



ASYMMETRIC IMPACT OF UNCERTAINTY AND POLITICAL RISK ON FOREIGN DIRECT INVESTMENT: AN EMPIRICAL STUDY OF SOUTH ASIA

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Abstract

This study explores the asymmetric impact on FDI in southern Asia of the political risk and macroeconomic policy uncertainty. The Pooled Mean Group (PMG) investigates the impacts on FDI inflows of political risk and macroeconomic policy uncertainty. For this reason, macroeconomic policy uncertainty and political risk indexes are established. The long-term and short-term findings suggest that the negative side of political risk and macroeconomic policy uncertainty affects FDI inflows badly. Openness to trade has a beneficial impact only in the short term on FDI inflows. In the long run, the surplus financial health about a consistent trade liberalization policy has a positive impact. Inflation is detrimental to long-term FDI inflows in the short term. A variable investment profile has a long, positive effect on FDI in the short-term sense. Quality of infrastructure (IQ) has a positive impact on FDI over the short and long term. Further, Labor Force Participation has a positive effect on both short and long-term FDIs. On the other hand, short-term and long-term investment returns have an adverse impact on FDI. In addition to FDI



incentive policies, South Asian economies must focus on political and macroeconomic factors.

Keywords: FDI, Exchange rate Uncertainty, Political risk, NARDL

Introduction

In the age of globalization, economies are expanding their financial sector networks around the world. Through profitable investment projects, developing countries will achieve economic growth via capital accumulation and fair opportunities for local and foreign investors. The globalization approach strengthens the significance of foreign direct investment in developing nations. Through the spillover effects of technology and organizations in developing countries, FDI considers as a catalyst for industrial development, job creation, and productivity enhancement (Lipsey 2002). Thus, the availability of international capital is a primary concern for decision-makers. Moreover, developing economies have not created foreign direct investment inflows at the rate attained by industrialized countries.

The research illustrated numerous economic and non-economic variables that decide foreign direct investment (Evans and Wachtel 1993; Berik et al. 2004). GDP per capita inflation, economic active labor force, Trade openness, return on investment, infrastructure quality, capita formation are the key economic indicators of yield growth. That influence investors' behavior. The latest research stresses the role of the elements of political uncertainty in raising foreign direct investment. Political instability or political risk emerges from various factors, such as religious and military participation, external and internal conflict, socio-economic and institutional quality, of the host country in deciding FDI inflows. Political instability can examine with the help of all these variables in the receiving country climate (Jun and Singh 1996). Buse and Hefker (2007) established the role of political risk as a prerequisite for foreign direct investment inflows in the receiving country by researching 83 emerging economies. Thomas and Worral (1994) emphasized that structural risk could become a serious barrier to a multinational (MNC)-host country agreement. In this manner, the return on investment will decline in all those economies that are more likely to face political uncertainties. So, instead of concentrating on conventional economic factors, it is essential to understand the political determinants similarly for foreign direct investment inflows.

Some other research type emphasizes macroeconomic policy uncertainties in developing economies that can restrict FDI flow from developed economies. Macroeconomic policy uncertainties may contain risk as regards monetary policy, fiscal policy, and exchange rate policy. The research identifies numerous ways in which macro-economic policy



uncertainties might affect foreign direct investment flows. **(Fischer, S 1993)** stated that higher inflation is an indicator of the uncertainty of macroeconomic policy, which commonly believe in making it more difficult for MNEs to anticipate host countries' prices. A continuous rise in the receiving country's budget deficit is one more essential medium that can raise fiscal policy uncertainty and lead to elevated tax rates. Thus, rising tax rates contribute to high prices for capital inputs, which increases the profit edge for MNEs but harms FDI inflows in host countries.

In developing countries, the flow of foreign direct investment increased enormously after 1980. FDI flows rose from US\$ 10,100 million in 1986 to US\$ 87,124 million in 1994. In 2019, UNCTAD observed that flows to emerging economies continuously at an estimated \$695 billion, which indicates that more than half of worldwide FDI continues to captivate by these countries. On either side, inflows of FDI to South Asia rose by 3.5% to \$54 billion. While India is South Asia's largest recipient, its investment exceeded \$42 billion. It increased by 6%, with major cross-border manufacturing, financial services, telecommunications, merger, and acquisition operations. Flows to Sri Lanka and Bangladesh increased to a peak of \$1.6 billion and \$3.6 billion, respectively. At the same time, Pakistan reported a 27 percent drop in investment to \$2.4 billion. South Asian countries, namely Pakistan, India, and Sri Lanka, and Bangladesh, have developed an enormous variety of local and foreign shareholders' opportunities. Those nations have all facilities for multinational investors to escape double taxation, secure overseas investment under rules and regulations, and remove restrictions on foreign investment in various economic sectors. The proportion of FDI in South Asia remains small compared with the rest of the globe. Now, the problem is why foreign direct investment flows in South Asia consistently little compared to other places in the world. This subject is essential for both theoretical and empirical studies for the countries of South Asia. Ghani et al. (2010) found that South Asia's critical shortfalls in attracting foreign direct investment were higher business costs, inadequate services, low institutional efficiency, etc. The law and order situation has increasingly worsened in recent years. Thus, eventually, it makes the cause of rising transaction costs for an enterprise.

