

## Effects of Pakistan's international trade balances on GDP growth: A Study of Pakistan's Foreign Trade

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### Abstract

*In recent years, the debate over international trade balances has exploded. The domestic and external environments significantly influence how the nation trades with the rest of the globe., The government will serve as a facilitator for the sector while it addresses the significant structural problems affecting Pakistan's exports from 2010 to 2021. The economic balance of limiting imports and the economic balance of allowing exports to flourish continue to be two crucial indicators of international trade. The results showed that factors related to the trade balance's exports and imports were statistically significantly correlated. It shows that exports and imports are statistically significantly affected by the details of trade balance. Additionally, the coefficients in both models have the opposite signs. The primary political conclusion is that increasing the number of free trade agreements may benefit international trade.*

**Keywords:** International trade balances; Protection; Gravity model; GDP growth; Pakistan

### 1. Introduction

Many other arguments have been advanced over time in support of the use of protectionism, including the "learning by doing" concept, national security concerns, and the need to prevent unfair competition. It's important to distinguish between liberalization and protectionism as two distinct types of foreign trade balance. When it comes to international trade, a free trade balance is one in which the government has minimal involvement and allows supply and demand to determine what is traded and what isn't, while a protectionist approach uses tariffs and other barriers to trade to shield domestic industries from foreign competition. Since African countries are rich in natural resources but have few companies to transform those resources into consumer goods and intermediate goods, trade is quickly becoming an essential component of economic progress. The local processing industries can't stimulate economic growth without the help of international trade in these resources (Asiedu, 2013). To encourage international trade in the region, governments in developing nations, particularly in Africa, have implemented trade policies such as import substitution methods, exchange rates, tariffs, and quantitative controls. The positive effects of international trade on economies, such as increased productivity, the development of human capital, the application of cutting-edge economic techniques, the more effective allocation and utilization of scarce resources, the dampening of market volatility, and the spread of new technologies, are the impetus for these policies (Manwa & Wijeweera, 2016). Recently, the digital economy has been widely lauded for its role in fostering long-term economic expansion. The widespread adoption of digital technologies is widely expected to stimulate economic expansion. Human and natural capital are better utilised, and productive capacity in the extractive sectors is built up, thanks to digitalization, which in turn boosts economic growth. This significant role of the digital economy in productivity, growth, and development has been proven conceptually and is supported by country-level empirical data in studies like (Saidi et al., 2017). What impact does trade balance have on domestic relative prices in Pakistan is the topic of Lewis and Guisinger (1968). Traditional theories of international trade hold that it is beneficial for economies to engage in trade because doing so leads to a more efficient allocation of capital and because trading nations often develop comparative advantages in production and exports. African economies have the same difficulties as other developing economies around the world, despite efforts to liberalize trade with the rest of the world (Haddad et al., 2013). The economic policies of Pakistan are outlined by Baysan (1992). Despite Pakistan's rapid economic expansion in recent years, the country's macroeconomic imbalances have been worsening. The near-term economic picture is highly sensitive to fluctuations in macroeconomic stability. This has sparked a heated discussion among development economists and other academics as to whether or not international trade

contributes to GDP growth. Many scholars have conducted empirical investigations to ascertain how trade with other continents influences economic development in Africa and elsewhere. Some research has found that foreign trade can boost economies (Zahonogo, 2017). Some academics, however, have claimed that international trade has a negative or ambiguous effect on economic development in Africa and elsewhere (Zheng & Walsh, 2019). We will examine the effect of trade balance, including tariffs, non-tariff barriers, environmental balance strictness, entry cost, and free trade agreement, on trade between Pakistan and its key partners to determine the cause of the negative balance and develop strategies to improve trade in Pakistan over the next six years.

The paper's remaining sections are organized as follows: Section 2 reviews the relevant literature and makes recommendations based on that review for the methodology used in this work. The data and methods used are outlined in Section 3. While Section 4 summarizes and examines the results, Section 5 wraps up the paper and offers some balance implications.

