strategies in the Competition for Attracting Foreign Direct Investment. Journal of the Japanese and International Economies, 15(2),

15- Joseph D. Alba, Donghyun Park, and Peiming Wang(2009) The Impact of Exchange Rate on FDI and the Interdependence of FDI over Time, ADB Economics Working Paper Series No. 164 , Asian Development Bank

16- Hosein Sharifi-Renania& Maryam Mirfatah(2012) The Impact of Exchange Rate Volatility on Foreign Direct Investment in Iran, Procedia Economics and Finance 1 (2012) 365 – 373.

17- Dal Bianco, S., & Nguyen, C. (2017). FDI Inflows, Price and Exchange Rate Volatility: New Empirical Evidence from Latin America, International Journal of Financial Studies, 5(1), 1-17.

18- Warren Moraghen, Boopen Seetanah, Noor Ul Haq Sookia(2020) The impact of exchange rate and exchange rate volatility on Mauritius foreign direct investment: A sector-wise analysis ,International Journal of Finance & Economics, 25 December 2020

19- **https://data.albankaldawli.org**

Appendix (1)
(Augmented Dickey-Fuller Test)   Unit Root Test

The first difference		The original level		Variables
The stable bound and its direction	The stable bound	the stable bound and its direction	The stable bound	
		-4.195801*** (0.0106)	-3.107517** (0.0344)	**Ln_Y**
		-4.233723*** (0.0098)	-5.772242*** (0.0000)	**LnX1**
-5.128930 *** (0.0010)	-4.869203 *** (0.0003)	-3.130585 (0.1140)	-1.142709 (0.6887)	**LnX2**
		-3.686544** (0.0356)	-3.380208** (0.0180)	**LnX3**

Note: Significant *, **, * significant at 10%, 5%, 1% respectively**

Appendix 2. F test for bounds

Null Hypothesis: No levels relationship F-Bounds Test

I(1)	I(0)	Signif.	Value	Test Statistic
3.2	2.37	10%	6.826657	F-statistic
3.67	2.79	5%	3	K
4.08	3.15	2.5%		
4.66	3.65	1%		

Appendix 3
Long term parameters

Prob.	t-Statistic	Std. Error	Coefficient	Variable
**0.0160	2.591741	0.337497	0.874705	LnX1
***0.0000	5.190853	0.368733	1.914036	LnX2
***0.0010	3.749486	0.532575	1.996882	LnX3
0.0012	-3.685923	3.510107	-12.93798	C

Note: Significant *, **, * significant at 10%, 5%, 1% respectively**

Appendix 4. results of the short term relationship test

Dependent Variable: D(Y)

Prob.	t-Statistic	Std. Error	Coefficient	Variable
***0.0016	3.556099	0.347148	1.234493	D(LnX1)
*0.0939	-1.744335	0.185438	-0.323467	D(LnX1(-1))
***0.0001	-4.579777	0.263511	-1.206823	D(LnX1(-2))
0.4787	0.719703	0.416975	0.300098	D(LnX2)
***0.0000	6.819415	0.107611	0.733845	D(LnX3)
***0.0000	-5.289589	0.109114	-0.577167	D(LnX3(-1))
***0.0000	-5.406290	0.113946	-0.616023	D(LnX3(-2))
***0.0000	-6.310481	0.102230	-0.645119	CointEq(-1)*

0.046769	Mean dependent var		0.851323	R-squared
0.485237	S.D. dependent var		0.814154	Adjusted R-squared
-0.098061	Akaike info criterion		0.209185	S.E. of regression
0.253832	Schwarz criterion		1.225240	Sum squared resid
0.024759	Hannan-Quinn criter.		9.765099	Log likelihood
			1.825097	Durbin-Watson stat

Note: Significant *, **, * significant at 10%, 5%, 1% respectively**

Results of the diagnostic tests

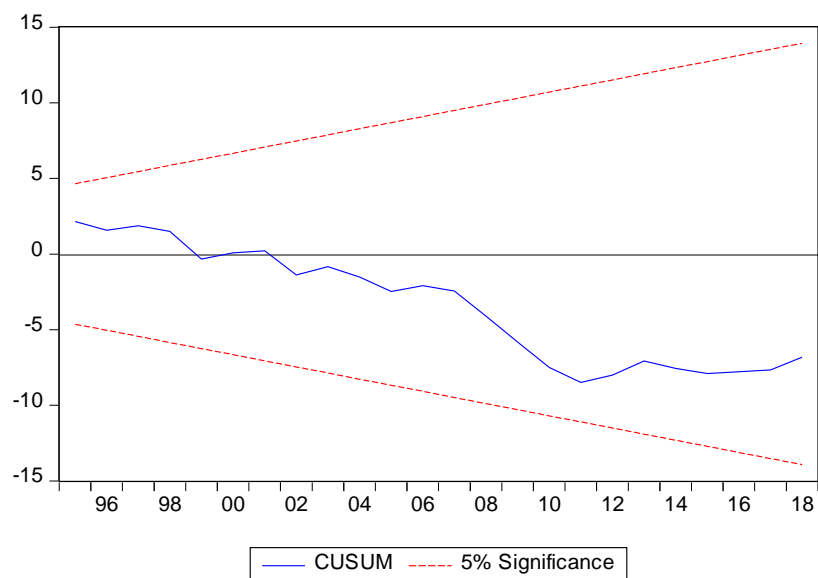**Appendix 5**

Heteroskedasticity Test : Breusch-Pagan-Godfrey

0.9708	Prob. F(11,24)	0.328861	F-statistic
0.9442	Prob. Chi-Square(11)	4.715452	Obs*R-squared
1.0000	Prob. Chi-Square(11)	0.974456	Scaled explained SS

Appendix 6

Breusch-Godfrey Serial Correlation LM Test:

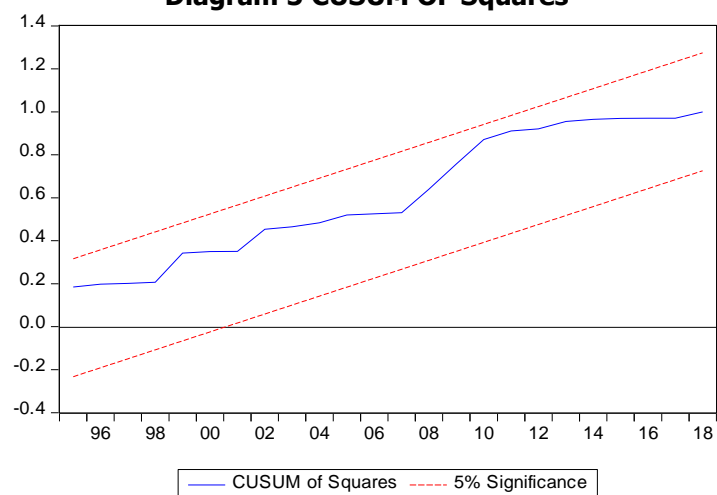|			
0.6718	Prob. F(2,22)	0.405122	F-statistic
0.5276	Prob. Chi-Square(2)	1.278759	Obs*R-squared

Diagram 4 CUSUM

Reference: Prepared by the researchers using Eviwes8

Diagram 5 CUSUM OF Squares

Reference: prepared by the researchers using Eviwes8