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TRADE INTENSITY AND REVEALED COMPARATIVE ADVANTAGE IN AGRICULTURAL COMMODITIES: AN ANALYSIS FOR PAKISTAN AND CHINA

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ABSTRACT

China and Pakistan share a longstanding partnership that has deepened over the years, particularly through initiatives like the China-Pakistan Economic Corridor (CPEC). China is investing $46 billion in the CPEC program, including infrastructure, energy, and agriculture. Extant research was planned to identify the comparative advantage of both countries in the agriculture sector. Further, this study measures the overall trade intensity and trade trend during 2004 through 2023. . The analysis reveals that Pakistan has an enormous trade deficit. Overall bilateral trade shows an increasing trend both in export and import. Out of 37 agriculture commodities, Pakistan has a comparative advantage in 11 agriculture commodities, whereas China has a comparative advantage in 9. The study further discloses that Pakistan's export trade intensity has decreased, and import trade intensity has increased since 2013. However, the RCA index of different commodities indicates a statistically significant advantage of Chinese products over Pakistani products. Furthermore, the Pakistani government should formulate favourable policies for higher growth of sectors with high comparative advantage; ultimately, this can increase earnings from exports, create employment opportunities, and increase global competitiveness.

Keywords: China-Pakistan, Revealed Comparative Advantage, Trade intensity, Export, Import

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INTRODUCTION

Reducing trade barriers help create a competitive business environment. It opens new doors for sustainable transfer of technology, leading to growth in production and redesigning traditional value chains to follow best practices based on comparative advantage (Batra and Khan, 2005). Pakistan and China as members of the World Trade Organization (WTO), have undertaken several economic reforms to liberalize international trade in recent decades. Pakistan, as per signed article No. XXIV of the General Agreement on Tariffs and Trade must reduce bilateral and regional trade barriers, especially obstructions of a financial nature, which can distort trade. However, both countries have different economic structures. Moreover, China has diversified its export products/goods to Pakistan, and these exports are in greater volume than those of Pakistan (Fazal-ur-Rahman, 2011). On the other hand, Pakistan has great export potential for different agricultural commodities in the Chinese market (Shabir and Kazmi, 2007).

Globalization has led to the development of competitive global supply chains due to increasing compliance with international standards, such as quality, safety, and environmental regulations (Kano *et al*., 2020). Nevertheless, the labor-intensive value chains in Pakistan are downgrading and becoming less competitive due to a lack of value addition at the farm level and insufficient development efforts. These labour-intensive industries have a significant impact on the livelihoods of rural areas but are still looking for the keen attention of policy makers. Factors that may hinder the productivity and efficiency of these industries are energy crisis, lack of local or foreign investments, exchange rate fluctuation and lack of infrastructure (Abbas and Waheed, (2017). Business people of generic origin are transferring their capital investments to real estate or other countries worldwide.

Free trade benefits the people of both countries by allowing them to trade specific commodities in which they have a comparative advantage, and its impact varies

depending on the economic conditions and trade policies of each country. The WTO has compelled compliant nations to reduce trade barriers, achieve sustainable production through technological advancement, and take new initiatives for revolutionary changes in their economic structure to exploit comparative advantage (Sampson, 2008). China and other ASEAN countries have a better comparative advantage due to the low cost of factors of production. In particular, China is successfully designing sustainable and consumer-driven chains for quality-oriented consumers in developed countries and priority-sensitive consumers in developing countries. On the other hand, political instability, varying socio-economic conditions and lack of access to modern technologies are the main obstacles to taking steps towards sustainable and free trade.

Pakistan's agribusiness and manufacturing sectors demonstrate significant competitiveness in the global market, particularly in key export commodities. For instance, the country holds a strong comparative advantage in raw cotton, raw leather, cereals, and fruits, with raw cotton standing out due to its high Revealed Comparative Advantage (RCA) value of 54.46 (Abbas and Waheed, 2017). This indicates that the agricultural sector is highly competitive, especially in raw materials. The value-added sectors, including textiles, carpets, sports goods, and beverages, also perform well, reflecting Pakistan's ability to compete both in raw exports and in processed goods, contributing significantly to its export receipts.

The footwear industry, meanwhile, holds considerable growth potential, particularly in leather-based footwear. During the mid-2000s, the sector showed promise, but its future competitiveness depends heavily on policy adjustments that align with global shifts and value-add opportunities (Akhtar *et al*., 2008). Addressing these policy gaps could help Pakistan capitalize on its footwear industry's growth potential.

When examining Pakistan's manufacturing industries, the carpet and textile sectors reveal a mixed performance. While Pakistan has a comparative advantage in several products, other regional players, such as China, dominate the market (Yasmin and Altaf, 2014). Despite this, Pakistan maintains a foothold in specific competitive niches, although sectors like footwear face obstacles that could inhibit long-term growth. This contrast highlights the need for targeted industry interventions that could help resolve persistent challenges, particularly in the context of global competitiveness.

In South Asia, countries like China and India have shown varying levels of comparative advantage across numerous sectors. China's dominance across 47 industries and over 1,800 products between 2000 and 2003 illustrates its robust competitive position in electronic goods, leather products, organic chemicals, toys, and cotton (Batra and Khan, 2005). By contrast, India faced an aggregate disadvantage yet retained some advantages in specific sectors like apparel and cotton. This divergence in competitiveness emphasizes the varying levels of industrial development and trade strategy in the region, with China emerging as a global powerhouse during this period.

