



The Criticality of Foreign Direct Investment on Financial Development: A Case Study of Pakistan

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ABSTRACT

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Economic growth and financial development are fueled by foreign direct investment. It is crucial for emerging markets and developing economies. The relationship between foreign direct investment (FDI) and financial development (FD) in Pakistan between 2001 and 2020 is empirically surveyed in this study. We have taken the Financial development (domestic credit to private sector % of GDP) as our dependent variable while FDI, (net inflows % of GDP), trade openness (TO), population growth (PG) and inflation (INF) as our independent variables. We extracted our all data of our variables from World Bank (WDI). Augmented Ducky fuller (ADF) and Philips Peron (PP) has been used to check the stationarity of data before using ARDL. Furthermore; we have applied Long Run Bound Test in order to know the long run relation. The findings indicate that foreign direct investment (FDI) and population growth (PG) have positively impact on financial development (FD). Additionally, the study finds that, in the case of Pakistan, trade openness (TO) is insignificant to financial development whereas inflation (INF) have a negatively significant. We applied Cusum and Cusum square test for model stability. The results of stability test show that our model is stable as are plots are within the critical bound. The study will help to design such policy that will attain specific goals to enhance foreign direct investment and financial development. It is anticipated that the findings would provide empirical insights and practical consequences for scholars and policy makers.

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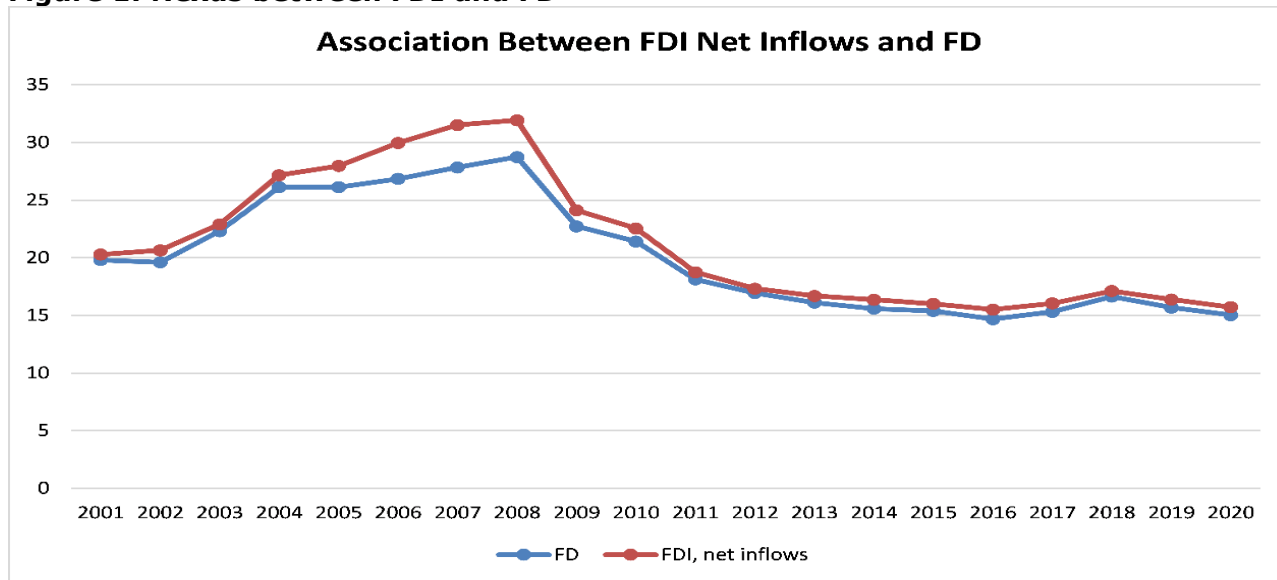
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1. Introduction

