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Macroeconomic Determinants of Foreign Direct Investment in Pakistan: Evidence from Economic Growth, Inflation, Exchange Rate, Interest Rate, and Corruption (1995-2025)

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ABSTRACT
Foreign Direct Investment is considered as the most imperative and essential source of generating capital not only in developing countries but also in under developed nations. Developing economies have a shortage of capital consequently they are competing with other economies to fascinate greater FDI inflow as possible. FDI have a vigorous character in infrastructure, efficiency and high-tech enhancement. Besides this, FDI is beneficial for both host and established economies since the marginal productivity of investment in developing nation is more because of its less investment and overseas investors pursue high profits and attract towards the developing nations. The intention of this investigation is to analytically examine an association among FDI and growth rate in Pakistan and other key economic factors such as exchange proportion, interest proportion, corruption and inflation from 1995-2025 by using Bound test ARDL (Augmented Regressive Distributive Lag) model. The econometric result of the analysis shows that interest rate, inflation and corruption have negative relation to foreign direct investment in both short and long run. While GDP and exchange rate have positive relation in long and short run, ECT (-1) (-0.4728) shows the model will converge to equilibrium by the rate of 47%. R-squared shows 87% total variation in endogenous variable due exogenous variables. Diagnostic Test illustrate there is not autocorrelation, heteroscadacity problem in the model and model in stable with in the critical region. Analysis suggested that Government should take measure in directive to alleviate the exchange frequency that may be attracting more investor for sake of higher profit. Developed FDI arrivals in turn fetch more educate effort and substitute absolute technology.

KEYWORDS:
ARDL Bound Test, Exchange Rate, Gross Domestic Product, Interest Rate, Inflation Corruption foreign direct investment.

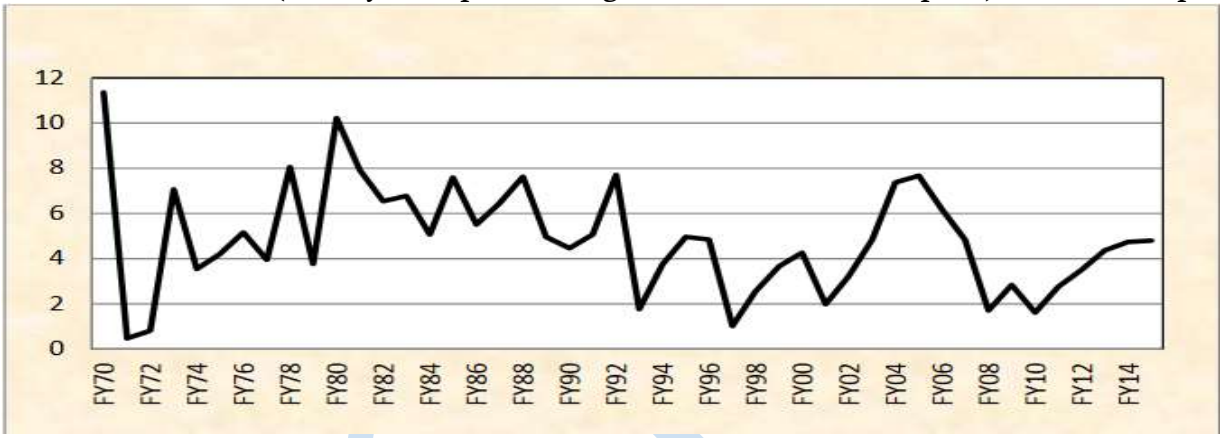
1. Introduction
In current scenario, economic growth is one of the major problem among the biggest problem of the Pakistan. In developing countries specially in the third world countries FDI plays a

vital role in economic growth. Basically in very start Pakistan is an agrarian nation later on its moves towards the industrial sector. In Bhutto regime due to the Nationalization of Industries, investment in the country decreases.

Pakistan's economic growth is always fluctuated between high low levels due to unstable economic and political circumstances. In 50's, 60's. 70's, 80's, and in 90's the growth rate is 2.7%, 6.5%, 5.1%,6.4% and 4.7% respectively because of frequently changed of government, Martial laws and also the9/11 incident. Pakistan reached at highest point of economic growth in year 2004,8.96% and the worst and lowest point 1.21% in year 2008 **(Nilofer and Qayyum, 2018)**

GDP of Pakistan from 1979 to 2015 (*Source:World Bank ,2016)*

Foreign Direct Investment (FDI) refers to foreign investment made through long-term interests and control (usually a ten percent or greater stake in an enterprise) over an enterprise

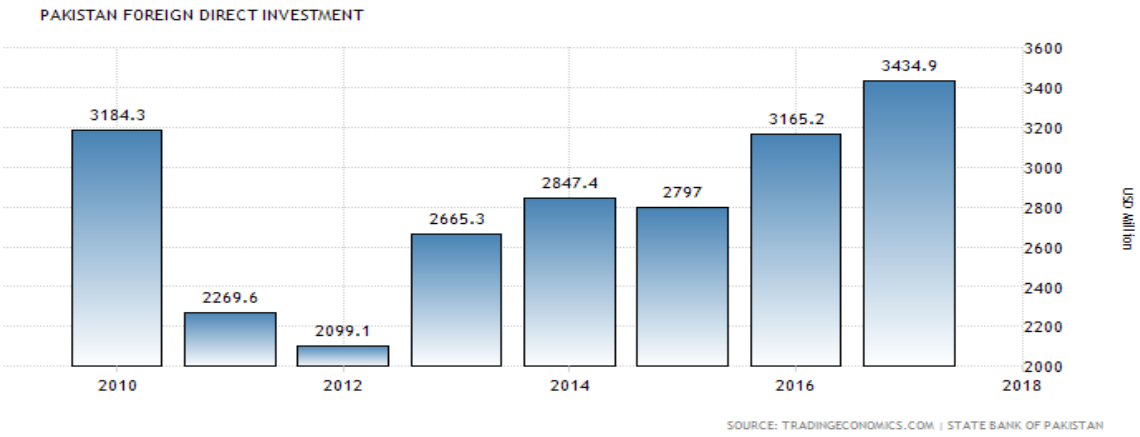


operating in another country. In the case of FDI, the investors are not only buying equities of a company but also they have operational control in the foreign company. In these ways, investors develop long-term ties with the host companies and exercise voting rights on the board to take an active role in the company's decision-making. FDI is not only a source of much needed financial capital but also has a catalytic effect on economic development in terms of introducing new methods of manufacturing across international borders, administrative capabilities, and effective marketing systems (Ibarra-Olivo et al., 2024).