On a broader scale, the United States's competitive standing in key industries, such as yarn and fabric, lags behind countries like China, Pakistan, India, and Turkey. Low production costs in these South Asian countries contribute to their stronger competitive positioning in the global textile market, underscoring the importance of cost-efficiency as a driving factor in maintaining international competitiveness. The U.S., by contrast, needs to work on keeping pace due to narrower profit margins.

Further analysis of global competitiveness shows that China continues outperforming the U.S. in low-technology goods in both U.S. and world markets, reinforcing China's stronghold in sectors characterized by low production costs but high export volumes (Wei and Zhao, 2015). This trend highlights China's sustained dominance in international trade, particularly in industries that benefit from its manufacturing efficiency. The apparel markets of India and Bangladesh have also seen notable improvements in their comparative advantage, particularly between 1995 and 2003. The number of Indian products with a comparative advantage increased, while Bangladesh experienced even more significant growth, reflecting the positive structural changes in these economies (Mohan, 2013). These shifts illustrate the growing role of South Asian countries in the global apparel industry, fueled by competitive pricing and expanding production capacities.

Pakistan's textile sector, in particular, has benefited from increased global involvement, which has bolstered its competitiveness over the years. Financial development has played a crucial role in this enhancement, as countries with more advanced financial institutions are better positioned to sustain their comparative advantage in international markets (Hanif and Jafri, 2008; Jayawickrama and Shandre, 2010). This suggests that financial infrastructure is a key determinant of long-term global competitiveness beyond cost efficiency and policy reforms. Overall, the evidence points to the complex interplay of factors that influence the competitive position of South Asian economies, especially Pakistan. Policy reforms, cost-efficient production, and robust financial systems can strengthen Pakistan's export potential, particularly in textiles, footwear, and agriculture sectors. By addressing sector-specific challenges and fostering excellent financial development, Pakistan could enhance its role in the global market, ensuring sustained growth and

competitiveness across its agribusiness and manufacturing sectors.

Pakistan is transforming its agricultural development policies to align with the WTO's green box to minimize the practices that can distort international trade. Policymakers have diverted their attention towards bilateral agreements to get long-term benefits from commodities that have comparative advantages (Suleri, 2003). Pakistan and China are establishing friendly and long-lasting trade ties, as China is one of the largest food-importing countries (Mughal and Hamza., 2022). The developed nations have been critically analyzing and examining the gaps through extravagant and effective policies for the agriculture sector. However, developing countries are showing ignorance and are not giving due attention. Like other developing countries, Pakistan needs to provide more support to goods manufacturers and exporters. Furthermore, our country lacks industrial and needs regulatory infrastructure in most potential growth sectors.

China invests about US$46 billion in Pakistan under the China-Pakistan Economic Corridor Program (CPEC). These development projects by the Chinese government are equal to about 20 per cent of Pakistan's Gross Domestic Product (GDP) (Andrew, 2015). This partnership between the two brotherly nations has strengthened over time; it took five decades to reach this new millennium. Secondly, these joint ventures have influenced the politics of South Asia. However, there are multidimensional perspectives of cooperation open between both nations (Javaid and Jahangir, 2015). However, these development projects include both energy generation (17000 MW) and infrastructure projects (railways and roads) (Saeed, 2015). The climate of most South Asian countries is temperate, with a lengthy coastline. Abundant rainfall produces diverse agricultural commodities, leading to comparative advantage in many products like tobacco, vegetables and fruits, coffee, tea, cocoa, spices, cereals, etc. Moreover, Pakistan and India are the regions that are vital producers of agricultural products like grain, cotton, and fruit. The trade value between Pakistan and China is improving daily, but Pakistan is facing a trade deficit. Further, Revealed Comparative Advantage values vary from commodity to commodity among Pakistan, China, and other countries (Irshad *et al.,* 2017; Ahmad *et al*., 2021).

In particular, the extant research examines the structure and potential of different agricultural commodities based on revealed comparative advantage for both Pakistan and China in comparison with the world prices, individually and within an integrated framework. Subsequently, the comparative advantage is analyzed for both economies involved in this paper. The pattern of trade intensity is also investigated for variation among different South Asian countries over the period 2004-2023. Moreover, this study is aimed at contributing to literature and was considered important to explore the structure of comparative advantage between Pakistan and China, the extent to which the economies of the two brotherly nations compete in the global market to act in the best interest of humanity in areas of comparative advantage.

Objectives: The study has been planned on following objectives:

i. To determine the trend and balance of trade between Pakistan and China
ii. To prioritize the leading agribusiness commodities in terms of their revealed comparative advantage in Pakistan and China
iii. To determine/measure the flow of trade between the China and Pakistan through trade intensity model

MATERIALS AND METHODS

This study provides a detailed overview of reciprocal trade between Pakistan and China. Data were collected from secondary sources, e.g., the International Trade Centre (ITC) and the Pakistan Bureau of Statistics (PBS). Data were analyzed using Microsoft Office (Excel), and different statistical tools were employed to perform the trend analysis and measure the Revealed Comparative Advantage and trade intensity between China and Pakistan. Explanations of statistical tools used in this study are given below:

