IMPACT OF TARIFF POLICY ON EXPORTS IN PAKISTAN: A CGE PERSPECTIVE

by

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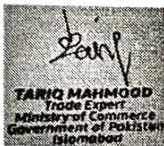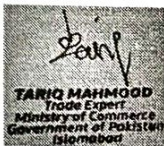
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I **Kiran Karim** hereby state that my MPhil thesis titled **"Impact of Tariff Policy on Exports in Pakistan: A CGE Perspective"** is my work and has not been submitted previously by me for taking any degree from the Pakistan Institute of Development Economics or anywhere else in the country/world.

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DEDICATIONS

My beloved Parents and Family whose unwavering support, endless sacrifices, and boundless love have been my foundation and inspiration. Their guidance and encouragement have been the light that led me through every challenge, and I am forever grateful for their belief in me. This work is a tribute to their enduring strength and faith, with special recognition to my mother, Ami, whose love and sacrifices have profoundly shaped the person I am today.

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ABSTRACT

This study examines the economic challenges arising from tariff policies affecting Pakistan's key export sectors. Using a computable general equilibrium model, the research simulates the impact of varying tariff rates on sectors such as textiles, leather, metals, manufacturing, plastic, minerals, processed food, vegetables, and animal products. The analysis focuses on how tariff changes influence Pakistan's exports to the USA, UAE, and China. The findings reveal that tariff increases lead to declines in major export sectors, adversely affecting market prices and industrial output. In contrast, reducing tariffs enhances export competitiveness, though the effects vary by industry. The study recommends reducing tariffs, particularly on raw materials and intermediate goods critical to export-oriented sectors, to lower production costs and improve competitiveness in global markets. A key insight is that Pakistan's reliance on import-stage taxes, including Additional Customs Duty, Regulatory Duty, Sales Tax, and Withholding Tax, poses significant challenges for the major export sector. These taxes, primarily imposed for revenue generation, lack strategic trade policy objectives. The study suggests policymakers reevaluate these policies to support Pakistan's export growth better.

Keywords: Tariff policy, CGE model, Pakistan top exports, trade competitiveness, sectoral analysis

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LIST OF ABBREVIATIONS

ACDs   Additional Customs Duties

AEO   Authorized Economic Operation

ASEAN   Association of Southeast Asian Nations

ATC   Agreement on Textile and Clothing

AVEs   Ad-valorem equivalents

BAT   Border Adjustment tax

BOP   Balance of Payment

CBR   Central Board of Revenue

CDs   Custom Duties

CEPA   Comprehensive economic

CGE   Computable General Equilibrium

CPFTA   China Pakistan Free Trade Agreement

ECO   Economic Cooperation Organization

ECO   Economic Cooperation Organization

ERP   Effective Rate of Protection

EU   European Union

EVFTA   EU-Vietnam Free Trade Agreement

FBR   Federal Board of Revenue

FBS   Federal Bureau of Statistics

GATT	General Agreement on Tariff and Trade
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GEMPACK	General Equilibrium Modelling PACKage
GPA	Agreement on Government Procurement
GSP	Generalized System of Preferences
GTAP	Global Trade Analysis Project
HOS	Heckscher–Ohlin and Stolper–Samuelson
INAS	Interbank National Authorization System
I-O	Input-output
IPO	Import Policy Order
ISI	Import substitution industrialization
ITA	Information Technology Agreement
MFN	Most Favored Nation
NTBs	Non-tariff barriers
NTC	National Tariff Commission
NTMs	Non-tariff Measurements
OIC	Organization of Islamic Cooperation
PIDE	Pakistan Institute of Development Economics
PTA	Preferential Trade Agreement

RDs	Regulators Duties
ROW	Rest of the World
RTAs	Regional Trade Agreement
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asian Free Trade Area
SAM	Social Accounting Matrices
TDAP	Trade Development Authority of Pakistan
TFA	Trade Facilitation Agreement
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
WEBOC	Web Based One Customs
WITS	World Integrated Trade Solution
WTO	World Trade Organizations

CHAPTER 1

INTRODUCTION

The primary objectives of tariff reforms enhancing domestic competition, increasing trade integration with a focus on export diversification and outward orientation, and gradually aligning domestic prices of traded goods with international prices. These major changes in trade policy are expected to promote efficiency in resource allocation, stimulate productivity growth, foster technological advancement, and encourage potential export activities Mufti & Ali (2024). As we move into an anti-globalization period, Pakistan has again started using tariffs as a crucial trade policy instrument. Customs, regulatory, and additional customs duties are among the various tariffs levied by Pakistan. These duties serve three main purposes: protecting local industries, reducing imports to address balance of payments issues, and generating revenue. In addition, withholding taxes of 5% to 9%, which function as income tax, are levied on imported goods before the importer earns any income, alongside an 18% sales tax, with some exemptions and reduced rates in certain cases. These taxes together are referred to as the Customs Tariff or indirect taxes Ahmed & Ather (2014) and Nasir (2020)

During the last decade, the 20 fastest-growing export economies have reduced import tariffs, but the trend has been the opposite in Pakistan. In East Asia, trade has historically been a significant economic growth driver. The trend began with the ASEAN Four in the 1980s, followed by China's emergence in the 1990s, and included the newly industrialized economies of Korea, Hong Kong, Singapore, and Taiwan during the 1970s and 1980s. Japan also experienced rapid economic expansion in the 1960s. An export-oriented industrialization policy has been the cornerstone of East Asia's economic success, allowing these nations to achieve growth rates that consistently outpaced those of other developing countries. Typically, this policy was initiated through targeted industrial policy tools designed for specific sectors and broader export incentives. These included duty-free imports for producing export goods and initiatives to promote foreign investment in export activities. Until the end of the 1990s, Pakistan adhered to an inward-oriented import substitution policy. However, shifts in the global landscape, including increased trade openness and international integration, compelled Pakistan to pursue trade liberalization. While most South Asian countries significantly liberalized their trade policies during the early and mid-1990s,

Pakistan postponed its trade reforms until the end of that decade. In 1998, the Government of Pakistan initiated substantial trade liberalization programs, marking a significant departure from the protectionist policies of previous decades M. Z. Khan (2007).

Global growth has been steadily moving to Asia over the past 20 years, particularly in the neighborhood of Pakistan. China, India, Iran, and Afghanistan Pakistan's neighbors have seen a 216% increase in their global market shares since 2003. The SAARC (South Asian Association for Regional Cooperation) region has seen an 186% increase, and the ECO (Economic Cooperation Organization) has seen a 127% increase. Pakistan's global market shares decreased by 19% during the same period. One of the primary reasons tariff regimes on imported inputs are a key factor in Pakistan's economic policy framework for revenue collection, significantly contributing to the country's inability to keep pace with the growth of regional exports Khan & Kalirajan (2011).

Improvements in the trade policy regime have been implemented through tariff reductions and rationalization, as well as the removal of import quotas, import surcharges, and regulatory duties. Despite the government's intent to expedite reforms and structural changes, progress has remained inconsistent in recent years due to political instability with Pakistan serving as a frontline state in this conflict. Diversity in taxation during the import phase indicates Pakistan's complex tax structure in addition to its high incidence of taxation. Taxes on imports make up, on average, 45 to 50 percent of FBR's total revenue. Therefore, the high tax burden at the import stage cannot be entirely attributed to customs import duties. As a result, a high rate of import taxes encourages a decline in exports and raises the price of goods. For instance, the textile sector, a major component of Pakistan's exports, faces customs duties ranging from 0% to 32%, along with additional taxes such as sales and withholding taxes Dad et al (2024) and Guo Hong Fu1 (2022). This layered taxation can discourage the production and exportation of textiles, as manufacturers struggle to maintain competitive pricing in international markets. The complexity of the tariff structure, coupled with high tax rates, creates an anti-export bias, further stifling growth in export volumes and market presence Yeo & Deng (2019).

Pakistan's growth performance has been inconsistent, fluctuating year by year throughout the 1980s and recent decades. However, the economy has experienced relatively steady growth in recent years at an average rate of around 3-4 percent. The causes of this slow and variable growth include political and economic stability and financial shocks. More critically, several unresolved

structural issues such as a narrow tax base, inflexible public expenditures, and a heavy debt burden have constrained fiscal space for public sector-led investments. The private sector has faced challenges due to a difficult investment climate characterized by excessive regulations and government intervention, an uncertain economic policy environment, and pervasive governance issues Sudarta (2022).

Over the past three decades, Pakistan's experience in the export sector has shown little success. The export earnings of Pakistan were stuck at around 8-9 billion US dollars during the 1990s and around 16-17 billion during 2005-2006, (around 13% of the GDP) and now it changes only 27 billion exports in 2024 US dollars. Its share in world trade (exports) has been stagnant at less than 0.2% of world trade. Export growth rates have fluctuated from year to year during the past three decades. Increases in tariffs can significantly impact exports by raising the cost of imported inputs, which in turn affects the overall production costs for exporters. when tariffs on intermediate goods rise, firms face higher expenses, leading to reduced competitiveness in international markets. This situation often forces exporters to either absorb the additional costs, which can shrink profit margins, or pass them on to consumers, making their products less attractive compared to foreign alternatives Noureen and Mahmood (2022).

A major contributing factor to this constrained growth is Pakistan's high tariff structure. Pakistan continues to have the highest average weighted tariff among 70 nations with significant yearly exports, and it collects 24% in indirect taxes. Ahmed (2022). However, when applied excessively, tariffs decrease industry competitiveness by raising input costs and contribute to deindustrialization by making less industrial investment. Increase the price of industrial goods for consumers and foster anti-export sentiment bias by elevating the appeal of the home market over that of exports. In actuality, the economy experienced a decline in industrial production, as evidenced by the decrease in the export share of GDP from 7% in 2010 to 7% in 2019. The industrial production share fell from 26.4% of the GDP from 13.5% in FY2010 to 20.3% in FY2019. As a result, Pakistan did not significantly alter its trade openness, leading to underperformance in enhancing factor productivity and overall economic growth. Compounding this issue were substantial macroeconomic imbalances, domestic political instability, security concerns, regional tensions, and a slow improvement in the investment climate, all of which

severely limited any potential gains in efficiency and productivity from the trade liberalization that did occur Zeb and Mahmood (2022).

Pakistan's economy has significantly declined, with exports comprising only 10% of the GDP in 2021, a notable decrease from the 16% share they represented in 1999 World Bank (2022). It has, nevertheless, also brought attention to the intricate problems Pakistan's export industry faces. Pakistan's export trade has been growing at a slower rate recently in 2009, it was 12.39% in 2016, it was 9.97% and in 2022, it was 8.74%. One significant aspect of the current trade environment is anti-export bias, which arises when a nation purposefully structures its trade policies such as tariffs and non-tariff barriers to protect and prioritize domestic industries at the expense of exporting. This strategy unintentionally dissuades companies from aggressively participating in global export and trade. Local industries have to resort to exporting only as a last resort because the domestic market has the most incredible levels of protection available worldwide Pursell et al (2011)

In recent years, efforts to revitalize Pakistan's economy have focused on positioning exports as a key driver of growth, with structural changes being implemented. Despite these efforts, the industrial structure has remained largely unchanged, dominated by low-technology or labor-intensive sectors such as textiles, fibers, leather, and food. The industrial sector's contribution to GDP has declined from around 20% in 2017-18 to 18.2% in 2023-24, highlighting the need for urgent structural reforms to enhance competitiveness and productivity. Furthermore, the proportion of medium- or high-technology products remains low or has decreased. In addition to initiatives like Special Economic Zones (SEZs), free trade agreements (FTAs) play a crucial role in enhancing Pakistan's industrial sector by providing access to new markets, fostering trade relationships, and encouraging investment Mufti & Ali (2024). However, the success of these measures will depend on addressing ongoing challenges such as energy shortages, political instability, and a lack of technological advancement Raja Amir Hanif (2024).

Over the past 20 years, Pakistan's export sector has faced significant challenges and transformations, reflecting a complex interplay of domestic and international factors. Traditionally dominated by low-technology, labor-intensive industries such as textiles, cotton, leather, and food products, Pakistan's exports have struggled to diversify. As of 2023, textiles still account for a substantial portion of total exports, comprising approximately 60% of the export value. However,

overall export performance has been stagnant; for example, total exports reached $27.724 billion in FY23, a notable decline from $39.52 billion in FY22. This decline can be attributed to several factors, including increased global competition, particularly following the removal of textile quotas under the Agreement on Textiles and Clothing (ATC) in 2005. Furthermore, the end of permissible safeguards against Chinese exports has intensified competition for Pakistani textile producers. The market concentration remains high, with major export destinations primarily including the United States (18.7%) and China (8.0%), limiting opportunities for diversification. Despite an increase in the number of exported products from 2,311 in 2003-04 to 2,792 in 2017-18, there has been little significant change in the value-added nature of these products. Reports indicate that Pakistan continues to lag behind competitors like India and Bangladesh in both export volume and value addition. For instance, while India has maintained a higher export-to-import ratio (1.02), Pakistan's ratio stands at 0.67, indicating a persistent challenge in achieving a balanced trade profile Nawaz et al (2024).

Trade liberalization in Pakistan progressed significantly during the 1990s, with substantial reductions in tariffs and customs duties as part of broader structural reforms. This period marked a shift toward an open and liberalized trade environment, aligning with international standards and agreements. For instance, Pakistan's weighted average tariff fell from 51% in FY1988 to 23.1% in FY2000. This reform-oriented approach contributed to a rise in exports, which grew from US$9.2 billion in FY2000 to US$25.1 billion by FY2014, representing an increase of 173%. However, after FY2014, the liberalization process slowed, with tariffs gradually increasing to 11.6%, leading to a decline in exports to US$23 billion by FY2019 Susantono & Muhtar (2020).

The factors that led to the poor export performance include falling unit prices of a wide range of exports, including commodity exports and low-value cotton manufactured goods are issues of gaining deeper access in the US and European markets, which are the dominant export markets for Pakistani textiles a wide range of behind the border policies, particularly the heavy reliance of trade-related taxes in the tax structure, high interest rates during the 1990s, a fairly intrusive regulatory environment for businesses and exporters, and problems of poor governance and political/sectarian violence that affected the larger export centers. It is quite clear that Pakistan's export competitiveness, which can be defined as its ability to achieve sustained high rates of export

growth, has been affected by exogenous and endogenous factors resulting in stagnating exports Uroos (2021).
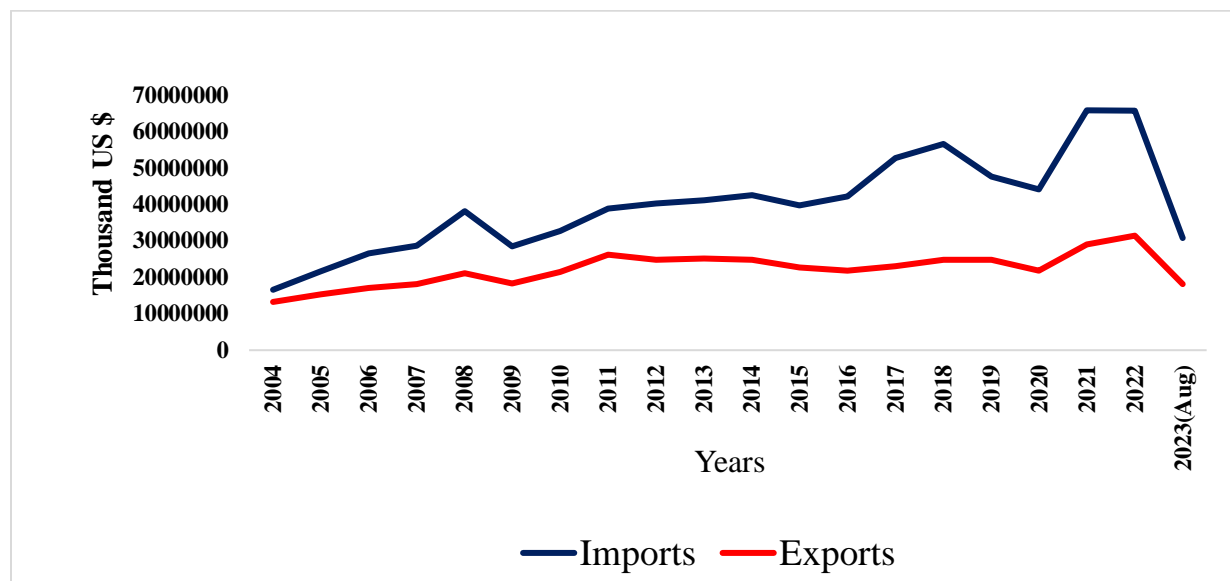
Figure 1.1:   Trade balance (Thousand US Dollars)

Source: State Bank of Pakistan

Empirically speaking, tariff increases can disrupt production efficiency in sectors that rely heavily on imported inputs. For industries such as manufacturing and metals, which depend on global supply chains for raw materials, higher tariffs increase production costs and reduce their international competitiveness Nicita et al (2013). This aligns with existing studies that emphasize the detrimental effects of protectionist policies on export-oriented industries Fontclara (2024). The industries relying on imported inputs are particularly vulnerable to tariff increases, as they face rising production costs that cannot be easily absorbed or passed on to consumers. This finding underscores the need for a balanced approach to tariff policy that considers the interconnectedness of global supply chains and the potential ripple effects of protectionist measures on export performance. Moreover, their share in global trade has doubled over the past two decades. It means value chains are highly concentrated, and countries with effective policies achieve specialization and comparative advantage L. Yu (2024).

To effectively address Pakistan's trade and economic challenges, research must focus on actionable policy solutions tailored to the country's unique trade environment and structural constraints. This includes balancing tariff reductions with strategic protections to enhance market

competitiveness while safeguarding vulnerable sectors. Given the complexity of Pakistan's tariff system, policies that reduce excessive import duties and rationalize tariffs would lower production costs for export-oriented sectors, boost competitiveness, and promote industrial growth. Targeted sectoral reforms, particularly in industries like textiles and leather, could reduce input costs and improve productivity. Strengthening trade agreements, especially with regional neighbors, would expand export markets and reduce tariff barriers. Our objective is to assess Pakistan's simulations in a CGE model to show that tariff reductions can boost exports and enhance competitiveness in high-performing sectors, but may also expose industries to increased competition, leading to mixed outcomes. The findings emphasize the need for a nuanced, sector-specific approach to tariff policy, balancing export growth with domestic industry protection. By incorporating a Social Accounting Matrix (SAM) into CGE modeling, policymakers can simulate the effects of policy changes such as tariffs, taxes, subsidies, and government spending, providing a comprehensive understanding of potential outcomes and supporting evidence-based decision-making (Bhatti & Moeen-ud-din, 2020; Lim et al., 2024; Soltanizadeh et al., 2024; Timilsina et al., 2024).

1.1   Problem Statement

In the past decade, Pakistan has increasingly implemented tariff policies, with higher customs duties and additional regulations on key export sectors such as textile, minerals, leather, metals, vegetables, processed food, plastic products, animal products, and manufacturing products. While these measures were designed to protect domestic industries and generate revenue, they have also raised the cost of importing essential raw materials and intermediate goods required for domestic production, particularly in export-oriented industries. This has led to higher production costs, reducing the global competitiveness of Pakistani exports and contributing to an anti-export bias. The current policy environment inadvertently favors domestic consumption and production over exports, making it more difficult for exporters to compete internationally. As a result, Pakistan faces a persistent trade deficit, as the elevated import duties hinder export performance. This thesis investigates the impact of these tariff policies on the competitiveness of Pakistan's major export sectors and explores their role in maintaining the country's trade imbalance.

