

THE CAUSALITY EFFECT BETWEEN INSTITUTIONAL FACTORS AND FOREIGN DIRECT INVESTMENT (FDI) INFLOWS IN TANZANIA

David S. M. Mfalomagoha

Institute of Finance Management Dar-Es Salaam Tanzania

mfalamagohd@yahoo.com,

Dr. Gwahula Raphael

Senior Lecturer, The Open University of Tanzania

ABSTRACT

The study examined effect of institutional factors on foreign direct investment (FDI) inflows in Tanzania between 1996 and 2015. The study used time series data for the period 1996 – 2015, data for FDI inflows was drawn from the Bank of Tanzania (BOT), available at (www.bot-tz.org) and data for institutional variables was drawn from the World Bank Worldwide Governance Indicators (www.govindicators.org). Augmented Dickey Fuller test and Phillip Perron (PP) was employed to test whether each data in series was integrated and has a unit root, thereby testing the stationarity. Johansen test of cointegration was used to evaluate long and short run relationship existing among the variables. Granger- Causality Model was used to test whether one time series variable data was useful in forecasting the behavior of another variable. The results demonstrate that regulatory (RQ), rule of law (RL), government effectiveness (GE), voice and accountability (VA) do not granger cause FDI and FDI do not granger -cause those variables. On the other hand political stability and absence of violence (PSV) and control of corruption (CC) granger- cause FDI inflows in Tanzania. The two variables demonstrated high predictive power for FDI inflows in the country. However the relationship was unidirectional. Structural break test revealed that there was a stable contribution among the variables over time as such there was positive relationship between variables. Based on this findings this study recommends that Tanzania should address any unfavorable component related with rule of law, government effectiveness among others which constraint FDI inflows in order to optimize the benefits of FDI inflows in Tanzania.

KEY WORDS: Institutional factors, Granger-Causality Effect, FDI

1. INTRODUCTION

One of the problems sub-Saharan African (SSA) countries are confronted with is low levels of investment. However there are many reasons behind this and they vary from country to country. Among the reasons is the influence of institutional factors on foreign direct investment (FDI) inflows. Poorly formulated regulations and ineffective legal systems, have progressively been forcing foreign investors to be increasingly selective as to where to invest (Fiodendji, 2016). It is agreed that there is a significant link between institutional factors and FDI inflows. Foreign investors pay a great deal of attention to the institutional frameworks of the countries in which they want to undertake investment projects (OECD, 2013).

2. LITERATURE REVIEW

2.1 Institutional Factors

Among the determinants of foreign direct investment flow (FDI) inflows include institutional factors, namely rule of law (RL), regulatory quality (RQ), government effectiveness (GE), control of corruption (CC), voice and accountability (VA),

and political stability and absence of violence(PS) (Kurul and Yalta, 2017). North (1990) define institutions as the rules in a society, the constraints that human beings impose on human interactions, or, more formally, are the humanly devised constraints that shape human interactions. Moreover institutions are imposed procedures, regulations, rules, laws, practice, traditions, values, taboos, sanctions, customs which prohibit, permit, or lead to specific type of behaviors, socially, politically, and economically. Moreover, North (1990) states that institutions are rules, constitution, laws, property rights, sanctions, taboos, customs, traditions, beliefs, attitudes, customs, values which prohibit, or permit, or lead specific type of behaviors, socially, politically, and economically. Moreover, North (1990) states that institutions are rules, constitution, laws, property rights, sanctions, taboos, customs, traditions, beliefs, attitudes, customs, values which prohibit, or permit, or lead to specific type of behavior within a society or market. They are critical for reducing or increasing transaction costs, by improving or denying accessibility to information, property rights and other resources. Institutional factors are a sort of framework of laws and regulations with the major role of reducing uncertainty by establishing a stable structure for human interaction. Institutional factors are systems of established and prevalent social rules that structure social interactions in a society (Hodgson, 2009). Many developing countries fail to attract sufficient FDI inflows due to poor quality of public services, closed trade regimes, inadequate regulatory frameworks, lack of political stability, unreliable legal system, corruption and rule of law, all of which prove to be disincentive to FDI flow (OECD, 2002; Binsaeed, 2009). This study aims to investigate the relationship between institutional factors and foreign direct investment inflows in Tanzania, using time series data and granger causality test analysis, and structural break test.

2.2 Foreign Direct Investment

Foreign Direct Investment (FDI) is a source of capital and a major catalyst for achieving economic growth and development because of its possible positive effects such as technology transfer, enhanced management skills, increased employment opportunities, and revenues to the government(Viksiz, 2013; Binsaeed, 2009; OECD, 2002; Loungani et al, 2001). Quazi (2007) and Smith (1997) pointed out that foreign direct investment (FDI) is a key factor of globalization, it stimulates productivity enhancement, and it brings about technological advancement and creates jobs. Foreign direct investment (FDI) is looked at as a factor that drives economic growth (Wang, 2009). Majority of governments from developed and developing countries agree that FDI can help them get through stagnation and even circumvent the poverty trap (Brooks et al., 2010). Foreign direct investment (FDI) is an establishment of production facilities in overseas countries representing a more direct involvement in the local economy with a longer term relationship. FDI inflows are measured as% of FDI inflows to the Gross Domestic Product (GDP) of a country.

2.3 Empirical studies

The relationship between institutional factors and FDI inflows has been explained by various studies including those of: Henisz (1998), Wei (2000), Jensen (2003), Richard and Nwankwo (2005) who argued that institutional factors particularly corruption, political restrictions and protection of property rights are among the important determinants of multinational investment and FDI inflows. On the other hand Staats and Biglaiser (2012) assert that panel data analysis showed that rule of law and judicial strength were important determinants of FDI inflows in 17 Latin American countries. Moreover, Henisz (2000), Henisz and Williamson (1999) argued that in countries where property rights are poorly protected Multi-National Companies' (MNC) investments faced expropriation risks. Kapuria-Foreman, (2007) found out that greater assurances to conform or comply with contracts agreements honor or respect for property rights were among the important determinants for attracting more FDI. Asiedu and Lien (2011),Banga (2003), Chan and Gamayel (2003), Buse (2003), Nsouli(2000), Wheeler and Mody(1992), Daude and Stein (2007) found out that inward FDI is significantly influenced by institutional factors, while Mauro (1995) stressed that corruption lowers investment inflows and consequently lowers economic growth.

