JOMSSI
JOURNAL OF MANAGERIAL AND SOCIAL SCIENCE INNOVATIONS

Investigate the Innovative impact of Trade Deficit on Economic Growth of Pakistan

Zeeshan Haider
Federal Urdu University Arts, Science & Technology Karachi
zeeshanhaidergm@gmail.com

Abstract

The purpose of this research paper is to analyze the relationship between trade deficits and the economic growth of Pakistan. For that intention, we collected the data from different sources for the period 1983–2022, and selected variables such as gross domestic product (GDP) as a dependent variable, trade deficit (TD), gross capital formation (GCF), and labour force (LF) as independent variables. For the analysis, we use analytical techniques such as ADF's unit root test, bond test, ARDL model, and error correction model to check the stationary and short- and long-run relationships between variables. According to this study's results, trade deficits had a negative relationship with GDP, while labour force and gross capital formation had a positive relationship with GDP during the study period. We recommend that the government of Pakistan should focus on diversification in export goods as well as try to make the production process able to convert goods from raw materials to final goods.

Keywords: *Trade Deficit, Labour Force, Gross Capital Formation*

Introduction

Trade accelerates the increase of productivity, particularly for nations and industries involved in global value chains (GVCs). Because of these connections, developing countries can focus on producing a single part, like a keyboard, as opposed to a complete product, like a personal computer (Baldwin, 2012). But consistently trade deficits disturb the country's health such as the devaluation of domestic currency, decrease in GDP, Increased government spending, Changes in exchange rate, price instability, and lots of things that deeply affect economic growth negatively (International Monetary Fund 2019 and Blavasciunaite, Garsviene, & Matuzeviciute, 2020).

The condition of a nation is defined as the difference between its imports and exports. Stability in trade is a crucial component. Regretfully, Pakistan has never seen a surplus in trade stability over the years. First, as I mentioned above, the trade imbalance is not a bad thing. As a result, the country's level of living rises. But the ongoing trade imbalance is a problem for our country; in fact, neither the government nor the State Bank of Pakistan have been able to cut back on imports State Bank of Pakistan, 2023).

The appreciation of foreign currency relative to the home currency is a fundamental economic phenomenon that requires careful analysis. But what exactly causes a foreign currency to appreciate? Why is it important to understand this process? In the context of Pakistan, worker

remittances and exports serve as crucial sources of foreign exchange earnings, helping to ease pressure on the country's balance of payments. However, economic slowdowns in trade partner nations can negatively impact both remittances and exports. Additionally, rising global commodity prices contribute to higher import costs, fueling domestic inflation. This inflationary pressure disproportionately affects average households and can ultimately hinder overall economic growth (International Monetary Fund, 2023).

When examining Pakistan's persistent trade imbalance and its implications for economic growth, it becomes evident that the country has long struggled with a widening gap between imports and exports. For decades, imports have been increasing at a faster rate than exports, exacerbating the trade deficit. Recent data from the Pakistan Bureau of Statistics (PBS) highlights this issue: "Pakistan's trade balance, the gap between exports and imports, recorded a deficit of $5.29 billion in the July to September period of 2023-24, compared to $9.16 billion in the same period of the previous year" (Pakistan Bureau of Statistics, 2023). This significant but still concerning reduction in the trade deficit underscores the ongoing challenge of sustaining export growth while managing rising import costs.

One critical factor affecting Pakistan's balance of payments is the limited diversification of its export base. Research suggests that Pakistan's reliance on a narrow range of export goods is a major barrier to expanding foreign exchange earnings. The country's export pattern remains largely unchanged, focusing primarily on three key sectors: rice, leather, and cotton manufacturing. Between July and March of FY2023, these three categories accounted for 68.1% of total exports, with cotton manufacturers alone contributing 57.3%. Leather exports stood at 3.2%, while rice exports made up 7.6%, leaving only 31.9% for other goods. This heavy reliance on a small number of commodities highlights the urgent need for export diversification to enhance economic resilience and improve trade balance (Economic Survey of Pakistan, 2023).

Understanding these economic dynamics is essential for policymakers, economists, and industry stakeholders aiming to formulate effective trade policies (Akash et al., 2023). Addressing the structural weaknesses in Pakistan's export sector and exploring new avenues for trade expansion could play a pivotal role in achieving sustainable economic growth.

