

**The Effects of Foreign Direct Investment and International Trade on Economic Growth:
An Evidence from Pakistan**

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ABSTRACT

This search investigates the correlation linking global trade and FDI and economic expansion. Time series data from 1999 to 2023 were used during the analysis. The model has been empirically studied using econometric and statistical techniques. The data comes from WDI department. Given toward the findings, when statistics stationarity is established applying the Augmented Dickey Fuller Unit root test, stationarity econometric techniques like autoregressive distributed lag have yielded inconsistent results. The model was constructed with GDP as the conditional relative variable and IM, EX, and FDI as the descriptive variable quantity. All the variables have a strong short-term correlation. FDI, exports, and GDP eventually suffer. Government ought to contribute to giving investors worldwide security. When investors increase their investments, economic growth should outpace the growth of exports.

Keywords: FDI, Economic Growth, Exports, Imports, WDI, Pakistan

INTRODUCTION

Universal trade and FDI can have a progressive effect continuously Pakistan's economic expansion. By opening to global markets, Pakistan can receive help from innovations, higher productivity, and better access to resources needed to produce more advanced goods. However, Pakistan's export growth has been slow, and there are numerous trade barriers in place. FDI can help by expanding markets, increasing production, and bringing in advanced technology. It can also support the development of human resources, which would improve productivity and efficiency. But Pakistan struggles with attracting enough FDI, as foreign investment stays low. The country's economy is vulnerable, facing challenges like high inflation, political instability, and security concerns. Additionally, Pakistan relies heavily on imports.

In 2024, Pakistan's economy showed signs of improvement, including the following: The present account deficit (CAD) shrank by 87.5%, dropping to \$0.5 billion. The financial account recorded net inflows of \$4.2 billion. Foreign exchange reserves rose to \$8.0 billion by the conclusion of March 2024, up from \$4.4 billion at the end of 2023. Remittances increased by 54.2%, reaching \$3.2 billion in May 2024. Foreign Direct Investment (FDI) inflows were \$270.9 million in May 2024, compared to \$155.7 million in 2023.

In July 2023, the Pakistani government, and the International Monetary Fund (IMF) agreed on a \$3 billion for Stand-By Arrangement (SBA) for addressing and helping the economic crisis of country. The government successfully completed the terms of the SBA in April 2024. Pakistan's GDP reached \$374.6 billion in 2024. In September 2024, Foreign Direct Investment (FDI) in Pakistan increased by \$385.1 million, related to a rise of \$249.7 million the preceding month. At the same time, Pakistan's Direct Investment Abroad grew by \$1.0 million in September 2024.

In 2024, international trade had various positive effects on Pakistan's economy, including improvements in the external account, an increase in foreign services, higher exports, strong agricultural growth, and lower inflation. Pakistan's major exports include rice, raw cotton, knitwear, ready-made garments, and surgical goods. The country's major imports are gasoline goods, basic oil, liquefied normal gas, palm lubricant, strong and brace, iron scrap, and electric equipment. There should be more flexible and easier policies to attract Foreign Direct Investment (FDI). However, researchers have different views on how FDI affects economic growth. Pakistan has not yet fully received help from FDI or used it effectively to boost economic growth, even though it has opened its doors to foreign investment (Le and Ataullah, 2006). FDI plays an important part in globalization by supporting the approach to additional marketplace, production facilities, and supportive. For the present nation, FDI brings assets, outcomes, organizational techniques, and technology, all of which can drive strong economic growth.

The increasing population in Pakistan has led to higher demands and needs. To meet these demands, the government has focused on imports to support local businesses and the economy. As a result, consumers in Pakistan are buying products at higher prices because of the increased cost of imports, which is a consequence of low local production.

Exports are considered an important sign of economic progress, and the situation is seen as exports and economic development are progressively linked. However, due to different socio-economic conditions, economic growth can vary between underdeveloped and developed countries. Despite having abundant natural resources, Pakistan is still economically underdeveloped.

