

The effect of corruption, trade openness and political stability on foreign direct investment: Empirical evidence from BRIC countries



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ABSTRACT

The decision of why a corporation would start or takeover a company in a foreign country rather than entering the foreign market through international trade has been a growing research topic for the last thirty years. This research aims to investigate the impact of corruption, trade openness, and political stability on foreign direct investments (FDI) in Brazil, Russia, India and China collectively. The study carried on the BRIC countries covered the period of 2002-2016, with total observations of 60 countries-years. The dependent variable for this research is Foreign Direct Investments (FDIs) and the independent variables are Corruption, Trade Openness and Political Stability. The research has used Panel Fully Modified Ordinary Least Squares (FM-OLS) cointegrating regression model to analyse the relationships. The findings show that the independent variable (Corruption) places no significant effect on the Dependent Variable (FDIs) in the BRIC countries. While the other two Independent Variables (Trade Openness and Political Stability) place a significant effect on the Foreign Direct Investments in BRIC countries. Moreover, it was found out that the direction of the relationship for both independent variables was positive. In addition, specific Panel Unit Root tests and Cointegration test were applied to meet confirm the reliability of the FM-OLS for panel data collected. Thus, this research will help the policy makers and research community with the knowledge of new dimensions regarding the topic.

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1. Introduction

The decision of why a corporation would start or takeover a company in a foreign country rather than entering the foreign market through international trade has been a growing research topic for the last thirty years. Most of the researches have attributed the choice of Foreign Direct Investments (FDI) to factors that are firm-specific or industry-specific (Khandaker and Sharmin, 2015). However, there is an increasing trend for researches on the locational advantages of FDI towards multinational corporations (MNCs) and how they became a determinant factor for establishing a presence in the foreign market. Many researchers have found out that FDI leads to higher economic growth (Pegkas, 2015). Therefore, many countries are interested in attracting foreign investors to invest in them. Thus,

the renewed interest for the locational factors of FDI is attributed to changes made by host countries to increase FDI inflows. Since there are many dynamic factors that play a role in the attractiveness of foreign direct investments, its literature became so relevant. In addition, the level of complexity is high in achieving an answer to research questions as the factors influencing FDI vary over time. The significance of this issue has led to this problem statement.

There are many variables that are being researched that may influence foreign direct investments including corruption, trade openness, and political stability. The political issues especially in the Middle East region have given a rise in awareness of the impact of political stability on Foreign Direct Investments of a country (Touny, 2016). In addition, the predominant view of impact of corruption on FDI is negative in developed nations and second world countries which increased the importance of designing controls of corruption to boost FDI inflows (Freckleton et al., 2012). On the other hand, countries with sophisticated regulations have experienced positive relationship between

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corruption and FDI (Huang, 2016). Trade openness is the amount of imports and exports of a country in relation to size of its economy (Waugh and Ravikumar, 2016). There is a debate on whether this trade openness increases FDI inflows or FDI inflows contribute to the rise in trade. Therefore, there are no general findings because different variables affect every nation in a distinctive way.

BRIC refers to the combined four emerging economies of Brazil, Russia, India and China. As a result of cheap labour force and production costs from high tax incentives, the BRIC countries became a favourable FDI destination to many Multinational Companies (MNCs) as a growth opportunity to expand overseas. This is linked to the notion that the major exporters of finished goods and services would be India and China; on the other hand, Brazil and Russia would be the major exporters of raw materials by 2050.

