Journal of law social and management sciences 2 (2)1-8, 2024

Journal home page: https://jlsms.org/index.php/jlsms

Open Access

ISSN: 2959-3867

Impact of Tariff, Exchange Rate and Investment Efficiency on Economic Growth: Evidence from Pakistan

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Abstract: The study explores the implications of tariff, exchange rate dynamics, and investment efficiency on Pakistan's economic growth using secondary data from 1980 to 2020. Results suggest that increasing REER and ICOR positively influences long-term GDP, aligning with economic theory. This underscores the importance of investing in capital-intensive businesses while maintaining a competitive exchange rate. While introducing tariff as a variable in the model, the results indicate that real effective exchange rate, incremental capital output ratio and tariff have very less effect on GDP in short run. Long-term trends reveal that REER and ICOR continue to positively affect GDP, while tariff has a negative impact. The study highlights that protectionist trade policies, such as increased tariffs, may hinder long-term economic progress. Policymakers are encouraged to consider strategies promoting trade liberalization to enhance Pakistan's economic growth. **JEL Codes: E0, E2,F3, H2**

Key Words: Tariff, Exchange Rate, Investment Efficiency, Economic Growth

Introduction

The study investigates the profound impact of currency fluctuations on economic development, emphasizing the positive and negative repercussions of exchange rate volatility. It delves into the consequences of poorly managed currency rates, which can detrimentally affect a nation's economic health by creating a risky atmosphere for investors. The distinction between fixed and variable exchange rates is explored, highlighting the advantages of a stable economy with a pegged exchange rate, along with the challenges such a regime may pose, including the need for substantial foreign currency reserves.

In examining the floating rate of foreign exchange, the study identifies both favorable and adverse elements. For instance, a deficit in the Balance of Payments may lead to currency depreciation, making exports more affordable and boosting demand, ultimately bringing the balance back into equilibrium. However, the drawbacks of variable exchange rates are discussed, such as their potential to exacerbate economic issues like inflation and unemployment, and the challenge they pose for foreign investors due to frequent fluctuations.

The research also delves into the relationship between GDP and real currency value, highlighting two primary channels of impact: aggregate supply and demand. Devaluation is shown to enhance global competitiveness, boosting exports and raising GDP through increased demand. However, the study acknowledges the potential downside in terms of increased production costs, leading to a decrease in GDP due to higher prices of local goods in the international market.

The focus then shifts to Pakistan, a growing South Asian country heavily reliant on imports for crude oil and other commodities and services. The economy faces challenges with ongoing trade deficits and declining foreign exchange reserves. Despite a rise in imports, Pakistan's exports have remained stagnant for over a decade, contributing to significant pressure on external accounts. The study attributes the underperformance of Pakistan's export sector to a limited export base, mainly consisting of products related to sports, leather, pharmaceuticals, rice, and chemicals.

Furthermore, the research highlights the hindrance to Pakistan's export competitiveness due to a lack of product variety and value addition. The study notes that fluctuations in currency values have had minimal impact on the export industry's performance. Pakistan's currency, similar to other emerging markets, is considered overvalued, prompting recent modifications to foreign exchange rate regulation. The shift from maintaining the real effective exchange rate (REER) to stabilizing the nominal exchange rate in reference to the dollar is noted.

The critical issue of poor currency rate management is underscored as vital for Pakistan's economic stability. Research by Hamid and Mir in 2017 is cited, indicating that inflated exchange rates and misalignment have hindered the expansion of the tradable industry, contributing to a loss of competitiveness in the global market. The study acknowledges that devaluing the currency alone may

not be sufficient to resolve Pakistan's external account deficit.

The research explores how the actual exchange rate influences economic activity through two channels: overall supply and overall demand. Fluctuations in the real exchange rate are attributed to changes in overall demand, with a fall in the rate making local products more competitive globally, boosting net exports and GDP. Conversely, an increase in the cost of imported goods can drive consumers to shift towards locally manufactured goods, fueling industrial expansion. The negative effects of devaluation, particularly in emerging nations, are discussed, emphasizing increased reliance on imports and higher production costs affecting industrial development.

The study transitions to the relationship between investment and economic growth, highlighting conflicting findings in various economic models. It distinguishes between public and private investment, citing studies supporting the distinct effects of government and private spending on economic growth. The importance of efficient investment in capital goods for positive economic advancement is emphasized.

