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Cross-Border Threads: The Role of the Pak-China FTA in Shaping Pakistan's Textile Export Performance.

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Abstract

With an eye toward Pakistan's larger economic performance, this paper looks at how the Pakistan-China Free Trade Agreement (CPFTA) affects Pakistan's textile exports. By use of econometric analysis, the study investigates the relationship between the Free Trade Agreement (FTA) and several important economic variables including GDP growth, trade balance, textile exports, and imports. The findings show that although the FTA has improved textile exports, it has also caused notable trade imbalances and slowed down GDP development. Policy ideas for optimizing the advantages of the CPFTA while minimizing its negative impact on Pakistan's economy round out this report.

Keywords: Imports, Exports, Pakistan-China Free Trade Agreement, Trade Liberalization Economic Integration, Textile, Trade Balance, Time-Series Analysis, Regression Analysis
JEL: F13, F14, F15, L67, Q24, C22

1-Introduction

Particularly for developing countries, free trade agreements (FTAs) have become indispensable tools for world economic growth. FTAs provide both positive and negative economic impacts as preferred trade agreements, hence they call for careful study. Scholars highlighting their importance in promoting economic growth and development include Rose (2004), Plummer (2006), and Kawai & Wignaraja (2007). Historically, Pakistan's textile industry which accounts for more than 60% of exports and uses about 40% of the industrial workforce has relied on trade agreements to increase competitiveness and open markets. Initiated in 2006 and enlarged in 2019, Pakistan's trade policy revolves mostly around the China-Pakistan Free Trade Agreement (CPFTA). Although the pact gives Pakistani exporters exclusive access to China's huge market, it has also raised questions about trade imbalances, more competition, and limited technological development inside the home industry. By means of trade volumes, tariff structures, and sectoral performance, this paper evaluates the effect of the CPFTA on Pakistan's textile industry between 2003 and 2024. By spotting possibilities, difficulties, and structural changes inside the industry, it seeks to add to the larger debate on trade policy and industrial competitiveness.

Background

Established in 1951, Pakistan's diplomatic ties to China have been strong historically with strategic collaboration across political and security spheres. But in comparison, economic interactions have trailed. Signed in 2006 and effective starting in 2007, the CPFTA was meant to strengthen bilateral trade and investment relations.

Pakistan's export performance under Phase I of the FTA was poor, despite mutual WTO participation and significant increase in total trade; imports from China skyrocketed, hence aggravating the trade deficit. Designed for 2020, Phase II aimed to correct these discrepancies by means of more general tariff concessions and expanded market access. Central to Pakistan's export economy, the textile industry suffered especially. Although the CPFTA helped export development particularly in cotton yarn and woven fabrics domestic companies faced more competition from cost-effective, technologically superior Chinese manufacturers. This dynamic has made policy review necessary to safeguard local businesses and maximize trade results.

Free Trade Agreement: Historical Context

China's rise as a major worldwide commercial force has changed regional economic ties. Focusing on duty elimination across thousands of product categories, the CPFTA sought to boost bilateral commerce to $15 billion in this environment. China lowered rates on important Pakistani exports including textiles, leather items, and agricultural products under Phase I. But Pakistan's exports to China experienced little increase in relation to imports, which surged dramatically in industries such electronics, steel, and synthetic fibers.

On 313 new product lines, many of which relate to textiles, Phase II of the CPFTA brought more tariff cuts. Pakistan's textile industry still suffers structural problems like lack of value addition, limited technological capabilities, and restricted export diversification even while this phase strives to balance trade and enhance economic cooperation.

commerce statistics show that bilateral commerce rose by 242% between 2007 and 2018 while Pakistani exports grew by 196%. But the widening trade gap emphasizes the agreement's uneven advantages. The continuation of this disparity emphasizes the need of strategic interventions including export diversification, home capacity building, and trade term renegotiation.

Research Problem

Pakistan still has a continuous trade imbalance even though it is a developing nation with great export potential. Still the pillar of Pakistan's export economy, the textile and clothing industry classified under HS codes 50 to 63 supplies items to several foreign markets, notably China. Although the first phase of the Pak-China Free Trade Agreement (FTA), carried out in 2007, has been much studied, fresh data and economic results of the second phase, launched in 2019, remain rather underused.

Though the FTA was meant to boost bilateral trade and offer reciprocal advantages, the widening trade deficit with China calls serious questions. Already limited by antiquated technologies and growing manufacturing costs, Pakistan's textile industry suffers more pressure from reasonably priced Chinese imports. As so, issues about the degree of market access given by the agreement and the real effectiveness of tariff concessions surface.

