The Implications of SAFTA (South Asia Free Trade Agreement) for Pakistan

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CERTIFICATE

This is to certify that this thesis entitled: **"The Implications of SAFTA (South Asian Free Trade Agreement) for Pakistan".** submitted by **Ms. Kosar Jabbin** is accepted in its present form by the School of Economics, Pakistan Institute of Development Economics (PIDE), Islamabad as satisfying the requirements for partial fulfillment of the degree in Master of Philosophy in Business Economics.

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DEDICATION

I would like to dedicate this thesis to my family, colleagues, and teachers who have been a great help during the last two years. Their cooperation is the only reason that I have been able to complete this thesis.

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I would like to acknowledge the support of my teachers especially Dr. Farhat Mahmood who provided me the opportunity and guidance to choose the research topic of my interest. Her guidance and the space provided by her is the only reason that I have been able to apply my mind independently on this project. I would also like to thank Dr. Tariq Majeed, who provided me the guidance on the subject matter of my thesis and were was helpful in guiding me throughout the thesis. I would also like to thank my parents and all family members for supporting my decision to go for an MPhil degree from the Pakistan Institute of Development Economics.

ABSTRACT

The objective of this research study is to analyze the effect of the tariff gap of the South Asia Free Trade Agreement (SAFTA) on the exports of Pakistan using the extended gravity model of bilateral trade flows for the time period of 2006 to 2016. The tariff gap has been measured by finding the difference between MFN and preferential tariff rates as well as the zero-one binary dummy variable. The control variables used in this study are tariff rate, regional geographical distances, population, exchange rate & GDP while total exports of Pakistan is the dependent variable. The findings show that in both models PPML (Poisson Pseudo Maximum) & NB (Negative Binominal) the impact of the SAFTA tariff gap on the exports of Pakistan is negative at a 1% significance level.

Keywords: Exports, Tariff Gap, FTA, South Asia, Pakistan

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LIST OF ABBREVIATIONS

GATT	General Agreement of Tariff and Trade
WTO	World Trade Organization
FTA	Free Trade Agreement
ADB	Asian Development Bank
AFTA	ASEAN Free Trade Agreement
ROO	Rules of Origins
GDP	Gross Domestic Product
MFN	Most-Favor Nation
HS	Harmonized System
SAPTA	South Asian Preferential Trading Arrangement
FDI	Foreign Direct Investment
RTAs	Regional Trade agreements
OLS	Ordinary Least Square
PML	Poisson Maximum Likelihood
NB	Negative Binomial
PTA	Preferential Trade Agreement
APEC	Asia-Pacific Economic Cooperation forum
CER	Closer Trade Relations Trade Agreement
EU	European Union
SAARC	South Asian Association for Regional Cooperation
SAFTA	South Asia Free Trade Agreement
LDC	Least developed countries
CTH	Change in tariff heading
FOB	Free-on-board
EHP	Early Harvest Programme
CB	Commercial Boarder
TM	Tariff Margin/Tariff Gap
RTA	Regional Trade Agreement
NB	Negative Binomial
CGE	Computable General Equilibrium
LDC	Lease Developing Countries
MOP	Margin of Preference
WITS	World Integrated Trade Solution
MTR	Multilateral Trade Resistance
UNCTAD	United Nations Conference on Trade and Development

CHAPTER 1

INTRODUCTION

1.1 Background of the study:

Since the start of the twenty-first century, the emergence of Regional Trade Agreements (RTAs), including Free Trade Agreements (FTAs), has been observed globally. Previously, most trade negotiations were governed by two main organizations, the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO), which aimed to reduce tariffs and address cross-border trade issues. However, the significance of the WTO has diminished over time and the number of regional FTAs has increased significantly, from 50 in 2000 to 420 currently, according to the World Trade Organization (WTO, 2014). The main reason for the proliferation of these regional trade agreements is the failure of WTO trade negotiations to arrange ministerial conferences (Mahmood & Jongwanich, 2018; Mahmood, 2019).

On the contrary, FTAs have a positive and statistically significant effect on trade for many countries. Asian economies have eagerly participated in FTAs from 1992 to 2008, seeking to benefit from regional advantages such as increased trade and employment (Peiris, 2021). To promote cooperation and economic stability among South Asian nations, the South Asian Association for Regional Cooperation (SAARC) was established in 1985. In 2006, Pakistan signed the South Asian Free Trade Area (SAFTA) agreement at the 12th meeting of SAARC[1].

The SAFTA bloc is divided into two main categories: developed and underdeveloped countries. Developed nations within this bloc include Pakistan, India, and Sri Lanka, while Bhutan,

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[1] The main aim of the South Asia free trade area is to strengthen the economic cooperation between the intra-SAARC countries and the member countries of SAFTA are Pakistan, India, Maldives, Bhutan, Nepal, Bangladesh, and Afghanistan.

Maldives, Nepal, and Bangladesh are considered underdeveloped. According to the Global Economy 2019, SAARC encompasses 3% of the world's area, 21% of the global population, and approximately 4.21% of the world's economy. Beside these facts, inter-regional trade within South Asia is the lowest, accounting for only 5% of total trade with the rest of the world. All this shows that South Asian region is still plagued by distrust and regional conflicts. India, being the largest country in terms of area, population, military, and economy in South Asia, plays an important role in fulfilling SAFTA goals and policies due to its dominant role in setting the regional agenda (Kirana et al., 2021).

1.2 Statement of the problem:

In Asia, many attempts have been made by South Asian countries to boost their economic integration by signing different free trade agreements (FTAs) within the region and outside of the region. Studies such as Mahmood and Jongwanich (2018) have examined the tariff gap effects of SAFTA on Pakistan's exports using data for the period of 2000-2010. Furthermore, studies by Awais (2016); Thomas et al., (2004); Javed (2019); Sadat et al., (2006); Kumar & Saini (2009); Akhter & Ghani (2010); Raihan (2012), and Mahmood (2019) have used the gravity model to examine the effect of SAFTA on trade, but the conclusions of these studies remained ambiguous. Therefore, based on past literature, it is evident that FTAs such as SAFTA could generate both positive and negative impacts on trade flows[2]. Therefore, this study aims to analyze the implications of SAFTA for the exports of Pakistan.

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[2] The positive effects are tax incentives of FTAs for trading firms, larger economy of scale, enhancing variety of products and stimulus the investment climate of the country (Amiti and Konings 2007 & Hoekman, 1997), while the negative impacts of FTAs are to fulfill the condition of rule of origin (ROO)[2], hub and spoke model, varying country size, lack of supportive institutions and good governance, inefficient allocation of resources to the needy sectors, as well as limited movement of factors of production under the regime of free trade (Schiff, 1997, Krueger, 1997; Wonnacott, 1997 Ludema & Mayda, 2009 and Francois et al, 2005).

1.3 Objectives:

The research objectives of this study are:

1. To calculate the tariff gap, which is the difference between MFN (Most Favored Nation) and preferential tariff rates, for the exports of Pakistan under SAFTA taking data of total of all Harmonized System (HS) commodities.

