



Available Online Journal of Economic Impact

ISSN: 2664-9764 (Online), 2664-9756 (Print)

<https://www.scienceimpactpub.com/jei>

OPPORTUNITIES FOR PAKISTAN'S EXPORTS GROWTH THROUGH OBOR: CASE OF CENTRAL ASIAN REPUBLICS

Arsalan Ahmed ^{a,*}, Faisal Nawaz ^a, Muhammad Ali ^b, Muhammad Younus ^c, Shahida Wizarat ^d

^a Department of Mathematics, Dawood University of Engineering and Technology, , Karachi, 74600, Pakistan

^b Department of Artificial Intelligence and Mathematical Sciences (AIMS), Sindh Madressatul Islam University, Karachi, Pakistan

^c Department of Computing, Indus University, Karachi, Pakistan

^d Department of Economics, Institute of Business Management, Karachi, 75190, Pakistan

ARTICLE INFO

Article history

Received: October 03, 2022

Revised: December 19, 2022

Accepted: December 23, 2022

Keywords

Central Asian Republics

Trade Liberalization

Exports

CMS

OBOR

CPEC

ABSTRACT

The economic expansion of these large countries generates a boundless prospect for the Central Asia Republics to emerge as a hub for trade and commerce. Especially with trade road development programs such as Western Europe - Western China (WE-WC) International Transit Corridor Project, One Belt One Road Project (OBOR), this paper analyzes the exports of Pakistan to Central Asian Republics. It explores the flaws and opportunities for bilateral trade. The study uses the Constant Market Share (CMS) method for the analysis and estimates World Trade Effect, Markets Distribution Effect, Commodity Composition Effect, and Competitiveness Effect for Pakistan's exports. The study found that the World Trade Effect and Markets Distribution Effect positively impacted the exports of Pakistan while the Commodity Composition Effect and Competitiveness Effect were causing problems for Pakistan's export growth for Central Asian Republics Markets. The study concluded that exports of Pakistan are concentrated in a few commodities, such that 45-50% of Pakistan's overall exports have a lower global export growth rate than other commodities. Also, the exports to Central Asian Republics (from Pakistan) have a growth rate, but still not substantial due to the low share of these commodities (in the total imports of Central Asian Republics). Lastly, an effective exchange rate policy for the Central Asian Republics can minimize this negative effect of the Competitiveness Effect.

* Email: arsalan.ahmed@duet.edu.pk

<https://doi.org/10.52223/jei5012304>

© The Author(s) 2023.

This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

INTRODUCTION

International Trade has become a curial part of the world economy during the last 50 years. Especially after the establishment of WTO, this phenomenon has to raise exponentially throughout the world; therefore, it is auspicious for a country to focus on export growth in order to sustain growth-related economic activities domestically. International studies have established that in developing countries, economic growth is positively affected by export promotions. Such as, Kwasi (1990) analyzed this hypothesis using the usual augmented production function and found that export growth has a positive and significant impact on economic growth in less developed countries (LDCs). Yaya (2018) conducted research on the relationship between export growth and imports across 12 African nations. The analysis supports a long-term association between export growth and economic growth in eight nations. Additionally, Islam et al. (2022) use the NARDL approach to economic growth to analyze the asymmetric impact of exports on economic growth in the Kingdom of Saudi Arabia, resulting in a positive shock from exports. Also, in a manner similar to this, Hailin and Xiao (2010) investigate the relationships between exports and productivity growth in Asian nations. They found evidence to support the traditional export-led growth theory. Furuoka (2018), however, uses a Fisher causality test to investigate the relationship between exports and growth in four

Asian economies: Indonesia, the Philippines, Hong Kong, and Japan. In half of the countries, the study revealed a correlation between export growth and economic growth. In addition, Shahbaz et al. (2009) analyzed the exports-led growth hypothesis for Pakistan from 1990-2008 and found the short-term and long-term viability of the export-led growth paradigm for Pakistan.

Exporting specialized goods and services to foreign markets helps the country create an economic climate that boosts output and demand for those goods and services. Because of the importance of exports on a global scale, governments are including export growth targets in their foreign policy, and countries are allowing favorable trade agreements with a number of nations that benefit all parties. Therefore, government measures are intended to promote export expansion through various incentives such as export subsidies, tax breaks, etc. In Pakistan, among remittances, exports, and financial development, exports have a significant impact both in the short and long run (Ronald R., 2011). Exports of goods and services have always remained a major factor in the economic structure of Pakistan. The economic growth of Pakistan has been constrained by its balance of payments. Pakistan can encounter the problem of balance of payment by shifting its export structure towards products with a higher income elasticity of demand, hence achieving good economic growth (Felipea et al., 2010).

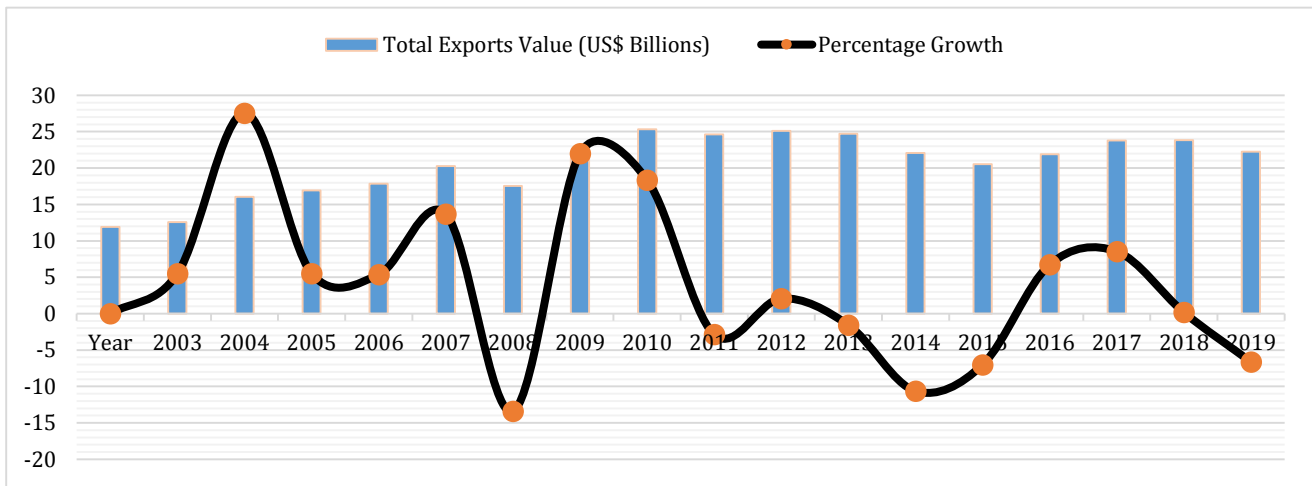


Figure 1. Exports of Pakistan to the World; Source: International Trade Centre (ITC), 2019.