In the same way, administrative quality is relatively weak, which is causing many problems in South Asia. It raises the question of the audit and business process. Moreover, macroeconomic policy threats, including risings in the inflation rate, persistent fiscal deficits, and exchange rate instability, continue to raise business costs that outweigh FDI returns. These factors highlight the significance of analyzing the role of political and macroeconomic policy determinants of foreign direct investment inflows in South Asia.



This research is related in several ways to the literature. First, All previous studies focused on a linear framework. However, in reality, there are many nonlinear variables in the macroeconomic area, especially in the business cycles (Neftçi, 1984; Falk, 1986 ;). Here this is the main inspiration to conduct this study as everyone knows that the main disadvantage of linear time series structures is that parameters are presumed linear. Whereas, in actual most series are not linear (Anoruo, 2011). The study, therefore, mainly aims to examine the asymmetric role of macroeconomic policy uncertainty and political risk in determining South Asian FDI inflows.

Review of Literature

Hermes and Lensink (2001) examined government uncertainty. The timeframe used in LDC countries for this study from 1971-1991. As a consequence, policy instability had a significant impact on capital outflows. The results of this study implied that political instability lessens expected income, which dramatically leads to the regional country's capital flight. A state may play an essential role in maintaining policy coherence that eventually attracts international FDI.

Barrell et al. (2003) studied the FDI-exchange rate uncertainty relationship by applying the GARCH model methodology. Data from 1982–2000 has used for European countries. This methodology obtained Multivariate sense, conditional mean, and exchange-rate variance. This research examined the relationship between exchange rates and market concentration or monopoly power that discourages FDI in the receiving country.

Chan and Gemayel (2004) presented an empirical study of the different political uncertainty aspects for the Middle East and North African (MENA) economies. This study examined the association between political risk and FDI inflows across the period 1991–1999. Random and fixed effect specifications were employed. Investment risks and political risks are described as a significant major factor of FDI. The government will take preventive steps that provide long-run economic stability that was effectively reducing the investment risk and political risk in MENA economies.

Busse and Hefeker (2007) studied the impact of political risk and institutions on foreign direct investment in developing economies. For the period 1984–2003, the panel based data reported by 83 developing countries. These included all twelve political risk indicators measured by the global country guide risk (ICRG) service community, including political risk and institutional risk factors. The dynamic panel data were analyzed using a fixed-effect model. The GMM estimators also discussed the issue of autocorrelation. The authors found that under policy risk variables, the inflow of FDI in emerging economies played a



significant role. Such as democratic rights, law and order situations, ethnic conflict, external and internal conflict, and government stability.

Kim (2006) studied the association between political risk and FDI in Asian nations between 1984 and 2002. A random effect and fixed effect model reported analyzing the significant factors for foreign direct investment. This paper analyzed that bilateral investment treaties (BITs) are essential for generating FDI to Asian nations. Still, the nationalization of political risk reduces the benefits of (BITs) for Countries in Asia. Therefore, the political risk elements for FDI attractiveness could not overlook.

Rios-Morales et al. (2009) investigated that political risk is a significant indicator of Foreign direct investment. They have built a theoretical relation between the variable of political risk and good governance. In this analysis, the score on good governance is used to estimate political uncertainty. Also, political uncertainty between countries may distinguish on the grounds of even more influential factors, such as the corruption regulation, law, and order, along with several other indicators. They noticed that voice and accountability and political uncertainty had a significant influence on FDI.

Solomon, B., & Ruiz, I. (2012) analyzed the role of political risk and macroeconomic instability. They established trends in FDI in the African economy. Therefore, the differential influence of these variables on FDI flows to Africa is especially significant, given the limited share of FDI in African economies. Authors found that political instability and exchange rate fluctuations typically decrease Foreign direct investment. Nonetheless, the impact of political risk has seen to be quite severe for the FDI to flow into African countries.

Lee, J. (2010) assessed of GARCH's dynamic panel model in the G7 countries in 1965–2007 shows that higher productivity growth is related to higher growth instability. However, higher growth does not contribute to economic uncertainty.

Bhandari, R., & Upadhyaya, K. P. (2010) explored the effects of real exchange rate fluctuations on private investments in South-East Asia. They used panel data from the Philippines, Indonesia, Malaysia, and Thailand. Data from the annual time series from 1972 to 2001. For variable estimation, both the fixed effect and the random effect estimators are used. The results of the two estimates show that real exchange-rate volatility an adverse effect on private investments in the country.