Trade liberalization becomes a central focus, with Pakistan implementing initiatives to lower tariff rates, signing Free Trade Agreements (FTAs), and streamlining business processes. The study recognizes the role of institutions and governance in shaping economically favorable tariff rates. It discusses the impact of government motives for political gain on institutional quality and growth rates, exploring models of trade protection and the complexities of tariffs' theoretical impact on economic growth.

In summary, the research offers a comprehensive exploration of currency fluctuations, investment, and trade liberalization, with a specific focus on Pakistan's economic challenges. It underscores the importance of effective currency rate management, efficient investment, and balanced trade policies for sustainable economic growth. The complexities of tariff implementation and the potential benefits and challenges of trade liberalization are thoroughly examined, providing insights for policymakers and stakeholders in navigating the economic landscape.

The research addresses several critical issues affecting Pakistan's economic growth, specifically focusing on tariffs, exchange rates, and investment efficiency. The statement of the problem identifies the potential harm caused by tariffs intended to safeguard emerging industries. An example is provided where the State Bank of Pakistan's ban on imports under specific chapters adversely affected the export industry, leading to a slowdown in economic growth.

The study also delves into the contentious relationship between exchange rates and economic progress. While some economists argue for strong linkages between economic growth and exchange rates, others suggest a detrimental connection. The impact of currency devaluation is explored, emphasizing its potential to make imports more expensive and exports more profitable, thus influencing economic growth.

Furthermore, the research highlights the significance of investment as a key factor in economic growth. Despite substantial investments in projects like the China Pakistan Economic Corridor (CPEC), the study notes a lack of equivalent output increase and GDP growth in Pakistan. The overarching objective is to understand how investment efficiency, exchange rates, and tariffs collectively impact Pakistan's economic growth and to propose measures to mitigate negative effects.

The research gap section underscores the need for a comprehensive approach, moving beyond individual variable studies to assess interdependencies among tariffs, exchange rates, Incremental Capital Output Ratio (ICOR), and their collective impact on economic growth. The study aims to go beyond the traditional Ordinary Least Squares (OLS) regression used in previous research and simultaneously consider all three factors and their implications on economic growth.

The present study aims to examine the distinct and combined impacts of exchange rates, investment efficiency, and tariffs on economic growth. The goal of the research is to shed more light on the connections between these variables so that useful policies may be created. The long- and short-term effects of tariffs, currency rates, and investment efficiency on Pakistan's economic growth are discussed in the presented hypotheses.

However, the study acknowledges certain limitations. It is conducted solely in the context of Pakistan and does not extend to other countries. Additionally, the research focuses on macroeconomic indicators within the country, limiting its scope to the broader global economic landscape.

LITERATURE REVIEW

Muhammad Asif et al. (2022), studied how tariffs, import substitution, and investment efficiency affected Pakistan's economic expansion using the secondary data from 1981 to 2017. The study concluded that tariffs and economic growth are positively correlated. The study also found a link between economic growth and tariffs on all imports that was unfavorable. Foreign aid, the consumer price index, government revenue, employment in the agriculture and service sectors, the foreign exchange reserve, and tariffs on manufactured goods are all factors that influence economic growth.

Tayyab Khan et al. (2022), found out the implication of Currency devaluation on Pakistan’s Economic growth. Previous researchers have conflicting opinions on the issue of currency depreciation has positive or

negative impacts on economic growth. The found that currency depreciation has no discernible influence on Pakistan's GDP growth. However, research does highlight a progressive long-term association among economic development and factors such as the interest rate and gross capital creation. While currency depreciation can potentially lead to increased exports and an improved balance of payments, Pakistan's turbulent political situation has hindered the realization of these benefits.

Jeton Mazllami (2021), seeks to evaluate the effectiveness of investments made to promote growth in the economy in Slovenia and the Republic of Croatia. The research's particular goals are to determine the optimal ICOR level, the link between ICOR and the gross domestic product, and the impact on the economic growth of both nations. The technique used in this study will involve an investigation of investment efficiency as assessed by the World Bank approach's metrics Incremental Capital-Output Ratio (ICOR). The years 1995 through 2020 are included in the observational period. Both nations' investment efficiency (ICOR) is anticipated to fluctuate between 1 and 6. According to the study's findings, the economic growth in Croatia improves by 1.961 percent for every one unit that the ICOR level decreases, whereas Slovenia's growth of economy increases by 0.259 percent less for every one unit that the ICOR level decreases.