Trend Analysis: $Yc = a\ (x) + b$

Revealed Comparative Advantage (RCA): The RCA can be explained as if the value (RCA) of country X is more significant than country Y. Country X has a high probability of having a comparative advantage in the product, and it is reliable with changes in economy and relative to factor endowment and productivity. However, it cannot differentiate the enhancement in factor endowments and finding of appropriate trade policies of a country (Batra and Khan, 2005). The formula used to measure the RCA is premised on the following:

$$RCA = (X_{ij}/X_{wj})/(X_i/X_w)$$

X_{ij} = Export of Country 1 (Pakistan) in Commodity j

X_{wj} = Export of world in Commodity j

X_i = Country 1 (Pakistan) total export

X_w = World Total Export

Trade Intensity: The trade intensity (Export and Import) imitates a ratio, i.e., the share of country i in the country's trade relative to the share of world trade involving

country j. The greater and lesser trade intensity index depends upon the unit value. A value greater than one indicates more trade flow and less than one indicates less trade flow between the two countries. Further, the 0 value implies no trade between the countries. If the country has a trade intensity greater or less than one, it indicates the country traded (export or import) with another country. It may also be expected from that country's share in total world trade. The formulas used to measure the trade intensity are given below:

Export Intensity Index: $XIIij = (Xij/Xi)/(Mj/(Mw - Mi))$

XII_{ij} = Country I export intensity index with country j
X_{ij} = Country I export to country j
X_i = Country I total exports
M_j = Country j total imports
M_w = World total imports
Mi = Country I total imports
I,j = Pakistan, China

Import Intensity Index:

$$MIIij = (Mij/Mi)/(Xj/(Xw - Xi))$$

MII_{ij} = Country i trade intensity indes with country j
M_{ij} = country i imports with its partner country j
M_i = Country i total imports
X_j = Country j total exports
X_w = World's total exports
X_i = Country i total exports
I,j = Pakistan, China

RESULTS AND DISCUSSION

The results and discussion are divided into three sections: I, II, and III. Section I explains the trend analysis between China and Pakistan. It will explain both countries' overall trade balance and export and import trends. Section II addresses the revealed comparative advantage in agriculture commodities of both countries. It will also make clear which agricultural commodities from China and Pakistan have a comparative advantage. Section III explains the results of trade intensity (export and import) during the entire study period (2000-23).

SECTION I

Trend Analysis: The trend analysis has been made on 20 years of data (2004-2023) of Pakistan and China's overall import and export data, and results are depicted in Table 1. The results showed that Pakistan had a trade deficit throughout the study period, meaning that Pakistani exports were lower than China. Furthermore, the value in the balance of trade column consistently increased negatively.

Table-1 Balance of trade and Trend Analysis between Pakistan and China.

Year	Pakistan Export to China (Thousand US ($)) (000)	Pakistan import from China US ($) (000)	Balance of trade US ($) (000)	Export Trend Analysis Yc_1 US $ (000)	Import Trend Analysis Yc_2 US $ (000)
2004	300.58	1139.816	-839.236	586.53	902.61
2005	435.68	2349.39	-1913.71	697.01	1770.08
2006	506.64	2914.92	-2408.28	807.49	2637.55
2007	613.75	4164.23	-3550.48	917.97	3505.02
2008	726.71	4738.05	-4011.34	1028.45	4372.49
2009	997.85	3779.76	-2781.91	1138.93	5239.96
2010	1435.94	5247.71	-3811.77	1249.41	6107.43
2011	1678.95	6470.65	-4791.7	1359.89	6974.9
2012	2619.94	6687.56	-4067.62	1470.37	7842.37
2013	2652.22	6626.32	-3974.1	1580.85	8709.84
2014	2252.9	9588.41	-7335.51	1691.33	9577.31
2015	1934.92	11019.01	-9084.08	1801.81	10444.78
2016	1590.85	13680.15	-12089.3	1912.29	11312.25
2017	1510.41	15404.32	-13893.91	2022.77	12179.72
2018	1829.43	14599.74	-12770.31	2133.25	13047.19
2019	2042.89	12423.99	-10381.1	2243.73	13914.66
2020	1867.03	12486.52	-10619.49	2354.21	14872.13
2021	3,589.80	20,765.00	-17,175.20	2,464.69	15,739.60
2022	3,575.00	16,344.00	-19,494.00	2,575.17	16,607.07
2023	3,641.90	11, 777.00	-22,208.10	2,685.65	17,474.54

Source: Author's own calculations from secondary data

An increasing trend can be seen in the value of exports from Pakistan to China, but during 2010-12, the increase rate was much higher than in previous years (Irshad and Xin, 2015). Many factors could support this hike in exports, such as the WTO's implementation of agreements that smoothed trade and the reduction of restrictions on trade (Karim and Jan, 2016). This trend thus can support the hypothesis partially that Global trade, including Pakistan, can be sustainable if the regime of the WTO about free trade is implemented in the true spirit.

On the other hand, the import trend analysis showed that imports between Pakistan and China increase yearly. Fig 2 shows the dynamics of import trends in graphical form. Further, the graphs clearly show Pakistan's import trend from China. Moreover, the trade balance shows that trade has favoured China throughout the study period. This Import trend indicates a substantial import increase from China during 2013-17. Chinese imports from many countries declined during this period (TDAP, 2017). Therefore, it could be the reason for increased exports of China to Pakistan due to strategic location advantage.