Upadhyaya, K. P. (2011) analyzed the effects of Real Exchange Rate Volatility on FDI inflows in Bangladesh, India, Pakistan, and Sri Lanka. A model is developed that includes



exchange rate volatility with other FDI determinants. For India, Pakistan, and Sri Lanka, data from the 1976–2009 annual time series are used. In Bangladesh, due to data limitations, only the data series from 1986 to 2009 are used. Panel data from these four countries are also being compiled for the period 1986-2009. The estimated results show an inconclusive correlation between the exchange rate volatility and the FDI.

Servén, L. (2003) investigated the association between real exchange-rate fluctuations and private investment in developing countries. The author has used a comprehensive collection of data from the cross-country time series and developed a GARCH model of real exchange volatility. He noticed that the investment had a significant negative effect. The consequences of uncertainty are often not uniform – insecurity matters when it reaches a critical stage. Furthermore, in developed economies, the harmful effect of real exchange rates on investment is greater than in less developed economies.

Azam et al. (2012) developed a theoretical framework focused on an oligopolistic and imperfect competitive environment in the host country to illustrate the impact of FDI's political risk and macro policy uncertainty. The effect of political risk and macro-economic policy instability on FDI inflows analyze through ARDL. The long-term findings indicate negative impacts on FDI inflows. Trade openness has a beneficial impact only short-term and long-term on FDI inflows. Market size also affects FDI's long-term and short-term inflows, indicating that FDI inflows in South Asia are mainly dependent on economic growth. The economies of South Asia must focus on political and macroeconomic factors, along with FDI opportunities, to draw more FDI.

Asamoah, M. E et al. (2016) examined institutional quality regulates the macroeconomic volatility and FDI association between 1996 and 2011 in 40 sub-Saharan African countries. GARCH models use for macroeconomic volatility analysis. The dynamic panel estimates of Arellano and Bond (1991) analyze the relationship between direct foreign investment and macroeconomic volatility. The authors found that macroeconomic volatility adversely affects FDI flow. In contrast, institutional efficiency also increases FDI flows in the presence of other variables. The relationship between institutional efficiency and macroeconomic volatility decreases the initial negative FDI flow impact of economic uncertainty.

By summarizing the literature, it can conclude that macroeconomic uncertainty and political risk hurt foreign direct investment inflows. However, there are empirical limitations that are worth considering in light of past studies. All earlier studies on foreign direct investment in Pakistan framework are carried in a linear framework, either time series or panel study. We carried out the present study in nonlinear settings. Furthermore,



this research's prime intention is to examine the asymmetric relationship between exchange rate uncertainty, political risk, and foreign direct investment in Pakistan. So, we aim to fill this lacuna.

Data and Empirical Results

Our analysis covers four south Asian countries, namely; Pakistan, India, Srilanka, and Bangladesh, from 1984 to 2018. The variables that have been taken annually in this article. This study incorporated six independent variables, one macroeconomic uncertainty variable, and four political uncertainty variables. At the same time, the dependent variable is a foreign direct investment inflow. However, all macroeconomic variables were obtained from the World Development Indicator (WDI) and International Financial Statistics (IFS). At the same time, data on political instability have taken from the International Country Risk Guide (ICRG). For more information about variables and an expected sign of observed variables, refer to the following tables 4.1 and 4.2.

Variables	Explanation
Dependent variable • FDIG	Foreign direct investment inflows are scaled by GDP, such as $100 \times (\text{FDI}/\text{GDP})$.
Macroeconomic variables • INF • EAL • RINV • IQ • TO • IP	The six macroeconomic variables incorporated such as; INF shows the inflation which can be observed by consumer price index; whereas, EAL indicates the economically active labor force which can measure by population with ages between 15 to 64; whereas, RINV means a return on investment which can be calculated by employing the logarithm of the actual per capita GDP inverse (for a description of the creation of this variable, see Asiedu, 2002); however, IQ means Infrastructure quality proxy by the number of telephone lines per capita. Moreover, TO shows the trade openness, which means the share of trade in GDP and IP measures the investment risk. This is very significant for multinational enterprises' decisions on where to invest.
Uncertainty Indicators • UER	UER demonstrates the volatility of the exchange rate to determine that we use GARCH to assess volatility since they are closer to measuring foreign exchange uncertainty.
Political Instability Variables • EXT • INT • COR • LAW	To assess specific components of political risk, this paper employing the index that has taken from international country guide risk (ICRG), such as; the external conflict (EXT), internal conflict (INT), corruption (COR), and law and order (LAW)

Results and Discussion

Panel Unit-Root Test

It proposed that the stationary test identified the different variables before a co-integration analysis was carried out. As previously stated, four different unit-root test approaches have proposed to affirm each variable's stationarity. The unit-root tests Fisher-ADF and Fisher



PP are relatively simple, non-parametric unit-root tests. The experiments were performed in two separate ways, initially with an intercept and an intercept and a linear pattern for both approaches.