Table # 1

Pakistan's Major Exports (Percentage Share)

Commodity	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**July-March**	
							2021-22	**2022-23P**
Cotton Manufactures	56.5	61.7	56.4	56.6	59.0	59.3	59.2	57.3
Leather**	4.1	4.2	3.7	3.6	3.3	3.0	3.0	3.2
Rice	8.8	7.7	9.0	10.2	8.1	7.9	7.7	7.6
Sub-Total of three Items	**69.4**	**73.6**	**69.1**	**70.4**	**70.4**	**70.2**	**69.9**	**68.1**
Other items	30.6	26.4	30.9	29.6	29.6	29.8	30.1	31.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: PBS

According to table: 1, we may say that our export trend has shown no appreciable change for 8 Years, and that is the main factor which is deeply affecting our economic growth through rising deficit trade because as you know we are a developing country and with the passage of time or with our growing population, our consumption and needs are rising and we are not able to produce enough and its leads to our over import rate means over import as compare to export which means that we are in trade deficit. And due to that deficit factor, we are going towards low and unstable economic growth (Awan et al., 2019 & Awan et al., 2020).

Problem Statement

Trade deficits occur when a country imports more goods and services than it exports, leading to an imbalance in foreign trade. This situation arises due to a country's inability to produce sufficient goods to meet domestic demand, thereby increasing reliance on foreign imports (Rehman et al., 2021). Persistent trade deficits often necessitate external borrowing to finance imports, typically at high-interest rates, exacerbating the fiscal burden on the economy (Kumar et al., 2020). In the case of Pakistan, the country frequently relies on foreign loans with substantial interest rates to cover its trade imbalance, resulting in a widening current account deficit (Ahmed & Qayyum, 2019). A persistent current account deficit has significant macroeconomic consequences, including exchange rate depreciation, inflationary pressures, and declining investor confidence, all of which contribute to slower economic growth (Hussain et al., 2022).

Given these challenges, it is imperative to explore the underlying causes of Pakistan's trade deficit and its impact on economic stability. Factors such as declining export competitiveness, import dependency, structural inefficiencies, and policy shortcomings may play a crucial role in exacerbating the problem (Javid & Munir, 2021). This study aims to investigate the determinants of Pakistan's trade deficit, assess its effects on the economy, and propose viable policy solutions to mitigate its adverse consequences. The findings of this research will contribute to policy discussions on achieving sustainable economic growth by addressing external imbalances.

Significance of this study

Significance of this study bases on theoretical and practical work contribution. As we know, lots of work has already been done on this topic (Trade deficit relationship among economic growth, case of Pakistan) but there is sufficient space to conduct further research on it. And we hope that, that our current work on this issue helpful to our economic decision makers, policy makers to overcome the issue and as well as it's also helpful to our next future upcoming researchers.

Literature Review

Numerous studies have previously been conducted to investigate the reasons behind the trade imbalance and its impact on the country's economic development. We looked at earlier research on our subject, which is summarized below.

Trade plays a crucial role in the economy and contributes to economic growth. Rehman et al., (2021) explored the relationship between the trade deficit and economic development in

selected countries. To analyze this connection, a random-effects model was employed for estimation. The findings reveal that the trade deficit negatively affects economic growth. The study recommends that countries focus on reducing their trade deficits to enhance economic performance and achieve higher growth.

Pan et al., (2022) investigated the asymmetric effects of key macroeconomic variables—economic growth, industrial production, the consumer price index (CPI), and oil prices—on the trade deficit in the People's Republic of China. Utilizing the Toda–Yamamoto causality test and the non-linear ARDL approach, the study analyzed quarterly data spanning from 1995Q1 to 2021Q4. The findings reveal unidirectional causality and the existence of non-linear co-integration among the examined variables. Moreover, the bounds test analysis confirms a long-run asymmetric relationship between the trade deficit, industrial production, oil prices, and GDP growth, whereas no such connection is observed for CPI. The results further indicate that a decline (increase) in industrial production, coupled with an increase (decrease) in oil prices and GDP growth, leads to a rise (decline) in the trade deficit. While the short-run results exhibit a similar trend, they remain statistically insignificant, suggesting that the relationship between the trade deficit and its determinants materializes primarily in the long run. From a policy standpoint, Pan emphasizes the importance of sustaining stable GDP growth, fostering industrial production through technological advancements, and transitioning toward renewable energy sources, such as solar and wind power, to mitigate the trade deficit.

Shah (2021) examined the significance of regional economic integration in fostering economic growth in South Asian countries from 1980 to 2015. Despite the importance of economic cooperation, intra-regional trade in South Asia remains limited, accounting for only 5%–6% of the region's total trade. Recognizing the interdependence among countries, the study employs methodologies that account for cross-sectional dependence. Specifically, the continuously-updated and bias-corrected (CupBC) estimator by Bai et al. (2009) is utilized to estimate long-run coefficients, while the Dumitrescu–Hurlin panel causality test (2012) is applied to assess causal relationships among the variables. The findings indicate that economic integration has a significant positive impact on economic growth in the region. However, the study challenges conventional perspectives by revealing a negative relationship between both democracy and human capital with economic growth. Moreover, bidirectional causality is identified between economic integration and democracy, regional integration and human capital, democracy and human capital, and democracy and labor. These insights contribute to the ongoing discourse on regional economic integration and provide policy recommendations for South Asian economies.