This study aims to find whether Pakistan's textile sector has benefited directly from the Pak-China FTA or if it has increased fundamental flaws in trade and industrial competitiveness. The study will ascertain if Pakistan has seized on the FTA or if the trade imbalance calls for strategic policy recalibration by looking at export performance, trade trends, and sector-specific economic indicators for the period 2003 to 2024. The ultimate objective is to determine how much textile exports contribute to Pakistan's GDP and how best to maximize bilateral trade agreements for equitable economic growth.

Research Objectives

This study aims to assess the quantitative and qualitative impact of the Pak-China Free Trade Agreement on Pakistan’s textile sector, particularly its exports to China. By utilizing trade data

spanning two decades, the study intends to evaluate both the economic outcomes and strategic implications of the agreement.

The specific objectives include:

- To identify the impact of Pak-China FTA on textile exports.
- To identify the causality relationship between Pak-China FTA & textile sector.

Research Questions

This research endeavors to address the following key questions:

- What is the impact of Pak-China FTA on Pakistan's textile sector?
- What is the causality relationship between Pak-China FTA & textile sector?

Significance of the Study

This study holds considerable significance at multiple levels. From a policy perspective, it offers empirical evidence on the effectiveness of Pakistan's trade agreements and informs future negotiations, particularly within the textile and apparel sector. For industry stakeholders, the findings can help identify barriers to competitiveness and inform investment strategies aimed at improving productivity and export potential.

From an academic standpoint, this research enriches the existing body of literature on trade liberalization and sectoral development, especially within the context of emerging economies navigating global trade regimes. The insights derived from this study can serve as a critical reference for scholars analyzing the relationship between bilateral trade agreements, industrial upgrading, and economic growth.

Given Pakistan's reliance on textile exports and its growing economic partnership with China, understanding the nuanced effects of the CPFTA is vital. This study thus contributes to shaping informed decisions that support sustainable economic development and long-term trade equity.

2. Literature Review

Long acknowledged as drivers of economic development, free trade agreements (FTAs) and regional trade integration help to increase standards of living by liberalizing market access and therefore strengthening competitiveness. Effective regional blocs including NAFTA, SAFTA, the European Union (EU), and ASEAN show how well regional integration may support trade growth and economic collaboration.

Notwithstanding these achievements, economists continue to disagree about trade liberalization. The 2008 global financial crisis and the fall-off in the Geneva trade negotiations exposed weaknesses in world trade systems, therefore underlining the need of justice and efficiency of FTAs.

Theoretical Framework of FTAs

FTAs are official agreements between two or more nations meant to lower or remove trade restrictions, therefore allowing preferred market access. FTAs are supposed to include "substantially all" trade among members nations, per Article XXIV of the General Agreement on Tariffs and Trade (GATT). Although FTAs have economic possibilities, they may contradict the World Trade Organization's Most Favored Nation (MFN) policy by encouraging preferential trade, therefore generating conflicts in multilateral systems.

Linking trade patterns to income levels, Linder (1961) developed a theory implying that nations with similar demand structures are more likely to trade. Gene and Helpman (1995), through a political economy lens, argued that FTAs are likely to be pursued when the benefits to exporters outweigh the costs to import-competing industries, highlighting the political considerations in trade agreements. Similarly, Frankel and Romer (1999) demonstrated that trade openness

positively impacts income levels, with even modest increases in trade ratios yielding measurable growth in per capita income.

2.2. Empirical Evidence on FTAs and Trade Patterns

Din et al. (2009) assessed comparative advantages under the Pak-China FTA, concluding that Pakistan's specialization is limited to a few raw material-based goods, whereas China enjoys a broad advantage across numerous product categories. Using the Trade Specialization Index (TSI) and gravity models, they argue that the FTA, in its current structure, benefits China more significantly, though mutual gains remain possible with better resource allocation.

Memon and Jawwad (2002) stressed the economic importance of Pakistan's textile sector, noting that while it comprises a significant share of exports, it underperforms in global markets, particularly in value-added segments. Malik (1996) similarly observed the limited global presence of Pakistan's textile exports, despite their centrality to the national economy.

Freund (2003), analyzing 91 trade deals, emphasized the role of reciprocity in trade agreements and highlighted the imbalanced concessions between developed and developing countries. Calling for more complex modeling, Ghosh and Yamarik (2004), Baier and Bergstrand (2007), and Wacziarg and Welch (2008) all cautioned of methodological errors in past empirical investigations that handled FTAs as only exogenous variables.

Zhang (2010) underlined the need of appropriate economic structures for FTAs to produce balanced results as well as the potential of trade diversion. Key for FTAs to be successful, Saini (2012) and Mitra (2002) noted are institutional capability, macroeconomic stability, and economic alignment among members nations.

Zaheer et al (2014) the different economic sizes of Pakistan and China may influence the structure and amount of textile trade, thus highlighting the significance of including macroeconomic elements such as GDP and market size in assessing the success of trade agreements.