Table 2 provides panel unit-root data test results. Results show that CPI, FPI, and GDP variables cannot reject the null hypothesis at the level stage. Other variable OPC, OPEC, OP, E, and M are in the level form stationary. OPC, OPEC, and OP are stationary when used in Levin et al. (2002) and Pesaran et al. (2003) tests and rejected without the pattern. E is stationary only if not including the LLC trend, whereas M2 is stationary only when using LLC trends.

Moreover, after converting into the first difference, all variables are stationary. In summary, the stationarity results from the four different techniques confirm that all variables are free of the unit-root in the second difference. The next phase is the panel co-integration checking.

Table - 2

Variable	Assumption	LLC	IPS	Fisher-ADF	Fisher-PP	LLC	IPS	Fisher-ADF	Fisher-PP
		Level				First difference			
INF	No Trend	-1.628 (0.052)	-2.707 (0.003) **	22.507 (0.004) **	53.196 (0.000) **	-6.630 (0.000) *	-9.111 (0.000) **	78.967 (0.000) **	137.09 (0.000) **
	Trend	-0.888 (0.187)	-1.608 (0.053)	14.369 (0.045) **	42.556 (0.000) **	-6.116 (0.000) *	-8.268 (0.000) **	67.217 (0.000) **	675.20 (0.000) **
INP	No Trend	-1.382 (0.083)	-0.587 (0.278)	8.129 (0.420)	6.661 (0.573))	-6.976 (0.000) *	-6.691 (0.000) **	55.58 (0.000) **	104.98 (0.000) **
	Trend	-2.286 (0.011)	-1.636 (0.050)	13.674 (0.090)	11.410 (0.179))	-6.093 (0.000) *	-5.519 (0.000) **	41.733 (0.000) **	110.21 (0.000) **
IQ	No Trend	-0.778 (0.218)	0.322 (0.626)	4.515 (0.807)	4.240 (0.834))	-2.185 (0.014) *	-2.962 (0.001) **	23.252 (0.003) **	45.53 (0.000) **
	Trend	2.458 (0.993)	3.364 (0.999)	0.784 (0.999)	0.780 (0.999))	-1.929 (0.026) **	-2.511 (0.006) **	20.234 (0.009) **	38.302 (0.000) **
LFP	No Trend	-0.507 (0.305)	-1.868 (0.030) **	21.119 (0.006) *	24.856 (0.001) **	-4.322 (0.000) *	-6.416 (0.000) **	54.798 (0.000) **	81.900 (0.000) **
	Trend	-2.208 (0.013) **	-3.638 (0.000) *	28.373 (0.000) *	36.240 (0.000) **	-3.690 (0.001) *	-5.312 (0.000) **	42.790 (0.000) **	332.39 (0.000) **
TRADE	No Trend	-0.205 (0.418)	0.939 (0.826)	2.811 (0.945)	3.492 (0.899))	-4.659 (0.000) *	-5.392 (0.000) **	43.460 (0.000) **	78.047 (0.000) **
	Trend	0.899 (0.815)	0.519 (0.698)	4.931 (0.764)	4.686 (0.790))	-3.511 (0.002) *	-4.518 (0.000) **	33.996 (0.000) **	64.353 (0.000) **
ROI	No Trend	3.033 (0.998)	5.308 (1.000)	0.181 (1.000)	0.109 (1.000))	-3.055 (0.001) *	-3.622 (0.000) **	28.487 (0.000) **	62.879 (0.000) **
	Trend	0.855	1.791	2.144	3.045	-2.023	-2.715	21.603	55.513



		(0.803)	(0.963)	(0.976)	(0.931)	(0.021 **)	(0.003)*	(0.005)*	(0.000)*
UER	No Trend	-5.406 (0.000) *	-5.795 (0.000) *	47.728 (0.000) *	57.132 (0.000)	30.644 (1.000)	-3.322 (0.000)*	27.960 (0.000)*	98.270 (0.000)*
	Trend	2.370 (0.991)	-2.018 (0.021) **	55.518 (0.000) *	339.97 6 (0.000)*	59.996 (1.000)	-2.327 (0.010)*	27.135 (0.000)*	406.35 (0.000)*
ULAW	No Trend	-1.356 (0.087)	-1.417 (0.078)	12.317 (0.137)	6.508 (0.590)	-2.022 (0.021) **	-4.5081 (0.000)*	35.47 (0.000)*	46.19 (0.000)*
	Trend	-0.224 (0.411)	-0.807 (0.209)	9.200 (0.325)	4.700 (0.789 0)	-0.805 (0.210)	-3.205 (0.000)*	24.073 (0.002)*	33.56 (0.000)*
UCOR	No Trend	-1.038 (0.149)	-1.637 (0.050) **	15.704 (0.046) **	14.623 (0.066)	-2.792 (0.002) *	-4.493 (0.000)*	35.895 (0.000)*	70.46 (0.000)*
	Trend	-0.210 (0.416)	-0.928 (0.176)	11.072 (0.197)	9.448 (0.305)	-1.838 (0.033) **	-3.254 (0.000)*	24.972 (0.001)*	58.77 (0.000)*
UEC	No Trend	-1.429 (0.076)	-1.820 (0.034)	14.753 (0.064)	8.699 (0.368)	-4.782 (0.000) *	-4.727 (0.000)*	37.214 (0.000)*	61.42 (0.000)*
	Trend	-0.083 (0.466)	-0.720 (0.235)	9.174 (0.327)	6.567 (0.583)	-4.449 (0.000) *	-3.466 (0.000)*	25.647 (0.001)*	48.11 (0.004)*
UIC	No Trend	-2.381 (0.008) *	-1.790 (0.036) **	15.360 (0.060)	5.536 (0.699)	-5.599 (0.000) *	-5.338 (0.000)*	43.690 (0.000)*	64.95 (0.000)*
	Trend	-1.537 (0.062)	-1.618 (0.061)	14.571 (0.068)	5.730 (0.677 4)	-4.751 (0.000) *	-4.103 (0.000)*	31.202 (0.000)*	55.26 (0.000)*