Gomes-Casseres (1991) found out that intellectual property rights and political stability and absence of violence were considered crucial for guaranteeing conducive business environment in the country. Beavan et al. (2004) results found out that institutional factors were significant determinants of FDI inflows, and there was a positive relationship between institutional factors and FDI inflows, particularly the rule of law. Kersan-Skabic(2013), found out that among the institutional factors only corruption had a significant negative impact on FDI inflow. Government effectiveness, rule of law, and political stability had no significant impact on FDI inflow, though in fact they were expected to have a greater influence on FDI inflows. Maric and Kristina (2017) observed that countries with rigid regulations and high level of bureaucracy, corruption could help to remove barriers and accelerate the exercise or the process of investment in the host country. Erkekoglu and Kilicarslan (2016) a study in 91 countries between 2002-2012 and found out that an increase in government effectiveness reduced FDI inflows while a study by Daude and Stein (2004) found out and concluded that sometime unpredictable policies were a threat to FDI inflow.

Siddica and Angkur (2017) carried a study in 40 countries comprising developing and developed countries over the period of 1990-2010 employing panel econometric model and noted that rule of law had positive effect on FDI while government effectiveness had negative effect and also statistically significant. Another study by Amal et al (2010) found out that government effectiveness was found to be negatively significant, implying a negative relationship with FDI inflows in eight Latin American countries for the period of 1996 to 2008.

Buse, and Goizard (2006), found that in the most regulated economies, excessive regulations very often were restricting foreign direct investment inflow. Daude and Stein (2004) found out that multiplications of regulations very often happened to be barriers to foreign investors and it was difficult to comply with. On the other hand, Sedik and Seoudy (2012) conducted a study in 20 MENA countries in the period between 1999 and 2010; and revealed that regulatory quality seemed to have positive and significant effects on FDI inflows in MENA countries. Saidi et al (2013) investigated the relationship between institutional variables and FDI inflows in 20 developed and developing countries in the period between 1998 and 2011, the result showed that regulatory quality had positive impact on FDI inflows. Yonis, Ochi and Ghadri (2013) also found out that regulatory quality had positive and statistically significant impact on FDI inflows.

Lucke and Eichler (2016) did a study on institutional determinants of FDI in 94 countries between 1995 -2009 the result indicated that regulatory quality had positive impact on FDI inflow. Bellos and Subasat (2013) revealed that under certain circumstances regulatory quality deters FDI inflows while Mramba ;(2015) found out that regulatory quality had no significant relationship with FDI inflows in Tanzania. Similarly Hailu (2016) found that institutional factors had no statistical significant relationship with FDI inflows. OECD (2013) found that regulatory quality in Tanzania was still restrictive to foreign direct investors. Various studies including the following; Grosse and Trevino (1996), Tallman (1998), Zhao(2003) pointed out that a better rule of law attracted more FDI, implying that there was a positive relationship between rule of law and FDI inflow. Jensen (2003) found and concluded that rule of law had a positive effect on FDI. Daude and Stein (2004) also stressed that deficiency enforcement of property rights and lack of commitment on the part of the government seemed to play major role in deterring FDI flow. Asiedu (2005) found out and concluded that reliable legal system has a positive impact on FDI inflow. Busse and Hefeker (2007) found out that rule of law was a determinant of FDI inflow. Mishra and Daly (2007) concluded that, the legal system in host countries had a direct impact on FDI inflows in those countries.

Samini and Ariani (2010) studied the impact of political stability, control of corruption and rule of law, and concluded that improvement of rule of law had a positive impact on FDI inflows in MENA countries. Mengistu and Adhikary (2011) concluded that rule of law was one of the main determinants of FDI inflow in the host country. Aguiar et al., (2012) concluded that rule of law tended to attract FDI inflow. Demirtus (2013) examined the effects of institutional factors on FDI flow using data from 71 developed countries and developing countries between the years 1995 and 2002. The results of his study indicated that there was a positive relationship between rule of law and FDI inflow. Kunsch, et al., (2014), Tanzania Investment Climate Statement (2014, 2015), and Gangi, Y. (2017), found that rule of law was one of the main institutional factors which attract FDI inflow in the host country. However, on the other hand Bayar and Alakbarov (2016) findings showed that rule of law had statistical insignificant impact on attracting FDI in overall panel of emerging market economies. Another study by Bannaga et al. (2013) was carried out in 18 Arab countries in the period between 2000-2009, they found that voice and accountability significant negative impact on FDI inflow in 18 Arab countries.

Salem and Baum (2016) revealed that political stability and absence of violence (PSV) had a positive impact on FDI and is significant at 5% level; political stability and absence of violence were found to be significant determinants in attracting FDI in real estate. Another study by Jadhar (2012) found out that institutional factors had no significant impact on FDI flow in BRICS countries. Karim (2012) argued that several institutional variables, such as government stability, friendly policies, the level of corruption and bureaucracy were statistically significant in influencing the inflow of FDI in Malaysia. There are inconsistencies in findings on how institutional factors are related with FDI inflows in various countries as revealed by various studies, including those of Jadhar (2012), Hailu (2016), Asiedu and Lien (2011), Banga (2003), Chan and Gamayel (2003), Daude and Stein (2007), Senkuku,(2015), Ochi and Ghadri (2013), Amal, et al.(2010), Yimer (2017) Phung (2017), Sedik (2012), Kurul and Yalta (2017). The aim of this study is to see how institutional factors influence FDI inflows in Tanzania.

3. METHODOLOGY AND SOURCES OF DATA

3.1 Data

The study used secondary quantitative time series data for institutional variables drawn from www.govindicators.org which is the primary source of data for research on institutions and institutional factors. The World Bank Worldwide Governance Indicators are categorized in six groups each of which represents a different aspect of institutional quality in a country. The variables for this study were; Rule of Law, Regulatory Quality, Government Effectiveness and Control of Corruption, Voice and Accountability, Political Stability and absence of Violence. All of these indicators take values from the scale between -2.5 and +2.5; the larger values indicate better institutional quality. The study also used time series data for FDI inflows drawn from the Bank of Tanzania (BOT), Tanzania Investment Report TIR (2012, 2013, 2014, the data is also available at (w.w.w.bot-tz.org).

3.2 Methodology

Multiple linear regression model was employed based on the fact that it is the best model suited for testing multiple linear equation according to Gujarat (2013) and Greene (2003). Based on the nature of the data, the study employed semi-log modeling. The study instituted the natural logarithm in FDI in order to minimize the problem of outliers. The present study did not institute natural logarithm in independent variables since all the variables are in ratios; as such there is no problem of outliers.