Trade and Economic Growth in Pakistan

Abdul and Sheeza (2019) conducted a research about Trade deficit, the main rezone conducting of this research paper to know the phenomena of Trade deficit relationship with the economic growth. They do this by gathering time series data from the World Data Bank, IMF, State Bank of Pakistan, and Pakistan Economic Survey from 1980 to 2017. They used trade volume (TV), GDP, and foreign direct investment (FDI) as independent variables and trade deficit (TD) as a dependent variable. The Error Correlation Model (ECM) and ARDL were used to examine the short- and long-term impacts of trade on economic growth. The primary finding was that, while short-term effects of foreign direct investment on the trade imbalance are negligible, they are

favorable over the long term. Additionally, both trade volume and GNI have short- and long-term positive and negative relationships with trade equilibrium.

Zada et al. (2010) investigated Pakistan's export drivers. Using time series data from 1975 to 2008, the study sought to determine the link between trade and economic growth. For the outcome, the OLS approach was used. The results indicate that Pakistan's exports are very susceptible to shifts in global demand and pricing. The study demonstrated the significance of demand-side variables such as global GDP, real exchange rates, and global pricing in influencing Pakistan's exports.

Shamshir, Rehman, Hussain & Sabir (2019), found the short run as well long relationship among some macroeconomic variables and economic growth. They examined the data of Pakistan from 2000- 2015 through ARDL model. The results of the study found the instead of the other macroeconomic variables FDI and unemployment trade had insignificant effect on economic growth of Pakistan during the period 2000- 2015.

Noreen, Saima, and their team (2021) investigated how Pakistan's economic performance was impacted by its external debt. Examining how trade deficits and foreign debt affected Pakistan's economic performance from 1980 to 2017 was the aim of this study. GDP was the dependent variable, while the explanatory factors were the labor force, manufacturing value added, trade deficit, gross capital formation, exchange rate, and total external debt. The result was subjected to the Johansen co-integration test and the vector error correction approach. According to the study, the trade imbalance has a statistically significant and detrimental effect on GDP, and the overall amount of foreign debt also has a negative effect. So they proposed. Instead of depending too much on borrowing from outside sources, the Pakistani government should develop long-term plans to differentiate economic activities and provide the country with lucrative sources of budget funding.

The impact of the exchange rate, trade deficit, and gross fixed capital creation on Pakistan's economic development between 1986 and 2013 was examined by Zahir, Zainab, and others (2019). They employed time series analysis for it. Secondary sources are the source of the information. The data was analyzed using the ordinary least squares (OLS) approach. The outcome demonstrated that trade deficits had a statistically significant negative impact on GDP. Additionally, the gross domestic product is positively and statistically insignificantly impacted by the exchange rate. The outcome also shows that when an economy does well in terms of currency exchange, the exchange rate has no discernible impact on economic growth. The impact of terms of trade on Pakistan's economic development was examined by Khalil, Ali, and colleagues (2017) using yearly time series data spanning from 1980 to 2013. An autoregressive distributed lag model was chosen for this study in order to examine both short- and long-term connections. The findings show that trade has both short-term and long-term detrimental consequences on economic growth. Additionally, this research shows that labor has a substantial beneficial impact on economic growth both in the short and long term. Furthermore, capital stock only has a long-term impact on economic growth. Therefore, they propose that economic measures may be put in place to worsen trade conditions, which would further boost Pakistan's economic expansion.

In their 2002 study, Aalam, Ashfaq, and associates examined how trade volatility affects economic development, paying particular attention to export instability, its consequences on investment, and inflation. They also examined how foreign exchange reserves contribute to economic expansion. The research, which employed an econometric model, concluded that export volatility had no discernible impact on investment or economic development in Pakistan. Excess foreign exchange reserves, however, have been shown to increase production and capital creation. Imports are essential for maintaining economic growth because of their complementarity with industrial expansion, even if export instability may have an impact on foreign exchange profits and imports. According to the conclusions, foreign reserves should be stabilized for long-term growth.

Abid Ali (2021) investigated how Pakistan's trade imbalance affected economic expansion. He used time series data from 1980 to 2015 to do this. The order of stationary was ascertained using the ADF test. Based on the results of the AFD test, autoregressive distributed lag (ARDL) was the estimating method employed. The findings indicate that both in the short and long term, the trade imbalance has a negative and substantial effect on production growth. According to the report, the government should boost output and lower unemployment in order to improve the trade balance. Controlling the pace of population growth, raising the literacy rate, maintaining a stable foreign exchange policy, and containing inflation are all necessary.