Macro-economically, FDI is a key enabler and a major force of growth and globalization; a way to complement domestic saving and strengthen economic relations between countries. International trade historically accounted for most economic activity around the world in the 1970s, but direct investment now plays a big part in attracting capital inflows and in technical integration (Ibarra-Olivo et al., 2024). In the last twenty years FDI has experienced a giant leap in flows from all over the world and this is a clear indication of its importance in driving the development process, especially in fast growing emerging markets like China and India. FDI strengthens the production potential of local firms, increases competition in markets and provides much-needed momentum for developing economies that are trying to rapidly speed up their economic growth through technology transfers and the introduction of efficient machines.

On the other side, host economies also experience a range of structural benefits from attracting FDI: job creation, skills development, positive balance of payments effects due to export increases and import substitution (Morris & Aziz, 2011). Developing countries, such as Pakistan, attract these investments by providing security and economic conditions for

investors. Interest rates are important in determining capital flows across countries: capital tends to flow to countries with higher investment returns. Moreover, low level of inflation indicates that the economy is strong internally, and the central bank is practicing good monetary policy and the government is good, in terms of fiscal responsibility (Morris & Aziz, 2011). Finally, FDI continues to be a key factor in sustainable economic development in the form of job creation, increased domestic saving, and increased domestic output.
Foreign Direct investment of Pakistan rises by $291.5MN in June,2018, contrast with rises of $237.9MN in May 2018. The highest FDI inflow is recorded in year June 2008 i.e. $1.3bn while lowest recorded inflow is $-53.9mn in year 2015



Pakistan Foreign Direct Investment, 2010–2017 (***Source: Trading Economics n.d.)***

FDI provides a channel for host nations to contribute in the globalization procedure which is prepared contact to the global market **(V.R and B.B 2007).** Corruption is the greatest hurdles for social and economic development, it demoralizes the development by misleading the rule of law and weaken the institutional foundation on which the economic growth is established. It affects the living standards, absence of justice or self-determination and loss of economic capitals because of corrupt governance. It also disturbs the faith of people in the Administration and amongst each other. Corruption also opens a new door to generate more exploitation. It reduces the motivation and productivity on work that is easy to earn money in a deceitful way.
Consequently, it becomes generalized and affects every sphere of society. Corruption is a recognized factor which does not only affect the FDI as well as discourage the economic growth in Less Development Countries. Corruption which mentions to the misapplication of community control (office) for private profit is utmost likely to happen where the community and private segments encounter.
As many researchers have already documented in their research literature that corruption plays a major obstacle for economic growth and development, and it has a negative association with investment and growth. Therefore, significantly it makes sense as statistical and economical.
According to Dornbusch research, the exchange rate is the price of a nationwide currency with respects to a different currency, an exchange rate has two modules, domestic and foreign currency, the value of per unit of foreign currency is stated according to of the national

currency. In a closed economy environment, it is always variable which affect the macroeconomic factors like trade, money inflow, inflation and FDI (Dornbusch 1996).
Developing countries can also manipulate these funds to encourage optimistic growth. FDI is favorable for both developed and developing countries because the developed countries investors want to make a high profit and due to capital shortage there is high marginal productivity of capital in developing countries. Research shows there is international investment boom started in 2004. In 2010 the less developing countries received $ 561 billion as direct investments but due to world financial crisis in 2007 the world FDI inflows declined by 11.5% and in 2008 and 2009 it more sharply falls by 32%. According to 2007-2011 as average FDI inflows, Pakistan position at 51st out of 82 countries and FDI contribution was 0.19% of the world total.
To measure the quality of macroeconomic management, Inflation is used as an indicator so the conceivable relationship between FDI and inflation is negative **(Ullah et al., (2012).** Pakistan Foreign Investment enlarged by 206.7 million Dollars in November 2017, equated with a rise of $277.7 million in the preceding month. Pakistan's FDI net flows data is restructured monthly, existing since July 1997 to November 2017. The data extended a record high of $1.3 MN in June 2008 and a low record of $-53.9 MN on June 2015. Difference between the Total and the summation of data per country is due to the zero value of some countries. Foreign Collection Investment decreases by $128.0 MN in September 2017. The state's GDP was stated at $304.0 MN in June 2017 **(Ahmed et al., 2023).**This analysis focuses on the importance of FDI in context GDP, interest rate, inflation, corruption, the exchange rate for Pakistan.
Foreign Direct Investment (FDI) has remained a cornerstone of global economic integration and continues to be critical for capital formation in developing economies. After 2009, Pakistan faced persistent challenges of low domestic savings, energy deficits, and security concerns, which increased its reliance on FDI for financing infrastructure and technology transfer (Khan & Nawaz, 2010). The launch of the China-Pakistan Economic Corridor (CPEC) in 2015 marked a turning point, channeling large FDI inflows into the power and financial business sectors and highlighting the role of macroeconomic stability in attracting foreign capital (State Bank of Pakistan, 2026; World Bank, n.d.). Sector-wise data from the Board of Investment shows that power and financial business sectors received the highest FDI inflows during 2015-2024, confirming the impact of CPEC on investment patterns (Board of Investment, 2025). Macroeconomic instability continued to shape FDI trends from 2009-2026. High inflation and rising interest rates increased the cost of doing business and reduced investor confidence during this period (State Bank of Pakistan, 2026). Empirical studies using ARDL models confirm that both variables maintained a significant negative relationship with FDI inflows in Pakistan in the short and long run (Ishfaq & Waqas, 2023). Similarly, exchange rate volatility remained a dual factor: depreciation made domestic assets cheaper for foreign investors, but excessive fluctuations created uncertainty, deterring long-term investment (Baffour & Yeboah, 2023).Institutional quality emerged as the most critical constraint on FDI post-2009. Pakistan's ranking in Transparency International's Corruption Perception Index declined from 134 in 2011 to 139 in 2012, reflecting weak governance and bureaucratic inefficiency (Lokmat Times/IANS, 2025). Recent IMF Governance Diagnostics 2025 report that Pakistan loses 5-6.5% of GDP annually to corruption, equivalent to $20-26 billion, which directly erodes investor confidence and FDI inflows (International Monetary Fund, 2025). Despite GDP growth and CPEC-related investment, corruption and governance

issues continue to limit Pakistan's potential to attract sustainable FDI inflows up to 2025.This extended period 1995-2025 allows the study to capture both pre- and post-CPEC dynamics, providing updated evidence on how interest rate, GDP, inflation, corruption, and exchange rate influence FDI performance in Pakistan.