Khang The NGUYEN & Hung Thanh NGUYEN (2021) looked at the influence of investments on the study's analysis of economic growth. They aim to determine the immediate and long-term impacts of public, private, and FDI on Vietnam's economic growth. Between 2000 and 2020, they used panel data from 63 Vietnamese provinces. They examined the relationship between labour and trade openness using PMG (Pool Mean Group) regression and discovered that both, in the short run, had a negative impact on the expansion of the economy. Long-term economic growth is benefited by the elements (domestic private investment, trade openness, labour, and FDI). The only element that has a long-term adverse impact on economic growth is public policy.

Naqvi et al (2020) they studied sought to determine how Pakistan's balance of trade was impacted by the real effective exchange rate (REER) through a time-series analysis spanning the years 1981 to 2015. It emphasized how a real effective exchange rate misalignment can result in both short- and long-term deficits in the balance of trade. Notably, approximately 75% of Pakistan's exports comprise agricultural products, such as raw cotton, textiles, leather, and sporting goods. The study recommended expanding exports to include capital goods, consumer products, chemicals, electrical & electronic equipment, and other sectors.

Feny Marissa et al. (2019) they investigate the effect of investment efficiency on economic growth. In the provinces of South Sumater and Jambi. He employs Ordinary Least Squares (OLS) to undertake a quantitative study of time-series data gathered from the Central Bureau of Statistics (BPS) from 2007 to 2016. According to the World Bank, the incremental capital-output ratio (ICOR) approach is the most important method for measuring how investments affect economic development. Using the ICOR technique for both provinces, they show a negative correlation between investment efficiency and economic development. Additionally, they discover that, even when both Provinces get the same amount of investment, Jambi Province's investment efficiency has a greater influence on its economic growth than South Sumatera Province does.

Saadah Yuliana et al. (2019) they investigate how inflation, domestic direct investment, and FDI affect economic growth. He does so by utilizing time-series data from the Central Bureau of Statistics of Indonesia (BPS), which covers the period from 2007 to 2016. He used a data panel and a multiple regression model for his quantitative analysis. He came to the conclusion that the province of South Sumatera's economic growth was significantly and favorably impacted by investment, inflation, and domestic direct investment. The development of the infrastructure has benefited the economy in significant and positive ways. Inflation also has minimal impact but is a reliable predictor of economic expansion. The investment has a multiplier effect on a number of macroeconomic parameters, the speaker says.

Kenichi Kawasaki (2018) In this study, he uses a Computable General Equilibrium (CGE) model of international commerce to analyze the economic effects of the tariff increases. He claims that while placing import tariffs on the relevant US industry would defend that industry specifically, the macroeconomic effects on the US economy would be bad. He finds out that if there is a one percent increase in the import tariff worldwide then there is a 1.7 percent decrease in the global trade and 0.2 percent decrease in the Global GDP. It concludes that the rise in Tariff will ultimately decrease the Global GDP and Global trade volume as well.

Khalil Ahmed et al. (2017) they investigate the impact of the currency exchange rate on Pakistani exports is explored in this article. They employ yearly time series data for their study. They have chosen a data set that spans the years 1970 to 2015. They get information from the World Bank and the International Monetary Fund. They employ the Phillip-Perron and Augmented Dicky-Fuller (ADF) models (PP) to determine if the data is stable. Regressive Distributive Lag (ARDL) is used to investigate the relationship between the variables. According to the findings, the currency rate has an adverse and considerable influence on Pakistan's exports.

Orij Uka Odim and Ugwuanyi Charles Uche (2017) they looked at the connection between Nigeria's tariffs and economic expansion. Using the standard least squares regression approach, the researchers studied the impact of tariffs on economic development from 1980 to 2013. Their research sought to ascertain if tariffs had a substantial impact on Nigeria's economic development. Tariffs, according to their results, have a big and favorable impact on Nigeria's economic advancement. This illustrates that tariffs were imposed during the investigation period and had a positive influence on the economy of the nation. Furthermore, researchers recognized the need to consider additional factors that may also affect economic growth, beyond tariffs alone. This acknowledgement suggests that although tariffs were a major component in Nigeria's economic growth, there are probably other factors at play that need be taken into consideration to fully comprehend the economic success of the nation.

