Impact of Political Instability on International Investment and Trade in Pakistan

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Abstract

This paper focuses on the effect of political instability on international investment and trade in Pakistan. The sample comprised of annual data for a period of 41 years (from 1976 to 2016). To test the long and short run relationships among the variables, ARDL model is applied and particularly Error Correction Model is used for short run analysis. To check the serial correlation in the ECM models, LM serial correlation test is applied. Cumulative sum (CUSUM) is also utilized to test the stability of the ARDL models. The unit root of all the variables is also tested and it is found that all the variables are stationary either at level or at first difference. Findings conclude that political instability badly hampers both the international investment and trade in the long-run. Moreover, in short-run, the political instability significantly hinders the foreign portfolio investment and exports. No significant impact of political instability is found on foreign direct investment and imports in the long run.

Keywords: Political Instability, International Investment, Trade, Imports

Introduction

In retrospect, the political situation of any country has always been a key factor in international business. It has been a center of attention for both researchers and practitioners in recent years. Asiedu (2000) found that political instability and corruption, to a large extent, demote FDI. A politically unstable condition simply refers a situation where country's resources are mismanaged or not used to their full potential. Alesina et al (1996) analyzed that politically unstable situations discourage investment, trade and economic growth. Abu, Karim and Aziz (2014) found the political instability is greatly contributing towards underdevelopment and corruption. Le and Zak (2001) concluded political risk to be the main factor in producing capital flight. This implies that international investment and trade highly depends on the political environment in the host country.

Lall and Narulla (2004) found foreign investment to be necessary for economic development. In this regard, Foreign Direct Investment (FDI) has a unique role of booming the economy of developing countries as it comes along with loads of capital, technology and employment opportunities. As researched by Gorg and Greenaway (2003) FDI not only brings capital formation but also comes along with best technology, practice and management. At the same time, political unrest is the main concern for foreign investors in making investment decisions. As argued by Butler and Joaquin (1998) that cash flow effect of political risk is of high interest to investors. Goswami and Haider (2014) also confirmed that failure of the Government is the underlying factor towards poor Foreign Direct Investment inflows. Lastly, Shah and Ahmed (2002) found the market strength, minimized costs associated risks and workable public contracts to be the pre-conditions for constantly boosting FDI inflows.

Developing countries like Pakistan always strive for sustainable economic growth. In this context, the policy framework for any country is crucial in determining the determinants for its

overall economic growth. Buthe and Milner (2008) confirmed International Trade agreements encourage developing countries to attract FDI that boost economic growth. Recognizing that international trade contribution towards overall development, many developing countries want to attract it. Many economists believed that trade liberalization policy and higher trade volume are strongly and positively associated with each other. As by Edwards (1992) open economies grow faster as compared to the economies possessing trade distortions. Keeping this in view, many developing countries have minimized trade barriers anticipating that the international contact can enhance the performance of local firms. Thus, the policies of a country that allow its economy to open and integrate with the world economy can have more chances to attract international trade.

With more attention towards trade openness frameworks, governments are trying to facilitate imports and exports. Still economic determinants are crucial in determining the countries that offer more rewards to investors and possess location advantage. Such scenarios highlight the need to study the effect of political situation in defining the direction of international investment and trade.

The purpose of this research is to analyze the effect of political instability on investment and foreign trade in a fluctuating economy like Pakistan. The causal association between the variables is also inspected. Moreover, Inflation, Trade volume, FDI inflows and FPI are examined.

This study's econometric results will contribute to supplement the existing literature in context of Pakistan by applying ARDL model testing approach. The research conclusion will assist Pakistan's policy makers in implementing suitable strategies regarding import, exports, FDI, FPI and a room for policy examination.

Literature Review

Several studies have been led on the issue of political instability and its resulting effect on Investment. This chapter further divides in two sections, one is the impact of political instability on investment and second impact of political instability on trade of Pakistan.

Impact of Political Instability on Investment

FDI plays a more viable role in transferring technology and contributing more towards growth as compared to domestic investment (Borensztein et al., 1998). Developing countries that have low income per capita, huge domestic markets as well as investment ratios tend to attract more FDI (Edwards, 1990). The analysis of prior literature on political instability and investment is given below.

Habib and Zurawicki (2002) investigated the relationship between corruption and Foreign Direct Investment. A sample of eighty nine countries is incorporated for the period of 1996-1998. They employed OLS regression results revealed that foreign investors avoid corruption as they do not consider it legal. Moreover, they consider corruption risky, costly and difficult to manage which ultimately results in operational inefficiencies.

Afza and Anwar (2013) explored the factors which affected foreign direct investment in Pakistan from the year 1980 to 2010 by using OLS and ARMA model. Since the study used time series data, therefore to measure the stationarity of variables, Augmented Dickey-Fuller (ADF) unit root test was applied. The results reported that electricity generation, market size, exchange rate stability, trade openness and incentives provided to investors positively influence FDI whereas war against terrorism, political instability and inflation negatively influence FDI inflows in Pakistan.

Khan and Akbar (2013) made a review on negative relationship between FDI and political instability for ninety-four countries (sub-divided as Low-Income Countries, Lower Middle-Income Countries, Upper Middle-Income Countries and High-Income Countries) over a period of 24 years i.e. from 1986-2009. The conclusion depicts that FDI was negatively affected by the many political

risk indicators for the overall world including high-income countries, but among upper middle-income countries the strongest relationship was proved.

Nasreen and Anwar (2014) examined the impact of political risk in attracting FDI inflow towards Pakistan. The data used is from 1981 to 2012. The ARDL approach was used to measure the consequences of political risk on both short-run and long-run relationship. To find the stationarity of time series variables, the Augmented Dicky Fuller (ADF) unit test was used. Lastly the constancy of ARDL model was tested by running the CUSUM and CUSUMSQ tests. The study concluded that FDI inflows are unfavorably affected by political risk index in short-run as well as long-run in Pakistan. The study further suggested in Pakistan per capita GDP and quality of infrastructure to be positively related while inflation and exchange rate are hampering negatively to FDI inflows in the country.

Rani and Batool (2016) analyzed the relationship among FDI, economic development and political instability for Pakistan and the underlying variables affecting it. The study undertaken was between the years of 1980 – 2013 to find the short run as well as long run relationship among political instability, FDI and economic development. For estimation, ARDL technique is incorporated by applying Wald Test for finding long run relationship and OLS & Error Correction Model for short run relationship between HDI and various independent variables. Time series data used consisted of the period of 33 years. The results reported negative relationship to exist between economic development and political instability but found the positive connections to be existed between FDI and economic development.