1.1 Significance:

Foreign Direct Investment (FDI) is a critical component of an efficient international economic system and plays a pivotal role in accelerating economic progress and development. Foreign investors undertake cross-border investments primarily to maximize returns on capital. Pakistan, being a capital-deficient developing economy with low domestic investment, relies heavily on FDI for financing infrastructure, technology transfer, and long-term growth. This study examines the relationship between FDI inflows and key macroeconomic variables, namely interest rate, GDP, exchange rate, inflation, and corruption, in Pakistan over the period 1995 to 2025. FDI is treated as the endogenous variable, while the macroeconomic factors are considered exogenous variables.

1.2 Objectives:

The primary objective of this study is to analyze the impact of key macroeconomic variables on Foreign Direct Investment inflows in Pakistan from 1995 to 2025. The specific objectives are:

- To examine the relationship between interest rate and FDI inflows in Pakistan.
- To assess the impact of GDP on FDI inflows in Pakistan.
- To investigate the effect of inflation on FDI inflows in Pakistan.
- To analyze the influence of corruption on FDI inflows in Pakistan.
- To determine the relationship between exchange rate and FDI inflows in Pakistan.

1 LITERATURE REVIEW:

Foreign direct investment (FDI) is in a complex and interdependent relationship with exchange rate stability and volatility, as a cause and a consequence of these types of fluctuations. Through the application of Behavioral Equilibrium Exchange rate (BEERS) model in balancing economy of Pakistan between 1993 and 2009, Rahman et al. (2010) ascertained that foreign capital inflows (including those made by overseas workers) had a key role to play in the stability of the real exchange rate. They found empirically that the valuation towards the equilibrium real exchange rate was carried out on a constant, steady basis during this time in Pakistan. In support of these results, Bilawal et al. (2014) compared Pakistan economic indicators on two different datasets (19822013 and 20032013) in terms of linear regression and correlation models. They identified a high positive correlation between exchange rate changes and inflows of foreign investment and that exchange rate changes explained up to 67% of the total variance in domestic FDI inflows.

The impact of the exchange rate stability on the foreign capital flows in South Asia is not exclusive to this region. In an empirical study of the time-series currency changes (monthly) in Nigeria (1986-2016) the researchers estimated the exchange rate volatility using Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and obtained the estimation of this system using Two-Stage Least Squares (2SLS). The control of the external reserves, domestic interest rates, the rise of the real GDP and the openness of the trade, the study discovered that the rise of the exchange rate volatility has a statistically significant negative influence on the inflow of the FDI. The currency risks caused by variance in the exchange rates cause loss of investor confidence and destabilizes the anticipated returns. On

the other hand, stable currency regimes provide foreseeable operating environments, which promote long-term cross-border capital commitments.

One of the fundamental aspects of development economics is the interaction of FDI, openness to international trade and gross domestic product (GDP) growth. Bandara (2022) investigated the overall impact of imports, exports, and FDI on South Asian Association of Regional Cooperation (SAARC) panel, Real GDP (RGDP), 2000-2020 using STATA. The findings revealed that, the South Asian states have a high positive relationship between net exports, FDI inflows as well as national economic growth. Similarly, Iqbal et al. (2014) calculated Pakistan (1983-2012) time-series data using descriptive statistics and multivariate regression equations. They arrived at the conclusion that FDI results in a large positive impact on GDP growth in export oriented situations, a statement that is a manifestation of the advantage of open trade policy frameworks in raising the extent of developmental impact of foreign inflows.

The comparative analysis of the relations between states reveals that alteration of the effectiveness of FDI absorption depends on the structural economic differences. Agrawal and Khan (2011) study deems the growth model as modified where the endogenous variable is the GDP and the exogenous variables are; FDI, the labor force and human capital formation with Ordinary Least Squares (OLS) estimation being used to compare the growth of China and India in 1993 to 2009. They found that a 1 percent increase in FDI generated a 0.07 percent increase in Chinese GDP as compared to a small increase of 0.02 percent in Indian GDP. The powerful gap here holds empirical explanations of the aggressive policy approach by China in terms of attracting foreign capital, as well as strategic information to India in terms of improving its institutional structure to better utilize the capital.

Recent econometric approaches emphasize on the long run cointegrating dynamics that exist between foreign investment and underlying macroeconomic drivers of emerging market blocs. As an extension of core host-nation factors, Joo and Shawl (2023) validated that GDP growth, FDI, and core host-nation factors co-dependent across the BRICS economies by using panel Autoregressive Distributed Lag (ARDL) estimation, using 32 years of secondary data (19872018) collected by the World Bank and UNCTAD. Their empirical evidence revealed that the macroeconomic stability, development of financial sector (measured in terms of the development of the private bank credit), human capital and trade openness co-integrate with the FDI in order to maintain the growth of the economy in the long run.

Such structural correlations are also supported by such multi-decade longitudinal studies in individual countries:

- Ghana: Antwi et al. (2013) tested time-series data (1980-2010) cointegrating time-series and time-varying inflation, FDI inflows, and real GDP per capita and found that time-varying inflation and the time-varying FDI inflows consistently connect with the time-varying real GDP per capita. They suggested formation of host governments so that they can create their domestic revenue-generation structures besides lure foreign capital in order to reduce their dependence on the external world.
- Pakistan: Nosheen (2013) did cointegration analysis of 1980 to 2010 and found out that foreign direct investment was a long-run complement, and when used in conjunction with national capital formation, it has the effect of increasing the national production frontier.

Besides the inherent macroeconomic aspects, institutional quality, foreseeability of law and selective fiscal policies play a pivotal role in determining destination choices of foreign

investors. Shaari et al. (2022) employed panel ARDL bounds testing to examine how corruption and environmental degradation affect the capital flows in the ASEAN+3 (Southeast Asian countries and China, Japan and South Korea) economies in the 1995-2020 period. Their results confirmed the theory of grabbing hand as they showed that the long run corruption reduction is a direct positive response to the incoming FDI flows. In line with these findings, Freckleton et al. (2012) used the Panel Dynamic Ordinary Least Squares (PDOLS) on a sample of 28 industrial and 42 developing countries. Their results confirmed the confirmation that, despite FDI positively influencing both the short and long-term economic growth throughout the board, the growth dividend of a new capital inflow is maximized in an economy with a lower level of institutional corruption.

Tax incentives and fiscal design also influence investments. By the Eclectic Paradigm formulated by Dunning, Abille et al. (2020) tested Ghanaian economic data (1975 to 2017) in ARDL bounds testing. The empirical findings showed that the corporate tax rates did give statistically significant long and short-run effect on FDI inflows where short-run adjustment is observed to be the lagged implementation to change in the tax structure by multinational corporations. Alharthi et al. (2024) tested the United Arab Emirates (19802013) using ARDL that revealed a statistically significant positive association between real GDP and incoming FDI, but not inflation rates and capital inflows.