2. Literature review

The relationship between corruption and FDI inflows has become an important area of research in the growth of literature. Some researchers have found out that there is a relationship between the two variables arguing that foreign investors would less likely want to pay additional costs in the form of bribes to obtain business licences because it would reduce their returns on investments (ROI) (Freckleton et al., 2012). Therefore, the argument indicates a negative impact of corruption on FDI inflows of the host country which is the predominant view. Giving bribes involves a high degree of default risk as the person accepting the bribe may not do the act agreed upon. If the promises are not received by the briber, he or she cannot enforce the bribery in the court of law as, unlike legitimate contract, bribes are not legally binding agreements (Cuervo-Cazurra, 2008). Corruption hinders both private and government investment spending and dampens foreign investments to the host country (Bayar, 2011). In addition, like most literature, it was supported that there is a significant association between corruption and FDI when estimating FDI inflow in 55 countries across four different time periods (Mudambi et al., 2013). According to Javorcik and Wei (2009), there is a significant negative impact of corruption on FDI in emerging supporting most other researchers. It was argued that corruption adversely affect Swedish multinational companies' choice of their FDI destinations indicating a significant negative relationship between corruption and FDI (Hakkal et al., 2008). In addition, this result has not changed using parametric and non-parametric analysis offering results that are in favour of the "helping-hand" role of corruption (Barassi and Zhou, 2012).

On the other hand, an increase in FDI inflows can be determined by high levels of corruption. This is possible in the scenario of a host country that has inefficient bureaucracy by accelerating the decision-making process through corruption (Drury et al.,

2006). In China, the FDI inflows have been rising from 1980-2008 although the level of corruption was rising and weakening of level of protection of property rights (Elfakhani and Mackie, 2015). However, in that period, China has had the strongest economy, highest growth in GDP, high level of education and low inflation rates. Thus, the result of the study cannot be applied to situations beyond that period of time. Also, the case of MENA is an exception as a study has empirically demonstrated that there is a positive association between corruption and FDI inflows in the region which could be explained by two main reasons (Helmy, 2013). Firstly, the economic benefits to the foreign investors could out pass the additional costs incurred because of corruption in the area. Secondly, there are other variables that play higher roles in influencing FDI inflows towards the MENA region than corruption, such that, the growth of other determinants would increase the foreign direct investments in the region even though there is a higher level of corruption.

According to Iloie (2015), corruption had no significant impact on the FDI inflows. However, those results cannot be generalized because the data collected were limited to some countries located in central and Eastern Europe and the period covered was short-term 2008-2013. Moreover, a research that discovered a direct relationship between corruption and FDI also found out that the variable has no significant impact on FDI when it has been treated as an effect of the government regulations variable (Mudambi et al., 2013).

A lot of researches have been conducted on the question of whether trade openness influences foreign direct investments. The predominant view of the studies found is that there is a significant relationship between the two variables. According to Mora and Singh (2013), the roles of trade openness on FDI differs from a country to another. They argued that trade exports have a positive significant relationship with FDI inflows in developing nations in Asia. However, in developed countries, the increase in trade imports is highly correlated with FDI based on their sample and methodologies. In addition, it was concluded that FDI inflows in India is determined by trade openness among other variables such as, GDP and exchange rate (Pattayat, 2016). Furthermore, Turkey has been opening its trade since 1980 which has caused an increase in the need for financial support. This need was met through an increase in FDIs in the long run indicating a positive relationship between trade openness and FDI (Güriş and Gözgör, 2015). According to Ghosh (2007), the relationship between the two variables remains to be significantly positive despite having controlling variables such as, institutional quality and macroeconomic volatility. Majority of the researchers concluded that countries with high trade openness are expected to have high inflows of FDI. According to Boateng et al. (2015) liberalization of trade positively affects FDI inflows in Norway as it enhances the economic climate to

attract foreign investments. The study tested a quarterly data set of various variables including trade openness on inward FDI into Norway in the 1986–2008 period using Ordinary Least Squares (OLS) method. This result was supported mainly because foreign investors would want to easily move in to the country, establish their operation with fair competition without interference from local governments (Alshammari et al., 2015). Thus, trade openness helps them achieve those needs. Goswami and Haider (2014) suggested that the trade openness, especially in terms of exports, do play a major role in bringing foreign direct investments to emerging countries. It was argued that when there is a higher opportunity to able to export products from a host country and gain competitive advantage in the international markets, multinationals enterprises will be more likely encouraged to build premises in that country meaning a positive relationship between trade openness and FDI do exist.