The model is adopted to take the following specification,

$$\ln FDI = \alpha + \beta_1 CC_t + \beta_2 RL_t + \beta_3 RQ_t + \beta_4 GE_t + \beta_5 PSV_t + \beta_6 VA_t + \varepsilon_t$$

Where;

FDI=Foreign Direct Investment

CC=control of corruption

RL=Rule of law

RQ=Regulatory quality

GE=Government effectiveness

PSV=Political stability and absence of violence

VA=Voice and accountability

β =coefficient

ε =error term

α =constant

ln=natural log

3.3 Econometric Estimation Techniques

3.3.1 Unit Root Test

The study conducted the Dickey Fuller Test based on linear regression in which case the Augmented Dickey Fuller (ADF) test and Phillip- Perron (PP) test (Watson and Teelucksingh, 2002; Greene, 2003; Gujarat, 2009) to check whether each data in series is integrated and has a unit root, thereby testing the stationarity of the data. In econometrics it is suggested to test unit root in order avoid 'spurious regressions'. It is obvious that regression of non-stationary time series on another non-stationary time series gives spurious regression implying meaningless results for this reason unit root test is absolutely important. The model is expressed as follows:

$$\Delta Y_t = \alpha Y_{t-1} + \sum_{j=4}^p p_j (\Delta Y_{t-j+1}) + \varepsilon_t$$

In the contemporary econometrics the frequently employed techniques for testing unit root include DF, ADF test and PP test. According to Gujarat (2009), ADF test for unit root is the most powerful test, based on this fact this study preferred the ADF test.

3.3.2 Co integration Test

Variables are said to be co integrated if they have a long-term or equilibrium relationship between them. A test for co integration is a pre-test to avoid spurious regression situation.

The test for co integration was carried out by employing the Johansen test of co integration which is popular, reliable and has the ability to evaluate long run and short run parameters using Ordinary Least Square (OLS) estimators.

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

$$J_{max} = -T \ln(1 - \hat{\lambda}_{r+1})$$

Co integration analysis is important in any time series economic regression. A linear 'combination of one dependent variable and one or more independent variables can be either integrated of order I (1) or integrated of zero I (0)'.

When the mean of error term vary around a fixed mean (zero mean) these variables are co integrated. If the linear combination is integrated of order one then variables are said to be non-stationary as such variables are not co integrated. Co integration variables tend to move together in the long run (long run equilibrium) Gujarati 2009; Greene, 2003; Watson and Teelucksingh, 2002). As a matter of fact, model estimation and hypothesis testing employing the Ordinary Least Square (OLS) become viable only when variables involved in regression are 'integrated of order zero'. In most cases macroeconomic time series data are non-stationary meaning that they are 'integrated of order one' as such that linear combination 'violates the basic assumptions for OLS estimation.'

3.3.3 Granger Causality Test

According to Granger (1969), Granger Causality test is a statistical hypothesis test for determining whether one time series is useful in forecasting another which was first proposed in 1969. Leamer (1985) attests that Granger Causality is a way to investigate causality between two variables in a time series. According to Granger (1969), Granger Causality test, which was first proposed in 1969, is a statistical hypothesis test for determining whether one time series variable is useful in forecasting the behavior of another variable. In this study, the study employed the Granger Causality Test Model to test the causality between independent variables and the dependent variable. Before running the test, time series must be stationary before proceeding. Data should be transformed to eliminate the possibility of autocorrelation. It should also be made sure that the model does not have any unit roots, as well as these will skew the test results. The study conducted the pair wise granger causality test at level and at different lag order that is lag 2 and lag 4.

Granger Causality Test Model

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \dots + \alpha_i y_{t-i} + \beta_1 x_{t-1} + \dots + \beta_i x_{t-i} + \epsilon_t$$

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \dots + \alpha_i x_{t-i} + \beta_1 y_{t-1} + \dots + \beta_i y_{t-i} + u_t$$

3.3.4 Model Specification

Pair wise Granger Causality Model.....1

$$FDI = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 FDI_{t-2} + \beta_1 CC_{t-1} + \beta_2 CC_{t-2} + \epsilon_t$$

$$CC = \alpha_0 + \alpha_1 CC_{t-1} + \alpha_2 CC_{t-2} + \beta_1 FDI_{t-1} + \beta_2 FDI_{t-2} + \mu_t$$

Pair wise Granger Causality Model.....2

$$FDI = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 FDI_{t-2} + \beta_1 RL_{t-1} + \beta_2 RL_{t-2} + \epsilon_t$$

$$RL = \alpha_0 + \alpha_1 RL_{t-1} + \alpha_2 RL_{t-2} + \beta_1 FDI_{t-1} + \beta_2 FDI_{t-2} + \mu_t$$

Pair wise Granger Causality Model.....3

$$FDI = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 FDI_{t-2} + \beta_1 GE_{t-1} + \beta_2 GE_{t-2} + \epsilon_t$$

$$GE = \alpha_0 + \alpha_1 GE_{t-1} + \alpha_2 GE_{t-2} + \beta_1 FDI_{t-1} + \beta_2 FDI_{t-2} + \mu_t$$

Pair wise Granger Causality Model.....4

$$FDI = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 FDI_{t-2} + \beta_1 PS_{t-1} + \beta_2 PS_{t-2} + \epsilon_t$$

$$PSV = \alpha_0 + \alpha_1 PSV_{t-1} + \alpha_2 PSV_{t-2} + \beta_1 FDI_{t-1} + \beta_2 FDI_{t-2} + \mu_t$$

Pair wise Granger Causality Model.....5

$$FDI = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 FDI_{t-2} + \beta_1 VA_{t-1} + \beta_2 VA_{t-2} + \epsilon_t$$

$$VA = \alpha_0 + \alpha_1 VA_{t-1} + \alpha_2 VA_{t-2} + \beta_1 FDI_{t-1} + \beta_2 FDI_{t-2} + \mu_t$$

Pair wise Granger Causality Model.....6

$$FDI = \alpha_0 + \alpha_1 FDI_{t-1} + \alpha_2 FDI_{t-2} + \beta_1 RQ_{t-1} + \beta_2 RQ_{t-2} + \varepsilon_t$$

$$RQ = \alpha_0 + \alpha_1 RQ_{t-1} + \alpha_2 RQ_{t-2} + \beta_1 FDI_{t-1} + \beta_2 FDI_{t-2} + \mu_t$$

Where FDI is the dependent variable denoted by Y_t and the independent variables denoted by X_t and include, Rule of law (**RL**), Government effectiveness (**GE**), Regulatory Quality (**RQ**), Control of Corruption (**CC**), Political stability and non- violence (**PS**), Voice and accountability (**VA**), t is time series, α is the constant, β_1 is coefficient of Y_t (FDI) and X_t which includes CC, RL, RQ, GE, PSV and VA. Those are the variables for which we want to explain their behavior while α is a constant term or vertical intercept which represents the value of FDI when none of the independent variables exists while ε and μ are error terms, t is time.