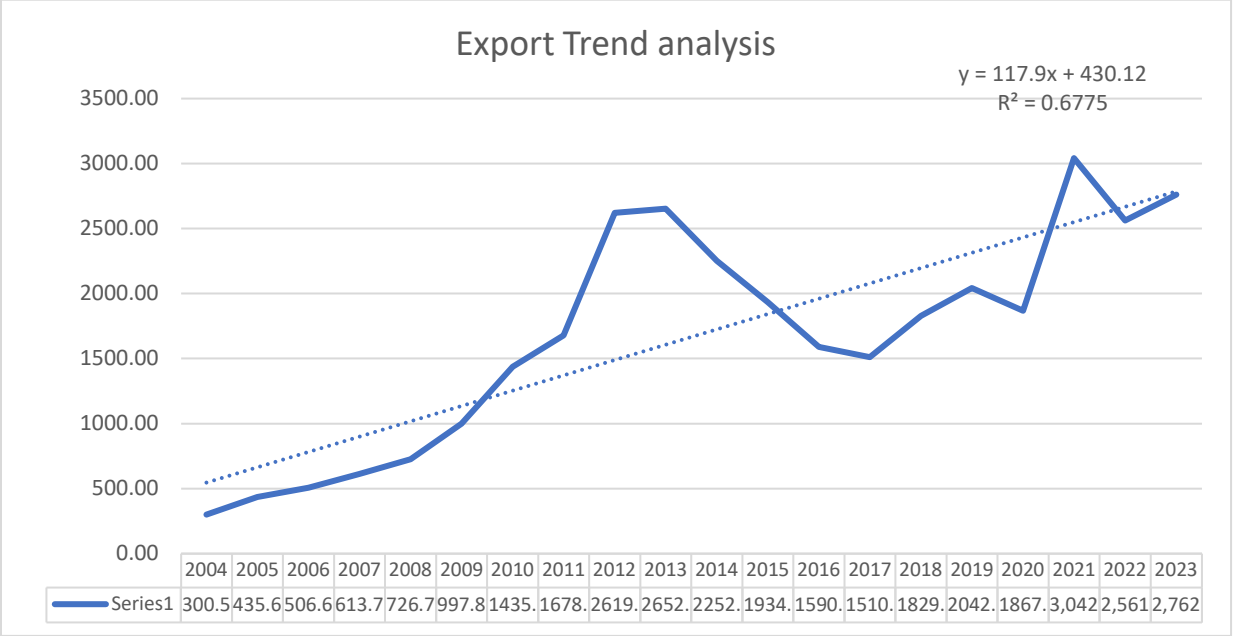

Fig. 1: Graphical representation of the trend of Pakistan's Export to China

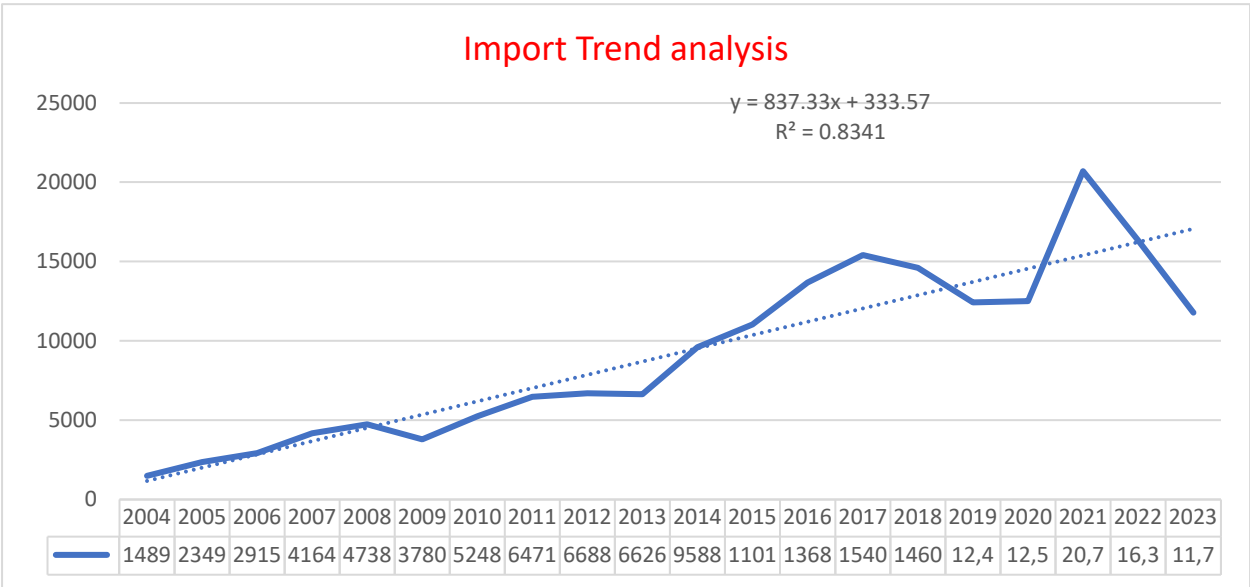

Fig-2: Graphical representation of Import trend analysis between Pakistan and China

SECTION II

***Revealed comparative Advantage*:** Revealed that Comparative Advantage analysis was conducted for 26 commodities/groups of commodities, and the results are depicted in Table 2. The result shows that Pakistan's RCA index in 11 commodities is greater than that of unity. However, China has nine commodities for which it achieves an RCA index greater than unity. This means that Pakistan enjoys a comparative advantage in 11 commodities, such as rice, citrus fresh or dried dates, potatoes, onions, dried vegetables, and cotton. The commodity-wise analysis explored that RCA for rice is increasing yearly until it reaches its maximum in 2008 and starts declining with little growth. In the case of citrus, the Ratio increased gradually until 2015 and decreased slightly since 2020. Mango and dates showed a mixed fluctuation trend in the RCA ratio, reaching a maximum in 2013, and a slow decline was observed during the last decade (Akhtar *et al*., 2009). RCA for cotton was at a maximum during 2009, then gradually decreased (Zaheer *et al*., 2015).