Huda and Shabbir (2012) examined Pakistan's international commerce and spoke about how the variable, which is a significant part of national revenue, might support the nation's economic growth. The model of economic development related to trade factors was estimated using a collection of yearly time series data on Pakistan's GDP from 1981 to 2010. The results of a straightforward regression analysis, using the GDP variable as a stand-in, indicate that international commerce has a major impact on the nation's economic progress. It supports the ideas of international commerce that contend that fostering overseas trade activity is necessary to achieve economic progress.

Comparing labor productivity across nations was the main subject of debate on international commercial activity in Adam Smith's (1776) and David Ricardo's (1817) classical free trade ideas. These theories' central claim is that a nation's ability to reduce labor costs and enhance output production in order to boost exports to other nations strengthens its economic development. There is a trade imbalance in Pakistan as imports are always more than exports in terms of trade (Rehman et al., 2021). Therefore, in order to boost exports through the productivities of factors of production from prospective economic sectors, the government must intervene through strategic trade policy. Attempts to broaden and enhance export markets abroad are also crucial

Methodology

This study based on time series secondary data of Pakistan from the period 1982 to 2022. Researchers use various quantitative methods to examine historical economic data to identify potential patterns and relationships between Trade deficits and economic growth. The data was obtain from the (WDI) World Development Indicator which is 40 years period time from 1982 to 2022 data of Pakistan. The minimal sample sizecriteria were met based on previous studies. And

variables of the study Trade deficit, Economic growth were we see the depth relations of these variable. In the study data analysed through the E- Views software and for investigate the short run as well long run relation used the ARDL model (Shamshir et al., 2019 & Abbasi et al., 2021).

Model Specification:

In this model,

$$EG = f (LF, GK, TD)$$

$$EG = \beta o + \beta 1 (LF) + \beta 2 (GK) + \beta 3 (TD)$$

Where
TD = Trade Deficit = (Export - Import)
EG = Economic Growth
LF = Labor Forces
GK = Gross Capital Formation

Empirical analysis

Descriptive Statistics:

Table # 2: Descriptive statistics

	Labor Force	Gross Capital Formation	Trade Deficit	GDP
Mean	52725901.00	2.87	0.38	4.11
Median	52288827.00	3.44	1.19	4.24
Maximum	76944640.00	14.55	40.86	7.83
Minimum	32045924.00	-9.70	-27.80	-1.27
Std. Dev.	13721748.00	6.47	13.58	2.03
Skewness	0.03	-0.22	0.50	-0.25
Kurtosis	1.71	2.47	3.91	3.19
Jarque-Bera	2.21	0.64	2.41	0.39
Probability	0.33	0.73	0.30	0.82

The descriptive statistics for the chosen variables are displayed in Table 2. During the period under consideration, the average labor force was 52725901.00, with a standard deviation of 13721748.00. With a standard deviation of 6.47, the gross capital formation average is 2.87. The average gross domestic product is 4.11 with a standard deviation of 2.03, while the average trade deficit is 0.38 with a standard deviation of 13.58. Kurtos is concerned with the data's flatness and peakiness in relation to a normal distribution. All of the variables in this table are platy kurtic, according to the kurtosis values. A test called the Jarque Bera is used to determine the joint hypothesis of skewness and kurtosis as well as to verify or check normalcy. Data does not have a normal distribution if the result of this non-negative test is zero. According to Table 2's findings, every variable has a normal distribution.

Correlation Analysis:

The strength of the association between several variables is measured via correlation analysis. Bivariate quantitative analysis is used to investigate the relationship between many variables. Table 3 presents the findings of the correlation study.

Table # 3. Correlation analysis

	GDP	Labor Force	Gross Capital Formation	Trade Deficit
GDP	1			
Labor Force	-0.1	1		
Gross Capital Formation	0.7	-0.1	1	
Trade Deficit	-0.2	-0.2	-0.4	1

Correlation coefficient values can be either positive or negative. The range of the correlation coefficient is -1 to +1. A series of ones makes up the table's diagonal. It is a measure of linear dependency and is symmetric in nature. There are certain limitations to this study, though, as it simply explains the existence of a link between two variables and not the positive association between them. Some of the variables in this table have a positive correlation with one another, while others have a negative correlation. GDP and trade deficit have a negative correlation, although GDP and labor force participation have a positive correlation.

ADF's Unit Root Test

To determine if a time series data set is stationary or non-stationary, a unit root test is utilized. Although a number of tests have been created to verify the presence of the unit root, Dickey and Fuller are frequently employed to verify or test the unit root (Rehman et al., 2020). In order to remove autocorrelation, Dickey and Fuller then extended their test structure by creating or adding additional lagged terms of dependent variables. The Akaike information criteria (AIC) predict this additional lag length component.