1.2   Research Problem

The process commences with the formulation of trade policies, including protectionist measures by the government, such as tariffs and NTBs (Non-tariff barriers) which can restrict imports. These policies encompass a range of regulations and standards that influence a country's trade activities. Because import tariffs raise the price of imported goods, domestically produced alternatives become more appealing to end users. NTBs on the other hand, can impose additional import barriers like quotas, licensing requirements, or technical standards. Sanitary and phytosanitary (SPS) measures are especially important in the agricultural sector. These policies, which are intended to safeguard people, animals, and plants from the dangers posed by imported goods, frequently impose onerous restrictions that can seriously impede trade.
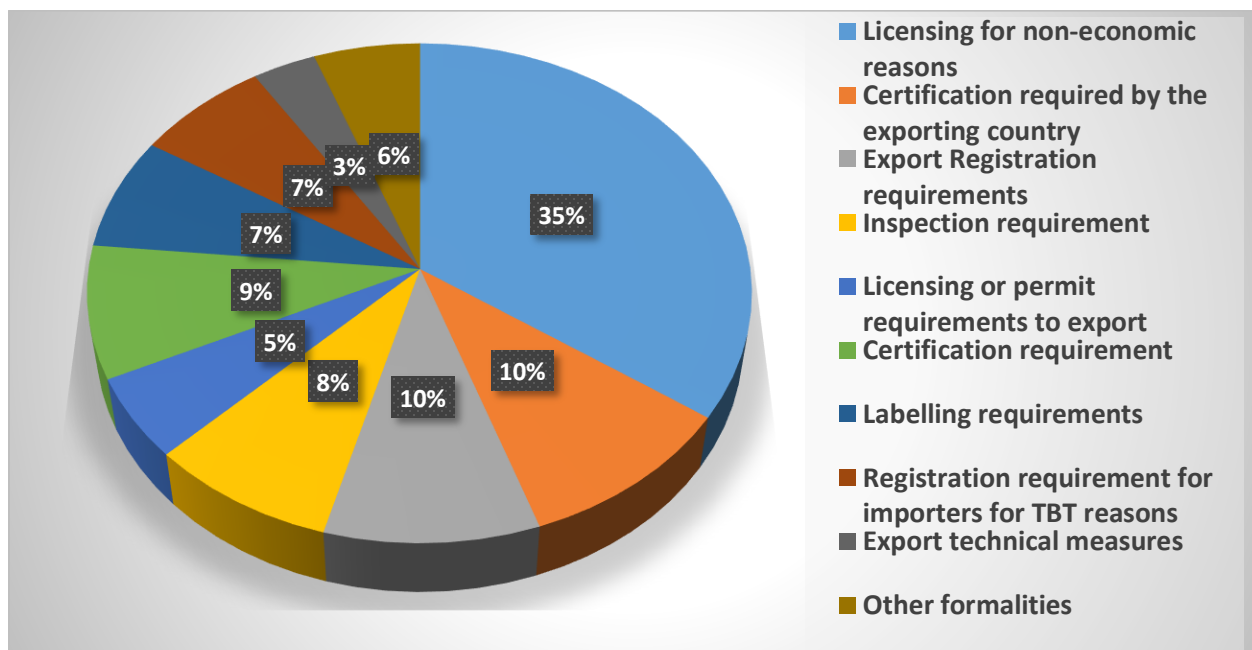
Figure 1.2:   Pakistan NTB 2021

Source: World Integrated Trade Solution (WTIS)

Higher tariffs and NTBs can deter foreign goods from entering the country and complicate the process. This directly impacts the variety of products available in the domestic market. They may have unforeseen repercussions even though they aim to safeguard domestic industries. These include fewer consumer options, increased import costs, and possible trade partner retaliation.
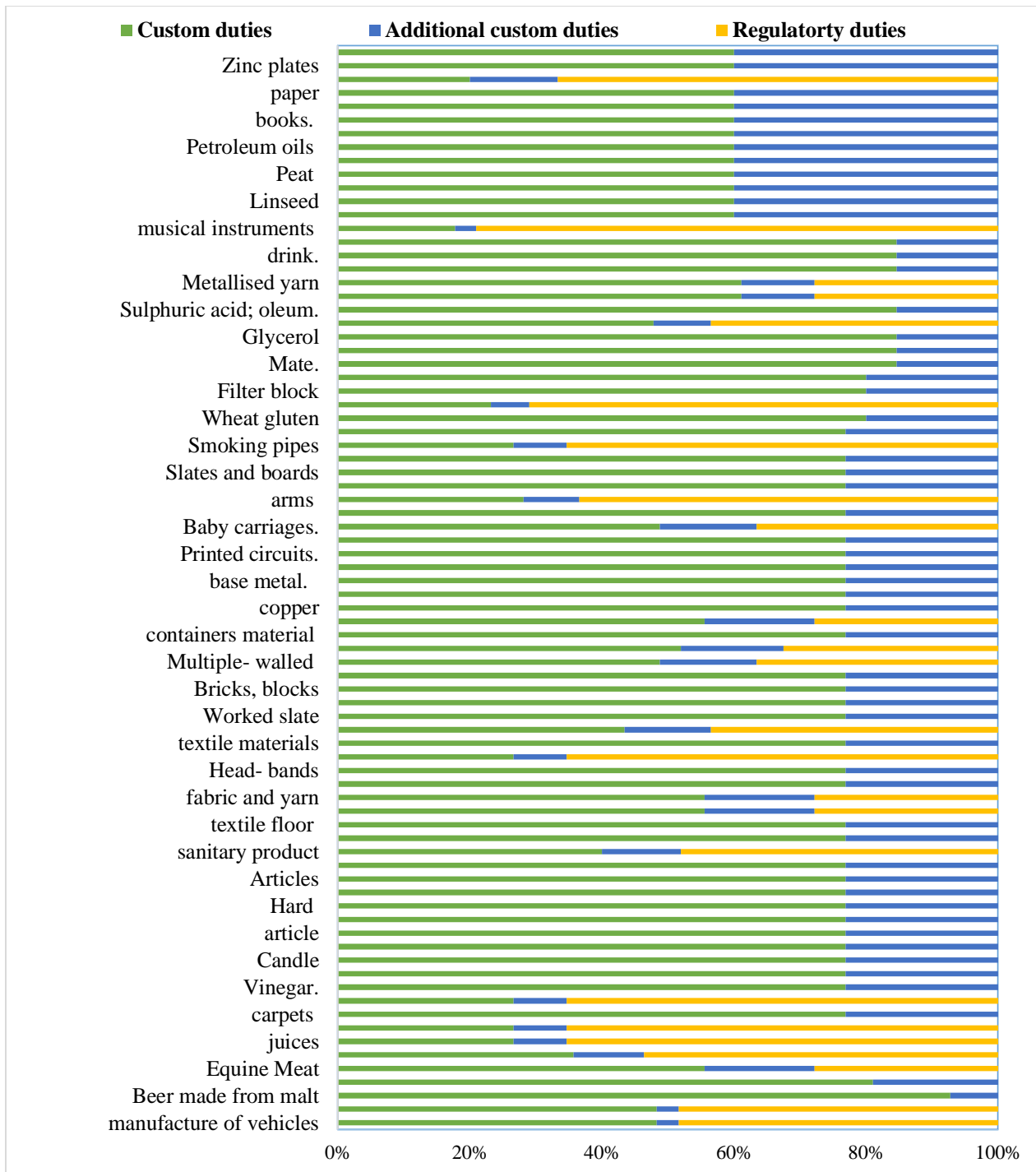
Figure 1.3:   Pakistan Customs Tariff FY 2022-23

Source: Federal Board of Revenue

The traditional goals of Pakistan's tariff policy were revenue generation, import substitution, and export promotion through protection through the imposition of high tariffs on finished goods, reduction of tariffs on raw materials, and exemption from tariffs. The existing Customs tariff FY

2022-23 structure places a 20 percent tariff on locally manufactured finished goods, which also face an additional 7 percent customs duty and regulatory duties. yarn is taxed at a combined 30 percent, while cotton fabrics face a 55 percent tax burden. Readymade garments are heavily taxed at approximately 60 percent. Even used garments face a 26 percent tax burden.

These duties serve various purposes, including protecting domestic industries from foreign competition, bolstering government revenue, and addressing specific policy goals. Their implementation effectively compensated for the decline in revenue from traditional customs duties, which had gradually fallen out of favor as a primary source of government income.
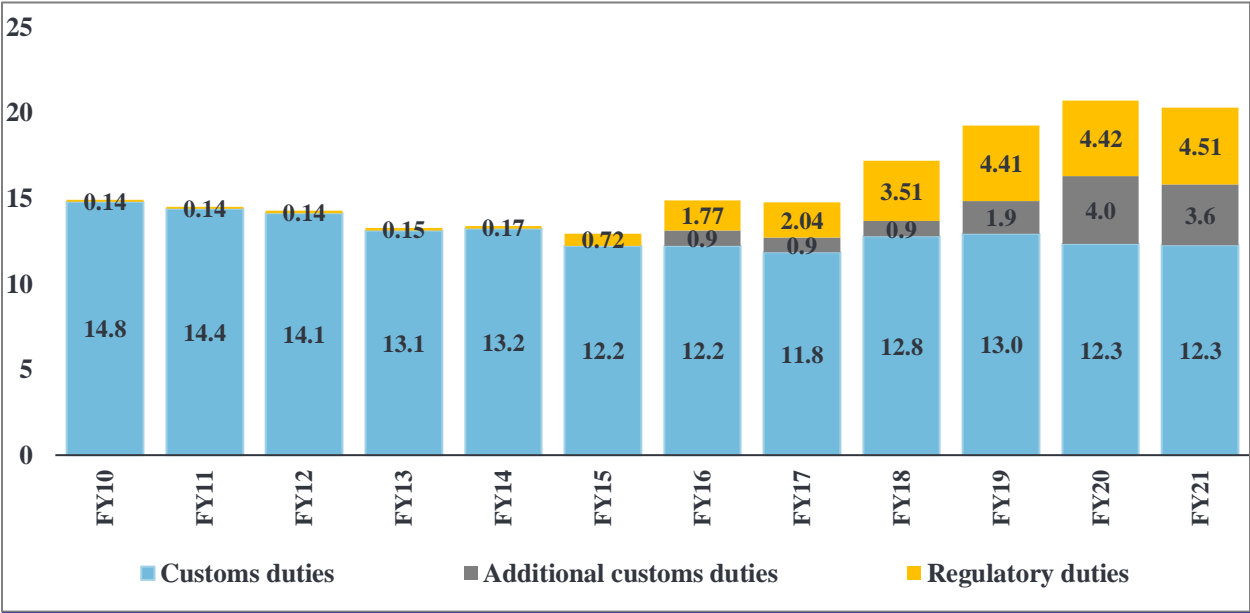
Figure 1.4:   Pakistan Average Tariffs from FY2010-21(In percent)

Source: World Bank

 The introduction of Additional customs duties and Regulatory duties in Pakistan significantly affects the country's export sector. These measures increase the cost of importing essential raw materials and intermediate goods, critical inputs for domestic industries, including those engaged in exporting goods. The higher production costs stemming from these import duties directly impact the competitiveness of Pakistan's exports.

An increase in production costs elevates the expense of manufacturing for local industries, thereby influencing the pricing of goods in both domestic and international markets. Consequently, Pakistani

exports may become less competitive relative to products from other countries with more advantageous cost structures. This diminished competitiveness can lead to a reduction in the nation's share of global trade and a subsequent decline in export volumes.

Pakistan cascading tariff scheme, goods that are more processed and closer to the final consumer face higher tariffs. Final consumer goods are subject to the highest tariffs, followed by processed intermediates, while raw materials encounter relatively tariffs. This cascading structure aims to protect local industries by making imported finished products more expensive, encouraging domestic consumption. However, the high tariffs on consumer goods can also increase production costs for manufacturers relying on imported inputs.
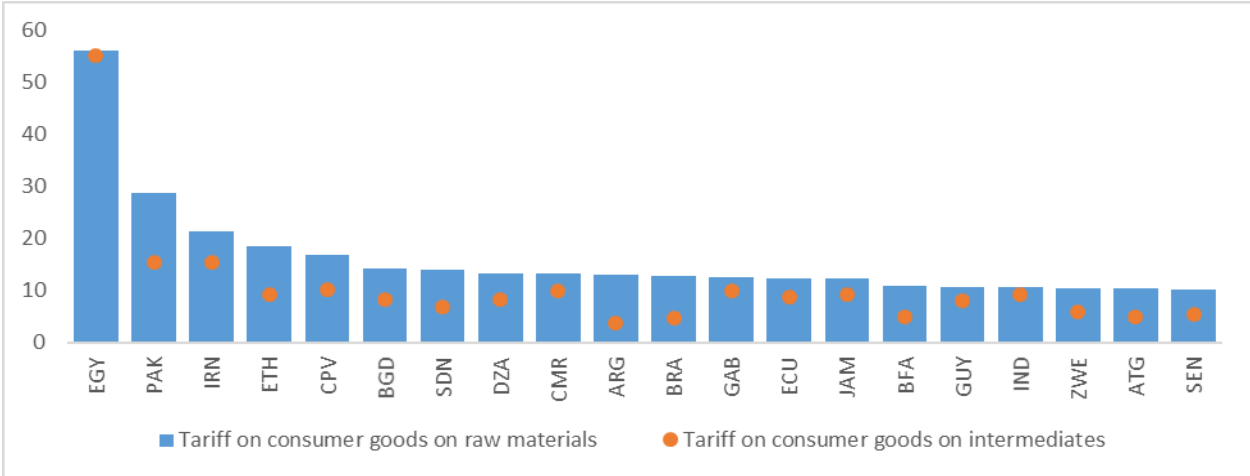
Figure 1.5:   World Tariff Cascading, FY 2020-21

Source: World integrated trade solution, world bank

In terms of composition, the majority of Pakistan's imports are goods intended for commercial or industrial use. In FY23, petroleum accounted for 30%, food goods for 16%, and agriculture for

16% of all imports. Only 10% of imports are made up of machinery goods, of which 7% are other items.
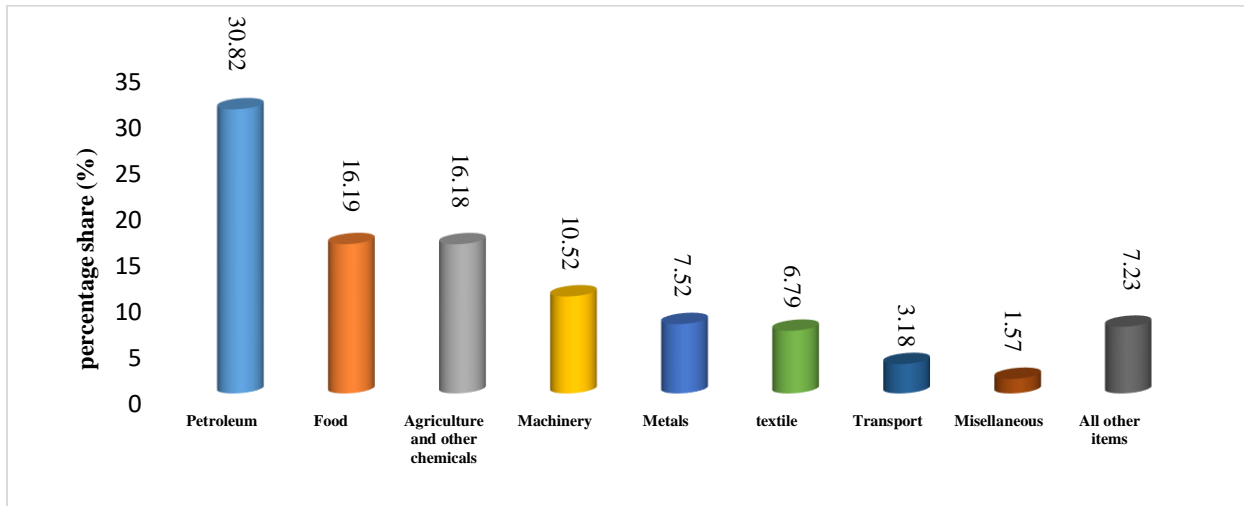
Figure 1.6:   Share of imports, in percentage, FY 2023

Sources: Pakistan Bureau of Statistics (PBS)
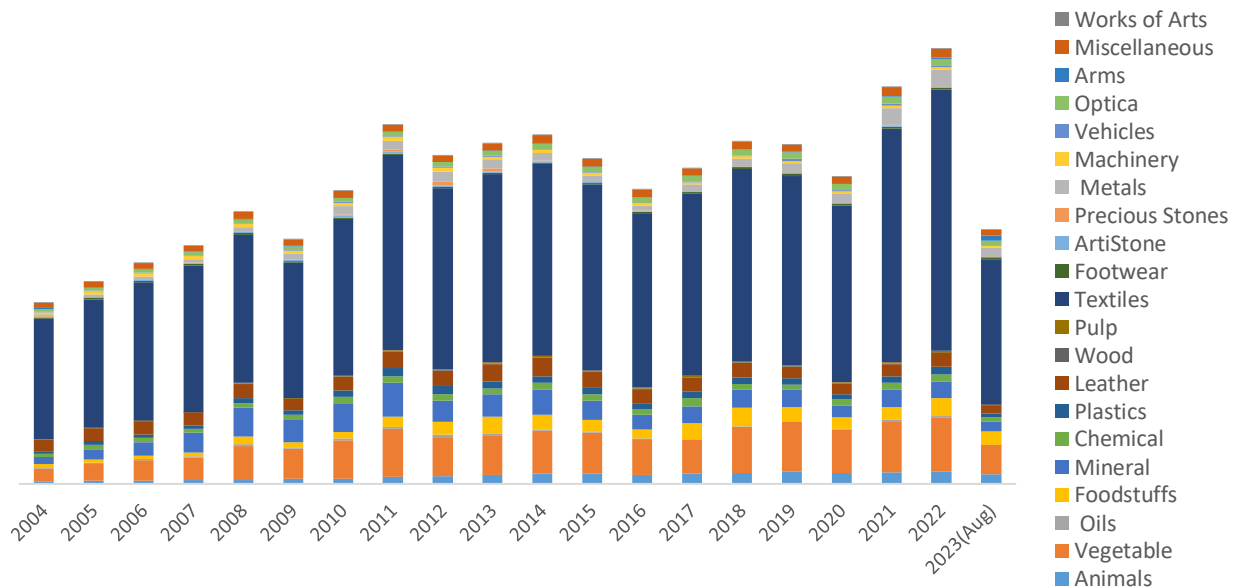
Figure 1.7:   Export Products 2004-2023(Aug) (Thousand US Dollar)

Source: State Bank of Pakistan

An unfavorable current account balance, often driven by a decline in export volumes and increased production costs, may require foreign exchange reserves to cover the deficit. These reserves are a buffer to ensure a nation's ability to meet its international financial obligations. Over time,

sustained use of these reserves can deplete them, leading to concerns about exchange rate stability and potential currency devaluation.

1.2   Objectives of the Study

- Identify the effect of tariff policy on major sectors of Pakistan

1.3   Research Question

The study questions that are based on the above-stated objectives are as follows:

- How do the major Sectors in Pakistan effect export markets, industrial output, and market prices in response to tariff policies?
- How does Pakistan's export performance to major trade partners affect the growth of its overall exports market as a results of tariff policies?

1.4   Significances of Study

This study is significant as it addresses a gap in the literature by evaluating the uncertainties surrounding Pakistan's tariff policies. The research provides valuable insights into the impact of past tariff policies, helping to inform future trade strategies and adjustments. By analyzing the effects of previous policy interventions, such as Additional Customs Duties and regulatory duties imposed on major export sectors for revenue purposes rather than trade objectives, this study contributes to the rationalization of tariffs aimed at promoting industrial and economic growth. Despite the slow economic recovery following the pandemic, the lessons learned from past policies inspire continued tariff rationalization to create a more conducive environment for exports and economic development. The findings of this study are particularly valuable for export sectors and policymakers, offering evidence-based guidance on the relationship between tariffs and exports. This information can support efforts to reduce tariff and non-tariff barriers, ultimately fostering export sectors and improving international competitiveness. By applying a dynamic CGE model, specifically the GTAP (Global Trade Analysis Project) framework, the study provides a comprehensive analysis of how both positive and negative tariff shocks affect Pakistan's key export sectors. This analysis helps to address the anti-export bias within the economy, offering strategic insights that will contribute to the formulation of the National Tariff Policy 2025-30. In

doing so, it assists in rationalizing tariffs, simplifying complex regimes, and promoting sustainable economic growth.

1.5   Organization of the Study

This study is structured into six key chapters, each containing detailed sub-chapters. Chapter two provides the reviews of existing literature, examining tariff policy and trade, non-tariff measures, the research gap, and literature based on CGE modeling. Chapter three focuses on tariff policy in Pakistan, detailing the history of trade policies and important trade-related laws. Chapter four outlines the research methodology, describes the theoretical background, and discusses the history of tariff policy, comparative advantage, deadweight loss, and new growth theory. the CGE model, graphical representation of the GTAP closure, simulation scenarios, GTAP sectors, and regional aggregation. Chapter five presents the results and discussions, focusing on the simulated sectoral effects on Pakistan and the effects on exports. Chapter Six concludes the study with a summary, conclusions, and policy recommendations.

CHAPTER 2

LITERATURE REVIEW

2.1   Tariff and Exports

Can tariff and non-tariff policies promote export growth? Scholars such as Lahiri et al (2010), Ganelli & Tervala (2015), Antràs and Chor (2023), and recent influential scholars like Bown (2019), Schexnayder (2009), and Pierce and Schott (2020) have examined the impact of tariff increases on output growth. They establish that tariffs lead to a failure in output growth and price market due to a substantial reduction in efficiency after decades additionally, tariffs consequence in augmented unemployment, industrial output, and market prices.

Pakistan's tariff policies also had an impact on the manufacturing sector's export performance and led to inefficiencies in domestic production, which kept the nation from realizing the full potential of its exports. The duties on imports of intermediate inputs used in the production of exportable goods functioned as direct taxes on exports even though tariffs were lowered under liberalization regimes. Yousaf (2013) concluded that lower tariff structures can lead to increases in GDP, inflation rates, and foreign direct investment (FDI). Waheed (2015) observed that customs duty contributions fell from 43% to 7% over three decades, with tariff reductions on machinery imports, tax holidays, and fiscal incentives for domestic exporters resulting in revenue losses for Pakistan. Using the Gravity model, they demonstrated that trade policies negatively impacted Pakistan's trade flows between 2006 and 2015.