Nazeer and Masih (2017) analyzed the causal relationship among political instability, FDI and economic growth as a case of Malaysia, in particular. The study covered the period of 30 years starting from 1984 to 2013. The ARDL framework was adopted to create co-integration and thus the direction of causation among variables. By applying Variance Decompositions (VDC), GDP was found to be extreme exogenous whereas Political Instability to be extreme endogenous followed by FDI. The study also used Impulse Response (IR) based on VAR model to find the impact of shock of political instability on other variables. The findings showed political instability to be cointegrated with FDI and growth of economy.

Impact of Political Instability on Trade

International trade brings peace and stability in the country by stimulating economic development (Cukierman et al. 1992). However, Political instability disturbs smooth functioning of trade by affecting income and prices directly and investment in physical capital indirectly (Bashir et al. 2013). How far political instability is affecting trade it is normally observed through that how far imports and exports of the country are affected by the political instability.

Politically stable countries export more (Srivastava and Green, 1986). Fosu (2003) argued that political instability negatively affect expected return which results in capital flight, that ultimately disturbs the exports of the country. The imports of a politically unstable country are affected due to down surge in its economic growth and other factors including income, interest rate, domestic price level, unemployment and exchange rate (Collins, 1996); (Roubini, 1991).

Fosu (2003) found the relationship between political instability and export performance for sample of 30 sub-Saharan Africa countries from the period 1967-1986. The regression results founded by the estimation of Ordinary Least Squares (OLS) and Hausman-Wu test showed that political instability is damaging more to exports as compared to overall GDP.

Bussmann et al. (2006) examined the relationship between trade liberalization or economic openness and political instability with data from 90 developed countries from 1978-1997. The regression logistic was used for estimation. All tests conducted used white-corrected standard errors to

resolve the problem of heteroscedasticity. By using Multivariate Regression analysis, it was concluded that the more economically open countries tend to be more stable which simply means that domestic conflicts can be reduced if countries get merged with world economy. Moreover, the foreign economic liberalization does not give rise to political instability.

Oh and Reuveny (2010) analyzed the effect of disaster incidents and increasing political risk on the importing or exporting countries and the sample comprised of 116 countries from 1985 to 2013 By employing OLS estimation and Huber-White estimator, the study concluded that rise in climatic disasters or political hazards decreases bilateral trade.

Bashir et al. (2013) focused on studying the potential impact of foreign political instability on Chinese exports. The sample comprised of 121 importing countries, covering time period from 1988 to 2011. The data comprising of real GDP, population, exchange rate, Political Safety index, imports and exports was analyzed using alternative dynamic panel and dynamic system generalized method of moments (SGMM). Findings conclude that foreign political instability has negative and, real exchange rate and income have a positive impact on Chinese exports.

Khan et al. (2015) studied the impact of political Instability on Pakistan's exports using time series data from 1991- 2010. The method used is Regression analysis and ANOVA. The study concluded the negative relationship between political instability and exports.

Afolabi and Abu Bakar (2016) examined the causal link between FDI inflow, trade volume, political instability and economic growth in Nigeria from 1981-2012. The study used co-integration analysis and Multivariate Granger causality test is applied using VECM approach. A bi-directional causation was found to exist between FDI inflow and economic growth and one-way direction existed between political instability & GDP, and between FDI and trade volume.

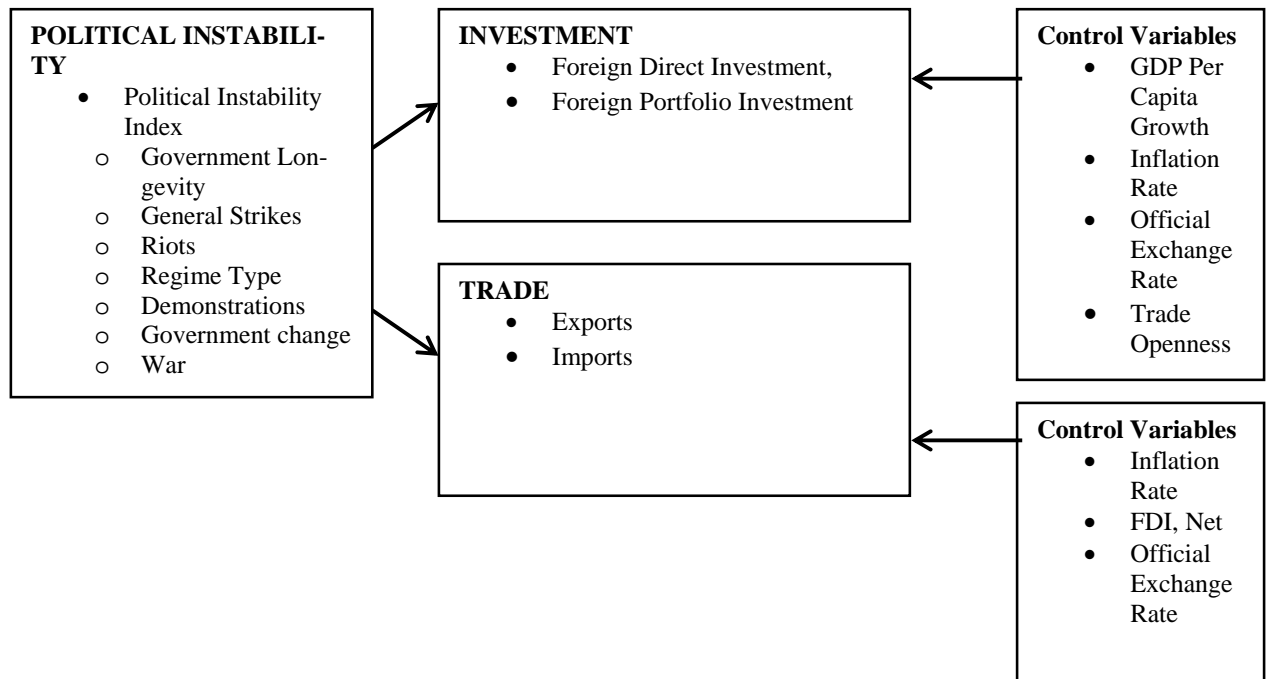## Methodology
Research Design and Sample

Figure 1: Political Instability, International Investment and Trade Nexus
Source: Authors' Development

This research analyzes the impact of political instability on international investment and trade of Pakistan. To examine this relationship, our main explanatory variable in this study is political instability Index. The dependent variables for trade include growth of imports and exports. Moreover, the dependent variables for Investment include net inflows of foreign direct investment and foreign portfolio investment. The sample comprises of Annual time series data over a span of 41 years from 1976 to 2016. Following the previous literature other control variables have also been included in the study to improve the precision of the model.

