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FOREIGN DIRECT INVESTMENT INFLOW AND ITS DETERMINANTS IN UGANDA FROM 1996 TO 2022

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Abstract

Foreign Direct Investments (FDIs) World-wide have been determined by a number of factors which include; Market Size, Quality of Labour Force, FDIs Regulations, Fiscal Policies, Government Expenditure, Political, Social and Economic Stability of the host country among others. This study examines the relationship between FDIs as a dependent variable and its determinants (Market Size, Human Capital, Country Risk, Domestic Capital Formation and Infrastructural Development) as independent variables in Uganda. Time Series Annual data have been used for the period between 1996 and 2022. The study used the Correlation Analysis and Error Correction Model (ECM) in analyzing both short- and long-term impact of one time series on another. The outcome indicated a significantly positive connection between Market Size, Domestic Capital Formation, Human Capital and Infrastructural Development and FDIs inflows in Uganda. But the relationship between Country Risk and FDIs is negative. The study suggests the improvement in the Quality of Labour Skills, Infrastructure Development and providing a favourable investment climate that can encourage FDIs.

Keywords: Foreign Direct Investments, Market Size, Domestic Capital Formation, Country Risk, Human Capital, Infrastructural Development, Error Correction Model, and Uganda.

1.   Introduction

Several factors have been put forward to explain Uganda's increasing in-ward Foreign Direct Investments (FDIs) inflows. Some of these factors are explained in this paper, Market Size proxied by Gross Domestic Product (GDP), Domestic Human Capital, Country Risk which is sometimes called Political Risk, Domestic Capital Formation, Country's export, Openness of the economy, fiscal

incentives and Infrastructural Development among others. Various research works carried out on the casual connection between FDI inflows and its contribution to GDP include: (Owusu, 2020; Akadiri, 2019; Odhiambo, 2021; Eudelle & Shrestha, 2017; Mahembe and Odhiambo, 2016; Ekundayo Et al, 2020; Gokmen, 2021 and Sharma et al, 2020). This paper focuses on only 5 determinants of FDI which are; Market size (GDP), Human Capital (HC), Country Risk (CR), Domestic capital formation (DCF) and Infrastructural Development (INFRA).

2.   Literature Review

According to Rjoub, et al (2017), Gross Domestic Product is among the most significant determinants of FDI. Yusoff & Nuh (2015) looked at the connection between FDI and its determinants, such as country's openness to trade and GDP in Thailand from 1970 to 2008. Results proved that the analysis variables are significant determinants of FDI in Thailand. Nixha (2017) studied the impact of FDI and its determinants on growth rates of a country, results showed a direct effect on growth rates through improving the domestic capital accumulationand indirectly increasing the human capital.

From 1976 to 2014, Dutta et al. (2017) looked into the connection of FDI and its variables, including trade openness, domestic investment, human capital, and GDP in Bangladesh. The results showed that there are two types of relationships: one FDI and GDP, another between domestic investment and trade openness, and a third between FDI and domestic investment. Asiedu (2006) finds no evidence to support the theory that FDI is encouraged by greater growth rates. Human capital is a significant factor in determining foreign direct investment (FDI), according to Mujahid & uz Zafar (2012). They claim that having a cheap and plentiful labor force has a good impact on FDI into the nation. According to Alfaro et al. (2004), FDI is also significantly influenced by GDP, country risk, infrastructural development, and domestic capital formation.

3.   Methodology
3.1   Sources of Data

The data are Time series obtained in Uganda from the Database of 2023 in the World Bank, IMF and UNCTAD report for 27 years from 1996 to 2022.

3.2   Model Specification

To analyze the connection of FDI inflows and its Determinants in Uganda from 1996 to 2022; the following model is put forward:

FDI = F(GDP, HC, CR, DCF, INFRA)………………………………………………(1)

Where;

> FDI = Foreign Direct Investment, net inflows (Million US Dollars)
> GDP = Gross Domestic Product (Billion US Dollars) proxy to Market size
> HC = Human Capital (Labour force participation % of population)
> CR = Country Risk (1 - 100) 1 represents the most peaceful countries.
> DCF = Domestic Capital Formation (UG Shillings in Billions)

INFRA = Infrastructural Development (mobile phone subscribers per 100 people)

F = Functional relationship

From the equation (1) above, below is the statement of the model

$$FDI_{it} = \alpha + \beta_1 GDP_{it} + \beta_2 HC_{it} + \beta_3 DCF_{it} + \beta_4 INFRA_{it} - \beta_5 CR_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots(2)$$

Where, the signs of the parameters expected are; $\beta_0, \beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0$ and $\beta_5 < 0$.

