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# An analysis of the relationship between foreign direct investment (FDI), political risk and economic growth in South Africa

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**Abstract:** A country's political stability and trends in economic growth are important factors to attract foreign investment. Most developing countries struggle to achieve political stability and high levels of growth. Due to these issues, developing countries attract limited foreign investment. Applying the Bounds test for cointegration, an ARDL model was utilized using time series data from 1995 to 2016, this study examined the potential impact of political risk and gross domestic product (GDP) on foreign direct investment (FDI) flows to the South Africa. Findings of the study revealed that in both short and long run, political risk and economic growth affect the level of foreign direct investment. The political risk rating was found to have a higher impact on FDI flow if compared to GDP. The lower the political risk level (resulting in a highly rated index), the higher the level of FDI inflows. Using the Granger causality approach, empirical results indicated a bi-directional causal relationship between FDI and economic growth, while it was found that political risk causes changes in FDI. In other words, individually, political risk and gross domestic product cause changes in FDI. Based on the study findings, it is imperative for the South African government to reduce the level of political risk in order to increase foreign investment into the country which, in return, could assist in economic growth and welfare.

**JEL Classifications:** F43, O50

**Keywords:** ARDL model, economic growth, foreign direct investment, political risk, South Africa

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## 1. Introduction

Interesting global economic trends occurred during 2017. Firstly, global FDI has fallen by 16% 2016 to 2017. This happened while global economic growth and trade have shown significant improvements in 2017. FDI flows have moved away from developed countries in 2017 with a decline of 27% (UNCTAD, 2018). Global FDI has been affected by geopolitical risks and policy uncertainty. According to Fourie & Burger (2017), the main factors that determine capital inflows are the relative interest rates, rates of return on investment, the exchange rate, and economic and political environment expectations. It is understood that FDI can play a considerable role in the economic progress of developing countries and its popularity as a source of financing can be seen as far back as the debt crisis of the 1980's (Mallampally & Sauvart, 1999). Most developing countries do not have sufficient savings required to finance their internal investment programmes. Therefore, these countries are reliant on external sources of financing to meet their economic goals (Levine, 2005; Dupasquier & Osakwe, 2006). Developing countries are in desperate pursuit of accessing additional capital through external sources to fund development projects (Aitken & Harrison, 1999; Khan & Akbar, 2013). However, investors don't just

thoughtlessly invest in any country as there are numerous factors that influence their investment decisions (Mallampally & Suvant, 1999).

The literature on development and FDI indicates a variety of economic and non-economic factors that determine FDI flows which include market size, competitiveness in terms of costs and macro-economic factors, play an important role in indicating a country's stability to investors (Khan & Akbar, 2013). However, in today's ever-changing political environment, investors have become increasingly concerned about the political stability of the host country (Baek & Qian, 2011). According to Schoeman (2015), this investor's uncertainty was confirmed by a survey conducted by the World Bank's Multilateral Investment Agency in 2013 where findings suggested that macroeconomic and political stability of the host country remain the primary concerns for global investors.

Investors are concerned about the political environment of the host country as political instability is most likely to affect the profitability and return on their investment (Busse, & Hefeker, 2007). According to Asiedu (2002), there are three major types of political risk that discourage foreign investors. The first and most severe of these is policy regarding nationalization. The second is the risk of policy instability where the host country's FDI related policies give rise to uncertain investment environments that can affect the profitability of the investment. The third and last is related to war, terrorist activities and political violence as it can damage foreign assets and limit the productivity of the economy in the long run (Sandler & Enders, 2008). To make sense of these phenomena, it can be understood that as with any investment, most investors are primarily concerned about the return on investment.

Political instability in a country can directly impact the feasibility and sustainability of business opportunities in countries as well as the ability of that country in servicing its debts (Grindle, 2004). Political risk can be defined as the risk that the yields from investment could suffer from low institutional quality and political instability in a country (Hayakawa et al., 2011). In most cases it could be assumed that political risk would have a negative impact on FDI flows as it increases the uncertainty of the economic environment, thus reducing the incentives for foreign investors (Khan & Akbar, 2013).