According to the World Trade Organization¹, Pakistan exported 24 US\$ billion worth of commodities to the world in 2019. Figure 1 shows the pattern of export value and export growth for Pakistan. It clearly demonstrates that the export growth rate of Pakistan has fluctuated vigorously in the last fifteen years, highlighting the deficiency of a stable and effective policy for Pakistan's exports. To stabilize this export growth, Pakistan needs to focus on emerging markets with enough import potential closer to its location. In this regard, it is challenging for Pakistan to penetrate large economies like China, Russia, and India. However, given the existence of trade road development initiatives like the Western Europe-Western China (WE-WC) International Transit Corridor Project and the One Belt, One Road (OBOR) Project, the Central Asian Republics have a seemingly endless opportunity to become a hub for trade and commerce. The importance of the Central Asian Republics has increased massively for Pakistan's economy. The CPEC project of Pakistan is an integral part of OBOR.

Therefore, it is essential to analyze Pakistan's exports to Central Asian Republics and identify the gaps to explore these markets more effectively.

Figure 2 shows the share of different countries in Pakistani exports for the period 2021, which are the USA (21%), China (10%), United Kingdom (7%), Germany (5%), UAE (4%), etc. (International Trade Centre). Unfortunately, the share of Central Asian Republics is only 1% which is much lower than other countries. The Central Asian Republics, which include Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, have a total population of about 65 million people and a combined area of roughly four million square kilometers. Due to their close proximity and shared history, religion, culture, customs, values, and destiny, these nations and Pakistan have close ties. The fact that Pakistan and the Central Asian Republics are both members of the Economic Cooperation Organization further strengthens their bilateral relations.

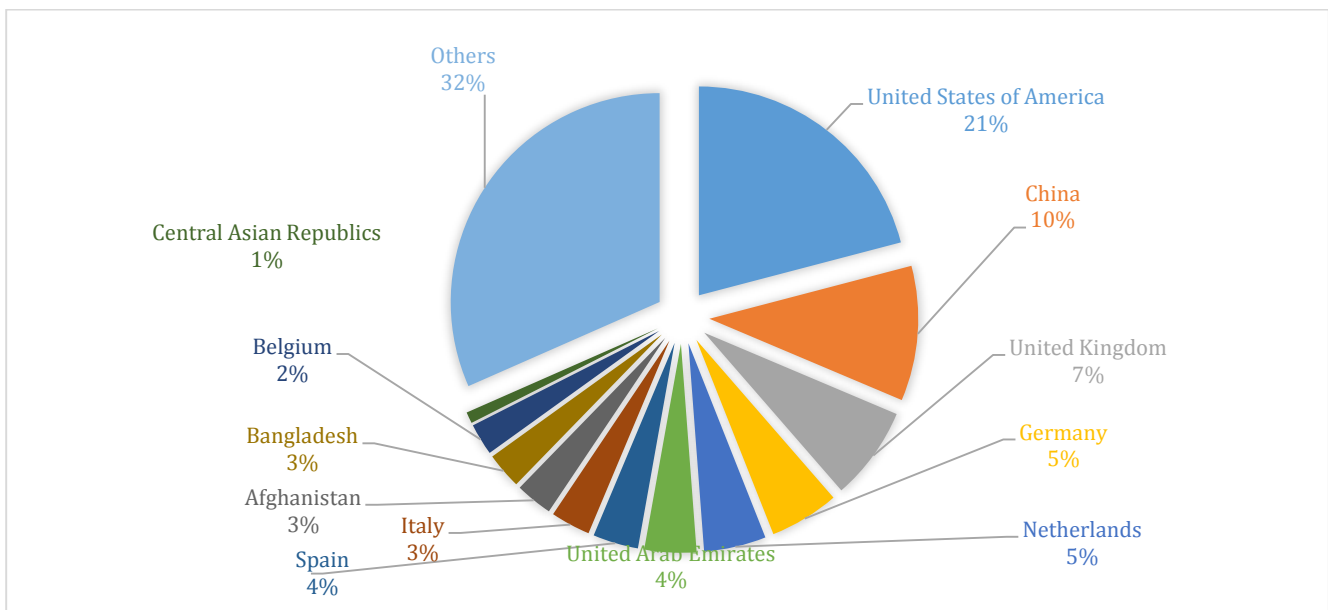


Figure 2. Share of different countries in Pakistani exports (2021); Source: International Trade Centre (ITC).

¹ https://www.wto.org/english/thewto_e/countries_e/pakistan_e.htm

Table 1. Exports of Pakistan to Central Asian Republics (US\$ Billions).

Year	Central Asian Republics Aggregation	Kazakhstan	Uzbekistan	Turkmenistan	Tajikistan	Kyrgyzstan
2003	17.97	10.04	3.30	1.62	0.24	2.78
2004	20.20	8.89	3.21	1.32	0.30	6.48
2005	16.82	9.97	2.27	0.98	1.52	2.09
2006	12.87	8.52	2.09	0.76	0.47	1.03
2007	11.89	6.29	2.73	1.41	0.24	1.23
2008	10.92	6.06	2.55	0.63	0.27	1.41
2009	9.07	4.22	2.11	0.59	0.98	1.18
2010	12.09	5.92	2.73	1.51	0.69	1.25
2011	11.90	5.77	3.51	1.08	0.62	0.92
2012	13.43	4.24	3.98	1.33	3.10	0.78
2013	22.35	5.42	3.46	2.42	10.29	0.77
2014	26.06	6.65	2.35	6.95	9.13	0.99
2015	27.82	12.84	1.98	8.17	3.98	0.85
2016	37.47	24.53	3.38	4.00	4.37	1.19
2017	81.61	70.55	3.94	3.24	2.95	0.93
2018	116.62	87.44	17.39	0.80	9.47	1.52
2019	118.66	83.45	22.56	2.65	7.83	2.17

Source: International Trade Centre (ITC).

In the last fifteen years, the significant improvement in the exports of Pakistan to Central Asian Republics merely happened in the previous three years. Nevertheless, this value is still very insignificant in the total exports of Pakistan to the world (see Table 1). In addition to that, the major importer among all the Central Asian Republics is Kazakhstan, which holds an 80% share in total imports of Central Asian Republics from Pakistan (see Figure 3).

Currently, according to the International Trade Centre, the total imports of Central Asian Republics are more than 70 billion US\$ (see Figure 4). Suppose Pakistan could be able to capture only ten percent of this share. In that case, it could massively solve foreign exchange problems for Pakistani authorities. Pakistani exports of clothes, cotton products, engineering, consumer goods, and medicines have much potential in exchange for the Central Asian Republic's power and electrical items.