Examining behavioral responses to exogenous shocks, Nizami, (2024) a study on the influence of COVID-19 on internet usage using unit root testing, Granger causality, and OLS regression. In trade impact evaluations, including this analysis of the CPFTA's effects on textile exports, the methodological framework and diagnostic testing in such studies support the implementation of similar approaches.

2.3. Insights Specific to the Pak-China FTA

Ehsan (2013) conducted a pre- and post-analysis (2003–2010) of the Pak-China FTA, utilizing a gravity model. The study concluded that while bilateral trade volumes increased, the trade deficit also widened. Pakistan's exports were positively influenced by China's growing GDP, but the overall FTA did not significantly alter trade flows, suggesting limited effectiveness in stimulating balanced trade.

A study on Pakistan's intra-industry trade (IIT) patterns with eleven major trading partners over a 31-year period using a gravity model (UN COMTRADE & WDI data) reveals that approximately 24.93% of Pakistan's trade is intra-industry, with significant variation across commodities and countries (e.g., highest with Singapore and in crude materials) Zaheer et al. (2013). This analysis underscores Pakistan's evolving trade integration and the need for strategic policies to expand IIT. These insights are particularly relevant in the context of the CPFTA, as they reflect Pakistan's trade structure and the potential for leveraging trade agreements to boost sector-specific exports, such as textiles.

Saqib and Xin (2016) underlined that the long-term viability of the agreement depends not just on commodities but also on non-tariff sectors including services, non-tariff fields of research cooperation and investment.

Using CGE modeling under the Global Trade Analysis Project (GTAP), Hussain and Shah (2017) concluded that, whereas China benefited from the FTA, Pakistan suffered, mostly in macroeconomic terms. Still, they pointed up areas of possible development for Pakistan in textiles, chemicals, and agriculture.

To assess the impact of the FTA on textile exports Khan et al. (2019) used econometric models on panel data (2003–2017) and time-series. Using Revealed Comparative Advantage (RCA) and co-integration tests, they highlighted long-term links between exports and trade policies, therefore tying policy outcomes to the 2014–19 Textile Policy.

While Ahmed et al. (2021) noted that Chinese-backed infrastructure development and defense cooperation improved bilateral trade relations, so providing Pakistan strategic market access and modernization prospects, Lateef et al. (2017) found a positive impact of the FTA on Pakistan's agricultural exports to China.

Rahamdil et al. (2021) offered a sobering analysis demonstrating that although exports to China grew post-FTA, the rise in imports was disproportionately bigger, hence exacerbating Pakistan's trade deficit. They underlined the need of Pakistan understanding the Chinese market, making investments in innovation, and matching exports to sectors of relative advantage.

Broader Regional and Global Perspectives

Using a gravity model, Akhtar and Ghani (2010) investigated the possibility for regional integration in South Asia and exposed latent trade creation potential. Emphasizing the strategic aspect of FTAs, Dent (2010) and Shepherd (2019) investigated the evolution of bilateralism in the Asia-Pacific area and regional economic communities.

Zaheer et al. (2015) indicated that Pakistan's cotton export potential could be permanently lost without major increases in cotton yield and the adoption of strong trade policies, research, and disaster management, therefore affecting the nation's income sources.

Shah et al. (2020) underlined how institutional strength, financial reform, and production play in deciding how successful FTAs are in fostering economic growth. Reinforcing these results, Tunio et al. (2021) urged Asian countries to develop their capacity and implement coordinated policies for RTAs to provide continuous development.

Shaikh (2023) It emphasizes that although Pakistan's economy depends more on the textile industry, its long-term competitiveness depends more on using responsible and sustainable practices. In the framework of the CPFTA, the flood of Chinese imports and higher trade exposure highlight the need of Pakistan's textile sector to improve sustainability by means of compliance, CSR, and renewable energy acceptance.

Research Methodology

The impact of the Pak-China Free Trade Agreement (PCFTA) on Pakistan's textile industry and general trade performance is evaluated in this paper using a quantitative, empirical research approach. With annual time series data ranging from 2003 to 2023, the study looks at factors including GDP, trade balance, textile exports and imports. To investigate causal linkages, a deductive method is used testing predefined hypotheses with econometric models.

Using E-Views program, augmented Dickey-Fuller (ADF) tests for stationarity, co-integration methods, and multiple linear regression is done mostly. With a strong concentration on the textile industry as a major GDP contributor, the study especially addresses Pakistan's export performance. World Bank (WDI) and TradeMap.org are among the data sources guaranteeing consistent and thorough coverage. Based on epistemological theory, the study seeks to impart objective interpretation of statistical data and support trade and economic development policy-making process.