Data Specifications

For most of the indicators the data was collected from the World Development Indicators 2018 except the political instability index. Qureshi et.al (2010) constructed political instability index from 1971 to 2005. By taking this methodology the index is further updated to 2016.

Explanatory Variable: Political Instability Index

In this research paper, Political Instability index is used for the Political Instability. By using the methodology of Qureshi et.al (2010) with the same variables for the political instability index is updated to 2016 which was for 1971 to 2005. The index is updated by applying Principal Component Method. The PC1 summary is given below:

Table 1. Factor Loadings of PC1

Variables	PCI
Government Longevity	-0.126**
General Strikes	0.411*
Riots	0.319**
Regime Type	-0.158***
Demonstrations	0.324**
Government change	0.418**
War	0.457*

Note: '*', '**', '***' denotes statistical significance at 1%, 5% and 10% level.
Critical values from Koutsoyiannis (1977)

$$PI = 0.126E1 + 0.411E2 + 0.319E3 - 0.158E4 + 0.324E5 + 0.418E6 - 0.457E7$$

Where

E1 = Government Longevity

E3 = Riots

E5 = Demonstrations

E7 = War

E2 = General Strikes

E4 = Regime Type

E6 = Government change including coup

On the basis of the mentioned equation, political instability is updated. Brief description of the variables of political instability index can be found in annexure A.

Dependent Variables

The International investment in any country can be in two forms, that is FDI (Foreign Direct Investment) and FPI (Foreign Portfolio Investment). The data on Foreign Direct Investment (FDI) Net Inflows (% of GDP), Foreign Portfolio Investment (FPI) Net (% of GDP) has been obtained. The International trade is carried out through imports and exports. For this study the data on Annual percentage growth rates of exports and imports have been obtained.

Control Variables

The control variables have been selected by following the literature.

- *GDP Per Capita:* Gross Domestic Product Per Capita holds the level of income which is why it is considered to be important for foreign investors as a increased level of income. The association of GDP per capita with FDI has always been an area of interest for researchers. For instance, Martinez- Zarzoso (2003), Martinez-Zarzoso and Nowak- Lehmann (2004), Nasreen and Anwar (2014) discussed that as much as the level of income is higher of the country, the more interest of foreign investors it attracts to invest in that country. Real GDP per capita growth has been utilized to quantify the GDP.

- *Inflation Rate:* This variable is thought-out as one of the significant factor in determining the FDI inflows. Higher the rate of inflation leads to macroeconomic instability of the economy, and thus reduces FDI flows. Kolstad and Villanger (2008) discovered negative relationship between inflation and FDI inflows within 74 countries from the globe. Najaf and Najaf (2016) concluded inflation to have insignificant effect on FDI inflows in Pakistan. Likewise, Afza and Anwar (2013) proposed inflation to negatively influence FDI inflows in Pakistan. Houck (1979) concluded that changes in currencies bring changes in prices and costs which may rouse or reduce international transactions of products and services. Inflation rate is used as factor for FDI inflows and international trade.

- *Exchange rate:* Countries that do not have strong currency always strive to attract more FDI so that foreign investors may benefit from better purchasing power in these countries. In contrast, countries that have stable currencies usually discourage FDI flows as investing in such countries is reflected to be much expensive. Love and Lage- Hidalgo (2000) found indirect relationship to exist between exchange rate and FDI inflow, which shows that devaluation of foreign currency tends to attract more FDI in a country. Unlikely, Froot and Stein (1991) and Campa (1993) concluded that when currency of host country is appreciated, it then encourages FDI inflows in host countries. Pozo (1992) proposed that increase in the instability of the real exchange rate discourage the volume of trade. In contrast, Tenreyro (2007) suggested that change in exchange rate has no impact on trade flows. Official exchange rate of local currency is being utilized to find out the exchange rate in the country.

- *Trade Openness:* It measures aggregate trade (i.e. total of imports and exports of goods and services) as a ratio of GDP. Trade openness is a key determinant of FDI. Brahim and Souria (2017) suggested trade openness to have a greater impact on FDI. Likewise, Afza and Anwar (2013) confirmed that trade openness has positively influence FDI.

- **FDI, Net Flow:** A country's balance of payments shows how much it saves that is sufficient to pay for its imports. It also shows whether the country is making enough economic output to compensate for its growth. The FDI net flow, BOP is used in this study as control variable for trade.

Econometric Models

Political Instability and International Investment

Following econometric models are formulated to access the impact of political instability on international investment:

$$FDI_t = \propto_0 + \gamma PI_t + \lambda CV_t + \varepsilon_t \ldots (1)$$
$$FPI_t = \propto_0 + \gamma PI_t + \lambda CV_t + \varepsilon_t \ldots (2)$$

Where,

FDI = Foreign Direct Investment

FPI = Foreign Portfolio Investment

PI = Political Instability Index

CV = Set of control variables described above and following notations will be used to represent these variables:

GDP = GDP Per Capita (Annual Growth Rate)

INF = Inflation Rate

TOP = Trade Openness

$OEXC$ = Official Exchange Rate

ε_t = Error Term

Political Instability and International Trade

The econometric models formulated to access the impact of political instability on international trade are as under:

$$IMP_t = \propto_0 + \gamma PI_t + \lambda CV_t + \varepsilon_t \dots (3)$$
$$EXP_t = \propto_0 + \gamma PI_t + \lambda CV_t + \varepsilon_t \dots (4)$$

Where,

IMP = Imports of Goods and Services (Annual % growth)

EXP = Exports of Goods and Services (Annual % growth)

PI = Political Instability Index

CV = Set of control variables described above and following notations will be used to represent these variables:

INF = Inflation Rate

$FDINET$ = Foreign Direct Investment, Net

$OEXC$ = Official Exchange Rate

ε_t = Error Term

Econometric Methodology

In this empirical investigation, we move through two main stages.

Unit Root Test

The first stage in empirical investigation is to examine the stationarity of all the variables. The time series data must be stationary in order to provide non-spurious results of regression. The most common methods used to test the stationarity are Augmented Dickey Fuller (ADF) and Phillips Perron (PP) test; however, we have also employed Dicky-Fuller generalized least square (DF-GLS) because it is more suitable for small sample data set (Alimi, 2014).