Foreign direct investment (FDI) is significant part of a nation's economic development. Foreign direct investment has numerous advantages, such as enhancing capital accumulation, technological innovation, and productivity. These factors contribute to a progress of nations in various domains, including the financial, commercial, and general economic system. Moreover, authorities concur that in both established and developing countries, foreign direct investment (FDI) is an essential part of a development strategy. The European Commission states that Foreign direct investment (FDI) is an operator of competitiveness and development of economy. Foreign direct investment (FDI) is significant types of investments for the economic development (EG) of a nation since it draws in investors who support economic expansion and improve the caliber of human resources (Q. Khan, Xinshu, Haider, & Jaffari, 2021). Foreign direct investment helps to boost economic growth by increasing the availability of good and services; further more

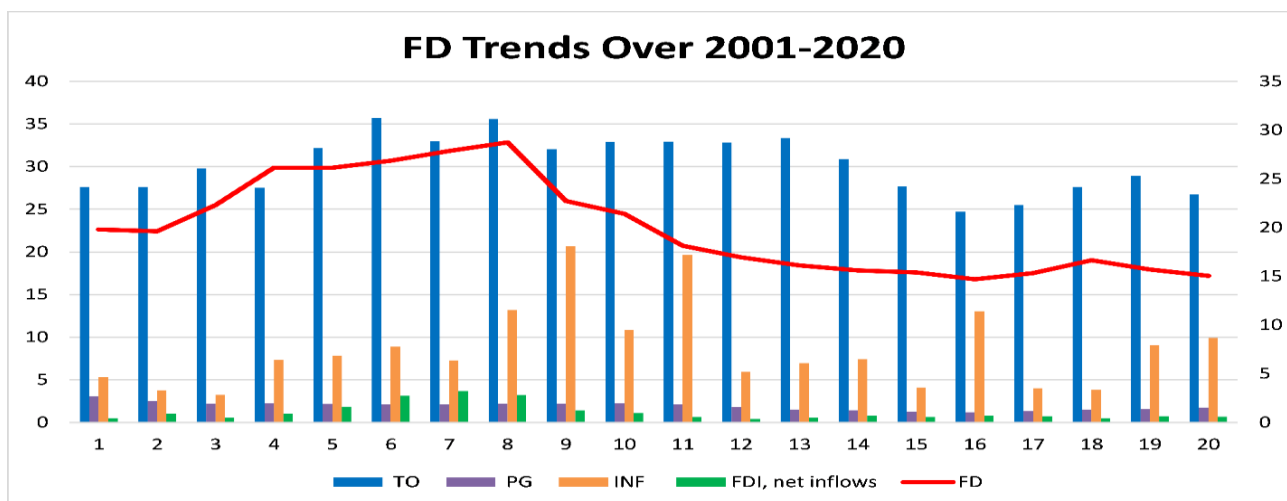
foreign direct investment is also an valuable source of development of human capital, FDI helps to develop the human capital by providing different training and education to workers. Several studies have investigated the connection between financial development (FD) and economic expansion (Ishfaq, Qamri, Ajmal, Khan, & Akbar, 2024). There have also been some studies on the connection between financial development and reducing poverty; these studies offer a detailed examination of the nature of this relationship, while some of the studies shows most of these findings has concentrated on the insignificant effect of foreign direct investment (FDI) on poverty alleviation. While some studies have concluded that foreign direct investment has a harmful or negligible influence on poverty reduction, the bulk of the evaluated material is in favor of foreign direct investments beneficial effects on reducing poverty (Q. R. Khan, 2023). The majority of research has indicated that foreign direct investment and financial development are positively correlated (Q. R. Khan, Anwar, Muhammad, Ghafouri, & Ahmad, 2024).