The bilateral investment programs provide significant empirical data of how the targeted flows of capital could contribute to the development of a region as the case presented in the study on China-Pakistan Economic Corridor (CPEC). Ahmad et al. (2022) explored time-series data (19902019) of Pakistan using ARDL framework, i.e., the relationships between Chinese FDI (in this particular example, in the renewable energy infrastructure), trade openness, interest rates, exchange rates, inflation, remittances, and national output growth. An estimation of their statistics revealed a very strong, long-run cointegrating on the relationship that is accompanied by a statistically significant negative Error Correction Term (ECT) which validates quick returns to equilibrium after short term shocks. The results confirm that specific Chinese direct investment is a potent structural reformer of long term economic growth of Pakistan.

Meanwhile, the need to ensure consistent bilateral investment flows implies the need to control localized risk factors. Degong (2024) used ADF unit root testing and ARDL bounds to analyze Chinese outbound FDI into Pakistan under CPEC between the years 1990-2017. The empirical evidence has demonstrated that high rates of inflation, currency devaluation, institutional corruption and poor domestic law and order are statistically significant negative drag in the incoming Chinese capital flows. All these factors have the implication that host countries should possess good monetary governance, the reduction of institutional friction, better predictability on exchange rates as well as high domestic security settings in order to reap maximum benefits on developmental effects of foreign capital.

The capital that is generated by the developing economies through the Foreign Direct Investment (FDI) is significant source of external finance as it is capable of contributing to the formation of capital, development of infrastructures, job creation, transfer of technology and administration skills. Various macroeconomic and institutional factors such as economic growth, exchange rates, inflation, interest rates, money supply, taxation and governance quality determine the volume of FDI that is entering an economy.

The author, Zakari (2017), investigated the association between foreign exchange rates and FDI in Nigeria between the year 2005 and 2014. The research employed correlation and

regression methods to determine whether fluctuations in the exchange rate were related to the alterations in the FDI inflows. The results showed that exchange rates were strongly correlated with the FDI but the correlation between GDP and FDI was relatively low even though positive. In general, the research found that there was a positive relationship between exchange rates and GDP with FDI in the period studied. Such results imply that macroeconomic conditions may be a significant contributor to the appeal of a developing economy to foreign investors.

On the same note, the study by Khan et al. (2022) addressed the determinants of FDI inflows in Pakistan, paying attention to the misery index, money supply, and the exchange rates. Data used in the study was during the years 1980 and 2021. Its results revealed that growth in the misery index can have negative effect on foreign investment since the deteriorating economic condition can decrease the confidence of the investors. The analysis used the Error Correction Model (ECM) to test short-run relations and Autoregressive Distributed Lag (ARDL) model to test long-run relations and cointegration. The findings found the exchange rates and misery index as significant determinants of FDI in the short-run, whereas money supply and exchange rates were significantly greater determinants of FDI in the long-run.

Another aspect that may affect the decisions of foreign firms in terms of their investments is tax policy. Gutu et al. (2026) surveyed the literature on the impact of tax incentives on attracting FDI to the Southern African Development Community (SADC). Their review showed that the effectiveness of tax incentives varies among countries and regions as they are determined by the quality of institutions, economic status, and perceptions of investors. Comparative data of Southeast Asia and European Union revealed more consistent results of incentive programs. The research highlighted that effective tax incentives ought to be suitably target, transparent and in line with international standards instead of being introduced without any strategic purpose.

In Pakistan, the economic growth has come out as a significant determiner of FDI severally. Khan and Nawaz (2010) have found that the long-run relationship between GDP and FDI was strong and positive in the long run with ARDL and VECM. Expanding GDP is usually an indication of markets growing, of domestic demand being firm and much more likely to be profitable, which can enhance the appeal of a country to foreign investors. The economic growth of Pakistan in other areas including power and financial services besides investment linked to the China-Pakistan Economic Corridor (CPEC) post-2015 has also led to the shift in the trend of FDI (World Bank, n.d.).

The movement of exchange rates has given more intricate outcomes. The depreciation of the currency may also potentially promote FDI by lowering the relative cost of local production and assets to be incurred by the foreign investors. The data in Pakistan indicates that there is a positive long-run correlation between the exchange rates and FDI, although too much volatility in the exchange rates can cause uncertainty and deter investment as companies will find it more difficult to predict upcoming costs and returns (Khan et al., 2012).

Other macroeconomic variables, especially inflation and interest rates, can have a negative impact on FDI. Constant inflation decreases buying power and escalates the cost of production and the high interest rates add the cost of funding investment projects. In Pakistan, the significance of cost of borrowing is also evident in the recent monetary conditions. The policy rate available in June 2026 as stipulated by the State Bank of Pakistan (2026) stood at 11.50 per annum which is relatively high and may deter investment.

Lastly, institutional quality is another key issue to FDI in Pakistan. Risks of investment may also be compounded by corruption, inefficiency in the bureaucracy, poor implementation of laws, and lack of investor confidence. The ongoing governance issues are also manifested in the current rankings by Transparency International towards Pakistan (Lokmat Times/IANS, 2025). Using 19962021 Johansen cointegration and VECM, Ishfaq and Waqas (2023) discovered that corruption did not positively impact the economic growth and FDI inflows. Even though governance has been a focus of growing attention in post-COVID-19 literature, comparatively little research has utilized the most up-to-date data up to 2026 and has implemented ARDL methods. This allows the possibility of continuously empirical studies of FDI determinants of Pakistan with the help of revised macroeconomic and institutional indicators.

3. Data Source and Methodology:

Annual time-series data for the period 1995-2025 were collected from multiple authentic sources. Data on FDI, GDP, inflation, and exchange rate were obtained from the International Monetary Fund and International Financial Statistics (IMF) and the World Bank's World Development Indicators (World Bank, 2026). Interest rate data were sourced from the State Bank of Pakistan's Statistical Bulletin (State Bank of Pakistan). The corruption index was constructed using the World Bank's Country Policy and Institutional Assessment (CPIA) scores (World Bank). Stock market capitalization data were retrieved from the World Federation of Exchanges database (World Federation of Exchanges, 2026).