4. PRESENTATION OF FINDINGS AND DISCUSSION

4.1 Unit Root Test Results

After specifying the model, then the study performed the unit root tests at level for all variables under study which are government effectiveness, regulatory quality, rule of law, control of corruption, voice and accountability, and political stability and absence of violence, except these variables, FDI is in natural logarithms. After performing unit root test, the study estimated all these variables at level and in first difference to see if the variables are stationary at first difference as expected. The research performed by the Augmented Dickey-Fuller (ADF) test which is powerful than normal Dickey-Fuller (DF) testing. This study tested unit root at level and first difference both at without constant and linear trend, with constant and with constant and linear trend (See table 1).

Table 1: Unit root test results at level and at first difference

AT LEVEL				
Coefficients				
Variables	Without constant and trend	With constant	With constant and trend	Order of integration
FDI	-0.095075	-1.248943	-2.874111	$I(1)$
GE	-0.829047	-1.230101	-1.757632	$I(1)$
RQ	-0.546389	-3.341347	-3.288502	$I(1)$
RL	-0.525860	-3.774881	-5.545396	$I(1)$
CC	-0.990298	-1.566254	-1.205750	$I(1)$
VA	-2.520006	-2.076496	-1.464094	$I(1)$
PV	-1.647288	-3.257592	-3.475757	$I(1)$
FIRST DIFFERENCE				
Coefficients				
Variables	Without constant and trend	With constant	With constant and trend	Order of integration
FDI	-5.555956	-5.735503	-5.554372	$I(0)$
GE	-4.731109	-4.606481	-3.736172	$I(0)$
RQ	-4.817341	-4.689134	-4.830897	$I(0)$
RL	-3.934138	-3.833169	-3.685318	$I(0)$
CC	-4.472285	-4.399707	-4.540220	$I(0)$
VA	-5.154702	-5.946990	-6.842073	$I(0)$
PV	-4.552371	-4.395425	-6.291721	$I(0)$

Without constant and trend: Test critical values: 1%, 5% and 10%, with constant: Test critical values: 1%, 5% and 10%, with constant and trend: Test critical values: 1%, 5% and 10%. Notes: If variables are integrated of order one $I(1)$ means variables are non-stationary. If variables are integrated of order zero $I(0)$ mean variables are stationary.

Unit root test at level reveals that all variables are non-stationary and are integrated of order one $I(1)$ since the computed absolute values of tau statistics does not exceed the critical tau values. On the other hand, at first difference all variables are stationary as such are integrated of order zero $I(0)$ because the computed values of tau statistics exceeds the critical tau values. Therefore the specified model is properly formulated.

4.2 Johansen Co integration Test Results

Having established that all variables are non-stationary at level and stationary at first difference, and then the study estimated the Johansen co integration test. The empirical results reveal that variables are co integrated. The powerful test that is trace statistic confirms that there are five co integrating equations at the 0.05 critical levels whereas Max-Eigen statistic test indicates three co integrating equations at the 0.05 critical levels (See table 2).

Table 2: Johansen co integration test results

Rank Test (Trace)				Rank Test (Maximum Eigenvalue)			
Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	P-values	Hypothesized No. of CE(s)	Max-Eigen Statistic	0.05 Critical Value	P-values
None *	117.52	69.818	0.00	None*	42.783	33.876	0.00
At most 1*	74.742	47.856	0.00	At most 1*	32.246	27.584	0.01
At most 2*	42.496	29.797	0.00	At most 2*	26.328	21.131	0.00
At most 3 *	16.167	15.494	0.03	At most 3	11.253	14.264	0.14
At most 4*	4.9139	3.8414	0.02	At most 4*	4.9139	3.8414	0.02

Note: Trace test indicates there are five co integrating equations at the 0.05 critical levels whereas Max-Eigen statistic test indicates three co integrating equations at the 0.05 critical levels. *Denotes rejection of the hypothesis at the 0.05 critical level under MacKinnon-Haug-Michelis (1999) p-values.

4.3 Presentation and Discussion of Granger Causality Test Findings

The study conducted the pair wise granger causality test at level and at different lag order that is lag 2 and lag 4. The findings show the outcomes of the granger causality at lag 2 and lag 4 respectively. Pair wise Granger Causality Tests Results at Level -Lag 2, empirical analysis revealed that corruption (CC) granger-caused FDI because its p-value (0.0007) is statistically significant at 5 percent level of significance, but FDI did not granger-cause political stability and non violence (PSV), because its p-value (0.3805) is statistically insignificant at 5 percent level of significance. Thus, from these findings it is one way direction (unidirectional) of granger-causality relationship between the variables (See table 3 below).

Table 3: Pair wise Granger- Causality Test Results at Level- Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
CC does Granger Cause FDI	18	13.2076	0.0007
FDI does not Granger Cause CC	18	1.04165	0.3805

Pair wise Granger Causality test results at Level-Lag 2; the analysis revealed that political stability and non violence (PSV) granger-caused the FDI, since its p-value (0.0141) is statistically significant at 5 percent level of significance, but FDI did not granger-cause political stability and non violence (PSV) since its p-value (0.9100) is statistically insignificant at 5 percent level of significance. Thus, from these findings it is one way direction (unidirectional) of granger causality relationship between the variables, (See table 4 below).

Table 4: Pair wise Granger Causality Test Results at Level- Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
PSV does Granger cause FDI	18	6.02654	0.0141
FDI does not Granger cause PSV	18	0.09497	0.9100

Pair wise Granger Causality Test Results at short run-Lag 4, in these results; the analysis revealed that corruption (CC) granger-caused foreign direct investment (FDI) since its p-value (0.0334) is statistically significant at 5 percent level of significance. But FDI did not granger-cause corruption (CC) since its p-value (0.5604) is statistically insignificant at 5 percent level of significance. Thus, from these findings it is one way direction (unidirectional) of granger causality relationship between the two variables running from CC to FDI (See table 5 below).