On the other hand, China enjoys a comparative advantage in 9 commodities such as fruits and nuts, Apple pears and quinces, onion shallots, garlic, dried vegetables, provisionally preserved vegetables, cotton, etc. The comparative results of the RCA index indicate that in some commodities, both countries have comparative advantages, e.g., onions, shallots, garlic, dried vegetables, uncooked or cooked and cotton. Further, the results of the RCA index revealed that Pakistan has a more significant comparative advantage than China in cotton and onion shallots garlic because the more significant the RCA index of a country, the stronger the advantage. Nevertheless, China has a higher RCA index in dried vegetables and vegetables cooked or uncooked than Pakistan (Erdem, 2020). The results contradict China's notion of having a substantial comparative advantage in agricultural commodities. Previously, this different impression was supported by literature about China's exports because of the increasing trade deficit at a larger scale (Ali, 2017).

SECTION III

***Trade (Export and Import) Intensity Index*:** Trade intensity (Export and Import) is the ratio of both countries' trade share relative to the world's contribution. The trade intensity index highlights the sector's strength and indicates the projected trade flow between the countries. The results of the trade (Export and Import) intensity index between Pakistan and China are given in Table 3. The table demonstrates that only the import intensity index of Pakistan from China is greater than the unity value in the entire study period. This means that China and Pakistan have traded below their potential. However, the export intensity index from Pakistan to China is overall more significant than that of China throughout the study period, and the results show that export intensity, either China to Pakistan or Pakistan to China, is somewhat constant and below the unity (Ahmad *et al*., 2024).

Moreover, the graphical illustrations in Fig-3 and Fig-4 clearly show China and Pakistan's overall ofand export intensities. The export intensity from Pakistan to China fluctuated until 2012. In 2013, it achieved unity, but it began declining continuously. In 2014, it achieved unity again but was lesser than in 2013 and thus continued its falling trend (Mall, 2014). Therefore, it indicates the export potential from Pakistan to China. However, the intensity of exports from China to Pakistan is much lower than its potential. This is realistic because China's overall exports are very high compared to Pakistan. However, China has immense export potential to serve the Pakistani markets.

The import intensity of Pakistan from China showed a fluctuation trend up to 2012, and then an increasing trend prevailed. However, the import intensity of Pakistan from China was more significant than unity throughout the study period except in the last three years, when its value gradually increased slower (Abbas and Waheed, 2017). The import intensity of China from Pakistan fluctuated, but continuously after that, it declined, although a slight increase after 2019 was visible (Khan *et al*., 2019). During 2014, it was more significant than unity, but the value in this year was lower than in 2013. Therefore, it fell into a decreasing trend. However, the trade intensity in 2014 and 2015 remained constant, but after that, it again followed a decreasing trend in 2016 and increased after 2019.

The China-Pakistan Free Trade Agreement (FTA) 2006 was enacted in 2007. The objectives of the FTA were to strengthen relationships, encourage diversification and expansion, eliminate trade barriers, facilitate the movement of goods across the border, and determine the parameters for further economic cooperation between the two countries. After the signing of this FTA, trade patterns between China and Pakistan generally improved; however, Pakistan's trade deficit has widened (Shabir and Kazmi, 2007). It has been observed that post-FTA, while the trade pattern between China and Pakistan improved, the trade deficit on Pakistan's side increased. In the current scenario, Pakistan gains more in bilateral trade because of a positive correlation regarding Pakistan's exports to China. However, China's GDP is growing faster than Pakistan's (Irshad *et al*., 2017). It is also observed that FTA had not achieved the objective, i.e., strengthening the trade by providing more profound access to each other's markets, because FTA had only 35.5% (2681 of 7550) tariff elimination product line (however, 1400 products did not record any exports in 2012,), 15% each in marginal and no concession. This means that this FTA shows narrow exposure compared to