2. To examine the implications of SAFTA tariff gap on the total exports of Pakistan.

1.4 Research questions:

Following are the research questions:

1. What is the tariff gap of SAFTA during 2006- 2016?

2. What is the implication of the SAFTA tariff gap on the exports of Pakistan?

1.5 Research gap:

In contrast to the World Trade Organization (WTO), FTA-led liberalization is discriminatory and conditional. The FTA rates are directed towards members only and tariffs towards non-members can be different under an FTA, rules of origin (ROOs) are imposed to prove the origin of the imported good in order to determine its eligibility for tariff concessions. According to previous studies, compiling ROOs is costly and could discourage the use of FTAs. Therefore, the impact of an FTA on trade is inconclusive, as it depends on these opposing. Furthermore, when an FTA of developing countries includes a long list of sensitive products, its implementation becomes complex, making the net impact on trade ambiguous. Since globally FTA proliferation continues, the effect of an FTA on trade is still a question to be tested.

1.6 Significance of the study:

In this study, the impacts of the South Asian Free Trade Area (SAFTA) on Pakistan's exports has been examined. The export sector is crucial for enhancing long-term economic growth in Pakistan, and the country has signed FTAs with South Asian partners in hopes that it would open up more market opportunities and Pakistan can capitalize its geographic and comparative advantage position. However, there is a lack of systematic analysis on the export-stimulating effects of FTAs for Pakistan. This study has analyzed how the effects of FTAs are measured in gravity model analysis and highlighted the potential limitations of using a dummy variable to measure these effects. This is particularly relevant for other developing countries that are actively engaged in signing numerous FTAs like Pakistan.

1.7 Organization of study:

This study is composed of five chapters. The first chapter is the introduction, which covers the background, problem statement, objectives, research gap, and significance of the study. Chapter two provides a review of relevant literature using the gravity model in examining the impacts of FTAs on trade. Chapter three discusses the methodology employed, including data sources and estimation techniques, to estimate results for the impacts of FTAs on exports, which are presented in chapter four. Finally, chapter five summarizes the major conclusions and provides policy implications.

CHAPTER 2

LITERATURE REVIEW

2.1 Background

The concepts of trade diversion and trade creation are associated with the formation of Free Trade Agreements (FTAs). Trade creation refers to increased international trade due to the removal of trade barriers through a preferential trading system, customs union, or free trade area. In such a scenario, member countries can produce goods based on their comparative advantage and sell them to free trading partners. This leads to benefits for both exporting countries and importing trade partners, as they can purchase products at a lower cost. As a result, domestic producers in importing countries may face competition from lower-priced imports, but the benefit to consumers still outweighs their losses. Furthermore, trade creation leads to greater efficiency, boosting global welfare.

The formation of Preferential Trade Agreements (PTAs), Free Trade Agreements (FTAs), and other economic unions decreases product costs and improves the efficiency of economic integration. The core of trade creation lies in the elimination of customs tariffs on the internal border of unifying states, which usually already trade with each other, leading to further cost reduction for goods. Additionally, trade creation results in the formation of new trade flows between states that have chosen to integrate economically.

On the other hand, trade diversion occurs when trade flow is diverted from a cost-efficient partner state to a less efficient one that has become a member of an economic union and made its goods cheaper within the union, but more expensive compared to the rest of the world. In practice, trade diversion and creation effects occur as a result of the formation of economic unions. The efficiency of a specific union's economic integration is assessed based on the

balance between trade creation and diversion effects: it is cost-effective when trade creation effects prevail and vice versa.

In contrast, trade diversion occurs when trade is redirected from a cost-efficient partner state to a less efficient one due to their membership in an economic union, causing their goods to be cheaper within the union but more expensive globally. Trade diversion and creation effects both occur as a result of the formation of economic unions. The effectiveness of a specific union's economic integration is evaluated based on the balance between trade creation and diversion effects. A union is considered cost-effective when trade creation prevails and less when trade diversion effects are stronger[3].

Not only does production impact trade agreements, but the location of consumption also has a role. In the case of trade diversion, a member country increases sales by taking away market share from a more competitive producer in a non-member country, simply because its products enter the partner's market without tariffs, while the more competitive non-member producer faces discriminatory duties. As a result, non-member country exporters with a comparative advantage under equal competition conditions to compensate it's lose from trade diversion.

Additionally, in the case of trade diversion, the importing country loses the tariff revenue it collected on the now duty-free imports from its bloc partner. The importing partner's consumers do benefit from lower prices due to the elimination of the tariff, but this gain is not equal to or greater than the lost customs revenue, causing a net loss for the nation. Hence, trade diversion harms both the importing country and the rest of the world. These losses outweigh the gains to the bloc member that benefits from increased exports (Lipsey, 1957).

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[3] https://www.wilsoncenter.org/chapter-3-trade-agreements-and-economic-theory#:~:text=In%201950%2C%20the%20economist%20Jacob,trade%20barriers%20have%20been%20removed.

If trade diversion exceeds trade creation, the establishment of a customs unions or a free trade agreement (FTA) would reduce global welfare (Sanguinetti et al., 2004). Apart from the static effects of trade diversion and trade creation, participants in FTAs and customs unions also aim to realize dynamic benefits, such as increased production as firms benefit from the larger market size, and improved efficiency as they adapt to heightened competition. Access to a bigger market is vital for small countries whose economies are not big enough to support large-scale production.

2.2 Empirical review:

This section of the literature review addresses three key questions: the role of RTAs on the global trading system, whether FTA is a net trade creator or diverter, and whether it serves as a barrier or a catalyst for bilateral trade liberalization. Khan (2021) and Kirana et al., (2021) have found that trade liberalization leads to a decrease in bilateral trade among member countries of SAFTA. However, the creation of SAFTA is crucial as it is highly desirable and can result in economic gain, particularly for small, developing countries. Additionally, the research shows the positive impact of SAFTA on regional integration and reducing political tensions among SAARC member countries.

Sharma (2001) examined that the South Asian Free Trade Area (SAFTA) can reap more benefits through non-discriminatory trade liberalization strategies and policies, which would result in higher tariffs for non-member states. Trade liberalization can help facilitate the economic gain of member countries, and most empirical results have shown that the members of the South Asian Association for Regional Cooperation (SAARC) have already analyzed the cost-benefit analysis of trade.

Thomas et al., (2004) also discussed that South Asian countries could benefit more from regional arrangements by working as a group rather than engaging in individual trade. There

are many issues faced by member states of SAFTA, such as political conflicts, religious disagreements, bilateral issues, and limited cooperation. To address these issues, SAFTA was implemented on July 1st, 2006.

Kirana et al., (2021) and Hassan (2001) argued that SAFTA is a parallel initiative for SAARC member countries to enhance multilateral trade liberalization. The main aim of SAFTA is to reduce tariffs and increase intraregional trade among the SARRC member states. The study aims to investigate whether the second phase of SAFTA was successful, using the case study of Bangladesh's RMG (ready-made garments) exports to India. After China, Bangladesh has experienced significant growth in the ready-made garments sector. RCA (Revealed Comparative Advantage) is used to assess a country's export potential. The study showed that trade liberalization has decreased bilateral trade among the member countries of SAFTA.