Autoregressive Distributive Lag Model

Pesaran and Shin (1995) and Pesaran et al. (2001) recommended Autoregressive Distributed Lag (ARDL) bounds testing approach to co-integration in the second stage. ARDL technique has resolved the endogeneity problem. Appropriate number of lags is estimated in ARDL that solves both the problems of endogeneity and auto-correlation (Pesaran and Shin, 1995). In ARDL approach both long-run and short-run coefficients are estimated simultaneously, and all the variables are considered endogenous (Khan *et al.*, 2005).

Political Instability and International Investment

Following unrestricted error correction ARDL model equations are used for testing relation of Political Instability with FDI and FPI.

$$\Delta FDI_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \varphi_{1i} \Delta \text{FDI}_{t-i} + \sum_{i=1}^{p} \varphi_{2i} \Delta \text{PI}_{t-i} + \sum_{i=1}^{p} \varphi_{3i} \Delta \text{GDP}_{t-i} + \sum_{i=1}^{p} \varphi_{4i} \Delta \text{INF}_{t-i} +$$
$$\sum_{i=1}^{p} \varphi_{5i} \Delta \text{TOP}_{t-i} + \sum_{i=1}^{p} \varphi_{6i} \Delta \text{OEXC}_{t-i} + \lambda_1 FDI_{t-1} + \lambda_2 PI_{t-1} + \lambda_3 GDP_{t-1} + \lambda_4 INF_{t-1} +$$
$$\lambda_5 TOP_{t-1} + \lambda_6 OEXC_{t-1} + \varepsilon_t \ldots (5)$$

$$\Delta FPI_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \varphi_{1i} \Delta \text{FPI}_{t-i} + \sum_{i=1}^{p} \varphi_{2i} \Delta \text{PI}_{t-i} + \sum_{i=1}^{p} \varphi_{3i} \Delta \text{GDP}_{t-i} + \sum_{i=1}^{p} \varphi_{4i} \Delta \text{INF}_{t-i} +$$
$$\sum_{i=1}^{p} \varphi_{5i} \Delta \text{OEXC}_{t-i} + \lambda_1 FPI_{t-1} + \lambda_2 PI_{t-1} + \lambda_3 GDP_{t-1} + \lambda_4 INF_{t-1} + \lambda_5 OEXC_{t-1} + \varepsilon_t \ldots (6)$$

Political Instability and International Trade

Following unrestricted error correction ARDL model equations are used for testing relation of Political Instability with Imports and Exports.

$$\Delta IMP_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \varphi_{1i} \Delta \text{IMP}_{t-i} + \sum_{i=1}^{p} \varphi_{2i} \Delta \text{PI}_{t-i} + \sum_{i=1}^{p} \varphi_{3i} \Delta \text{INF}_{t-i} + \sum_{i=1}^{p} \varphi_{4i} \Delta \text{FDINET}_{t-i} +$$
$$\sum_{i=1}^{p} \varphi_{5i} \Delta \text{OEXC}_{t-i} + \lambda_1 IMP_{t-1} + \lambda_2 PI_{t-1} + \lambda_3 INF_{t-1} + \lambda_4 FDINET_{t-1} + \lambda_5 OEXC_{t-1} + \varepsilon_t \ldots (7)$$

$$\Delta EXP_t = \varphi_0 + \sum_{i=1}^{p} \varphi_{1i} \Delta \text{EXP}_{t-i} + \sum_{i=1}^{p} \varphi_{2i} \Delta \text{PI}_{t-i} + \sum_{i=1}^{p} \varphi_{3i} \Delta \text{INF}_{t-i} +$$
$$\sum_{i=1}^{p} \varphi_{4i} \Delta \text{FDINET}_{t-i} + \sum_{i=1}^{p} \varphi_{5i} \Delta \text{OEXC}_{t-i} + \lambda_1 EXP_{t-1} + \lambda_2 PI_{t-1} + \lambda_3 INF_{t-1} +$$
$$\lambda_4 FDINET_{t-1} + \lambda_5 OEXC_{t-1} + \varepsilon_t \ldots (8)$$

In above equations (5-8), Δ is the first-difference operator, φs represent short run coefficients and λs represents long-run coefficients ε_t is the white noise error term.

The null hypothesis of non-existence of long run relationship is as follows:

$H_0 = \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = \lambda_6 = 0 \ldots (9)$

The alternative hypothesis showing the existence of the long run relationship among the variables is as follows:

$H_1 = \lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq \lambda_6 \neq 0 \ldots (10)$

In the next step the bound test is conducted for null hypothesis by comparing the calculated F-statistic with critical bounds suggested by Narayan (2005). This paper used Narayan (2005) critical values instead of those provided by Pesaran et al. (2001) because Narayan's values are generated for small sample sizes from 30 to 80 observations.

Long-Run Parameters

The next step is to find the long-run parameters using OLS regression under the following equations 11-14:

Political Instability and International Investment

$FDI_t = \lambda_0 + \lambda_1 PI_t + \lambda_2 GDP_t + \lambda_3 INF_t + \lambda_4 TOP_t + \lambda_5 OEXC_t + \varepsilon_t \ldots (11)$

$FPI_t = \lambda_0 + \lambda_1 PI_t + \lambda_2 GDP_t + \lambda_3 INF_t + \lambda_4 OEXC_t + \varepsilon_t \ldots (12)$

Political Instability and International Trade

$IMP_t = \lambda_0 + \lambda_1 PI_t + \lambda_2 INF_t + \lambda_3 FDINET_t + \lambda_4 OEXC_t + \varepsilon_t \ldots (13)$

$EXP_t = \lambda_0 + \lambda_1 PI_t + \lambda_2 INF_t + \lambda_3 FDINET_t + \lambda_4 OEXC_t + \varepsilon_t \ldots (14)$

Short-Run Causality Dynamics

When the long run relationship is established among the variables then we move to ECM framework. According to Granger (1998), ECM framework examines the causal relationship among

the co-integrated variables. In the model, the short run dynamics are examined by the individual coefficients of the lagged terms and the long run causality is found in error correction term (ECT). Short run causality is proved through significant lagged explanatory variable while a negative and statistically significant ECT proves long run causality.