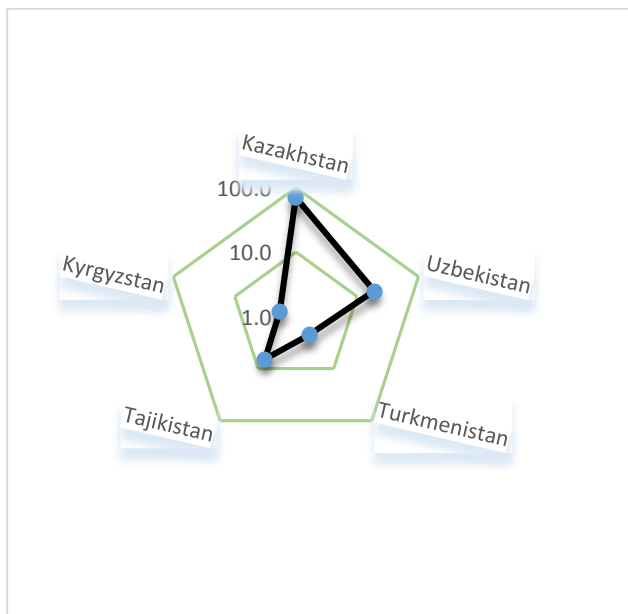


Figure 3. Share of each country in the total Exports of Pakistan to Central Asian Republics; Source: International Trade Centre (ITC).

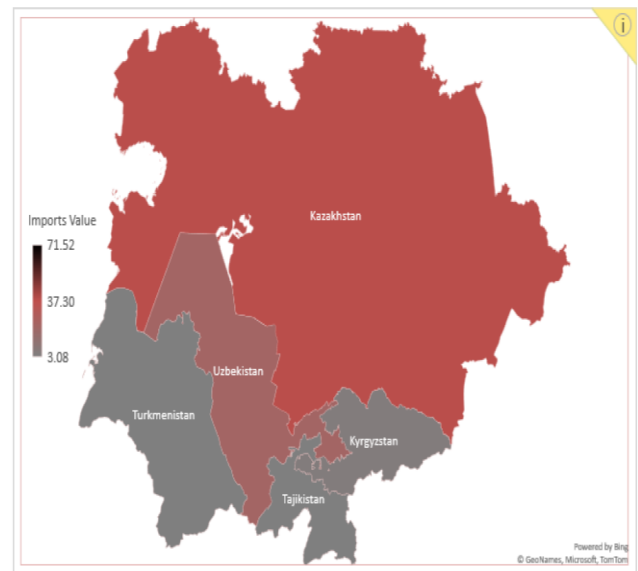


Figure 4. Total Imports of Central Asian Republics. Source: International Trade Centre (ITC).

Hypothesis

As indicated previously, this study will analyse Pakistan's exports to Central Asian republics using a constant market share analysis methodology. This methodology separated the country's export growth into four components: the World trade effect, the Commodity composition effect, the Market distribution effect, and the Competitiveness effect. The study's methodology was described in a later section. Based on these four effects, the following four hypotheses are presented:

- H¹: The World trade effect is positive for Pakistan's exports to Central Asian Republics.
- H²: Pakistan exports to Central Asian Republics experienced growth through the Commodity composition effect.
- H³: The market distribution effect is positive for Pakistan's exports to Central Asian Republics.
- H⁴: The Competitiveness effect impact is negative for Pakistan's exports to Central Asian republics.

REVIEW OF LITERATURE

In the literature, there are several studies that employed the method of constant market share analysis. Crespo and Maria (2010) used the CMS approach to assess changes in the market share of 82 of the world's top exporting countries between 1995–1997 and 2005–2007 in order to explore the impact of competitiveness on export growth. The study's findings point to similarities in market share as well as regional variation among neighboring countries. Clipa (2012) investigated the competitiveness of Romanian exports using the constant market share approach; the study disaggregated change into a relative market share, competitiveness effect, and structural effect. Similarly, by using continuous market proportions, Rudy and Masaru (2012) analyse the export structure and competitiveness of Indonesia's industrial sectors from 1987 to 2008. In a different study, Yan et al. (2020) makes an effort to use the Constant Market Share (CMS) model to assess the dynamics of Australia's LNG export performance. Their study stated that, throughout the previous three decades, Australia's LNG export performance has been mostly influenced by the competitiveness effect.

In the case of Turkey, Barbaros et al. (2007) utilize constant market share analysis to examine the competitiveness of Turkey's organic exports to the European Union market. The study looks at multiple reasons to explain why Turkey's exports are increasing compared to global exports. The first cause relates to the growth of the export market in comparison to global export growth (structural effect). The second reason is that the exporting country's competitiveness has improved (competitiveness effect). Nidhi and Saba (2019), utilizing the constant market share (CMS) model, investigate the main contributing factors to China's export performance during 2002–2014. It decomposed exports into three categories based on their technological intensity and revealed that export performance is largely a result of their competitive strength on the global market. Likewise, with constant market share (CMS), Shuai et al. (2018) examine the global competitiveness of Chinese solar photovoltaic (PV) goods within the framework of the "Belt and Road Initiative." The study discovered an increase in China's total international competitiveness in solar PV products. Through "constant market share analysis," the Monetary Policy Committee of the European System of Central Banks (European Central Bank, 2005) discovered for the European Union the effects of specialization in various industries and geographical markets on an economy's overall export market share. In order to partially make up for the missing opportunities in Asia, it was determined that the Eurozone could seize another quickly growing market (the CEECs and Russia). Also, Kithsiri et al. (2020) determine the competitiveness of Ceylon Tea in its major destinations with the CMS model. The study differentiated the total change of exported quantity into three major segments, market growth effect, composition effect, and competitive effect. They identified Azerbaijan, the UK, Libya, India, and Iran as the potential markets to be competitive for Ceylon tea exports from Sri Lanka. It established that CMS is widely employed in studies to analyze the export growth of the country. However, there are only a few studies that use CMS for the export growth analysis of Pakistan. Kamal et al. (2022) empirically investigated the trade competitiveness and trade potential of Pakistan and ASEAN countries in the Chinese market. Their study highlighted that Pakistan's export performance in China's market relies on the market distribution effect. Maqbool et al. (2019) employ Constant Market Share Analysis to explore the competitiveness and