At present, Pakistan's budget requires funding meant for key parts such as energy, telecommunications, infrastructure, education, and other areas linked to economic growth (Aizenman & Noy, 2006). Over period, Pakistan's economy is moving towards a more recognized budget (Mahmood & Niazi, 1992). This analysis aims to examine the impact of key economic factors imports, exports, and (FDI) on Pakistan's economic progress.

The major purpose of the findings is to explore the connection linking FDI, imports, exports, and economic development in Pakistan. It reviews numerous studies near get whether FDI has a positive or negative effect proceeding with the profitable improvement of a nation. Additionally, the study will analyze how imports, exports, and FDI interact with each other and contribute to Pakistan's overall economy.

LITERATURE REVIEW

Kingsley (2022) examined how international trade influences gainful progression in Nigeria, consuming time series data from 1986 to 2018. The analysis focused on FDI, real GDP, and furthermore interest rates as variables. In this analysis, gross domestic product and foreign direct investment were considered being determined variables, while interest rates served while separate variable quantity. Data were found since the World Bank and the Central Bank of Nigeria, and the researchers employed the ordinary least squares method for their analysis. The conclusions show a significant connection linking economic progress and universal occupation, with various aspects of trade having a progressive effect on increase. The findings also discovered that, at the 5% level, interest rates have a statistically significant impact. The researchers recommended that the government develop effective policies related to trade liberalization and exchange rates to foster low inflation, enhance productivity growth, promote economic development, and ensure political stability.

Najabat et al. (2017) explored the connection relating FDI, universal exchange, afterward efficient development popular Pakistan. The research indicates that worldwide trade and FDI are important for promoting financial progression in developing nations. FDI enhances economic advancement by

providing crucial capital, facilitating technology transfer, improving workforce abilities, aggregate competition in local markets, after that establishing further employment chances. Additionally, universal trade impacts economic progression by enhancing production capabilities for various goods and services. Applying time series data beginning 1991 to 2015, the research observed a progressive connection among universal employment, FDI, afterwards profitable evolution in Pakistan. These findings emphasize the importance of both worldwide trade and FDI as essential drivers of economic development in growing nations.

Khan et al. (2017) explored the connection involving exports furthermore Pakistan's profitable progression utilizing data spanning 1972 to 2014. They used two models: the ECM to analyze short-term effects and the ARDL model to consider long-term collaboration. The primary variable being measured in this study was the gross domestic product (GDP), and the factors influencing GDP were TOT, IM, EX, besides CPI. According to the consideration, exports boost economic growth while imports, the CPI, and TOT have the opposite effect. To support additional economic growth, the researchers suggest policies that emphasize importing capital goods and encouraging the export of high-value goods. They also suggest CPI supports smooth and steady economic development.

Abdulrehman et al. (2020) studied international visiting the attractions in Pakistan and its connection to economic evolution. Tourism is an important source of income for the country. The main goal of the study was to explore both the long-term and short-term effects of international tourism on Pakistan's economic development. The researchers operated the (ARDL) model to analyze these relations. They also applied the Augmented Dickey-Fuller test to check whether the data sequence was permanent. The findings showed that international tourism expenditures have a positive effect on economic growth. Overall, spending on travel items, passenger transport, and other tourism-related activities also positively affected economic expansion. Based proceeding these results, the findings implies that Pakistan would adopt better policies to attract more international tourists and boost its economy.

Hieu Hu Nguyen (2020) studied the effect of FDI then worldwide trade on Vietnam's economic expansion from 2000 to 2018, sourcing secondary data. The study related to the Ordinary Least Squares (OLS) method to analyze how FDI and exports affect economic expansion. The results demonstrated that while imports have a destructive effect on economic growing, exports have a convinced one. To develop the influence of FDI and international trade on trade and industry development, the study suggests that the government should continue policies to attract more FDI, increase the value of exported goods, and regulate imports. It also recommends continuing export-focused policies, liberalizing trade, and honoring international trade agreements.