Political Instability and International Investment

Following (ECM) Error Correction Models are estimated for testing relation of Political Instability with FDI and FPI:

$$\Delta FDI_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta FDI_{t-i} + \sum_{i=1}^{p} \gamma_{2i} \Delta PI_{t-i} + \sum_{i=1}^{p} \gamma_{3i} \Delta GDP_{t-i} + \sum_{i=1}^{p} \gamma_{4i} \Delta INF_{t-i} + \sum_{i=1}^{p} \gamma_{5i} \Delta TOP_{t-i} + \sum_{i=1}^{p} \gamma_{6i} \Delta OEXC_{t-i} + \theta ECT_{t-1} + \varepsilon_t \dots (15)$$

$$\Delta FPI_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta FPI_{t-i} + \sum_{i=1}^{p} \gamma_{2i} \Delta PI_{t-i} + \sum_{i=1}^{p} \gamma_{3i} \Delta GDP_{t-i} + \sum_{i=1}^{p} \gamma_{4i} \Delta INF_{t-i} + \sum_{i=1}^{p} \gamma_{5i} \Delta OEXC_{t-i} + \theta ECT_{t-1} + \varepsilon_t \dots (16)$$

Political Instability and International Trade

Following (ECM) Error Correction Models are estimated for testing relation of Political Instability with Imports and Exports:

$$\Delta IMP_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta IMP_{t-i} + \sum_{i=1}^{p} \gamma_{2i} \Delta PI_{t-i} + \sum_{i=1}^{p} \gamma_{3i} \Delta INF_{t-i} + \sum_{i=1}^{p} \gamma_{4i} \Delta FDINET_{t-i} + \sum_{i=1}^{p} \gamma_{5i} \Delta OEXC_{t-i} + \theta ECT_{t-1} + \varepsilon_t \dots (17)$$

$$\Delta EXP_t =$$
$$\varphi_0 + \sum_{i=1}^{p} \gamma_{1i} \Delta EXP_{t-i} + \sum_{i=1}^{p} \gamma_{2i} \Delta PI_{t-i} + \sum_{i=1}^{p} \gamma_{3i} \Delta INF_{t-i} + \sum_{i=1}^{p} \gamma_{4i} \Delta FDINET_{t-i} + \sum_{i=1}^{p} \gamma_{5i} \Delta OEXC_{t-i} + \theta ECT_{t-1} + \varepsilon_t \dots (18)$$

In the above equations (15-18), from the long-run co-integration, ECT (Error correction term) is derived. By following Pesaran and Pesaran (1997), then we apply the stability tests for the selected ARDL models by applying the cumulative sum of recursive residuals (CUSUM) of recursive residuals of test. All the tests are performed in Eviews 10 software.

Results
Unit Root Test
The integrating level of all the variables is examined using ADF, PP and DF – GLS tests.

Table 2. Unit Root Tests

VARIABLES	ADF		PP		DF-GLS	
	t-stats	Order of Integration	t-stats	Order of Integration	t-stats	Order of Integration
FDI (Inflows)	-2.841301***	I(0)	-4.156248*	I(1)	-2.532766*	I(0)
PI index	-3.394812*	I(1)	-4.081344*	I(0)	-0.857436***	I(1)
Inflation Rate	-2.918756**	I(0)	-3.016258**	I(0)	-2.915882*	I(0)
GDP Per Capita	-4.68329586*	I(0)	-4.653868*	I(0)	-4.746058*	I(0)
Ordinary exchange rate	-4.156326*	I(1)	-4.036406*	I(1)	-3.900176*	I(1)

VARIABLES	ADF		PP		DF-GLS	
	t-stats	Order of Integration	t-stats	Order of Integration	t-stats	Order of Integration
Trade Openness	-7.094928*	I(1)	-7.094928*	I(1)	-1.930757***	I(0)
Foreign Portfolio Investment	-4.669855*	I(0)	-4.693605*	I(0)	-4.59517*	I(0)
Exports	-6.545064*	I(0)	-6.543001*	I(0)	-6.2855*	I(0)
FDI (Net flows)	-4.140329*	I(1)	-3.840875*	I(1)	-2.289993**	I(0)
Imports	-6.042767*	I(0)	-6.080384*	I(0)	-5.959515*	I(0)

'*', '**', '***' Indicate the rejection of null hypothesis of unit root at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

Table 2 shows that under ADF test, FDI (Inflows), Inflation Rate, GDP Per Capita, Foreign Portfolio Investment, Exports, and Imports are stationary at level. However, Political Instability Index, Ordinary Exchange Rate, Trade Openness, and FDI (Net Flows) are stationary at first difference. PP unit root test shows that FDI (Inflows), Ordinary Exchange Rate, Trade Openness and FDI (Net flows) are stationary at First difference and all other variables are stationary at level. When DF-GLS unit root test was applied, all the series except PI Index and Ordinary Exchange Rate all are found stationary at level. Therefore, it is necessary to determine the lag length structure.

Lag Length Structure
The Lag Length is predicted using four different criteria:
1. Final Prediction Error (FPE)
2. Hannan-Quinn Information Criterion
3. Schwarz Information Criterion and
4. Akaike information criteria (AIC).

Political Instability and International Investment
Table 3 depicts the optimal lag length of Foreign Direct Investment and other control variables. Except SC, all the tests predict lag length of 2 out of maximum 4 lag lengths.

Table 3. Lag Length Selection of Foreign Direct Investment

Lag	FPE	AIC	SC	HQ
0	0.674148	2.440683	2.701913	2.532779
1	0.206874	1.257617	1.562385*	1.365062
2	0.201887*	1.230894*	1.579200	1.353688*
3	0.212550	1.279350	1.756765	1.417493

'*' indicates lag order selected by the criterion
Source: Authors' Calculation

Table 4. Lag Length Selection of Foreign Portfolio Investment

Lag	FPE	AIC	SC	HQ
0	4.79e-05	-7.110203	-6.892512	-7.033457
1	4.94e-05*	-7.080199*	-6.818969*	-6.988103*
2	5.22e-05	-7.027716	-6.722947	-6.920271
3	5.29e-05	-7.016378	-6.668072	-6.893584

'*' indicates lag order selected by the criterion
Source: Authors' Calculation

The results of optimal lag length of Foreign Portfolio Investment and other control variables are shown in table 4. All the four tests predict lag length of 1 out of maximum 4 lag lengths.

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It is evident from table 5 that the optimal lag length of imports and other control variables is 3 out of maximum 4 lag lengths.

Table 5. Lag Length Selection of Imports

Lag	FPE	AIC	SC	HQ
0	351.5451	8.698552	8.916243	8.775298
1	321.7222	8.608677	8.869907	8.700773
2	225.298	8.250687	8.555456	8.358132
3	218.6531*	8.218429*	8.566736*	8.341224*

'*' indicates lag order selected by the criterion
Source: Authors' Calculation

All the four tests predict lag length of exports and other control variables is 2 out of maximum 4. Results are shown in table 6.