Table 5: Pair wise Granger Causality Test Results at Level- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
CC does Granger Cause FDI	16	4.90649	0.0334
FDI does not Granger cause CC	16	0.80267	0.5604

Pair wise Granger-Causality Test Result at Level, Lag 4, the analysis revealed that political stability and absence of violence (PSV) granger caused foreign direct investment (FDI) since its p-value (0.0017) is statistically significant at 5 percent level of significance. On the other hand foreign direct investment (FDI) did not granger cause political stability and absence of violence (PSV) since its p-value (0.8688) is statistically insignificant at 5 percent level of significance. Thus from the findings is one way direction (unidirectional) of granger causality relationship between the two variables running from PSV to FDI (See table 6 below).

Table 6: Pair wise Granger Causality Test Results at Level –Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
PSV does Granger Cause FDI	16	14.4614	0.0017
FDI does not Granger Cause PSV	16	0.30060	0.8688

Pair wise Granger Causality Test Result at Level Lag 2, the analysis revealed that corruption (CC) granger caused foreign direct investment (FDI) since its p-value (0.0189) is statistically significant at 5 percent level of significance, while foreign direct investment (FDI) did not granger- cause corruption since its p-value (0.4237) is statistically insignificant at 5 percent level of significance.

Thus from these findings it is one way causation or unidirectional causality where one variable causes the other but not the other way round (See table 7 below).

Table 7: Pair wise Granger Causality Test results at Short run- Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
CC does Granger Cause FDI	17	5.62918	0.0189
FDI does not Granger Cause CC	17	0.92333	0.4237

Pair wise Granger Causality Test Result at short run Lag 4, the analysis revealed that corruption (CC) did not granger-cause foreign direct investment (FDI) since its p-value (0.0794) is statistically insignificant at 5 percent level of significance. On the other hand foreign direct investment (FDI) did not granger-caused corruption since its p-value (0.8268) is statistically insignificant at 5 percent level of significance (See table 8 below).

Table 8: Pair wise Granger Causality Test Results at Short run- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
CC does not Granger-Cause FDI	15	3.59797	0.0794
FDI does not Granger- Cause CC	15	0.36343	0.8268

Pair wise Granger-Causality at Short run Lag 4, the analysis revealed that political stability and absence of violence (PSV) granger-caused foreign direct investment (FDI) since its p-value (0.0208) is statistically significant at 5 percent level of significance, but foreign direct investment (FDI) did not granger cause political stability and absence of violence (PSV) since its p-value (0.5380) is statistically insignificant at 5 percent level of significance (See table 9 below). Thus from the findings is one way direction (unidirectional) of granger causality relationship between the two variables running from PSV to FDI.

Table 9: Pair wise Granger Causality Test Results at Short run- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
PSV does Granger Cause FDI	15	6.74754	0.0208
FDI does not Granger Cause PSV		0.85886	0.5380

The granger-causality test was conducted to examine the direction of causal relationship between the variables under investigation which included: corruption (CC), rule of law (RL), regulatory quality (RQ), government effectiveness (GE), political stability and absence of violence (PSV), and voice and accountability (VA). The results based on the significant probability values less than or equal to 0.05 revealed that there existed unidirectional causal relationship between control of corruption (CC) and FDI inflows, and there existed unidirectional causal relationship between political stability and absence of violence(PSV) and FDI inflows in Tanzania. However the other variables namely; rule of law (RL), regulatory quality (RQ), government effectiveness (GE), and voice and accountability (VA) did not granger-cause FDI inflow in Tanzania, FDI did not granger-cause them either, which implies that there is no causal relationship between these variables and FDI inflows in Tanzania(See tables: 10, 11, 12, 13,,14,,15,16,17,18,19,20,21,22,23,24,25,26,27,28, 29, 30) below).

Table 10: Granger Causality Test Pair wise Results at Level - Lag 2

Null Hypothesis	F-Statistic	Probability
RL does not Granger Cause FDI	0.94400	0.4142
FDI does not Granger Cause RL	0.83242	0.4569

Table 11: Pair wise Granger Causality Test Result at Level-Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
RQ does not Granger Cause FDI	18	1.73546	0.2148
FDI does not Granger Cause RQ	18	0.79040	0.4743

Table 12: Pair wise Granger Causality Test Results at Level-Lag 2

Null Hypothesis	Observations	Statistic	Probability
GE does not Granger cause FDI	18	0.41243	0.6704
FDI does not Granger Cause GE	18	0.46806	0.6364

Table 13: Pair wise Granger Causality Test Results at Level-Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
VA does not Granger cause FDI	18	1.69311	0.2221
FDI does not Granger cause VA	18	0.26384	0.7721

Table 14: Pair wise Granger Causality Test Results at Level- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
RL does not Granger cause FDI	16	0.40389	0.8007
FDI does not Granger cause RL	16	2.16968	0.1747

Table 15: Pair wise Granger Causality Test Results at Level-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
RQ does not Granger Cause FDI	16	1.74114	0.2448
FDI does not Granger Cause RQ	16	0.64373	0.6486

Table 16: Pair wise Granger Causality Test Results at Level-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
GE does not Granger Cause FDI	16	1.67682	0.2582
FDI does not Granger Cause GE	16	1.41211	0.3232

Table 17: Pair wise Granger Causality Test Results at Level- Lag 4

Null Hypothesis	Observations	Statistic	Probability
VA does not Granger Cause FDI	16	1.49093	0.3020
FDI does not Granger Cause VA	16	0.33225	0.8481

Table 18: Pair wise Granger Causality Test results at Short run-Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
RL does not Granger Cause FDI	17	0.75048	0.4931
FDI does not Granger Cause RL	17	1.18443	0.3393

Table 19: Pair wise Granger Causality Test results at Short run - Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
RQ does not Granger Cause FDI	17	0.08826	0.9161
FDI does not Granger Cause RQ	17	1.23994	0.3240

Table 20: Pair wise Granger Causality Test Results at Short run-Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
GE does not Granger-Cause FDI	17	1.16878	0.3437
FDI does not Granger-Cause GE	17	0.21512	0.8095

Table 21: Pair wise Granger Causality Test Results at Short run- Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
PSV does not Granger-Cause FDI	17	1.97683	0.1811
FDI does not Granger-Cause PV	17	0.97831	0.4040