diversifications of Pakistan's exports of leather and leather products in the global economy for the period 2003-2014. It suggested that Pakistan has the potential to enhance its exports to the world and become competitive in the world if it focused on diversification more substantially. Shah et al. (2022) examined the effect of the China-Pakistan Free Trade Agreement (CPFTA) on the bilateral trade between Pakistan and China with the help of Constant Market Share Analysis. The study shows that Pakistan should develop a better understanding of the Chinese market and increase efficiency in the utilization of tariff lines in order to get benefit from CPFTA. Similarly, in order to analyse the increase in Pakistan's export demand globally, Wizarat et al. (2009) employed constant market share analysis. The analysis finds that the income and trading policies in the importing nations have a significant positive impact on the world trade effect and commodity composition effect. Also, Using the Constant Market Share (CMS) technique, Ahmed and Wizarat (2016) assess Pakistan's exports to the EU27 countries in light of general economic conditions. According to the report, Pakistan's exports to the EU 27 market were negatively impacted by the market distribution effect. In another study, Ahmed and Tahir (2015) employed the Constant market share analysis to explore Pakistan's exports to Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. It also found a negative market distribution effect for the exports of Pakistan with respect to these seven countries. Apart from these studies, the area of research related to Pakistan's exports to the central Asian republic is not explored with the methodology of Constant Market Share Analysis. The reason for that could be the low share of central Asian republics in Pakistan exports to the world. However, with the initiative of one belt on the road, it will be very crucial for Pakistan to find suitable policies to increase trade with central Asian republics; therefore, this study attempted to fill this gap by analyzing Pakistan's exports to central Asian republics with the methodology of constant market share analysis. In the following section, the study discussed the methodology of the research.

METHODOLOGY

The Methodology of Constant Market share Analysis (CMSA) is adopted to analyze the export growth of Pakistan in Central Asian Markets. H. Tyszynski (1951) was the first person who introduce this methodology of Constant Market Share Analysis (CMSA) in International Economics. His article "World Trade in Manufactured Commodities" examines manufactured goods' exports for eleven countries and classifies manufactured commodities into sixteen groups. According to the study, the demand for manufactured exports had increased due to industrialization. This CMSA Methodology was further devised and improved by Leamer and Stern in 1970 (Leamer and Stern, 1970; Jepma, 1986). The central premise of CMAS is that a nation's export proportion on the global market should remain stable for one year. The study is conducted by dividing the aggregate export growth results into four categories: first, the world trade effect reveals the effect of global export growth on domestic export growth. Second, an analysis of the export commodity concentrations under the influence of the commodity composition. The third factor is the market distribution effect, which measures the export concentration and market diversity of a country. Fourthly, the competitiveness impact reflects the effect of export pricing on foreign markets.

Variable Explanation

X^1 is measured as the total exports value of the country for base year

X^2 is measured as the total exports value of the country for current year

X_i^1 is measured as the total exports value of the country in the base year for a commodity (i)

X_i^2 is measured as the total exports value of the country in the current year for a commodity (i)

X_{ij}^1 is measured as the total exports value of the country to the country (j) in the base year for a commodity (i)

X_{ij}^2 is measured as the total exports value of the country to the country (j) in the current year for a commodity (i)

r: percentage change in the total world exports during base year to current year

r_i : percentage change in the total world exports of a commodity (i) during base year to current year

r_{ij} : percentage change in the total world exports of a commodity (i) to country (j) during base year to current year

For the validity of the results, all data has been taken from a single source of the International Trade Centre (ITC). Since its inception in 1964, the International Trade Centre (ITC) have the detailed data on the trade, grouped by product and service categories (H.S. and BOP), are available on the ITC website².

Model Specification

The country's exports can be diversified into both commodity and international market directions. Let the exports be of the i th commodity to the j th market; therefore, the equation for representing the total change in exports for the i th commodity and j th market can be written as (Tyszynski, 1951):

$$\begin{aligned}\Delta X_{ij} &= X_{ij}^2 - X_{ij}^1 \\ \Delta X_{ij} &= r_{ij} * X_{ij}^1 - r_i * X_{ij}^1 + X_{ij}^2 - X_{ij}^1 \\ \Delta X_{ij} &= r_{ij} * X_{ij}^1 + (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1)\end{aligned}\quad (1)$$

In equation 1, If we added all the commodities and countries mathematically for the purpose of aggregating then we can obtain equation 2.

$$\Delta X = X^2 - X^1 = \sum r_{ij} X_{ij}^1 + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} X_{ij}^1) \quad (2)$$

To obtain the world export growth effect on the i th commodity in the j th markets for the country's exports, addition and subtraction of the terms r and r_i are being done³ in the equation 2.

$$\begin{aligned}\Delta X &= X^2 - X^1 = \sum (r - r - r_i - r_i + r_{ij}) X_{ij}^1 + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1) \\ \Delta X &= X^2 - X^1 = \sum (r * X_{ij}^1 - r * X_{ij}^1 + r_i * X_{ij}^1 - r_i * X_{ij}^1 + r_{ij} * X_{ij}^1) + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1) \\ \Delta X &= X^2 - X^1 = \sum (r * X_{ij}^1) + \sum (r_i * X_{ij}^1 - r * X_{ij}^1) + \sum (r_{ij} * X_{ij}^1 - r_i * X_{ij}^1) + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1) \\ \Delta X &= X^2 - X^1 = \sum (r * X_{ij}^1) + \sum [(r_i - r) * X_{ij}^1] + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1)\end{aligned}$$

$$\begin{aligned}\Delta X &= X^2 - X^1 = \sum (r * X_{ij}^1) + \sum [(r_i - r) * X_{ij}^1] + \sum [(r_{ij} - r_i) * X_{ij}^1] + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1) \\ \Delta X &= X^2 - X^1 = (r * X^1) + \sum [(r_i - r) * X_{ij}^1] + \sum [(r_{ij} - r_i) * X_{ij}^1] + \sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1)\end{aligned}\quad (3)$$

Equation 3 delineates a three-level analysis of a country's export growth, which is divided into four components. The first component, denoted by the term $r * X^1$, elucidates how a country's export growth is influenced by the overall increase in global exports. The second component is expressed by the term $\sum [(r_i - r) * X_{ij}^1]$, which captures the impact of the composition of exported commodities on the country's export growth. The third component, represented by the term $\sum [(r_{ij} - r_i) * X_{ij}^1]$, examines the market distribution of the country's exports. Lastly, the fourth component, $\sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1)$, accounts for the residual unexplained variance, reflecting the effect of competitiveness.

Proposition I:

If $(r * X^1)$ is greater than zero, then it shows that the country's exports are positively affected by the growth of exports at the global level. Conversely, the negative value of $(r * X^1)$ Shows that increase in international exports decrease Pakistan's exports to the world.