## 2. Literature review

Theoretically, nations that engage in trade have a competitive advantage due to their ability to specialize in development and exports to their trading partners, which stimulates economic growth, and the digital economy supports such trade (Lwoga & Sangeda, 2019). Kavoussi (1984) studied 73 low- and middle-income developing nations and discovered a substantial correlation between economic growth and export growth. He demonstrated that exports positively correlate with growth throughout a wide range of national incomes, from low to high, while the strength of the relationship declines with more economic development. The more an economy exports, the more it exposes itself to international competition, which in turn drives innovation and productivity gains (Wagner, 2007). Despite evidence indicating international trade is harmful to the growth of the South African economy, Polat et al. (2015) find that a developed finance sector contributes to economic expansion. Using data from Italy and an autoregressive distributed lag bound test technique to cointegration, Cerdeira Bento and Moutinho (2016) find no evidence for the trade-led economic growth theory. They found, however, that foreign trade had a favourable impact on Italy's CO<sub>2</sub> emissions. The assumption that information transmitted through trade seems to enhance domestic production is supported by the findings of Coe and Helpman (1995), who state that "international trade in intermediate products is the principal conduit of international knowledge spillovers." According to Grossman and Helpman (1991), trade liberalization helps with the introduction of new kinds because it facilitates access to a greater pool of technical expertise, which in turn lowers the price of innovation. Kraay (1999) used a panel data of 2,105 Chinese industrial organisations between 1988 and 1992 to examine whether firms learn from exporting. He discovered that the learning effects are more prominent among established exporters. The Organization for Economic Co-operation and Development (OECD) performed a research on the effect of trade on per capita income in 2003. The findings indicated that the elasticity of trade between countries was 0.2, a value that was statistically significant. For the purpose of analysing economic growth rate, Sachs and Warner (1995) developed a balance index, and they discovered that the average growth rate in the time following trade liberalization is much greater than that in the period before. In 2010, Sun and Heshmati analysed data from a six-year research they had performed on the impact of foreign trade on China's GDP growth. According to a rank correlation study performed by Maizels (1963) on seven advanced economies, there is a positive association between international trade and economic progress. International trade, according to Aghion and Howitt's (1992) innovation-based growth model, allows for innovation and, in turn, advances technology. The availability of foreign intermediate inputs like oil through international trade is a prime example. According to Romer (1990), countries can benefit from increased manufacturing productivity thanks to international trade since they are able to buy intermediate inputs that were not created in-country. Increasing the size of the market for novel products, according to Rivera-Batiz and Romer (1991). Increased international trade is one way that countries might benefit from the favourable effects of technological spillovers on productivity (Saggi, 2000).

### 3. Methodology

#### 3.1 Conceptual framework

According to Bergstrand (1985), typically, the log-linear equation specifies that flow from origin  $i$  to destination  $j$  can be explained by the economic forces at the trade flow origin, economic forces at the flow destination, and the economic forces either aiding or resisting the flow movement from origin to the destination. The approach uses a gravitational model based on bilateral trade flows. For this analysis, it is specified as follows:

$$\ln T_{ij,t} = \alpha Y_{ij,t} + \beta \text{ trade balance}_{ij,t} + \epsilon_{ij,t}$$

Where  $T$  is total trade, matrix  $Y$  includes a set of control variables, and  $\epsilon$  is the error term.

$EX_{ij}$  = The number of US dollars' worth of products and services exported from nation  $i$  to country  $j$ .

$IM_{ij}$  = Value, in thousands of US dollars, of imports from Country  $i$  to Country  $j$ .

The control variables in matrix  $X$  are:

$GDP_i$  = GDP of country  $i$  expressed in billions of U.S. dollars.

$POP_i$  = Countless millions make up Country  $i$  populace.

$DIST_{ij}$  = the number of nautical miles between country  $i$  and  $j$ .

CL = the language spoken in both countries  $i$  and  $j$ .

CB = shared frontier between countries  $i$  and  $j$ .

The critical variable of interest is trade balance and includes:

NTB<sub>j</sub> = Limitations on imports from Country  $j$  that are not due to Tariffs.

ESP<sub>i</sub> = Requirements for environmental sustainability in Country  $i$ .