Khalid and Uzma (2024) provide a critical analysis of Pakistan's tariff reforms, highlighting that reducing tariff rates can paradoxically enhance revenue by boosting trade volumes. This finding is particularly relevant when examining the nuanced effects of policy shifts on both trade dynamics and government revenue streams. Their methodology and conclusions offer a foundation for exploring sector-specific impacts in Pakistan's context, enriching the understanding of the broader economic implications of tariff reforms.

The literature indicates a direct relationship between trade openness and the competitiveness of domestic industries. Researchers such as Bown (2019), Schexnayder (2009), and more recent contributors like Bagwell et al (2020) have analyzed the retaliatory tariffs imposed by the US

aimed at restricting trade. Their findings suggest that antidumping duties, countervailing duties, and safeguards can limit trade and contribute to rising unemployment. They concluded that while tariffs may play a role during early development stages, their significance diminishes in mature economies.

Scholars such as Krugman (2017), and more recent researchers like Meagher (2019) and Baccini, (2019) emphasize the importance of effective trade liberalization reforms, including the reduction of tariff rates and non-tariff barriers. They also discuss the significance of institutional effects, scale effects, spillover effects, and technological advancements in enhancing a nation's competitiveness. There is a consensus that while protectionist policies may benefit certain sectors, they ultimately harm a country's competitive advantage and overall economic growth. Although tariffs can serve as a means of revenue collection, they tend to reduce consumer welfare and diminish reciprocal demand. Lowering tariff rates can discourage smuggling and under-invoicing, thereby improving revenue collection and enhancing consumer welfare.

Inappropriate exports and GDP growth can also increase the frequency and intensity of extreme weather events like protectionism. Consequently, assessing the direct and secondary effects of protectionism and looking into the funding of adaptation tactics in the federalist system of economy Kawasaki (2018), the impact of customs and mineral excise taxes, which are forms of protectionism, on income inequality and poverty in rural and urban areas for the first time. Applied to Indonesia, a dynamic computable general equilibrium model of Urban and rural poverty was found to be negatively impacted by export taxes. Still, income inequality barely changed as the income decline in the higher income group does not differ appreciably from that of the lower income groups. However, if mineral ore smelters are built, poverty will also decline. Lahiri & Nasim (2006) calculated the best export rebate, which is a return of the duties paid on the imported inputs, using a theoretical framework. The authors contend that when the government is less revenue-constrained, national welfare rises, and exporting sectors receive larger rebates.

The negative consequences of tariffs stem from the increased costs of imported inputs and the appreciation of the real exchange rate, which have a minimal and often insignificant effect on the trade balance. Antràs and Chor (2023) demonstrated that tariff hikes primarily target intermediate goods, contributing to the rise of global value chains and the fragmentation of production processes. This fragmentation leads to higher prices across various sectors of the economy.

Conversely, Dong et al. (2022) found that a gradual reduction in tariffs results in a steady increase in imports.

Carneiro & Arbache (2003) measure the economic effects of trade limitations in Brazil largely rely on its trade activities. To analyze this, they utilized the CGE modeling framework and examined the trends in Brazilian industrial exports, as well as their impact on the labor market and macroeconomic indicators. Our findings demonstrate that trade liberalization increases economic welfare through higher output, lower domestic costs, and increased labor demand. However, the advantages of this economic growth are taken by the most competent employees in the most trade-oriented industries, defying the forecasts made by the HOS theorems (Heckscher–Ohlin and Stolper–Samuelson).

In today's interconnected global economy, where global value chains are reshaping trade dynamics, it is increasingly evident that tariffs are not solely applied to imported goods. Countries rely on each other for exports, making traditional measures such as balance of payments and gross trade value inadequate indicators of comparative advantages. This evolving landscape necessitates a reconsideration of tariff policies to foster a more competitive environment that supports sustainable economic growth

2.2   Tariff Effects on Industrial Output and Market Price Dynamics

The shifts in tariff policies have had substantial effects on developing nations of the industrial sector, impacting both the output levels and market prices. When tariffs on imported inputs are high, domestic industries often face increased production costs, which can limit output and reduce competitiveness in global markets. Conversely, reducing tariffs can lead to more affordable input costs, potentially boosting industrial productivity. However, this liberalization can also affect market prices, as lower tariffs may reduce the costs of imported goods, influencing domestic pricing structures and competitive dynamics Santos-Paulino (2002).

In Pakistan, economists have been studying tariff walls and calculating protectionism rates since 1970. Haque & Siddiqui (2021) measure errors in calculating effective tariff rates, noting that the two definitions of Effective Rate of Protection (ERP) are the percentage difference in value added at domestic versus world prices, and the percentage difference in value added per unit of output under two price settings are not equivalent. ERP in Pakistan found that protectionist policies negatively impacted labor intensity, comparative advantage, and export orientation

Furthermore, scholars have discussed how insider information can lead to increased domestic prices of imported goods influenced by tariffs, which can curb demand and potentially hinder economic growth. Hummels and Klenow (2005) found that tariffs significantly affect trade flows, with high tariff rates leading to substantial reductions in trade volume. This decrease in demand can subsequently lower the prices of imported goods in the international market. Mill's theory of reciprocal demand highlights that import duties are often applied to raw materials and commodities that can be substituted domestically, resulting in higher costs for consumers and decreased demand for these products. The Harrison (2011) authors argue that a balanced approach to trade policy is essential to foster both domestic industry growth and export competitiveness, highlighting the need for careful consideration of tariff structures to avoid hindering economic development.

High import tariffs in Pakistan have had significant adverse effects on the productivity, sales, and wages of domestic firms. These tariffs increase the costs of imported inputs, which constrains firms' ability to access advanced materials and technologies essential for improving productivity. As a result, many firms face higher production costs and are less competitive both domestically and internationally. (World Bank, 2022) report highlights that high tariffs also contribute to increased markups for incumbent firms, which can reduce competitive pressure in the market, enabling inefficient firms to remain profitable while limiting market entry for more innovative firms. Consequently, the tariff structure has created an anti-export bias, discouraging firms from entering or expanding in export markets due to the high costs associated with importing essential inputs.

like many developing nations, Pakistan began to shift away from the ISI (Import substitution industrialization) approach in the late 1980s and initiated a trade liberalization economy. Up until 2006, attempts were made to reduce tariffs and other indirect trade taxes. The highest tariff, which was set at 225 percent and lowered to 25 percent by 2003, produced an average tariff rate of 11 percent as opposed to 65 percent in 1990-1991 because considerable efforts were made to secure trade liberalization during this time. However, the pace of change was slow in 2008, some policies were reversed, resulting in the imposition of additional Regulatory Duties (RDs) on top of the Customs Duties(CDs) Karim (2014).

Pursell et al (2011) in their report suggests that Pakistan started to rely more on Statutory Regulatory Orders (SROs) in 2006, which provided exemptions and partial exemptions from

regular rates in exchange for higher prices on other tariff lines, adding complexity to the tariff structure. Furthermore, starting in January 2006, the authors claim that the implementation of preferential trade agreements specifically, SAFTA (South Asian Free Trade Area) with China and other South Asian countries led to an increase in the complexity of the tariff system. An anti-export bias may arise from the complexity of tariff policies. It emphasizes that while tariffs are intended to protect domestic industries, they often lead to increased production costs, making exports less competitive in international markets. This situation discourages firms from engaging in global trade, as domestic markets become more attractive due to protective measures.

Lahiri et al (2010) measured the tariffs on steel, an intermediate input used in industrial manufacturing, were measured, it was found that they were incredibly high. Based on the outcomes of their theoretical model, the authors determined that further reductions in steel tariffs were required to stimulate the manufacturing sector and end cross-border smuggling. In a similar paper, Ganelli & Tervala (2015) argue how rising consumption taxes can substitute tariffs in a way that equilibriums revenue, and make the case that rising taxes on consumption and dropping tariffs on intermediate goods will recover welfare. Likewise, Naito (2006) suggests that consumer-price-neutral tariff and tax reforms for growth boost could be coupled with an additional increase in the consumption tax on the less distorted good to achieve growth, revenue, and welfare gains. These findings imply that a significant portion of tariff rates are falling. Lowering tariffs would increase tariff revenue rather than decrease it, as an estimate indicates that, for example, a 10% reduction in the tariff on sheet steel would result in an 18% increase in imports of the material.

Recently, Zeshan (2022) examined import substitution strategies using ERP and found that the average ERP in Pakistan declined from 53% to 21% between 2011 and 2020. Reductions in ERP were seen across sectors: agriculture dropped from 3.6% to 1.2%, manufacturing from 99.8% to 39.7%, and services from -2.8% to -0.7%.

Qadir (2020) analysis of the national tariff policy in tariff can influence both the product mix and the process of industrialization. He suggested that tariff cascading in the policy may encourage rent-seeking behavior and criticized the level of protection provided to the automotive industry. Hina (2022) found that import demand elasticity is inelastic, rendering depreciation ineffective in curbing import demand. She noted that imposing tariffs would merely raise domestic prices, resulting in minimal adjustments in quantity and leading to attenuation bias.

Pierce et al (2017) there was a consensus against employing tariffs as a protective measure for local industries. However, the landscape shifted when the US government imposed a $50 billion tariff on Chinese imports, prompting retaliatory tariffs from China. Scholars have noted that changes in tariffs can lead to shifts in imports ahead of any rate increases, causing import prices to surge before tariffs are enacted and resulting in significant declines in import prices afterward.

The theory of comparative advantage suggests that tariffs can lead to an inefficient allocation of resources, ultimately hindering economic growth. While higher tariffs may offer short-term protection and spur initial growth, they have long-term negative impacts, such as affecting exchange rates through trade balance and pass-through effects. General Equilibrium Theory (Léon Walras, 1874) examines the broader impact of tariffs on the economy, including effects on prices, output, and trade. In the context of new growth theory, Krugman (1979) explored the effects of tariffs on trade and growth, emphasizing the role of product differentiation in a monopolistic economic setting.

2.3   Different Tariff Measures and Trade

Non-tariff barriers like licensing requirements, quotas, and technical standards are becoming more and more common in discussions of protectionism. Representations of trade policy in the context of non-tariff trade are often oversimplified. An interesting trend can be seen in the ad-valorem equivalent estimates for a given set of non-tariff trade restrictions in the global analysis of the trade in forest products. AVEs (Ad-valorem equivalents) which seek to express import measures as a single-digit percentage of a commodity's worth, are used in this simplification process Kravchenko et al (2022). This method is used to improve data management and modeling viability in CGE (Computable General Equilibrium) models, which are frequently used to analyze trade policy Walmsley & Strutt (2019).
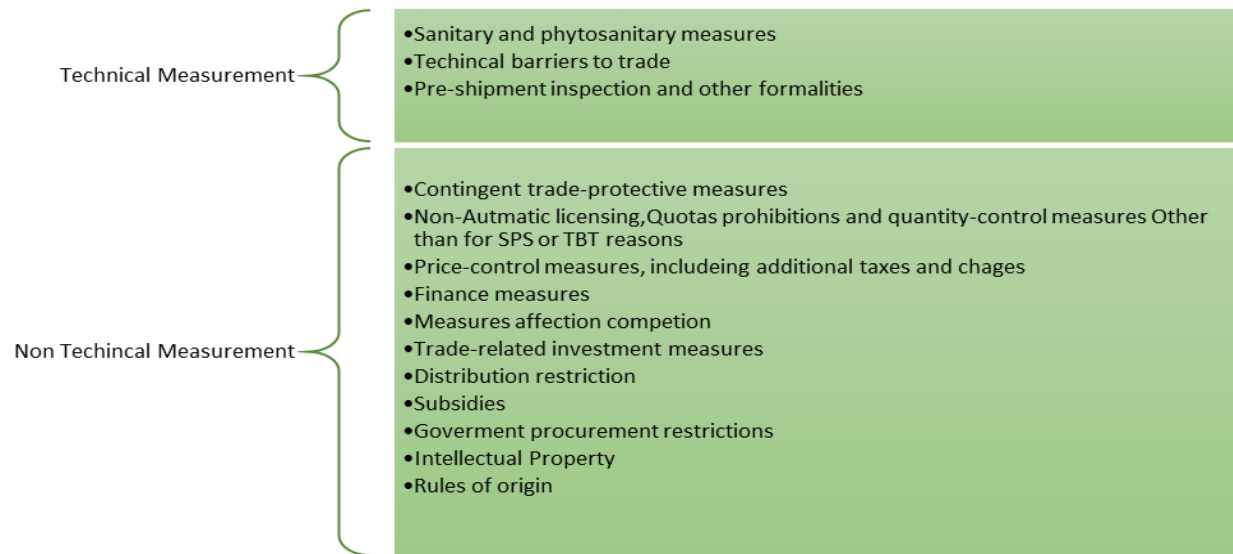
Figure 2 1:   NTMs

Source: UNTAD (2000 to 2023)

The effects of trade costs on international trade have long piqued the interest of academics and decision-makers. Nevertheless, measuring the effect of NTMs requires a lot of work. They are typically enforced with legal backing, taking the form of documentation specifications resulting in drawn-out processes Timini & Conesa (2019). Due to their impact on increasing costs and limiting entry into the market, international trade bodies such as UNCTAD(United Nations Conference on Trade and Development) and WTO are also very concerned about the growing number of NTMs (UNCTAD/World Bank, 2018). According to Grübler & Reiter (2021), the rise in from 1995 to 2012, 400% of NTM notifications were reported to the WTO. Additionally, the number of non-tariff measures (NTMs) impacting trade extends beyond just tariffs, as indicated by UNCTAD (2019). As the number of NTMs continues to grow, there is also an increase in research focused on this subject. In the year 2000, approximately one million NTMs were enforced, and numerous studies revealed that year was only 2014, but in 2017, there were approximately 4 million NTMs worldwide, and the number of studies increased to 140 Santeramo & Lamonaca (2018)

Globally, trade policy has changed, emphasizing the application of non-tariff measures Nga et al (2023). This trend presents challenges for developing countries, especially those with economies heavily reliant on agriculture. Developed nations frequently apply Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary (SPS) standards, impacting trade in agriculture and livestock sectors. For Pakistan, a developing country, trade plays a vital role in economic expansion. According to

the International Trade Centre (ITC, 2020), Pakistan's exports could potentially increase by $12 billion by 2024, compared to its 2020 baseline, if it strengthens its global market integration and distribution networks. Additionally, the World Bank projects that Pakistan could reach upper-middle-income status by 2047 if these and other growth strategies succeed. However, barriers to this growth include NTMs, unclear domestic regulations, and limited awareness among traders. This study aims to examine how Pakistan and its trade partners apply NTMs to identify challenges and opportunities for better global integration.

Overall, research revealed different correlations between the trade-protecting measures, namely tariffs and non-tariff measures (NTMs), depending on variables such as methodology, NTM types, and differences in example nations. A similar assessment of protectionism's effects is accurate. To our knowledge, more research is needed to link the two protective trade measures. This study bridges this gap and advances previous research by demonstrating the connection between export and protectionism policies. We empirically examine whether global structural shifts in tariff and NTM policies could indirectly impact trade to achieve this.

2.4   Literature Based on CGE and SAM

The literature on CGE models applied to developing and less developed nations has been observed by many authors. The main CGE studies on Pakistan and the world economy will be covered in this section. These studies benefit and drawbacks are discussed in a helpful way to incorporate a few extra dimensions. The Social Accounting Matrix (SAM) highlights various studies conducted in Pakistan and globally, illuminating key sectors and providing critical policy messages on international trade, trade liberalization, economic development, poverty reduction, environmental sustainability, and trade liberalization. A single-entry, internally consistent accounting system known as a SAM documents an economy's entire range of economic transactions. It tackles the continuous requirement for up-to-date, reliable multispectral economic data, which is essential for policy research and creating models encompassing the economy as a whole Aguiar et al (2019). In Pakistan, the impact of tariff policies has garnered significant interest and study, with researchers examining how trade barriers affect different export sectors of the economy and their implications for poverty reduction, sustainable development, and trade liberalization.

A few SAMs were constructed for Pakistan, as shown in the preceding SAM Table. In 1979, the Pakistan Institute of Development Economics (PIDE) created the country's first SAM. After that, as part of the Improvement of National Accounting System (INAS) project, the Federal Bureau of Statistics (FBS) collaborated with the government to generate a SAM for 1984-85. Since this SAM only comprised one household group, analyzing distributional effects across households was inappropriate. A new SAM for 1989-1990 was created by Siddiqui and Iqbal (1999), who also disaggregated data using eight household groups. Five production accounts were created by combining the industry classifications from the Input-Output (IO) table, including the agriculture sector, industry, health, education, and other vital sectors.

In 2004, Pakistan's SAM for the fiscal year 2001-02 was created by Debowicz et al (2013); and Dorosh & Niazi (2006). There were 34 production accounts and 19 household groups in it. The fact that the provinces were separated into households and there were more commodities than in Siddiqui and Iqbal's (1999) study made it more appropriate to examine how shocks to particular industries affected various social classes. Waheed & Ezaki (2008) subsequently produced a monetary SAM for 1999-2000. While the previous SAMs were mainly based on the real economy, the authors were able to deconstruct the loanable funds market's activities into discrete payments connected to both financial and physical flows between institutions. The increasing importance of financial flows and the availability of relevant data make this feasible. Production activities from the following sectors were combined to establish six accounts: manufacturing, construction, water, gas, agricultural, mining, quarrying, and other sectors. Similarly, Toori & Gill (2023) stressed evidence-based policy-making to promote economic growth and reduce poverty, focusing on industries like wheat, rice, and manufacturing.

On a global scale, studies Adnyana et al (2020); R. Islam, 2015; Sinha et al (2007) examined the impact of tariff policies on sectors such as tourism, energy, agriculture, Plantation, Restaurants, Hotel, Textile, Handicrafts, manufacturing, construction highlighting the need to address output, employment, and income Distribution, environmental concerns while promoting economic growth and exports. (Deb Pal et al., 2012; Pradhan et al., 2014) He emphasized the importance of effectively analyzing income distribution and energy modeling to tackle inclusive growth issues. The literature also underscores the significance of sustainable development practices. Fuentes-Saguar et al (2017) He advocated for promoting the bio-economy to align economic activities with

renewable resources while concentrating on putting sustainable farming methods into place to lessen the impact of climate variability on access to an adequate food supply and agriculture productivity across the Middle East and North Africa.

We construct a SAM for Pakistan based on data from households, contemporaneous National Accounts, and information from the SAM. The work is a component of the Pakistan Strategy Support Program, which assists the Pakistani government with evidence-based policy reform to promote international commerce, pro-poor economic growth, and improved food security. It is anticipated that the SAM will be combined with CGE modeling to evaluate the macro and distributional effects of policy changes on the economy (Bhatti & Moeen-ud-din, 2020; M. A. Khan et al., 2018). Because it offers a thorough picture of economic transactions within an economy, the SAM is essential to the CGE framework. It captures the flow of income and expenditures between various sectors, households, governments, and the rest of the world. The accuracy and dependability of the CGE models are guaranteed by this thorough data integration. SAM provides a nuanced understanding of economic dynamics by enabling CGE models to simulate how changes in one area of the economy can affect other areas Perali et al (2012). Additionally, the SAM offers the data required for CGE models to be calibrated so that they correctly reflect the real economy.

The CGE table explores a wide range of international economic studies, emphasizing how different industries and policy measurement (Santos, 2022; Stuttard & Frogner, 2003; Thurlow, 2008). Utilizing SAM within the CGE framework enhances the ability to capture and analyze these complex interactions, leading to more informed and effective policy decisions. These studies provide deep insights into the dynamics of international trade, economic development, and the intricate balance between tariff policies and their repercussions on exports in Pakistan and worldwide.

Tariff policies have been closely examined on a global level. Research like the ones carried out by (Bhatti et al., 2015; Lofgren et al., 2002) has underlined that to promote economic growth, it is imperative to address income inequality and give human capital investments, particularly in secondary education top priority. Numerous aspects of tariff policies and their effects on trade and financial performance have been studied by additional researchers. For instance, studies like (Shagdar & Nyamdaa, 2017; Tokunaga et al., 2003) underscored the significance of tariff

reductions and institutional reforms in fostering economic integration and competitiveness. Similarly, (Mahmood & Marpaung, 2014) emphasized the importance of implementing carbon pricing mechanisms and energy efficiency measures to address environmental concerns while promoting sustainable economic development.

2.5   Research Gap

In conclusion, research on trade and tariff policies in Pakistan, despite methodological limitations, suggests that tariffs harm competitiveness and consumer welfare, contributing to stagnation and de-industrialization. Every study listed in the literature review provides various insights into the effects of tariff policy. Although these studies address a wide range of research topics, no comprehensive system-wide analysis using the Computable General Equilibrium framework has been conducted to evaluate how Pakistan's export sectors are indirectly impacted by tariff policy. This study looks at how tariffs affect Pakistan's major export market to close that gap. While tariffs are a widespread issue affecting the entire economy, this study will use a CGE model to analyze how tariffs influence Pakistan's overall economic structure. The research will help determine which export sectors require more targeted management strategies to mitigate the adverse effects of tariff policies. Additionally, it will highlight how tariffs affect import-dependent sectors, which are equally crucial to the nation's economy but are often overlooked in discussions focused solely on exports.