Adeniran, J.O. et al. (2014) they investigate the impact of exchange rates on the Nigerian economic progress in this study. The researcher obtained secondary data for the investigation from several issues of the National Bank of Nigeria's Statistic Bulletin. He employs the ordinary least squares (OLS) method to analyse the data in this study. While the foreign exchange rate has a positive impact, he feels it is not significant. According to previous studies, rising nations should choose floating currency rates. He learns that each of inflation and rates of interest are harmful to Nigeria's economic progress.

M. Azeem Naseer (2013), he investigate the relationships between trade, real effective exchange rates, foreign direct investment (FDI), and economic development. According to the literature now available, commerce is boosted by economic expansion since it draws FDI. To investigate these correlations, the scholar gathered data from 1980 to 2012. Naseer examined the correlations between the variables using the Johansen co-integration test. The findings indicate a long-term link among FDI, real effective exchange rates, trade, and growth in the economy. The error correction model (ECM) results also indicated a substantial link between these components. The Granger causality test was also used in the study to analyse the causal links between the variables. The results of the tests showed that as a country's exports increase, so does its economy, encouraging investment from abroad.

Arslan Ahmed et al. (2013) they examine the impacts of inflation, nominal exchange rate, FDI, and capital stock on economic growth using time series data from 1975 to 2011. They employ the Augmented Dickey Fuller (ADF) test to find out the data's stationarity. It was determined that the data had become stagnant. The GDP technique was then used to determine the link among the three independent variables (Exchange Rate, Foreign Direct Investment, and Capital Stock) and the variable that was dependent (Gross Domestic Product). Pakistan's GDP will shrink by 0.29 percent for every 1% increase in inflation. Based to the coefficient of exchange rate, GDP declines by 0.55 per cent for every single percent rise in the exchange rate. The GDP increases by 0.37 percent for every one percent increase in FDI.

Mr. Zahoor Hussain & Muhammad Farooq (2009) they investigate how exchange rates affect macroeconomic factors in this article. He uses the quarterly data between (1982 - I and 2007 – IV) they employ an auto-regressive distributed lag model (ARDL) and an error-correcting approach to do this. The study's findings indicate a substantial relationship between these two factors. Despite statistics indicating that import and export values are minor, the study's ultimate result suggests that foreign exchange fluctuation, exports, and savings are all associated with a positive long-term link with economic growth. Performance of the domestic economy is discovered to be susceptible to exchange rate volatility over the long term.

Alvaro Aguirre Cesar Calderon (2005) The study assesses the implications of growth-related real exchange rate (RER) fluctuations. They use panel and time series co-integration methodologies to determine RER misalignments as deviations of actual RERs from their equilibrium for 60 countries between 1965 and 2003. For dynamic data, panel data techniques are used. RER discrepancies, according to the study, restrict development, but the effect is not linear: growth decreases worsen as misalignments rise in magnitude. Small to moderate undervaluation benefits growth more than extreme undervaluation. These findings hold up when the equilibrium real exchange rate is taken into consideration. Finally, very variable REER misalignments impede growth.

Additionally, this study aims to determine how exchange rate, tariffs, and investment efficiency affect both unidirectional and bidirectional economic development.

Data and Research Methodology

The study used data collection methods to examine the correlation between Gross Domestic Product, tariffs, real effective exchange rate (REER), and incremental capital-output ratio (ICOR). The data is gathered from the State Bank of Pakistan (SBP) and the World Development Indicators (WDI) for the period 1980-2021.

The incremental capital-output ratio, or ICOR, which calculates the amount of investment needed to generate a new GDP unit, is the main subject of the research. The change in investment divided by the change in GDP or production yields the ICOR. More investment efficiency is implied by a higher ICOR, whereas a lower ICOR implies better investment efficiency, and less investment is required for improved production.

The study develops two formulas to investigate the relationship between the ICOR and Pakistan's GDP. Just the ICOR and the real effective exchange rate (REER) are included in the first equation; the tariff variable is added to the ICOR and REER in the second equation.

The major variable in this study is the incremental capital output ratio (ICOR). As a result, two equations are utilized in this study to examine how the ICOR has influenced Pakistan's GDP. Which are as follow:

$$GDP = \alpha_1 + \alpha_2 ICOR + \alpha_3 REER + \mu \quad \text{---------- (1)}$$

$$GDP = \alpha_1 + \alpha_2 ICOR + \alpha_3 REER + \alpha_4 Tariff + \mu \quad \text{--- (2)}$$

A statistic called the incremental capital-output ratio, or ICOR, quantifies the amount of investment required to generate one extra GDP unit. The difference between the change in investment and the change in GDP or production is the formula for ICOR. An enhanced production may be achieved with less investment if the ICOR is lower, showing greater investment efficiency. A country's foreign exchange rate is weighted averaged in relation to an index or basket of other major currencies, which is known as the Real Effective Exchange Rate (REER). An rise in real GDP is used to gauge economic growth. The objective of the research is to examine the correlations among these factors and their overall influence on the economic expansion of Pakistan.