The hypotheses examine whether the PCFTA appreciably affects several economic metrics, including GDP, trade balance, and textile industry performance on bilateral and worldwide levels. Aiming to clarify cause-effect links, the explanatory research design uses secondary, historical data.

Following hypotheses have been developed:

H1: The PCFTA exerts a significant influence on the real Gross Domestic Product of the nation.
H2: The PCFTA exerts a significant influence on the trade balance of the nation.
H3: The Impact of the PCFTA on Pakistan's Textile Exports to China is significant.
H4: The Impact of the PCFTA on Pakistan's Textile Imports from China is significant.
H5: The Impact of the PCFTA on Pakistan's Textile Exports to the Global Market is significant.
H6: PCFTA has a positive impact on overall trade flows in Pakistan.
H7: PCFTA has a positive impact on the trade flows of textile sector at sector-level basis in Pakistan.
H8: PCFTA has a positive impact on the exports of Textile in Pakistan

Following are the equations

Equation 1: (PAK_GDP_GR) = f(FTA)
Equation 2: Total Trade Balance (PAK_TB_TOT) = f(FTA)
Equation 3: Textile Exports to China (PAK_CH_X_TEXT) = f(FTA)
Equation 4: Textile Imports from China (PAK_CH_M_TEXT) = f(FTA)
Equation 5: Textile Exports of Pakistan (PAK_X_TEXT) = f(FTA)
Equation 6: Total Exports of Pakistan (PAK_X_TOT) = f(FTA)
Equation 7 : PAK_CH_X_TEXT = f(PAK_GDP_2015, CHN_GDP_2015)
Equation 8: PAK_CH_X_TEXT = f (PAK_GDP_2015, CHN_GDP_2015, FTA, PAK_CH_TB_TEXT)

Where:

GDP Growth Rate = (PAK_GDP_GR)
Pak-China Free Trade Agreement = (FTA)
Total Trade Balance = (PAK_TB_TOT)
Textile Exports to China =(PAK_CH_X_TEXT)
Textile Imports from China = (PAK_CH_M_TEXT)
Total Textile Exports of Pakistan = (PAK_X_TEXT)
Total Exports of Pakistan = (PAK_X_TOT)
Pakistan Gross domestic product in Constant 2015 US dollars = (PAK_GDP_2015)
China Gross domestic product in Constant 2015 US dollars = (CHN_GDP_2015)
Pak-China Total Trade Balance = (PAK_CH_TB_TEXT)

Results and Discussion

Empirical Findings and Discussion

In view of Pakistan's economic ties with China, this part offers a thorough study of her textile export performance. The results underline how the China-Pakistan Free Trade Agreement (CPFTA), with its tariff concessions and Chinese investments, is helping Pakistan's textile export expansion.

Especially when compared to other nations, key developments noted include changes in market share, trade volume, and export competitiveness. The study also highlights the difficulties Pakistan's textile sector faces including structural inefficiencies, raw material shortages, and more competition from Chinese textile imports.

Emphasizing both possibilities and ongoing restrictions in the global and regional trade environment, the results offer insightful analysis of how trade rules and bilateral economic interaction have shaped the history of Pakistan's textile industry.

1.1. Unitary Test

All selected variables are stationary at level.

1.2. Regression Analysis

Equation 1: GDP Growth Rate (PAK_GDP_GR) = f(FTA)

Table 1 Dependent Variable: PAK_GDP_GR			
Variable	Coefficient		Prob.
FTA	-3.190040646		0.024345894
C	6.836380293		1.85E-05
R-squared	0.239497754	F-statistic	5.983489673
Adjusted R-squared	0.19947132	Prob(F-statistic)	0.024345894
Durbin-Watson stat		1.861666286	
Source: Author's Own Estimations			

The results from Equation 1 reveal a statistically significant negative impact of the China-Pakistan Free Trade Agreement (CPFTA) on Pakistan's GDP growth. The coefficient of -3.19 indicates a decline of approximately 3.19 percentage points in GDP growth post-FTA implementation, with a p-value of 0.0243, confirming the result's significance.

The model's R-squared value of 0.239 suggests moderate explanatory power, while the Durbin-Watson statistic of 1.86 indicates no major autocorrelation in residuals. These findings suggest that trade liberalization under the CPFTA may have led to increased trade deficits, competitive pressures on domestic industries, and structural inefficiencies, collectively contributing to slower economic growth.

Although the hypothesis that the CPFTA affects GDP growth is supported, the adverse nature of the impact raises concerns about the broader economic effects of the agreement.