4.   Empirical results

4.1 Descriptive Statistics

Table 1 contains the standard deviations, mean values, minimum value, maximum value, Skewness probabilities, Kurtosis probabilities, and the observations. The results reported show that all the data are positively skewed meaning that most values are concentrated on the right of the mean. Hence the data are normally distributed in this case. This only with exception of data for Country Risk (CR) which is negative, and this was expected from the study.

Table 1: Descriptive statistics of study variables

	FDI	GDP	HC	CR	DCF	INFRA
Mean	656.7	20.58519	11.96111	60.96296	11050.78	29.73704
Standard Error	80.61739	2.54322	0.594827	4.330203	1561.152	5.022188
Median	728.9	25.1	11.72	68	9467	28.63
Mode	#N/A	6	#N/A	0	#N/A	#N/A
Standard Deviation	418.9002	13.21496	3.090813	22.5004	8111.985	26.09605
Sample Variance	175477.4	174.6352	9.553126	506.2678	65804300	681.004
Kurtosis	-1.06229	-1.51036	-1.48348	4.514844	-0.85694	-1.78087
Skewness	**0.17909**	**0.195077**	**0.062626**	**-2.38998**	**0.61307**	**0.073451**
Range	1404.7	39.8	9.1	79	24233	69.65
Minimum	121.5	5.8	7.23	0	1112	0.34
Maximum	1526.2	45.6	16.33	79	25345	69.99
Sum	17730.9	555.8	322.95	1646	298371	802.9
Count	27	27	27	27	27	27

Source: Data Analyzed by the Researcher 2023

4.2 Variable Correlation Analysis

Table 2 indicates the correlation of FDI inflows with GDP, HC, CR, DCF and INFRA as independent variables. The correlation results show a positive connection among variables; GDP, HC, DCF and INFRA and FDI inflows. However, the relationship between CR and FDI is negative.

Table 2 showing variable correlation

	FDI	GDP	HC	CR	DCF	INFRA
FDI	1					
GDP	0.891227	1				
HC	0.87309	0.960069	1			

CR	-0.362688	0.279423	0.395823	1	
DCF	0.85024	0.924932	0.963258	0.352157	1
INFRA	0.881626	0.985655	0.976606	0.287869	0.934095	1

Source: Data Analyzed by the Researcher 2023

4.3: Augmented Dickey-Fuller Approach

ADF Test results in table 3-13 indicate that when variables are tested for unit root at level 1(0) and for the first difference 1(1). Variable like human capital (HC) in table 5 is statistically significant at level and other variables become statistically significant at 5 percent significant level after being tested for the first difference. This means that all variables are stationary or have no unit root therefore, the null hypothesis is rejected.

Table: 3 Augmented Dickey-Fuller Test Results

dfuller lfdi

D-F test	No. of obs =		26
Test	1% Critical	5% Critical	10%Critical
Statistic	Value	Value	Value
Z(t) -1.121	-3.743	-2.997	-2.629
MacKinnon approximate p-value for	**Z(t) = 0.7065**		

Source: Data Analyzed by the Researcher 2023

Table 4: dfuller lgdp

D-F test	No. of obs =		26
Test	1%Critical	5% Critical	10%Critical
Statistic	Value	Value	Value
Z(t) -0.244	-3.743	-2.997	-2.629
MacKinnon approximate p-value for	**Z(t) = 0.9331**		

Source: Data Analyzed by the Researcher 2023

Table 5: dfuller lhc

D-F test	No. of obs =		26
Test	1%Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t) -3.539	-3.743	-2.997	-2.629
MacKinnon approximate p-value for	**Z(t) = 0.0070**		

Source: Data Analyzed by the Researcher 2023

Table 6: dfuller lcr

D-F test	No. of obs =	23

Test	1% Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t) -1.893	-3.750	-3.000	-2.630
MacKinnon approximate p-value for	Z(t) = 0.3351		