Table 6. Lag Length Selection of Exports

Lag	FPE	AIC	SC	HQ
0	297.5871	8.531921	8.749612	8.608667
1	231.492	8.279534	8.540764	8.37163
2	188.7617*	8.073749*	8.378517*	8.181194*
3	195.924	8.10867	8.456976	8.231464

'*' indicates lag order selected by the criterion
Source: Authors' Calculation

Since in our data some variables are stationary at level and some at first difference, therefore it is justified to use ARDL model for determining relationship among the variables.

ARDL Bound Test for Co-integration

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The results of the ARDL bounds testing approach for Foreign Direct Investment are displayed in Table 7. The results confirm that long run relationship between FDI, political instability index, inflation rate, GDP and ordinary exchange rate since the F-statistic 4.755687 exceeds the upper bound at 5% level.

Table 7. ARDL Bound Testing of Foreign Direct Investment

Variables	F-Statistics	Co-integration
F (FDI/ PI, INF, GDP, OEXC, TOP)	4.755687**	Co-integration
Critical Value	Lower Bound	Upper Bound
1%	4.045	5.898
5%	2.962	4.338
10%	2.483	3.708

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
The lag length is 2. Critical values are obtained from Narayan (2005) case III "Unrestricted intercept and no trend" for 40 observations. The number of regressors is k=5.
Source: Authors' Calculation

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Table 8 portrays the results of the ARDL bounds testing approach for Foreign Portfolio Investment. Findings reveal long run relationship exists between FPI, political instability index, inflation rate, GDP and ordinary exchange rate; the F-statistic 4.388644 exceeds the upper bound at 10% level.

Table 8. ARDL Bound Testing of Foreign Portfolio Investment

Variables	F-Statistics	Co-integration
F (FPI/ PI, INF, GDP, OEXC)	**4.388644*****	Co-integration
Critical Value	Lower Bound	Upper Bound
1%	5.017	6.611
5%	3.547	4.804
10%	2.932	4.021

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
The lag length is 3. Critical values are obtained from Narayan (2005) case III "Unrestricted intercept and no trend" for 40 observations. The number of regressors is k=4.
Source: Authors' Calculation

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Empirical results of ARDL bound tests of Imports are vivid from table 9. Findings reveal that a long run relationship exists between imports, political instability index, inflation rate, foreign direct investment and ordinary exchange rate. Since the F-statistic 4.604 exceeds the upper bound at 10% level.

Table 9. ARDL Bound Testing of Imports

Variables	F-Statistics	Co-integration
F (IMP/ PI, INF, FDINET, OEXC)	**4.604067*****	Co-integration
Critical Value	Lower Bound	Upper Bound
1%	5.017	6.611
5%	3.547	4.804
10%	2.932	4.021

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
The lag length is 3. Critical values are obtained from Narayan (2005) case III "Unrestricted intercept and no trend" for 40 observations. The number of regressors is k=4.
Source: Authors' Calculation

The results of Exports are clear from table 10. The results prove that long-run relationship exists between imports, political instability index, inflation rate, foreign direct investment and ordinary exchange rate. Since the F-statistic 5.899 exceeds the upper bound at 5% level.

Table 10. ARDL Bound Testing of Exports

Variables	F-Statistics	Co-integration
F (EXP/ PI, INF, FDINET, OEXC)	5.899391**	Co-integration
Critical Value	Lower Bound	Upper Bound
1%	5.018	6.610
5%	3.548	4.803
10%	2.933	4.020

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
The lag length is 2. Critical values are obtained from Narayan (2005) case III "Unrestricted intercept and no trend" for 40 observations. The number of regressors is k=4. **Source:** Authors' Calculation

Long-Run Analysis

In the long-run analysis, we will examine the marginal impacts independent and control variables on international investment and trade of Pakistan.

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The estimations of long run equilibrium relationship in equation (11) are listed in table 11 shows that Political Instability (-0.008011 significant at 5% level) and Ordinary Exchange Rate (-0.014101 significant at 1% level) pose negative significant impact on FDI; which is consistent with the literature.

Table 11. Estimated Long-Run Coefficients of Foreign Direct Investment

Variables		Co-efficient	
C		-1.958691	
PI		-0.008011**	
INF		0.056633	
GDP		0.044483	
OEXC		-0.014101*	
TOP		0.072506	
R^2	0.324907	**Durbin-Watson stat.**	2.404075
F-Statistic	3.368935	**Prob (F-Statistic)**	0.013743

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

The long run estimations of Foreign Portfolio Investment from equation (12) are outlined in table 12. Results conclude that shows that only Political Instability has significant negative impact on Foreign Portfolio Investment (-0.000192 significant at 5% level).

Table 12. Estimated Long-Run Coefficients of Foreign Portfolio Investment

Variables		Co-efficient	
C		0.019744***	
PI		-0.000192**	
INF		0.000186	
GDP		0.000894	
OEXC		5.59E-06	
R^2	0.316861	**Durbin-Watson stat.**	1.822516
F-Statistic	3.190922	**Prob (F-Statistic)**	0.033141

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

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Tables 13 and 14 exhibit the long run estimates of equations (13) and (14) of imports and exports respectively. Findings disclose that political instability have negative significant impact on imports (-0.033117 significant at 5% level) and exports (-0.615960 significant at 1% level).

Table 13. Estimated Long-Run Coefficients of Imports

Variables	Co-efficient
C	7.680639

Variables	Co-efficient		
PI	-0.033117**		
FDINET	-2.39E-09		
INF	-0.605381		
OEXC	-0.096916		
R^2	0.55881	Durbin-Watson stat.	2.064733
F-Statistic	3.532700	Prob (F-Statistic)	0.0712492

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

Table 14. Estimated Long-Run Coefficients of Exports

Variables	Co-efficient		
C	68.60010*		
PI	-0.615960*		
FDINET	1.52E-09		
INF	0.013303		
OEXC	0.008134		
R^2	0.275420	Durbin-Watson stat.	2.168400
F-Statistic	3.420984	Prob (F-Statistic)	0.018056

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

Short-Run Analysis

We estimate equation (15-18) to find the short-run relationship using Error Correction Model (ECM) within ARDL framework.

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Table 15 shows the results of ECM for Foreign Direct Investment. It is evident that the Error Correction Term is statistically significant at 5% level and negative. It indicates that the feedback mechanism exists between FDI and other variables. In other words, ECT is stronger; taking the value 0.164. In short-run one lag inflation (sig. at 5% level) and two lags ordinary exchange rate (sig. at 10% level) inversely affects the Foreign Direct Investment.