- **Hypothesis Testing**:
  - **H1: The Free Trade Agreement between Pakistan and China exerts a significant influence on the real Gross Domestic Product of the nation. → Accepted, but with a negative impact**

Equation 2: Total Trade Balance (PAK_TB_TOT) = f(FTA)

Table 2: Dependent Variable: PAK_TB_TOT			
Variable	Coefficient		Prob.
FTA	-19823632.22		0.001869532
C	-4333279.667		0.404761299
R-squared	0.406718517	F-statistic	13.02527056
Adjusted R-squared	0.375493176	Prob(F-statistic)	0.001869532
Durbin-Watson stat		0.984932888	

Source: Author's Own Estimations

Equation 2 shows a significant negative impact of the China-Pakistan Free Trade Agreement (CPFTA) on Pakistan's trade balance, with a coefficient of -19.82 million USD. This indicates a worsening of the trade balance post-FTA implementation. The result is statistically significant (p-value = 0.0018), and the model demonstrates moderate explanatory power with an R-squared of 0.40. However, the Durbin-Watson statistic of 0.98 signals potential autocorrelation, which could affect the reliability of the estimates. Economically, the findings suggest that while exports may have grown under the FTA, imports surged at a faster rate, likely driven by increased reliance on Chinese raw materials and finished goods. The hypothesis that CPFTA significantly impacts the trade balance is accepted, but the findings underscore a detrimental effect, reflecting a deepening trade deficit and raising concerns about the competitiveness of Pakistan's domestic industries.

- **Hypothesis Testing**:
    - **H2: The Free Trade Agreement between Pakistan and China exerts a significant influence on the trade balance of the nation. → Accepted, but with a negative impact**

Equation 3: Textile Exports to China (PAK_CH_X_TEXT) = f(FTA)

Table 3: Dependent Variable: PAK_CH_X_TEXT			
Variable	Coefficient		Prob.
FTA	761580.8333		0.013068791
C	220505.6667		0.402509178
R-squared	0.282936693	F-statistic	7.496963106
Adjusted R-squared	0.245196519	Prob(F-statistic)	0.013068791
Durbin-Watson stat		0.47395295	

Source: Author's Own Estimations

Equation 3 reveals a significant positive impact of the China-Pakistan Free Trade Agreement (CPFTA) on Pakistan's textile exports to China, with an estimated coefficient of 761,581 USD. The relationship is statistically significant (p-value = 0.013) and indicates that the FTA has contributed to an increase in textile exports. The model has moderate explanatory power (R-squared = 0.282), but the Durbin-Watson statistic of 0.47 suggests potential autocorrelation, which could affect the robustness of the results. Economically, while the FTA has promoted textile export growth to China, the effect size remains modest, especially in the context of broader trade dynamics. Nonetheless, the hypothesis is accepted, confirming that trade liberalization under CPFTA positively influenced sector-specific exports.

Hypothesis Testing:

- **H3: The Impact of the Pakistan-China Free Trade Agreement on Pakistan's Textile Exports to China is significant. → Accepted**

Equation 4: Textile Imports from China (PAK_CH_M_TEXT) = f(FTA)

Table 4: Dependent Variable: PAK_CH_M_TEXT			
Variable	Coefficient		Prob.
FTA	995500.2222		0.000937994
C	46648.66667		0.845168537
R-squared	0.446052923	F-statistic	15.29930543
Adjusted R-squared	0.416897813	Prob(F-statistic)	0.000937994
Durbin-Watson stat		0.492301343	

Source: Author's Own Estimations

Equation 4 indicates a significant positive impact of the China-Pakistan Free Trade Agreement (CPFTA) on Pakistan's textile imports from China, with an estimated increase of approximately 995,500 USD. The relationship is highly significant (p-value = 0.0009) and statistically robust. The model shows moderate explanatory power (R-squared = 0.44), but the Durbin-Watson statistic of 0.49 suggests potential autocorrelation, which may affect the reliability of the results. Economically, the FTA has improved access to Chinese textile products, but it also highlights growing import dependency and potential pressures on Pakistan's domestic textile industry. The hypothesis is accepted, confirming that trade liberalization has significantly increased textile imports from China, though it also raises concerns about domestic competitiveness.

- **Hypothesis Testing**:
  - **H4: The Impact of the Pakistan-China Free Trade Agreement on Pakistan's Textile Imports from China is significant. → Accepted**

Equation 5: Textile Exports of Pakistan (PAK_X_TEXT) = f(FTA)

Table 5: Dependent Variable: PAK_X_TEXT			
Variable	Coefficient	Prob.	
FTA	4233835	0.007364891	
C	9036263.333	1.36E-06	
R-squared	0.321400327	F-statistic	8.998834592
Adjusted R-squared	0.285684555	Prob(F-statistic)	0.007364891
Durbin-Watson stat		1.993305707	

Source: Author's Own Estimations

Equation 5 demonstrates a significant positive impact of the China-Pakistan Free Trade Agreement (CPFTA) on Pakistan's overall textile exports, with an estimated increase of approximately 4.23 million USD. The effect is statistically significant (p-value = 0.0073), confirming the robustness of the relationship. The R-squared value of 0.3214 indicates that the model explains about 32.14% of the variation in textile exports, suggesting moderate explanatory power. The Durbin-Watson statistic of 1.99 indicates no significant autocorrelation, further supporting the reliability of the results. Economically, the FTA has improved Pakistan's access to international markets, particularly China, boosting the country's textile sector export performance. This reflects Pakistan's comparative advantage in textile production and China's demand for textile inputs. However, the moderate R-squared suggests that other factors, such as production efficiency, exchange rates, and global competition, also influence textile export trends.