Farooq et al. (2013) investigated the effects of general and marine insurance on global trade and economic expansion. According to the study, a trade deficit can eventually impede a nation's economic expansion. The primary objective was to investigate the short and lengthy period connections between Pakistan's economic growth, trade openness, and marine and general insurance between 1982 and 2009. To examine the short- and long-term impacts of these variables, the researchers employed the ARDL and VECM models. Additionally, they examined the effects of marine insurance on trade openness using the OLS method. The study discovered a favorable long-term correspondence amongst economic growth and usual coverage. Trade openness, however, had a harmful effect on economic growing. While there existed an actual correlation between marine insurance and trade openness, overall trade was negatively impacted. The study made clear that Pakistan's international trade may be restricted by insurance policies. The researchers recommend that policymakers look for strategies to lessen the negative impact that insurance policies have on international trade.

Nuzhat (2009) explored the influence of FDI on economic expansion in Pakistan. FDI is thought to be crucial for developing nations' economic expansion. The findings primary idea was to assess the

connection linking FDI and profitable expansion in Pakistan utilizing data spanning from 1980 to 2006. The study used an invention purpose based on endogenous evolution hypothesis to analyze the connection linking FDI and economic evolution. This approach also considered the impact of further causes like trade, home assets, and workers. The conclusions decisions indicated a weak and destructive correlation connecting West Pakistan GDP besides FDI influxes. Based on these findings, the study suggests that Pakistan would benefit more from converging on refining organization, developing human properties, supporting confined private enterprise, and producing a constant macroeconomic situation to encourage productive investment and boost economic development.

Zaheer and Khilji (2011) establish the position of interchange then foreign FDI in Pakistan and Malaysia from 1980 to 2010. They used the Johansen cointegration test to understand the connection connecting these factors and the Granger Causality test to find out the track of connection in the model. The study looked at trade openness, FDI, real exchange rate, and GDP as key variables. The conclusions displayed that, overall, trade openness has a helpful validity on commercial development into equal nations. Trade openness boosts economic growth by allowing countries to examine improvement of economies of scale, reducing barriers on the way to imports, and increasing competition. The study concludes that trade openness will stay a note component for economic growth in the future.

Atrayee and Hendrik (2006) looked at how foreign direct investment allocations machinery began advanced states to exclude expanded unities. While FDI often happens among developed nation state, the United States receives the greatest share of FDI inflows. This paper explores how these FDI inflows have helped stimulate the expansion of the U.S. financial system. Using time series statistics, the learning applied a SEM to analyze the association among FDI and U.S. profitable enlargement. The findings demonstrate that FDI significantly and favorably affects U.S. growth. The study finds that technology-rich countries like the U.S. benefit from FDI. The long-term benefits of FDI are large, especially in terms of increased productivity, and the U.S. bank account shortage is improved through the progressive effects of FDI. However, the income elasticity of FDI is still unclear. Overall, the study suggests that U.S. procedures should converge on establishing the nation's attractiveness for foreign direct investment to continue receiving help from these positive effects.

Muhammad et al. (2011) analyzed the impacts of imports, commercial advancement, and Foreign Direct Investment (FDI) on Pakistan's trade and industry production beginning 1990 to 2008. They utilized the ARDL approach to examine the long-term connection involving these components afterward real GDP. The findings showed that imports, commercial progress, and FDI all own a definite effect proceeding the country's output, meaning they impact to the progress of Pakistan's nation.

DATA AND METHODOLOGY

This chapter concludes by discussing the approaches related to foreign direct investment, model specifications, data sources, and the definitions of variables and key terms regarding the connection amongst universal trade, FDI, and financial evolution in West Pakistan. The econometric techniques applied to validate the findings will be summarized in this section. Furthermore, a model will be developed to explore empirical study.

Data Sources

In this research study, while IMP, EXP, and FDI are considered independent variables, GDP is the reliant adjustable. The sources of the facts applied in the investigation are also covered in detail in this part, along with connections between independent and dependent variables.