Table 15. Estimated Short-Run Results of Foreign Direct Investment

Variables	Co-efficient
C	0.119462
D(FDI(-1))	**0.552347***
D(FDI(-2))	-0.205990
D(PI(-1))	0.007478
D(PI(-2))	0.003280
D(INF(-1))	**-0.049330**
D(INF(-2))	0.034115
D(GDP(-1))	0.018321
D(GDP(-2))	0.011488
D(OEXC(-1))	0.005292
D(OEXC(-2))	**-0.054150***
D(TOP(-1))	-0.001117

Variables		Co-efficient	
D(TOP(-2))		0.009041	
ECT(-1)		**-0.164739** it should be negative and significant otherwise there is no relationship	
R²	0.513266	**Durbin-Watson stat.**	1.795361
F-Statistic	1.946791	**Prob (F-Statistic)**	0.075247

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.

Source: Authors' Calculation

The ECM results of Foreign Portfolio Investment are elaborated in table 16. Results conclude that the ECT is negative and statistically significant at 1% level. Hence feedback mechanism exists between FPI and other variables. Moreover, the deviation of Foreign Portfolio Investment from long-run equilibrium level in one year is corrected only about 1% in the next year. In short-run one lag political instability (sig. at 5% level) affects inversely and one lag GDP (sig. at 5% level) directly affects the Foreign Portfolio Investment.

Table 16. Estimated Short-Run Results of Foreign Portfolio Investment

Variables		Co-efficient	
C		-0.000532	
D(FPI(-1))		0.135517	
D(PI(-1))		-6.62E-0.5**	
D(INF(-1))		0.000188	
D(GDP(-1))		0.001033**	
D(OEXC(-1))		0.000179	
ECT(-1)		-0.011198*	
R²	0.483412	**Durbin-Watson stat.**	1.903324
F-Statistic	4.990827	**Prob (F-Statistic)**	0.001042

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.

Source: Authors' Calculation

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Empirical findings of ECM for imports and exports are shown in Table 17 and Table 18 respectively. It is evident that in both the models the Error Correction Term is negative and statistically significant at 1% level, indicating the existence of feedback mechanism between imports, exports and other variables. In case of imports the ECT indicates that about 85% of the deviation from long-run equilibrium level of imports in one year is corrected in the next year. No short-run relationship is statistically proved in imports model.

In the export model the value of ECT indicates that when a deviation occurs from long-run equilibrium, about 22.4% of it is corrected in the next year. Moreover, inverse statistically significant (sig. 5% level) impact of two lags political instability is proved in the short-run.

Table 17. Estimated Short-Run Results of Imports

Variables	Co-efficient
C	1.808398
D(IMP(-1))	0.767462
D(IMP(-2))	0.306797

Variables		Co-efficient	
D(IMP(-3))		0.23508	
D(PI(-1))		-0.43296	
D(PI(-2))		-0.288892	
D(PI(-3))		-0.186278	
D(FDINET(-1))		-4.36E-09	
D(FDINET(-2))		7.93E-09	
D(FDINET(-3))		-1.16E-09	
D(INF(-1))		-0.103849	
D(INF(-2))		1.281154	
D(INF(-3))		-0.952766	
D(OEXC(-1))		-0.146199	
D(OEXC(-2))		-5.24E-01	
D(OEXC(-3))		-5.27E-01	
ECT(-1)		-0.85351*	
R^2	0.701686	Durbin-Watson stat.	1.799487
F-Statistic	2.940213	Prob (F-Statistic)	0.01217

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

Table 18. Estimated Short-Run Results of Exports

Variables		Co-efficient	
C		0.066273	
D(EXPO(-1))		0.129277	
D(EXPO(-2))		-0.220189	
D(PI(-1))		0.526139	
D(PI(-2))		-0.353601**	
D(FDINET(-1))		-2.47E-09	
D(FDINET(-2))		1.66E-09	
D(INF(-1))		-0.048687	
D(INF(-2))		0.796399	
D(OEXC(-1))		-0.327159	
D(OEXC(-2))		0.477608	
ECT(-1)		-0.224065*	
R^2	0.664997	Durbin-Watson stat.	1.921429
F-Statistic	4.691931	Prob (F-Statistic)	0.00058

'*', '**', '***' denote statistical significance at 1%, 5% and 10% significance levels respectively.
Source: Authors' Calculation

Serial Correlation LM Test Results

Since the long-run and short-run relationships are tested next step is to look for the serial correlation in the ECM models. The LM serial correlation test is applied to test for autocorrelation in the above ECM models. The results show that there is no prove of autocorrelation in all the models because the probability of F-statistics of all the models of Equation 15-18 is greater than 0.05. Results are given in the Table 19, 20, 21 and 22.

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Table 19. Breusch-Godfrey Serial Correlation LM Test for Foreign Direct Investment

Null Hypothesis: No serial correlation at up to 2 Lags			
F-statistic	1.644537	**Prob. F(2,22)**	0.2160
Obs*R-squared	4.942245	**Prob. Chi-Square(2)**	0.8045

Source: Authors' Calculation

Table 20. Breusch-Godfrey Serial Correlation LM Test for Foreign Portfolio Investment

Null Hypothesis: No serial correlation at up to 1 Lag			
F-statistic	0.422554	**Prob. F(1,31)**	0.5205
Obs*R-squared	0.534452	**Prob. Chi-Square(1)**	0.4689

Source: Authors' Calculation

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Table 21. Breusch-Godfrey Serial Correlation LM Test for Imports

Null Hypothesis: No serial correlation at up to 3 Lags			
F-statistic	0.195884	**Prob. F(3,17)**	0.8977
Obs*R-squared	1.236273	**Prob. Chi-Square(3)**	0.7443

Source: Authors' Calculation

Table 22. Breusch-Godfrey Serial Correlation LM Test for Exports

| Null Hypothesis: No serial correlation at up to 2 Lags			
F-statistic	0.337688	**Prob. F(2,24)**	0.7168
Obs*R-squared	1.040078	**Prob. Chi-Square(2)**	0.5945

Source: Authors' Calculation

Stability Tests

Finally, Borensztein *et al.* (1998) proposed Cumulative sum (CUSUM) test for the stability of ARDL models .