3.1 List of Variables

The dependent variable is foreign direct investment FDI net inflow (% of GDP)
And independent variables are:

- Gross domestic product (constant 2015 US$)
- Exchange rate (ER) (index)
- Inflation (INF) (annual %)
- Corruption (index)
- Interest Rate (%)

3.2 Conceptual Framework

FDI is the most essential aspect that it contributes to the development of a nation by transporting technologies i.e. external companies train native employees on how to switch particular jobs. FDI impose an industrial effect to enhance a net production and encourage the products of host state at international level. It is considered to remove the technological gap in lower developing nation via importing technologies (World Bank, 2026). The interest rate is the sum of money charged by a creditor to a debtor. The interest rate is the sum of money a stakeholder earns from a venture. Foreign investors usually investigate economies having less interest rate i.e. they will gain higher returns from their investments. Thus, the interest rate has a direct relation to foreign FDI. Hence, the interest rate is also depending upon the inflation in an economy, during inflation the rate of interest is higher, when demand for a money is higher i.e., experiencing a tight supply of money increases, creates an inflation in an economy. Corruption is usually defined as the use of general public position for private interest. Corruption in any nation decreases bureaucracy and raises the flow of foreign investments, therefore, the economy rapidly gathers the wealth thus, and corruption is directly linked with FDI stock. Exchange rate and FDI inflow are correlated to each other i.e. it may be positive or negative. Appreciation in host country currency will raise the FDI movement in an economy, that the domestic consumers have a greater purchasing power which leads the economy towards economic growth. While on the other hand, depreciation in a currency also stimulates the FDI, which is the cost of production will decrease and become cheaper for foreign investors.

3.3 Hypothesis of the study

H_1: There exists statistically negative connection between interest rate to FDI.
H_2: There exists statistically positive association between GDP and FDI.
H_3: There exists statistically positive association between inflation and FDI.
H_4: There exists statistically negative association between corruption to FDI.
H_5: There exists statistically negative relationship between exchange rate to FDI.

4. RESULT AND DISCUSSION:

4.1 Descriptive Statistic:

Table:02

	FDI	IR	GDP	ER	INF	CRP
Mean	1.144375	2.328773	4.214142	106.6517	8.516456	-0.79947
Maximum	3.668323	10.52201	7.705898	125.5911	20.28612	-0.10795
Minimum	0.382827	-6.77409	1.014396	93.48988	2.539516	-1.22003
Skewness	1.868051	0.645428	0.189287	0.254157	0.593219	0.900276
Kurtosis	5.490120	3.188898	2.412992	1.830200	3.426324	3.291745
Jarque-Bera	23.51902	1.98566	0.569214	1.897952	1.854287	3.881618

Note: FDI indicates foreign direct investment, IR indicates interest rate, GDP indicates gross domestic product, INF indicates inflation and CRP indicates corruption.

Mean is the average value of the series, mean of foreign direct investment FDI is (1.144), interest rate (IR) is (2.328), GDP is (4.214), exchange rate (ER) is (106.651), inflation (INF) is (8.516) and corruption (CRP) is (-0.799). Maximum is the highest value of the series, therefore maximum of foreign direct investment (FDI) is (3.668), interest rate (IR) is (10.522), GDP is (7.705), exchange rate (ER) is (125.591), inflation (INF) is (20.286) and corruption (CRP) is (0.107). Minimum is the lowest value of the series, minimum of foreign direct investment FDI is (0.382), interest rate (IR) (-6.774), GDP (1.014), exchange rate ER (93.489), inflation (INF) (2.539) and corruption (CRP) is (-1,220). Skewness is a measure of asymmetry of the distribution of the series, the value of skewness for foreign direct investment FDI is (1.868) interest rate (IR) (0.645), GDP (0.189), exchange rate (ER) (0.254), inflation INF (0.593) and corruption CRP (0.900), all are positively skewed. Kurtosis measures the peakedness or flatness of the distribution of the series. Kurtosis value of exchange rate ER (1.830) and GDP (2.412) are platokurtic i.e. the value is less than three, while interest rate IR (3.188), inflation INF (3.426) and corruption CRP is (3.291) are Mesokurtic, the value is equal to three and, foreign direct investment FDI (5.490) is leptokurtic is greater than three. Jarque-Bera test is statistic for testing whether the series is normally distributed and the Jarque-Bera value for foreign direct investment (FDI) is (2.3519), interest rate (IR) is (1.985), GDP is (0.569), exchange rate (ER) is (1.897), inflation (INF) is (1.854) and corruption (CRP) is (3.881).

4.2 Correlation Analysis:

Table:02

Correlation	FDI	IR	GDP	ER	INF	CRP
FDI	1.000000					
IR	-0.28086	1.000000				
GDP	0.100255	-0.12098	1.000000			
ER	-0.38677	0.250927	0.158221	1.000000		
INF	0.346372	-0.504	-0.29863	-0.11138	1.000000	
CRP	-0.42613	0.009527	0.218365	0.567461	0.082185	1.000000

Table 2 shows that FDI has positive relation with GDP (0.100) and inflation (0.346) while negative relation with interest rate (-0.280), exchange rate (-0.386) and corruption (-0.426). Interest rate has negative relation with GDP (-0.12) and inflation (-0.504) while weak positive relation with exchange rate (0.250) and corruption (0.009). GDP has negative relation with inflation (0.298) while weak positive relation with exchange rate (0.158) and corruption (0.218). Exchange rate has negative relation with inflation (-0.111) while positive relation with corruption (0.567). Inflation has positive relation with corruption (0.082).

4.3 Unit Root ADF Test:

Augmented Dickey- Fuller test represents a time series data. The results of ADF test shows that which econometric technique is applied to data. ADF test is applied in order to check the stationary of the variables.

Table: 03 UNIT ROOT TEST

Variables	Level				1st difference				
	Constant		Trend		Constant		Trend		Decisions
	t-stats	Prob.	t-stats	Prob.	t-stats	Prob.	t-stats	Prob.	
FDI	-2.812	0.070	-2.744	0.228	-3.326	0.023	-3.268	0.0937	I(0)
IR	-1.385	0.573	-1.676	0.732	-11.122	0.000	-11.085	0.000	I(1)
GDP	-3.686	0.011	-3.590	0.053	-6.102	0.000	-6.035	0.0002	I(0)
ER	-0.697	0.831	-0.130	0.995	-3.844	0.007	-5.0072	0.0023	I(1)
INF	-2.214	0.206	-6.314	0.000	-6.460	0.000	-6.314	0.0001	I(1)
CRP	-5.910	0.000	-4.250	0.014	-2.953	0.055	-2.774	0.221	I(0)

The table 03 represents that in ADF Unit root test data is significant at level and 1st difference. On the basis of mix results of ADF-test, ARDL model is applied to this investigation.