GDP has a convincing impact on individual variable quantity, the evidence of GDP assembled from WDI. Gross domestic products have positive impact on IMP and data collect of Import from WDI. FDI has a

convincing impact on GDP and data collected from WDI. Exports has positive Impact on Gross domestic product and data collected from WDI.

Description of Variables

In this section, we will describe the independent and dependent variables that make up the model's foundation. The purpose of the model is to consider how FDI, afterwards general trade relates to Pakistan's economic expansion. While IMP, EXP, and FDI are regarded as independent variables pertinent to this study, GDP is the dependent variable in this case.

Dependent Variable

This research constructed the model. This model uses GDP as a dependent variable to examine economic expansion, FDI, and worldwide trade.

The following is an explanation of dependent variable star.

Gross Domestic Product

GDP serves while the dependent variable in this study, measuring the whole amount of all goods and production created surrounded by a nation over an identified period. The U.S. Bureau of Commercial Analysis's most recent estimates show that GDP produced by 2.8 percent yearly in the third quarter of 2024 after increasing by 3.0 percent in the preceding sector. The updated figures indicate higher contributions from private portfolio savings, non-residential static speculation, public and resident government expenditure, and private fixed investment. However, there were also downward revisions noted for exports, consumer spending, government spending, and imports.

Imports

Imports are an essential part of global trade, along with exports, which are goods sold to other countries. Both imports and exports are important for economic growth because no country has all the resources needed to produce everything it requires. Imports belong to the cargos and provisions a citizen buys from other nations. In October 2024, Pakistan's imports totaled 4.5 billion USD, a decrease from 4.7 billion USD the previous month. The latest report shows that Pakistan's total imports dropped by 8.8% in October.

Exports

Exports are used as an independent variable in this model. Products and services produced in one nation and sold to consumers in another are known as exports. Pakistan exports carpets, rugs, leather goods, sports goods, textiles, and chemicals. Pakistan exports significant amounts of rice, sugar, cotton, and other goods; exports reached an all-time high of \$ 3.0 billion, up from \$2.8 billion the month before. Exports from Pakistan during January 2024 amounted Rs. 782,646 billion as against Rs. 799,588 in December 2023. The main driver of a nation's economic growth is its exports. More exports show a higher level of output from a nation's factories and industrial facilities, as well as a larger workforce needed to support these factories.

Foreign Direct Investment

In this model, FDI is used being an individual variable. While FDI does not directly promote economic growth, it can have an indirect positive impact through its interactions with other factors. FDI helps by easing technology transfer, increasing capital investment, and boosting productivity. In 2024, FDI has been growing. It increased by 172% year-on-year, reaching \$358.84 million, which was the highest monthly FDI inflow. China was the largest investor, contributing \$177.37 million in net FDI.

Corresponding toward the Official Deposit of Pakistan, the nation involved a complete of \$771 million in FDI relating July and September 2024.

Methodology

These are the methods used to explain the research study.

ADF

ADF test, suggested behind American language arithmeticians David Dickey and Wayne Fuller who exploited it in 1979, is utilized towards establish if a unit root is introduce in an autoregressive model. This test is appropriate for a time series data that appears trends, such as asset prices. Although it is a simple method of evaluating unit root, a basic autoregressive model is unable to adequately capture the more intricate and dynamic patterns found in many economic and financial time series. The Augmented Dickey-Fuller (ADF) test is helpful in this situation.

ARDL

Economic analysis often adopts a long-run connection linking the variable star being studied, as suggested by theory. In this context, it is expected that the means and variances of the variables will stay constant over time. However, most empirical research has shown that these assumptions, namely, the reliability of averages and variances, do not hold when analyzing time series data. As a result, many co-integration techniques are misapplied, incorrectly estimated, or misunderstood. One such technique is the ARDL co-integration technique, furthermore, seen similar the Bound Testing method.