Notes: the parenthesis figures are likelihood values. * and * * represent the significance levels of 1 % and 5%, respectively. Nation (N) number = 4 and time (T) = 35. The Akaike Data Criterion (AIC) automatically chooses the maximum number of lags.

PANEL CO-INTEGRATION TEST:

After checking the stationary data, co-integration between expected variables was tested to verify the long-term relationship. The author used the Johansen Fisher and Kao co-integration analyses with the null hypothesis that there was no co-integration, as both variables were stationary at 1(0). When variables, such as the first difference, are introduced at the same time, we measure their co-integration for the panel and build the modeling approach.



$$Y_{it} = \beta_1 + \rho_i t + \beta_{1i}X_{1.it} + \beta_{2i}X_{2.it} + \beta_{3i}X_{3.it} + \beta_{4i}X_{4.it} + \beta_{5i}X_{5.it} + \beta_{6i}X_{6.it} + \beta_{7i}X_{k.it} + \dots N + \varepsilon_{it} \dots \dots \dots (1)$$

Note: $i = 1$, refer countries, $t = 1$ shows time, k = variable of interest (uncertainty variable), β_1 = intercept and ρ_i = show the trend.

Table – 3 (a) KAO co-integration test

	Model-1	Model-2 (law)	Model-3 (cor)	Model-4 exc	Model-5 inc
ADF	-4.4661 (0.0000)	-4.6881 (0.0000)	-4.8765 (0.0000)	-4.8411 (0.0000)	-4.7084 (0.0000)
Residual variance	0.1957	0.1939	0.1939	0.1948	0.1949
HAC variance	0.1189	0.1791	0.1804	0.1805	0.1801
Null Hypothesis: There is no co-integration					

Table – 3 (b) Johansen Fisher Panel Co-integration Test

No. of CE(s)	Model-1		Model-2		Model-3		Model-4		Model-5	
	Fisher test		Fisher test		Fisher test		Fisher test		Fisher test	
	Trace	Max. Eigen	Trace	Max. Eigen	Trace	Max. Eigen	Trace	Max. Eigen	Trace	Max. Eigen
None	115.0 (0.000)	228.2 (0.000)	145.9 (0.000)	193.9 (0.000)	107.1 (0.000)	341.7 (0.000)	155.9 (0.000)	203.2 (0.000)	144.8 (0.000)	212.7 (0.000)
At most 1	310.4 (0.000)	130.1 (0.000)	190.6 (0.000)	84.68 (0.000)	259.7 (0.000)	121.7 (0.000)	185.8 (0.000)	64.95 (0.000)	195.1 (0.000)	83.15 (0.000)
At most 2	155.2 (0.000)	116.0 (0.000)	99.31 (0.000)	54.53 (0.000)	119.4 (0.000)	64.17 (0.000)	113.2 (0.000)	47.67 (0.000)	106.3 (0.000)	44.83 (0.000)

Note: H_0 = No co-integration for the panel test of co-integration. Optimal lags for Fisher and Kao Panel Cointegration tests based on SIC are 2 and 2, respectively.

The unit-root test results showed stationary variables. The author then decides that the long-run association exists or not between the models' variables. So, before continuing the PMG and MG studies, we were conducting the panel co-integration studies under nonlinear formulations between exchange-rate volatility, political risk, and Foreign Direct Investment. This research used the Johansen Fisher Panel's Co-integration and Kao Co-integration Test to see whether or not a co-integration relationship exists. This co-integration methodology is mainly centered on discovering the number of Cointegration vectors in the nonlinear framework. For the nonlinear formulation, decomposed the



uncertainties parameters into positive and negative changes, as in model-1 incorporated exchange rate uncertainty and four different political risks such as law and order, corruption, external conflict, and internal conflict incorporated in model 2 to model 5 respectively, with positive and negative changes. Kao co-integration test and Johansen Fisher Panel Co-integration present in Table 3(a) and 3(b), respectively. Fisher Stats outcomes show under the Trace statistics and Max Eigenvalue correspondingly, which are based on the nonlinear formulation, respectively. Both tests demonstrated the long-run association among nonstationary variables entering in all models. No co-integration is the null hypothesis of this test. The result indicates that a 5% significance of the null hypothesis has been rejected. Therefore, long term nonlinear relationships are evident in the countries of South Asia between exchange rate volatility, political risks, and foreign direct investment, both within and among dimensions.