Furthermore, assessment, the majority of research on the effects of changes in tariff policies concentrates on economically vulnerable export industries, like manufacturing, mining, forestry, and agriculture. However, other sectors, though potentially less vulnerable, still contribute significantly to export-oriented sectors like vegetables, food processing, animal products, minerals, textiles, leather goods, metals, manufacturing, and plastics. According to this research, most policy issues are directly related to structural exports, so explicitly addressing these issues within a CGE model is imperative. Creating a unified framework that includes economic indicators is crucial for this purpose. This work addresses the need to integrate policy and export indicators into an economic system, serves as the foundation for analysis, and ultimately guides policy formulation.

CHAPTER 3

TRADE POLICY FORMATION IN PAKISTAN

3.1   Measures Directly Affecting Market Access

Pakistan has been actively involved in international trade agreements, joining the General Agreement on Tariffs and Trade (GATT) in 1948 and the World Trade Organization (WTO) in 1995. As a WTO member, Pakistan grants at least Most Favored Nation (MFN) treatment to all member countries, with exceptions for India and Israel, and extends this treatment to non-WTO trading partners as well. To enhance trade processes, Pakistan accepted the WTO's Trade Facilitation Agreement (TFA) on October 27, 2015, which is projected to lower trade costs by about 13%. As of August 2021, Pakistan had implemented 79% of its TFA commitments, with full implementation scheduled between 2017 and 2024. Pakistan's trade policies have been reviewed five times by the WTO, with the most recent review occurring in 2022. Although Pakistan is not a signatory to some plurilateral agreements like the Information Technology Agreement (ITA), it has been an observer of the Agreement on Government Procurement (GPA) since 2015. Upon ratification, WTO agreements are incorporated into Pakistan's domestic laws, underscoring the country's ongoing commitment to improving market access and trade facilitation (WTO, 2022).

Additionally, as of August 2021, Pakistan was involved in six new dispute settlement cases, acting as a respondent in a case brought by the UAE on anti-dumping measures and as a complainant in a case against South Africa's anti-dumping duties on Portland cement. Pakistan also participated as a third party in multiple cases involving India and China (WTO, 2021)

3.1.1   Free Trade Agreements (FTAs)

Pakistan has actively pursued Free Trade Agreements (FTAs) with major economies, including the China-Pakistan Free Trade Agreement (CPFTA), the South Asian Free Trade Agreement (SAFTA), and agreements with Malaysia and Mauritius, aiming to reduce trade barriers and enhance export opportunities. The CPFTA, signed in 2006 and upgraded in 2019, encompasses both goods and services, establishing China as one of Pakistan's largest trading partners. Despite preferential tariff reductions, Pakistan's export growth to China has remained modest; in 2020,

China accounted for 27.28% of Pakistan's imports but only 8.4% of its exports. Similarly, while SAFTA, effective from 2006 and involving eight South Asian countries, represents a significant regional trading bloc for Pakistan, trade under SAFTA constituted merely 1.96% of Pakistan's imports and 7.74% of its exports in 2020. This indicates that although tariff reductions have been beneficial, non-tariff barriers and logistical challenges continue to impede trade growth. The limited impact of these FTAs can be attributed to several structural issues within Pakistan's economy. A significant concern is the concentration of exports in a few sectors, particularly textiles, which account for a substantial portion of total exports. This lack of diversification means that while certain FTAs may facilitate increased trade in specific products, they do not adequately address broader challenges faced by exporters in accessing diverse markets. For instance, a study examining data from 2003 to 2010 found that while SAFTA and bilateral FTAs with China and Iran positively influenced Pakistan's export value and the number of exporters, agreements with Sri Lanka and Mauritius showed no significant effect on export performance (WTO,2020).

The CPFTA exemplifies the challenges faced by Pakistan; although it was anticipated to enhance trade, imports from China surged from $2.9 billion in 2006 to $15.17 billion by 2021, resulting in a substantial trade deficit for Pakistan. This raises questions about whether FTAs are genuinely expanding export opportunities or merely redirecting trade flows without substantial net gains. Moreover, local industries struggle to compete with lower-cost imports from China, which often leads to reduced industrial output in sectors like textiles and leather. Additionally, Pakistani industries frequently fail to meet the stringent quality standards and production timelines required by international markets, preventing the country from fully exploiting the potential benefits of FTAs. As a result, while tariff reductions have been granted under these agreements, they have not translated into significant increases in export volumes or diversification. Furthermore, in sectors where local industries cannot compete effectively, price suppression often negatively affects profitability and leads to job losses in labor-intensive sectors Reis & Taglioni (2013).

3.1.2 Regional Trade Agreements (RTAs)

Regional Trade Agreements (RTAs) play a significant role in Pakistan's trade policy, complementing the multilateral trading system. Pakistan views RTAs as a means to foster a more predictable and secure trade environment, which supports sustainable growth, diversification of trade products, and enhanced cooperation among member states. These agreements are also seen

as tools to alleviate poverty and improve livelihoods. Pakistan has been proactive in pursuing bilateral and regional trade and investment agreements, including those within the South Asian Free Trade Area (SAFTA), the Pakistan-China Free Trade Agreement (CPFTA), and several other RTAs and PTAs with countries such as Sri Lanka, Iran, and Malaysia. While some RTAs have had limited trade impact, Pakistan continues to negotiate new agreements with countries like Azerbaijan, Tunisia, and members of the Gulf Cooperation Council, aiming to expand bilateral trade and investment linkages. Despite challenges, including the slow progress of certain agreements like the Economic Cooperation Organization (ECO) and the Organization of Islamic Cooperation (OIC) trade frameworks, Pakistan remains committed to leveraging RTAs to enhance its regional trade and economic prospects (WTO, 2022).

3.1.3   Preferential Trade Agreements (PTAs)

Pakistan's engagement in Generalized System of Preferences (GSP) schemes has played a pivotal role in boosting its export performance, aligning with the objectives of tariff reductions to enhance trade competitiveness. Since January 1, 2014, Pakistan has benefited from the European Union's GSP+ arrangement, which grants zero tariffs on around two-thirds of product categories, promoting sustainable development and governance improvements. This arrangement has been instrumental in bolstering Pakistan's exports to the EU, which rose by 47%, from USD 6.09 billion in 2013 to USD 8.94 billion in 2021, with significant growth in the textiles and garments sector. The GSP+ benefits were extended until 2023, amplifying the impact of tariff preferences on export growth and employment, particularly for women in textiles. Similarly, under the United States GSP scheme, Pakistan ranked as the 9th largest beneficiary in 2019, with GSP exports reaching USD 474 million by 2020 a 37.5% increase from the previous year. These preferential arrangements, notably in textiles, illustrate the role of targeted tariff policies in strengthening Pakistan's export landscape, which is central to understanding the broader impact of tariff reductions in Pakistan's trade policy framework (WTO, 2020).

3.2   Pakistan Policies

Since gaining independence in 1947, Pakistan has a history of utilizing protectionist policies in its plans for economic development. federal legislation about international trade include tariffs, import policies, trade frameworks, foreign exchange regulations, intellectual property rights, and

export-promoting product and quality standards. These laws are critical in regulating imports and exports, promoting regional industries, and influencing the trade environment. However, the disparities between federal and provincial regulations frequently need to be clarified among traders, which hinders efficient trade operations. Pakistan's protectionist policies impact export-oriented industries and trade dynamics, significantly influencing these laws. Modifications to these policies have the potential to affect Pakistan's trade environment by modifying the tactics, rewards, and rules that regulate global trade (WTO, 2010).

3.2.1   Measures Directly Affecting Imports

Pakistan's import procedures are governed by several key legal frameworks, including the Customs Act of 1969, Customs Rules 2001, Export and Import Policy Act 1951, and the Import Policy Order 2020. These regulations outline essential documentation requirements such as national tax numbers, sales tax registration, shipping invoices, packing lists, and certificates like the bill of lading and SPS certificates. Upon arrival at the port, goods are registered with an import general manifest and processed through the Web-Based One Customs (WeBOC) system, which allows importers to self-assess duties. In alignment with the WTO's Trade Facilitation Agreement, Pakistan has modernized its customs operations by introducing 32 new WeBOC modules, an e-payment system handling nearly half of all duty payments, a container scanning system, an Authorized Economic Operator (AEO) program, and pre-clearance processes to streamline trade clearance (TPR,2022).

Building on these initiatives, the Pakistan Single Window (PSW) platform has revolutionized the import process, aiming to reduce administrative burdens, enhance compliance, and streamline operations. One of the platform's significant achievements is the integration of over 74 regulatory bodies into a unified digital system, allowing traders to process documentation and obtain approvals without interacting with multiple agencies separately. This consolidation has significantly reduced delays and operational inefficiencies. Additionally, the PSW has simplified documentation requirements by standardizing digital formats, such as those for the bill of lading and SPS certificates, and introduced an Advance Risk Management System (ARMS) to expedite the clearance of low-risk consignments while ensuring thorough checks on higher-risk goods. These measures, combined with the automation of customs declarations, duty payments, and

approvals, have reduced import clearance times by over 30%, lowering costs and improving overall efficiency for importers (PSW, Annual Report 2022).

The PSW's transformative impact extends beyond process efficiency to tariff rationalization and trade competitiveness. By facilitating the reduction of duties on essential raw materials and machinery, the PSW supports domestic industries and mitigates the inflation of production costs caused by high tariffs. Simultaneously, increased duties on luxury and non-essential imports help address trade deficits. The shift from a paper-based system to an electronic platform has replaced 155 physical documents with digital submissions, leading to significant reductions in processing times and costs. According to PSW reports, these advancements have contributed to a rise in Pakistan's Trade Facilitation score from 56.99% in 2021 to 70.97% in 2023, with cross-border paperless trade increasing from 22.22% to 44.44% during the same period. These improvements not only enhance operational efficiency but also bolster the competitiveness of Pakistani exporters by lowering import costs and aligning with international trade standards. Together, these measures showcase Pakistan's commitment to fostering economic growth through enhanced trade facilitation and a more competitive global presence.

3.2.1.1 Tariffs

Pakistan's import policies involve measures that directly impact tariffs, customs procedures, and restrictions. While the Customs Act 1969, Customs Rules 2001, and the Import Policy Order 2020 establish fundamental guidelines for import documentation and compliance, significant reforms have been made to streamline the tariff system. These reforms include the introduction of the WeBOC platform for managing import declarations and the risk-based channel system, which has decreased clearance times. In 2021/22, Pakistan's average applied MFN tariff dropped to 12.1%, down from 14.3% in 2014/15. This reduction is largely attributed to the elimination of nuisance tariffs and the introduction of a duty-free band covering nearly 29% of tariff lines. However, increases in high tariffs in the transport sector have tempered this reduction, with transport-related tariff lines rising from 238 to 331 over the same period. Despite these increases, over 93% of applied tariffs remain between 0% and 20%, with the modal rate being 20%. Additionally, Pakistan enforces restrictions on imports from countries like Israel and bans certain products for health, security, and religious reasons. To further protect domestic industries, Pakistan maintains anti-dumping and countervailing measures, managed by the National Tariff Commission. These

measures are in line with WTO standards, and recent amendments to the Anti-Dumping Duties Act 2015 have strengthened protections for local industries, improving the appeal process and preventing unfair trade practices (WTO, 2022).

3.2.2 Measures Directly Affecting Exports

Pakistan's export procedures are governed by the Export Policy Order 2020, which outlines the necessary steps for exporters. To engage in export activities, businesses must first register a business name, obtain a national tax number, and register with the relevant chamber of commerce and industry. Additionally, exporters must register with the Web-Based One Customs (WeBOC) system and obtain a Form E through an online banking portal. While not mandatory, it is highly recommended that exporters also register with the sales tax department to claim refunds or deductions. Exporters are required to provide several documents, including the shipping line's loading program, invoice, packing list, certificate of origin, SPS certificates, and other relevant approvals like DRTE certification and brand ownership documentation. Specific products, such as cotton and basmati rice, are subject to additional requirements, such as export contract registration with the Trade Development Authority of Pakistan (TDAP) and pre-shipment inspections. Furthermore, certain goods, like mangoes destined for the European Union, require mandatory hot water treatment S. Qadir (2020).

Exporters of jewelry and gemstones must also be registered with TDAP to benefit from duty-free imports of gold, and they are subject to penalties if the gold is not exported within 120 days. Once all documents and procedures are complete, exporters submit an online goods declaration through WeBOC, which assigns the consignment to a risk-based channel. The majority of exports pass through the green and yellow channels, allowing for quicker clearance, while exports flagged for the red channel undergo physical inspection and delays. After the payment of any applicable duties or taxes, the consignment is cleared for export Shabbar (2024).

3.2.3 Measures Directly Affecting Industrial Output

Pakistan's tax system, while complex, has significant implications for industrial output. The Sales Tax Act 1990 imposes a 17% sales tax on both imported and domestically produced goods, though certain goods benefit from exemptions listed in the Sixth and Eighth Schedules of the Act. These

exemptions, which are sometimes granted through SROs (Statutory Regulatory Orders), result in significant revenue forgone of PKR 578 billion in 2020/21, up by PKR 60 billion compared to the previous fiscal year. Additionally, sales tax on services, which is levied by provincial authorities, varies between 13% and 16%, further influencing the cost structure for industries. Excise duties on products like petroleum, cement, and automobiles also affect industrial costs. These duties, under the Federal Excise Act 2005, are both ad valorem and specific, and they are adjusted through government-issued SROs. The withholding tax system, particularly the tax on imports under Section 148 of the Income Tax Ordinance 2001, further complicates the tax burden on industries. Withholding taxes apply to payments for technical services, royalties, and imports, with rates ranging from 5% to 20%, influencing industrial operations, particularly for foreign investments and transactions. Despite these complexities, the government's tax reforms aim to broaden the tax base and reduce exemptions, which could ease the tax burden on industrial sectors in the future, fostering growth and stability in industrial output Umair Muhammad (2024).

CHAPTER 4

RESEARCH METHODOLOGY

4.1   Theoretical Framework

International trade theories aim to explain the origins and patterns of global trade, illustrating the benefits of trade and its potential to enhance overall welfare. These theories have evolved over centuries, marked by major shifts in thought from the early mercantilist policies to more modern frameworks like the Heckscher-Ohlin (H-O) theory. These trade theories provide guidance for shaping national trade policies, whether through restricting or liberalizing trade, and have influenced international organizations like the World Trade Organization (WTO) to advocate for freer trade.

Mercantilism, one of the earliest trade theories, emerged in 16th-century France and England and viewed international trade as a zero-sum game in which one nation's wealth accumulation came at the expense of another. The primary objective was to maximize exports while limiting imports, often achieved through high tariffs to make imports costly and reduce dependency on foreign goods. Rashid (1980) examined notable mercantilist thinkers, including John Locke, who emphasized theories that linked national wealth to holdings of gold and silver. Cantillon (1755), in his Essay on Economic Theory, acknowledged trade's value but warned against over-reliance on imported goods, emphasizing the importance of developing domestic manufacturing for long-term prosperity. Mercantilist ideas gradually waned in the 18th century with the rise of economists like Adam Smith and David Ricardo, who redefined international trade theories by introducing the concepts of absolute and comparative advantage.

Adam Smith's The Wealth of Nations (1776) introduced absolute advantage, proposing that countries should focus on producing goods they are most efficient at and importing others. This concept emphasized specialization and division of labor to maximize output, laying the groundwork for modern economic thought and international trade theories. Torrens (1826) further developed these ideas, discussing how nations should specialize in goods with lower direct costs, which led to the theory of comparative advantage. Ricardo (1817) expanded on this in On the Principles of Political Economy and Taxation, arguing that even without an absolute advantage, a

country could benefit from trade by specializing in goods with lower relative production costs. Smith's and Ricardo's ideas laid the foundation for later supply-side trade theories, including the Heckscher-Ohlin theory, which builds on these early insights into trade specialization

4.1.1 Comparative Advantage

The traditional idea, pioneered by David Ricardo in 1817, underscores the benefits countries can derive from specializing in producing goods with the lowest opportunity cost to engage in trade. This concept suggests that nations can enhance efficiency and overall welfare by focusing on their comparative advantages. Countries specializing in areas with comparative advantages produce more effectively and exchange their excess production for items made in other countries that are produced more effectively, benefiting from trade on both sides Kazım (2022).

However, Hausmann et al (2014) argue that implementing tariff policies on trade can distort these benefits. Tariffs are levied as taxes on imported goods, raising their cost on the domestic market. This price increase reduces the competitive edge that foreign producers may have, thus protecting domestic industries from international competition. Although this protection might help some domestic sectors in the near run, it frequently results in an ineffective use of resources. Rather than countries producing goods for which they have a comparative advantage, resources may be diverted to protect industries that are not globally competitive.

Furthermore, the concept of comparative advantage may be misleading because of non-tariff barriers like import licenses, standards, and quotas. These policies further shield home markets from international competition by restricting the volume of imports or raising the costs for foreign manufacturers. These regulations impede the flow of resources to their most advantageous applications, resulting in economic inefficiencies Trung (2002).

Both tariffs and non-tariff barriers may have many negative consequences. First, money is moved from the country's most successful economic sectors to less successful ones that are exempt from tariffs. Second, domestic producers may have fewer export opportunities as other nations retaliate with tariffs, which would lower export volumes and potentially reduce trade gains. Tariffs impact consumers and businesses that use these commodities as inputs by raising the cost of imported goods. Lastly, tariff-protected industries might be less motivated to innovate and increase

productivity, which could eventually result in stagnation and a decline in their ability to compete globally Kinzius et al (2019).

4.1.2   Deadweight Loss

A tariff on imports can reduce exports, thus distorting market equilibrium in the economy. This distortion results in a loss of economic efficiency, as the gains from trade are reduced Rodrik (1988). Deadweight loss occurs because the tariff raises the prices of imported goods, leading consumers to purchase fewer imports and domestic producers to supply more than the efficient quantity Alkalah (2016). This artificial manipulation of supply and demand lowers the economy's overall surplus, which is made up of government revenue, producer surplus, and consumer surplus. The portion of the surplus that does not benefit producers, consumers, or the government is known as the deadweight loss, and it denotes a reduction in overall welfare Kaplow (2012).

Gowland (2010) explains how a tariff raises the price of imported goods domestically, which lowers the amount demanded and raises the amount supplied domestically. This causes resources to be reallocated from their most efficient use, resulting in a deadweight loss to the economy.

Tariffs can also reduce the competitiveness of exports by raising the price of goods. Due to tariffs on imported raw materials or intermediate goods, domestic producers may face higher input costs, leading to higher production costs and reduced export volumes. Thus, while tariffs aim to protect domestic industries, they can inadvertently harm export performance by creating inefficiencies and deadweight loss in the economy Edwards & Lawrence (2008).

However, figure 2.1 represents the assessment of a tariff results in a deadweight loss, just like with most taxes. This deadweight loss lowers consumer surplus, which lowers the overall surplus of the domestic economy because purchasers gain from lower prices.

The reduction in consumer surplus that is not made up for by an increase in the producer surplus of those domestic producers who can now sell at a higher price or by the money raised through taxes is known as the "deadweight loss" of a tariff.

The amount demanded decreases from the quantity demanded at the world price to the quantity demanded at the world price plus the tariff when a tariff is applied. Concurrently, the quantity

produced by regional providers increases from the quantity supplied at the worldwide rate to the quantity supplied at the premium rate.
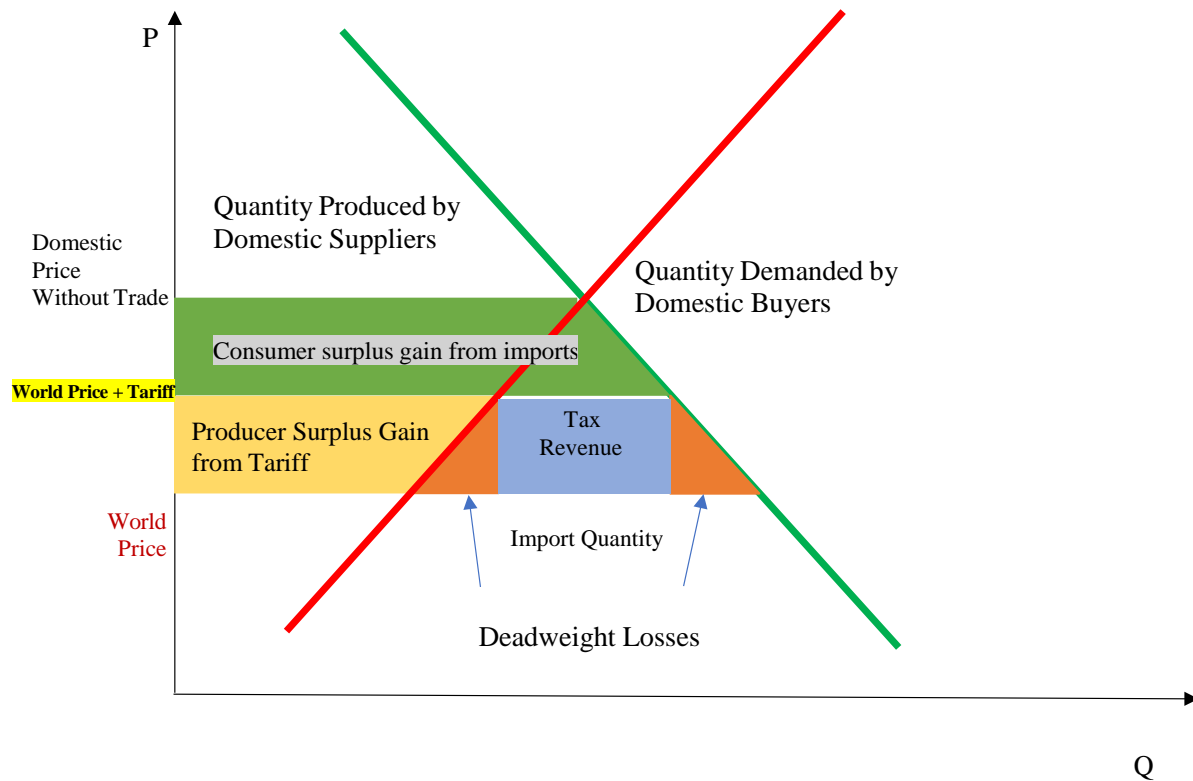
Figure 4.1:   Economic Effect of Tariff

Consumer purchases either boost domestic businesses to increase producer surplus or boost government revenue by importing goods and paying the appropriate tariff. Deadweight losses from tariffs are only incurred by customers who decide not to purchase the goods because of the higher price.