However, despite the vast amounts of research conducted on the determinants of FDI, there seems to be a lack of clarity as to exactly what impact political instability has on FDI inflows and economic growth in South Africa. Increases in FDI has played an important role in South Africa's development progress since the country's reintegration into the global economy in 1994 (Jordaan, 2016). Generally, for many foreign investors, South Africa was considered an attractive investment opportunity boasting with promising prospects with its FDI flows far surpassing the rest of the continent. According to the Global Business Policy Council (2017), the country's performance was clearly reflected by its position in 2011 AT Kearney FDI confidence index. It occupied the 11<sup>th</sup> position of the top 25 most attractive investment destination in 2012. However the country dropped off the AT Kearney FDI Confidence Index in 2015, and has seen massive declines in FDI inflows ever since (Jordaan, 2016). The Investment Trends Monitor published by UNCTAD (2016), showed FDI flows into South Africa fell by 74% in 2015, with the decline being far steeper than the rest of the continent (UNCTAD, 2016). According to Xing (2016), the decline in FDI is mainly the result of political and macroeconomic uncertainties in the country and with the government considering to make changes to the country's policies and legislation uncertainty growing.

Thus, the objective of this study is to determine whether growing political risk has contributed to low investor confidence and declining FDI flows and lower levels of economic growth in South Africa. In the process of achieving this objective, the International Country Risk Guide (ICRG) political risk rating published by PSR group (2018) is utilized. The ICRG measure provides a broad range of political, economic and financial risk that shape the economic environment and cost of doing business in a host country. The rest of this paper has the following layout: a thorough review of the most relevant literature, next step variables description followed by methodology and econometric models; data analysis, results discussion and diagnostic tests. The study concludes with a concise summary of findings followed policy recommendations.

## 2. Literature review

As previously stated, it is expected that political risk could affect a host country's FDI flows and economic growth. However, there aren't many econometric studies that tested this hypothesis. This seems especially the case for Sub-Saharan Africa, whereas Khan & Akbar (2013) attribute the problem primarily to a lack of high quality time series data. Nonetheless, there have been a number of studies conducted in other regions on the determinants of FDI which included the impact of political risk on FDI flows and impact on economic growth. The literature review sets out to analyse the relationships between FDI, political risk and economic growth.

Walsh & Yu (2010) found macroeconomic factors such as market size and growth, the exchange rate, openness, the extent of clustering of firms, political stability, financial market liberalization and the quality of institutions to affect FDI flow. A study conducted by Fedderke & Romm (2006) identified policy factors that attract investment to countries. Such factors include trade openness, trade barriers, corporate tax rates, product-market regulation, labor market arrangements, FDI restrictions, trade barriers, and infrastructure, the size of the market of the host country (often measured by the GDP), distance and transport costs, factor endowments as well as economic and political stability. All of the factors directly or indirectly affects FDI flows. In a study by the IMF (2011) of 46 developing countries from 1990 to 2009, the following pull-factors for FDI inflows were listed as structural factors such as size of domestic economy: education, locality, political stability such as the institutional environment and conflicts such as labour strikes; macro-economic factors such as economic growth, inflation, export development and the exchange rate; and economic policy including trade policy, tax rates, tariffs, and capital account restrictions. Final results of this study include that political stability is one of the crucial factors for successfully attracting FDI inflows.

Wheeler & Mody (1992), on one hand, found that political risk and administrative efficiency are insignificant in determining the production location decisions of U.S. firms. On the other hand, Root & Ahmed (1979), looking at aggregate investment flows into developing economies in the late 1960s, and Schneider & Frey (1985), using a similar sample for a slightly later time period, find that political instability significantly affects FDI inflows. In a study by Khan & Akbar (2013), they analyzed the impact of political risk on FDI in 94 countries over a time span 24 years, using the pooled OLS estimation technique. The study found that most of the political indicators had a negative impact on FDI in all countries especially developing countries.

Gastanaga et al. (1998) found a positive relationship between FDI flows and institutional quality. They also found that a combination of low corruption and nationalization risk

alongside good contract enforcement, lead to better FDI flows. Their results were based on data that was gathered from 22 developing countries. Kolstad & Tondel (2002) found that FDI flows are affected by bureaucracy, internal and external conflict, law and order and government stability. They also came to the conclusion that FDI flows are affected by internal conflicts, ethnic tensions, and poor governance. However, Busse & Hefeker (2007) also found that government stability, ethnic tensions, corruption, internal and external conflict, democratic accountability of government, law and order and the quality of bureaucracy are all significant factors to keep in mind when it comes to foreign direct investment flows. Jensen (2003) found that the most important factor is political risk when it comes to the risks analysis by investors.