COST<sub>i</sub> = The Roots of Entry-Level Prices.

#### 3.2 Data Collection

Sideways from the United States, the United Kingdom, China, Afghanistan, Germany, Spain, the United Arab Emirates, the Netherlands, Italy, Belgium, Bangladesh, South Korea, France, India, and Saudi Arabia, there are seventeen countries in the sample. Pakistan is one of them. On the basis of the overall dollar amount of such imports, these countries were chosen as the top buyers of Pakistani goods in 2019 to 2021, all information is up to date. The development of imports and exports with various nations is seen in Table 1.

Table.1. Shows the development of Exports and Imports from 2019 to 2021.

Rank	Exports to	2019	2020	2021	Imports from	2019	2020	2021
1	United States	4.08	2.09	6.09	China	16.09	7.08	22.09
2	China	2.09	1.07	3.08	UAE	7.09	3.67	10.09
3	United Kingdom	2.08	2.9	3.34	USA	6.09	3.45	7.14
4	Germany	2.12	1.98	2.56	Saudi Arabia	2.09	1.78	3.45
5	UAE	0.98	0.69	1.6	Japan	2.98	1.09	3
6	Netherlands	0.87	0.56	0.97	Germany	3.08	1.98	3.78
7	Afghanistan	0.76	0.92	1.09	India	0.07	0	0.08
8	Spain	0.78	0.26	1.11	Netherlands	1.29	1.98	2.09
9	Italy	0.67	0.45	0.87	Korea	1.09	0.78	1.97
10	Bangladesh	1.5	0.86	2.36	Bangladesh	0.56	0.89	0.92

The figures for bilateral trade flows (exports and imports) between Pakistan and the countries that purchase from Pakistan are provided by the World Integrated Trade Solution (WTIS). A dependable source of data on GDP and population is the World Bank. The population is measured in millions, although the GDP is measured in US billions. We get characteristics like bilateral distance, shared language, and common border using the CEPII GeoDist database.

#### 4. Results and Discussions

In this study, we explored the trade flow between Pakistan's and its main trade partners. From 1995, Pakistan had a negative trade balance of \$664M in net imports. Table 2 provides our estimation result which examined the international trade balance.

**Table.2. The effect of trade policy in overall on trade balance from 2019 to 2020**

Variables	Expected effect	Log-linear export model	Log-linear import model
lnGDPj	(+)	0.427***	2.198***
		0.0608	0.0804
lnPOPj	(+)	-0.192***	0.206***
		0.0448	-0.0752
lnGDPi	(+)	0.786**	0.048*
		-0.742	-2.475
lnGPOPi	(+)	-2.022*	-0.754*
		-4.196	-6.196
lnDISTij	(-)	-0.242**	-4.206**
		-0.219	-2.02
lnNTBj	(-)	0.819	-0.202
		-0.078	-0.587
lnEPSi	(±)	2.255*	-0.275*
		-0.78	2.647
lnEPSj	(±)	2.419**	0.0858*
		-0.275	-0.275
lnCOSTi	(+)	0.454***	-0.0198**
		-0.276	-0.538
lnCOSTj	(+)	0.0752***	0.222**
		-0.0534	-0.0754
FTA	(±)	-0.206*	2.757**
		-0.253	0.487
CB	(+)	2.675*	-2.244**
		-0.204	-0.422
CL	(-)	2.219**	0.758***
		-0.244	-0.222
Constant	(+)	4.538	22.02
		48.55	62.62
Observations		190	190
R-squared		0.553	0.754
F test		48.47	48.78
Root MSE		0.53872	0.5872

It might have an impact on how Pakistan and its partners do business. The econometric issue has undergone testing. When the data were pooled, neither the Breusch-Godfrey test nor the Durbin's alternative test revealed any serial correlation in the residual. The overall value of exports and imports is statistically significantly and favourably impacted by the GDP of importing nations. The NTB of importing nations was statistically significant and positive for the export equation but statistically significant and negative for the import equation. In the export equation, the EPS and COST of importing nations were both negative and statistically significant. In the import equation, COST<sub>j</sub> and FTA had positive and statistically significant effects. The objective of the empirical analysis was to ascertain whether or not certain elements of the trade balance were crucial to trade. For both exports and imports, the effects of four of the most important factors were examined. Tables 3 present a number of specifications in which the balance variable is regressed on the level of bilateral trade. The results of the basic specification, which includes the two most important critical variables, NTB<sub>j</sub> and (EPS<sub>i</sub> and EPS<sub>j</sub>).

