



Impact of Imports, Exports and Exchange Rate on Economic Growth of Pakistan

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ARTICLE DETAILS	ABSTRACT
History Revised format: Feb, 2021 Available Online: Mar, 2021 Keywords Annual Time Series, OLS, ADF, Imports, Exports, Exchange Rate, Inflation	This study examines the impact of exports, imports, and the exchange rate on Pakistan's economic growth. A time series of annual data from 1980 to 2020 was employed in the study. The study used GDP as dependent and imports, exports exchange rate and inflation are used as independent variables. The study also applied ADF unite root test for stationary purpose and OLS is applies for the findings. The results of OLS indicate that, Imports and Exports put positive impact while exchange rate and inflation put negative impact on economic growth in Pakistan. The study suggests that, high imports will lead to less growth of economy. The study also confirms the Export-led-growth hypothesis.

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1. Introduction

Foreign trade is a trade of goods and services among different countries. It is ordinary form of international trade and played very imperative role in economic growth of any country. Economic welfare of any country is depending on the increment in the gross domestic product (GDP). Any type of changes positively and negatively GDP will lead to decrease or increase. There are many factors include in GDP growth that effect economic growth, Imports, Exports and exchange rate are also those factors that affect the economic growth. Development economists took an attention in the significance of imports and exports in the procedure of development. It allows producers and seller to seek out for produced goods internationally. A country cannot depend on the domestically manufacture products only but turn to products in a different place. Exports are characterizing goods and services that are produce domestically and sold these goods and services to other country. Exports are viewed as a growth engine for the economy. Export growth will lead to increased economic activity. In order to determine the relationship between exports and economic growth, a number of researches have been done. This relationship is called Export-led-growth and growth-led-export. Many researchers follow the ELGH hypothesis. These researchers include, Different studies like Michaely (1977), Balassa (1978, 1985), Bhagwati (1978), Vohra, (2001) and Herzer, (2005), and Hye and Siddiqui (2011) confirmed the export-led growth. On the other side, the link from growth to export is named growth-led-export. Growth led export means export-oriented growth. That is, growth coming from exporting goods from a country. Different studies like Findlay (1984), Jung and Marshal (1985), Mishra, (2011), Iqbal, (2012) and Santos, (2013) confirmed the growth led export. Imports is also affect the growth of economy, imports means buy goods and services from other countries. It is very important factor. Imports would be good or bad for economic growth; high imports will lead to trade deficit and slow down the performance of the economy. Many researchers show positive impact of imports for economic growth in Pakistan. These researchers include Ali, I., Khan, I., Ali, H., Baz, K., Zhang, Q., Khan, A., & Huo, X. (2020). Shoukat et

al (2018), Ahmed et al (2018), Fatemah and Qayyum (2018). The table below shows the imports data of Pakistan, it can be seen that imports is greater than exports.

Years	Imports	Exports	Years	Imports	Exports
2011	40.52	29.83	2016	45.03	25.48
2012	45.79	27.81	2017	53.52	25.11
2013	46.37	30.69	2018	60.76	26.66
2014	45.39	29.91	2019	56.53	28.15
2015	46.13	28.69	2020	43.85	25.25

Pakistan Imports and Exports in Billions US \$

Due to unfavorable conditions of the economy, the export of developing countries reduced and these countries face many problems. Instability and weakness of the trade performance put a bad impact on the development of the countries. The above table shows the data of exports and imports of Pakistan from 2011 to 2020, we can see Pakistan's imports is greater than exports in these years. One domestic currency will be exchange for another is called exchange rate. It is very significant macroeconomic variable in international trade it also established the balance of trade. It affects the macroeconomic variables like FDI, trade, inflation, remittances, capital flows and GDP etc. In economics, the relationship between the exchange rate and economic growth has long been a key topic. Besides foreign trade and economic growth, the currency rate has a direct impact on both. In a number of research studies, the relationship between exports, imports, exchange rate volatility, and economic growth has been forecasted., Akhtar and Hilton (1984), Kenen and Rodrik (1986), Rogoff (1998). The purpose of this article is to examine the impact of exports, imports, and the exchange rate on Pakistan's economic growth. Due to Pakistan's high exchange rate, the country is experiencing a trade imbalance, which implies that imports are more than exports, causing the economy to slow down. The study analysed annual time series data from 1980 to 2020 from the Islamic Republic of Pakistan to determine the relationship between them. The presented study is prepared by different sections, sections first presented the introduction, section two will give related reviews of different studies, section three presented theoretical frame work, section four data and methodology and section five and six are represented results and policy recommendations respectively.