Sekkat & Veganzones-Varoudakis (2007) set out to determine the linkages between political risk, business climate and FDI inflows to 33 developing countries. The study identified indicators that were important for most foreign direct investors and in order to provide better supported results applied two panel data models namely; a fixed effect model and a dynamic panel model (the Arellano - Bond GMM estimator) over the period of 1996 - 2008. The study found that lower levels of political risk were correlated with higher FDI inflows and that the conditions in which business operated were an important determinant for FDI flows, indicating that a favorable business climate tends to result in an increase of FDI.

Busse & Hefeker (2007) explored the connection between political risk, institutions and FDI inflows for the period 1984-2003 using data from 83 developing countries by means of different econometric techniques like the fixed effects and GMM estimator. The results found that law and order, government stability, quality of the bureaucracy, investment profile, ethnic tensions, internal and external conflict and democratic accountability were statistically significant determinants of FDI. Further results indicate that foreign investors are highly sensitive to the local political environment with an unstable political situation having a negative impact on FDI. Javed (2016) found that secure property rights and stable institutions are of utmost importance when it comes to FDI flows. Walsh & Yu (2010) also came to the same conclusion when they investigated the impact of institutions on FDI. Hayakawa et al. (2011) used various components of both political and financial risk to determine their impact on inward FDI flows from both short and long run perspectives for 90 developing countries. The study used the Generalized Method of Moments (GMM) estimator for the period 1985-2007 and found political factors like corruption; religious tensions, government stability, and ethnic tensions are negatively related to FDI flows. In terms of the financial risk factors, only exchange rate stability was a positive and statistically significant variable in developing countries.

The focus of this study is on the situation in South Africa, which is a developing country. South Africa, after spending some time in investment doldrums, has re-entered the top 25 of the A.T. Kearney Foreign Direct Investment Confidence Index of 2017 in position 25 (Global Business Policy Council, 2017). South Africa is the only African country in the 25 index. The African continent is still receiving the lowest level of FDI inflow of all continents. The report indicates a more optimistic outlook on growth in South Africa. In terms of the report, the factors that have the highest impact on FDI flow are the macro-economic environment, risk factors such a political risk, corruption and security, foreign exchange dynamics, tax rates, domestic market size, incentives, cost of labour, and the regulatory environment. Overall political risk has a major impact on global flow of FDI. In South Africa the main factors as push factors for FDI are low growth, low commodity prices, high electricity costs in 2015 and 2016. The upswing however started in 2017

through to 2018 due to its position in Africa as a manufacturing hub. This sector has attracted new investment in for example the automobile industry. By analyzing the literature, it becomes apparent that political risk has a negatively effect on investment choices by creating risk factors. Thus this study sets out to identify if this is the case in the South African context as well. The following section of this paper is the methodology which is then followed by the results, discussion and conclusion.

### 3. Data and methodology

#### 3.1. Data source and description

This study is based on a quantitative research methodology. Quarterly time series data for the time period from 1995 to 2016 was used. The data was collected from different sources. Data for the political risk rating (PRR) was acquired from the International Country Risk Guide (ICRG) and includes 12 weighted variables covering political attributes. These include: government stability, internal and external conflict, democratic accountability, corruption and military involvement in politics (ICGR, 2016). The variable PRR used the risk rating index; the higher the country is rated, the lower is the political risk. Based on the political risk rating, this study expected a positive relationship between FDI and PPR index. The other two variables are gross domestic product (GDP) representing economic growth and the FDI. Both data sets were obtained from the South African Reserve Bank (SARB). As the study aimed to assess whether political risk in South Africa has an impact on the country's FDI inflows and economic growth, it is important to examine both the long run and short run relationships between the variables. The ARDL approach was selected and this model encompasses various advantages such as being efficient for variables that are integrated of order zero  $I(0)$ , order one  $I(1)$  or a mixture of  $I(0)$  and  $I(1)$  variables. It also provides stable results when applied on small sample data sets. Furthermore, the estimation of short-run and long run using is performed simultaneously in the ARDL model. The ARDL model or bound testing technique developed by Pesaran et al. (2001) is therefore the most suitable model in this case. The simplified representation of the ARDL model is formulated as follows:

$$FDI = f(GDP, PRR) \quad (1)$$

Where FDI is foreign direct investment, GDP is the gross domestic product and PRR is the country's political risk rating. The long-run relationship is tested using the ARDL or bound test, based on the Wald-test (F-statistic). Pesaran et al. (2001) provide two critical values for the cointegration test. Accordingly, the lower critical bound assumes all variables cointegrate at level,  $I(0)$ . The upper bound assumes that all the variables cointegrate at first difference,  $I(1)$ . When the computed F-statistic is greater than the upper bound critical value, then the null hypothesis ( $H_0$ ) is rejected suggesting that the variables cointegrate. However, if the F-statistic is below the lower bound critical value, then the  $H_0$  is not rejected meaning that there is no co-integration amongst the variables. When the computed F-statistics falls between the lower and upper bound, unless further information, the results are inconclusive (Dube & Zhou, 2013). The following model is formulated to analyse the long run relationship between FDI, GDP and PRR (all variables were transformed to natural logarithms):

$$\Delta LFDI_t = \alpha_1 + \sum_{i=1}^k \psi_i \Delta LFDI_{t-i} + \sum_{i=1}^k \delta_i \Delta LGDP_{t-i} + \sum_{i=1}^k \varphi_i \Delta LPRR_t + \gamma_1 LFDI_t + \gamma_2 LGDP_t + \gamma_3 LPRR_t + e_{1t} \quad (2)$$

Where  $\Delta LFDI_t$  denotes changes in the natural logarithm of foreign direct investment (LFDI) levels at a given time  $t$ ,  $\Delta LGDP$  denotes changes in natural logarithm of gross domestic product at given time  $t$ , and  $\Delta LPRR_t$  denotes changes in natural logarithm of political risk rating at time  $t$ . The  $\alpha_1$  indicates the constant,  $k$  is the optimum number of lags included into the study and  $e_{1t}$  represents the stochastic error terms. Symbols  $\psi_i$ ,  $\delta_i$  and  $\varphi_i$  indicate short-run changes of the model, whilst  $\gamma_1$ ,  $\gamma_2$  and  $\gamma_3$  are the long-run coefficients. Based on the Equation 2 the null hypothesis to determine was formulated as the following:

H0:  $\gamma_1 = \gamma_2 = \gamma_3 = 0$ : variables do not cointegrate in the long run.

Ha:  $\gamma_1 \neq \gamma_2 \neq \gamma_3 \neq 0$ : variables cointegrate in the long run.

In case the null hypothesis (H0) is rejected, the study proceeds to the next step which is the estimation of error correction model (ECM). The significant of the ECM lies in the fact that it allows determining the speed of adjustment towards long run equilibrium or steady state after shocks in the system. The error correction model is specified as follows:

$$\Delta LFDI_t = \alpha_2 + \sum_{i=1}^k \psi_i \Delta LFDI_{t-i} + \sum_{i=1}^k \delta_i \Delta LGDP_{t-i} + \sum_{i=1}^k \varphi_i \Delta LPRR_t + \pi ECT_{t-1} + e_{2t} \quad (3)$$

Where  $ECT_{t-1}$  is the error correction term resulting from the long run equilibrium with its estimated parameters,  $\delta$  and  $\varphi$ . The  $\pi$  is the coefficient of the error correction term that measures the speed of adjustment towards equilibrium level after a shock. In the view of Narayan & Smyth (2009), once the long run relationship and residuals are estimated, it is important to establish the error-correction on the basis of granger causality model. Nonetheless, Bahmani-Oskooee & Alse (1993) assert that the error correction should be the starting point because if series (variables) are cointegrated, then the Granger causality test is estimated.

## 4. Empirical analysis

### 4.1. Unit root

Before conducting cointegration analysis, it is important to check whether specified economic variables are stationary or non-stationary. The augmented Dickey-Fuller (ADF) test has received considerable attention in time series data with the non-stationary null hypothesis. According to Asteriou & Hall (2007), if non-stationary variables are used in econometric estimation, this may lead to spurious regression results. The Augmented Dickey-Fuller (ADF) test was used to test the order of integration of all the variables. The results of the test are presented in table 1. Based on the test statistic of the ADF it was

found that LFDI is stationary at levels,  $I(0)$  and  $I(1)$ , while LGDP and LPRR are both stationary at  $I(1)$ . The ADF test results indicate a mixture of integration orders. Based on this result, the ARDL model was selected as the most suitable approach to analyse the long and short run relationships between the variables.