Table 22: Pair wise Granger Causality Test Results at Short run- Lag 2

Null Hypothesis	Observations	F-Statistic	Probability
VA does not Granger-Cause FDI	17	0.35044	0.7113
FDI does not Granger – Cause VA	17	0.19402	0.8262

Table 23: Pair wise Granger Causality Test Results at Short run-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
RL does not Granger-Cause FDI	15	0.17355	0.9441
FDI does not Granger-Cause RL	15	1.21562	0.3948

Table 24: Pair wise Granger Causality Test Results at Short run- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
RQ does not Granger-Cause FDI	15	1.18894	0.4039
FDI does not Granger – Cause RQ	15	0.50221	0.7369

Table 25: Pair wise Granger Causality Test Results at Short run- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
GE does not Granger Cause FDI	15	0.53895	0.7139
FDI does not Granger Cause GE	15	0.58018	0.6887

Table 26: Pair wise Granger Causality Test Results at Short run-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
VA does not granger cause FDI	15	0.93636	0.5024
FDI does not granger cause VA		0.07546	0.9871

Table 27: Pair wise Granger Causality Test Results at Short run-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
RL does not Granger-Cause FDI	15	0.17355	0.9441
FDI does not Granger-Cause RL	15	1.21562	0.3948

Table 28: Pair wise Granger Causality Test Results at Short run-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
RQ does not Granger-Cause FDI	15	1.18894	0.4039
FDI does not Granger – Cause RQ	15	0.50221	0.7369

Table 29: Pairwise Granger Causality Test Results at Short run- Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
GE does not Granger Cause FDI	15	0.53895	0.7139
FDI does not Granger Cause GE	15	0.58018	0.6887

Table 30: Pairwise Granger Causality Test Results at Short run-Lag 4

Null Hypothesis	Observations	F-Statistic	Probability
VA does not granger cause FDI	15	0.93636	0.5024
FDI does not granger cause VA		0.07546	0.9871

4.4 Diagnostics and Stability Test Results

4.4.1 Heteroscedasticity Test results

The existence of heteroscedasticity is a problem that results from having variances of the error term that are not constant for each value of the independent variables. The study utilized the Breusch-Pagan-Godfrey test to detect heteroscedasticity error, the Observed R-squared is 4.239918 and the p value 0.6442 is higher than 5% significant level, so the null hypothesis cannot be rejected proving that there is no heteroscedasticity problem. Empirical findings are showing that there is no problem of heteroscedasticity since the computed probability chi-square values are statistically insignificant as such we cannot reject the null hypothesis of no problem of serial correlation. Therefore, the empirical results are correctly inferred (See Table 3).

Table 31: Heteroskedasticity Test: Breusch-Pagan-Godfrey Results

F-statistic	0.582896	Prob. F (6,13)	0.7382
Obs*R-squared	4.239918	Prob. Chi-Square(6)	0.6442
Scaled explained ss	1.099637	Prob. Chi-Square(6)	0.9816

SOURCE: Researcher's 2018

4.4.2 Multicollinearity Test results

Multicollinearity is a state of very high inter-associations among the independent variables. It occurs when variables are highly correlated to each other and when there is repetition of the same variable. Multicollinearity makes it difficult to gauge the effect of independent variables on dependent variables; it was tested using a variance inflation factor (VIF).

4.4.3 Variance Inflation Factor (VIF) Test Results

Similarly under VIF there is no problem of multicollinearity as shown in the table below since no any variables have VIF above 10 as rule of thumb suggested (See Table 4 below)

Table 32: VIF Test Results

	Coefficient	Uncentered	Centred
Variable	Variance	VIF	VIF
C	0.675043	98.11497	NA
GE	0.788140	30.75751	1.774542
RQ	1.604980	39.07286	1.092381
RL	0.307488	7.147619	1.641499
CC	0.361942	30.55827	2.906792
VA	0.494091	11.69063	2.843052
PS	0.169619	5.751535	1.495351

4.5 Structural Break-Stability Test Results

The stability test results revealed both the CUSUM and CUSUMQ plots lie within the 5 percent critical bounds, which implied that the parameters of the model did not suffer from any instability over the period of study and that relationship amongst the variables was stable. The straight lines in the figures below represent critical bounds at 5 percent significant level. Therefore, structural break test in this study is important for policy formulation and forecasting purposes in FDI inflows in Tanzania. This study estimated the stability of the coefficients between FDI and Regulatory quality (RQ), rule of law (RL), government effectiveness (GE), political stability and non violence (PSV), control of corruption (CC), and voice and accountability (VA). The stability test results revealed both the CUSUM and CUSUMQ plots lie within the 5 percent critical bounds, which implies that the parameters of the model do not suffer from any instability over the period of study and that relationship amongst the variables was stable. The straight lines in the figures below represent critical bounds at 5 percent significant level. Therefore, structural break test in this study is important for policy formulation and forecasting purposes in FDI inflows in Tanzania. The figures 2 and 3 show the CUSUM PLOT and CUSUM SQUARE PLOT for variable under study.