AUTO REGRESSIVE DISTRIBUTED LAG MODEL (ARDL)

The Auto Regressive Distributed Lag econometric technique is being used in time series data to show the relationship among macro variables in any equation. ARDL model plays an imperative role while analyse of any economic situation. In an economy, variation in any economic variables may cause amendment in other variables. The variation in a variable is not reflects instantly, however it distributes over upcoming times.

4.4 VAR Lag Order Selection Criteria

Table:04

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-310.0785	NA	1460.735	24.31373	24.60406	24.39733
1	-236.6175	107.3661*	88.80960*	21.43211	23.46442*	22.01735*
2	-197.4068	39.21068	115.5324	21.18514*	24.95943	22.27200

* indicates lag order selected by the criterion

In table 4 the AIC (Akaike information criterion) shows the lag length at 2, while SC (Schwarz information criterion) shows at 1.

4.5 Bound Test Approach:

Null Hypothesis: There exist no long-run relationships.

t-stats	**Value**	**k**
F-stats	16.543	5

Critical Value Bounds

Significance	**I0 Bound**	**I1 Bound**
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

The above table shows that the tabulated F-statistic value is greater than upper bound. So, rejected the null hypothesis and it indicates that there exists long run relation.

4.6 Long run and Short run Coefficients:

Variables	**Long run coefficients** **Coefficient (Standard. Error)**	**Short run coefficients** **Coefficient (Standard. Error)**	
IR	-0.185*** (0.026)	-0.025*** (-0.025)	
GDP	0.233*** (0.146)	0.110** (0.053)	
ER	0.016*** (0.026)	0.007*** (0.012)	
INF	-0.043*** (0.092)	0.064** (0.032)	
CRP	-1.612** (0.785)	-0.761** (0.423)	
CONSTANT	-2.020 (3.062)	**R-squared**	88.89
ECM(-1)	-0.472* (0.165)	**Adjusted R- squared**	87.54
F-stat and Prob.	177.07 (0.000)	**Durbin Watson stat**	1.944

$FDI = \beta_0 + \beta_1 IR + \beta_2 GDP + \beta_3 ER + \beta_4 INF + \beta_5 CRP$

Whereas, $\beta_0 =$ intercept

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 =$ are the slope of interest rate , gross domestic product, exchange rate, Inflation and corruption respectively.

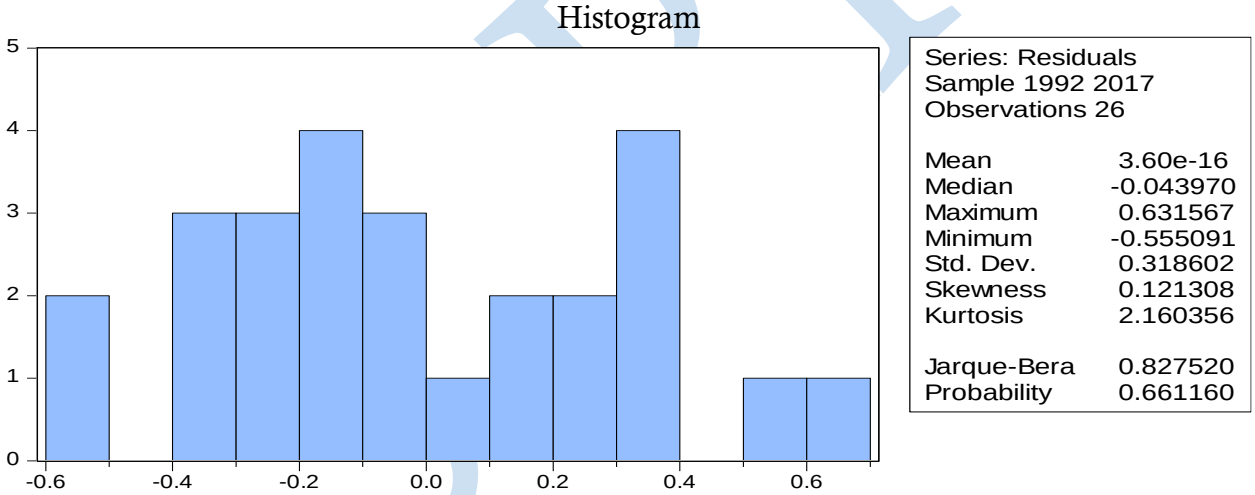
Table 6 depicts that 1% increase in Interest rate decreases FDI by $-0.185 in long run and $-0.025 in short run and the result. GDP shows a positive relationship to FDI in both short and

long run that is 1 % increase in GDP increases $0.23 FDI inflow in long run and $0.110 in short run and the result is consistent with the results of Nketiah et al. (2020). Moreover, also there exits positive correlation between Fdi and exchange rate in both short and long run, 1% increase in exchange rate in both short and long run causes increase in FDI inflow by $0.016 and $0.007 in long and short run respectively and the results are same as the study of Bilawal et al., (2014). While the inflation shows a negative relation to fdi in long run that 1 % increase in inflation decreases $-0.043 FDI inflow and positive relation in short run, 1% increase in inflation increases $0.064 FDI inflow in an economy and the result is consistent with the result of Andinuur (2013). Whereas, 1% increases in corruption decreases FDI by $-1.612 and $-0.761 respectively and the result is same as the result of Fahad and Ahmed (2016).

The value of ECM (-0.472) is significant and negative which illustrate that model will be converged towards the equilibrium at the rate of 47% in long run. Durbin Watson value (1.944) is approximately equal to 2 which depicts that there is no autocorrelation problem in the model. R-squared 88.89 shows 88% total variation in dependent variable FDI caused is the independent variables exchange rate, inflation, GDP, interest rate and corruption. Adjusted R-squared (87.54) depicts that after solving all the residuals independent variables cause 87% total variation in dependent variable.

4.7 DIAGONISTIC TEST:

4.7.1NormalityTest:



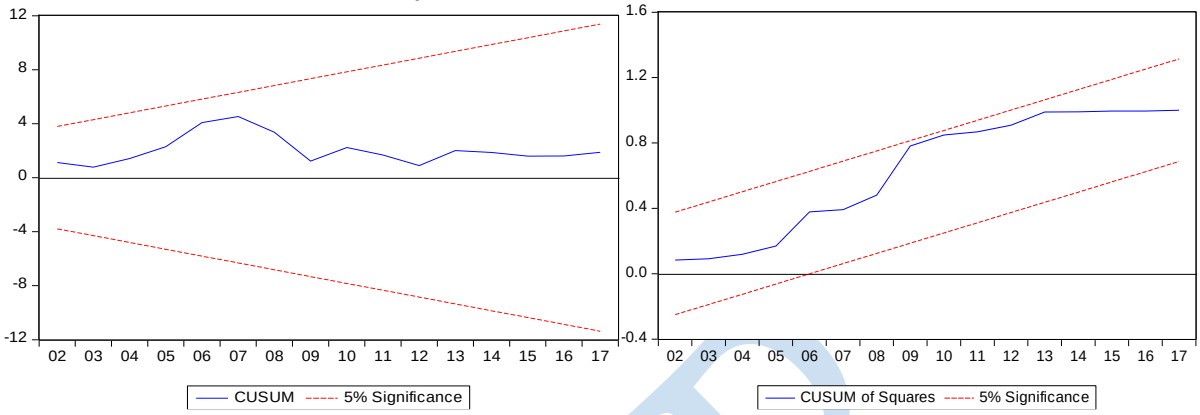
Histogram show the normality of the model.