Proposition II:

If $\sum [(r_i - r) * X_{ij}^1]$ is positive, then it indicates that country's exports are not concentrated in a few commodities. On the other side, When the value of $\sum [(r_i - r) * X_{ij}^1]$ is negative, then the country's exports are not experiencing growth due to the concentration of its exports in very few commodities.

Proposition III:

If $\sum [(r_{ij} - r_i) * X_{ij}^1]$ is less than zero, then it indicates that the export growth of a country is stagnant because the country exports only limited markets. In contrast, if $\sum [(r_{ij} - r_i) * X_{ij}^1]$ is positive, then it demonstrates that the country's exports are experiencing substantial growth due to the exports to many countries.

Proposition IV:

If the value of $\sum (X_{ij}^2 - X_{ij}^1 - r_{ij} * X_{ij}^1)$ is positive, then it demonstrates that the export growth of a country is achieved due to the competitiveness of the exporting commodities. However, if this value is negative, then the country's exports are not growing due to the non-competitiveness of the exports.

Data Definition and Selection

For the examination of various trade data categories, the Harmonized System (HS Code) has been employed. It was established by the World Customs Organization (WCO) to synchronize global trade by creating a set of codes that would be globally recognized. The four-digit H.S. code will be applied at the microlevel in this study. There are two sections to the four H.S. codes. The first two digits (HS-2) designate the commodity's classification chapter; for instance, 09 = Coffee, Tea, Mate, and

² <http://www.intracen.org/country/pakistan/>

³ Addition and subtraction of the terms r and r_i at the same time don't affect the equation's equilibrium

Spices. Groupings within that chapter are designated by the next two digits (HS-4); for instance, 0902 = tea, whether or not flavored. According to Table A in the appendix, the chosen commodities account for 70% of Pakistan's total exports. The study is restricted to data from 2003 to 2012 due to data complexity at the micro-level of HS Code data (the selected commodities in this study account for 80% of Pakistan's overall exports). As a result, it might also be seen as a study restriction.

RESULTS AND DISCUSSION

The study will discuss the world trade effects, commodity composition effects, the market distribution effects, and the competitiveness effects separately in the following subsections.

World Trade Effects

Figure 5 demonstrates that Pakistan's exports were affected by the global export increase (2003–2012) during the years

(excluding 2008–2009). In 2009–10 and 2010–11, Pakistan experienced a robust (highest in 2003–12) international trade effect of 3.86 billion US dollars and 3.93 billion US dollars, respectively. The average value of world trade impacts over the past decade has been approximately \$1.8 billion, while the value of world trade impacts in 2011–2012 was \$0.18 billion. CMS results (Figure 6) similarly demonstrate that the global trade impact is the most prominent of the four variables (world trade impact, commodity composition impact, market distribution impact, and competitiveness impact). For the past ten years, the average value of the effects on international trade has been roughly US\$ 1.8 billion. Pakistan's exports at the aggregate level are positively affected by global export growth; one crucial reason for export growth in global Pakistan can have a beneficial effect on its exports is that the world average growth rate is also positive for the same period.

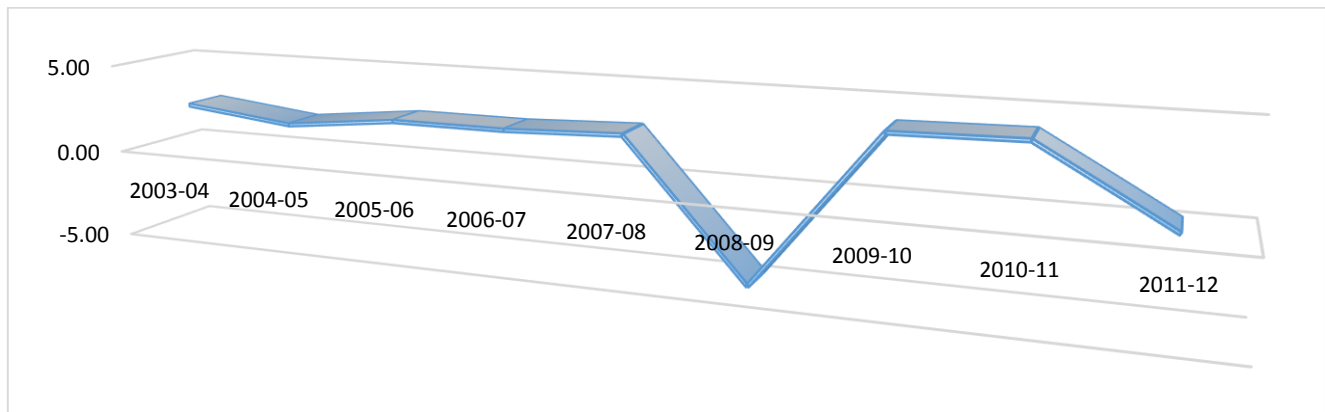


Figure 5. World Trade Effects (US\$ billions); Source: Author's own estimation using ITC Data.

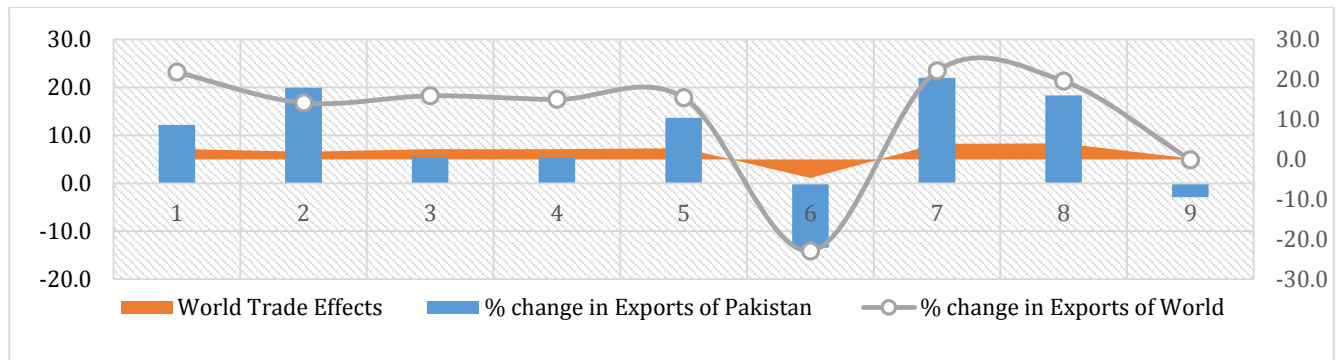


Figure 6. Percentage Change in Pakistan Exports, World Exports, and the World Trade Effect; Source: Author's own estimation using ITC Data.