TABLE 1. ADF TEST RESULTS

VARIABLES	VARIABLES AT LEVELS, $I(0)$		VARIABLES FIRST DIFFERENCE, $I(1)$		OUTCOME
	CONSTANT	CONSTANT AND TREND	CONSTANT	CONSTANT AND TREND	
LFDI	0.0002 *	0.0001*	0.0001 *	0.0005*	$I(0)$
LGDP	0.6653	0.9053	0.0004 *	0.0017 *	$I(1)$
LPRR	0.6423	0.5956	0.0003 *	0.0006 *	$I(1)$

Note: \* - indicates a p-value level of significance at 5%.

#### 4.2. Lag selection and the cointegration test

In time series, analysis the lag length plays an important role because the number of lags included in the model affects the study outcome. Therefore, it is necessary to use the optimum number of lags. In using the Akaike Information Criterion (AIC), the optimum number of lags selected for the model 2, 0, and 4. In other words, two lags were used for LFDI, zero lag for LGDP and four lags for LPRR. Table 2 displays the outcome of the ARDL Bounds test. The computed F-value of 14.1253 is greater than all critical values of the upper bound. Consequently, the null hypothesis is rejected in the favour of the alternative hypothesis. This means that a long run relationship exists between the variables.

TABLE 2. BOUND TEST RESULTS

TEST STATISTIC	VALUE	k
F-statistic	14.1253	2
CRITICAL VALUE BOUNDS		
Significance	$I(0)$ Bound	$I(1)$ Bound
10%	3.17	4.14
5%	3.79	4.85
1%	5.15	6.36

#### 4.3. Long run coefficients and interpretation

The long run relationship is expressed by long-run coefficients is indicated in equation (4). The output indicates that both independent variables, namely LGDP, and LPRR have positive effects on LFDI. It should be noted that higher political risk ratings equate to lower risk for a specific country. A high rating is, therefore, positive and also has a positive effect on FDI. A one percent increase in LGDP causes the FDI to increase by 1.31 percent. Also, a one percent increase in LPRR (improvement of political risk rating) cause

the LFDI to increase by 3.78 percent. Improved political risk rating, therefore, has an even greater impact in attracting FDI than GDP growth. This relationship between FDI, lower levels of political risk and economic growth has also been found by a number of other researchers which include Jensen (2003), Sekkat & Véganzones-Varoudakis (2007), IMF (2011), Khan & Akbar (2013), and Schoeman (2015).

$$LFDI = 45.9391 + 1.3149 * LGDP + 3.7814 * LPRR \quad (4)$$

#### 4.4. The ECM and short run relationship

The error correction term (ECT) provides the speed of the short-term adjustments and to determine the time it takes for changes in the system to return to long-run equilibrium. The short-run empirical results are indicated in Table 3. The error correction term (ECT) is negative and significant indicating a long-run causality running from the independent variables to the dependent variable and that all variables are cointegrated. This means that it will take approximately 1.08 (1/0.929) periods (quarters) for changes in the independent variables to affect FDI. Furthermore, economic growth is at 10% significance level (LGDP) and political risk is significant at a 5 percent level.

TABLE 3. ARDL ESTIMATED SHORT RUN COEFFICIENTS

VARIABLE	COEFFICIENT	STD. ERROR	T-STATISTIC	PROB.
<i>D(LFDI(-1))</i>	-0.1550	0.0963	-1.6084	0.1122
<i>D(LGDP)</i>	-1.2216	0.7172	-1.7032	0.0929**
<i>D(LPRR)</i>	-2.8614	4.3148	-0.6631	0.5094
<i>D(LPRR(-1))</i>	4.2096	6.3501	0.6629	0.5095
<i>D(LPRR(-2))</i>	33.0503	6.3256	5.2247	0.0000*
<i>D(LPRR(-3))</i>	-27.5889	4.5082	-6.1196	0.0000*
<i>CointEq(-1)</i>	-0.92909	0.14648	-6.3427	0.0000*

Note: \* - indicates significance at 5 percent and \*\* indicates significance at 10% of the p-value.