2. Literature Review

Gull et al (2020), investigate the effect of export along with Government spending on education on growth of economic in case of Pakistan by using Annual data from 1972 to 2018. The results of Autoregressive Distributed Lag approach shows positive impact of export along with Government spending on Education on GDP growth in Pakistan. How farm exports and exchange rates effect Pakistan's economic growth is examined by Huo et al (2020). The study used time series data spanning the years 1980-2017. Imports and exports have a positive and considerable impact on the economy, while the exchange rate has a positive but negligible impact. Matuzeviciute et al (2020), exploring the effect of balance of Trade on GDP growth in countries of European Union. A panel data was estimated from 1998 to 2018 for analysis.. The research applied Ordinary Least Square (OLS) method of multi-component regression analysis. The result of OLS method shows that deficit in trade balance have negative impact on economic growth. In Pakistan, Shoukat et al. (2018) examine the relationship between Exports, Imports, and Economic Growth. From 1972 to 2009, the study used annual time series data. Error Correlation Model (ECM) demonstrates that imports, exports, and economic growth have a long-term

relationship. Imports and exports, according to the report, are vital to Pakistan's economic progress.. Ahmed et al (2018), observe the effect of rate of Inflation, Imports, Exports and Tax on Economic Growth in Pakistan. The study used annual data from 1977 to 2016. The study also used Johenson co-integration test for the purpose. The result of Johenson co-integration test shows negative relationship of inflation, imports and taxes on GDP growth and Positive relationship of exports on economic growth in Pakistan. Fatemah and Qayyum (2018), scrutinize the effect of Exports on the economy growth in case of Pakistan. The study utilized the data from 1971 to 2016. The study also applied Johnson Maximum Likelihood test for the findings. The results of the study show that export put positive impact with labor force, investment and domestic credit to private sector on growth of economy in Pakistan. When it comes to Panama, Bakari and Mabrouki (2017) explore the impact of exports and import on economic growth. From 1980 to 2015, the study used annual data. It uses Johansen cointegration, Vector Auto Regression, and Granger-Causality tests to examine the relationship between variables. According to the study's findings, imports and exports have no bearing on economic growth in Panama. Shaikh (2017), probe into the association among export and growth of economy in case of Pakistan by utilizing time series data from 1990 to 2012. The study also applied Ordinary Least Square (OLS) model on different variables. The result of OLS model shows that there is positive relationship between exports and economic growth. The study also confirms the Exports Led Growth Hypothesis in Pakistan. Hamdan (2016), exploring the effect of imports and exports on economic growth in case of Arab countries. The study applied (PRM) Poold Regression Model, (FEM) Fixed Regression Model and (REM) Random Effect Model on Panel data from 1995 to 2013. The results of different econometrics model show positive and significant impact of both imports and exports on economic growth in selected countries. Ali and Li (2016), observe the role of imports, exports in growth performance and trade balance in Pakistan by utilizing data from 1972 to 2015 annually time series. The result of Autoregressive Distributed Lag (ARDL) approach shows that, role of imports and exports is very significant and positive for the enhancement of economy and trade balance in Pakistan. Bakari and Mabrouki (2016) investigate the relationship between imports, exports, and economic growth in Turkey. Annual data from 1960 to 2015 is used for this purpose. The Granger-Causality test and Vector Auto Regression were also used in the study (VAR). The findings indicate that there is no link between imports, exports, and economic growth in Turkey. The study also confirms bidirectional causality between exports and growth, as well as between imports and growth. Bakari (2016) examines the impact of imports, exports, and economic growth in Canada from 1990 to 2015. The study used Granger-Causality tests and Vector Auto Regression to accomplish this goal (VAR). The findings reveal that there is no relationship between Canadian exports, imports, and economic growth. Chibaya (2016), measured the effect of foreign trade on Economic Growth in Malawi from 1961 to 2016. The study also used Ordinary Least Square method (OLS). The result of OLS method shows that exports and imports has positive effect on the GDP in Malawi. While other macroeconomic variables like labor force and gross capital formation also put positive impact on economic growth in Malawi. Examining the impact of trade openness on Egypt's economic growth, Giza (2015). Throughout the study, the authors used time series data from 1980 through 2015. Model of Autoregressive-Distributed Lag (ARDL) was used in the research investigation. The long-term and short-term results demonstrate a positive correlation between trade openness and economic growth. As a result of the study, it was determined that trade openness promotes economic growth.