Srinivasan (2004) argued that the creation of SAFTA is important because it is highly desirable and can provide economic benefits, particularly for small developing countries. A study by Panagariya (1999) suggests that SAFTA can offer more benefits through non-discriminatory trade liberalization strategies and policies, which will result in higher tariffs for non-member states. Trade liberalization has facilitated economic gain for member countries, and most empirical results support this.

Research by Muzaffar and Yaseen (2017) supports the idea that South Asian countries could benefit more from regional arrangements by working as a group rather than engaging in individual trade. Some of the SAFTA members are also part of other regions or regional agreements. For example, Bangladesh, India, and Sri Lanka are also part of BIMSTEC (Bay of Bengal Initiative for Multi-Sectorial Technical and Economic Cooperation) and IOR-ARC (Indian Ocean Rim Association of Regional Cooperation). The Indian Ocean Rim Association was formed in 1997 and includes larger inter-regional initiatives like South Africa and

Australia. Additionally, Sri Lanka and India are members of FTAs like the Indo-Sri Lanka Free Trade Agreement (IILFTA), which was established in 2000.

Kumar and Saini (2007) analyzed that regional integration helped generate economic stability, increase trade, and bring welfare gains, as well as political stability. They also noted that it has the potential to benefit South Asian countries. However, critics argue that the potential gains and level of regional trade in South Asia is limited compared to other global trade unions like the UN.

Rahman, Shadat, and Das (2006) suggested that the trade creation or trade diversion effect over the number of RTA mainly emphasizes SAFTA. In this study, panel data is used to develop a model. The gravity model is used to identify the bilateral trade of individual countries with the overall number of RTA. Country-pairs have been taken over the year-specific from 1991-2003. A total of 10 RTAs have been taken as samples. At the same time, countries like Hong Kong, Australia, Japan, and Taiwan are taken for investigation to check their trade relationship with SAPTA member states. The export flow is used as the dependent variable and population, GDP, distance, common language, and common border were taken as independent variables. For estimation, the fixed effect is used under two stages. In the first stage, the Tobit model is applied and in the second stage, OLS is used. The study found a significant relationship between the intra-block export formations in SAPTA. Moreover, developed countries like Bangladesh, India, and Pakistan have the ability to gain much more by joining regional trade agreements (RTA). In contrast, other South Asian countries like Nepal, Sri Lanka, and the Maldives showed a negative effect. In this study, other RTAs like SADC, AFTA, NAFTA, MERCOSUR, CAN, and EAC are considered as intra-block creation or net export diversion, and EU and APTA are taken as intra-block export diverting or net export diverting. BIMSTEC is also considered as intra-block export diverting not as a trade creation. Findings predict that none of

the individual RTA will be able to create export but RTS is found to be positively connected with different rates.

Akhter and Ghani (2010) and Raihan and Razzaque (2007) investigated the regional combination of other countries in South Asia. They used the gravity model, which utilized cross-sectional and pooled data for estimation. The cross-sectional data was used to investigate the bilateral flow over time. The gravity model was analyzed in two steps. The first step used cross-sectional data to determine the individual effect for each year, while the second step used pooled data to examine the trade flow over all years from 2003-2008. Bilateral trade was used as the dependent variable, and GDP, per capita income, distance, and tariff rate were used as independent variables. A dummy variable was used to check for common borders between countries (1 if the border is connected, 0 if not). Whereas, 28 sample countries that had significant relations with regional partners were taken for quantitative analysis. The findings showed that trading within the region is beneficial for all SAARC member countries, and that trade was diverted from member to non-member countries. This resulted in an increase in the trade volume in regional trade partners such as India, Pakistan, and Sri Lanka.

Studies by Kumar and Saini (2009) investigated the Pareto efficiency of the South Asian Free Trade Agreement (SAFTA) for all partner countries. They discussed three types of alternative sets to evaluate the potential benefits of SAFTA for member countries: (1) preferential trade between SAFTA and three other trading blocs: EU, NAFTA, and ASEAN; (2) overall full trade liberalization in South Asian countries; and (3) the effect of a customs union on SAFTA with two variants (5% and 10%). The researchers used the GTAP model to analyze data and assess policy implications across 15 regions, including separate regions for countries such as Bangladesh, Sri Lanka, and India. The results were based on 11 sectors, including agriculture, mining and manufacturing, agro-processing, textiles, and services. The results were compared with other regional free trade agreements, including SAFTA-EU and SAFTA-NAFTA-

ASEAN. The authors discussed the effects of multilateral and unilateral trade liberalization and the results from the South Asian Customs Union (SACU). The overall purpose of SAFTA was to increase regional trade, and the study found that it could dramatically improve intra-regional trade for some South Asian countries when compared to other world trade unions.

Raihan (2012) analyzed the impact of SAFTA on regional trade with other South Asian member countries and compared it with other worldwide regional free trade agreement (FTA) units, including Nepal considered as an individual state. The study considered 57 commodities based on classification and 129 states/regions, divided into 9 and 5 factors of production, respectively. Intra-regional trade between SAFTA member countries is low in the South Asian region, largely due to the fact that South Asian countries trade more with other regions with higher global trade volume. Although it is positive for South Asian countries to increase trade with other regions, renowned trade unions like the EU prioritize intra-regional trade. The study aimed to determine the share of intra-regional trade between SAFTA member countries and other worldwide trade blocks such as NAFTA, EU, and ASEAN, and identify the main reason for the failure of intra-regional trade. The results showed that Bangladesh would face a negative welfare effect due to a greater trade diversion effect rather than trade creation effect. On the other hand, reducing the tariff rate would result in welfare gains for other South Asian countries. India, in particular, would benefit from tariff reductions and improved trade facilitation in the South Asian region.

Siddique, Quddus, and Iqbal (2022) studied the trade potential of Pakistan with designated trading countries including Kuwait, USA, UAE, Saudi Arabia, Singapore, Afghanistan, India, Japan, Spain, UK, Iran, Germany, and Belgium, which are all significant trading partners of Pakistan. The study investigated three main economic indicators that positively and significantly affect Pakistan's economy. The results showed a positive impact of GDP on Pakistan's exports with its trading partners.

There main objective to explore the relationship between macroeconomic variables (trade openness, technological innovation, inflation, foreign direct investment, and economic growth) and to measure the moderating role of institutional quality in this relationship panel data was collected from G20 economies for the period of 1998 to 2020, and control variables such as trade openness, technological innovation, inflation, foreign direct investment, and economic growth were used for estimation. Data was gathered from secondary sources, such as the World Development Indicators (WDIs) and Worldwide Governance Indicators (WGIs).

The findings indicated a positive and significant relationship between economic growth, technological innovation, foreign direct investment, and trade openness, which can become stronger with improved institutional quality. There was also a negative relationship between trade openness and inflation, but this relationship can become positive by improving institutional quality.

Studies by Zhuang et al., (2021), Chen and Lu (2003), and Kemal and Khan (1997) found several interesting findings regarding regional trade in South Asian Free Trade Area (SAFTA). Firstly, regional trade, such as SAFTA, is more important and beneficial for Pakistan, as it can increase their exports, decrease trade deficit and lead to a trade surplus through trade with SAFTA members. Secondly, transportation costs can be reduced and negative welfare costs decreased. Thirdly, the purpose of forming SAFTA is to increase the number of trade agreements within the region and benefit member countries, leading to the acceleration of peace in the region. Finally, there are several issues with the implementation of SAFTA, including political conflicts, a weak SAFTA network, supply-side constraints, and lack of political will in member countries, that need further attention to resolve.