The ARDL Bound Testing approach, explained by Pesaran et al. (2001), is an approach used to assess long-run correlations connecting variable stars. This technique offers several benefits as well as established co-integration tests. First, it can be used even if the time series data is combined of instruction I (0) or else series 1 (I (1)). Second, the methodology allows for the derivation of an UECM across an easy straight revolution. This simulation captures both short-run and long-run dynamic range. To conclude, empirical evidence suggests that the ARDL method provides consistent and reliable results, even with small sample sizes, making it a preferred choice in many studies.

Histogram Normality Test

Descriptive statistics play a vital role in biomedical research, as they help to characterize the fundamental attributes of the study's data. Quantitative data is analyzed using measures of dispersion and central tendency. Conducting a normality test is essential for selecting appropriate statistical techniques for data analysis, particularly in determining measures of central tendency for continuous data. When the data follows a normal distribution, parametric tests are employed to compare groups; conversely, nonparametric techniques are used when the data does not meet this criterion. Various methods, both visual and numerical, can be utilized to assess data normality, each with its own advantages and disadvantages. In this study, we have discussed summary metrics and techniques to evaluate whether the data is normally distributed. Normality is assumed by several statistical techniques used for data analysis, such as regression, correlation, analysis of variance, and t-test. According to the central limit theorem, a violation of normalcy is not a significant problem when the sample size consists of one hundred or more performances. Despite the sample size, the hypothesis of regularity should be remained to despite the significant findings. We display its continuous data as a mean value after deciding that it follows a normal distribution. Additionally, this shows that the value is used to compute the significance level (P-value) by comparing the groups.

The following meaning is not a representative value of our data if it is not normally allocated. An incorrect interpretation could result from choosing the incorrect representative value for a data collection

and then using that value to compute the significance level. For this reason, we first figure out whether the data is normal before deciding whether the meaning is proper as the data's representative value. If appropriate, a parametric test is used to compare the means; otherwise, nonparametric techniques are applied to compare the groups based on the media. A histogram is a graphical illustration that, like a bar graph, arranges a group of data objects into a user-definite series. By categorizing multiple data locations into rational series 12 or bins, the histogram creates a visually accessible representation of the data series.

The fundamental point of this investigation is to consider the connection between GDP, which is treated as the independent variable, IMP, EXP, and FDI, which are considered dependent variables. The study aims to explore how these variables interact with one another, whether they influence each other in an analogous manner or in distinct ways.

$$GDP = f(IMP + EXP + FDI)$$

GDP = Gross Domestic Product

IMP = Import

EXP = Export

FDI = Foreign Direct Investment

The gross domestic product is independent of this model. While foreign direct investment, imports and exports are dependent on variables. This formula makes it clear that imports, exports, and foreign direct investment all affect GDP.

RESULTS AND DISCUSSION

The current study examines the connection between Pakistan's economic growth, imports, exports, and FDI. To accomplish its goals, it uses econometric, statistical, and trend analysis methods. The ADF unit root test is managed to estimate the records stationarity. After that, additional analysis is conducted using the ARDL model. Several investigative tests are involved out to guarantee the model's dependability. The study's main goal is to investigate the impacts of FDI and global dealings continuously Pakistan's profitable expansion while offering insights into the ways in which these factors interact.

Table 1: Unit Root Test

To check the data is stationary or not enhanced dicky fuller analysis are hiring.

| Variables | Variables | | 1 st Difference | | Conclusion |
|---------------|-----------------------|------------------------|----------------------------|-----------------------|------------|
| | Intercept | Intercept & Trend | Intercept | Intercept & Trend | |
| GDP | -3.381128 (0.0221) | -3.498166 (0.06230) | -5.352082 (0.0003) | -5.195995 (0.0002) | I (1) |
| EXPA | -4.470077 (0.0018) | -5.025633 (0.0025) | -7.125253 (0.0000) | -6.990023 (0.0001) | I (0) |
| IMPGDP | -1.593573 (0.4682) | -3.981108 (0.0246) | -6.928920 (0.0000) | -6.764957 (0.0001) | I (1) |
| FDIN\$ | -3.868518 (0.0077) | -3.66297 (0.0457) | -6.028027 (0.0001) | -5.795770 (0.0005) | I (0) |

Source E-Views 14 (author's calculation) conducts estimation.