Figure 1: Nexus between FDI and FD



Although there has been considerable amount of research concentrating on how FDI affects the economy's many facets, including air pollution, income inequality, shadow economies, institutional quality, and economic growth and various aspects (Ehsan, Nazir, Nurunnabi, Raza Khan, Tahir, & Ahmed, 2018; Jafri, Liu, Usman, & Khan, 2021). For example; Some of the studies demonstrate that building green industries and reducing environmental pollution are major goals of the financial system and financial resources (Haider, Raza, Jameel, & Pervaiz, 2019). The effect of FDI on carbon emission for newly industrial countries, and suggest that to meet upcoming targets for sustainable development, more money must be invested in the use of green energy (Q. R. Khan, 2023; Shah, Yan, Khan, Khurram, & Khan, 2021). Furthermore, several studies have emphasized the advantages effect of these investment regarding recipient economies Iamsiraroj (2016); Saidi and Spray (2018) Haini, Loon, and Raimi (2023) a high degree of economic stability, a notable increase in financial resources, productivity gains, and ability to obtain the international markets (Gkillas, Tsagkanos, & Vortelinos, 2019). Some of researcher explored how FDI affects growth based on absorption capacity and local conditions (Haq, 2023; Omran & Bolbol, 2003). Moreover, by literature review we discovered that the nations with lower level of human capital may be attractive for overseas direct investment depending on the type of activity the foreign direct investment will produced. As a result, it will help developing economies to grow who are struggling for it. Through the activities of foreign firms in host economies and through spillover to the internal market. In simple, foreign direct investment plays important role in access of new markets, infrastructure development and increase competition.

Figure 2: FD association trends with independent variables



Our study tries to contribute in a few different ways to the collection of existing knowledge. To start with, previously different types of studies are made by countries with different aspects as described before which show different results because the social, financial, and economic origins of each country; after undergoing literature review for instance; According to some studies, financial development and economic growth Ciobanu, Dinu, Iacob, and Constantinescu (2022); Ishfaq et al. (2024) are significantly impacted by foreign direct investment (FDI). However, environmental degradation and foreign direct investment; we see multiple studies like Qamri, GM.et al; (2022). Many studies show link among trade liberalization and foreign investment among most of them show significant relation , for instance Gola, Qamri, Panhyar, Khan, and Ali (2023). Realizing the need and important areas of concern that that have not been addressed in the past researches conducted, the principal goal of this paper is to analyze the criticality of foreign direct investment on financial development in Pakistan from 2001 to 2020.

Secondly, in order to see the linkage among them we have used different variables, for instance we take financial development (a proxy DCPS, % of GDP) as our dependent variable and FDI net inflows (% of GDP), TO (as sum of imports and exports, % of GDP), INF and PG as these variables are more relevant after consumer credit theory of Musharf and PAK China corridors. For instance, CPEC and FDI aspects; energy, transport, infrastructure and industry are central to a prosperous and thriving economy. The results indicate FDI and population growth has positively effect on financial development (FD). We have used different methodology to check relation between financial development (FD) and foreign direct investment (FDI); for instance, to verify stationarity we use Augmented Dickey Fuller (ADF) and Philips and Peron (PP), then use Auto Regressive Distributed Lag (ARDL) method after verifying stationarity and we applied ECM to check short run relation. And Long run bound test for long run relationship, CUSUM test and CUSUM Square test in order to check stability of model. This study is beneficial for policy makers to gain a comprehension of tactics in Pakistan. It is anticipated that the findings would provide empirical insights and practical consequences for scholars and policy makers. The remaining of this study structured the way that described below: Section 2; reviewing literature. Section 3; theoretical background. Section 4; Empirical data is discussed, along with the data used and methodology of econometric. Section 5; conclusion and policy implication.

2. Literature Review

The study examines earlier research on how the foreign direct investment and Financial Development effect each other in case of Pakistan. Numerous research studies analyzing that variables influencing the trade openness, inflation and population growth. The financial development (FD) and population growth is positively impacted by foreign direct investment (FDI). Waqas, Shaheen, Awan, and Aslam (2011) studied the ADRL technique for Granger causality testing and co-integration should look at the long-term equilibrium relationship and potential causality direction between FD, EG for Pakistani economy. Mahmood (2013) demonstrated the association between EG and FD in Pakistan for time period 1979-2008. This