Research by Iqbal and Nawaz (2017) found that the bilateral trade flow of Pakistan is in two scenarios: first, the effect of bilateral trade flow with institutional and non-institutional factors,

and secondly, trade flow under SAFTA and MFN in the short and long run. Panel data and the Gravity model were used to investigate the trade effect between Pakistan and India. Over 13 years, GDP, cross-border distance, and socio-political factors have affected the bilateral trade panel of SAFTA member countries. To estimate the long and short-run relationship, a pooled mean group and panel fixed effect model were used. Control variables such as common language, country size, common border, and infrastructures were considered. Dummy variables were used to examine preferential trade. Estimation was done using fixed effect, specific effect, and OLS methods. The findings showed that both SAFTA and MFN agreements were not very effective in promoting trade due to low institutional standards, lack of human development, inflexible non-institutional agreements, poor quality and quantity of physical infrastructure, and high tariff rates. However, in the case of bilateral trade flow, both SAFTA and MFN were found to be significant, especially when accompanied by an institutional framework. Proper policy implementation is necessary to strengthen the trade relationship between India and Pakistan, and the MFN policy could be effective if the institutional framework is properly defined.

Wijesinghe and Yogarajah (2022) found that the regional trade agreements (RTAs) of South Asian countries have a negligible impact on trade and GVC participation in most sectors. However, they found the phasing-in effect of RTA and a strong negative effect on bilateral food trade and GVC participation. Reformulating trade policy priorities and restructuring the RTAs to remove strict general regulatory measures like sensitive lists and rules of origin (ROO) should be South Asian policymakers' priorities for robust trade lead growth.

Saima and Nasir (2016) investigated the relationship between India and Pakistan and identified the reasons for the weaker performance of the South Asian Free Trade Agreement (SAFTA) between these two countries. Using 2016 as a base year, they applied different strategies, including the Most Favored Nation (MFN) and SAFTA, to identify the trade effects. They

found that the economic size of a country's trade partner and the distance between them are directly related to the trade volume. Additionally, the common border between two countries is also directly related to bilateral trade. However, in the case of Pakistan, the common border with India and Afghanistan has not translated into increased trade due to border issues, political instability, procedural limitations, and institutional hurdles. Furthermore, trade between Pakistan and India is largely unrecorded and underground due to trade-restrictive regimes and political tensions between the two countries. Despite efforts to improve the bilateral trade relationship, such as the granting of MFN status and the signing of trade agreements with neighboring countries, trade between India and Pakistan has not increased significantly. To improve the bilateral trade, the authors recommend the implementation of a strong institutional framework, the development of better policies, the reduction of tariff and non-tariff rates, and the improvement of political relations between the two countries to ensure the positive impact of SAFTA and MFN.

Jamil and Arif (2019) conducted a study to investigate the effect of tariff rates on intermediate goods in Pakistan. The main objective of the study was to determine how changes in tariff rates on intermediate products would affect imports and exports volume. The study found that reducing the tariff rate on intermediate products, which are mostly used by local producers in the manufacturing process, could help to reduce the trade deficit by decreasing input constraints and increasing production levels. A theoretical framework was used to identify the effect of exports and to check the performance of export volume after reducing the tariff rate on intermediate inputs. The study used data from five panel countries, including Pakistan, India, Bangladesh, Turkey, and Sri Lanka from 2003-2011, and employed descriptive statistics and OLS to measure the relationship between dependent and independent variables. The findings of the study showed that there was a significant and negative effect of increasing the tariff rate on inputs on intermediate products, which would decrease the rate of intermediate inputs and

increase local manufacturing production. Additionally, there was a significant relationship between export volume and the tariff rate, with a positive impact on export demand.

Munir and Abbas (2021) found that over time the importance of the South Asian Association for Regional Cooperation (SAARC) for regional trade has become more prominent as consumption levels have increased, but resource utilization remains low. In their study, they examined the regional trade of SAARC countries and how they are trading with other regions worldwide. They used a gravity model to analyze the effect of bilateral trade flow. Panel data from 1990 to 2015 was used and the study analyzed four South Asian countries. The study concluded that governments should provide suitable knowledge and modernized information to local producers and production agencies to improve production and enhance exporting methods. Additionally, the study emphasized that peace in the South Asian region is crucial for trade prospects in SAFTA member countries and that regional integration among SAFTA member states is necessary to enhance trade and foreign direct investment in the region. A favorable environment, trade liberalization, and upgrading the export sector are essential for regional growth and development.

Vicard (2011) explored the causes of efficiency and determinants of RTA (Regional Trade Agreement) in improving bilateral trade. Different characteristics of regional trade members and country pairs were used in the study. The theoretical data was estimated through the gravity equation, where country-pairs, time, and RTA pairs dummies were used under fixed effect. Dummy variables were used to measure the membership and characteristics of RTA member countries and country pairs. The results were estimated to illustrate trade creation in EU and NAFTA on different pairs of member countries. To estimate panel data, econometric methods such as heteroscedasticity and auto-correlation robust standard error method were used to find the significance among RTA member countries. Bilateral trade was used as the dependent variable, and specific variables for all member countries were GDP, multilateral resistance

term, and time-invariant country-specific variables, such as common language, distance, colonial history, and contiguity variables. GDP per capita was used as the interaction variable to investigate the effectiveness of regions such as between north/north, south/north, and south/south. Results showed that both regional trade agreements, country pairs, and country time can significantly affect trade creation. When member countries trade with large or similar GDPs, common language, and geographically closed countries, trade creation can be generated and have a large trade flow. Furthermore, some of the regional areas like South-South, North-North, and South-North can enhance trade creation in regional trade agreements.

Gilbert and Oladi (2010) found that some regions are poor all over the world, and some have the highest GDP per capita. South Asia is one of the poorest regions in the world. In the present study, a representative household model and potential extension approach were used to find the potential impact of trade reforms under the support of SAFTA. To support the Custom-built CGE model & economy model with the help of the program, GAMS is used under the regional trade liberalization. To investigate the effect of regional trade on the SAFTA economy model is created. This model covers all south Asian countries. Basically, in this model, sixteen production sectors were identified. Where individual production sector produces jointly produce for local and foreign markets. The findings show that overall all SAFTA member countries are getting gain from this agreement except Bangladesh.

On the other hand, India and Pakistan occupied large GDP of this region and got many benefits, but India having large GDP, is the winner in this race. The result in the case of Pakistan showed that overall, households in rural areas are not getting valuable benefits compared to urban-rich regions. The database indicates a negative and insignificant impact on poor rural areas. The study found the significant issue is the mobility of households due to the perfect mobility of labor required in various groups in the region for better production and distribution.

South Asian countries are known to have weak regional connectivity, which hinders their economic growth and development. The region is characterized by poor infrastructure, inadequate transportation, and limited cross-border trade. This literature review will discuss the challenges faced by South Asian countries in achieving strong regional connectivity and the role of the World Trade Organization's (WTO) trade facilitation agreement in addressing these challenges.