4.1.3   New Growth Theory

Paul Romer's 1986 introduction of the new growth theory, which strongly emphasized the contribution of knowledge, innovation, and technology, completely changed our understanding of economic growth. This theory contends that trade liberalization, which includes lowering or doing away with tariffs, can, via some methods, considerably boost economic growth. One of the central tenets of the new growth theory is that innovation and knowledge are endogenous variables that are subject to the influence of market forces and policy choices Romer (1989).

Tariff policies have the potential to boost export production in vital industries like manufacturing, agriculture, and textiles when they are in line with trade liberalization. Countries can increase their competitiveness on the international scene, gain access to bigger markets, and realize economies of scale by reducing trade barriers Storper (2016). This increase in output and market reach fosters a cycle of innovation and productivity gains, which also increases production and encourages investment in research and development George et al (2012).

4.2   CGE Model

CGE (Computable General Equilibrium) models are numerical depictions of how an economy would respond to changes in productivity or other policies by using real economic data and economic theory. Another name for these models is applied general equilibrium models. The study examined the above-mentioned tariff policies and their overall effects on the domestic economy using a national CGE The policy simulations involved a static CGE, enabling a thorough analysis of the direct and indirect effects across regions, periods, and economic sectors resulting from policy adjustments. The CGE is theoretically sound and effectively captures the economic effects predicted by economic theory. Model variables, a database, a group of economic agents, and equations representing the economy's structure and the agents' behavioral responses make up CGE.

A CGE involves defining the specific study case, constructing a coherent model, collecting data, establishing a reference point for calibration, programming the model, conducting an experiment, and ultimately assessing the results (Brockmeier, 2001). These models are not the same as other econometric or macroeconomic techniques. The CGE framework considers the entire economy and captures the interactions and effects among its various sectors, whereas the latter focuses exclusively on one.

4.3   Graphical depiction of the GTAP model standard

In this study, the worldwide GTAP (Global Trade Analysis Project), a multi-country, multisector AGE model Robinson et al (1999) has been used to evaluate the effects of trade liberalization reforms on Pakistan empirically. Multi-nation, economy-wide CGE (Computable General Equilibrium) aims to calculate the relative costs of different mixes of inputs and outputs in the relevant economies as well as demonstrate the shifts in global trade patterns. Thus, any modification in any, in theory, component of the system will affect nations everywhere in the world Rocco et al (2020).

The GTAP was aimed at comparative-static analysis of tariff policy issues in an economy-wide structure. Since the changes in tariff policies and production levels in any of the regions and sectors will have impacts on other regions and sectors, even though my main focus of this study is on results for Pakistan, it is possible to incorporate the tariff policy changes of other countries within a global CGE modeling framework. It is only complete a general equilibrium evaluation that economic policies can be assessed in terms of their impacts on exports. It is also easy to make a comparison between different tariff policy possibilities through a global CGE.

The GTAP (Global Trade Analysis Project), facilitates such multi-country, worldwide economic analysis. Since this study emphasizes on global trading relations and detailed sectoral and regional trading activities of the Pakistan economy, many of the simulations we need to consider require a global side. For example, in the case of Pakistan, it is necessary to consider the effects on Pakistan of a decrease of domestic import tariffs on trade partners. I also need to assess the impact of the decreases in import tariffs on Pakistan's exports on the Pakistan economy and its sectoral distribution. Using a global model like GTAP, we can endogenously capture the effects of tariff policy changes in Pakistan. This ensures that changes abroad in combination with Pakistan's changes are used to generate new terms of trade policy for Pakistan.

Importantly, CGE models can integrate measures of well-being and are based on Walrus's general equilibrium theory Dwyer (2015). CGE models generally concentrate on the linkages between economies variables. These models also link macro and micro economic variables, i.e., exports and imports, market price and industrial output (Marchant, 2006).

It is essential to discuss and illustrate the GTAP model before delving into the model closure or simulation design (Figure 9) a graphical exposition of the GTAP model structure by focusing on

the accounting relationship of all agents in the multi region open economy for every region. This regional household gets all of its money and divides it into three areas: savings (SAVE), private household spending (PRIVEXP), and domestic government spending (GOVEXP). Each of the three elements of the final Cobb-Douglas per capita indicates that demand has a constant share in the area income utility features Corong et al (2017).
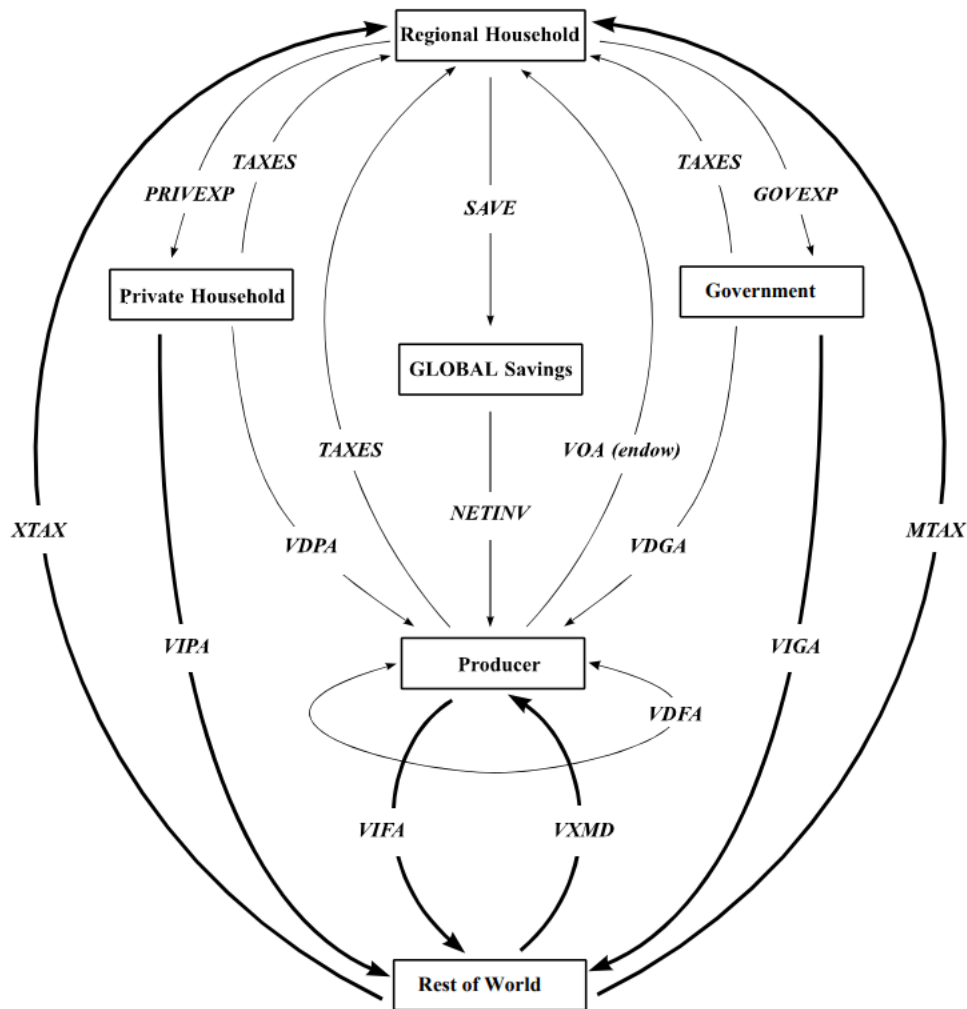

Figure 4.2:   Circular Flow in a Reason Economy

Source: Brockmeier (2001)

Each component must allocate its income in a way that is what it receives from the regional household. The enterprises in the lower half of the model create a closed economy that consists of

the regional household and its three components when producers are considered. This provides a closer look at the accounting connections in the GTAP model. At first, the region household the upper part of the diagram shows the value of output at agent's prices, or VOA, that producers pay for the items that local households receive as endowments make up the available regional income. These commodities are for endowment or essential inputs. The firm subsequently blends items (VDFA = value of domestic business purchases at agency rates) to manufacture finished items. The government and private homes receive these finished goods, resulting in (VDGA = value of domestic government agent) and (VDPA = value of domestic price agent private household purchases). When applied in a closed system, this intricate process completes the cycle of expenses, income, and production without taxes or economics, presenting a fascinating challenge for understanding.

Next, the model is expanded to include the rest of the world. This region's structure is similar to the domestic economy's in the model, and its inclusion shows where imports come from and where exports from the domestic economy are directed to other regions. The exports are represented as (VXMD = export value at market price). By destination, three distinct economic actors make up the imports in the local financial system. As a result, each of the three pays differently for goods they import into the rest of the globe Area (ROW). With its intricate web of economic interactions, this global perspective underscores the depth and complexity of your study in understanding the dynamics of international trade.

Global savings is the third component of savings in the multi-region open economy without taxes since savings and investments in the open economy are computed globally. Brockmeier (2001). However, open economies entail two international domains. The second global sector handles all foreign transactions and global international trade and transportation-related operations. Additionally, it functions as putting together the regional investment products portfolio and fulfilling regional households' need to save money by selling its portfolio's shares. Similarly, the second global sector assembles commerce exports, insurance services, and transportation, as discussed previously, and a composite item is created to facilitate trading in goods between the countries.

4.4 Simulation Scenarios

As analyzed the expected tariff policy in Pakistan using the GTAP model to gauge its potential impact. This evaluation allows for insights into export fluctuations and a thorough comprehension of broader general equilibrium repercussions. The results hold practical significance for policymakers and economists concerned with international trade and economic policy.

Table 4.1: Scenario Design

Scenario	Tariff Change	Sectors Included	Key Variables Measured	Partner Countries
Baseline	Current	Vegetables, Processed Food, Animal Products, Minerals, Textiles, Leather, Metals, Manufacturing, Plastic, and Others.	Exports, Imports, Market Price, Industry Output	China, USA, UAE, and Row
Tariff Increase	+10%	Vegetables, Processed Food, Animal Products, Minerals, Textiles, Leather, Metals, Manufacturing, Plastic, and Others.	Exports, Imports, Market Price, Industry Output	China, USA, UAE, and Row
Tariff Reduction	-10%	Vegetables, Processed Food, Animal Products, Minerals, Textiles, Leather, Metals, Manufacturing, Plastic, and Others.	Exports, Imports, Market Price, Industry Output	China, USA, UAE, and Row

Table 4.2: Simulation Design

Simulation	Descriptions
Sim-1	Pak Increased the 10% import tariff on all sectors from China, USA, UAE, and ROW.
Sim-2	Pak Decreased the 10% import tariff on all sectors from China, USA, UAE, and ROW.
Sim-3	10% tariff decrease on Pak imports from USA, UAE, China, and ROW
Sim-4	10% tariff Increase on Pak imports from USA, UAE, China, and ROW
Sim-5	Pak 10% tariff reduction on imports from the USA, UAE, China, and ROW
Sim-6	Pak decreased the 10% import tariff on all sectors from the USA.

Sim-7	Pak decreased the 10% import tariff on all sectors from UAE.
Sim-8	Pak decreased the 10% import tariff on all sectors from China.
Sim-9	Pak decreased the 10% import tariff on all sectors from ROW.

The table shows how Pakistan's import tariffs' ad valorem base rates have changed in the GTAP model. These modifications reflect the desired or new rates in the model. Thus, based on the target rates expressed in percentage terms, the variable "tms" in the GTAP model which represents the source-specific change in tax on imports of a tradable commodity was concurrently adjusted for the pertinent sectors.

The CIF import value, which accounts for trade expenses like transportation and insurance, is subject to ad valorem import tariffs. These tariffs lead to higher prices of imported goods, which are then paid by all intermediate and final consumers. Consequently, an increase in import tariffs results in higher import prices and reduced consumer demand for imports (the import demand curve shifts from D1 to D2). In Figure 11, the import tariff demonstrates three effects on the importing nation. These effects are as follows:

a) The "a + c = ABFE2" area represents the direct burden of the tariff. This is the amount of tariff revenue that consumers pay to the government on imports. This revenue does not harm the economy because it transfers consumer purchasing power to the government. The government can then use this money to support national welfare programs.

b) If the importer is facing excessive pressure or if allocative efficiency decreases (in zone "b = BDE1"), consumer surplus decreases without being balanced out in other parts of the economy. This occurs when consumers pay more for imports and reduce their consumption. As a result, consumption is inefficient because consumers who would have been willing to purchase QM1–QM2 imports at the free market price of PM1 can no longer do so.
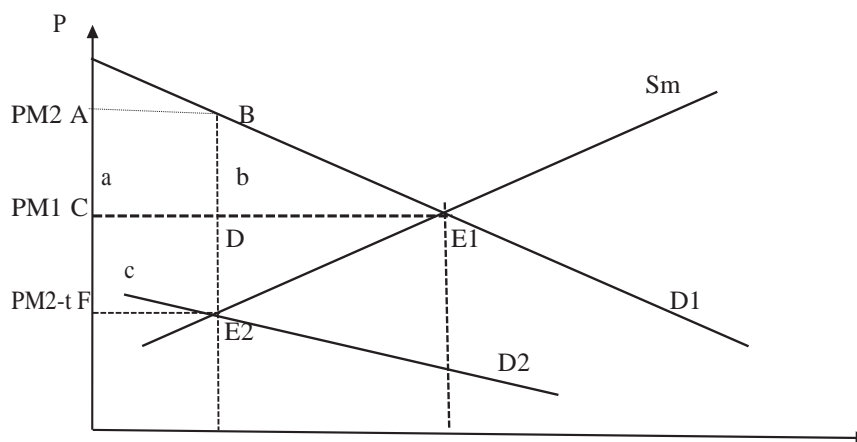
Figure 4.3: An import tariff's effects on the importer

Source: Modified from Burfisher., 2011

S"Sm" represents the supply of the imported goods from foreign sources. According to the Armington assumption that goods are differentiated by country of origin, there is no domestic production of the imported type.

D1 represents the demand curve for imports by domestic consumers, taking into account any applicable duties, such as duty-free demand.

D2 represents the demand curve when an import tariff is introduced, reflecting an increase in the import tariff in our case.

At the initial equilibrium, PM1 and QM1 represent the CIF import price and import quantity.

At the new equilibrium, PM2 and QM2 represent the domestic price of imported goods and import quantity, with PM2 being the CIF world import price plus the tariff.

PM2-t represents the import price, net of the tariff.

c) When we talk about the impact of terms of trade (area "c = CDFE2"), we are referring to the situation where power is imported from foreign countries to local consumers. This can be seen as a direct burden. The government reimburses consumers for area "c" of their tariff payment at a price lower than what foreign consumers pay. As a result, the increase in local prices does not fully reflect the entire tariff. The exporting nation experiences a loss of purchasing power for imports, leading to trade benefits for the importer (Shagdar & Nyamdaa, 2017)

The change in a nation's overall well-being is influenced by the extra cost of the tariff and its effect on trade conditions. The direct effect of tax revenue only redistributes national income. Thus, the

importer's overall impact is determined by whether the additional cost or reduced consumption efficiency (area "b") outweighs its trade benefit (area "c").

4.5 GTAP Sectors

4.5.1 Sectoral Aggregation Used in the Model

The analysis focuses on ten key sectors of Pakistan's significant exporters: vegetables, processed food, animal products, minerals, textiles, leather, metals, manufacturing, plastic, and others. These sectors were chosen for simulation using GTAP11 due to their substantial contribution to Pakistan's exports. This option allows for a comprehensive assessment of how changes in tariff policies impact Pakistan's key export industries. The goal of the study is to offer in-depth understanding of the impact that tariff adjustments have, both directly and indirectly, on the export performance of the nation.

The sectors of Vegetables, Processed Food, Animal Products, Minerals, Textiles, Leather, Metals, Manufacturing, and Plastic for the simulation analysis due to their substantial contribution to Pakistan's export economy, as indicated by their export values in FY2022.Pakistan's export performance in several areas in FY2022 showed notable contributions from important industries. Textiles were the most popular item with a significant value of $18,690,938 in exports, demonstrating the nation's dominance in the world textile market. Vegetable items came in second with $3,888,655, showing Pakistan's strength in agricultural exports. With $1,303,638 in exports, food goods came in second, demonstrating the variety of Pakistan's food export options. Pakistan's industrial and natural resource export strengths are seen in the $1,182,601 and $1,163,072 contributions from metals and mineral goods, respectively. Notable contributions were made by manufactured items, animal products, and leather products, with export values of $968,990, $893,935, and $613,728 respectively. These demonstrate Pakistan's wide range of exports in the manufacturing, natural resource, textile, and agricultural sectors, underscoring its significance in the dynamics of international trade.

Table 4.3:   Inflows to Pakistan 2022

S.no	Commodity Description	2022(Thousand US $)
1	Textiles	18,690,938
2	Vegetable Products	3,888,655
3	food products.	1,303,638
4	Metals products	1,182,601
5	Mineral Products	1,163,072
6	Leather products	968,990
7	Animals Products	893,935
8	Manufactured products	613,728
9	Plastics products	549,377
10	optics, photography, and cinematography	497,049
11	Machinery products	183,313
12	Footwear, Headgear, Umbrellas, and Walking Sticks	164,783
13	Pulp Wood products	110,143
14	Vehicles, Aircraft, and Transport Equipment	105,685
15	Arms and Ammunition, Parts and Accessories	92,236
16	Animal, Vegetable Fats, Oils and Waxes	75,108
17	Stone, Plaster, Cement, Asbestos, Mica	69,678
18	Wood products	30,670
19	Semi-Precious Stones, Metals	29,777
20	Arts, Collectors, Pieces, Antiques, and Special Transactions NES	26,171

Source: State Bank of Pakistan

In 2022, Pakistan's imports were led by mineral products, totaling $22.26 billion, reflecting the country's heavy reliance on external sources of energy and raw materials. machinery and mechanical appliances followed with $7.38 billion, crucial for industrial and technological growth, while chemical products amounted to $7.18 billion, supporting various sectors like pharmaceuticals and agriculture. Imports of textiles of $5.31 billion and base metals of $4.9 billion highlight the need for raw materials in local production. Other significant imports include animal or vegetable Fats and Oils for $3.86 billion, plastics for $3.81 billion, and vehicles and transport equipment for $3.41 billion, essential for both industrial and consumer use, demonstrating the diversity and importance of imported goods in sustaining Pakistan's economy.