study shows that real deposit rate, real interest rate, financial investment and development are all positively correlated. Over period use a quarterly data set covering 1990–2008. To study the long-term collaboration ARDL bound test is employed and VECM frame work for investigation of causality. Through the process of technical diffusion, it is investigated that FDI is thought to have a favorable effect on economic growth, according to theoretical and empirical studies (Q. R. Khan et al., 2024). Choong and Lim (2009) demonstrated that country having it follows that it is in a better position to benefit from FDI inflows more successfully since it has a strong financial system as its basis. Additionally, FDI is attracted to a financial sector that is developing healthily. Khan et al., (2019) suggested that investment efficiency, not volume, is the primary conduit connecting financial development to growth. Additionally, it offers a model in which financial liberalization under an unfavorable regulatory environment is the cause of the negative association between growth and financial inter mediation. The study shows that the Granger Causality test showed that there is a bi-causal relationship between Foreign Direct Investment (FDI) and Trade Openness (TO), suggesting that Trade Openness (TO) and Foreign Direct Investment (FDI) policies have a statistically significant impact on economic expansion (Mohammad, 2015; Mohammad & Ahmed, 2017; Nawaz, Hussain, & Hussain, 2021).

Hermes and Lensink (2003) results contradict the widely acknowledged belief that an rise in Foreign Direct Investment (FDI) supporting the economic growth of low developing nations may be vital. By using PVAR approach, these studies look into any possible connection between FDI and FD over period 1990-2013 in selected small island economies. Its show bi-causal relationship between FD and International investment helps the countries' economies grow. Development of finances cooperatively encourage FDI by boosting access to outside funding and assisting indirectly with overall economy (Desbordes & Wei, 2017). FDI can boost GDP, depending on the circumstances in the local area and absorption capacity. The findings suggest that before attempting to draw in foreign direct investment, nations should endeavor to modernize their internal financial systems (Omran & Bolbol, 2003; Shahzad, Xu, Lim, Yang, & Khan, 2024). The causal relationship between FD and EG in Egypt between 1960-2001 within tri variety vector Autoregressive (VAR). Applying Granger Causality test using VEC methodology, results support that causality of FD and EG is bi-directional and FD causes EG through boosting efficiency and providing more resources for investment was investigated by (Abu-Bader & Abu-Qarn, 2008). Valíčková and Havránková (2002) discussed the nature and direction of relation between FD and EG, employing data over the years from 1970–1999 from thirty development nations. The study aligned the hypothesis that FD and EG are causally related and examines that improved domestic financial situation not only encourages foreign businesses to invest in Pakistan but also make it possible to maximize the gains from such investments (R. E. A. Khan & Nawaz, 2010).

Majeed, Jiang, Ahmad, Khan, and Olah (2021) analyzed that the direct linkage between FDI and FD variables are explanatory an increase in FDI inflows make more money available overall for the domestic economy and makes money market financial intermediation easier. The banking sector can encourage trade with overseas investors. Alzaidy, Ahmad, and Lacheheb (2017) it examined that how the Malaysia economy effected by foreign direct investment (FDI) from 1975 to 2014. The results indicate that FD is crucial in moderating the effect of FDI on economic growth. Mpanju (2012) investigated that the influences of foreign direct investment (FDI) inflows on creation of jobs in Tanzania between 1990 and 2008. The factors have a strong positive relation as seen by the results. This study concludes that Tanzania employment creation especially does depend upon FDI inflows. Shamim, Azeem, and Naqvi (2014) investigated the relationship between FDI and poverty alleviation. Time series covering the years 1973 through 2011 provide the basis of the data. The findings indicate a favorable correlation between trade openness, FDI, GDP ratio, and investment. The second model uses the integration technique the results show FDI had negative impact on poverty. Ang (2009) this study determined that the function of FDI and FD as the procedure of economic development of Thailand, it uses time series data from 1970 to 2004; the results demonstrate that while FDI has a negative long- term impact on output expansion, FD boosts economic development. The findings hold up well to several financial development metrics (Ahmed, Azhar, & Mohammad, 2024).