Table # 4: Unit Root test

	Level		1st Difference		2nd Difference		Result
Variable	**Intercept**	**Trend Intercept**	**Intercept**	**Trend Intercept**	**Intercept**	**Trend Intercept**	
GDP	-0.718917 * 0.0009	-0.804171 * 0.003	-1.415245 * 0.000	-1.412949 * 0.000	-4.900989 * 0.000	-4.883556 * 0.0004	1(0)
Labor Force	0.014068 * 0.9985	-1.159599 * 0.1195	-2.118732 * 0.0616	-2.037996 * 0.2447	-1.745799 * 0.000	-1.740095 * 0.000	I(1)
Gross Capital Formation	-1.159744 * 0.0011	-1.164610 * 0.0065	-1.377645 * 0.000	-1.377896 * 0.000	-2.728972 * 0.000	-2.727166 * 0.000	1(1)
Trade Deficit	-0.968282 * 0.000	-1.013950 * 0.0001	-2.082854 * 0.000	-2.081531 * 0.000	-3.287001 * 0.000	-3.299189 * 0.000	1(1)

Table 4 demonstrates that GDP is integrated at level (1(0)), with a probability value of 0.00 and a co-efficient value of -0.71. The labor force is integrated at first difference 1(1), where the probability value is 0.11 and the coefficient value is -1.15. The co-efficient value of gross capital formation, which is integrated at 1(1), is -1.16 with a probability of 0.00. With a co-efficient of -1.01 and a probability of 0.00, the trade deficit is therefore likewise integrated at the 1(1) first difference. These results show that not all variables are at the same degree of integration and that there is no co-integration. Every variable is incorporated at every level. The auto regressive distributed lag (ARDL) model must now be used.

Autoregressive Distributed Lag (ARDL) Approach.

Persearn et al. (1996) created the ARDL method to examine the relationship between several factors. It is applicable in situations where the variables are incorporated in varying sequences. The entire concept allows for the variable to be allocated a varying lag duration.

Bound Test:

The ARDL approach's first step for determining if there is a long-term link between variables is the bound test. Table 5 displays the bound test results:

Table # 5: Bound Test

Test Statistic	Value	Significant	I(0)	I(1)
		10%	2.72	3.77
F-statistic	20.50354	5%	3.23	4.35
K	3	2.50%	3.69	4.89
		1%	4.29	5.61

Table 5 shows the critical value of upper bound 1(1) and bound 1(0). According to the results, the F. Statistic value is 20.50354, which is higher than the 4.35 upper bound. There is no long-term link if the statistic's value is less than the lower bound's critical value; conversely, if the statistic's value falls between the upper and lower bounds, there is conflicting evidence regarding the long-term relationship (Soomro et al., 2021). Since the value of F. Statistic in this table exceeds the upper bound, the null hypothesis is rejected, as per Persearn et al. (2001) and Nayaran (2004), since the value of F. Statistic exceeds the upper bound's critical value, and the alternative hypothesis is accepted. It currently demonstrates that the trade imbalance and economic growth are negatively correlated.

Long Run Relationship of ARDL

According to the ARDL model's long-term association results, the labor force's coefficient values are negative, indicating a long-term negative link between this variable and GDP. The trade deficit's co-efficient value is positive, indicating a long-term positive correlation between this indicator and GDP. Gross capital formation has a coefficient of 0.23, meaning that a one-unit increase in GDP would result in a 23% rise in GDP. This link is statistically significant.
Almost every variable in this model is statistically significant, indicating a substantial correlation with GDP.

Table # 6: Results of ARDL Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LF	-0.00	0.00	-0.560327	0.5802
TD	0.008687	0.010857	0.800172	0.4311
GCF	0.238852	0.026994	8.848229	0.00
C	3.740514	0.53388	7.00628	0.00

Cointeq = GDP - (-0.0000*LF + 0.0087*TD + 0.2389*GCF + 3.7405)

Error Correction Model: Short Run Relationship

The short-term outcomes and the correlation between the independent and dependent variables are displayed in Table 7. The findings show that the R-squared value is 0.69 and the Adj R-squared value is 0.62. It indicates that independent factors account for 79% of the variation in the dependent variable (GDP). ECM has a value of -1.82. It implies the rate of change (Abbasi et al., 2021). A good association is shown by the DW value of 1.94. Long-term equilibrium may be achieved because the ECM coefficient, which indicates how long it will take for a variable to return to equilibrium, should have a negative sign and be statistically significant at the 1% level.

Table # 7: Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	0.44	0.14	3.10	0.00
D(LF)	0	0	-0.55	0.58
D(TD)	0.01	0.01	0.80	0.42
D(GCF)	0.25	0.04	6.24	0
CointEq(-1)	-1.82	0.22	-8.19	0
		D.W. = 1.98		
R^2 = 0.69		Prob (F. statistic) 0.00		
Adj R^2 = 0.62		F. statistic 9.47		
S.E of regression 1.24				

Stability Test

In the study plot the cumulative sum of recursive residuals (CUSUM) and cumulative sum of recursive residuals of squares (CUSUM) to verify the stability of the coefficient. The outcomes demonstrate the model's stability.