- **Hypothesis Testing**:
  - **H5: The Impact of the Pakistan-China Free Trade Agreement on Pakistan's Textile Exports to the Global Market is significant. → Accepted**

Equation 6: Total Exports of Pakistan (PAK_X_TOT) = f(FTA)

Table 6: Dependent Variable: PAK_X_TOT			
Variable	Coefficient		Prob.
FTA	9655999.056		0.000648419
C	13521900.33		6.39E-06

R-squared	0.466140747	F-statistic	16.58990479
Adjusted R-squared	0.438042891	Prob(F-statistic)	0.000648419
Durbin-Watson stat		0.751470651	

Source: Author's Own Estimations

The results demonstrate that the Pakistan-China Free Trade Agreement (CPFTA) has had a significant positive impact on Pakistan's total exports, with an estimated increase of approximately 9.66 million USD in exports. The relationship is statistically significant (p-value = 0.0006), confirming that the observed effect is not due to chance. The R-squared value of 0.4661 indicates that 46.61% of the variation in total exports can be explained by the presence of the FTA, showing a moderate to strong explanatory power. The F-statistic of 16.58 (p-value = 0.0006) further supports the robustness of the findings, indicating that the model is statistically significant. Economically, the positive and significant coefficient suggests that the FTA has facilitated greater trade volumes, likely due to tariff reductions, improved market access, and stronger trade relations between Pakistan and China. This has enabled Pakistani exporters to take advantage of the agreement to boost exports. However, the impact's magnitude also implies that external factors, such as global demand, competitiveness, and production capacity, continue to influence Pakistan's overall export performance.

- **Hypothesis Testing**:
  - **H6: Pak-China Free Trade Agreement has a positive impact on the exports of Textile in Pakistan → Accepted** as FTA has a statistically significant and positive impact on total exports.

Equation 7: Bivariate Regression Analysis

Dependent Variable: PAK_CH_X_TEXT (Pakistan's Textile Exports to China)

Model Specification: PAK_CH_X_TEXT = f(PAK_GDP_2015, CHN_GDP_2015)

PAK_CH_X_TEXT = f(Pak_GDP_2015, CHN_GDP_2015)

Table 7: Dependent Variable: PAK_CH_X_TEXT			
Variable	Coefficient	t-Statistic	Prob.
PAK_GDP_2015	-0.043753896	-3.561643	0.002229487
CHN_GDP_2015	0.000723655	3.760907	0.001430748
C	6383314.741	3.804844	0.001297312
R-squared	0.487294045	F-statistic	8.553921339
Adjusted R-squared	0.430326717	Prob(F-statistic)	0.002448022
Durbin-Watson stat		0.647283961	

Source: Author's Own Estimations

The results from Equation 7 reveal the contrasting impacts of GDP growth in both Pakistan and China on Pakistan's textile exports to China. Pakistan's GDP growth has a negative and statistically significant relationship with textile exports, with a coefficient of -0.0437, indicating that as Pakistan's economy grows, its textile exports to China tend to decline. This suggests that as Pakistan's economy expands, it may shift its production focus toward local markets or other export destinations, or the rising domestic costs could reduce the competitiveness of its exports. On the other hand, China's GDP growth positively influences textile exports from Pakistan, with

a coefficient of 0.0007, indicating that as China's economy grows, its demand for textiles from Pakistan increases. This aligns with the idea that China's expanding industrial and manufacturing sectors drive up the need for materials such as textiles, which Pakistan supplies. The R-squared value of 0.4873 suggests that the model explains nearly 49% of the variation in textile exports, reflecting moderate explanatory power, although other factors not included in the model also play a role. The F-statistic confirms that the model is statistically significant, indicating that the included variables have a strong explanatory capacity for the trade patterns. The findings imply that while Pakistan's economic growth poses challenges for its textile export sector, China's growth offers significant opportunities. To enhance Pakistan's textile export performance, policies that boost competitiveness, such as tax incentives and investment in productivity-enhancing technologies, should be prioritized, alongside improving trade facilitation and business connections with China. However, the model faces challenges, including multicollinearity between GDP variables and autocorrelation in the data, which may require refinements in future research to improve explanatory power and address statistical issues.