On other hand, few researchers have found out that FDI affects trade openness and no other way round. According to Kosekahaoglu (2006), the correlation between trade imports and FDI occur in both directions in Turkey. However, FDI inflows often influence the trade exports of the country and not the other way around. The researcher argued that FDI increases demand for intermediate products because foreign investors look for resources in the host country to utilize and export to other nations.

One of the criteria of a healthy business environment or the macroeconomics of a country is the stability of its political situation. Political stability and power distance in country are determinant factors of political risks (Shahzad and Al-Swidi, 2013; Shahzad et al., 2012). Developing countries are able to attract more FDI inflows if they more politically stable as argued by Shahzad et al. (2012). On other hand, an empirical study has shown that an increase of political instability by one unit negatively affects FDI inflows in Middle East region by 68% (Touny, 2016). Political stability allows government to maintain a low risk of dispossessing private property for public use and alter their resources to support the financial market accessing to internalization advantages through increase FDI inflows (Khandaker and Sharmin, 2015). This is because stability would improve foreign investors' confidence in bringing more capital to the host country. In addition, according to Dutta and Roy (2011), a country is less likely to increase their FDI inflows if it is politically instable in spite of having a solid financial infrastructure. The empirical results of Hakro and Ghumro (2011) have shown significant relationship between the two and direction being negative. The variable continues to be an important factor to FDI inflows in Sub-Saharan African countries among other variables such as, the availability of specific resources (Bartels et al., 2014). Comparing to other factors, political stability had the most impact on FDI inflows in most competitive Asia Pacific countries (Rashid et al., 2017). Also, a study covering OECD nations has

supported most literature as it was found out that political instability deters the foreign direct investments to the country (Goswami and Haider, 2014). Furthermore, it was found out the coefficient of institution qualities including political stability were positive in a study covering seven South Asian countries for a period of 1996-2007 indicating a positive relationship between the two variables (Azam et al., 2011).

However, a recent study using panel data of 65 countries over a period of 29 years, a total observation of 1,885, has shown a controversial empirical result on the relationship between political stability and FDI (Lucke and Eichler, 2016). It was found out that foreign investors would prefer investing in developed countries even if they had a score of political instability. It was argued that foreign investors in developed countries can hedge political risks through insurance companies such as, MIGA, the protects against acts of terrorism. Furthermore, it was recently found out that political stability had no significant impact on the FDI inflows (Stack et al., 2017). However, those results cannot be generalized because the data collected were limited to 10 Eastern European countries covering a period of 1996-2007.

3. Material and method

The panel data set consists of 15 years 2002-2016 for the four BRIC (Brazil, Russia, India, and China) countries with a total observation of 60 countries-years. Political stability will be measured using Political Stability and Absence of Violence Index by World Bank and will be shown as "POL" in the model. This index measures 'perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. The Corruption Perception Index by Transparency International is used to the measure the perceived levels of corruption in a country and will be shown as "COR" in the model. The index gives a score to each of the 180 countries with score ranging from 0 to 10. Zero means high level of corruption while a ten indicates a low level of corruption. However, from 2012 onwards, the score has been changed to a 0-100. Hence, the data needs to be revised for accurate analysis. Data on the trade openness independent variable will collected from the database of the World Bank and will be shown as "TRADE" in the model. Trade openness will be measured by the total of exports and imports of a country as percentage of its Gross Domestic Product. Finally, the measurement of FDI will be done through a percentage of country's GDP using data from the World Bank database and will be shown as "FDI" in the model.

The study covered a panel data and appropriate statistical tests were applied including unit root test, cointegration test and residual diagnostics tests, as well as Fully Modified Ordinary Least Squares (FM-OLS) model to estimate the model using the collected data.

4. Research findings

Before applying the cointegration test and Panel Fully Modified Ordinary Least Squares (FM-OLS), the panel data needs to be tested for stationary to determine whether the panel data has unit root and its order of integration. This research conducts Levin-Lin-Chu unit root test and the result is presented in [Table 1](#).