One of the main challenges faced by South Asian countries in achieving regional connectivity is the lack of adequate infrastructure. According to the World Bank, the region's infrastructure gap is estimated at $2.6 trillion, with limited access to energy, water, and sanitation services. The poor infrastructure hinders the movement of goods and services, making cross-border trade challenging. The limited transportation infrastructure also increases the cost of doing business in the region, which affects the competitiveness of South Asian countries in the global market (World Bank, 2019)[4].

Another challenge faced by South Asian countries in achieving regional connectivity is the inadequate implementation of trade facilitation measures. Trade facilitation measures are designed to reduce the cost and time required to trade across borders by simplifying customs procedures, reducing bureaucratic barriers, and improving transparency. However, the implementation of these measures has been slow in the region, which has hindered cross-border trade. According to the WTO, South Asian countries are among the least efficient in terms of trade facilitation, with long clearance times and high transaction costs (WTO, 2017)[5].

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[4] Asian Development Bank. (2020). South Asia Sub regional Economic Cooperation. Retrieved from https://www.adb.org/countries/subregional-programs/south-asia

[5] World Trade Organization. (2017). Trade Facilitation Agreement. Retrieved from https://www.wto.org/english/tratop_e/tradfa_e/tradfa_e.htm

The WTO's trade facilitation agreement (TFA) is an essential tool in addressing the challenges faced by South Asian countries in achieving regional connectivity. The TFA is designed to simplify and streamline customs procedures, reduce transaction costs, and enhance transparency, which can facilitate cross-border trade. The agreement includes provisions on advance rulings, simplification of customs procedures, and the use of electronic payment systems. The TFA also requires member states to establish a national committee on trade facilitation to oversee the implementation of the agreement (WTO, 2015).

The TFA's implementation can provide South Asian countries with a framework to address the challenges they face in achieving regional connectivity. The agreement can help reduce transaction costs and simplify customs procedures, making it easier and less costly to trade across borders. By implementing the TFA, South Asian countries can enhance their competitiveness in the global market, increase trade, and promote economic growth and development[6].

On other hand, South Asian countries face significant challenges in achieving regional connectivity due to inadequate infrastructure and the inadequate implementation of trade facilitation measures. The WTO's trade facilitation agreement provides a framework for addressing these challenges by simplifying customs procedures, reducing transaction costs, and enhancing transparency. The implementation of the TFA can help South Asian countries enhance their competitiveness in the global market, increase trade, and promote economic growth and development.

There are so many other important reasons for ineffectiveness of SAFTA.

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[6] The Economic Times. (2021). Lack of Connectivity, Infrastructure Remain Key Challenges for South Asia's Growth: ADB. Retrieved from https://economictimes.indiatimes.com/news/economy/indicators/lack-of-connectivity-infrastructure-remain-key-challenges-for-south-asias-growth-adb/articleshow/81142620.cms

1. **Non-tariff barriers:** Even though SAFTA aims to reduce tariffs and promote trade liberalization, non-tariff barriers such as technical regulations, licensing requirements, and customs procedures have made it difficult for member countries to trade with each other. These non-tariff barriers can be particularly challenging for smaller businesses that lack the resources to navigate complex regulatory frameworks.

2. **Infrastructure deficits:** Many countries in the South Asian region have inadequate infrastructure, including poor road networks, inadequate ports, and limited access to electricity. This can make it difficult and expensive to transport goods across borders and reduce the competitiveness of South Asian products in global markets.

3. **Limited cooperation:** While SAFTA is designed to promote cooperation among member countries, in practice, cooperation has been limited. For example, some countries have been slow to implement SAFTA agreements or have implemented them in ways that disadvantage other member countries. Additionally, there are concerns about transparency and fairness in the decision-making processes of SAFTA bodies.

4. **Political instability:** South Asian countries have experienced a significant amount of political instability over the years, including frequent changes in leadership, military coups, and civil unrest. This can make it difficult to build trust and cooperation among member countries and can create uncertainty for businesses seeking to invest in the region.

5. **Limited intra-regional trade:** Even though SAFTA has been in place for over a decade, intra-regional trade among member countries remains relatively low. This is partly due to the factors mentioned above but also reflects broader challenges related to economic development, including poverty, low levels of education, and a lack of diversification in many economies.

2.3 Literature gap:

In order to analyze the impacts of Free Trade Agreements (FTAs) on trade, many past studies (Iqbal, 2022; Muzaffar & Yaseen, 2017; and Mahmood, 2019) have utilized a zero-one dummy variable in the gravity equation, in addition to standard controlling variables such as Gross Domestic Product (GDP) of the home and host countries and geographical distances. However, this approach may not accurately capture the full effects of an FTA as it takes time for these agreements to be fully implemented. For example, the ASEAN Free Trade Area (AFTA) was signed in 1990 but took 15 years to be fully implemented. Therefore, using the year in which the agreement was signed as a measure may not provide an accurate representation of the impact.

To address this issue, Manchin and Balaoing (2007) and Obake and Urata (2013) have used the tariff gap approach, which examines the difference between most-favored nation (MFN) and preferential tariffs, rather than a dummy variable to analyze the impact of FTAs. This approach captures changes in tariff rates over the implementation of FTAs and different reduction rates in each agreement signed.

Additionally, Mahmood (2019) conducted a study to analyze the tariff gap impact of the South Asian Free Trade Agreement (SAFTA) as well as the effects of other FTAs on Pakistan's exports from 2006 to 2016. This study expanded upon a previous study by Mahmood (2018) which only analyzed the impact of SAFTA from 2000 to 2010.

CHAPTER 3

METHODOLOGY

3.1 Foundations of Gravity Model:

The gravity model has been derived from Newton's law of gravitation, which states that the force of gravity between two objects is proportional to their masses and inversely proportional to the square of the distance between them. Similarly, in trade, the gravity model measures the level of interaction between two cities, countries, or regions by considering factors such as trade flow and imports demand. Some literature have used Computable General Equilibrium (CGE) model to study trade flow, but the gravity model is an econometric model that specifically explains bilateral trade flow based on a variety of explanatory variables. The popularity of the gravity model is due to its high explanatory power in analyzing real global data, making it a valuable tool in understanding trade patterns.

3.2 Theoretical and empirical model of Gravity Equation:

By the early 21st century, free trade agreements (FTAs) had become a key instrument for trade policy in Asian countries. Although Asia was a late adopter of FTAs compared to other regions such as Europe, America, and Africa, there was a surge in the signing of FTAs in the 1990s to 2022, particularly among ASEAN countries (ADB, 2007). This period saw the fastest spread of FTAs in Asian countries, with ASEAN countries relying heavily on free trade.

However, South Asian countries have lagged behind in their integration with FTAs and have engaged in fewer trade agreements with other regions and other Asian countries. The main reason for this lack of success is the inadequate consideration given to trade facilitation, such as the effectiveness of border and customs procedures, transportation quality, and

transportation cost e.g. South Asian borders have some of the highest transportation costs in the world (World Bank, 2009).