Results

Time series analysis is used in this investigation. The basic idea of time series analysis states that every variable in a time series should be stationary. To ascertain variable stationarity, the study used the Augmented Dickey-Fuller (ADF) test. In ADF, the alternative hypothesis is that the series is stationary without a unit root, while the null hypothesis is that the series has a unit root and is non-stationary. Table 1 illustrates that although GDP and ICOR remain stagnant at I(1), REER and Tariff remain stationary at I(0).

Table 1: Unit root Results

	GDP		REER		ICOR		TARIFF	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
T-States	-1.57	-3.484	-4.27	-6.68	-2.5665	-2.7365	-4.2678	-3.278
Probability	0.4793	0.0191	0.0032	0.0000	0.1153	0.0855	0.0043	0.0327

Source: Author's Estimations Unit root Results

After confirming that the absence of unit roots implies that variables are stationary, we proceed to examine the variables' long-run relationship. Because the sequence of integration differs for each variable, the ARDL model is being used to achieve the goal. Table 2 displays the ARDL Bound test result. In order to ascertain whether there is a long-term correlation between the variables, the 95 percent UB value at the chosen significance level of 5% is compared with the F-statistic value. The defined variables have a long-term relationship if the F-statistic value is higher than the UB value. The value of the F-statistic (4.13) in the example confirms the presence of long-run co-integration between the variables because it is greater than both the 10% significance threshold and the 95% UB value.

Table 2: *ARDL Bounds Test*

F-Bound Test				
Test Stats	Value	Signif	I(0)	I(1)
Asymptotic: n=100				
F-Stats	9.05	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5
Actual Sample Size		**40**	**Finite sample: n=40**	
		10%	2.8	3.5
		5%	3.4	4.2
		1%	4.7	5.8

Source: Author's estimations Note: a: LB stands for Lower Bound, b: UB stands for Upper Bound.

Since the error correction term (ECT) is negative, the long-term link between the variables is confirmed. The relevance of the error correction term coefficient, which suggests that the long-term equilibrium is steadily approaching the short-term equilibrium. The ECM value systematically shows the rate of adjustment, or how rapidly the short-term disequilibrium moves in the direction of the long-term equilibrium. Additionally, diagnostic tests are carried out. The results of the Breusch-Godfrey (BG) Serial Correlation Lagrangian Multiplier (LM) Test (p-value > 0.05) indicate that there is no autocorrelation; the Breusch-Pagan-Godfrey (BPG) test (p-value > 0.05) concludes that heteroscedasticity is not present; and the Jarque-Bera (JB) test (p-value < 0.05) confirms that the data is not normally distributed. Stability test has been performed by Ramsey reset test (p-value > 0.05).

Table 3: Error Correction Regression and Long-run Co-integration

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	-1.202646	1.253481	-0.959445	0.3441
GDP(-1)*	-1.284562	0.216882	-5.922863	0.0000
ICOR(-1)	4.567069	1.373435	3.325289	0.0021
REER**	0.030209	0.011817	2.556350	0.0152
D(GDP(-1))	0.375009	0.185312	2.023667	0.0509
D(ICOR)	1.983741	0.894063	2.218792	0.0333
Levels Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ICOR	3.555350	0.935561	3.800235	0.0006
REER	0.023517	0.007729	3.042664	0.0045
C	-0.936230	0.957127	-0.978167	0.3349
EC = GDP - (3.5553*ICOR + 0.0235*REER -0.9362)				
Serial Correlation LM test	F-stats (0.030)		Prob (0.97)	
Hetroscedasticity	F-stats (1.7)		Prob (0.159)	
Normality test	J.B Value 1.5		Prob (0.459)	
Ramsey reset Test	F-stats (1.74)		Prob (0.19)	

Source: Author's Estimations

In light of the aforementioned findings, we may conclude that ICOR has a positive and noteworthy influence on GDP because its t-statistics value is larger than 2 and its P-value is less than 5%. Therefore, we

may conclude that over time, a 3.5 unit increase in ICOR will cause a 1unit increase in GDP. The REER has a positive and substantial influence on the GDP because its P-value is less than 5% and its t-stats value is larger than 2. Therefore, we may conclude that over time, a 0.02 unit increase in REER will increase in 1 unit of GDP.