4.7.2Serial Correlation and Heteroscedasticity

	F-stats	**Prob. F**	**Obs*R-squared**	**Prob. Chi-Square(2)**
Breusch-Godfrey Serial Correlation LM Test:	5.443	0.117	11.373	0.113
Heteroscedasticity Test: Breusch-Pagan-Godfrey	1.077	0.428	9.810	0.988

The values of Breush-Godfrey Serial correlation LM Test and Heteroscedasticity Breusch-Pagan-Godfrey Test are insignificant hence, accepting the null hypothesis that there exists no normality issue nor autocorrelation problem in the model

4.7.3 CUSUM and CUSUM SQUARE TEST:



The stability test CUSUM and CUSUM Square shows that the model is stable at 5% significance level as data lies between critical regions in both Cusum and Cusum square test.

5 CONCLUSION AND RECOMENDATIONS:

In developing countries such as Pakistan, Foreign Direct Investment (FDI) plays a pivotal role as a primary source of capital. For the economic development of host countries, FDI can contribute significantly under certain conditions, particularly when accompanied by comprehensive economic policies and greater openness to trade. The primary objective of this research is to assess the impact of interest rate, GDP, exchange rate, inflation, and corruption on FDI inflows in Pakistan during 1995 to 2025. The ARDL Bounds test results indicate that interest rate and inflation have a significant negative relationship with FDI in both the short run and long run. Furthermore, corruption also exhibits a significant negative relationship with FDI. In contrast, GDP and exchange rate demonstrate a significant positive relationship with FDI in both the short and long run. The Error Correction Term, ECT(-1) = -0.472, is negative and significant, indicating that the model converges from disequilibrium to equilibrium at a speed of 47% per year. The Durbin-Watson statistic of 1.94 suggests no autocorrelation problem in the model. The values of R = 0.88 and R^2 = 0.87 show that the exogenous variables explain 88% and 87% of the total variation in the endogenous variable, FDI, respectively. Based on these findings, several policy implications are proposed for the Government of Pakistan. To reassure foreign investors and attract FDI, the government must strengthen investment protection and assurance mechanisms. It should also enhance the export of finished goods by improving infrastructure, upgrading the transportation system, and adopting modern technologies to reduce domestic production costs. Controlling corruption is crucial, as corruption is detrimental to society and has a direct negative impact on FDI inflows and living standards. Implementing anti-corruption policies is therefore essential for ensuring efficient allocation of both foreign and domestic investment.

6 FUTURE RECOMMENDATIONS:

Future research should extend this study by examining the causal relationships among FDI, inflation, corruption, exchange rate, interest rate, and economic growth rate using a multivariate Vector Autoregressive (VAR) methodology. This extension may yield more robust results and provide additional insights into dynamic interactions and causality among

the variables. The current study covers the period from 1995 to 2025. Future research could update the dataset for historical comparison, and extend the analysis beyond 2025 for forecasting purposes using time-series forecasting models. Such extensions would enhance the predictive power of the model and offer policy-relevant projections for Pakistan's FDI inflows.

REFERENCES:

- Agrawal, G., & Khan, M. A. (2011). Impact of FDI on GDP: A comparative study of China and India. *International Journal of Business and Management*, *6*(10), 71. https://10.5539/ijbm.v6n10p71
- Al-Fawwaz, A. A. (2018). Foreign Direct Investment and Economic Stability: The case of Arab Peninsula. *Advances in Social Sciences Research Journal*, *5*(8). https://10.14738/assrj.58.4997
- Alharthi, M., Islam, M. M., Alamoudi, H., & Murad, M. W. (2024). Determinants that attract and discourage foreign direct investment in GCC countries: Do macroeconomic and environmental factors matter?. *Plos one*, *19*(2), e0298129. https://doi.org/10.1371/journal.pone.0298129
- Baffour, A. A., & Yeboah, E. (2023). The dynamism between, import, foreign direct investment inflow, inflation and Covid-19 on economic growth: evidence from Ghana. *Business and Finance Journal*, *8*(1), 105-127. https://doi.org/10.33086/bfj.v8i1.3540
- Bibi, S., Ahmad, S. T., & Rashid, H. (2014). Impact of trade openness, FDI, exchange rate and inflation on economic growth: A case study of Pakistan. *International Journal of Accounting and Financial Reporting*, *4*(2), 236-257. https://doi.org/10.5296/ijafr.v4i2.6482
- Bilawal, M., Ibrahim, M., Abbas, A., Shuaib, M., Ahmed, M., Hussain, I., & Fatima, T. (2014). Impact of exchange rate on foreign direct investment in Pakistan. *Advances in Economics and Business*, *2*(6), 223-231. https://10.13189/aeb.2014.020602
- Board of Investment, Government of Pakistan. (2025). Sector-wise net FDI data 2011-2025. Online available at: https://invest.gov.pk
- Dornbusch, R. (1976). Expectations and exchange rate dynamics. *Journal of political Economy*, *84*(6), 1161-1176. https://doi.org/10.1086/260506
- International Monetary Fund. (2025). Pakistan: Governance and corruption diagnostic assessment. IMF Country Report.
- International Monetary Fund. (2025). Pakistan: Governance and corruption diagnostic assessment. IMF Country Report No. 25/XX.
- Iqbal, N., Ahmad, N., Haider, Z., & Anwar, S. (2014). Impact of foreign direct investment (FDI) on GDP: A Case study from Pakistan. *International Letters of Social and Humanistic Sciences*, *5*, 73-80. https://doi.org/10.18052/www.scipress.com/ILSHS.16.73
- Ishfaq, A., & Waqas, M. (2023). Impact of corruption on economic growth in Pakistan: An analysis. Journal of Development and Social Sciences, 4(1), 149–158. Online available at: https://doi.org/10.47205/jdss.2023(4-I)14
- Lokmat Times/IANS. (2025, August). Pakistan's governance failures tarnishing global reputation further. Lokmat Times. https://www.lokmattimes.comState Bank of Pakistan. (2026).