ARDL Bound Test

The ARDL model is used when the data is stationary. The process involves two main steps. First, the F-statistics are assessed to check if there is a long-run correlation connecting the variable quantity.

Table 2: Bound Test

| F-STATISTICS | 6.007691 | K=3 |
|---------------------|----------|------|
| Critical Bound Test | LCB | LUB |
| 10% | 2.37 | 3.2 |
| 5% | 2.79 | 3.67 |
| 2.5% | 3.15 | 4.08 |
| 1% | 3.65 | 4.66 |

Source E- Views 14 (author’s calculation) conducts estimation.

Table 3: Estimate Long- run Coefficient of the Model

| Variables | Co-efficient | Std-Error | t-statistics | Prob |
|-----------------|--------------|-----------|--------------|--------|
| LNIMPGDP | -0.548996 | 0.132912 | -4.130526 | 0.0012 |
| LNEXPA | -0.146045 | 0.062185 | -2.348556 | 0.0353 |
| LNFDIN\$ | -5.44E-10 | 2.05E-10 | -2.660702 | 0.0196 |
| C | 13.34583 | 2.579806 | 5.173193 | 0.0002 |

Source E-Views 14 (author’s calculation) conducts Estimation.

The coefficients in the analysis clarify the effect of clarifying variable quantity upon the determined adjustable. For GDP, the quantity value is -0.548996, besides a t-statistic of -4.130526 and a probability value of 0.0012, indicating a statistically significant negative relationship.

For exports, the constant value is -0.146045, through a t-statistic of -2.348556 and a significant probability value of 0.0353, also suggesting a significant negative effect.

In the case of FDI, the coefficient value is -2.660702, besides a significant possibility rate of 0.0196, showing a substantial negative relationship as well. These results suggest that all three variables GDP, exports, and FDI have a statistically major negative change on the dependent variable in this study.

Table 4: Estimate of Short- Run

| Variables | Co-efficient | St. Statistics | t-statistics | Prob |
|------------------------|--------------|----------------|--------------|--------|
| D (GDP (-1)) | 0.443471 | 0.195368 | 2.269928 | 0.0409 |
| D (IMPGDP) | 0.248920 | 0.167801 | 1.483424 | 0.0618 |
| D (IMPGDP (-1)) | 0.828725 | 0.249495 | 3.321614 | 0.0055 |
| D(EXPA) | -0.058338 | 0.038599 | -1.624496 | 0.1283 |
| D (EXPA (-1)) | 0.087262 | 0.038599 | 2.260693 | 0.0416 |
| CoinEtq (-1) | -0.842192 | 0.293930 | -6.267460 | 0.0000 |

Source E-Views 14 (author’s calculation) conducts Estimation.

The table presents the brief factor assessment of the template. The coefficient for Coin (-1), which measures the conjunction of the model, is -0.842192, with a t-statistic of -6.267460 and a highly significant probability value of 0.0000. This indicates a strong long-run connection beginning the instructive variable quantity to the related variables.

For the variable GDP, the coefficient amount is 0.443471, with a t-statistic of 2.269928 and a significant probability rate of 0.0409, suggesting a statistically significant positive relationship.

The imports variable has a coefficient value of 0.248920, with the same t-statistic of 2.269928 and a significance probability value of 0.0618, indicating a positive relationship, although it is marginally insignificant.

In contrast, the exports variable has a coefficient rate of -0.058338, amongst a t-indicator of -1.624496 then an insignificant probability value of 0.1283, suggesting no significant impact in the short run. These findings highlight the varying influences of the descriptive variable quantity on the determined adjustable within the model.