PMG and MG Results

The authors have used PMG and MG estimators in order to estimate short-term, and long-term dynamic links in the presence of an error correction term as a long-term association between macroeconomic uncertainties, political risks, and foreign direct investment have been identified. The findings for the nonlinear PMG and MG models are given in Table 4 with an exchange-rate uncertainty and four various political risks (law and order, corruption, external conflict, and internal conflict). Furthermore, to determine the effect on FDI author decompose the exchange rate uncertainty and political risk into positive and negative shifts. The Hausman test aimed to determine the most effective model estimator between PMG and MG and found PMG to be the best predictor. The findings described in Tables 4.5 show that most of the variables from model 1 to model 5 are significant with their predicted signs. For instance, inflation has a significant effect on FDI with their expected sign. The negatives sign indicates that a high inflation rate will signify the home country's instability in economic conditions. The negative sign of inflation is also confirmed by previous studies (see Asiedu, 2006).

Furthermore, the investment profile that defines investment risk. This measure comprises sub-components such as asset expropriation, contract profitability, and international companies' ability to send profits back to their own country. These sub-factors are highly crucial to multinational enterprise decisions on where to invest. Consequently, the investment profile significantly and negatively impacts FDI inflow except for model-3 and model-4. Thus, the negative effect indicates the highest investment risk that discourages investors from making an investment decision. This result support by an earlier study (Asiedu, 2006 and Hefeker, 2007).



Moreover, the infrastructure quality has a positive impact on FDI inflow, and all models are significant at 1 percent level except model-3. This result is back by the previous study conducted by Wheeler and Moody (1992). Countries with higher levels of infrastructure are much easier to attract foreign direct investment, as improved quality of infrastructure would enable businesses to work as effectively as possible. Further, trade openness a positive and significant impact on foreign direct investment. This result could realistic under the openness scenario. The inflow of FDI influences the overall trade volume due to MNE investing in import raw material, semi-finished commodities, and manufactured products. The trade policy of the host country may also affect its investment decisions. Previous research has shown that openness has a strong bond with FDI inflows (Edwards, 1990). Likewise, the active labor force also has a significantly positive effect on FDI. International companies are more likely to join developing economies with high labor efficiency and a professional workforce. Previous research has found that the economically active labor force indicators have a strong association with FDI inflows (see Asiedu, 2006 and Lemi and Asefa, 2003 for literacy research).

The rate of return on investment has a significantly adverse effect on FDI in Pakistan. The result is against the expected sign because Pakistan characterizes by a low income per capita nation. According to an earlier study by Hymer (1976), which claimed that developed countries have a low GDP per capita, but they provide a high return on investment. It increased FDI inflow in these countries. On the contrary, our result shows a negative relation between the return rate on investment and FDI inflow in Pakistan. It may be due to persistent political environment instability such as; poor condition of law and order, external and internal conflicts, etc. Thus, all these uncertainties trigger a significant amount of risk that is not encouraging for investment.

According to our estimates from Model 1 to Model 5, all positive uncertainties mean that "good uncertainty" is the volatility that is related to progressive shocks to an economy. Consequently, this kind of uncertainty leads to higher investment and asset prices. At the same time, negative uncertainty indicates the "Bad Uncertainty," which is related to adverse innovation in quantity (e.g., return, production) that tends to plunge investment and asset prices.

Exchange rate uncertainty is incorporated in model 1. A positive exchange rate uncertainty shows a sudden and unexpected rise in the local currency's foreign currency price, which implies an unexpected appreciation of the local currencies. Likewise, negative volatility means that local currency value decreases because of the exchange rate's unexpected depreciation. The positive uncertainty of the exchange rate has a significant and positive impact on FDI. Whereas negative uncertainty of the exchange rate also has a positive but



insignificant effect on FDI within the long run. This result consistent with a previous study (Solomon, B. 2007). Thus, the exchange rate's positive side outcomes reveal that a 1% increase in the exchange rate's unanticipated appreciation is related to 0.001% increases in FDI inflows in terms of GDP.

In contrast, the negative side indicates that a 1% increase in the exchange rate's unanticipated depreciation is related to a 0.002% increase in FDI inflow. Further, the association between exchange rate uncertainty and inflow of FDI is also positive but insignificant in the short run. Consequently, in both scenarios, either the shock on domestic currency is positive or negative, leading to the rise of the FDI inflows in South Asia.