Model Stability Test (CUSUM)

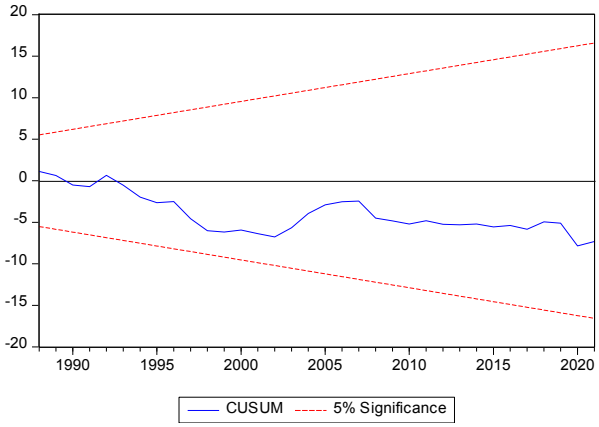

Figure 2: Model Stability test (CUSUM)

The graph clearly indicates the stability of the model because values are between positive 5% and the negative 5%.

Model Stability Test (CUSUM of Squares)

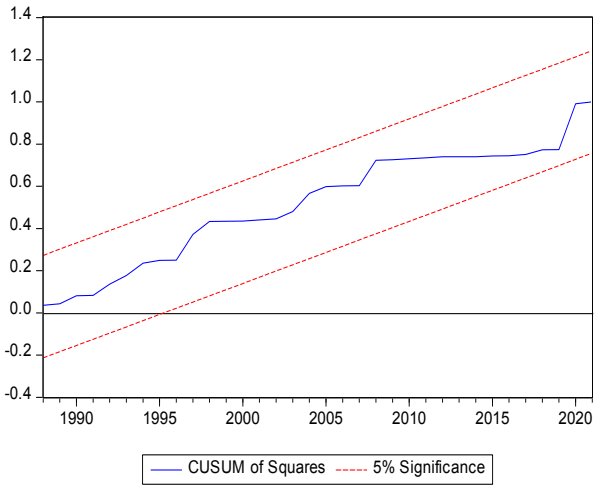

Figure 3: Model Stability Test (CUSUM of Square)

The graph clearly indicates that the data is normally distributed because the values lies in the middle of the positive 0.2 and the negative 0.2.

To examine the influence on GDP, the study includes tariffs as a variable in model 2. The ARDL technique has been adopted since the studied variables are stationery at the mixed order of integration of I(0) and I(1). The study revealed that the model's results further improve if the tariff variable is included. The ARDL bound test findings for model 2 are shown in Table 4, and they support the long-term link between the variables under consideration since the F-statistic of 6.87 is higher than the 99% UB value at the 1% significance level.

Table 4: ARDL Bounds Test

F-Statistics	99% LB[a]	99% UB[b]	95% LB	95% UB	90% LB	90% UB
6.87	4.29	5.61	3.23	4.35	2.72	3.77

Source: Author's estimations Note: a: LB stands for Lower Bound, b: UB stands for Upper Bound.

The long-term relationship between the variables is confirmed by the fact that the error correction term (ECT) is negative. The significance of the coefficient of the error correction component in establishing the convergence of the short-run equilibrium towards a stable long-run equilibrium. The rate at which the short-run disequilibrium steers towards the long-run equilibrium is known as the adjustment speed, and it is systematically represented by the ECM value. Tests for diagnosis are also carried out. Breusch-Godfrey (BG) Serial Correlation Lagrangian Multiplier (LM) Test (p-value > 0.05) has been used to test for autocorrelation; this test ensures that autocorrelation is not present. Breusch-Pagan-Godfrey (BPG) test (p-value > 0.05) has been used to determine whether heteroscedasticity is negated, and Jarque-Bera (JB) test (p-value > 0.05) has verified and checked the normality of the data.

As shown in table 5, the REER's t-stats value is larger than 2 and its P-value is less than 0.05, it has a positive and substantial influence on the GDP. So we can say that 6.49 unit increase in the REER will effect to increase the 1 unit of GDP in the long run. As the tariff's t-stats value is larger than 2 and its P-value is less than 0.05, it has a negative and considerable impact on the GDP. Therefore, we may conclude that over time, a 8.7 unit decline in the tariff will result in an 1 unit increase in GDP.