Table 2: Pakistan's Revealed Comparative Advantage

Sr No	Product	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	Wheat and meslin	2.45	0.83	0.06	0.01	10.16	0.69	0.60	0.13	0.06	0.04	0.02	0.64	1.30	0.00	1.18	0.54	1.92
2	Oats	0.00	0.00	0.00	0.00	0.00	0.00	8.57	0.00	0.00	199.44	400.76	0.00	78.66	0.00	0.00	1.34	4.56
3	Rice	66.98	90.01	64.90	79.34	60.48	58.42	61.46	63.06	61.59	63.91	57.42	62.76	74.16	63.81	63.45	68.23	66.78
4	Maize or corn	0.01	0.59	1.61	0.06	1.46	2.07	0.65	0.07	0.30	0.32	0.17	0.02	0.65	0.27	1.09	0.75	1.47
5	Millet , Buckwheat, canary seed other cereals etc.	0.12	0.14	0.23	0.04	0.18	1.48	0.09	0.01	0.08	0.13	0.55	0.34	1.78	2.11	2.11	1.82	2.63
6	Barley	0.18	0.03	0.00	0.01	0.06	0.00	0.01	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.01
7	Grain sorghum	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.02	0.00	0.00	0.02	0.03
8	Rye	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.00
9	Citrus fresh or dried	3.01	3.66	4.76	6.59	8.25	9.67	9.74	11.23	10.88	9.92	8.08	9.72	9.05	9.97	10.31	11.18	9.76
10	Watermelons, Melons and papaws (papayas), fresh	0.49	0.23	0.15	0.49	1.04	0.48	0.05	0.27	0.15	0.22	0.41	0.29	0.28	0.09	0.31	0.14	0.23
11	Banana incl. plantains fresh or dried	0.11	0.47	1.10	1.33	1.98	1.10	2.48	1.24	1.53	1.63	1.17	1.47	1.85	1.30	1.64	1.78	1.49
12	dried apricots, apples, peaches, pears etc.	4.52	5.79	12.63	9.88	7.95	11.64	25.51	24.39	21.06	18.95	9.23	10.14	5.50	5.90	6.78	5.92	7.34
13	Grapes fresh or dried	0.08	0.04	0.05	0.03	0.02	0.01	0.01	0.13	0.07	0.00	0.01	0.00	0.00	0.01	0.00	0.03	0.05
14	Strawberries fresh and other berries	0.61	0.25	0.25	1.65	0.42	0.39	0.37	0.29	0.79	0.43	0.50	0.30	0.33	0.18	0.25	0.19	0.37
15	Mangoes and dates, avocados, figs etc.	11.28	10.51	11.83	10.51	12.06	13.74	13.72	10.54	10.43	12.51	9.70	11.44	9.32	8.50	8.42	7.89	8.91
16	Potatoes fresh or chilled	7.84	4.65	10.26	9.30	15.59	16.88	20.62	9.02	24.65	15.17	14.99	22.55	18.07	12.64	14.23	13.47	15.71
17	Other vegetables fresh or chilled	0.81	0.39	0.34	0.95	3.36	0.62	3.14	2.02	2.61	2.58	2.22	1.68	1.44	0.71	1.67	2.38	2.99
18	Dried vegetables whole cut slices or powder	3.73	1.76	1.05	0.81	1.49	1.81	2.49	3.81	2.54	0.59	0.46	0.25	0.37	1.56	1.23	1.45	1.78
19	Dried leguminous vegs	0.93	0.50	0.00	0.00	0.33	0.61	0.49	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.45	0.22	0.33

	(Shelled)																
20	Turnip salad beetroots, carrots radishes etc.fresh	0.20	0.12	0.64	0.00	0.24	0.15	0.01	0.01	0.03	0.02	0.07	0.06	0.04	0.10	0.12	0.14	0.17
21	Leguminous vegetables	1.06	0.59	0.26	0.06	2.26	1.70	0.32	0.51	0.61	0.58	0.48	0.82	0.72	0.42	0.55	0.67	0.71
22	Vegetables steamed	0.17	0.28	0.62	3.96	3.41	3.54	2.30	3.91	1.07	1.91	1.13	1.79	2.38	2.69	1.45	2.11	2.29
23	Cabbages and cauliflowers etc.	0.09	0.06	0.15	0.04	0.13	0.03	0.02	0.05	0.20	2.38	3.27	4.36	2.04	2.78	1.89	2.02	1.91
24	Vegetables preserved by SO_2 etc.	0.13	0.01	0.01	0.01	0.19	2.28	0.99	0.33	0.28	1.23	0.13	0.55	0.33	0.56	0.89	0.94	1.02
25	Tomatoes fresh or chilled	0.01	0.06	0.50	0.10	1.55	0.37	0.18	0.45	0.31	0.84	0.07	0.74	0.45	0.28	1.09	1.23	1.34
26	Cotton	93.89	80.26	104.57	75.44	66.07	75.97	85.44	94.26	97.36	85.90	70.39	61.43	56.42	44.48	43.89	45.67	47.12

Table 3: China's revealed comparative advantage

Sr No	Product	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1	Wheat and meslin	0.18	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Oats	0.01	0.00	0.00	0.00	0.00	0.07	0.78	113.05	85.29	3.44	69.58	105.38	59.99	0.00	0.00	0.00	0.00
3	Rice	0.41	0.25	0.28	0.20	0.17	0.10	0.14	0.11	0.08	0.13	0.19	0.26	0.33	0.24	0.24	0.33	0.26
4	Maize or corn	0.48	0.03	0.02	0.01	0.01	0.03	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
5	Millet , Buckwheat, canary seed other cereals etc.	1.43	0.91	0.82	1.00	1.08	0.59	0.44	0.34	0.29	0.27	0.28	0.26	0.25	0.16	0.16	0.25	0.28
6	Barley	0.06	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Grain sorghum	0.39	0.20	0.13	0.14	0.16	0.11	0.05	0.02	0.01	0.05	0.10	0.14	0.13	0.04	0.04	0.13	0.10
8	Rye	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Citrus frsh or dried	0.34	0.47	0.59	0.52	0.58	0.72	0.75	0.72	0.72	0.73	0.60	0.65	0.68	0.66	0.66	0.65	0.72
10	Watermelons, Melons and papaws (papayas), fresh	0.07	0.09	0.13	0.14	0.18	0.23	0.26	0.30	0.38	0.39	0.32	0.26	0.37	0.31	0.31	0.37	0.39
11	Banana incl. plantains fresh or dried	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
12	dried apricots, apples, peaches, pears etc.	0.61	0.56	0.55	0.47	0.43	0.40	0.37	0.36	0.36	0.37	0.30	0.40	0.43	0.46	0.46	0.40	0.43
13	Grapes fresh or dried	0.13	0.14	0.22	0.21	0.28	0.33	0.31	0.35	0.65	0.59	0.61	0.56	0.77	0.78	0.78	0.77	0.78
14	Strawberries fresh	0.06	0.06	0.11	0.13	0.14	0.17	0.19	0.17	0.25	0.16	0.13	0.12	0.16	0.17	0.17	0.16	0.12