Figure 2: Plot of Cumulative Sum of Recursive Residuals

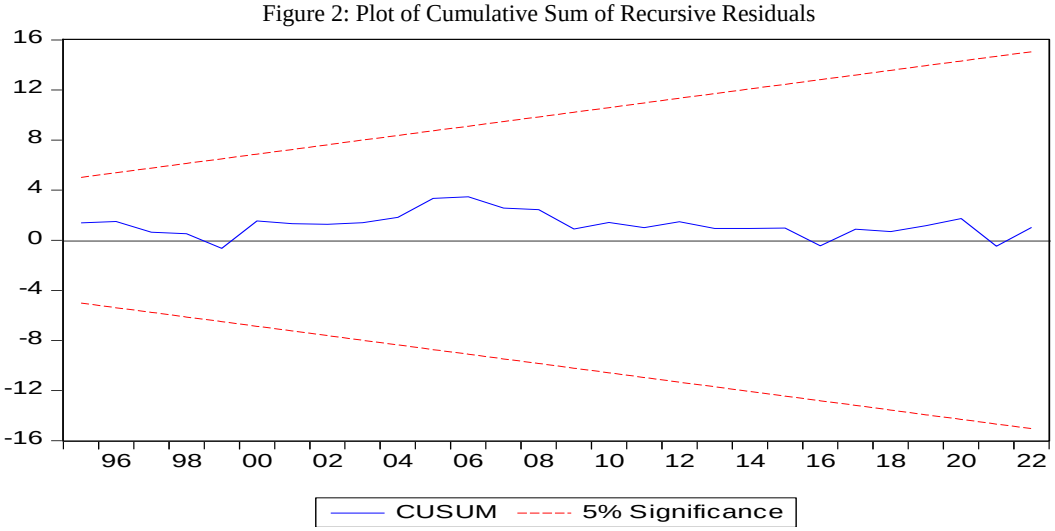
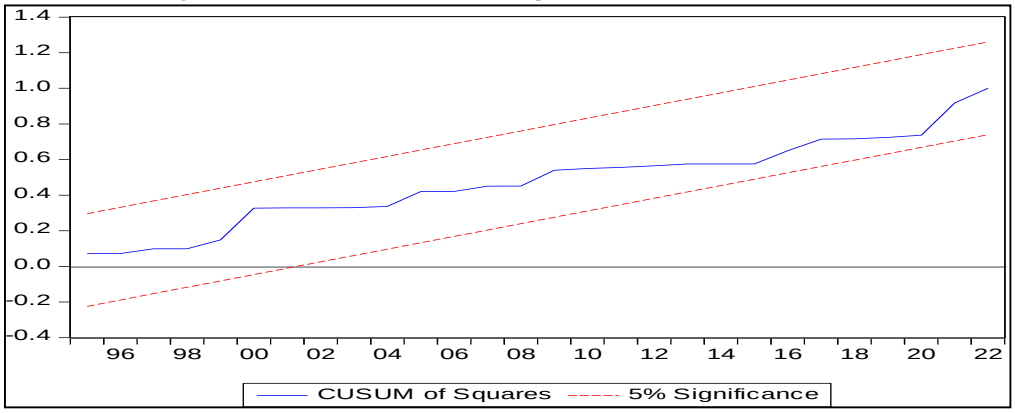


Figure 3: Plot of Cumulative Sum of Square of Recursive Residuals



The consistency of the coefficient over time is demonstrated using the cumulative sum recursive residual (CUSUM) model. The stability of the model is depicted graphically. Since the sum of the squares of the recursive residual graphs and the overall sum of the recursive residual graphs are within the range of the 5% significant level, these figures demonstrate the stability of the model.

Finding of The Study

According to this study, we may use time series data spanning 40 years, from 1983 to 2022, to explain the findings of empirical analysis of the variables that influenced Pakistan's GDP. The long-term and short-term impacts of independent variables on dependent variables were investigated using the Auto Regressive Distributive Lagged (ARDL) model. The following lists each independent variable's impact on economic growth:

Here, results of each variable explain individually, with GDP economic growth serving as the model's dependent variable.

- The findings indicate that Pakistan's economic growth is adversely affected by the trade deficit (TD) both in the short and long term. It causes the economy to slow down.
- An economy's ability to develop depends on its labor force. Employment opportunities are a sign of a robust economy and will lead to significant economic growth. The results of our analysis suggest that there is a considerable correlation between labor forces and economic growth as measured by GDP.
- Investment, infrastructure development, and technological advancement are all included in a nation's gross capital formation (GCF). Capital formation is essential to the nation's progress. We must state that gross capital formation (GCF) is essential for economic progress, as this study has shown that it has a favorable impact on Pakistan's economy.
- An economy's ability to develop depends on its labor force. High job opportunities will lead to high economic development in a nation. Our findings show a high correlation between labor force participation and production.