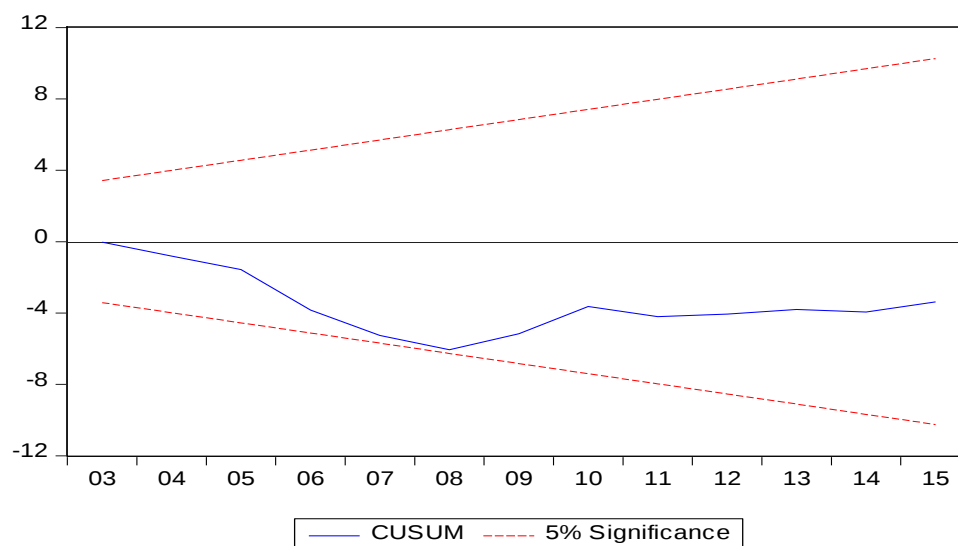


FIGURE 2: CUSUM PLOT RESULTS

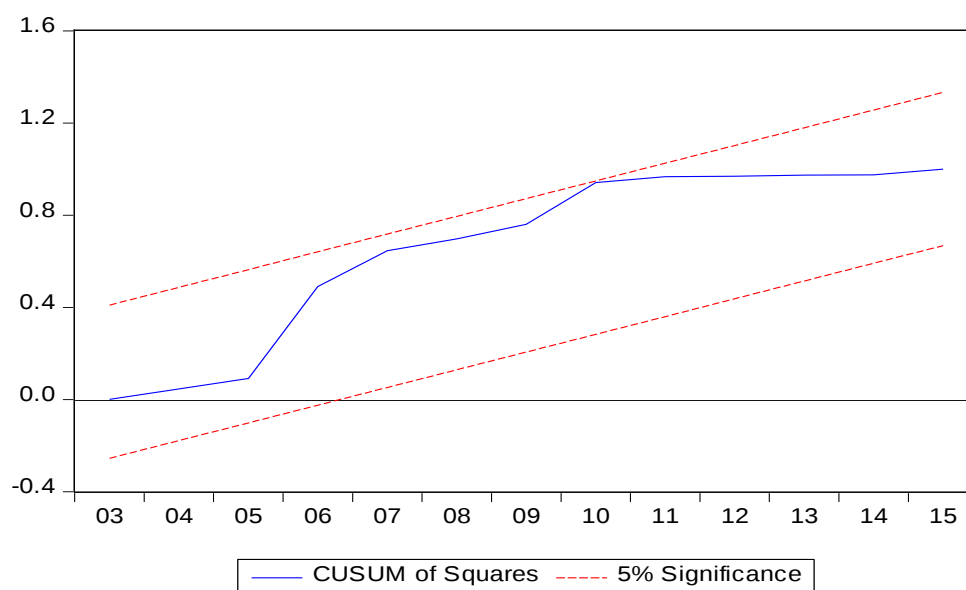


FIGURE 3: CUSUM SQUARE PLOT

5. CONCLUSION AND RECOMMENDATION

The results demonstrate that regulatory (RQ), rule of law (RL), government effectiveness (GE), voice and accountability (VA) do not granger cause FDI and FDI doesn't granger-cause those variables. On the other hand political stability and absence of violence (PSV) and control of corruption (CC) granger- cause FDI inflows in Tanzania. The two variables demonstrated high predictive for FDI inflows in the country. However the relationship was unidirectional. Structural break test revealed that there was a stable contribution among the variables over time as such there was positive relationship between variables. Based on this findings this study recommends that Tanzania should address any unfavorable component related with rule of law, government effectiveness among others which constraint FDI inflows in order to optimize the benefits of FDI inflows in Tanzania.

REFERENCE

- Ah liquist, John S. (2006), Economic policy, institutions, and capital flows: portfolio and direct investment flows in developing countries. *International studies Quarterly* 50: 681-704
- Asiedu, E. and Lien, D. (2011), Democracy, FDI and Natural Resources; *Journal of International Economics* 84, 99-111
- Anyanwu, J.C. (2012), Why Does Foreign Investment Go it goes? New, Evidence From African countries; *Annals of Economic and Finance* 13-2, (425-462)
- Banga, R. (2003), "Impact of government policies and investment agreements of FDI inflows." working paper number 116. Indian Council for research of International economic relations
- Bank of Tanzania, Tanzania Bureau of Statistics and Tanzania Investment Centre, (2013), Tanzania Investment Report 2013, Foreign Private Investment
- Basu, A. and Srinivasan, K, (2002), Foreign Direct Investment in Africa: Some case studies, working paper WP/02/61, International Monetary Fund
- Bayar, Y., Alakbarov, N. (2016) Corruption and Foreign Direct Investment Inflows in emerging Market Economies, *Ecoforum*, vol.5, Issue 2(9), 2016
- Bellos, S. and Subasat, T (2013b), Governance and Foreign Direct Investment in Latin America: A Panel Gravity Model Approach; *Latin America Journal of Economics*, 50(1), 107-131
- Bimal, S. (2017), Determinants of FDI in South Asia: Analysis of Economic, Institutional and Political factors; *Journal of South Asian studies*
- Binsaeed, F. (2009), Factors affecting Foreign Direct Investment Location in the Petrochemicals Industry, the case of Saudi Arabia