Amoh, Abdallah, and Fosu (2019) explored that the FDI and FD linkage and to evaluate how strongly the various FDI metrics are related. Structural equation modeling is used to a subset of data spanning 1970 to 2016. The analysis concludes that, emerging economies need to concentrate on creating a friendly investment climate. Qamruzzaman, Mehta, Khalid, Serfraz,

and Saleem (2021) examined that the relationship among foreign direct investment, financial innovation and exchange rate volatility in a select south Asian nations from 1980 to 2017. It applies the causality test, ARDL, and unit root test. These findings suggest that the financial system inventiveness and ongoing FDI inflows help to reduce the volatility of the foreign currency market. Additionally, non-linear ARDL verifies that the model has asymmetric co-integration. Wang et al. (2022) investigated that the linkage of FDI on carbon emissions for the newly industrialized world using annual data and the panel ARDL technique from 1990 to 2016. Long-term analysis shows that all activities related to foreign investment directly affect carbon emissions, however economic development significantly and negatively affects carbon emissions. Fauzel (2016) determined that the relationship among economic expansion and FD. It makes use of the PVAR and the connection between FD and FDI investment for the years 1990–2013. It demonstrates that FDI is a crucial component in the growth of the financial market. The relation among FD and FDI is also bi-causal. Dutta and Roy (2008) explored that the destination country political climate may have an impact on FD contribution. It shows the empirically investigate the role of FDI and FD are related to political risk. A panel of 97 nations is used to demonstrate that the relationship between the two is strictly nonlinear. FD has a detrimental effect on FDI once it reaches a certain threshold. According to Lutfi, Ashraf, Watto, and Alrawad (2022) investigated the role FDI of Pakistan influx from 2001 to 2019. FDI inflows was the dependent variable. According to the stationary test, FD has no significance and FDI and economic policy uncertainty have modest significant relationships.

3. Theoretical Framework

The connection among Foreign Direct Investment (FDI) and Financial Development (FD) is examined theoretically. Foreign direct investment (FDI), Inflation (INF), Trade openness (TO), Population Growth (PG) are independent variables. The dependent variable is Financial Development (FD). FDI and TO has positive relation. Consequently, greater TO increases both domestic and foreign FDI inflows. Wagoner's law states that as domestic governments receive more foreign direct investment, economic growth and national revenue both increase. Government spending will consequently increase dramatically. Inflation and Foreign Direct Investment can be complicated. FDI generally has the ability to affect inflation directly as well as indirectly. FDI directly has the ability to raise domestic output in order to meet demand for goods and services, which reduce inflationary pressures. Indirectly, FDI can also bring in foreign technology and capital, which can increase the economy's efficiency and production. It increases output and can control inflation by reducing expenses. FDI has the ability to improve job prospects and generate employment. It might also tempt citizens of other states or even other regions to move to areas where foreign direct investment is concentrated. As a result, people can live in these places. Various economic frameworks provide unique perspectives on the ways in which foreign direct investment (FDI) impacts financial development. Based on certain ideas, FDI promotes financial development by supplying resources including cash, technology. Furthermore, according to certain ideas, foreign direct investment (FDI) could be detrimental domestic financial institutions.

The marginal rate of return on investment is equivalent to an interest rate, according to neoclassical investment theory. Neoclassical economists contend that FDI may enhance financial development by bringing in capital and technology, all of which can boost economic growth and productivity. The economic aspects of foreign direct investment (FDI) mainly emphasis of the neoclassical approach to FDI. Neoclassical theory states that variables including labor costs, market size, resource availability, and technological capabilities influence foreign direct investment (FDI). This method places a strong emphasis on how laws and rules from the government can either help or hurt foreign direct investment. It suggests that nations with welcoming investment climates that is, those with stable political and economic environments, open and transparent regulatory frameworks, and robust property rights protection are more likely to draw. The Keynesian theory of places a strong emphasis on the significance of interest rates when making financial decisions. FDI have contradictory effects on financial development. It can provide the necessary extra capital during some financial crises, but if it is not properly managed, it can also lead to financial instability. According to Keynesian (1936), FDI can boost aggregate demand and economic growth by allowing businesses to create jobs, raise income levels and boost consumer spending abroad. The rise in demand of good and services, boosting the economy of the host nation. It highlights how FDI promotion is aided by government initiatives. They argue that the governments' use of monetary and fiscal policies to interfere may