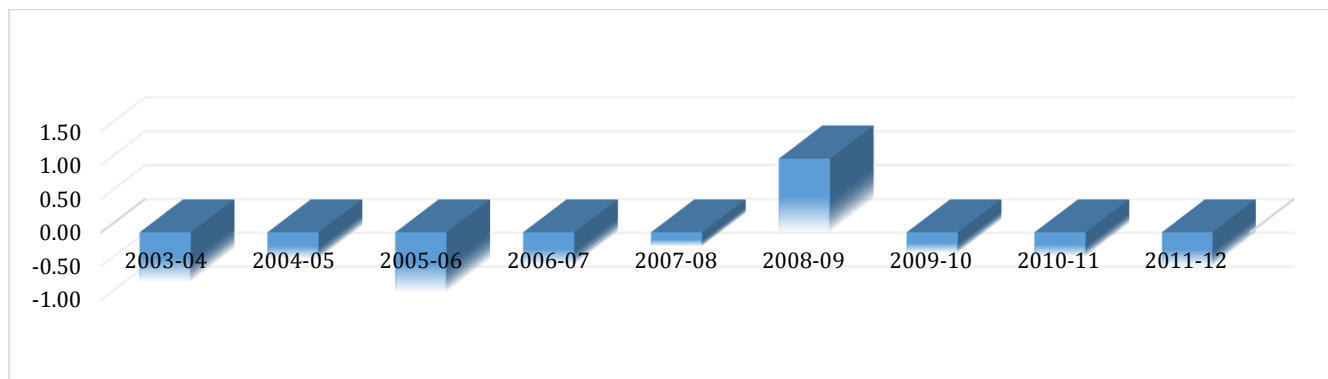


Figure 7. Commodity Composition Effects (US\$ billions); Source: Author's own estimation using ITC Data

Figure 7 compares the percentage change in Pakistan's exports, the percentage change in world exports, and the world trade effect. It demonstrates that the pattern among the three remains consistent. In 2008-2009, Pakistan's World Trade Effect was negative (-4.6), while the country's exports grew at a damaging pace of -13.5 percent, and global export growth was down by around 22.9 percent. At the same time, Pakistan saw a strong growth rate of 22 -18% in 2009-11 because of the World trade effect of 4 billion US\$. The magnitude of the World trade effect is due to the high percentage change in world export growth, which is around 22% - 20%. So, the World Trade Effect for Pakistan is positively affected by the shift in world export growth.

Composition Effects

The results of the CMS research show that the Commodity Compositions Effect had a negative impact on Pakistan's exports from 2003 to 2012 (Figure 7). The sole positive Commodity Composition Effect, worth 1.09 billion US dollars, was observed in 2008-2009. The largest detrimental value (impact) of commodity composition was reported in 2005-2006 and was equal to -0.89 billion US dollars. Additionally, the Commodity Composition Effect in 2011-12 was \$-0.50 billion. This adverse

Commodity Composition Effect demonstrates that Pakistan's exports are focused on a small number of items with low global demand.

According to Tables 2 and 3, Pakistan mostly exports eleven (4-digit disaggregated) basic commodities. There is a negative Commodity Composition Effect because the eleven commodities (4 digits disaggregated) that make up 45-50% of Pakistan's total exports are growing less quickly than other commodities globally.

Market Distribution Effects

The results (Figure 8) show that the Market distribution effect for Central Asian Republics in Pakistani exports remains optimistic for the whole period 2003-12. But the magnitude of the Market distribution effect is shallow as compared to the other effects. Also, it decreased from 14.66 million US\$ (2003-04) to 1.20 million US\$ (2011-12). The share of Central Asian Republics in the exports of Pakistan decreased from 0.15% (2003) to 0.05% (2012); this proportion is insufficient for Pakistani exports to reap the full benefits of the positive Market distribution effect by Central Asian Republics in total Pakistani exports.

Table 2. Share of Commodities in the Total Exports of Pakistan.

H.S. Code	% Share in total Exports of Pakistan to CARs	% Share in total imports of Pakistan from the world
'90	3.83	2.3
'39	0.491	2.88
'27	0.048	10.78
'85	0.602	7.97
'84	1.881	16.3
'94	0.191	1.66
'72	0.003	3.41
'73	0.101	8.29
'87	0.061	8.84
'48	0.676	1.28
'40	0.112	1.47
'44	0.068	1.98
'38	0.025	1.14
Aggregate	8.089	68.3

Source: Author's own estimation using ITC Data.

Table 3. Share of Commodities in the Total Exports of Pakistan.

HS Code	% Share in total Exports of Pakistan to CARs	% Share in total imports of Pakistan from the world
63	6.04	0.34
61	3.23	0.86
52	1.78	0.22
62	3.12	0.65
10	2.68	0.54
42	19.76	0.14
25	0.81	0.65
08	3.03	0.5
90	3.83	2.3
07	1.53	0.22
30	28.75	2.68
95	2.02	0.2
41	1.39	0.01
Aggregate	77.97	9.31

Source: Author's own estimation using ITC Data.

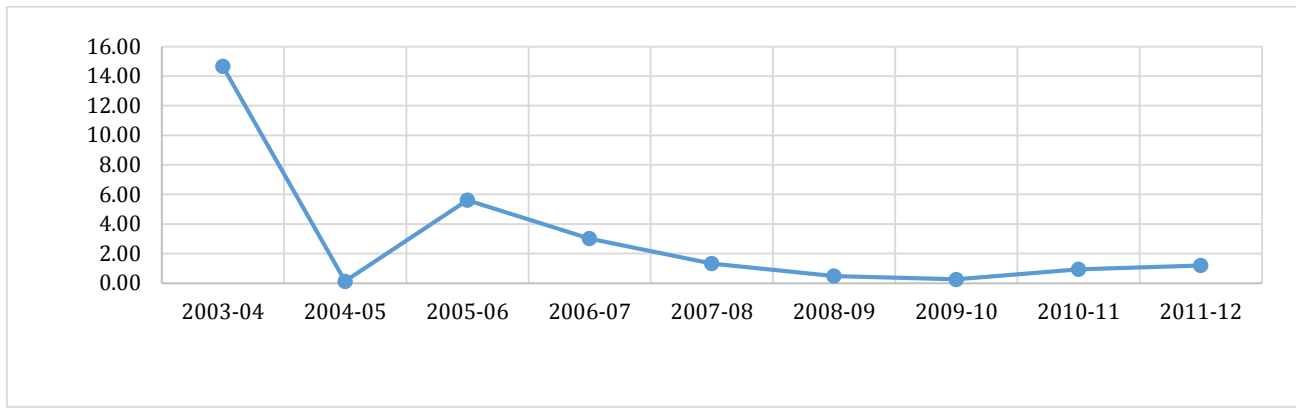


Figure 8. Market Distribution Effects (US\$ billions); Source: Author's own estimation using ITC Data.