Equation 8: Multiple Regression Analysis

Dependent Variable: PAK_CH_X_TEXT (Pakistan's Textile Exports to China)

Model Specification: PAK_CH_X_TEXT = f(PAK_GDP_2015, CHN_GDP_2015, FTA, PAK_CH_TB_TEXT)

Regression Results:

Table 8: Dependent Variable: PAK_CH_X_TEXT			
Method: Least Squares			
Variable	Coefficient	t-Statistic	Prob.
PAK_GDP_2015	-0.0209	-2.121671	0.049831111
CHN_GDP_2015	0.0003	2.706041	0.015578027
FTA	485733.0758	2.539821	0.021848093
PAK_CH_TB_TEXT	0.68794	3.865525	0.001369752
C	2685404.866	1.931781	0.071294641
R-squared	0.842811063	F-statistic	21.44708344
Adjusted R-squared	0.803513829	Prob(F-statistic)	2.89E-06
Durbin-Watson stat		1.979625635	

Source: Author's Own Estimations

The Pak-China Free Trade Agreement (FTA) has significantly boosted Pakistan's textile exports to China, with an increase of approximately 485,733 USD (p = 0.0218). However, Pakistan's GDP growth negatively impacts textile exports to China (-0.0209, p = 0.0498), suggesting that domestic growth shifts focus away from China. In contrast, China's GDP growth positively influences textile imports from Pakistan (0.0003, p = 0.0155), highlighting the role of China's economic expansion in driving demand. Additionally, an improving textile trade balance between the two countries (0.6879, p = 0.0013) further supports higher textile exports from Pakistan. These results underscore the importance of trade agreements, GDP dynamics, and trade balance in shaping Pakistan's textile exports.

Diagnostic Tests for Equation 8

Table 9: Autocorrelation Test (Breusch-Godfrey Serial Correlation LM Test)

Breusch-Godfrey Serial Correlation LM Test: Null hypothesis: No serial correlation at up to 2 lags			
F-statistic	1.434876599288902	Prob. F(2,14)	0.27110351398231 96
Obs*R-squared	3.572359148396699	Prob. Chi-Square(2)	0.16759924860660 53

Since the p-values are above 0.05, we fail to reject the null hypothesis of no serial correlation. There is **no evidence** of significant autocorrelation.

Table 10: Heteroskedasticity Test (Breusch-Pagan-Godfrey Test)

Heteroskedasticity Test: Breusch-Pagan-Godfrey Null hypothesis: Homoskedasticity			
F-statistic	1.144633156913409	Prob. F(4,16)	0.37125972147570 5
Obs*R-squared	4.672305208560894	Prob. Chi-Square(4)	0.32260249601399 09
Scaled explained SS	2.146962936080751	Prob. Chi-Square(4)	0.70875001349347 84

Since the p-values are greater than 0.05, we fail to reject the null hypothesis of homoskedasticity. No significant heteroskedasticity detected.

Table 11: Cointegration Test (Johansen Test for Long-Run Relationship)

Hypothesized No. of Cointegrating Equations	**Trace Statistic**	**0.05 Critical Value**	**p-value**
None *	142.45	69.81	6.19E-10
At most 1 *	73.24	47.86	4.66E-05
At most 2	27.94	29.79	0.0807

The trace test indicates two cointegrating equations at the 5% level, suggesting a stable long-run relationship between textile exports and the explanatory variables. This confirms that the variables share a long-term equilibrium relationship, meaning that changes in Pakistan's GDP, China's GDP, and trade balance have a persistent impact on textile exports to China.

Table 12: Summary of Findings for Equation 8:

Diagnostic Test	**Result**
Autocorrelation	No significant autocorrelation detected

Diagnostic Test	Result
Heteroskedasticity	No heteroskedasticity detected
Cointegration	Two cointegrating equations found

Equation 8 confirms that the Pak-China FTA has significantly boosted Pakistan's textile exports to China, with China's GDP growth playing a crucial role. The presence of cointegration suggests a long-run relationship, reinforcing the importance of stable trade policies to sustain export growth.

Table 13 Summary of Hypothesis Testing

Hypothesis	Accepted/ Rejected	Nature of Impact
H1: FTA influences Pakistan's GDP	Accepted	Negative
H2: FTA influences trade balance	Accepted	Negative
H3: FTA influences textile exports to China	Accepted	Positive
H4: FTA influences textile imports from China	Accepted	Positive
H5: FTA influences textile exports to global market	Accepted	Positive
H6: FTA influences total exports in Pakistan	Accepted	Positive
H7: FTA influences textile sector trade flows	Accepted	Positive
H8: FTA influences overall trade flows	Accepted	Positive

The Pakistani textile trade has been much influenced by the Pak-China FTA, according to the regression study. The deal has resulted in more imports and a negative trade balance even as textile exports have surged. Policy interventions should center on lowering trade imbalances, raising home competitiveness, and leveraging China's economic growth to boost exports even more. Sectoral-level research of textile subcategories and industry-specific tariff impacts should also be part of further inquiry.