have an impact on investment decisions and create an environment that encourages foreign direct investment. The institutional approach explains how institutions affect the relationship between financial development and foreign direct investment. It highlights how important it is for institutions to function properly, including strong legal and regulatory frameworks. This methodology provides insightful insights into how countries may promote foreign direct investment and maximize its positive benefits on growth of economy. Marxist theory sees foreign direct investment (FDI) as means by which multinational corporations exploit her labor and resources that are available in developing countries leading to increase in inequality and a hindrance in the expansion of the financial sector.

4. Data and Methods

The concept used in this study is chosen based on economic theory and the availability of data. This study has used the ARDL technique and a quantitative research strategy. The data of study is Pakistan country covering 20 years from 2001 to 2020. As our data is time series, this study employed the Augmented Ducky Fuller (ADF) and Philips Peron(PP) to check the unit root because our data is time series and there is need to check the stationarity of data before using ARDL. Furthermore; we have applied ECM to check short run relation; which suggest that our results demonstrate the convergence and statistical significance of the error correction term. While applied the Longrun Bound Test in order to know the long run relation. We also applied the Cusum and Cusum square to check stability of our model.

$$FD = \beta_0 + \beta_1FDI + \beta_2TO + \beta_3INF + \beta_4PG + \varepsilon \tag{1}$$

4.1. Dependent Variable

Financial development (DCPS)

4.2. Independent variable

Trade Openness (TO), Population growth (PG), Inflation (INF), Foreign Direct Investment (FDI), ε : Error term

Table 1: Measurements and Variables

Variables	Measurements	Sources
Dependent variable		
FD	Domestic credit to private sector(% of GDP)	WDI
Independent variables		
FDI	Net inflows as %of GDP	WDI
TO	% of GDP	WDI
INF	(By GDP deflator, %)	WDI
PG	Annual population growth rate	WDI

5. Results and Discussion

To verify stationarity; ADF (Augmented Dicky Fuller) and Philips Peron (PP) are used.

5.1. Results of ADF

H0: there is unit root test (series is non-stationary)

H1: there is no unit root

If probability value <50% (0.05), reject H0

All the variable become stationary at level, then we use ARDL test. Then following are the results below with analysis interpretation.

5.2. ARDL Co-Integration Method Results

We have used ARDL model in our study due to the variation on order of integration. According to the ADF and Phillips Peron results, the order of our integration is different. By using the Akaike information criterion, ARDL has implemented for long term identification. There is long term relation among the variables if the value of F- statistic is greater than upper and lower bound. Here, the results indicate that there is long run relation among variables.

Table 2: Error Correction Model (ECM) Result of ARDL Co-Integration Techniques

Variable	Coefficient	Std. Error	Prob.*
DCPS(-1)	0.747801	0.162545	0.0058

FDI_NET_INFLOWS	-0.593714	0.22494	0.0383
INF	-0.139083	0.067972	0.0961
PG (-2)	4.774892	2.006748	0.0632
TO(-2)	0.138434	0.127573	0.3274
R-squared	0.992678	Akaike info criterion	2.579761
S.E of regression	0.809925	Schwarz criterion	3.222808
Sum Squared resid	3.279896	Hannan-Quinn Criterion.	2.668429
Log Likelihood	-10.21785		
Durbin-Watson Stat	2.735699		
S.D. dependent var	5.133404		

Our results are consistent with following studies Lestari, Lesmana, Yudaruddin, and Yudaruddin (2022); Olorogun, Salami, and Bekun (2022) all these studies show positive impact between FDI and FD. Similarly, population growth PG (2.379418) which is also significant. While trade openness TO (1.085133) have t-value less than 2; which show it is insignificant. Moreover; Kim, Lin, and Suen (2010); Mohamed Sghaier (2023); Sanusi, Meyer, and Ślusarczyk (2017) all these support our results. While inflation (INF) have (-2.046166) t- value, which show that it is negativity significant. Our results aligned with these studies; for instance, Dar and Nain (2023); Mustafa (2019). F-statistic value is (56.49333). We have applied ECM to check short run relation; the value of ECM is (0.1) which implies that our results demonstrate that the error correction term is convergent and significant. The Durbin Watson test value of 2.7356, which is greater than 2, indicates that there is no auto-regressive issue. F-statistic value of 4, which exceed upper and lower boundaries; then it demonstrates a lasting partnership. We use the Cusum Test and Cusum Square to check stability of our model. Our results demonstrate that our model is stable since the plots fall inside the important restrictions.