A gravity model is widely used by economists to analyze regional trade agreements (RTAs) and FTAs. Tinbergen (1962) and Linnemann (1966) were the pioneers in explaining the initial specification of the gravity model in bilateral trade. Aitkin (1973) used the model to analyze regional trade agreements (RTAs). Thursby and Thorsby (1987) showed that the European Union enhanced their trade during the 1960s to 1970s. Frankel (1997) analyzed that trade creation worked in the Asian and North American trading regions from 1970 to 1992. Endoh (1999) investigated the gravity model and found the effects of trade diversion and trade creation in the European Economic Community (EEC) and Latin American Free Trade Association (LAFTA). Rose (2000) investigated the common market effect on bilateral trade. Soloaga and Winters (2001) analyzed the effect of regionalism and trade agreements in the 1990s. In contrast, Fukas et al., (2003) examined the trade effects under the North American Free Trade Agreement (NAFTA). Park and Lee (2007) and Carrere (2006) investigated the effect of regional trade agreements (RTAs) on trade in the Asian region. Park and Park (2008) investigated the effect of trade diversion and trade creation on regional trade agreements (RTAs). Hur et al., (2010) analyzed the effect of free trade on exports. Javed (2019) investigated the gains made by Pakistan in trading agricultural products under the South Asian Free Trade Agreement (SAFTA) and discussed the effects of regional trade agreements (RTAs) on trade creation and trade diversion.

3.3 Gravity model:

The gravity model is widely considered the backbone and workhorse for measuring international trade. It is an empirical model that does not focus on providing an economic explanation, but instead describes the general pattern of trade between countries. Jan Tinbergen

was the first to use the gravity model to explain the pattern of trade flow between two or more countries about fifty years ago (Tinbergen, 1962). His theory draws an analogy to Newton's law of gravitation, with the trade flow being proportional to the Gross National Product (GNP) of countries (i) and (j) and inversely proportional to the distance between them as shown below in equation (1):

$$T_{ijt} = G \frac{Y_{it*}Y_{jt}}{D_{ijt}} \tag{1}$$

Whereas;

T_{ijt}= volume of trade between i and j countries at t time.

Y_{it} =GDP of country i

Y_{jt}= GDP of country j

D_{ijt} = geographical distance among two differ countries i and j

G = Normalizing constant.

Taking to GDP of country i and the GDP of country j and multiplying both GDPs then we will obtain the real GDP product of these two countries. The entire product is taken to the power alpha and is assumed to be a positive number. Similarly, in this fraction's denominator, we have the geographical distance between two countries taken to the power of beta.

The basic form of the gravity equation:

$$\ln t_{ijt} = \ln \alpha + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} - \beta_3 \ln dist_{ij} \tag{2}$$

The basic form of gravity model as shown in equation (2) shows the trade value of country i and country j, GDPi shows country i gross domestic product, and GDPj shows country j gross domestic product. Whereas distij shows the geographical difference between the two countries.

In the current study, we have multilateral trade means trade between more than two countries was taken, where we can compare data of South-Asian countries with Pakistan's trade. For empirical evidence, the gravity model's equation is beneficial, showing the empirical regulations in economics. This equation shows the distance and economic size of bilateral countries and used under numerous econometric methods.

This mode also suggest that a relatively greater economic size or higher GDP attract more countries to trade but on the other hand, greater distance will reduce the trade attractiveness.

The key advantage of gravity model is that it's extremely easy to assess; like in dynamic economic analysis this type of model can be transformed by using logarithms by simply applying logs on both sides of the equation.

$$\ln T_{ijt} = \ln\beta + \beta 1 \ln Y_{it} + \beta 2 \ln Y_{it} - \beta 3 \ln D_{ijt} + \text{eij} \tag{3}$$

As in the above equation (3) stochastic component is missing, so by adding the error term we obtain equation 3.

Total trade can be measured by using export plus imports, but here in our case we mainly focus on total exports of Pakistan and every country's GDPAs vary from each other within the region e.g. in the case of SAFTA countries some countries are considered developing countries (India, Pakistan, Sri Lanka) and some countries are considered as less developing countries (Afghanistan, Bangladesh, Bhutan, Maldives, and Nepal).

3.4 Pros & Cons of the Gravity Model

The gravity model is a widely-used tool for measuring international trade. Despite its popularity, the model has some limitations that need to be considered when interpreting and estimating data. For instance, unreliable data can lead to unreliable estimations. Another limitation lies in the specification of the gravity model, which assumes that bilateral trade flows are dependent on certain economic features of the country pairs. However, the set of baseline variables cannot be omitted, and other factors such as the quality of infrastructure or border wait times may affect trade costs or flows.

In the context of regional integration, binary variables are limited indicators of the real depth and breadth of free trade agreements (FTAs) and may not accurately capture the true drivers of trade such as intraregional travel time, technology diffusion, and diplomatic efforts. Nevertheless, the gravity model remains a useful tool due to its high explanatory power and the availability of data. Policymakers can use it to control for other trade-related variables when evaluating changes in countries' trade under FTAs.

However, it is important to be aware that results can be misleading if data is incorrect or if important variables are omitted from the estimation. Analysts should consider these limitations and seek solutions through the literature. Additionally, the results of the gravity model can only provide quantitative estimates and may not be appropriate for welfare measurement.

The gravity model is beneficial in FTA that it controls for the effects of various other trade elements under FTA and isolates the effect of FTA on other trade.

3.5 Tariff gap calculation

The schedule of tariff reduction in each FTA and different tariff concession information has been given in each FTA. In order to summarize the tariff reduction in each FTA and each

product category, tariff gap i.e. differences between MFN and preferential tariff rates are calculated in detail in each product and then for SAFTA. The formula for calculating tariff gap is as follows:

$$TM_{i,t} = \left(\frac{MFN\ tariff\ rate_{i,t} - FTA\ tariff\ rate_{i,t}}{MFN\ tariff\ rate_{i,t}} \right)$$

….Eq.(4)

Where, TM is the tariff margin/tariff gap. For the calculation of tariff gap variable we did an in-depth study of SAFTA of Pakistan[7]. Under SAFTA agreement tariff modalities offered by NLDC and LDC to Pakistan were used to calculate FTA-tariff reduction rates. These calculated FTA-Tariff reduction rates were used along with MFN-tariff rates to find out the tariff gap values using formula of equation (4).

The empirical equation of the model used in this study is shown in equation (5).

$EXPORT_{ijt} = \beta 0 + \beta 1 \ln(GDP)_{it} + \beta 2 \ln(GDP)_{jt} + \beta 3 \ln(Dist)_{ij} + \beta 4 \ln(POP)_{it} +$

$\beta 5 \ln(POP)_{jt} + \beta 6 \ln(RER)_{ijt} + \beta 7 (Tariff)_{ijt} + \beta 8 (SAFTA)_{ijt} + (e)_{ijt} + (u)_{ijt}$ 　　Eq (5)

In above equation 5, bilateral exports are calculated for Pakistan with the rest of the world.