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Figure 2 portrays the CUSUM statistics for Equation (15). It is evident in the figure that the plot of CUSUM is within the critical 5% bounds which confirms the long-run relationships among Foreign Direct Investment and other variables and stability of coefficient.
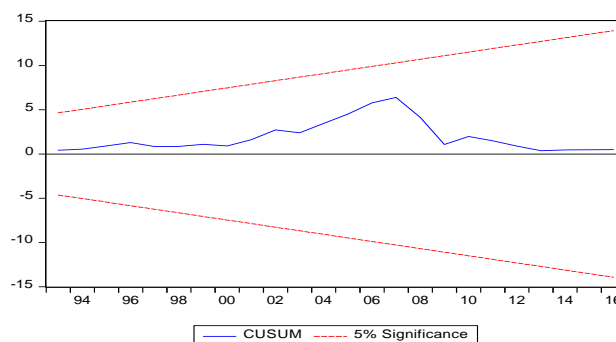
CUSUM Test Results
**Figure 2: CUSUM Test Result of Foreign Direct Investment**

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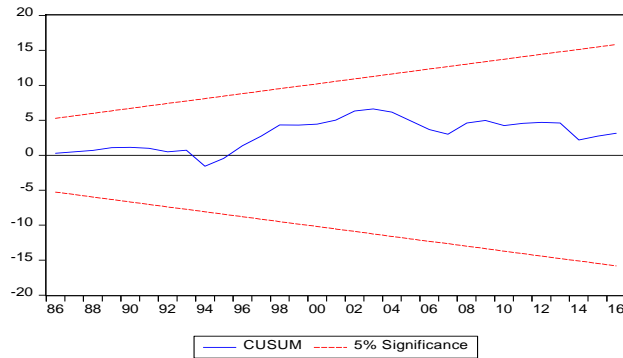
CUSUM Test Result
Figure 3: CUSUM Test Result of Foreign Portfolio Investment

The result of CUSUM statistics for Equation (16) are shown in Figure 3. It is found that the plot of CUSUM lies within the 5% critical bounds and thus confirms the long-run relationships and stability of coefficients among Foreign Portfolio Investment and other variables.

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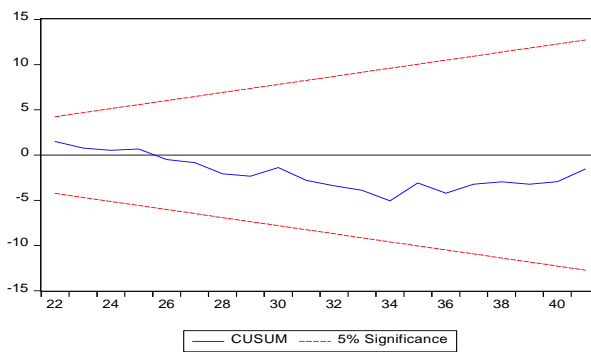
CUSUM Test Result
Figure 4: CUSUM Test Result of Imports
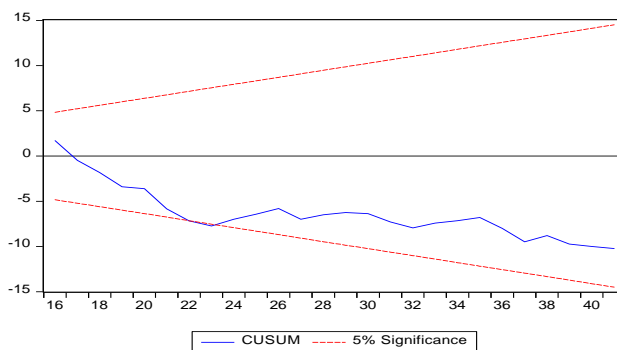
CUSUM Test Result
Figure 5: CUSUM Test Result of Exports

Results of CUSUM test for Imports (Equation 17) are exhibited in Figure 4. CUSUM plot lie within the 5% critical bounds and hence proves long-run relationships and stability of coefficients among Imports and other variables.

From Figure 5 it can be said that CUSUM plot lies within the 5% critical bounds and thus confirms long-run relationships among Exports and other variables.

Conclusion and policy implications

This study investigates the impact of Political Instability on International Investment and Trade from 1976 to 2016. The international investment in any country can be in the form of either foreign direct investment or foreign portfolio investment. Moreover, the international trade includes imports and exports. This study has made the first attempt to measure the impact of Political Instability on foreign portfolio investment and imports as well. Previous Literature has only focused on foreign direct investment and export. To test the long and short run relationships among the variables, we employed ARDL model. The unit root of all the variables is also tested and it is found that all the variables are stationary either at level or at first difference.

Here the models are also checked for serial correlation through LM test and for stability through CUSUM test. Findings conclude that political instability badly hampers both the international investment and trade in the long-run. Moreover, in short-run, the political instability significantly hinders the foreign portfolio investment and export. Moreover, ordinary exchange rate also possesses adverse impact on the foreign direct investment in long run and short run. It is also found that inflation adversely affect foreign direct investment and GDP positively affects foreign portfolio investment in short run. No significant impact of political instability is found on foreign direct investment and imports in the long run. The findings are consistent with Nazeer and Masih (2017), Nasreen and Anwar (2014), Afza and Anwar (2013), Khan and Akbar (2013), Khan et al. (2015), Bashir et al. (2013) and Fosu (2003). The ARDL models are found free from serial correlation. The CUSUM test also evinced the stability of the ARDL models.

Since its inception Pakistan is facing high level political instability due to frequent irregular government changes and four-times martial law which sustained almost twenty-eight years of seventy-one years of Pakistan (Zaidi 2017). Every policy needs consistency for the fruits in the future. The vulnerable political setup in Pakistan badly affect mostly areas of economy. Fortunately, since 2008 democracy is in power and there is no irregular government change so far till 2018. So to some extent consistency in the policies is playing its vital role in the economy although there is big question on the governance issue on the democratic government but it is far better than absolute crash of political system.

Foreign Direct Investment, exports and foreign portfolio investment are highly linked with the stability in the policies which is directly related to political setup of the country. In fact, at this stage, it is recommended that for the consistency in the policies there should not be any irregular government change and it is also recommended that every consecutive democratic government should also be bound by law to sustain the long-term on-going policies.

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Appendix A

Definitions of Political Instability Index Variables

Brief definitions of variables of political instability index are outlined here.

- **General Strikes**

  General strikes called by political actors for a complete closedown or blockade of economic activities that can last anywhere from a single to several days.

- **Demonstrations**

  It is an assembly of people or procession with an explicit political purpose.

- **Riots**

  It is explained as any violent demonstration or clash of more than 100 citizens involving the use of physical force.

- **Government Longevity**

  Years of Government longevity.

- **Government change**

  An instance of change of government including military coups.

- **War**

  Dummy Variable.

- **Regime Type**

  Democracy, Military led democracy or Military government.