Table 1: Levin-Lin-Chu unit root test at level

Series	Prob.	Lag	Max Lag	Obs
FDI	0.2063	0	4	56
TRADE	0.1269	0	4	55
COR	0.5960	0	4	54
POL	0.0637	0	4	54

Since all variables have a unit root, one of the common ways to make them stationary is to apply the first difference. As presented in [Table 2](#), the Levin-Lin-Chu unit root test shows that the null hypothesis can only be rejected after the first order differencing I(1) for all the variables at 5% level of significance. This is evidenced by the Levin-Lin-Chu test results at the first difference where all the P-values were less than 0.05 indicating stationarity of the time series. It can be concluded that all the variables are non-stationary at level and only become stationary after first order differencing. Thus, all variables are integrated of order one I (1).

Table 2: Levin-Lin-Chu unit root test at first difference

Series	Prob.	Lag	Cross-sections	Obs
D(FDI)	0.0000	0 to 1	4	51
D(TRADE)	0.0000	0 to 1	4	51
D(COR)	0.0000	0 to 1	4	51
D(POL)	0.0000	0 to 2	4	49

The existence of long run equilibrium between the variables in the study can be determined by using the [Pedroni \(1999\)](#) Residual cointegration test. If two or more time-series variables shift together at roughly the same time indicating a stationary linear combination of the variables, then the variables are said to be cointegrated ([Pedroni, 1999](#)). The null hypothesis is of no cointegration while the alternative hypothesis is that cointegration exists. The test is used in this research to conclude whether foreign direct investments, corruption, trade openness and political stability are cointegrated.

The results in [Table 3](#) provide several [Pedroni \(1999\)](#) Residual cointegration test statistics which examines the existence of cointegration through the outcomes of 11 statistics. In this study, six of the eleven statistics reject the null hypothesis of no cointegration at the 5% significance level of 0.05. Thus, this means that the alternative hypothesis that cointegration exists is accepted. Therefore, there is long run equilibrium among the variables in this study.

[Phillips and Hansen \(1990\)](#) suggested an estimator which utilizes a semi-parametric redress to dispose of the issues caused by the long run connection between the cointegrating condition and stochastic regressors' advancements. The

subsequent Fully Modified OLS (FM-OLS) model is asymptotically bias free and has completely proficient blend ordinary asymptotic.

Table 3: Pedroni residual cointegration test

Alternative hypothesis: common AR coeffs. (within-dimension)				
	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	-0.22084	0.5874	-0.40066	0.6557
Panel rho-Statistic	0.18216	0.5723	-0.00448	0.4982
Panel PP-Statistic	-1.91498	0.0277	-2.29279	0.0109
Panel ADF-Statistic	-1.93731	0.0264	-2.29282	0.0109
Alternative hypothesis: individual AR coeffs. (between-dimension)				
	Statistic	Prob.		
Group rho-Statistic	1.00369	0.8422		
Group PP-Statistic	-1.93504	0.0265		
Group ADF-Statistic	-1.96181	0.0249		

According to [Table 4](#), the FM-OLS model shows that the Coefficient of Determinants (R squared) is 0.69, which represents that 69.17% of the Foreign Direct Investments in BRIC countries can be explained by their Corruption, Trade Openness and Political Stability. On the other hand, only 30.83% of the Foreign Direct Investments in BRIC countries can be described and addressed by other factors that have not been empirically tested in this study. The adjusted R-squared of this FM-OLS model is 0.67, which signifies that 67.87% of a variation in Foreign Direct Investments in BRIC countries can be tracked back to the independent variables of this research. Altogether, this proves that the FM-OLS model is a good fit in accordance to the general rule of thumb because the values are more than 60% ([Rawlings et al., 2001](#)).

Table 4: (FM-OLS) model results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
COR	-0.017420	0.012849	-1.355740	0.1809
TRADE	0.049769	0.014738	3.376868	0.0014
POL	0.071467	0.012914	5.533915	0.0000
R-squared	0.69166	Mean dependent var		2.71613
Adj. R-squared	0.66870	S.D. dependent var		1.09136
S.E. of regression	0.86713	Sum squared resid		39.8514
Long-run variance	1.02907			

The Standardized Co-efficient beta of Corruption is -0.02 with the p-value of 0.18, which is higher than 0.05. This implies that corruption has a negative insignificant impact on the FDIs in BRIC countries. This indicates that corruption does not influence the foreign direct investments in BRIC countries. In addition, the findings of this research ties with the results of [Iloie \(2015\)](#) and [Mudambi et al. \(2013\)](#) in terms of significance. The reason behind that is the level of corruption of the countries taken into consideration in this study could be volatile.