Conclusions

This study has examined the key determinants of Pakistan's economic growth over the past 40 years (1983-2022) using the Auto Regressive Distributive Lagged (ARDL) model. Our findings highlight the significant impacts of trade deficit, labor force participation, and gross capital formation on GDP growth. These results provide valuable insights into the economic policies needed to enhance sustainable growth in Pakistan.

The analysis reveals that the trade deficit (TD) has a negative impact on Pakistan's economic growth in both the short and long run. This finding aligns with previous research indicating that persistent trade deficits lead to economic slowdown by increasing external borrowing, depreciating the currency, and limiting domestic investments (Mbah & Alagidede, 2019). To mitigate this adverse effect, policymakers should focus on export diversification and import substitution strategies to improve trade balance and foster economic resilience.

Labor force participation is identified as a crucial determinant of economic development. The positive and significant correlation between labor force participation and GDP growth suggests that employment opportunities are essential for sustaining economic expansion. This is consistent with the human capital development theories, which argue that a productive labor force contributes to higher output and economic efficiency (Becker, 1993). Government initiatives that promote skill development, vocational training, and employment generation programs can further strengthen this relationship and enhance economic productivity.

Another key finding of this study is the positive role of gross capital formation (GCF) in promoting economic growth. Investment in infrastructure, technological advancements, and industrial development contributes to capital accumulation, which drives long-term economic progress (Solow, 1956). Our results support the argument that higher levels of investment in physical and human capital are necessary for sustainable growth. Thus, policies encouraging

domestic and foreign direct investments, improving financial markets, and ensuring stable macroeconomic conditions are critical to fostering capital formation.

Overall, the findings of this study underscore the importance of addressing trade imbalances, increasing labor force participation, and promoting capital formation to achieve sustainable economic growth in Pakistan. Future research should explore additional macroeconomic variables, such as inflation, exchange rate stability, and government expenditure, to provide a more comprehensive understanding of the country's economic dynamics. By implementing evidence-based economic policies, Pakistan can enhance its growth trajectory and achieve long-term prosperity.

Recommendations

As per this study or research following are some recommendations which can boost the Pakistan's GDP.

- The government of Pakistan should try to make a Special Economic Zone (SEZ) where goods can be converted into final products.
- The government has a favorable policy for investors to invest in Pakistan.
- Try to focus on the export side; for that purpose, produce those products whose demand is high in foreign countries or the global market.
- Private investment should be promoted by the government. Some potential sectors may receive subsidies for this reason.
- In order to increase yields, the agriculture industry has to be pushed to update its seeds and use the newest technologies.
- Impose a high tax on imported products with respect to the trade balance.
- Develop the research department to understand global economic behavior and, with respect to that, produce the product.
- The government should focus on the cooperation of the government and private production entities and try to give possible incentives to private entities.

Reference

ABBASI, M. A., AMRAN, A., REHMAN, N. A., & ALI, A. (2021). Twin deficit and macroeconomic indicators in emerging economies: A comparative study of Iran and Turkey. *The Journal of Asian Finance, Economics and Business*, *8*(5), 617-626.

Ahmed, S., & Qayyum, A. (2019). The impact of trade deficit on economic growth: Evidence from developing countries. *Journal of Economic Studies*, 46(3), 245-261.

Ali, A. A. (2021). Trade Deficit and Economic Growth: Using ARDL Technique for the Economy of Pakistan. International Journal of Business and Management Sciences, 2(3), 211-221.

Akash, R. S. I., Khan, M. I., & Shear, F. (2023). The dynamics of international trade, capital flow, and economic growth in developing economies. *Journal of Management Practices, Humanities and Social Sciences*, *7*(3), 18-25.

Awan, A. G., & Mukhtar, S. (2019). Causes of Trade deficit and its impact on Pakistan's Economic growth. *Global Journal of Management, Social Sciences and Humanities*, *5*(3), 480-498.

Awan, A. G., & Qasim, H. (2020). The impact of external debt on Economic Growth of Pakistan. *Global Journal of Management, Social Scienes and Humanities*, *6*(1), 30-61.

Bai J., Kao C., Ng S. (2009). Panel cointegration with global stochastic trends. *Journal of Econometrics*, 149(1), 82–99.

Baldwin, R. (2012). Global Supply Chains: Why They Emerged, Why They Matter, and Where They Are Going. In D. K. Elms & P. Low (Eds.), *Global Value Chains in a Changing World* (pp. 13-59). World Trade Organization.

Becker, G. S. (1993). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press.

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.

Blavasciunaite, D., Garsviene, L., & Matuzeviciute, K. (2020). Trade balance effects on economic growth: Evidence from European Union Countries. *Economies*, *8*(3), 54.