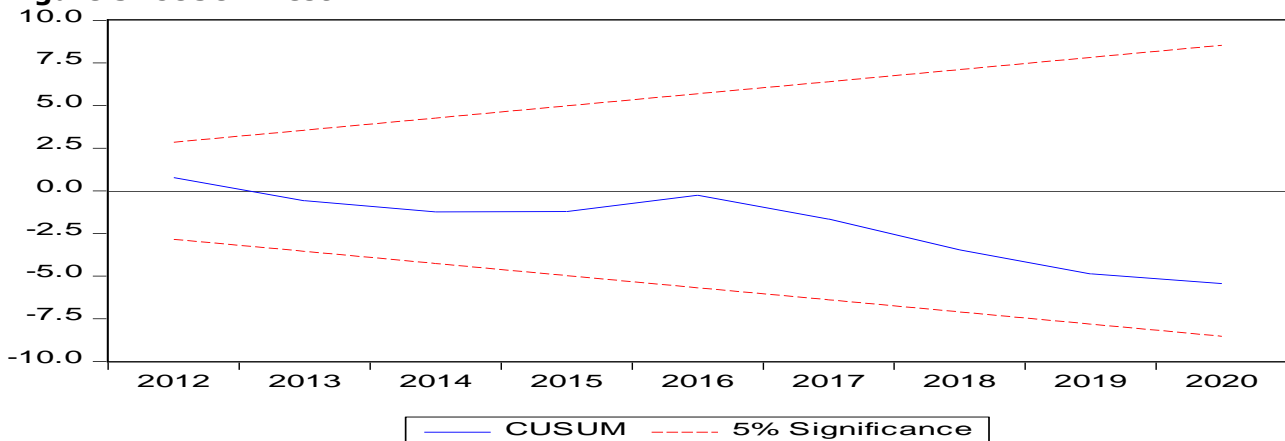
Table 4: Long run Result of ARDL Co- Integration Approach

Test Statistic	Value	Signif.	I(0)	I (1)
Asymptotic:n=1000				
F-Statistic	4-857796	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	18	Finite Sample:n=35		
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
		Finite Sample: n=30		
		10%	2.525	3.56
	5%	3.058	4.223	
	1%	4.28	5.84	

The results from Long Run Bound Test, we are able to determine the relationship is long term. F-statistic value of 4, which exceed upper and lower boundaries; then it demonstrates a lasting partnership.