3. Theoretical Framework

According to traditional theory of foreign trade; growth gains from trade at the country level by investment on modernization, specialization, productivity enhancement, or improved resource allocation. According to Ricardo's theory foreign trade allows country to change its limited resources to more well-organized sectors. The Solow's growth model of neoclassical growth considers technological change as exogenous; as a result, trade policies do not effect economic growth. Though, new growth theories consider technological advancement as an endogenous variable; and shows that trade policies can be united with those on foreign trade. The existence of the connection among openness trade and economic growth has the focus of significant debate. Another theory of foreign trade is Hecksher-Ohlin's theory. This hypothesis states that a country will export products with lower production costs and abundant raw materials. The exporting country will benefit from this, as it will improve its income and economic growth.

4. Data and Methodology

The present study used time series data from 1980 to 2020 to find out the effect of imports, Exports and Exchange Rate on economic growth in Pakistan. The data of GDP, Exports, Imports, Exchange Rate and Inflation Rate are collected from different sources such as World Development Indicator (WDI), The Global Economy, and different economic surveys of Pakistan. The present study applied Ordinary Least Square (OLS) technique to find out the relationship between dependent and independent variables. OLS is a method of estimating the unknown parameters in a Linear Regression Model. Data of dependent and independent variables are articulate in Logarithm form. The estimated equation can be written as:

$$\text{GDP} = f(\text{Imports, Exports, Exchange Rate, Inflation})$$

The econometric model is Log – Linear Model, in this model the Dependent variable is in Log form and independent variables in their original scale. The Multiple Regression Model of the study is:

$$\text{LGDP} = \beta_0 + \beta_1\text{IM} + \beta_2\text{EX} + \beta_3\text{ER} + \beta_4\text{INF} + \mu_i$$

LGDP = Log of GDP

IM = Imports

EX = Exports

ER = Exchange Rate

INF = Inflation Rate

μ_i = Error Term

5. Results and Discussion

In this section of the study, analysis of empirical data will be present.

Descriptive Statistics:

	LGDP	IM	EX	ER	INF
Mean:	1.393570	19.13873	13.30976	56.50010	8.207073
Median:	1.578154	19.67600	13.33000	53.64800	7.840000
Maximum:	2.323955	23.31000	17.27000	160.0500	20.28000
Minimum:	-0.693147	12.24400	8.240000	9.900000	2.520000
Std. Dev:	0.644334	2.732564	2.397715	39.49306	3.809431
Skewness:	-1.331374	-0.738383	-0.226971	0.787141	0.654290
Kurtosis:	4.562347	3.010477	2.271346	2.889505	3.625393
Observations:	41	41	41	41	41

Sources: Calculation by Using E-views 9

The summaries of descriptive statistics of observations of 41 are given in the table above. The first row show the average of LGDP, IM, EX, ER and INF is (1.393570), (19.13873), (13.30976), (56.50010) and (8.207073) respectively. Second to the last row of the table, you'll find the skewness values. Skewness is a measure of the asymmetry and injustice in the data distribution as compared to the mean. The data distribution is skewed if the mean is in the middle and top of the bell curve, and if the mean median and mode are the same. Here in the table we can see that, LGDP, IM and EX are negatively skewed because their mean value is less than their median value. While ER and INF is positively skewed because their mean value is greater than their median value. Second Last row shows the values of Kurtosis, It shows the flatness and peakness of the data to normal distribution. If probability distribution is highly peaked, Leptokurtic is defined as having a Kurtosis greater than 3. Kurtosis of less than 3 indicates flatness in the data distribution, which is known as platykurtic. In the table below, we can see that the values of EX and ER are less than 3, so these variables are platykurtic, on the other hand values of LGDP, LIM and INF are greater than 3, so these variables are Leptokurtic.

Pair – Wise Correlation:

Pair-Wise coefficient of correlation is widely used to identify multicollinearity between variables. The problem of multicollinearity is seen by the strong correlation coefficients of more than one variable.

Variables	LGDP	IM	EX	ER	INF
LGDP:	1.000000				
IM:	0.115449	1.000000			
EX:	0.022572	-0.028315	1.000000		
ER:	-0.536877	-0.331584	-0.503597	1.000000	
INF:	-0.328541	0.498286	0.252945	-0.003032	1.000000

Sources: Calculation by Using E-views 9

The table above shows the correlation matrix of all variables. The results show that only ER and INF is negatively correlated with LGDP while IM and EX are positively correlated with LGDP, and there is no highly correlated variable; this shows that there is not exist multicollinearity problem.

Unit Root Test

The unit root test of Augmented Dickey Fuller (ADF) was used in the present investigation to determine if the data were stationary. The table below presents the results of the Augmented Dickey Fuller (ADF) unit root test.