Further, the uncertainty of law and order situation included in model-2, the long-run result shows that positive sides have insignificant effects. In contrast, negative sides have a significant effect on FDI with their expected sign, the result being consistent (Raza et al. 2015). On the other hand, short-run outcomes reveal that both conditions of uncertainties are insignificantly affecting FDI inflow with their expected sign. However, positive uncertainty means that the law and order situation in the country is under control. This situation encourages the investor for investment, and it consequently raises the FDI inflow. In contrast, FDI inflow decreases under negative uncertainty of law and order situation.

Corruption uncertainty is incorporated in model-3. The long-run result shows that positive sides have an insignificant effect. In contrast, negative sides have a significantly adverse effect on FDI, the result consistent with (Gasanova et al. 2017). On the other hand, short-run outcomes reveal that positive uncertainty positively and significantly affects FDI. In comparison, negative uncertainty has an insignificant effect on FDI inflow with its expected sign. However, the positive side shows a decrease in corruption, and the negative side means an increase in corruption.

Furthermore, the uncertainty of external conflict incorporates model-4. The external conflict measure to evaluate the domestic country's risk from foreign action, the subcomponents of external conflicts are foreign pressure, cross border conflict, and war. External conflicts can negatively impact global business in several forms, ranging from operational limitations to international trade and investment consents. Thus, positive uncertainty indicates a decrease in external conflict, whereas the negative side shows an increase in an external conflict. Our result shows that positive uncertainty has a significant effect.



In contrast, negative uncertainty has an insignificant effect on FDI with their expected sign in the long run. On the contrary, positive uncertainty has an insignificant effect in the short run. However, negative uncertainty has a significant effect on FDI with their expected sign.

In the model-5, last uncertainty included that related to internal conflict. It used to assess the country's political violence and its lead to severe effect on governance. The subcomponent of internal conflicts is a civil war, terrorism, and civil disorder. Thus, positive uncertainty indicates a decrease in internal conflict, whereas the negative side shows an increase in internal conflict. Our result shows that positive uncertainty has a significant effect. In contrast, negative uncertainty has an insignificant effect on FDI with their expected sign in the long run. On the contrary, positive and negative uncertainty has an insignificant effect on FDI with their expected sign in the short run.

Table 4. Results from the estimators of uncertainty and political risk of nonlinear pooled mean group (PMG) and mean group (MG)

Model	Model-1		Model-2		Model-3		Model-4		Model-5	
Long Term	PMG	MG	PMG	MG	PMG	MG	PMG	MG	PMG	MG
Uncertainty variables	UER		LAW		COR		EXT		INT	
Positive	0.001 ^b (0.029)	0.202 (0.153)	0.002 (0.969)	0.289 (0.309)	0.308 (0.341)	3.223 (0.447)	0.074 ^a (0.008)	0.101 (0.235)	0.041 ^b (0.044)	0.542 (0.246)
Negative	0.002 ^e (0.775)	0.148 (0.175)	-0.188 ^a (0.000)	-0.166 (0.167)	-1.133 ^a (0.000)	0.075 (0.894)	0.008 (0.833)	-0.249 (0.514)	-0.024 (0.400)	0.013 9 (0.744)
INF	-0.036 (0.062)	-0.324 (0.084)	-0.042 (0.005)	-0.409 (0.217)	-0.035 (0.211)	-0.650 (0.070)	-0.042 (0.018)	-0.482 (0.106)	-0.037 (0.025)	-0.628 (0.231)
INP	-0.137 (0.0423)	-0.299 (0.003)	-0.153 (0.0102)	-0.303 (0.332)	0.113 (0.2053)	-0.256 (0.289)	-0.095 (0.1296)	-0.181 (0.225)	-0.142 (0.038)	-0.037 (0.771)
IQ	0.114 (0.001)	0.340 (0.755)	0.074 (0.002)	0.604 5 (0.608)	0.068 (0.146)	1.602 (0.541)	0.0934 (0.000)	-0.539 (0.808)	0.093 6 (0.002)	-2.113 (0.455)
LFP	0.0694 (0.015)	0.427 4 (0.413)	0.0246 (0.062)	0.722 8 (0.416)	0.084 (0.014)	0.444 (0.572)	0.023 (0.051)	0.662 (0.460)	0.026 (0.028)	1.255 (0.387)
TRADE	0.0548 (0.000)	0.014 4 (0.916)	0.0383 0 (0.000)	0.229 3 (0.050)	0.0044 (0.667)	0.048 4 (0.807)	0.048 (0.000)	0.139 4 (0.378)	0.046 8 (0.000)	0.272 (0.269)
ROI	-0.3703 (0.249)	-6.844 (0.166)	0.094 (0.696)	-2.286 (0.513)	2.981 (0.000)	-1.047 (0.749)	-0.738 (0.020)	2.048 (0.294)	-0.731 (0.041)	4.531 (0.134)
ECT	-0.872 (0.014)	-0.526 (0.005)	-0.796 (0.000)	-0.497 (0.005)	-0.408 (0.0031)	-0.401 (0.037)	-0.610 (0.002)	-0.504 (0.020)	-0.542 (0.007)	-0.489 (0.015)