Table 5: Correlation Matrix

| | GDP | IMP | EXP | FDIN |
|-------------|------------|------------|------------|-------------|
| GDP | 1.000000 | | | |
| IMP | -0.162925 | 1.000000 | | |
| EXP | 0.211851 | -0.396381 | 1.000000 | |
| FDIN | 0.030336 | -0.515356 | 0.126048 | 1.000000 |

Source: E-Views 9 (author's calculation) conducts estimation

This table proves that the GDP is strongly correlated with IMP, EXP and FDI.

Table 6: Granger Causality Test

| NULL HYPOTHESIS | F-STATISTICS | PROB |
|--|---------------------|-------------|
| IMP-GDP does not Granger Cause GDP | 0.20159 | 0.8183 |
| GDP does not Granger Cause IMP-GDP | 2.02973 | 0.1457 |
| EXP-A does not Granger Cause GDP | 0.25428 | 0.7782 |
| GDP does not Granger Cause EXP-A | 0.29322 | 0.7494 |
| FDIN\$ does not Granger Cause GDP | 1.77787 | 0.1974 |
| GDP does not Granger Cause FDIN\$ | 8.06722 | 0.0032 |
| EXP-A does not Granger Cause IMP-GDP | 0.18004 | 0.8367 |
| IMP-GDP does not Granger Cause EXPA | 3.83785 | 0.0409 |
| FDIN\$ does not Granger Cause IMP-GDP | 2.43252 | 0.1161 |
| IMP-GDP does not Granger Cause FDIN-\$ | 1.22172 | 0.8984 |
| FDIN-\$ does not Granger Cause EXP-A | 1.06112 | 0.3667 |
| SEXP-A does not Granger Cause FDIN-\$ | 0.10772 | 0.8984 |

Source E-Views 14 (author's calculation) conducts Estimation.

Diagnostic Test

Table 7: Breusch-Godfrey Serial-correlation

| Test-statistics | Value | Prob.F (2,11) | Decision |
|--|--------------|----------------------|-------------------------------------|
| F-statistics | 2.927406 | 0.0956 | Null Hypothesis ignored |
| Heteroscedasities test: Breudipagen Godfrey | | | |
| Test-statistics | Value | Prob-F (9,13) | Decision |
| F-statistics | 0.873413 | 0.5703 | Do not reject H |
| Normality | | | |
| Test-statistics | Value | Prob | Decision |
| J. b | 2.543576 | 0.280330 | Residuals are Normality distributed |

Source E-Views 14 (author's calculation) conducts Estimation.

Breusch-Godfrey serial correlation

The possibility of the Breusch-Godfrey test is 0.0956, which exists less than 5% as shown in the table. This shows that the null hypothesis is disregarded. Thus, it can be determined that the model displays serial correlation.

Heteroscedasticity Test

The probability value of the heteroscedasticity test is 0.5703, which is more important than 5% as shown in the table. This indicates the null hypothesis cannot be eliminated. Hence, it can be determined that the present is no issue with heteroscedasticity in the model.

The J-B normality test for the Residuals

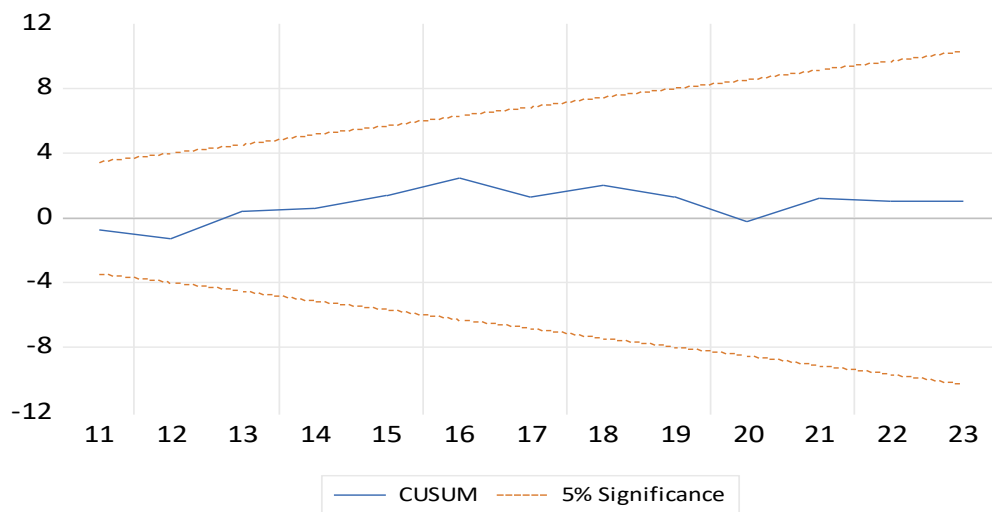
The possibility value of the Jarque-Bera (J-B) test is 0.280330, which is greater than the 5% magnitude stage. This shows that the null assumption cannot be denied. Consequently, it can be assumed that the division of the remainder is average. This finding suggests that the expectations underlying the regression analysis are satisfied, providing further validity to the model's results.