Table 4.4: Outflows to Pakistan 2022

S.no	Commodity Description	2022(Thousand US $)
1	Mineral Products	22,259,188,19
2	Machinery and Mechanical Appliances	7,380,039,46
3	Products of Chemical or Allied Industries	7,178,519,70
4	Textiles and Textile Articles	5,314,183,79
5	Base Metals and Articles of Base Metal	4,903,180,41
6	Animal or Vegetable Fats, Oils and Waxes	3,862,349,17
7	Plastics product	3,818,763,88
8	Vehicles, Aircraft, Vessels and Associated Transport Equipment	3,415,507,26
9	Works of Art, Collectors, Pieces, Antiques, and Special Transactions	2,507,941,58
10	Pulp of Wood or other Fibrous Cellulosic Material	1,253,697,20
11	Optical, Photographic, Cinematographer, Measuring	858,787,95
12	Prepared Foodstuffs; Beverages, Spirits, Vinegar, and Tobacco	766,344,26
13	Miscellaneous Manufactured Articles	480,323,22
14	Articles of Stone, Plaster, Cement, Asbestos, Mica or similar Materials	297,022,76
15	Wood and Articles of Wood	232,468,51
16	Live Animals and Animals Products	151,261,30
17	Raw Hide and Skins, Leather, Fur skins and Articles	132,517,18
18	Footwear, Headgear, Umbrellas, Walking Sticks	53,802,98
19	Arms and Ammunition, Parts and Accessories	39,408,46
20	Natural or Cultured Pearls, Precious or Semi-Precious Stones, Metals	19,223,22

Source: State Bank of Pakistan

4.6   Regional Aggregation

Begin by using the runGTAP software to model the effects of adjustments in tariff policies on Pakistan's exports. The regional breakdown for the investigation encompasses four separate areas: Pakistan (PAK), the United States of America (USA), the United Arab Emirates (UAE), China (CHN), and the Rest of the World (RoW). These regions were selected based on their significance

as significant trading partners for Pakistan. The USA, UAE, and China represent key export destinations for Pakistani goods, while the Row category encompasses all other countries, providing a comprehensive view of the global trade environment. This compilation enables us to understand how alterations in tariff policies affect Pakistan's exports to its main trading partners. It provides a comprehensive examination of both the direct and indirect consequences on the export industry on the export industry.
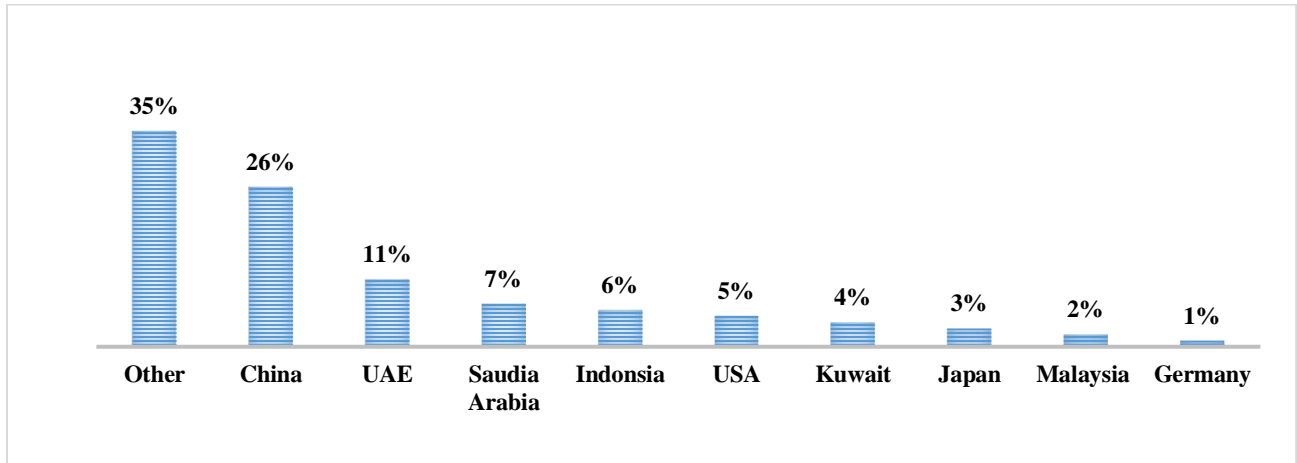

Figure 4.4: Pakistan Imports partners (2021-22)
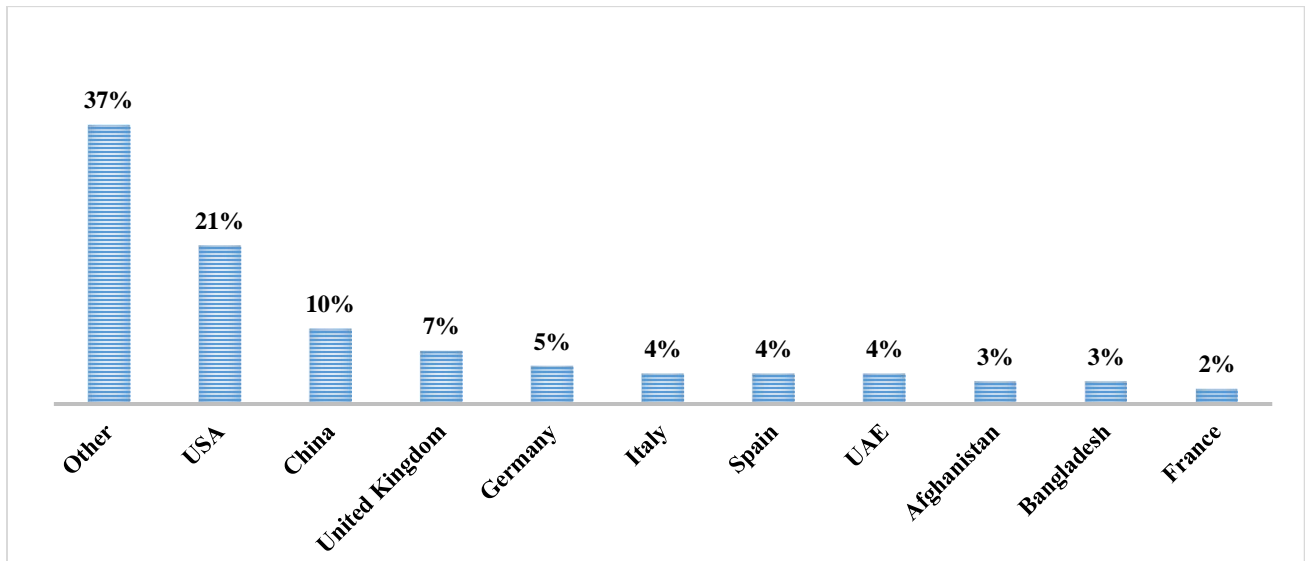
Source: Trade Map

Figure 4.5: Pakistan Exports Partners (2021-22)

Source: Trade Map

Table 4.5:   Regional Aggregation Used in the Model

S.no.	Code	Names
1	PAK	Pakistan
2	USA	United States of America
3	UAE	United Arab Emirates
4	China	China
5	RoW	Rest of World

Source: Economists aggregation using GTAP11

CHAPTER 5

RESULTS AND DISCUSSIONS

Over the past two decades, Pakistan has experienced a growing trade deficit, worsened by ineffective policies. The country's trade, particularly its exports, remains heavily reliant on 10 key sectors: textiles, vegetables, metals, minerals, food, plastic, leather, manufacturing, animals, and others. These sectors are fundamental to Pakistan's economy and play a significant role in understanding the impact of trade policies.

The tariff policy for ten export sectors and important trading partners was demonstrated by the simulation. The simulations were carried out independently for every nation using the methodology described in the chapter before. A comparison of the simulation results for each nation is shown in this section.

5.1 Simulated Sectoral Effects on Pakistan

Simulation results show that if Pakistan increased the 10 percent tariff across all sectors and the most export sectors indicating the negative and significant impact of higher tariffs on international trade competitiveness. The most significant decline is seen in minerals (-3.15%), manufacturing (-2.42%), leather (-2.33%), and metals (-2.32%). The higher tariffs make Pakistani goods less attractive in global markets due to increased costs. Therefore, international trade and development theory suggests export growth contributes positively to industrial growth. In line with this argument, analysis of the decline in metal and mineral exports can be attributed to several factors, including global market demand, production capacity, and trade barriers. Reducing tariffs on intermediate inputs like metals and minerals is significant for industrial growth. Lower tariffs reduce costs for industries by making high-quality inputs more accessible, which boosts competitiveness. This enables firms to expand into new export sectors and improve the quality of their products, ultimately enhancing manufacturing output and diversification. By lowering intermediate input tariffs, countries can foster innovation and support long-term growth in their export-driven industries.

In Pakistan 90% of the leather produced is exported, either as finished leather or as leather products, indicating the export-oriented nature of the country's leather industry. This industry is among the well-established native manufacturing industries that have progressed fairly well over time. The average annual decrease in leather exports has been 11% annually Ghafoor and Zafar, (2015). The reason is that the policymakers cannot manage efficiently tariff policy Noor et al. (2023)

Pakistan exports value-added goods to developed nations imports raw materials and related goods from developing nations. The majority of raw leather imports come from leather exports destinations Germany, USA, Italy, Spain, U.K, Netherlands, France, Hong Kong, China, and Canada for the period 1991 to 2020. This possess a significant portion of Pakistan's raw leather supply Haidr (2010). Most sectors also experience a reduction in imports (figure 6.1), reflecting the intended protective effect of tariffs on domestic industries. Leather sees the steepest decline (-3.28%), followed by Processed Food (-2.64%) and Textiles (-2.21%).

Pakistan has the second-biggest salt mine in the world, the fifth-largest reserves of copper and gold, the second-largest deposits of coal, and billions of barrels of crude oil. Despite having enormous potential, Pakistan's mineral sector contributes only 3% of its GDP, and its exports are merely 0.1% of everything in the world. Pakistan's total mineral exports in 2017 were 0.5 billion USD compared to the 401 billion USD global average. The marketing and exploitation of minerals have several gaps. The regulatory framework creates obstacles for investors, especially foreign investors, by omitting certain links between the federal mineral policy and provincial mining laws or policies Akhtar and Shah (2018). This leads to procedural less understanding of price change in the mineral sector. However, in some sectors like Minerals (0.40%) and Others (0.54%) this trend shows slight increases in imports despite the tariff hike. This could be due to specific demand dynamics or less sensitivity to price changes in these sectors.

The relationship between tariffs and industrial output growth in certain sectors can be positive, with tariff-oriented policies potentially driving economic growth Afzal (2024). The impact of tariff adjustments on industrial output varies across sectors. Manufacturing output has increased by 0.61%, while metals output has grown by 0.31%, likely due to reduced import competition. Trade liberalization, as predicted by conventional theories of international trade, is expected to raise the economic value of production. This increase occurs through both static gains in the economy's

output and improvements in allocative efficiency. The Ricardian model also suggests that trade can be beneficial when a country specializes in exporting goods it produces efficiently, particularly those where it has a comparative labor-productivity advantage. This model underscores the potential benefits of trade-oriented policies that align with a nation's comparative advantage, leading to increased economic output and efficiency gains in the sectors where it is most competitive.

Pakistan's main exports of textiles and clothing, agricultural products (such as vegetables, food products, and animal hides), and services have shown limited growth in value over the past decade. The current export portfolio lacks technological sophistication, with most products concentrated in primary goods or low-tech, undifferentiated items that require minimal technology and occupy the lowest tiers of global value chains. Additionally, the variety of unique products exported by Pakistan has decreased, contrasting with other countries like Sri Lanka and Vietnam, which have expanded their export portfolios and moved toward higher-quality, more sophisticated products. High tariff barriers further hinder Pakistan's ability to compete in international markets and diversify its exports. Although Pakistan has shown some early signs of growth in non-traditional exports since 2020-21, these products still represent only a small share of total exports Ahmad et al (2024). Textile exports make up 70% of Pakistan's total exports, but tariff structures can pose barriers to market access, particularly when they are structured in ways that disadvantage developing nations. One of the main obstacles to market access for exporters from developing countries comes from non-tariff measures (NTMs) such as tariff quotas, tariff peaks, and restrictive import standards set by individual countries Mutahir Hussain Shah & Ali Sajid (2013). In contrast, sectors like Textiles (-0.65%) and Animal Products (-0.27%) experience declines in output, possibly due to higher input costs and reduced export opportunities.

All sectors see an increase in market prices, indicating that the tariffs are being passed on to consumers to some extent. The highest price increases are observed in Plastic (0.43%) and manufacturing (0.41%), explore how these sectors might face higher input costs or are adjusting prices to maintain profit margins in the face of decreased imports and exports. Overall, the 10% tariff increase leads to a broad-based decline in exports and a mixed impact on imports. While some domestic sectors benefit from increased output and protective tariffs, others suffer from

higher costs and reduced competitiveness. The uniform rise in market prices across sectors highlights the inflationary pressure tariffs can exert on the economy Akhtar & Shah (2018).
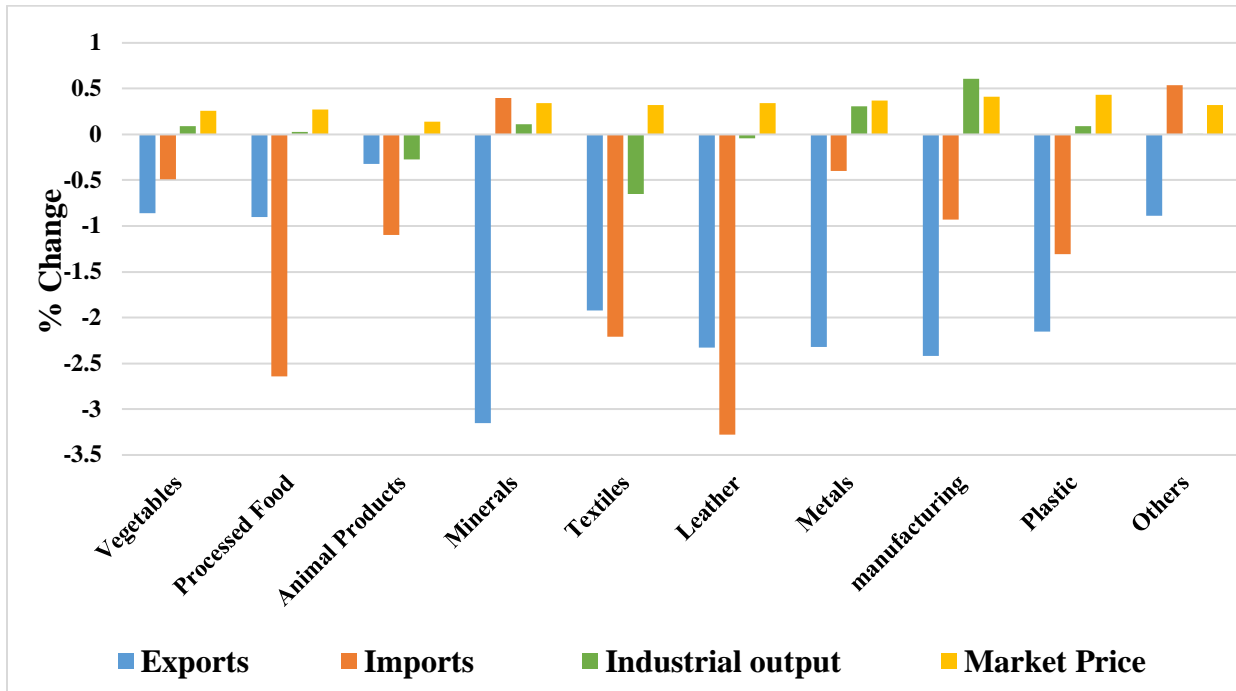

Figure 5.1:   Impact of Increased Tariffs on Export Sectors

Source: GTAP model, simulation results

The Hecksher and Ohlin (HO) model pointed out that trade arises due to differences in relative prices of various commodities, factor prices, and resource endowments between the countries. They demonstrated that trade could be beneficial when countries export those commodities that use their abundant factors more intensively in their production process. As the economy opens, there is a shift in resources toward the sectors that use more abundant factors, and the value of total productivity increases Nyahoho, (2010). The elimination of tariffs has had significant impacts across various sectors in Pakistan. The elimination of trade barriers can make certain industries more vulnerable to increased competition from foreign countries. This often leads to a higher share of imports in the local market, driven by the relatively higher ratio of domestic prices compared to import prices Zakaria (2014). Sim-2 Pakistan's removal of 10% of tariffs results in an increase in exports across all sectors, indicating enhanced international competitiveness. Minerals (3.15%), Manufacturing (2.42%), and Leather (2.33%) experience the most significant increases, suggesting these sectors benefit the most from reduced trade barriers.

Import taxes and non-tariff barriers for processed food, textiles, and manufacturing are relatively negatively significant in the country, it would eliminate value-added exports. The domestic component of value-added exports indicates that the closely integrated food value chain boosts the food economies. Imports generally increase in most sectors, reflecting higher demand for foreign goods due to tariff elimination W. Wei et al. (2024). Leather (3.28%), Processed Food (2.64%), and Textiles (2.21%) show the most significant increases in imports, driven by reduced costs and increased availability. Conversely, some sectors, such as Minerals (-0.40%) and Others (-0.54%), exhibit a decline in imports, likely due to a preference for domestic products or less reliance on imported goods. Pakistan has heavily relied on import tariffs to boost tax revenue, which has undermined trade integration and further weakened export competitiveness. Due to limited revenue mobilization and weak tax administration capacity, the government has depended on import duties and related taxes to generate revenue. As a result, tax revenue collected at import stages accounts for about half of the total tax revenue. Although Pakistan has reduced tariffs over the last decade, its tariffs remain relatively high compared to other countries. The highly effective protection has resulted in the prolonged protection of "infant" industries, preventing their development and reducing the incentive to compete with imports or focus on exports, given their privileged position in the domestic market Rehman (2022).

The impact on industrial output is mixed. Sectors like Animal Products (0.27%), Textiles (0.65%), and Leather (0.04%) see output growth, benefiting from increased export opportunities and competitive advantages. Meat, poultry, and dairy are significant economic sectors within the livestock subsector in Pakistan. The overall livestock development strategy resolves to enhance certain regulatory measures including health coverage, animal breeding observes, controlling livestock diseases, management practices and balanced ration for animal feeding have been adopted. The distinctive flavor of Pakistani meat stems from its organic origins, and it is widely exported to the Gulf economies. Pakistan's exports of meat and meat products are becoming more widespread to various global economies. Over ten years, the value and volume of meat exports have increased 100%, with exports of meat rising from USD 152.4 million in FY11 to USD 304.2 million in Pakistan FY 2020 Maqbool et al. (2022). In contrast, sectors such as Plastic (-1.09%), Manufacturing (-0.61%), and Metals (-0.31%) experience a decline in output, likely due to increased competition from imports or internal inefficiencies.

All sectors witness a decline in market prices, and eliminating tariffs reduces consumer costs. The most notable decreases are observed in Plastic (-0.43%), Manufacturing (-0.41%), and Metals (-0.37%). This price decline can be attributed to increased import supply and intensified competition, driving prices down Malik (2007).
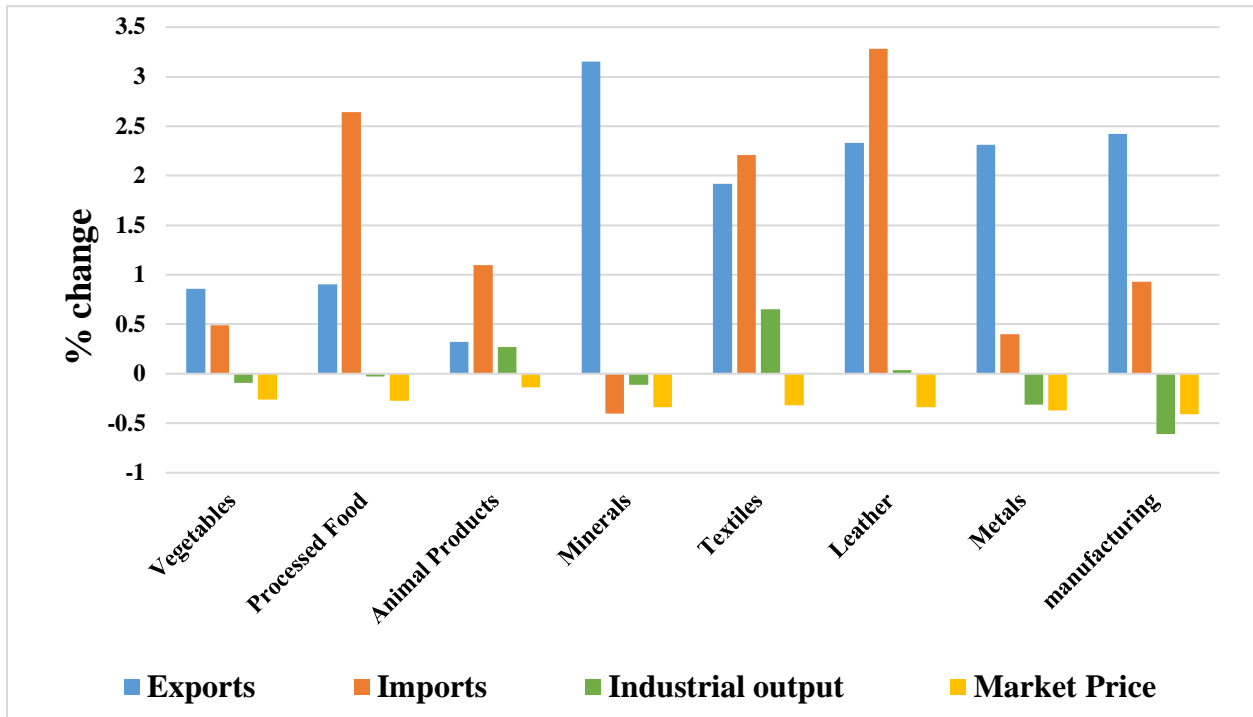

Figure 5.2:   Impact of Decreased Tariffs on Export Sectors

Source: Simulation results from the GTAP model

The findings from this study demonstrate that tariff policies have a significant impact on Pakistan's main export industries, with varying degrees of positive and negative effects depending on the specifics of the tariff change. Simulations using the Computable General Equilibrium (CGE) model show that a decrease in tariffs typically results in higher exports from high-performing industries like manufacturing, leather goods, and textiles. These industries are crucial to Pakistan's economy and mainly depend on access to international markets Olusegun A (2009). These industries gain from increased competitiveness as a result of lower trade barriers, which is consistent with research showing tariff liberalization boosts export performance Fugazza and Maur (2008). For instance, the rise in exports of leather and textiles highlights how crucial tariff reductions are to enhancing domestic production and expanding access to foreign markets.