Table 5: Short Run and Long Run Co-integration

Variable	Coefficient	Std. Error	t-Stats	Prob
D(GDP(-1))	0.57	0.19	2.97	0.016
D(ICOR)	-1.06	1.63	-0.65	0.52
D(REER)	0.29	0.16	1.80	0.09
D(Tariff)	-0.52	0.36	-1.44	0.17
CointEq(-1)	-0.09	0.02	-4.49	0.0007
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Stats	Prob
ICOR	-10.77	16.67	-0.64	0.53
REER	6.49	1.63	3.97	0.001
TARIFF	-8.73	1.83	-4.77	0.0005
C	-212.67	131.90	-1.61	0.13
Serial Correlation LM Test			F-stats (0.86)	Prob (0.42)
Hetroscedasticity			F-stats (1.09)	Prob(0.42)

Normality test J.B Value			0.730953	Prob (0.6938)
Ramsey reset Test			F-stats(2.1)	Prob(0.17)

Source: Author's Estimations

Model Stability Test (CUSUM)

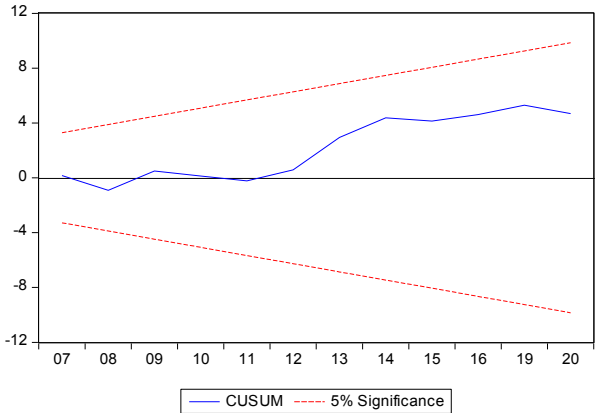

Figure 5: Model Stability Test (CUSUM)

The graph clearly indicates the stability of the model because the values lies between the positive 4% and the negative 4%.

Model Stability Test (CUSUM of Squares)

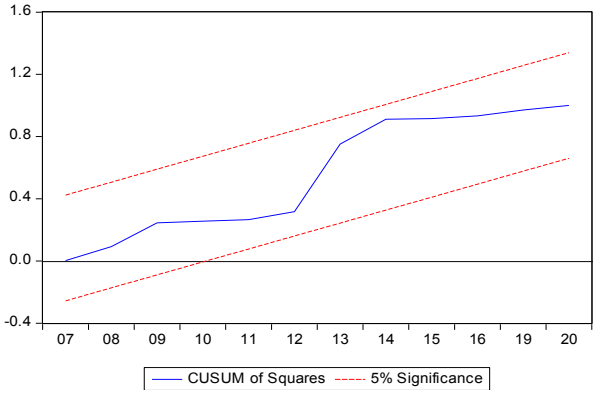

Figure 6: Model Stability Test (CUSUM of Squares)

The graph clearly indicates that the data is normally distributed because the values lies in the middle of the positive 0.4 and the negative 0.4.

Conclusions

This study investigates the interplay among Pakistan's real effective exchange rate (REER), incremental capital-output ratio (ICOR), tariff, and GDP from 1981 to 2021. Utilizing an econometric model, the analysis discerns short- and long-term effects on economic growth. Key findings suggest that a competitive and stable REER, along with efficient capital allocation (low ICOR), positively influences long-term GDP. Conversely, higher tariffs have a long-term negative impact on GDP.

The study underscores the importance of maintaining a competitive exchange rate and investing in capital-intensive industries for sustainable economic growth. Inclusion of tariff as a variable reveals that while it has no short-term effect, long-term implications show a detrimental impact on GDP, emphasizing the drawbacks of protective trade policies. The study advocates for trade liberalization and lower tariff barriers to foster long-term economic growth.

The analysis highlights the intricate relationships between REER, ICOR, tariff, and GDP in Pakistan. Policymakers are urged to prioritize trade liberalization, efficient investment, and competitive exchange rates for sustained economic development. Conversely, a focus on higher tariffs may hinder long-term growth. The study suggests that embracing strategies promoting investment efficiency, trade liberalization, and human capital development is crucial for Pakistan's inclusive economic growth in the future.

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