However, the changes in the level of corruption have no significant impact on FDIs in BRIC countries could be for many reasons. One of the reasons could be that the high combined population of the BRIC countries and the stable economic benefits provides foreign investors with the needs to trust those economies as a desired destination for their FDIs regardless of the variations in the corruption levels. Moreover, the long run coefficient of -0.02 indicates that a one unit increase in corruption will lead to a decrease of FDIs in BRIC countries by 1.74% in the long run. This negative relationship between corruption and FDI can be supported by many past literature like, [Freckleton et al. \(2012\)](#), [Barassi and Zhou \(2012\)](#), [Bayar \(2011\)](#), [Javorcik and Wei \(2009\)](#), [Cuervo-Cazurra \(2008\)](#) and [Hakkal et al. \(2008\)](#). Though, the findings of these studies were significant unlike the results of this research. On the other hand, the results of this research contradict with the findings of [Huang \(2016\)](#), [Elfakhani and Mackie \(2015\)](#), [Helmy \(2013\)](#) and [Drury et al. \(2006\)](#). The results of these studies differ from what this research has empirically found due to the fact that the subject of the research covers only BRIC countries which are dissimilar to the countries covered in those researches.

The Standardized Co-efficient beta value of trade openness is 0.05 with the p-value of 0.00, which is less than 0.05. This shows that trade openness has a positive significant effect on the FDIs in BRIC countries. The significance value indicates that trade openness is taken into consideration by foreign companies when deciding to establish their operations in BRIC countries or not. The findings illustrate that foreign investors prefer BRIC countries to have easy movement, fair competition and less interference of local government which are all attributes of trade openness. This mainly because the trade openness encourages multinationals to build premises as there is a higher opportunity to be able to export products from a host country and gain competitive advantage in the international markets. Hence, the more BRIC countries are open to trade, the more likely it would be able to attract foreign investor's capital towards their economy. This result seems to be so appropriate for the sample of BRIC countries because it is anticipated that Brazil and Russia would be the most suppliers of raw materials while India and China would be the most suppliers of manufactured goods by 2050. The findings of the study were supporting predominant view of the past literatures including those of [Pattayat \(2016\)](#), [Alshammari et al., \(2015\)](#), [Boateng et al. \(2015\)](#), [Güriş and Gözgör \(2015\)](#), [Mora and Singh \(2013\)](#) and [Ghosh \(2007\)](#). Moreover, the long run coefficient of 0.05 indicates that a one unit increase in trade openness will lead to an increase of FDIs in BRIC countries by 4.98% in the long run.

The Standardized Co-efficient beta value of political stability is 0.07 with the p-value of 0.00, which is less than 0.05. This shows that political stability has a positive significant impact on the FDIs in BRIC countries. The significance value indicates

that political stability is taken into consideration by foreign investors in BRIC countries when deciding to buy premises in those nations or not. The findings of this study illustrate that foreign investors prefer BRIC countries to be more politically stable before investing in them. This is mainly because the cost of political risks is often very high which could lead to loss of all the capital being invested. Hence, a higher political stability would more likely increase the confidence level of foreign investors to invest in BRIC countries. This is due to the fact that stability in the political situation would shift the focus of the government from selling private investments to boosting the financial market which benefits the foreign investors. In addition, the significance of political stability towards FDIs could be because foreign investors have no risk mitigations that they can use to hedge the political risks in those countries. However, this may cause some challenges to India as the political situation becomes less stable with the newly elected Bhartiya Janata Party (BJP) which is ruled by Narendra Modi, the current Prime Minister. Foreign investors may hesitate to invest in the top most foreign direct investment destination especially that the party has changed its views on investments. In addition, the standards are not effective as it should; however, the individualistic coefficient for India could not be estimated from the FM-OLS model. The findings of the study were in favour of many researches including those of [Rashid et al. \(2017\)](#), [Touny \(2016\)](#), [Khandaker and Sharmin \(2015\)](#), [Goswami and Haider \(2014\)](#), [Bartels et al. \(2014\)](#), [Shahzad et al. \(2012\)](#), [Hakro and Ghumro \(2011\)](#) and [Azam et al. \(2011\)](#).