Variables	At Level		At 1 st Difference		Conclusion
	Intercept	Trend & Intercept	Intercept	Trend & Intercept	
LGDP	0.0950	-----	-----	-----	1(0)
IM	0.0769	-----	-----	-----	1(0)
EX	-----	-----	0.0000	-----	1(1)
ER	-----	-----	0.0017	-----	1(1)
INF	0.0472	-----	-----	-----	1(0)

Sources: Calculation by Using E-views 9

As show in the table above, LGDP, IM and INF are stationary at level and intercept and integrated as 1(0) and LGDP and IM are stationary at 10% significance level and integrated as 1(1) INF is stationary at 5%. EX and ER are stationary at 1st difference and intercept.

Ordinary Least Square Results:

The table below shows the effect of independent variables on dependent variables.

Ordinary Least Square Method				
Dependent Variable Log of GDP				
25 Observation from 1995 to 2020				
Variables	Coefficients	Std. Error	t-Statistics	Prob.
IM	0.038874	0.031526	1.233067	0.2258
EX	0.053329	0.026963	1.977871	0.0559
ER	-0.002760	0.002034	-1.357215	0.1834
INF	-0.070305	0.025955	-2.708774	0.0104
LGDP(-1)	0.442509	0.184675	2.396144	0.0220
R²:	0.4317500	Durbin-Watson Test:		1.99945
Adjusted R²:	0.366807			

Sources: Calculation by Using E-views 9

The findings indicate that the value of coefficient of imports shows the positive but insignificant impact on economic growth. It shows that 1% increase in imports, (0.038874) unit increase in Gross Domestic Product. The study implies that high imports will lead to slow down the performance of economic growth. Present study supports the judgment of Aslam, A., Hakeem, A., & Ahmed, W. (2018). The value of coefficient of exports show positive and significance impact on economic growth. If 1 % increases in exports, (0.053329) units increase in gross domestic product. The present study support the findings of Bushra Kheir, V. (2018), shows positive impact on economic growth in Egypt.

The value of coefficient of exchange rate show negative and insignificant impact on economic growth. It shows that one percent increase in exchange rate it will lead to decrease in gross domestic product by 0.009071 units. My study confirms the findings of Ghani et al (2016), which shows that high rate of exchange will lead to less exports and high imports and slow down the economic performance. The value of coefficient of inflation rate is also show negative but significant impact on economic growth. It shows that one percent increase in labor force it will bring (-0.0370305) units decrease in economic growth. The study also confirms the findings of Ayyoub, M., Chaudhry, I. S., & Farooq, F. (2011), also shows negative and significant impact. The study implies that before the threshold level of inflation, it is significant impact on GDP.

Auto – Correlation:

The autocorrelation problem is test by Breusch – Godfrey Serial Correlation LM test. The table below shows the results of Breusch – Godfrey Serial Correlation LM test.

Breusch – Godfrey Serial Correlation LM Test	
F – Statistic	0.228187
Prob.	0.7972

Source: Calculation by Using E-views 9

The problem of autocorrelation is undertaken by taking lag of dependent variable. The probability value is insignificant it shows there is no autocorrelation.

Heteroskedasticity Test:

The problem of heteroskedasticity is test by Breusch – Godfrey test. The table below shows the results of Breusch – Godfrey test for Heteroskedasticity.

Heteroskedasticity Test Breusch – Pagan – Godfrey	
F – Statistics	0.974535
Prob.	0.4473

Source: Calculation by Using E-views 9

The above table shows the results of Breusch – Pagan – Godfrey test for heteroskedasticity. The probability value is insignificant which show that there is no heteroskedasticity in the data.

6. Conclusion

The study's primary goal is to determine the impact of imports, exports, and the exchange rate on Pakistan's economic growth. From 1980 through 2020, the study employed annual time series data. A literature review is conducted in the study to examine imports, exports, exchange rates, and economic growth. A discussion of important theories is included in the paper as well. It used the Augmented Dickey Fuller Unit Root Test for stationary purposes and the Ordinary Least Square (OLS) approach for the results of the investigation. Imports had a positive but negligible impact on Pakistan's economic growth, while exports had a positive and large impact. Inflation and the exchange rate had a negative impact on Pakistan's economic growth. Based on the findings, the study recommends that imports and exports are key determinant of economic growth, but high level of imports will lead to less economic performance in Pakistan. Exports processing zone units should be established. The

study also suggests that government and policy maker should create stable rate of exchange and control on inflation.

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