- Morris, R., & Aziz, A. (2011). Ease of doing business and FDI inflow to Sub-Saharan Africa and Asian countries. *Cross Cultural Management: An International Journal*, *18*(4), 400-411. https://doi.org/10.1108/13527601111179483
- Nilofer, N., & Qayyum, A. (2018). Impact of Foreign Direct Investment on Growth in Pakistan: The ARDL Approach.
- Nosheen, M. (2013). Impact of Foreign Direct Investment on Gross Domestic Product. *World Applied Sciences Journal*, *24*(10), 1358-1361. https://doi.org/10.5829/idosi.wasj.2013.24.10.229
- Bandara, S. (2022). The impact of FDI, import, and export on the economic growth of SAARC countries. *Import, and Export on the Economic Growth of SAARC Countries (February 10, 2022)*. Herath Bandara, Saman Janaranjana, The Impact of FDI, Import, and Export on the Economic Growth of SAARC Countries (February 10, 2022). http://dx.doi.org/10.2139/ssrn.4366816
- State Bank of Pakistan. (2026). *Statistical bulletin & monetary policy information compendium*. State Bank of Pakistan. https://www.sbp.org.pk/
- Ullah, S., Haider, S. Z., & Azim, P. (2012). Impact of exchange rate volatility on foreign direct investment: A case study of Pakistan. *Pakistan economic and social review*, 121-138.
- World Bank. (2026). *Foreign direct investment, net inflows (% of GDP) - Pakistan*. World Development Indicators. https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS?locations=PK
- World Bank. (2026). *World development indicators* [Data set]. World Bank Data. https://data.worldbank.org/
- Zakari, M. (2017). The Impact of Exchange Rate Fluctuations on Foreign Direct Investment in Nigeria. *Journal of Finance and Accounting*, *5*(4), 165-170. https://doi.org/10.11648/j.jfa.20170504.17
- Nketiah, E., Cai, X., Adjei, M., & Boamah, B. B. (2020). Foreign direct investment, trade openness and economic growth: Evidence from Ghana. *Open Journal of Business and Management*, *8*(01), 39-55. https://doi.org/10.4236/ojbm.2020.8100
- Antwi, S., Mills, E. F., & Zhao, X. (2013). Impact of macroeconomic factors on economic growth in Ghana: A cointegration analysis. *International journal of academic research in accounting, finance and management sciences*, *3*(1), 35-45. https://doi.org/10.6007/IJARAFMS/v3-i1/10263
- Khan, R. E. A., & Nawaz, M. A. (2010). Economic determinants of foreign direct investment in Pakistan. *Journal of Economics*, *1*(2), 99-104. https://doi.org/10.31901/24566594.2010/01.02.05
- Khan, A., Majeed, K. B., & Asghar, H. (2022). Does Higher Misery Index Dry Up Foreign Direct Investment Inflows in Pakistan? An ARDL Bound Testing Approach. *Journal of Contemporary Macroeconomic Issues*, *3*(1), 64. https://10.5281/zenodo.7113788
- Freckleton, M., Wright, A., & Craigwell, R. (2012). Economic growth, foreign direct investment and corruption in developed and developing countries. *Journal of economic studies*, *39*(6), 639-652. https://doi.org/10.1108/01443581211274593
- Abille, A. B., Mpuure, D. M. N., Wuni, I. Y., & Dadzie, P. (2020). Modelling the synergy between fiscal incentives and foreign direct investment in Ghana. *Journal of Economics and Development*, *22*(2), 325-334. https://doi.org/10.1108/JED-01-2020-0006

- Ahmad, M. S., Szczepankiewicz, E. I., Yonghong, D., Ullah, F., Ullah, I., & Loopesco, W. E. (2022). Does Chinese foreign direct investment (FDI) stimulate economic growth in Pakistan? An application of the autoregressive distributed lag (ARDL bounds) testing approach. *Energies*, *15*(6), 2050. https://doi.org/10.3390/en15062050
- Khan, R., & Zahra, H. (2019). Analyzing the relationship between domestic interest rates and FDI inflows: evidence from Pakistan. *Journal of Business and Economic Options*, *2*(2), 67-77. http://resdojournals.com/index.php/jbeo/article/view/85
- Degong, M., Ullah, P. D. F., Ullah, P. D. R., & Arif, P. D. M. (2023). An empirical nexus between exchange rate and China's outward foreign direct investment: Implications for Pakistan under the China Pakistan economic corridor project. *The Quarterly Review of Economics and Finance*, *87*, 224-234. https://10.1016/j.qref.2020.12.001
- Ahmed, M. M., Kumar, J., & Ali, J. (2023). An Assessment of Pak-Saudi Bilateral Trade Relations (1990-2019). *Human Nature Journal of Social Sciences*, *4*(1), 90-101. https://doi.org/10.71016/hnjss/bytese04
- Ignatius, A. E., Ogbonna, A. A., & Maduka, A. C. (2019). Exchange rate volatility and foreign direct investment: The Nigerian experience. *Journal of Business & Economic Policy*, *6*(4), 78-89. https://doi.org/10.30845/jbep.v6n4p10
- Ibarra-Olivo, J. E., Neise, T., Breul, M., & Wrana, J. (2024). FDI and human capital development: A tale of two Southeast Asian economies. *Journal of International Business Policy*, *7*(3), 314-336. https://doi.org/10.1057/s42214-024-00186-3
- Bobek, V., Majaj, S., & Horvat, T. (2024). The moderating role of institutions between FDI and GDP: evidence from China and India. *Economic research-Ekonomska istraživanja*, *37*(1), 2343375. https://doi.org/10.1080/1331677X.2024.2343375
- Gutu, G. J., Sifile, O., & Gwangwava, E. (2026). The impact of tax incentives on foreign direct investment attraction: a literature review for Southern African Development Community (SADC) and beyond. *Journal of Management Sciences, Innovation, and Technology*, *2*(1), 332-346. https://doi.org/10.63726/jmsit.v2i1.249
- World Federation of Exchanges. (2026). *WFE statistics database*. World Federation of Exchanges
- Shaari, M. S., Esquivias, M. A., Ridzuan, A. R., Fadzilah Zainal, N., & Sugiharti, L. (2022). The impacts of corruption and environmental degradation on foreign direct investment: New evidence from the ASEAN+ 3 countries. *Cogent Economics & Finance*, *10*(1), 2124734. https://doi.org/10.1080/23322039.2022.2124734
- Trading Economics. (n.d.). *Pakistan foreign direct investment*.