	and other berries																	
15	Mangoes and dates, avocados, figs etc.	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.04	0.05	0.03	0.04	0.04	0.04	0.03	0.02
16	Potatoes fresh or chilled	0.27	0.26	0.36	0.27	0.35	0.32	0.23	0.51	0.44	0.43	0.50	0.46	0.59	0.45	0.45	0.46	0.56
17	Other vegetables fresh or chilled	0.25	0.22	0.25	0.27	0.32	0.29	0.26	0.31	0.33	0.37	0.42	0.41	0.39	0.39	0.39	0.38	0.37
18	Dried vegetables whole cut slices or powder	5.27	5.04	5.10	6.01	6.40	4.97	5.27	4.95	4.67	5.04	5.38	5.29	4.79	3.72	3.72	3.84	4.01
19	Dried leguminous vegs (Shelled)	1.17	1.32	1.14	1.03	1.02	0.92	0.89	0.60	0.41	0.43	0.39	0.45	0.39	0.27	0.27	0.33	0.45
20	Turnip salad beetroots, carrots radishes etc.fresh	1.55	1.50	1.53	1.78	1.89	1.89	1.65	1.61	1.53	1.71	1.85	1.70	1.60	1.41	1.41	1.39	1.30
21	Leguminous vegetables	0.29	0.24	0.33	0.45	0.48	0.26	0.24	0.21	0.20	0.21	0.15	0.14	0.16	0.63	0.63	0.59	0.72
22	Vegetables steamed	1.54	1.49	1.35	1.49	1.56	1.50	1.34	1.27	1.19	1.27	1.34	1.29	1.29	1.11	1.11	1.20	1.35
23	Cabbages and cauliflowers etc.	0.59	0.64	0.87	1.06	1.39	1.14	1.10	1.21	1.25	1.26	1.34	1.38	1.46	1.30	1.30	1.38	1.55
24	Vegetables preserved by SO_2 etc.	3.73	3.73	2.86	3.16	3.18	2.69	2.19	2.15	1.80	1.89	1.98	1.94	1.98	1.55	1.55	1.60	1.67
25	Tomatoes fresh or chilled	0.05	0.06	0.06	0.05	0.07	0.08	0.08	0.10	0.12	0.15	0.19	0.17	0.16	0.18	0.18	0.19	0.20
26	Cotton	0.03	0.03	0.02	0.01	0.04	0.02	0.01	0.01	0.03	0.01	0.02	0.05	0.04	0.00	0.00	0.01	0.01

Table 3: China and Pakistan Trade Intensity

Sr. No.	Year	Export intensity index		Import intensity index	
		Pakistan to China	China to Pakistan	Pakistan from China	China from Pakistan
1	2004	0.399212514	2.381155708	1.131734348	0.716032737
2	2005	0.43566403	1.784798921	1.268703852	0.753573833
3	2006	0.462660984	1.683576019	1.204154339	0.825679206
4	2007	0.506524148	1.928653703	1.441502953	0.813395789
5	2008	0.516067787	1.520833309	1.247452503	0.637075975
6	2009	0.712197811	1.689288166	1.227623323	0.795497367
7	2010	0.73500109	1.633271327	1.335548536	0.782669812
8	2011	0.696444528	1.696364172	1.417144758	0.778903865
9	2012	1.081769176	1.726234288	1.368876233	1.14728807
10	2013	1.019119141	1.927755984	1.290339621	1.086358101
11	2014	0.878083306	2.017853805	1.62157624	0.939027264
12	2015	0.860655888	2.444001863	1.799303458	0.94231205
13	2016	0.781321962	2.539922683	2.184843479	0.806824533
14	2017	0.663811144	2.23419375	2.067836217	0.69371171
15	2018	0.705183702	1.974323893	1.870862847	0.721496134
16	2019	0.788882655	2.197731152	1.855923458	0.595693868
17	2020	0.715013994	2.008009442	1.816221052	0.681832501
18	2021	0.725	2.150	1.850	0.690
19	2022	0.740	2.250	1.900	0.710
20	2023	0.755	2.300	1.950	0.730