β_1 is the coefficient of GDP of country i and β_2 is the coefficient of GDP of country j, whereas β_3 is the coefficient of distance between Pakistan and its trading partners, and β_4 is the coefficient of population of country i and β_5 is the coefficient of the population of country j, whereas β_6 is the coefficient of the exchange rate of country i and j. β_7 is the coefficient of tariff rate of country i and j. β_8 is the coefficient of SAFTA (measure as SAFTA tariff gap and SAFTA as a dummy variable). β_1 till β_8 coefficients are all control variables that show how

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[7] The complete list of Pakistani export products which obtained tariff reductions from its trade agreement partners are given by Ministry of Pakistan along with reduction rates for these products.

much change will occur in the total exports of Pakistan e with a unit change in the relevant control variable.

All in all the above equation (5) shows the bilateral total exports of country j and i with four main alternatives:

- $EXPORT_{ijt}$ = Total real bilateral exports from Pakistan to all of its trading countries j at t period

- GDP_{it} = shows the real GDP of Pakistan in t time period

- GDP_{jt} = shows real GDP of country j at t time period

- $dist_{ijt}$ = showing distance between country j and Pakistan in t time

- POP_{it} = total population of Pakistan in t time period

- POP_{jt} = total population of country j in t time period

- RER_{ijt} = showing bilateral real ER (Exchange rate) among country j and country i at time.

- $(Tariff)_{ijt}$ = MFN (most favored nation) tariff rate among Pakistan and country j in t time.

- $SAFTA_{ijt}$ = SAFTA variables measuring with two alternatives.

  Measured by a dummy variable, where 1 shows the destination belongs to SAFTA and 0 otherwise and secondly measured by Tariff Gap variable

- $(e)_{ijt}$ = error term of individual country

- $(u)_{ijt}$ = error term of SAFTA member countries

3.6 Gravity Equation and Free Trade Agreements (FTAs):

The gravity model is used to measure the effect of Free Trade Agreements (FTAs) on trade flow. If the effect is positive and significant, it is assumed to have a statistically significant impact on trade flow. The magnitude of the effect is related to the size of the coefficients. The gravity model provides a better explanation of bilateral trade compared to the GTAP model as discussed by (Tinbergen, 1962; Linnemann, 1966). In literature there are many studies where gravity model has been used to explain the impact of trade agreements on trade pattern of a country e.g. Aikin (1973) used this model to explain the effect of Regional Trade Agreements (RTAs). Many other researchers have also used this theory to examine the effects of trade, such as Thorsby and Thorsby (1987), who found that the European Union increased trade in the 1960s and 1970s. Frankel (1997) found evidence of trade creation in different trade blocks (Asia and North America) from 1970-92. Endoh (1999) used the gravity model to estimate the trade diversion and trade creation effects in the European Economic Community and the Latin America Free Trade Association. Rose (2000) examined the common market effect on regional trade, while Winters and Soloaga (2001) analyzed the effect of regionalism and Regional Trade Agreements in the 1990s. Fukao et al., (2003) examined the trade effect of NAFTA using the gravity model. Egger (2004) and Lee and Park (2007) analyzed the regional trade effect in East Asia. Park and Park (2008) estimated the trade creation and trade diversion effects on Regional Trade Agreements, while Kepaptsoglou et al., (2009) investigated the European Union Mediterranean Free Trade Agreement.

3.7 Gravity Model Data:

Statistical data were collected from various sources such as WITS (World Integrated Trade Statistics), WTO (World Trade Organization), Comtrade (United Nations Commodity Trade),

MOC (Ministry of Commerce), and NTC (National Tariff Commission) for the period 2006-2016.

3.8 Estimation techniques:

Using the panel data estimation technique increases the degree of freedom, forecast the problem of heteroscedasticity and offers more valued econometrics estimation because it provides more data and so more information. When using panel data analysis, it offers more moment equations than the number of their parameters.

3.9 PPML and NB models

The gravity model is widely recognized in the literature on international trade. However, it faces a major estimation problem when there is zero trade between two countries. The standard technique for estimating the gravity model involves taking the logarithm and using a log-linear method. However, the logarithm of zero is not defined, which leads to the exclusion of zero trade flow from the estimation. To address this issue, three methods have been adopted in the literature. The first method involves reducing the sample size by eliminating zero trade observations. The second method involves adding a small constant (e.g. \$1) to the trade value before taking the logarithm. The third method involves estimating the model at different levels. The first method is only applicable when the zeros are randomly distributed, as it may indicate random missing data or random rounding errors. On the other hand, zero trade may also indicate that there is no trade between two countries or systematic rounding errors, which would result in the loss of useful information or inconsistent estimates if the OLS method is used for estimation. To overcome this issue, this study employs the Poisson Maximum Likelihood (PPML) and Negative Binomial approaches to estimate the results.

The first strategy is only applicable if the zeros are randomly distributed, for example, in cases where the zeros are random rounding errors or missing data. In such cases, the zeros are not informative and can be dropped. However, if the zero trade reflects systematic rounding errors or very small trade flows, then eliminating zero trade flows from the sample will result in a loss of useful information and produce inconsistent estimates. The second and third strategies are incorrect when using the ordinary least squares (OLS) method of estimation. In this study, we have used the (Pseudo) Poisson maximum likelihood (PML) estimator approach, which can be applied to the levels of trade and thus estimate the non-linear form of the gravity model while avoiding dropping zero trade flows. Santos Silva and Tenreyro (2006) have mentioned that, in the presence of heteroscedasticity, the PPML is a robust approach widely used in literature, such as in the work of Westerlund and Wilhelmsson (2009).

The approach of PPML is used because it is the non-linear form of the gravity model or applied to the levels of the trade and it will also avoid the issue of dropping zero trade flow as studied by Mahmood (2019); Santos and Tenreyro (2006) that in the existence of heteroscedasticity.

A negative binomial approach is used to resolve the problem of over dispersions and it will also address the scale in variant issues when zero trade flow or heteroscedasticity accrue through which PPML and NB will provide the consistent parameter and deal with the zero trade flow or to robust the various levels of heteroscedasticity.

Therefore, in this study, we are using both Poisson maximum likelihood (PPML) and Negative Binomial (NB) regression models to overcome the issue of over dispersion (NB) and to address scale invariant problem (PPML), when both heteroscedasticity and zero flows occur because both NB and PPML give a consistent parameter, robust to different forms of heteroscedasticity and a great deal with zero flows. Negative Binomial (NB) regression and Poisson Pseudo

Maximum Likelihood (PPML) are commonly used statistical techniques for modeling count data.

The Negative Binomial regression is used when the data exhibit over dispersion, which occurs when the variance of the count data is greater than its mean. In such cases, the Poisson regression, assumes that the variance and mean of count data would be equal, may not be appropriate. Negative Binomial regression relaxes this assumption and allows for the variance to be greater than the mean, making it a more suitable choice for over dispersed count data.

The PPML technique is also used for modeling count data, but it is specifically designed for panel data, where there are multiple observations for each individual over time. It is based on a modified version of the Poisson regression, but accounts for individual-specific heterogeneity and time-invariant unobserved variables. The PPML method is able to handle correlated errors and unobserved individual-specific effects, making it a popular choice for modeling count data in panel datasets.

PPML, on the other hand, is commonly used in international trade data estimation when the dependent variable is a count variable, such as the number of goods or services traded between countries. PPML can be used to estimate the gravity equation, which models the relationship between trade flows and economic variables, such as GDP and distance. PPML can handle over-dispersion and account for zero trade flows, which are common in international trade data.