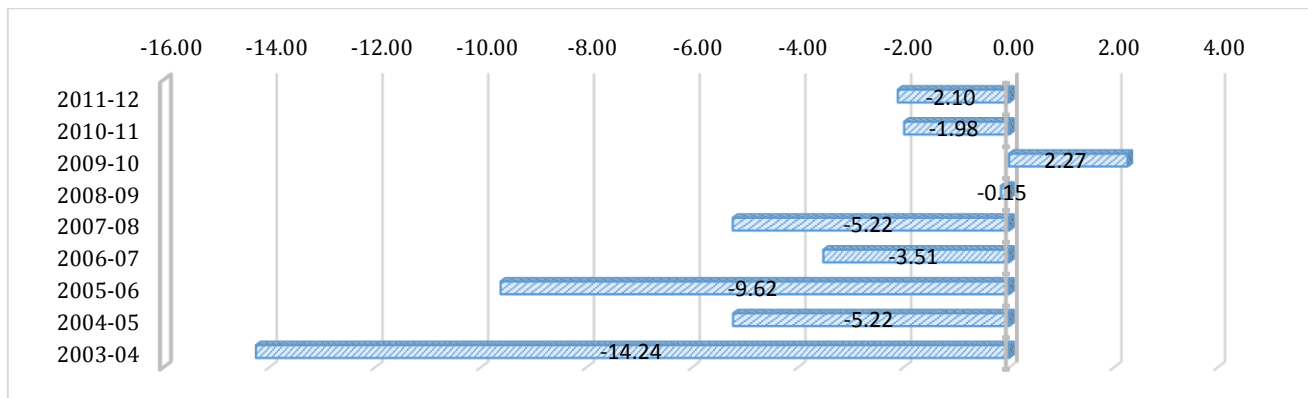


Figure 9. Competitiveness Effects (US\$ billions); Source: Author's own estimation using ITC Data.

Competitiveness Effects

The results (Figure 9) show that the Competitiveness Effect for the Central Asian Republic was primarily negative throughout the period 2003-12 except in 2009-10. The Competitiveness Effect for the Central Asian Republic was measured as positive as 2.27 million US\$. Moreover, the negative Competitiveness Effect value for the Central Asian Republic declined from (-) 14 million US\$ (2003-04) to (-) 2.10 million US\$ (2011-12). The share of Central Asian Republics in Pakistani exports decreased from 0.15% (2003) to 0.05% (2012), so this share is not sufficient to affect the total exports of Pakistan.

CONCLUSIONS AND POLICY RECOMMENDATIONS

The World Trade Effect is the most significant of the four components and has a large magnitude. While the effects of global trade and market distribution were favorable for Pakistani exports, the effects of commodity composition and competitiveness hindered the country's export expansion to Central Asian Republic markets. The fact that the nation's exports are heavily concentrated on a few commodities is one of the causes of the detrimental Commodity Composition Effect. The findings are comparable to those of Shah et al. (2022) and Irshad and Xin (2017). The study proposed that to encounter this problem, the government of the country should focus on commodity diversification, especially in the case of Pakistan. The authorities should encourage exporters to focus on the communities with HS Code 1001, 1302, 2207, 2610, 6103, 6104, and 9404, as these have a high growth rate of demand in international markets. Moreover, although the market distribution effect is positive for the commodities exported to central Asian republics by Pakistani exporters, these commodities have a minute share in the total imports of Central Asian Republics

from the world. As mentioned earlier in the study, with the expansion of one belt and one road, Pakistan could utilize this positive market distribution effect with the support of the transport infrastructure of OBOR (Wiseman et al., 2019). It is highly recommended to government authorities reap the benefit of transportation corridors with multiple streams. Pakistan can provide a trade route to china with OBOR and CPEC, but this route can also be used by Pakistani exporters to access the land-locked countries of central Asian republics (Kousar et al., 2018). Lastly, the study concluded that there is also a serious concern with the competitiveness in boosting Pakistani exports. Especially in the case of Central Asian Republics, it is causing a major hurdle for the export growth of Pakistan to Central Asian Republics. Uzma and Zafar (2013) found similar results for exports to Pakistan exports. Being Competitive is paramount and curial for the export growth of a country factor (Ruzekova, 2022). The study suggested that Pakistani exporters should plan to substitute current exports with exports of higher value-added products. So that they can have a higher bargaining capability in the international market; in addition, the government of Pakistan should provide necessary assistance to the exporter in the form of skill development and marketing of products. Also, the study recommends subsidies for export promotion by the government of Pakistan but only in the short run.

REFERENCES

- Ahmed, A., Tahir, H., 2015. Analysis for Pakistan's Export Growth to Great Seven (G7): An Application of CMSA. *Int. J. Sci. Eng. Res.* 6, 5.
- Ahmed, A., Wizarat, S., 2016. Exports of Pakistan in European markets (EU27): A Constant Market Share Analysis. *Int. J. Sci. Eng. Res.* 7, 520-529.