Source: Data Analyzed by the Researcher 2023

Table 7: dfuller ldcf

D-F test	No. of obs =		26
Test	1%Critical	5% Critical	10%Critical
Statistic	Value	Value	Value
Z(t) -2.200	-3.743	-2.997	-2.629
MacKinnon approximate p-value for	**Z(t) = 0.2062**		

Source: Data Analyzed by the Researcher 2023

Table 8: . dfuller linfra

D-F test	No. of obs =		26
Test	1% Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t) -2.236	-3.743	-2.997	-2.629
MacKinnon approximate p-value for	**Z(t) = 0.1933**		

Source: Data Analyzed by the Researcher 2023

Variables are tested for the first difference 1(1) and become stationary

Table 9: dfuller d.lfdi

D-F test	No. of obs =		25
Test	1%Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t) -4.769	-3.750	-3.000	-2.630
MacKinnon approximate p-value for	**Z(t) = 0.0001**		

Source: Data Analyzed by the Researcher 2023

Table 10: dfuller d.lgdp

D-F test	No. of obs =		25
Test	1%Critical	5% Critical	10% Critical

Statistic	Value	Value	Value
Z(t) -3.570	-3.750	-3.000	-2.630
MacKinnon approximate p-value for	**Z(t) = 0.0064**		

Source: Data Analyzed by the Researcher 2023

Table 11: dfuller d.lcr

D-F test	No. of obs =		22
Test	1% Critical	5% Critical	10% Critical
Statistic	Value	Value	Value
Z(t) -3.433	-3.750	-3.000	-2.630
MacKinnon approximate p-value for	**Z(t) = 0.0099**		

Table 12: dfuller d.ldcf

D-F test	No. of obs =		25
Test	1%Critical	5% Critical	10%Critical
Statistic	Value	Value	Value
Z(t) -4.797	-3.750	-3.000	-2.630
MacKinnon approximate p-value for	**Z(t) = 0.0001**		

Source: Data Analyzed by the Researcher 2023

Table 13: dfuller d.linfra

D-F test	No. of obs =		25
Test	1%Critical	5% Critical	10%Critical
Statistic	Value	Value	Value
Z(t) -3.206	-3.750	-3.000	-2.630
MacKinnon approximate p-value for	**Z(t) = 0.0196**		

Source: Data Analyzed by the Researcher 2023

4.4: Co-integration analysis results

Table 14 shows the results of Johansen cointegration Test, it's revealed that the variables are co-integrated because the absolute test statistic Z(t) 224.5905 > 94.52 at 5 percent critical value. This means Null hypothesis is rejected. Thus, we can run the ECM. vecrank fdi gdp hc cr dcf infra, trend(constant) max Johansen tests for cointegration

Trend: constant			Number of obs =	22		
Sample: 2001 - 2022			Lags =	2		
Maximum rank	Parms	LL	eigenvalue	trace statistic	5% Critical Value	

0	42	-448.32143	.	224.5905	94.52
1	53	-409.83201	0.96977	147.6117	68.52
2	62	-375.65169	0.95528	79.2511	47.21
3	69	-345.77096	0.93389	19.4896*	29.68
4	74	-340.58948	0.37565	9.1266	15.41
5	77	-336.06801	0.33704	0.0837	3.76
6	78	-336.02616	0.00380		

Source: Data Analyzed by the Researcher 2023

4.5: Error Correction Model

The table 15 below revealed the findings of VECM where its revealed that all variables have a long-run connection. This is proved by the coefficient of Error Correction term (-.8833059) that is significant at 5 percent. This indicates its adjusting at high speed of 88 percent towards long-run equilibrium. The results also indicate that null hypothesis is rejected because variables studied (GDP, HC, CR, DCF and INFRA) determine or have a relationship with FDI which is a dependent variable.