Short Term	PMG	MG	PMG	MG	PMG	MG	PMG	MG	PMG	MG
Uncertainty variables	UER		LAW		UCOR		UEXT		UINT	
Positive	0.033 (0.325)	0.027 (0.520)	0.080 (0.644)	0.197 (.008)	0.872 ^e (0.054)	-0.415 (0.087)	0.0284 (0.366)	-0.045 (0.842)	0.002 (0.956)	-0.076 (0.667)
Negative	0.001 (0.894)	.0140 (0.369)	0.122 (0.558)	-0.106 (0.319)	-0.148 (0.609)	0.031 (0.858)	-0.080 ^a (0.008)	-0.026 (0.801)	-0.139 (0.227)	0.023 (0.752)
INF	-0.015 (0.044)	0.030 (0.298)	0.0217 (0.071)	0.029 1 (0.414)	-0.021 (0.153)	0.038 (0.245)	0.0001 (0.983)	0.023 (0.312)	-0.017 (0.171)	0.008 (0.594)
INP	0.155 (0.030)	0.182 (0.000)	0.155 (0.000)	0.199 (0.000)	0.034 (0.689)	0.192 (0.000)	0.187 (0.012)	0.247 (0.029)	0.199 (0.006)	0.183 (0.087)
IQ	0.184 (0.835)	0.339 (0.584)	0.199 (0.793)	0.350 (0.605)	0.560 (0.569)	0.243 7 (0.651)	0.373 (0.583)	0.178 (0.828)	0.221 (0.747)	0.009 (0.991)
LFP	0.2664 (0.181)	- 0.075 6 (0.621)	0.1881 (0.212)	0.018 9 (0.822)	0.027 (0.660)	0.002 (0.946)	0.015 (0.855)	0.080 (0.026)	0.088 (0.061)	0.186 (0.095)
TRADE	0.0136 (0.693)	0.017 0 (0.125)	0.0001 (0.994)	.0107 (0.435)	0.0229 (0.494)	0.017 4 (0.262)	0.0164 (0.012)	0.015 3 (0.364)	0.022 5 (0.123)	0.020 2 (0.307)
ROI	-1.880 (0.121)	-0.714 (0.836)	-0.737 (0.719)	-0.011 (0.997)	-1.727 (0.505)	-0.911 (0.708)	-2.893 (0.237)	-0.892 (0.819)	-2.411 (0.407)	0.671 (0.889)
C	1.577 (0.001)	0.292 (0.316)	1.077 (0.000)	-6.404 (0.499)	5.240 (0.006)	-4.386 (0.663)	-0.741 (0.158)	-9.183 (0.522)	-0.537 (0.189)	-7.402 (0.676)
Hausman Test		0.000		0.000		0.000		0.000		0.099 9
Size (N×T)	128	128	128	128	128	128	128	128	128	128

Conclusion and Policy Recommendation

The analysis mainly aims to evaluate the impact of political risk and macroeconomic policy uncertainty on FDI in selected countries in South Asia. A co-integration PMG method is used to predict long-term and short-term economic variables



Before performing empirical research, South Asia's policy uncertainty index was developed. These indices are further used to check the relevance of FDI inflows. However, according to study findings, the authors found an asymmetric long-term and short-term association exists between political risk index and FDI. The outcome of observed variables as per our study hypothesis. Political risk includes law and order, corruption, external conflict, internal conflict, etc. Results show that political risk is essential for both long-term and short-term FDI inflows to South Asia.

Apart from political risk, the significance of macro-economic policy uncertainty for FDI inflows has been established. Our study also stated that macroeconomic policy uncertainty's negative sides adversely affect South Asian countries' FDI inflows. Negative uncertainty also discourages international investors and creates an insecure or unpredictable climate for developing countries. Exchange rate uncertainty usually discourages investors from investing in South Asia. Trade openness has a robust long-term influence on FDI inflows. This may be attributed to a trade liberalization liquidity surplus that facilitates FDI inflows. The short-term effect of trade openness on FDI inflows is also positive. Inflation harms long-term, short-term FDI inflows. An investment profile variable shows a long, positive impact on FDI in the short-run context. Infrastructure quality (IQ) has a positive short- and long-term impact on FDI. Moreover, Economic Active Force Participation (LFP) positively affects both short-term and long-run FDI. On the other hand, short- and long-term returns on investment adversely affect FDI.

However, South Asian nations must also emphasize the political risk elements and causes of macroeconomic policy instability in order to attract FDIs from other parts of the world. In FDI policies, a global risk climate and macroeconomic policy uncertainty should be given considerable importance.



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