Stability Test

Evaluate the degree to which the models are suitable for policy effects and the stability of the estimated coefficient. These were plotted along with the cumulative sum of recursive residuals and cumulative sum of recursive residuals of square. Straight lines by the five-percentage significance level write down the upper and lower critical boundaries. Our model is situated between two plotted lines that stand for boundaries. That deviation was displayed in the CUSUM and CUSUMQ graphs. The stability test, which gives model support for policy implications, is essential to realism.

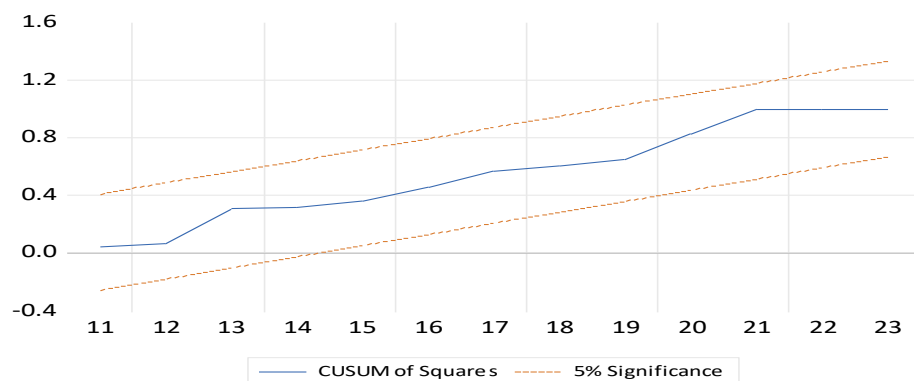
CUSUM Test

Systematic fluctuations in the coefficient of variables can be examined with the help of the collective sum of recursive residuals.



CUSUM of Square

To check for impulsive adjustments in the coefficient of variables, the cumulative sum of square balances has proven to be a realistic method.



CONCLUSION

In this research, we provide an overall summary that offers an overview of the study. This section will briefly explain the empirical investigation of the model and its findings. The current study focuses on an observed survey of intercontinental exchange, FDI, and economic progression within the context of Pakistan.

The investigation makes use of econometric, statistical, and trend analysis. After evaluating the records stationarity applying the ADF unit root assessment, the ARDL model is applied for additional analysis. The regression model's robustness is assessed using a variety of diagnostic tests. The model is specifically made to look at how Pakistan's economic progression, foreign direct investment, and worldwide trade interact, giving valuable information about how these factors affect one another in the nation's economy.

The conclusion highlights the need for the government to take the required steps and make the right choices to promote economic growth, especially in the areas of international trade and FDI. The study demonstrates the unidirectional relationship between imports to exports and FDI, as well as the mutual technique contributing bond amongst economic expansion, EX, and FDI. This may indicate that Pakistan's economic expansion and foreign trade policy drew foreign direct investment. Two essential elements that strengthen the influence of commercial growing trendy Islamic Republic of Pakistan are trade then foreign direct investment.

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