5. Conclusion

The Fully Modified Ordinary Least Squares (FM-OLS) cointegration regression model for Panel Data has been applied to test the significance of relationship between three independent variables and the dependent variable. The independent variables included were corruption, trade openness, and political stability. The foreign direct investment was taken as the dependent variable. Results have shown that the corruption has no significant effect on the foreign direct investments of BRIC countries in the long run. This means that FDIs in BRIC countries cannot be explained by the changes in the corruption level. However, this result cannot be generalized beyond the time-period and sample chosen. Therefore, it can be concluded that there are other factors that play major roles than corruptions when explaining the foreign direct investments in BRIC countries.

The findings of the research have shown that trade openness has a positive and significant effect on FDIs in BRIC countries in the long run. This result supports majority of the past researches and extends the generalization of the impact of trade openness on foreign direct investments. The empirical result indicates that the attractiveness of FDI in BRIC countries is because of the high trades which

support the notion that foreign investors are attracted to Brazil and Russia as they are expected to be the biggest suppliers of raw materials while India and China are expected to be the biggest suppliers of manufactured goods by 2050. The second research objective which was to analyse the effect of trade openness on FDI inflows in BRIC countries is thereby met.

Political stability has a positive and significant effect on FDIs of BRIC countries in the long run. This finding is consistent with the eclectic theory and most other researches that covered the correlations between the two variables relationship. However, this may imply that India might face difficulties with maintaining their position as a top FDI destination since the political situation has recently changed. Though, the individualistic coefficient could not be estimated with FM-OLS approach. The third research objective to investigate whether BRIC countries' political stability impacts their FDIs is also met.

The scope of this research was only limited to three variables. Further studies to analyse and measure the effect of other variables on foreign direct investments are recommended since FDI is a complex research topic. Other factors that can be empirically tested include the market size, labour cost, inflation, and infrastructure to determine whether they will have a significant impact on FDIs in BRIC countries. Due to the fact that not all sectors are open to FDI, it is also recommended to conduct a comparison study on an industrial level to determine the variance in the impacts. Since the sample size was small in this research, future scholars are suggested to cover a wider range of data by studying a longer time-period using maybe different proxy variables.

Due to the findings of this research which have shown significance of trade openness and political stability. This raises questions to individual characteristics of some countries in BRIC since Russia is less open to trade and India has a new ruling party that made many changes in its policies that created chaos in its economy. How does the restrictive trade in India may influence its foreign investors in the future? Will the new policies by the new party of India lead to higher FDI inflows? All of these questions are worth of further research to find an answer.

This study can help academic researchers to realise the consistency of the impact of trade openness and political stability on foreign direct investments with the theory and results of past literature. Also, the research can be applied as a reference for further research and extend upon the findings of this research.

The empirical result has some policy implications regarding attracting higher FDI inflows. It was found that trade openness facilitates greater FDI inflow in the BRIC countries. Therefore, efforts should be made towards improvement of trade openness; governments should reduce the tariff and non-tariff barriers in place to make the BRIC countries a more attractive market for FDI. This improvement will

lead to an increase in FDI as well as trade from BRIC countries. In addition, bureaucracy and regulatory hurdles limits effective market entry therefore policy makers should consider a move to trade liberalisation through free trade agreements that include investment and trade between the BRIC countries themselves as well as with the EU, preferably a multilateral agreement.

In addition, findings also indicated that there is a positive relationship between political stability and FDI. Hence, policy makers should put efforts towards the improvement of governance. This can be achieved by improving efficiency through creating regulatory quality, creating an efficient rule of law and consequently sound political stability to attract higher inflows of FDI.

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