- Brooks, D.H.; Hasan, R.; Lee, J.Son, H.H.; Zhuang, J. (2010), Closing development gaps: Challenges and Policy options; ADB Economics Working paper series 209, Manila: Asian Development Bank
- Bufe, M. & Hefeker, (2007), Political risk, Institutions and FDI. *European Journal of Political Economy*.
- Buse, M. (2003), Political Risk, Institutions and FDI, *Discussion paper*
- Castro, C., Nunes, P. (2013) Does Corruption Inhibit Foreign Direct Investment? *Politica/Revista de Ciencia Politica*, vol.51, number1: 61-83
- Chaib, B. and Siham, M. (2014), The Impact of Institutional Quality in Attracting Foreign Direct Investment in Algeria; *Topics in Middle Eastern and African Economies*, vol. 16, number 2
- Chan, K.K. and E.R. Gemayel (2003), "Macroeconomic instability and the pattern of FDI in the MENA region."
- Daude, C. and Stein, E. (2004), Quality of Institutions and Foreign Direct Investment.
- Du, J., Y. Lu and Z. Tao (2008), Economic Institutions and FDI location choice
- Dunning, J.H. (2006) Comments on Dragon multinationals: New players in 21st century globalization. *Asian Pacific Journal of Management*, 23(2), 139-141
- Dupasquier, C. and Osakwe, P. (2006), Foreign Direct Investment in Africa: Performance, Challenges, and Responsibilities, *Journal of Asian Economics*, 17 (2), pp. 241-260
- Emery, J., Spence, M., Wells, L. and Buchrer, T. (2000), Administrative Barriers to Foreign Investment: *Reducing Red Tape in Africa, FIAS Occasional Paper No 14*.
- Faeth, I. (2009), Determinants of foreign direct investment-a tale of nine theoretical models, *Journal of Economic surveys*, 23 (1), 165-196
- Fedderke, J.W. and Romm, A. T. (2006), Growth Impact of Foreign Direct Investment into South Africa, 1956-2003, *Economic Modelling*, 23 (5), pp. 738-60
- Fiodendji, K. (2016), Quality of Institutions, Natural resources and Foreign Direct Investment in Sub-Sahara Africa: Dynamic Approach; *Journal of Economics and Development Studies*; June, 2016, vol.4 No 2 pp 28-55
- Hailu, Y. G., Nondo, C., Kahsein, M.S. (2016), Does Institutional Quality matter in FDI? Evidence from Sub-Saharan African countries; *African Journal of Economic and Sustainable Development*; vol. 5 pg 12-30
- Helmy, H.E. (2013), The Impact of Corruption on FDI: Is MENA an Exception? *International Review of Applied Economics*, vol.27, number4: 491-514
- Hill, C.W.L. (2000), *Global Business*; 2nd edition, McGraw- Hill, Higher Education
- Hintosova, A. B., Kobikova, Z. & Rucinsky, R. (2016), Does Quality of Business Environment Influence Foreign Direct Investment Inflows? *Central European Journal of Management*. 2016. Vol. number 1
- Ghauri, P. and Gronhaug, K. (2005), *Research Methods in Business Studies, A Practical Guide*, Prentice Hall
- Jadhav P. (2012), Determinants of FDI in BRICS Economies: Analysis of Economic, Institutional and Political factor. *Procedia-Social and Behavioral Science*, 37, 5-14.) 97-105
- Kaufmann, D.A. and Zoido, P. (1999), Aggregating Governance Indicators, World Bank Policy Research Working paper, number 2195
- Karim, Z.A. (2012), The Quality of Institutions and FDI in Malaysia; *Asia Journal of Accounting and Governance*
- Kinoshita, Y. and Compos, N. (2001), Agglomeration and the Location Determinants of FDI.
- Koen Berden, Jeffrey H. Bergstrand and Eva van Etten (2012), "Governance, Globalization, and Selection into Foreign Direct Investment", ECORYS and Erasmus University
- Kurul, Z. and Yalta, Y. (2017), Relationship between Institutional Factors and FDI Flows in Developing Countries: New Evidence from Dynamic Panel Estimation; *Economies MDPI, Open Access Journal*, vol.5 (2) pages 1-10 May 2017.
- Li, Quan, and Adam Resnick (2003), Reversal of fortunes: Democratic institutions and foreign direct investment inflows to developing countries. *International Organization* 57: 175-211
- Loungani, P. and Razim, A. (2001) How Beneficial is FDI for Developing countries; *Finance and Development Magazine*, a quarterly magazine of the IMF, June, 2001 vol.38 number 2
- Meon, P.G. and K. Sekkat (2005), "Does corruption grease or sand the wheels of growth?" *Public Choice*, 122 (1):69-97
- Morisset, J. and Neso, O. (2002), Administrative Barriers to Foreign Investment in Developing Countries; *Policy Research Working Paper*, World Bank
- Muttaieb, K.A., & Kalirajan, K. (2010). Determinants of Foreign Direct Investment in Developing Countries. A Comparative Analysis. *Margin: The Journal of Applied Economic Research*, 4(4), 369-404
- Nsouli, S.M. (2000), "Capacity building in Africa: The role of international financial institutions." *Finance and Development*, 37 (4):34-37
- OECD (2002), *FDI for Development; Maximizing benefits, Minimizing Costs*, OECD Paris

- OECD (2012); Attracting FDI for Development. Paper presented at the Global Forum on International Investment, Shanghai, China.,
- OECD (2013), Overview of progress and policy challenges in Tanzania, in OECD Investment Policy Reviews: Tanzania 2013, OECD Publishing.<http://dx.doi.org/10.1787/9789264204348-6-en>
- Phung, H. (2015), Impact of Institutional and Political Variables on Foreign Direct Investment in Developing countries. The Park Place Economist; vol.25, issue 1 article 15
- Quere, A., Coupet, M., & Mayer, T. (2007), Institutional determinants of foreign direct investment. The World Economy, 30 (5), 764-78
- Punnett, J.B. and Ricks, D.S. (1997) International Business; Blackwell business
- Pupovic, E. (2012) Corruption's Effects on Foreign Direct Investment: The case of Montenegro, Economic Re-view Journal of Economics and Business, vol.10, number 2: 13-28
- Quazi, R. M. (2007) Investment Climate and FDI: A study of selected countries in Latin America. Global Journal of Business Research, 1 (1), 1-13
- Samimi, A. J., Monfred, M. (2011), Corruption and FDI in Organization of Islamic Countries, Information Management and Business Review, vol.2:number3: 106-111
- Sedik, W.M. (2012), The Impact of Country Risk and New Institutional Economics on Foreign Direct Investment: A Panel Data Analysis for Middle East and North Africa Region; Topics in Middle Eastern and African Economies, vol. 16 number 2, 2014
- Senkuku, A.M. (2015) Factors Influencing Foreign Direct Investment inflows in Tanzania; International Journal of Business and Management, vol. 10, number 7 2015
- Smith, S. (1997) Restrictive Policy toward multinationals: Argentina and Korea. Case studies in Economic Development (2nd ed.), 178-189
- Swaleheen, M. and Stancel, D. (2007), Economic Freedom, Corruption, and Growth; Cato Journal 27, 343-358
- Vadlamanati, K., Tamazian, A. and Irala, L. (2009); Determinants of FDI and volatility in South East Asian economies; Journal of the Asia Pacific Economy, 14(3)
- Vuksiz, G. (2013), Developing Countries in Competition for FDI; *The Journal of International Trade & Economic development*, vol.22, number 3.
- Wang, Z.Q. and Swain, N.J. (1995), The determinants of FDI in transforming economics: Empirical Evidence from Hungary and China. *Review of World Economics*, 131, 359-382
- Wei, S. S. (2000). How taxing is corruption on international investors? *The Review of Economics and Statistics*, 82(4)
- Wheeler, D. and A. Mody (1992), International investment location decisions: The case of US firms, *Journal of International Economics* 33573 -76
- Worthington, I., and Briton, C., (2006), The Business Environment, 5th edition; Prentice Hall
- Yimer, A. (2017), Macroeconomic, Political, and Institutional Determinants of FDI Inflows to Ethiopia: An ARDL Approach.