Table#14: Granger Causality Test	
Null Hypothesis:	Prob.
FTA does not Granger Cause PAK_CH_X_TEXT	0.0039
FTA does not Granger Cause PAK_CH_TB_TEXT	0.0005
FTA does not Granger Cause PAK_GDP_2015	0.0429
PAK_CH_X_TEXT does not Granger Cause FTA	0.0267
PAK_GDP_2015 does not Granger Cause FTA	0.0002
Source: Authors Own Estimations	

The Granger Causality Test findings show notable predicted links between important economic indicators about Pakistan's textile sector and general economy and Free Trade Agreements (FTAs).

With all p-values below the 0.05 level, the results show specifically FTAs Granger-cause chapter-wise textile exports (PAK_CH_X_TEXT), the textile trade balance (PAK_CH_TB_ TEXT), and GDP at 2015 constant prices (PAK_GDP_2015). This suggests that past values of FTAs can greatly predict future trends in these variables, therefore underscoring their influence in promoting export growth and economic performance. Furthermore, a reverse causation is shown whereby both GDP and textile exports Granger-cause FTAs, implying that developments in export performance and economic growth can affect the establishment or efficacy of next trade agreements. These bi-directional causality patterns highlight the interdependence of trade policy and economic results, so stressing that FTAs not only affect the GDP but also help to define the textile sector.

Conclusion and Recommendations

This paper assesses Pakistan's economy, especially its textile industry, under the Pakistan-China Free Trade Agreement (CPFTA). According to the study, the CPFTA has caused notable trade imbalances and slowed down GDP growth even while it has encouraged textile exports. Particularly because of growing trade deficits and more competition from Chinese goods, the deal has resulted in a roughly 3.19% point drop in Pakistan's GDP growth. Notwithstanding these obstacles, the CPFTA has helped textile exports to China and around the world to show noteworthy rise by around 4.23 million USD. But imports from China have skyrocketed, aggravating Pakistan's trade deficit and raising questions about its over-dependence on Chinese goods.

The report also emphasizes Pakistan's requirement of implementing policies supporting local businesses, lowering import reliance, and improving the competitiveness of its textile sector. Among the recommendations include modernizing the textile industry, broadening export markets, funding high-value textile manufacture, and enhancing trade facilitation. The study also advises renegotiating the tariff levels of the CPFTA and enacting laws shielding local businesses from too strong competition. By means of these initiatives, Pakistan would be able to maximize the advantages of the CPFTA while minimizing its negative impacts.

Policy Recommendations

Several legislative measures are advised to solve the widening trade gap and boost the textile industry. These include assisting local producers with subsidies, increasing export markets outside of China, and raising investment in high-value textile industry. Furthermore, the CPFTA should be renegotiated to further safeguard Pakistan's textile sector, particularly with relation to duties on Chinese manufactured finished goods. Global competitiveness of the textile industry would also be raised by modernizing it, funding new technologies, and establishing special economic zones (SEZs). Pakistan should also concentrate on local raw material development, especially with regard to R&D for synthetic and higher-yield cotton and synthetic fibers, hence lessening need on imports.

Crucially, trade facilitation has to be improved by means of improved infrastructure and simpler export processes. To boost its textile exports to high-value markets, Pakistan should also advocate international compliance rules. To establish Pakistan as a leader in sustainable textiles, the government should support public-private alliances in textile R&D and fund ecologically friendly production methods.

Directions for Further Studies

Although this report provides insightful analysis of how the CPFTA will affect Pakistan's textile industry, certain areas call for more study. Future research might concentrate on sector-specific analysis inside the textile sector, looking at how the CPFTA has affected several sub-sectors including cotton, clothing, and home textiles. Comparative analysis of Pakistan's trade agreements with other countries, including the EU and ASEAN, would also offer insightful analysis of CPFTA's relative success to other trade arrangements. Furthermore, studies on non-tariff barriers

(NTBs) and their effect on textile exports to China could assist in the identification of covert trade restrictions therefore undermining Pakistan's competitiveness.

More research might look at Pakistan's textile sector's long-term viability, especially with relation to technical developments, environmental sustainability, and automation. Case studies or industry surveys are among the qualitative research tools that would also help to clarify the pragmatic difficulties textile exporters encounter in using CPFTA advantages. Examining how CPFTA affects other industries, such as services and agriculture, would also help to present a more whole picture of its economic consequences.

Through improved trade policies and foreign alliances, future study can help Pakistan's general economic development be refined, trade policies be refined, and industrial growth supported by addressing these areas be supported.

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