**Table.3. The effect of trade balance specificities on exports and imports**

Variables	-1	-2	-3	-4
lnGDPj	0.216** (0.0431)	0.477*** (0.0477)	0.161*** (0.0394)	0.162*** (0.0477)
lnPOPj	— 0.0918	— 0.416***	— 0.0692**	— 0.0758** -0.0431
lnGDPI	2.069 -2.04	0.77 -2.043	2.396 -2.154	2.042 -2.075
lnGPOPI	— 2.432	— 0.602	— 2.151	— 2.477 -4.77
lnDISTij	— 0.616***	— 0.248	— 0.637***	— 0.608*** -0.243
lnNTBj	0.539*** (0.245)			
lnEPSi		0.431 -0.861		
lnEPSj		— 2.200***		
lnCOSTi			0.151 -0.392	
lnCOSTj			— 0.0156	
FTA				0.432 -0.16
CB	0.824*** (0.160)	2.151*** (0.162)	0.754*** (0.160)	0.616*** (0.374)
CL	2.431*** (0.372)	2.438*** (0.374)	2.437*** (0.143)	2.608*** (0.243)
Constant	37.69 -39.43	2.692 -39.69	16.82 -43.4	24.39 -43.42
Observations	245	245	245	245
R-squared	0.381	0.816	0.643	0.918
F test	43.38	48.6	16.15	42
Root MSE	0.43015	0.41386	0.43916	0.48243

In order to demonstrate the effect of entrance cost and assess the sensitivity of the findings to the addition of additional explanatory factors, we included additional variables, such as entry cost origin and entry cost destination, to column (3). The outcome of regressing the level of trade using control factors and dummy variables is reported in specification (4). The findings in Table 3 showed that the specificities (1), (2) had a favourable and statistically significant impact on exports. It is discovered that exports and the GDP of countries j and BC are statistically associated. In the export model, the population of the importing nations and the distance factors were both statistically significant negative variables. Table 4 shows the results of the regression of the effect of trade specificities on imports.

**Table.3. The effect of trade policy specificities on imports**

Variables	-1	-2	-3	-4
lnGDPj	1.158*** (0.0550)	1.173*** (0.0748)	1.135*** (0.0573)	1.117*** (0.0535)
lnPOPj	0.164*** -0.0396	0.11 -0.0748	0.135*** -0.0396	0.150*** -0.0365
lnGDPI	0.0753 -1.483	0.0807 -1.575	0.0111 -1.648	0.0735 -1.387
lnbPOPI	— 1.653	— 1.765	— 0.831	— 1.653 -3.835
lnDISTij	— 3.155***	— 3.137***	— 3.153***	— 3.157*** (0.175)
lnNTBj	— 0.310			
lnEPSi		— 0.0757		
lnEPSj		— 0.305		

lnCOST <sub>i</sub>			— 0.0481	
lnCOST <sub>j</sub>			0.111* (0.0565)	
FTA				1.175*** (0.373)
CB	— 1.311***	— 1.131***	— 1.157***	— 1.870***
				-0.177
CL	0.0653	0.0587	0.147	0.187* (0.173)
	-0.158	-0.165	-0.187	
Constant	48.17	48.5	10.35	38.64
	-50.11	-55.1	-64.05	-57.48
Observations	150	150	150	150
R-squared	0.65	0.765	0.653	0.703
F test	55.37	57.05	58.48	65.47
Root MSE	0.64641	0.6487	0.6438	0.50535