- Barbaros, R., Sedef, A., Osman, A., 2007. Competitiveness of Turkey's Organic Exports in the European Union Market. Paper presented at the 105th EAAE Seminar. International Marketing, and International Trade of Quality Food Products. Bologna. Italy.
- Clipa, P., 2012. The Analysis of the Competitiveness of Romanian Exports Using Constant Market Share Method. CES Work. Pap. 4, 502–511.
- Crespo, N., Maria, P. F., 2010. What determines the export performance? A comparative analysis at the world level. Working Papers (W.P. 27/2010/DE/UECE). Department Of Economics, School of Economics and Management. Technical University of Lisbon.
- European Central Bank, 2005. Competitiveness and the Export Performance of the Euro Area. Frankfurt, Germany: Task Force of the Monetary Policy Committee of the European System of Central Banks.
- Felipe, J., McCombie, J.S.L., Naqvi, K., 2010. Is Pakistan's growth rate balance-of- payments constrained? policies and implications for development and growth. Oxford Dev. Stud. 38, 477–496. <https://doi.org/10.1080/13600818.2010.525351>.
- Furuoka, F., 2018. A new causality test for the analysis of the export-growth nexus. MPRA Paper 91467. University Library of Munich. Germany.
- Hailin, L., Xiao, H. L., 2009. Export-total factor productivity growth nexus in East Asian economies. Appl. Econ. 41, 1663–1675. <https://doi.org/10.1080/00036840601032193>.
- International Trade Centre (ITC), 2019, Trade maps: Trade statistics for international business development. International Trade Center, Geneva, Switzerland.
- Irsahd, M.S., Xin, Q., 2017. Determinants of Exports Competitiveness: An Empirical Analysis through Revealed Comparative Advantage of External Sector of Pakistan. Asian Econ. Financ. Rev. 7, 623–633. <https://doi.org/10.18488/journal.aefr.2017.76.623.633>.
- Islam, M.S., Alsaif, S.S., Alshammari, A.F., 2022. Export-Growth Nexus in the Kingdom of Saudi Arabia: a Nonlinear Ardl Approach. Singapore Econ. Rev. 1–17.
- Jepma, C.J., 1986. Extensions of the Constant-Market-Shares Analysis with an Application to Long-term Export Data of Developing Countries. Palgrave Macmillan. London.
- Kamal, A.M., Qayyum, U., Khan, S., Ngozi Adeleye, B., 2022. Who is Trading Well with China? A Gravity and Constant Market Share Analysis of Exports of Pakistan and ASEAN in the Chinese Market. J. Asian Afr. Stud. 57, 1089–1108. <https://doi.org/10.1177/00219096211045098>.
- Kithsiri, K.H.S.K., Jayamanna, V.S., Abewickrama, L.M., 2020. Evaluation of Competitiveness of Ceylon Tea in the World Market. Sri Lankan J. Agric. Ecosyst. 2, 89. <https://doi.org/10.4038/sljae.v2i1.31>.
- Kousar, S., Rehman, A., Zafar, M., Ali, K., Nasir, N., 2018. China-Pakistan Economic Corridor: a gateway to sustainable economic development. Int. J. Soc. Econ. 45, 909–924. <https://doi.org/10.1108/IJSE-02-2017-0059>.
- Kwasi, A. F., 1990. Exports and economic growth: The African case. World Dev. 18, 831–835. [https://doi.org/10.1016/0305-750X\(90\)90005-I](https://doi.org/10.1016/0305-750X(90)90005-I).
- Leamer, E.E., Stern, R.M., 1970. Quantitative International Economics, Boston: Allen & Bacon.
- Maqbool, S., Anwar, S., Mahmood, T., 2019. Competitiveness, Diversification and Pakistan's Export Performance of Leather and Leather Products; A Constant Market Share Analysis. Eur. Online J. Nat. Soc. Sci. Proc. 8, 141–152.
- Nidhi, B., Saba, I., 2019. Export Performance of China: A Constant Market Share Analysis Front. Econ. China. 14(1), 110–130.
- Ronald, R.K., 2011. Do Remittances, Exports and Financial Development Matter for Economic Growth? A Case Study of Pakistan using Bounds Approach. J. Int. Acad. Res. 11, 18–26.
- Rudy, R., Masaru, I., 2012. How do Export Structure and Competitiveness Evolve Since Trade Liberalization? An Overview and Assessment of Indonesian Manufacturing Export Performance. Int. J. Trade, Econ. Financ. 3, 272–280. <https://doi.org/10.7763/ijtef.2012.v3.213>.
- Ruzekova, V., Kittova, Z., Steinhauser, D., 2020. Export performance as a measurement of competitiveness. J. Compet. 12, 145–160. <https://doi.org/10.7441/joc.2020.01.09>.
- Shah, S.H., Kamal, M.A., Yu, D.L., 2022. Did China-Pakistan free trade agreement promote trade and development in Pakistan? Int. J. Financ. Econ. 27, 3459–3474. <https://doi.org/10.1002/ijfe.2331>.
- Shahbaz, M., Khalil, A., Muhammad, A.A., 2009. Exports-Led Growth Hypothesis in Pakistan: Further Evidence. Munich Personal RePEc Archive Number 33617.
- Shuai, J., Chen, C. fei, Cheng, J., Leng, Z., Wang, Z., 2018. Are China's solar PV products competitive in the context of the Belt and Road Initiative? Energy Policy 120, 559–568. <https://doi.org/10.1016/j.enpol.2018.05.042>.
- Tyszynski, H., 1951. World Trade in Manufactured Commodities, 1899-1950. Manchester Sch. 19, 272–304. <https://doi.org/10.1111/j.1467-9957.1951.tb00012.x>.
- Uzma, Z., Zafar, M., 2013. Exchange rate depreciation and export price competitiveness: The case of Pakistani manufacturing industries. J. Asia Pacific Econ. 18, 529–542. <https://doi.org/10.1080/13547860.2012.742722>.
- Wiseman, Y., Alam, K. M., Li, X., Baig, S., 2019. Impact of transport cost and travel time on trade under China-Pakistan economic corridor (CPEC). J. Adv. Transp. 2019. <https://doi.org/10.1155/2019/7178507>.
- Wizarat, S., Iftikhar, K., Kamran, A. N., 2009. Major determinants of export growth. Pakistan Business Review. 11, 2.
- Yan, L., Xun, P.S., James, L., 2020. Dynamics of Australia's LNG export performance: A modified constant market shares analysis. Energy Econ. 89. <https://doi.org/10.1016/j.eneco.2020.104808>.
- Yaya K., 2018. The Causal Nexus between Exports and Economic Growth: Evidence on the Role of Omitted Variables. Int. J. Econ. Financ. Issues 8, 335–344.

APPENDIX

Table A. Share of Commodities in the Total Exports of Pakistan.

HS Code	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
'1006	5.3	5.1	6.8	6.8	6.4	12	10.1	10.6	8.1	7.6
'4203	3.5	3.5	3.9	3.7	3.7	3.7	3.1	2.8	2.6	2.6
'5205	8	8.1	7.6	8.4	7.8	5.9	7.3	7.6	7.7	8.5
'5208	5.8	4.3	4.5	4.2	3.7	3.8	3.1	3.1	3.1	3
'5209	0.5	0.7	0.6	1.5	2.1	2.8	3.1	3.3	3.7	4.4
'5210	3.2	4	4.6	3.7	3	3.4	2.1	1.9	2.1	2
'5212	2.4	3.7	2.8	2.4	1.7	0.8	1	0.9	1	0.9
'6105	4.6	4.7	3.8	4.1	3.4	2.8	2.7	2.7	2.5	2.2
'6203	3.5	2.9	3.7	3.7	4	3.9	4	4	3.7	3.7
'6302	15.6	13.5	15.9	16.1	14.4	12.5	13.6	12.3	11.2	10.2
'6307	1.9	1.5	1.6	1.5	1.7	1.6	1.5	1.6	1.5	1.5
Aggregate	54.3	52	55.8	56.1	51.9	53.2	51.6	50.8	47.2	46.6

Source: Author's own estimation using ITC Data.

Publisher's note: Science Impact Publishers remain neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0/>.