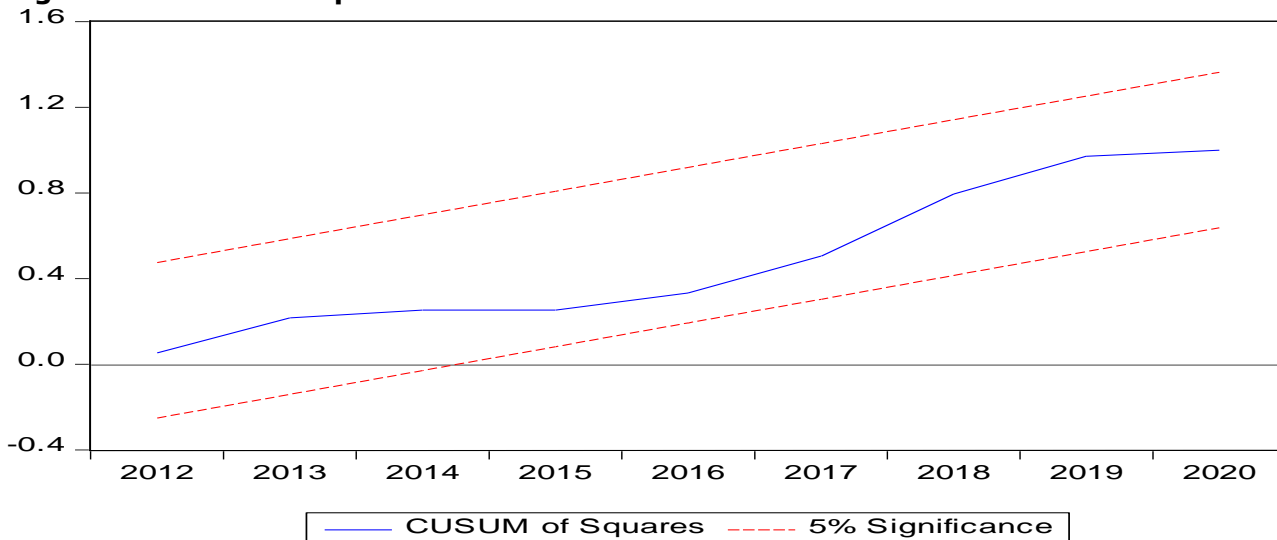
5.3. Stability Tests

Figure 3: CUSUM Test



To check stability of model, we apply Cumulative Sum (CUSUM) test, in order to check whether the model stability. At significant level of 5%; the results find that model is stable as plot lies within the bound.

Figure 4: CUSUM of Squares Test



After verifying, the CUSUM test, we apply Cusum square test; the results indicate that the plots lies within the bound at significant level of 5% so it mean our model is stable.

6. Conclusion and Policy implementation

Foreign direct investment is claimed to be necessary for achieving and maintaining competitiveness of the economy. The competitiveness of the economy under investigation is significantly impacted by foreign direct investment. The literature demonstrates a lack of appropriate investigation in this topic, leading to inconsistent findings. Thus, this study examines how foreign direct investment affects the Pakistan financial development from year 2001-2020, with other control variables including trade openness, Inflation, Population growth. The results from estimation show that FDI inflow enhance financial development in context of Pakistan. Additionally, we have examined that foreign direct investment has favorable effects with INF and population growth on financial development. While trade openness is insignificant to financial development. Therefore, the FDI is a best instrument to help the government to maintain its efforts to create a welcoming market through legislation and develop plans to draw in more foreign direct investment so that country can take advantage of it. Our study has significant theoretical and applied ramifications for regulators, legislators, and other interested parties. First, foreign direct investment will accelerate growth of economy and increase the quality of money available for the economy, strengthening financial intermediaries, like the banking system or available financial markets.

Secondly, foreign direct investment can bring management practices and advanced technologies, which can help to enhance productivity as well as efficiency, furthermore which results in access to new markets, infrastructure development. Thirdly; A comparatively advanced stock market makes listed firms more liquid and eventually lower capital costs, attracting foreign investors. Moreover, the results emphasize that there is need to strengthen the institutional frameworks; which includes regulatory reforms for instance; ensure transparency, reduce corruption and protect investor rights. Legal reform; which enforce contracts and resolve disputes efficiently and enhancing investor confidence. There is also need to make development in financial sector such like; banking sector reforms, capital market development and encouraging microfinance and supporting small medium enterprises. It is need of financial sector development, along with it there is importance of human capital development. Human capital development includes investment in education, training, research; these measures will be beneficial to build a skilled workforce that can meet the demand for modern industries. And by promoting the research and development will drive innovation and productivity. Most importantly trade liberalization; reducing trade barriers such as tariffs and non-tariff barriers. And to promote export oriented foreign direct investment. Along with this by improving market access and investment opportunities will attract foreign direct investment.

By implementing these policies Pakistan could create a synergistic relationship between foreign direct investment and financial development leading to sustainable economic growth and development. Pakistan can create a conducive environment that attracts substantial FDI and fosters robust financial development, leading ultimately to sustainable economic growth.

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