Columns (3) and (4) demonstrate a positive and substantial impact of these factors on imports, in contrast to the export model. At 1% of the level, the sign of COST<sub>j</sub> is positive and statistically significant, but at 10% of the level, the sign of FTA is positive and statistically significant. According to the findings for the control variables in Table 4, the import model's statistically significant determinants are GDP<sub>j</sub>, POP<sub>j</sub>, DIST<sub>ij</sub>, and CB. The findings shown in Tables 3 and 4 demonstrate that the coefficient of NTB has a positive sign at 10% of the level for the export model and is statistically significant, whereas the coefficient of NTB has a negative sign at 5% of the level for the import model. While the coefficient of FTA is positive and statistically significant connected with import model at 10% of the level and is not significant for export model, the coefficient of EPS<sub>j</sub> has an expected negative sign and is not statistically significant at 10% of the level for the export model. In addition to being statistically significant for both models, COST<sub>j</sub> is also negative for the export model at 1% and positive for the import model at 10%.

### Discussions

When estimating the various groupings of nations according to geographical or organisational groups, we performed a number of robustness checks to confirm the validity of the findings obtained in the general model. These checks' results are reliable and support the thesis of the research. Import and export restrictions continue to pose a serious trade hurdle for many emerging nations. It is a forum of nations that identify as being committed to democracy and the market economy. It provides a forum for political experience comparison, the search for solutions to shared issues, the identification of best practises, and the coordination of national and international policies among its members. The majority of OECD members are considered developed nations since they have high income economies and extremely high Human Development Indexes (HDI). The findings demonstrate that Pakistan's trade flows are favourably impacted by OECD members' NTB twice as much as those of other nations. A free trade organisation called the South Asian Free Trade Agreement, which includes Pakistan as a member, seeks to lower intra-regional tariffs. These nations share a same border and have comparatively lax environmental regulations and environmental barriers. For the export model, the sign of the FTA coefficient is positive and statistically significant, while for the import model, it is not statistically significant. We discovered that the results for the export model were comparable to those obtained with OECD nations. Additionally, the outcomes of the import model are different; NTB, EPS, and COST of the importing nations have a detrimental and statistically significant impact on imports. China, the United States, and Korea made up the Asia-Pacific Economic Cooperation, which includes Pakistan's top importers and exporters. The hypothesis that stricter environmental policies reduce total bilateral imports and exports can therefore be rejected. APEC has been criticised for promoting free trade agreements that would impose restrictions on national and local laws that regulate and ensure labour rights, environmental protection, and safe and affordable access to medicine. Islam and Arabian culture are shared by Pakistan, Saudi Arabia, and the United Arab Emirates. Their need to diversify their expanding economies away from oil is another economic concern they

have in common. The findings of the bilateral trade in goods between Pakistan and these nations indicate that none of the factors had a substantial impact on the import model. In this investigation, we discovered that partner nations' exports and imports are decreased by high costs and strict environments. However, the idea that non-tariff trade barriers lessen trade flow is also being called into doubt in the context of trade between Pakistan and OECD and SAFTA nations.

## 5. Conclusions

the study examines the effects of trade balance measures on trade flows between Pakistan and its primary trading pattern for the years 2010 to 2021. The results showed that factors related to the trade balance's exports and imports were statistically significantly correlated. However, an NTB<sub>j</sub> for the export model and a COST<sub>j</sub> for the import model predicted sign has been found. The study expanded the approach by looking at four distinct trade balance groupings. The results, which show a positive and statistically significant association between NTB<sub>j</sub> and exports and a negative correlation between EPS<sub>j</sub> and imports, support earlier research. For the export model, COST<sub>j</sub> and FTA were discovered to be positive and significant; however, for the import model, COST<sub>j</sub> and FTA were not significant. By calculating various nation groupings according to geographical or organisational clusters, we also verify the correctness of the results. Between fact, the NTB has a favourable impact on trade in high-income nations (OECD countries), however it has a negative impact on trade between Gulf and Asian nations, including India. These outcomes vary from one cohort to the next. This shows that trade balance has an impact on Pakistan's trade with these important partners, but the extent of the impact varies according on the trading partner's location and organisation. Strict environmental regulations and high prices for products and services always cut down on trade between Pakistan and its trading partners. On the other hand, in the instance of Pakistan, free trade balance is regarded as a successful method of promoting trade.

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