On the other hand, the adverse effects of tariff increases on export-oriented industries. Sectors such as minerals, metals, and processed food suffer significant declines in export volumes when tariffs are raised. The simulations indicate that a 10% tariff increase leads to a sharp decline in export performance across these sectors, with minerals experiencing the most pronounced impact. This conclusion is consistent with previous research showing that higher tariffs can stifle export growth by raising production costs and reducing competitiveness in international markets Zeshan (2021). The minerals sector, in particular, demonstrates how sensitive certain industries are to cost fluctuations brought on by tariff changes, emphasizing the need for cautious policymaking that considers the unique vulnerabilities of each sector.

5.2   Simulated Effects of Exports with Trading Partners

A comparative analysis of Pakistan's export competitiveness reveals a clear decline in its share of global exports, which is already among the lowest when compared to peer countries such as Bangladesh, India, Vietnam, and Malaysia. India leads this group with a consistent upward trend in exports. Similarly, Vietnam, which had a smaller share of global exports between 1991 and 1995 (0.088%) compared to Pakistan's 0.17%, has since seen a significant rise (1.34% during 2016-21), while Pakistan's share has remained stagnant at 0.12% during the same period. These figures highlight a substantial failure in improving Pakistan's export competitiveness in comparison to other emerging economies.

Pakistan has signed a limited number of free trade agreements (FTAs), including with China, Sri Lanka, and Malaysia, and has preferential trade agreements with Iran, Indonesia, and Mauritius. It is also a member of the South Asian Association for Regional Cooperation (SAARC). However, many FTAs are still under negotiation or consultation. A significant portion of Pakistan's imports comes from countries with which it does not have an FTA. For instance, in FY 2021, imports from the United States, United Kingdom, Afghanistan, and Germany accounted for around 37% of total merchandise imports, while imports from Pakistan's three FTA partners made up about 10%. The lack of permanent FTAs with major import source countries negatively affects Pakistan's competitiveness, as it faces higher tariffs compared to countries with such agreements.

Pakistan has limited trade partners during 2021-222, the United States of America (21%), followed by China (10%), Afghanistan (3%), the United Kingdom (7%), and UAE & Germany (5% each).

These five countries are major export partners of Pakistan and account for about 50% of total exports, during fiscal year 2021-22. Pakistan mainly imports from the United States of America, UAE, Saudi Arabia, Kuwait, Indonesia, and China. About 69% value of total imports in this market and 31 % rest of the world.

An important factor in a nation's economic development is international trade. Throughout the past fifteen years, Pakistan's economy has encountered several difficulties. There are both quantifiable and non-quantifiable responsible reasons. The quantifiable measurable elements are high interest rates and slow GDP growth. rate, FDI from overseas, large budget deficit, high average applied tariff rate, and the rate of inflation. The unquantified are the energy crisis, the war on terror, the impoverished lack of education, the limited industrial base, market access, and low-skilled work. The Pakistani government worked hard to enhance its trade by supplying raw materials at global prices (at zero tariffs), exporters' exemption from duties and taxes, and market access providing long-term policies Fatima et al. (2019). Pakistan's 10 percent tariff reduction and increase in imports from the trade partners USA, UAE, China, and ROW sim-5 (figure 6.5) across various sectors reveals significant trends in trade dynamics. This policy change predominantly impacts every sector with substantial export activity, reflecting the country's strategic effort to bolster trade and enhance global competitiveness.
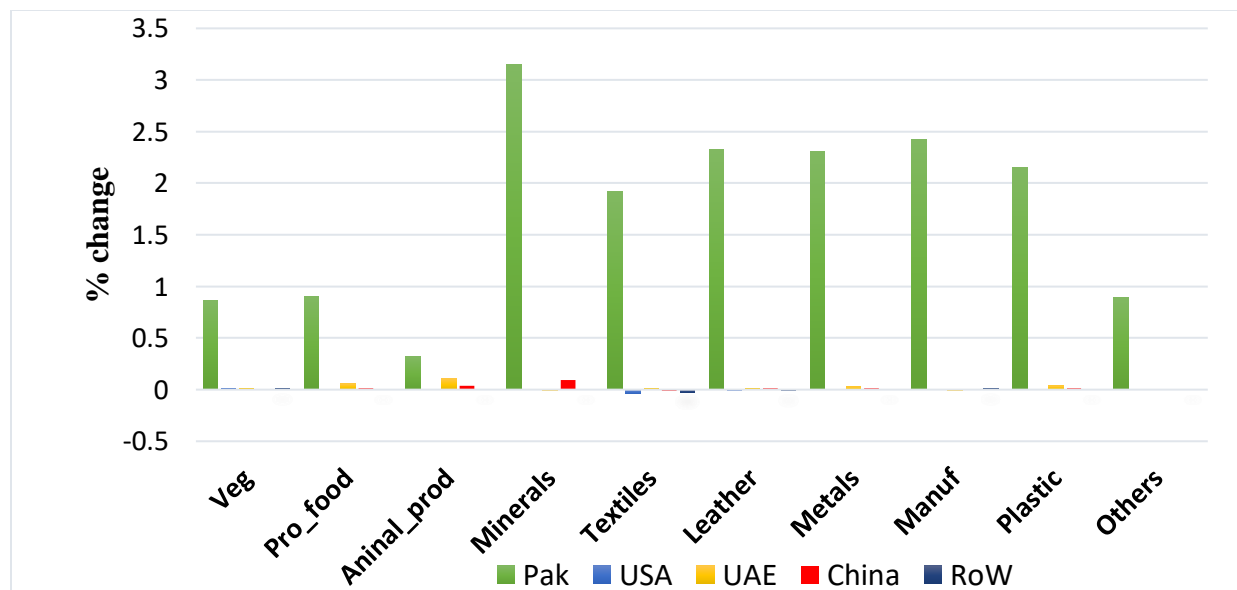

Figure 5.3:   Impact of Decreased Tariff on Exports
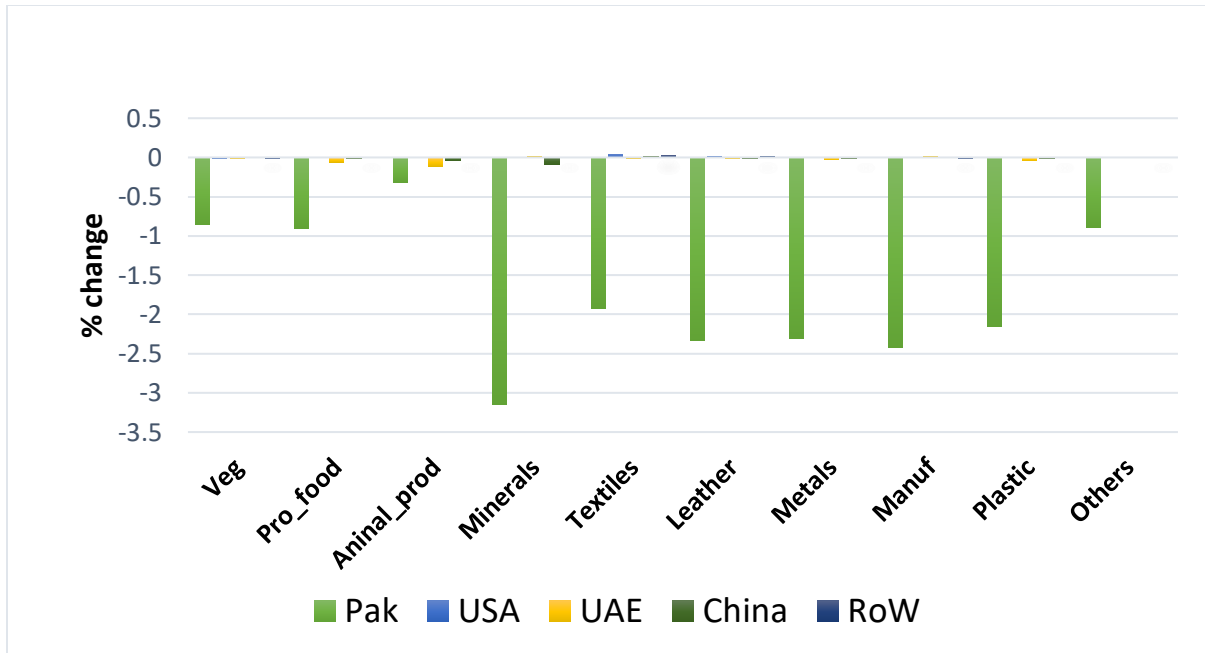
Source: GTAP model, simulation results

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Figure 5.4:   Impact of Increased Tariff on Exports

Source: GTAP model, simulation results

International trade can be critical for economic development and growth, connecting countries and businesses across the world. India, Bangladesh, and Vietnam have undertaken significant tariff reductions and trade liberalization initiatives, which have led to varying impacts on their export performance. In the case of India, tariff reductions under FTAs with ASEAN and Japan have not only increased trade but also facilitated the growth of more diverse export sectors, especially in manufacturing and IT services. In contrast, Vietnam's experience with tariff cuts through its agreements, such as the EU-Vietnam Free Trade Agreement (EVFTA), has been linked to a substantial increase in its exports, particularly in the textile and electronics sectors. While trade barriers have consistently in recent decades led to the exceptional growth of trade linkages, significant barriers remain across countries. Barriers hinder the free flow of goods and services between countries and hurt economies and consumers alike. Currently, Pakistan was the 62nd largest goods trading partner, with the USA having US$6.47bn worth of exports in 2022. The trade share of Pakistan with United States has been decreasing since few years. The main products that Pakistan exports to the United States are textiles, minerals, manufacturing, minerals, metals, and vegetables have increased from a 21% share in 2021-22 to a 19% share in 2022-23. However, by

2023-24, exports decreased to 17% share, indicating a decline in both value and market share (GOP,2023).

In the first quarter of 2024, Vietnam's exports to the United States reached $25.77 billion, reflecting a 24.1% increase compared to the same period in the previous year. This surge was driven by strong performances in key sectors such as computers and electronic products, machinery, textiles, wood products, and footwear. Notably, 31 out of 36 export items saw increased turnover, indicating a robust diversification of Vietnam's export portfolio and its ability to meet growing demand in the US market. Conversely, Bangladesh remains an essential supplier to the US, particularly in the apparel sector, exporting approximately $7.1 billion worth of apparel in 2023, which is an increase of $2.3 billion from 2013. This comparative analysis highlights how Vietnam's and Bangladesh's strategic focus on high-value reliance on a narrower product range, ultimately influences their respective export trajectories to the US.

Pakistan's exports to the United States have faced a continuous decline, contracting by 8.42% in the fiscal year 2023-24, with total exports valued at approximately $5.43 billion, down from $5.93 billion the previous year. This decline marks a significant reduction from $6.74 billion in FY22, indicating a downward trend over two consecutive years. While the United States remains Pakistan's largest export destination, the impact of high tariffs and related challenges has significantly affected export volumes and profitability. Addressing these tariff-related issues is essential for revitalizing Pakistan's export performance in the US market.

Nevertheless, in this (figure 6.6) decrease tariff and figure (6.7) increase, the prevalence of barriers to international trade in the US. The graph shows the percentage change in exports across various sectors due to increased tariffs from the USA. Pakistan experiences a sharp decline in exports, especially in sectors like textiles, metals, and manufacturing, with decreases of up to 9%. The USA sees a slight increase in exports of processed food and metals (around 1%), while the effects on China, UAE, and the Rest of the World are minimal. Overall, the tariffs primarily hurt Pakistan's exports, while providing minor benefits to certain US industries.

(Figure 6.7) shows the percentage change in exports across various sectors following a decrease in tariffs from the USA. Pakistan's exports increase significantly, particularly in sectors like Textiles, Leather, Manufacturing, and Plastic, with gains of up to 8%. The USA sees a slight negative impact

in the Metals sector, while the effects on UAE, China, and the Rest of the World are minimal, indicating that the tariff reduction primarily benefits Pakistan's export sectors.

The findings from this study have important policy implications for Pakistan's trade strategy. The targeted tariff reductions in high-performing sectors such as textiles, leather, and manufacturing could enhance export competitiveness and stimulate economic growth Vandamme (2019). Conversely, the study also advises against a one-size-fits-all approach to tariff policy, as sectors such as processed food and animal products may require continued protection to remain competitive. Policymakers should consider implementing sector-specific tariff adjustments that reflect the unique characteristics and competitive pressures facing each industry. They can strike a balance between promoting export growth and safeguarding domestic industries from excessive foreign competition. The critical insights into the sectoral dynamics of Pakistan's tariff policy and its broader economic implications Asif Shamim (2023).
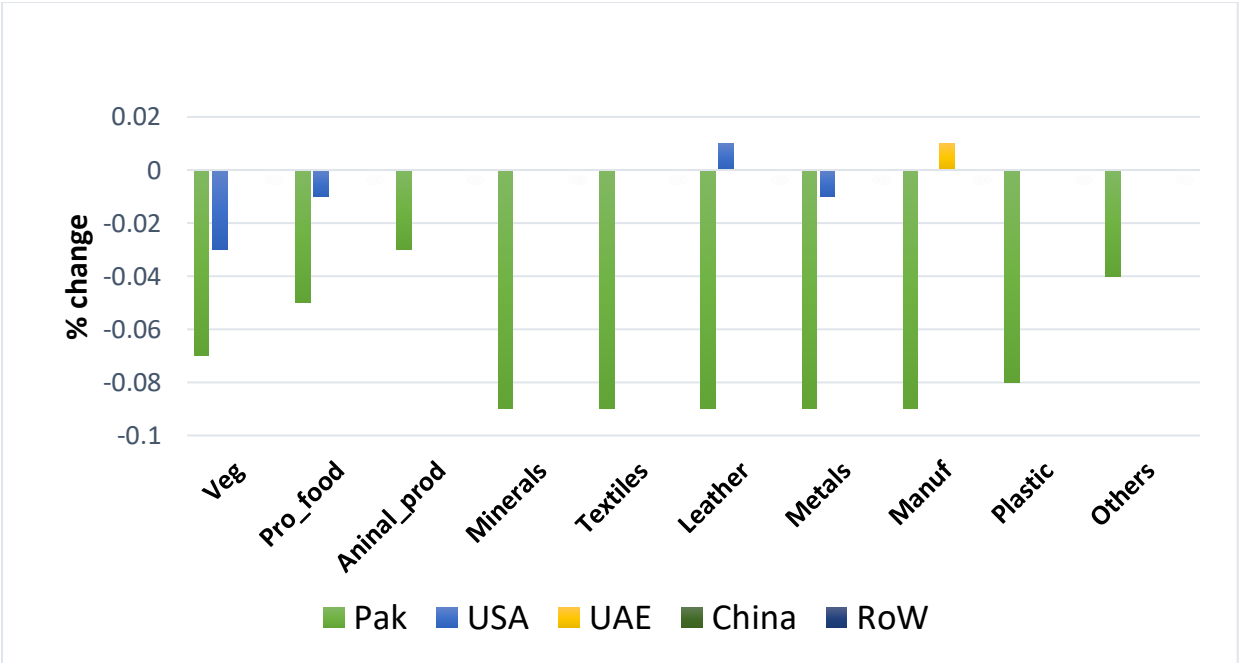

Figure 5.5:   Impact of Exports Increased Tariff from the USA

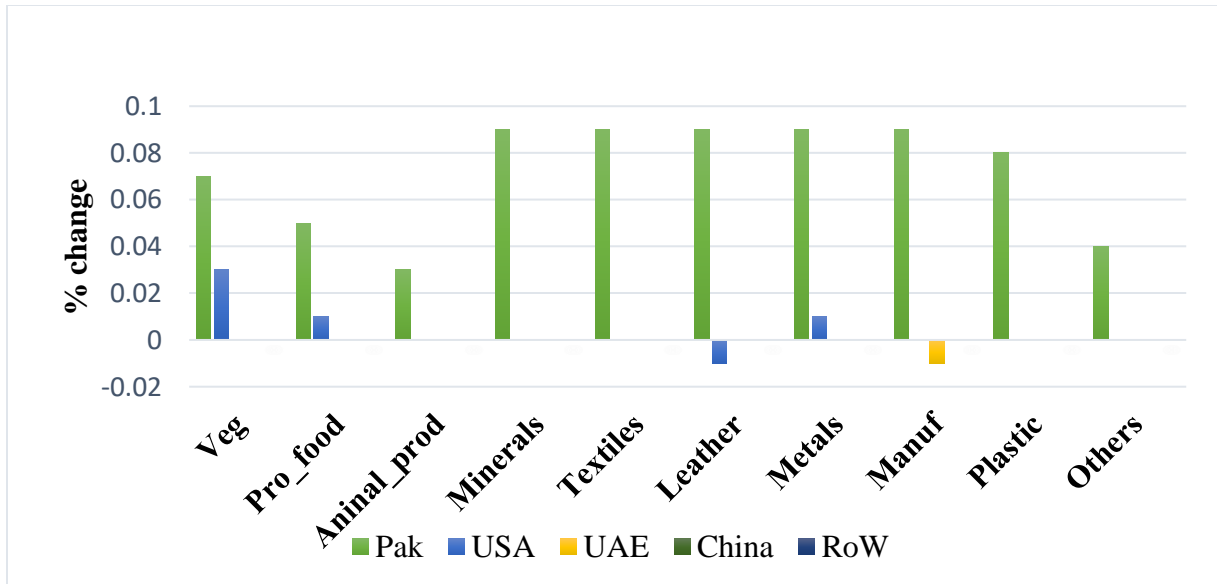*Source: GTAP model, simulation results*

Figure 5.6:   Impact of Exports Decreased Tariff from the USA

Source: GTAP model, simulation results

India has emerged as one of the UAE's largest trading partners, with bilateral trade exceeding $75 billion, driven by exports in sectors such as textiles, machinery, and pharmaceuticals. The Comprehensive Economic Partnership Agreement (CEPA) signed in 2022 has further facilitated trade by reducing tariffs and enhancing market access. Similarly, Bangladesh has significantly increased its exports to the UAE, particularly in the apparel sector, exporting approximately $2 billion worth of garments in 2023, fueled by growing demand for textiles in the region. Despite facing challenges, Pakistan has also seen some growth in exports to the UAE, especially in textiles and agricultural products, with total exports reaching around $1.59 billion in recent years as efforts to enhance trade relations continue through various agreements.

The UAE is Pakistan's third-largest trading partner after China and the United States, with a bilateral trade volume of nearly $5.6 billion during the fiscal year 2023-24. Pakistan's exports to the UAE are currently valued at approximately $1.59 billion, marking a steady increase from previous years, with exports rising from $1.09 billion in 2019-20. However, this growth has not been consistent, and there have been periods of decline. The estimated impact of trade policies can be analyzed using a comparative static model, which evaluates the profits and costs experienced under existing tariffs and subsidies. This model highlights how the tariff policy of Pakistan affects

export competitiveness, potentially leading to decreased profits for exporters and increased costs for consumers. Such insights are crucial for understanding the dynamics of trade between Pakistan and the UAE, particularly in light of fluctuations in export performance Javed et al. (2018)

(Figure 6.8) shows the impact of increased tariffs from the UAE on exports across various product categories in four regions: Pakistan, USA, UAE, China, and the Rest of the World. Pakistan faces significant negative effects, particularly in minerals (-0.4%), manufacturing (-0.3%), and metals (-0.2%), while sectors like textiles and other goods show slight positive changes. The USA, China, and ROW remain relatively stable, with changes in most sectors. Overall, Pakistan is the most negatively affected by the tariff increase, while the UAE and other regions show more resilience or slight growth.

Several important research studies attest to the extensive study conducted using CGE models to study the effects of tariff policies in Pakistan (Zeshan, 2021; Zeshan & Ko, 2016) emphasizes the vital significance of preserving global economic stability in the face of disruptions in global value chains, with a particular emphasis on industries like manufacturing, grains, crops, meat, and extraction (Fontclara, 2024; Fugazza & Maur, 2008; Mohora, 2006; Shaikh et al., 2012; Vellinga & Tanaka, 2024) To improve trade flows and economic integration, highlight the advantages of lowering tariffs and realigning trade policies, especially in sectors like textiles, fruit, vegetables, and livestock. These studies highlight the intricate relationship between sector dynamics and tariff policies, providing important information for developing trade strategies that will increase Pakistan's export competitiveness and economic resilience.