#### 4.5. Granger causality test and result

Similar to ECM, Granger causality is used to analyse the short run relationships among variables. In addition to this relationship, the Granger causality determines also the causal relationship among variables. Table 4 provides a summary of the Granger Causality results for all variables representing the short-run causal relationship between variables. The results indicate a bi-directional causality between LFDI and LGDP. While LPRR causes changes in both LFDI and LGDP, none of these two causes changes in LPRR. Additionally, a combination of LGDP and LPRR as independent variables granger causes changes in LFDI, also a combination of LFDI and LPRR causes changes in LGDP. However, a combination of LFDI and LGDP does cause changes in LPRR.

TABLE 4. GRANGER CAUSALITY TEST RESULTS

DEPENDENT VARIABLES	INDEPENDENT VARIABLES			
	LFDI	LGDP	LPRR	COMBINED VARIABLES
<i>LFDI</i>	-	0.0137*	0.0120*	0.0344*
<i>LGDP</i>	0.0355*	-	0.0128*	0.0054*
<i>LPRR</i>	0.9034	0.1510	-	0.3930

Note: \* - indicates a 5% significance level of the P-value.

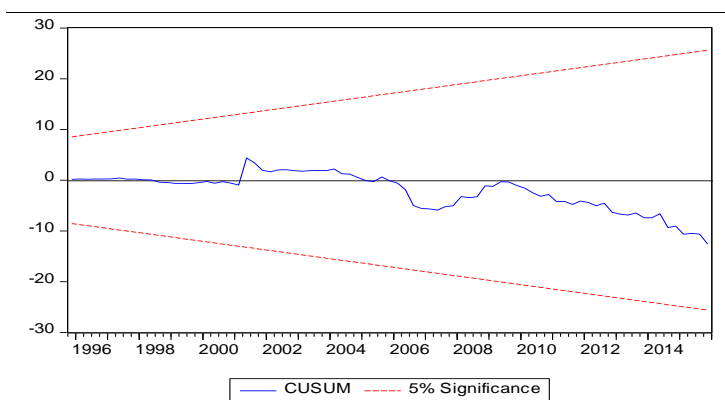
#### 4.6. Diagnostic and stability tests

Lastly, a number of diagnostic tests were performed to identify the stability and accuracy of the model. These tests included Serial Correlation, Heteroscedasticity, normality and stability test. The results displayed in Table 5 indicate the absence of autocorrelation and heteroscedasticity. However, variables were found to not be normally distributed and this makes sense in time series analysis. It is not always the case that variables are normally distributed. Despite the absence of normal distribution, the model employed in the study was found stable as it shown Figure 1.

TABLE 5. DIAGNOSTIC TESTS RESULTS

TEST	P-VALUE
Breusch-Godfrey serial correlation test	0.8157
White Heteroscedasticity test	0.2688
Ramsey RESET Test (log likelihood ratio)	0.5829
Jarque-Bera normality test	0.000

FIGURE 1. PLOT OF CUSUM MODEL STABILITY TEST



## 5. Conclusion and recommendations

The purpose of the study was to examine the effect of political risk and economic growth on foreign direct investment in South Africa from 1995 to 2016. In other words, the study analysed the responsiveness of the foreign direct investment to changes in gross domestic product and political risk ratings. Different econometric approaches such as ARDL, bound test for cointegration, Granger causality and residual tests were applied to the study. However, before the econometric analysis, the study reviewed the literature relating to relationships between variables under consideration. That literature review found overwhelming evidence that political instability, as well as gross domestic product, have significant effects on foreign investment. Correspondingly, this study found that increase in gross domestic product and political risk rating lead to a short and long run growth in the level of foreign direct investment. Additionally, the study found that, in the long run, political risk has a high impact on the FDI compared to the effect of GDP. That is to say, many investors are more concerned about the safety of their investments rather than how the South African economy grows. The effect of GDP on the FDI is, in the short run, significant at 10 percent level while the PPR is significant at 5 percent level of significance. The result from the Granger causality test suggested a bi-directional causal relationship between GDP and FDI and also revealed that GDP and political risk cause changes in FDI not vice versa. Future research will focus on the factors that influence FDI by utilizing other economic and non-economic factors, and also some comparisons between countries and regions. Regarding policy implementation and recommendations, the findings in the study suggest that, in order to attract more foreign investment, the South African government would firstly have to reduce the political risk and secondly implement strategies to improve the economic growth environment. Lastly it is important for any developing country to ensure stability regarding interest rates, exchange rates, policy and both the economic and political environments.

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