Source: Author's own calculations from Secondary data

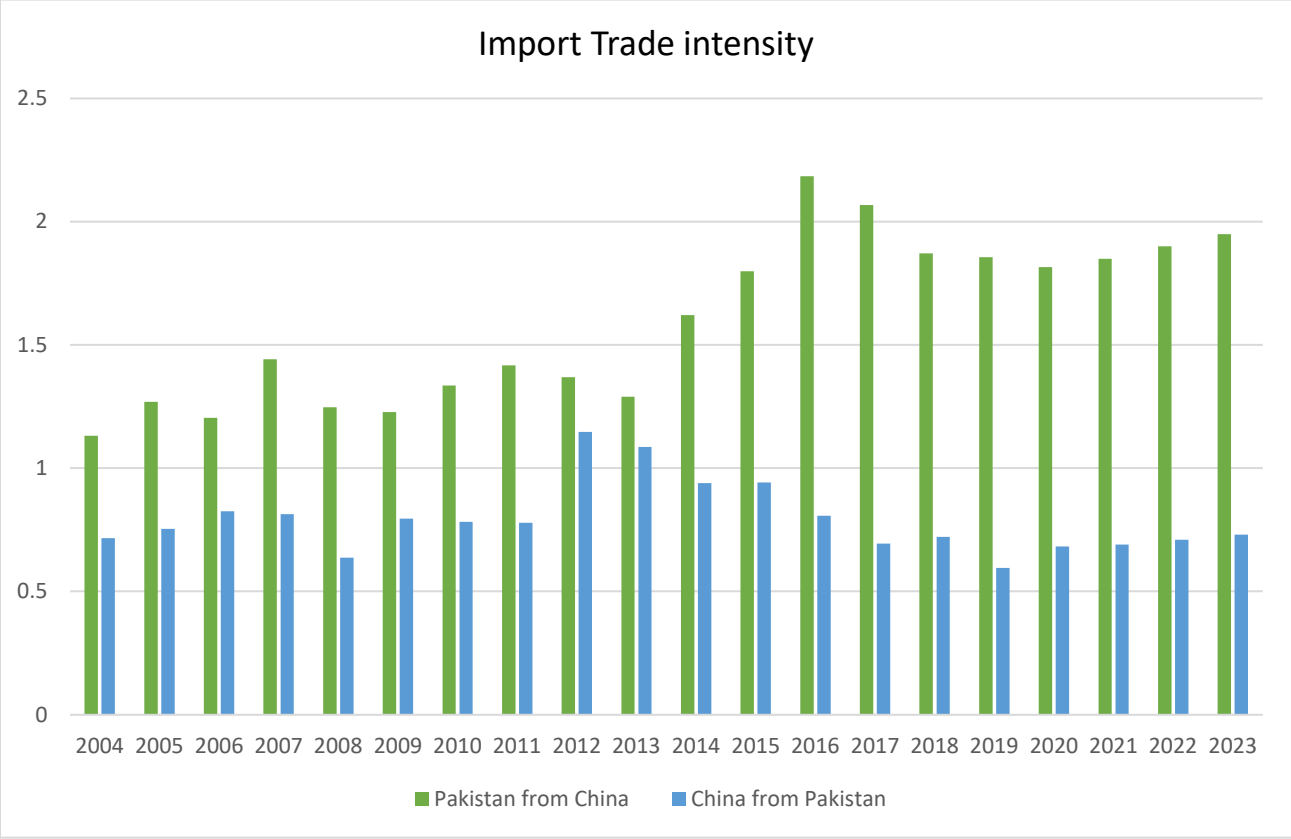

Fig-3 Import intensity between Pakistan and China

Fig-4 Export Intensity between Pakistan and China

other FTAs signed by China in more than eight countries. Heavier concessions were given to those countries, rendering Pakistani commodities less significant. Further, ASEAN Countries are getting tariff elimination in over 90% of products, which coincides with Pakistan's specialized products. Moreover, growth was observed in Chinese products that fell outside the FTA framework. In this regard, the impacts of FTA policies on ASEAN countries have made Pakistan's commodities uncompetitive (Pakistan Business Council, 2013).

Considering the analysis made in this study, the trend analysis reveals that the overall trade trend after the establishment of the FTA in 2007 has increased. Moreover, the export intensity from Pakistan to China after 2007 initially increased in 2008, remained somewhat constant up to 2011, and then rose again in 2012. However, it continuously decreased until 2019, followed by a gradual increase. The export intensity pattern reveals that Pakistani exports could not benefit after the free trade agreement. On the other hand, import intensity to Pakistan from China after 2007 initially decreased with a slight increase in a few years up to 2013, but after that, it increased and showed mixed trends. This indicates that Pakistan's import side may benefit from China by obtaining cheaper imports from other countries. However, it also clearly demonstrates why the trade deficit on the Pakistani side is increasing. The opposite trend has been found regarding the import intensity to China from Pakistan, which decreases continuously and sharply. The decreasing trend of import intensity of China from Pakistan depicts that Pakistani products may be high priced, unspecialized, or uncompetitive due to other reasons like high tariffs and customs duties, or possibly due to lack of information between Pakistani exporters and Chinese importers regarding each other markets.

Conclusion: The study's outcome shows that while both countries benefit from bilateral trade, China gains more than Pakistan. Pakistan's trade deficit has been increasing, which is a serious concern for its economy, especially considering the expected growth in trade due to the development of infrastructure under CPEC. In this context, Pakistan must develop a targeted trade policy with China to maximize benefits and minimize the trade deficit. The trade intensity analysis reveals a troubling trend: Pakistan's export intensity to China has been decreasing, while import intensity from China has been increasing, particularly after the expiration of the FTA in 2013. This shift indicates that trade is increasingly favouring China, contributing to Pakistan's widening trade deficit over the last six years of the study period.

To counter this, Pakistan must identify and promote exportable commodities to enhance its trade position and address the growing deficit. The findings underscore that Pakistan's trade position has weakened following the expiration of the FTA in 2012, as evidenced by the increasing import intensity from China and declining export intensity. Therefore, it is recommended that Pakistan urgently negotiate next FTA with China to mitigate further trade losses and deficits. However, Pakistan faces concerns regarding several products and industries, particularly securing meaningful market access. Pakistan has been demanding the

restoration of its preferences in the second phase of the Free Trade Agreement, as these have eroded, affecting 79% of its exports. Future research should focus on conducting in-depth exploratory studies to identify microeconomic and macroeconomic issues in Pakistan's agricultural sector, which may hinder its trade competitiveness with China.

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