Chaudhary, M. A., & Qaisrani, A. A. (2002). Trade instability, investment and economic growth in Pakistan. *Pakistan Economic and Social Review*, 57-73.

Dumitrescu E. I., Hurlin C. (2012). Testing for Granger non-causality in heterogeneous panels. *Economic Modelling*, 29(4), 1450–1460.

Economic Survey of Pakistan, 2023

Hussain, M., Khan, R., & Rafiq, M. (2022). Trade balance and economic stability: Empirical insights from South Asia. *International Journal of Economics and Finance*, 14(2), 89-105.

International Monetary Fund. (2019). *External Sector Report: The Dynamics of External Adjustment*. International Monetary Fund.

International Monetary Fund. (2023). *Pakistan: Staff Report for the 2023 Article IV Consultation*. International Monetary Fund.

Jebran, K., Iqbal, A., Rao, Z. U. R., & Ali, A. (2018). Effects of terms of trade on economic growth of Pakistan. *Foreign Trade Review*, *53*(1), 1-11.

Javid, M., & Munir, K. (2021). Import dependency and trade deficit: A structural analysis. *Pakistan Economic Review*, 56(1), 112-130.

Kumar, V., Rehman, H., & Ali, F. (2020). External borrowing and trade deficits: A macroeconomic perspective. *Economic Policy Journal*, 35(4), 78-96.

McCombie, J. S. (1993). Economic growth, trade interlinkages, and the balance-of-payments constraint. *Journal of Post Keynesian Economics*, *15*(4), 471-505.

Mbah, S. A., & Alagidede, I. P. (2019). "Trade Deficits and Economic Growth: New Evidence from Sub-Saharan Africa." *Journal of Economic Integration, 34*(1), 154-184.

Nguyen, T. T. (2020). Energy consumption, economic growth and trade balance in East Asia: A panel data approach. *International Journal of Energy Economics and Policy*.

Pakistan Bureau of Statistics. (2023). *Pakistan's Trade Statistics: July-September 2023-24*. Pakistan Bureau of Statistics.

Pan, L., Amin, A., Zhu, N., Chandio, A. A., Naminse, E. Y., & Shah, A. H. (2022). Exploring the asymmetrical influence of economic growth, oil price, consumer price index and industrial production on the trade deficit in China. *Sustainability*, *14*(23), 15534.

POPESCU, G. (2016). Fiscal Deficit, Trade Deficit and Economic Growth: An Analysis of Slovak Republic's Economy. *Theoretical and Applied Economics*, 121-128.

Rehman, N. A., Shamshir, M., & Shakir, K. (2020). Correlation of macroeconomic variables with twin deficit in Pakistan. *IBT Journal of Business Studies (JBS)*, *16*(1), 1-16.

Rehman, S. U., Taqi, M., ur Rahman, S., & Ahmad, W. (2021). Impact of Trade Deficit on Economic Growth: A Case of Some Selected Countries. *International Research Journal of Management and Social Sciences*, *2*(2), 27-39.

Rehman, H., Saeed, A., & Khan, T. (2021). The relationship between trade deficit, foreign debt, and economic growth: A panel data analysis. *Global Economics Review*, 6(1), 55-72.

Safdar, N., Liaquat, M., & Bibi, S. (2021). Role of external debt and trade deficit in economic performance of Pakistan. *Annals of Social Sciences and Perspective*, *2*(1), 1-14.

Shah, M. I. (2021). Investigating the role of regional economic integration on growth: Fresh insights from South Asia. *Global Journal of Emerging Market Economies*, *13*(1), 35-57.

Shamshir, M., Rehman, N. A., Hussain, A., & Sabir, S. (2019). Relationship among Economic Growth and other Macroeconomic Variables: A Study of Pakistan. *Journal of Resources Development and Management*, *54*(0), 60.

Soomro, J. A., Sultana, N., Chavara, J., & Shakir, K. (2021). Twin Deficit Hypothesis Validation: A case study of Pakistan. *ILMA Journal of Social Sciences & Economics (IJSSE)*, *2*(2).

State Bank of Pakistan. (2023). *Annual Report 2022-2023: The State of Pakistan's Economy*. State Bank of Pakistan.

State Bank of Pakistan. (2023). *Export Concentration and Its Implications for Pakistan's Economy*. State Bank of Pakistan.

Solow, R. M. (1956). "A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics, 70*(1), 65-94.

Yurdakul, F., & Ucar, B. (2015). The relationship between current deficit and economic growth: An empirical study on Turkey. *Procedia Economics and Finance, 26*, 101-108.

Zahir, S., & Rehman, Z. (2019). Linkage between Gross Fixed Capital Formation, Trade Deficit and exchange Rate on Economic Growth (Case Study of Pakistan). *Journal of Managerial Sciences, 13*(4).