(figure 6.8) illustrates the impact of decreased tariffs from the UAE on exports across different product categories for Pakistan, USA, UAE, China, and the Rest of the World. Pakistan shows significant positive growth in several sectors, particularly minerals (+0.5%), manufacturing (+0.3%), and metals (+0.2%), while textiles and other categories also see modest increases. The UAE shows more balanced effects with a moderate positive change in animal products (+0.1%) and smaller gains in manufacturing. Conversely, the USA, China, and ROW exhibit mostly neutral or slight negative changes across categories, especially in leather, metals, and processed food. Overall, decreased tariffs from the UAE strongly benefit Pakistan's export sectors, especially in resource-based industries like minerals and metals, while they impact other regions.
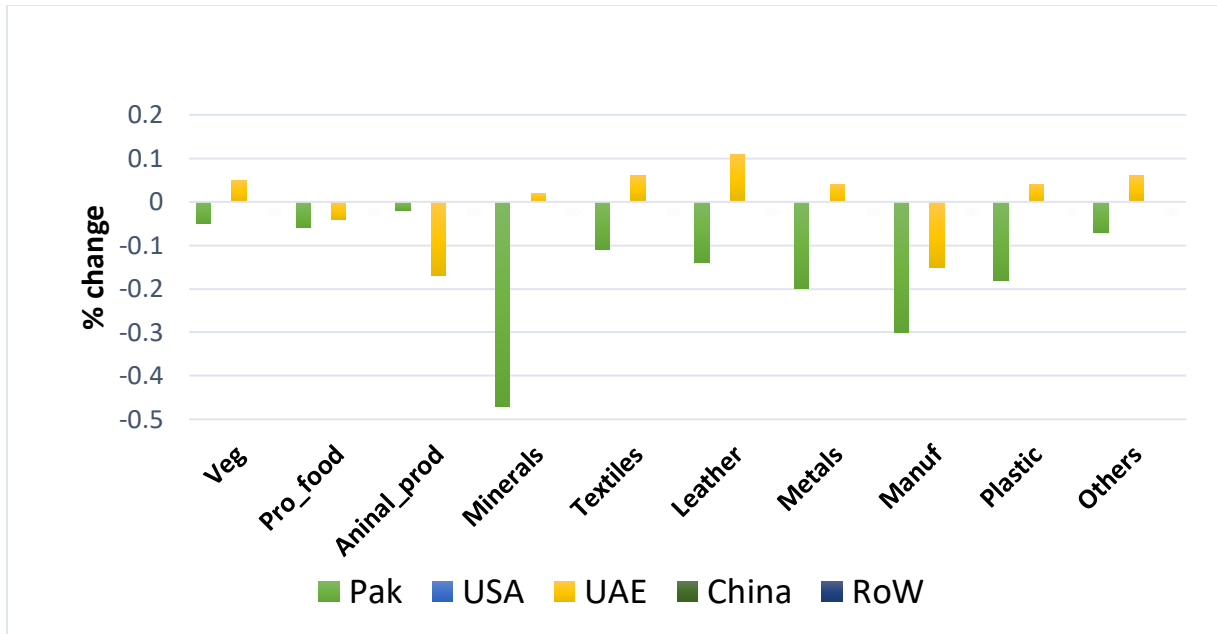
Figure 5.7:   Impact of Exports Increased Tariff from UAE

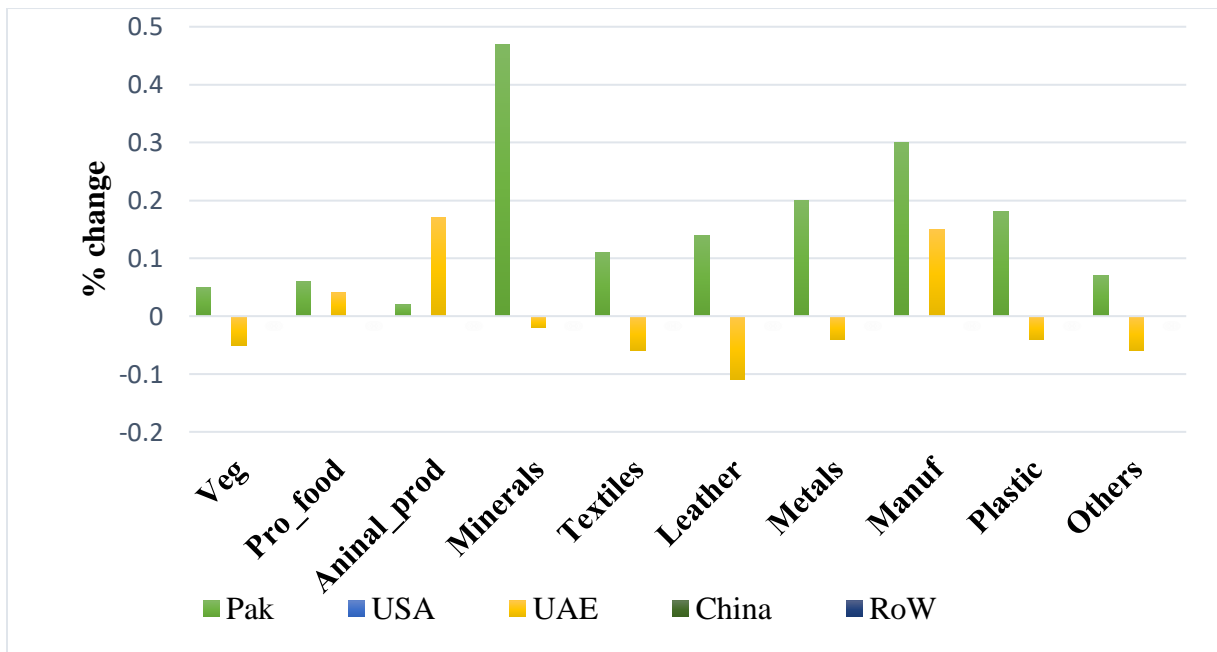*Source: GTAP model, simulation results*

Figure 5.8:   Impact of Exports decreased Tariff from UAE

Source: GTAP model, simulation results

The first trading partner of Pakistan is China is the fastest growing economy of China had a share in Pakistani trade which is about 17 percent of the total Pakistani trade. China and Pakistan have a long history of dependable and tried-and-true relations. The two states have a strong affinity for

a variety of reasons apart from the fact that they are close neighbors. Both nations have collaborated economically and diplomatically with one another. Their relationship is founded on mutual support, brotherhood, and sovereign equality. In 2007, the year the Free Trade Area Agreement was signed, the amount of trade between China and Pakistan was $4 billion. In 2016-17, this soared to $15.6 billion. However, according to data provided, Pakistan's exports to China in 2017 totaled just $1.5 billion, while its imports totaled $14 billion. Pakistan is the primary cause of the country's increased imports and decreased exports. Imports costly capital goods and raw materials, but exports rely largely on low-value goods, which only serve to widen Pakistan's trade deficit Babatunde (2019).

(Figure 6.10) The percentage change in exports across various sectors is due to increased tariffs from China, with a focus on Pakistan, the USA, UAE, China, and the rest of the world. Pakistan experiences the most significant impacts, particularly in sectors such as Minerals, which show a sharp decline of around -0.8%, and textiles, where exports drop by approximately -0.4%. The leather sector also faces a substantial reduction, with exports decreasing by about -0.5%, followed by manufacturing and plastic, which see declines of -0.3% and -0.2%, respectively. Vegetables is the only sector where Pakistan shows a slight increase of around 0.1%. An important aspect of this study is its focus on sectoral interdependencies and broader economic implications. Using a CGE model allows for a comprehensive analysis of how tariff policy affects exports and other key financial variables such as industrial output, market prices, and GDP Carneiro & Arbache (2003).

(Figure 6.11) percentage change in exports across various sectors as a result of decreased tariffs from China, with data for Pakistan, the USA, UAE, China, and the Rest of the World. Pakistan experiences notable positive changes in multiple sectors. The minerals sector shows the largest increase, with a rise of approximately 0.8%. Textiles and leather follow closely, both exhibiting an export growth of around 0.7%. The manufacturing sector also benefits, with exports increasing by 0.6%, while Plastic sees a rise of 0.4%. Processed food and animal products show more modest gains, each at about 0.2%. They indicate that tariff reductions can increase industrial output in high-performing sectors, thereby contributing to overall economic growth. However, the study also finds that tariff increases can have a cascading effect on the economy, leading to declines in GDP, reduced employment, and lower government revenue. These broader economic impacts highlight the importance of adopting a holistic approach to trade policy, one that takes into account

the potential spillover effects of tariff changes on different sectors and the economy as a whole Khoja & Khan (2020).
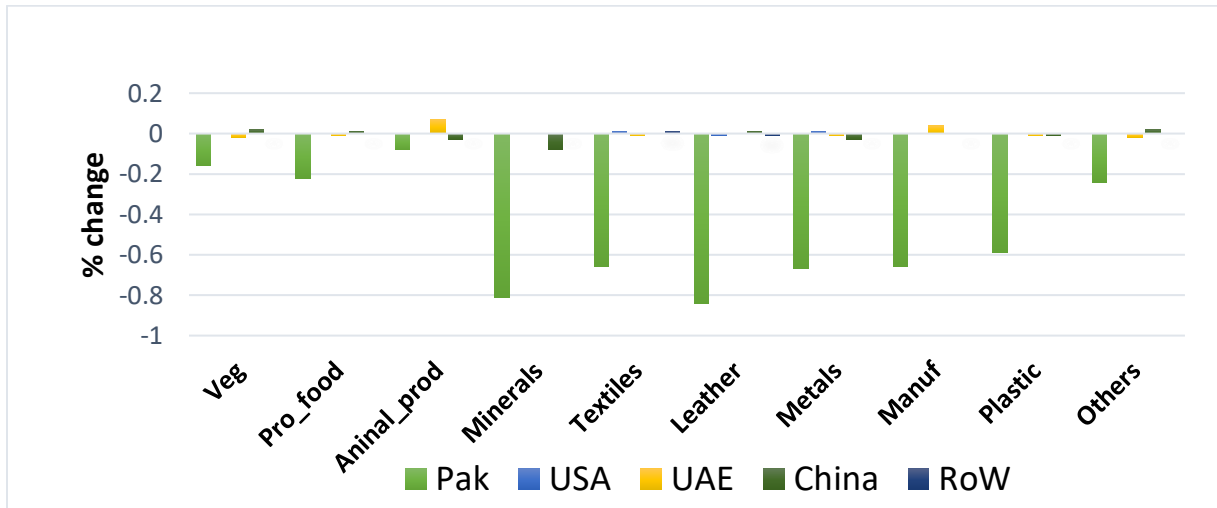

Figure 5.9:   Impact of Exports Increased Tariff from China
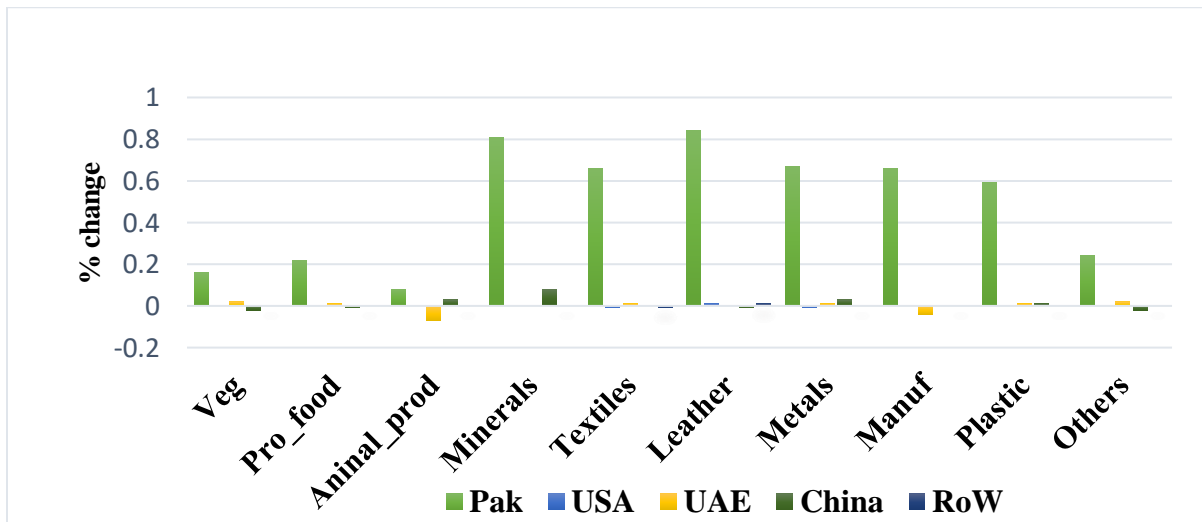
Source: GTAP model, simulation results

Figure 5.10:   Impact of Exports Decreased Tariff from China

Source: GTAP model, simulation results

CHAPTER 6

CONCLUSION AND POLICY RECOMMENDATION

6.1   Conclusion

This study examined the impact of tariff policy on Pakistani exports using a static CGE model. The model investigates the influence of changes in tariff rates on imports on the export market, industrial output, and market prices in major export sectors, including vegetables, processed food, animal products, minerals, manufacturing, textile, leather, metals, plastic, and others. Using the SAM and running the GTAP software, the research offers insights into how tariff changes, reductions, or increases impact Pakistan's export performance and overall economic dynamics.

The findings reveal that high tariffs on imported raw materials and intermediate goods significantly increase production costs for textiles, leather, metals, manufacturing, plastics, minerals, processed food, vegetables, and animal products, thus reducing the competitiveness of Pakistani exports in international markets. This situation is exacerbated by the anti-export bias created by the current tariff regime, which prioritizes domestic consumption over export growth. Moreover, reducing tariffs reduction, particularly on essential inputs for high-performing export sectors, can enhance competitiveness and stimulate economic growth.

The importance of strategic tariff adjustments, particularly about major trade partners such as the USA, UAE, and China. The interconnectedness of Pakistan's trade policies with global markets necessitates a balanced approach that supports vulnerable sectors while promoting export-oriented growth. By gradually reducing the system of tariffs on essential inputs for high-performing export sectors, policymakers can stimulate economic growth, improve trade balances, and eventually revitalize Pakistan's export performance in a competitive global landscape. These findings underscore the complexity of trade policy and the need for targeted measures to support vulnerable sectors while leveraging the benefits of increased trade competitiveness.

6.2   Policy Recommendation

In light of the findings from the simulations outlined in the preceding section, the suggested policy directives are as described below:

1.   Simplification of Tariff Structure

Gradually reducing import duties is essential for improving Pakistan's trade environment, which is currently heavily influenced by a regulatory and customs duty framework that often prioritizes revenue generation over trade facilitation. A significant portion of national revenue is derived from various import-stage levies, including Additional Customs Duty (ACD), Regulatory Duty (RD), Sales Tax (ST), and Withholding Tax (WHT). While these duties contribute to government revenue, they create barriers for industries, particularly exporters, by inflating costs. Reforming this regime to focus on trade growth and competitiveness rather than solely on revenue generation is crucial. A streamlined customs duty structure can reduce inefficiencies, lower costs for exporters, and promote industrial growth, fostering a more dynamic trade environment for Pakistan.

These reforms can be implemented over five years in three well-defined phases. In the first phase, spanning the initial two years, tariffs on the most protected industries should be gradually reduced to align with the current average tariff rate of 12%. The second phase, over the next two years, involves uniformly reducing tariffs across all industries to a standard rate of 5%. In the final phase, during the fifth year, tariffs on all imports should be eliminated.

2.   Sectoral Tariff Adjustments

Targeted sectoral tariff adjustments are essential for optimizing Pakistan's economic performance, particularly in key export sectors such as textiles, leather, agriculture, and manufacturing. These industries face distinct challenges that a one-size-fits-all tariff policy fails to address. For instance, while the textile sector constitutes about 51% of Pakistan's total exports, the leather industry also plays a significant role, contributing approximately 7% to total exports. Both sectors struggle with high input costs due to existing tariffs on raw materials. By adjusting tariffs specifically for these critical sectors, the government can lower production costs and stimulate industrial output.

3. Encouraging countries to Utilize Market Access Opportunities

Pakistan should actively encourage countries to utilize market access opportunities through the strategic negotiation of new Free Trade Agreements (FTAs) and the enhancement of existing ones. Currently, Pakistani exporters face higher tariffs in major markets, which limits their competitiveness. For instance, in the fiscal year 2023-24, the United States remained the largest destination for Pakistani exports, totaling approximately $5.43 billion, despite an 8.4% decline from the previous year.

One notable opportunity lies in the recent preliminary Free Trade Agreement signed with the Gulf Cooperation Council (GCC), which includes key nations such as Saudi Arabia and the UAE. This agreement aims to enhance market access by reducing customs duties on goods and services, potentially unlocking new trade avenues for Pakistani exporters. Additionally, Pakistan's participation in regional agreements like the South Asian Free Trade Area (SAFTA) can further diminish trade barriers with neighboring countries, fostering greater economic integration. Moreover, failing to leverage these agreements could result in missed opportunities. Countries like Bangladesh and Vietnam have successfully negotiated favorable trade terms with major markets, allowing their exporters to thrive while Pakistan lags without robust FTAs. Ultimately, fostering a dynamic marketplace through the effective utilization of FTAs will bolster economic resilience and drive sustainable growth across various sectors of the economy.

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APPENDICES

Appendix A

Sectors Aggregation Used in the Model

S.no.	GTAP Code	Names	GTAP Sector Description
1	v_ f	Vegetables, fruit, nuts	Vegetables, fruits, nuts, edible roots, tubers, and pulses.
2	of	Food products nec	Fish, crustaceans, mollusks, and other aquatic invertebrates are prepared and preserved; vegetables, pulses, and potatoes are prepared and preserved; fruits and nuts are prepared and preserved; flour made from wheat and meslin; flour made from other cereals; groats, meal, and pellets made from wheat and other cereals; other products made from cereal grains (including corn flakes); other flours and meals made from vegetables; mixtures and doughs for preparing bakers' wares; starches and products made from starch; sugars and sugar syrups, not elsewhere classified; products used in animal feeding; meal and pellets made from lucerne (alfalfa); bakery products; cocoa, chocolate, and sugar confectionery; macaroni, noodles, couscous, and similar products made from farinaceous substances; and other food products.
3	oap	Animal products ne	livestock; birds such as chickens and other fowl; various live creatures; fresh eggs from hens or other birds still in their shells; breeding materials from animals; pure honey produced by bees; fresh, chilled, frozen, dried, salted, or brine-preserved snails, excluding those from the sea; miscellaneous edible animal products not elsewhere classified; untreated hides, skins, and fur skins; insect waxes and refined or colored spermaceti
4	mm	Mineral products ne	Manufacture of other non-metallic mineral products
5	tex	Textiles	Manufacture of textiles
6	lea	Leather products	Manufacture of leather and related products

7	mp	Metal products	Manufacture of fabricated metal products, machinery, and equipment
8	of	Manufactures nec	Other Manufacturing: includes furniture
9	pp	Rubber and plastic products	Manufacture of rubber and plastics products

Source: Author's aggregation using GTAP11

Appendix B

Discussion with Experts

This content analysis examines various perspectives on the impact of tariff policy on exports, drawing insights from diverse professionals. Key themes identified include trade competitiveness, industrial output, market price management, and future directions for policy development. These themes are organized into categories of trade promotion, tariff administration, and policy effectiveness. Common sub-themes emphasize the role of tariff policy in enhancing competitiveness, minimizing bureaucratic obstacles, and defining the regulatory role of the export sector.

1. Why have tariffs increased, and which products are impacted by these policies?

Tariff increases typically aim to protect domestic industries, especially new or "infant" industries, and to generate revenue by taxing luxury and non-essential items. In Pakistan, tariffs are generally higher on finished goods, consumer items, and products that are also locally produced, while raw materials, essential food items, and chemical intermediates have lower tariffs.

1. How do we identify products with high tariffs? / What are the main challenges in Pakistan's tariff policy that affect export performance and industrial output?

To understand which products have high tariffs, consider that of over 7,500 items, around 1,900 have regulatory duties (RDs). These items are typically products of domestic industries, luxury, non-essential consumer goods, or non-essential industrial items. When regulatory responsibilities are high, demand elasticity is low, leading to increased revenue collection. Items with regulatory

duties are considered high tariffs, and those with responsibilities of 20% or above are treated as high-duty items. At least 2,000 items fall into this high-duty category.

In Pakistan, there are three types of tariffs: Custom Duty, Additional Custom Duty, and Regulatory Duty. Out of these duties, Custom and Additional Custom Duties apply to all items. For items with a 0% Custom Duty, there is a 0% Additional Custom Duty. For items with a 3% Custom Duty, there is a 2% Additional Custom Duty. This rule was established in 2022; previously, the rules varied each year as per the Additional Custom Duties SROs.

For items with an 11% or 16% Custom Duty, there is a 4% Additional Custom Duty. For items with a 20% Custom Duty, there is a 6% Additional Custom Duty. For items with duties above 20%, there is an additional 7% or more, up to 11.5%. This means that Custom and Additional Custom Duties are called the Customs Tariff.

Regulatory Duties are also a type of Customs Duty. However, they are imposed for different reasons, such as revenue collection, protecting domestic industries, and increasing the cost of competitiveness for locally made and imported goods. The goal of Regulatory Duties is to improve the cost of competitive products. However, all three types of duties together form the total Customs Tariff. Pakistan applies Customs Duty, Regulatory Duty, and Additional Duties at the import stage. Additionally, withholding taxes of 5% to 9% and sales taxes of 18% are applied. These five or six types of taxes are collectively called the Customs Tariff or indirect taxes.