Table 15: A table showing the results of VECM

(Vector error-correction model)							
Sample (Adjusted): 2001 – 2022					No. of obs	=	22
Log likelihood = -409.832							
Det(Sigma_ml) = 6.11e+08					HQIC	= 42.69481	
					SBIC	= 44.70406	

Equation	Parms	RMSE	R-sq	chi2	P>chi2		
D_fdi	8	172.805	0.6201	22.85171	0.0036		
D_gdp	8	1.93283	0.7540	42.90279	0.0000		
D_hc	8	.046806	0.9910	1536.588	0.0000		
D cr	8	3.80254	0.4233	10.27505	0.2462		
D dcf	8	2015.7	0.5434	16.66313	0.0338		
D infra	8	3.45389	0.6835	30.23297	0.0002		

	Coef.	Std. Error	Z	p>(z)	[95% Conf. Interval]	
_ce1|L1	-.8833059	.3901098	-2.26	0.024	-1.647907	-.1187048
LOGfdi	.349122	.2904079	1.20	0.229	-.2200671	.9183111
LOGgdp	10.50128	19.86815	-0.53	0.597	-49.44214	28.43958
LOGhc	993.8152	732.4799	1.36	0.175	-441.8191	2429.449
LOGcr	8.622097	12.22684	0.71	0.481	-15.34206	32.58625
LOGdcf	.0679946	.0555451	-1.22	0.221	-.176861	.0408717
LOGinfra	21.71651	10.35935	2.10	0.03	1.412549	42.02046
_cons	27.57885	128.6523	0.21	0.830	-224.575	279.7327

Source: Data Analysed by the Researcher 2023

5.   Summary, Conclusion and Recommendations

This study aimed at examining the factors that determine the FDI inflows in Uganda for the period between 1996 and 2022. The study assessed the variables such as GDP, Country Risky, Human Capital, Domestic capital formation and Infrastructural Development. It's revealed that all variables have statistical influence on the inflows of FDI, but the effect of Country Risk is negative. This means that the government of Uganda should provide a conducive political climate to encourage and increase FDIs in the country.

References

Akadiri A. C. Et al (2019). Is the causal relation between foreign direct investment, trade, and economic growth complement or substitute? *The case of African countries. Journal of Public Affairs.* 2019; 20(2):1–12.

Alfaro, L. et al. (2004). *FDI and economic growth:* The role of local financial markets. J. Inter. Econ., 64(1): 89-112.

Asiedu, E. (2006). FDI in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability. *The World Economy, 29*(1), 63–77.

Dutt, A. K. et al. (2017). The pattern of foreign direct investment and economic growth. *World Development, 25*(11), 1925–1936. http://dx.doi.org/10.1016/S0305-750X(97)00081-8

Ekundayo, M. R. et al (2020). Global FDI Inflow and Its Implication across Economic Income Groups. Published by the Journal of Risks and financial management.

Eudelle, P., & Shrestha, A. (2017). "Foreign Direct Investment and Economic Growth: The Cases of Singapore and Oman". *Global Policy, 8*(3), 402-405.

Gokmen O (2021) The Relationship between Foreign Direct Investment and Economic Growth: A case of Turkey. *Turkey: Canadian Center of Science and Education*. https://doi.org/10.5539/ijef.v13n7p85

Mahembe E, and Odhiambo N. (2016). Does foreign direct investment cause economic growth? *A dynamic panel data analysis for SADC countries. International Journal of Emerging Markets.* 2016; 11(3):316–32.

Mujahid, N., & uz Zafar, N. (2012). Economic Growth-Female Labour Force Participation Nexus: An Empirical Evidence for Pakistan. *The Pakistan Development Review*, *51*(4), 565-586.

Nixha A (2017). *Analizë e shkurtër e politikave-* Investimet e huaja direkte dhe eksportet: Kosova dhe Ballkani Perendimor. Prishtinë: Demokraci për Zhvillim (D4D)

Odhiambo, N. M. (2021). Foreign direct investment and economic growth in Kenya: An empirical investigation. *International Journal of Public Administration* 45: 620–31

Owusu, G. M. (2020). IFRS Adoption, Institutional Quality and Foreign Direct Investment Inflows: A Dynamic Panel Analysis. *Asian Journal of Business and Accounting*, *10*(2), 43-75.

Rjoub, H. et al (2017). Financial reforms and determinants of FDI: evidence from landlocked countries in Sub-Saharan Africa. *Economies* 5: 1.

Sharma, A. et al. (2020). An analysis of exports and growth in India: cointegration and causality evidence (1971–2001). *Review of Development Economics, 9*(2), 232-248. https://doi.org/10.1111/j.1467-9361.2005.00273.x

Yusoff, M. B. & Nuh, R. (2015). Foreign direct investment, trade openness and economic growth: Empirical evidence from Thailand. *Foreign Trade Review*, *50*(2), 73–84.