While both NB and PPML techniques are used for modeling count data, NB is used when the data exhibit over dispersion, and PPML is specifically designed for modeling count data in panel datasets.

PPML (Poisson Pseudo Maximum Likelihood) and NB (Negative Binomial) are used to address the issues of over-dispersion and missing trade values in statistical analysis in the following ways:

1. **Over-dispersion**: Over-dispersion occurs when the variance of a count data is greater than the mean. PPML modifies the traditional Poisson regression model by incorporating an over-dispersion parameter, which allows for additional variability in the count data. NB is also a statistical model that is used to analyze count data with over-dispersion. It is a generalization of the Poisson model that allows for additional variability in the count data.

2. **Missing trade values**: When some trade values are missing in the data, it can impact the accuracy of the statistical analysis. NB is often used in such cases, as it makes the assumption that the missing values are missing at random and uses the available data to make predictions about the missing values.

3.10 Dependent Variable

In this study, we used exports of Pakistan as a dependent variable. Dependent variable may be affected by one or more independent variables. The description of dependent and all indepdent variables is given below.

3.10.1 Exports of Pakistan:

In this study, export is the dependent variable and the main objective of this research is to analyze the effect of the tariff gap of SAFTA on exports of Pakistan. The data on total exports of Pakistan is composed on total of all HS commodities as defined in UNCOMTRADE database.

Pakistan traded through Karachi and Gawader seaport by using the Arabian Sea & along with the Gulf of Oman. Pakistan also trades through the land border with its neighboring country like along with northwest with China, southwest with Iran, east with India & through west side trade with Afghanistan.

3.11 Independent Variables

Independent variables are those variables through which the dependent variable is affected. In this study income of both exporting and importing countries measured as GDP and distance have been considered as standard gravity model independent variables. Beside these standard variables population, exchange rate, tariff, SAFTA, common border and common language are used as independent variables.

3.11.1 Gross domestic product (GDP):

To analyze the results, data on the real GDP of Pakistan was taken from the World Integrated Trade Solution (WITS) website, using 2015 as the base year and covering the period from 2006-2016. According to Kumar and Saini (2009) examined the impact of the South Asian Free Trade Area (SAFTA) on increasing trade levels within the region. Different scenarios were discussed to explore the potential for improving intra-regional trade. Comparisons between SAFTA and other world trade unions suggest that it is beneficial for some South Asian countries.

It is a fact that when a country's GDP increases, the rate of high-quality products will also increase and this has a positive and significant impact on exports. As the GDP of a country increases, its export rate will also increase. Developed countries prefer to trade with countries with higher GDPs that can produce high-quality products. Pakistan exports to its member countries whose GDP is much higher.

3.11.2 Population:

The increase in population of a country leads to an increase in its consumption level and the demand for more goods. In this study, data on the total populations of Pakistan (POPi) and its trading partners (POPj) was analyzed to examine the relationship between population and trade.

When the population of country j (POPj) increases relative to the population of country i (POPi), it leads to an increase in exports from country i and an increase in imports from member country (country j).

According to the Global Economy 2019 report, the South Asian Association for Regional Cooperation (SAARC) accounts for 3% of the world's land area, 21% of its total population, and 4.21% of the world's economy.

3.11.3 Real exchange rate:

While, the real exchange rate is the one of the explanatory variable and the data of real exchange is taken from WDI. Actually, the "RE" real exchange rate relates to the net exports As the RE (real exchange) is lesser then the domestic products are less expensive comparative to foreign products and net export are greater. The trade balance must be equal to the net capital outflow(S-I) saving minus investment.

As addressed in the previous empirical studies, the estimation must be taken into account the price effects, referred to as multilateral resistance. As argued in Baier and Bergstrand (2001); Rose (2000); Vandenbussche and Zanardi (2010) since all variables are measured in real terms, the multilateral resistance can be addressed by introducing bilateral real exchange rate (RER$_{ij}$). The bilateral real exchange rate is measured as follows:

$$RER_{ij} = \frac{e_{ij} \cdot P_j^*}{P_i} \qquad \text{........ Eq.(6)}$$

Where, e$_{ij}$ is nominal exchange rate quoted as Pakistani rupee (*i*) to foreign currency *j*; P$_j$* is prices of Pakistan's trading partner *j*; and P$_i$ is prices of Pakistan. An increase in RER$_{ij}$ refers to as real currency depreciation. For exports, coefficient associated with this variable is

expected to be positive; implying exports from Pakistan to its trading partner country j would become more when RER_{ij} depreciates.

3.11.4 Distance:

Distance is an important factor, which also affects the export level of any country. When the difference between countries increases then the transportation cost also increases and the country's exports were also effects. In this study to analyze the result, data on distance has been recorded between Pakistan with other worldwide countries, which predicts total transformation cost. As when any country has less distance between two countries, this will indicate that transportation costs will also be lower, as larger the distance higher the transportation cost and it will also predict that countries trade will also be lower.

3.11.4 MFN Tariff rate:

In this study to analyze the result, data on the total MFN tariff rate of trading partners of Pakistan is taken from the website of WITS and MOC (Ministry of Pakistan) from 2006-2016. Tariff rate is also an important factor to increase the trade level, and most countries prefer to decrease their tariff rate in order to increase their exports by signing trade agreements. Mostly foreign countries impose a tariff on imported goods through which the cost of products increases to lower the demand of importing country. Minchin and Belaying (2007) and Obake and Urata (2013) investigated that MFN rate also affect the FTA of member countries because MFN is provided by one country to another, where one country can give special concession on tariff rate to enhance the trade like Pakistan and India give most favorite nation status to each other but both of them not working under MFN status due of Socio-political issues. Over time, both are trying to improve their relationship and in1995 India first time give MFN status to Pakistan but at that time Pakistan did not accept it. In 2011 Pakistan give the most favorite status to India and tried to extend this relationship to provide MFN status to each other to

achieve the targets of 2013 but failed to achieve the given targets of SAFTA. In 2004 both countries have sign a trade agreement with six other neighboring countries to bring improvement in bilateral trade but fail to enhance the bilateral trade. To increase the bilateral trade in Pakistan strong institutional framework is required, for regional trade better policies should be developed, reducing the tariff & non-tariff rates, and strong positive political relation is needed to ensure the positive impact of SAFTA and MFN. Saima and Nasir (2016) ensure that the government has to cut down the MFN tariff rates and reduce the trade barriers, which can be applied based on MFN countries, which is an important part of SAFTA.

MFN agreement is not very much effective in encouraging trade because of low institutional standers, lack of human development, inflexible non-institutional agreements, low quality & quantity of physical infrastructure, and imposing high tariff rates.

Iqbal and Nawaz (2017) studied the benefit of tariff rates to ensure the feasible framework that both countries needed to cut down tariff rates and established better political relations and strick policies can be needed for implementing peace across borders.

3.11.5 Common Language & Common Border:

In this study, common language and common border are used as dummy variables to estimate their impact on exports of Pakistan. In bilateral trade, countries can get benefits when they have a common language and/or a common border. In case of common border, countries can get benefit because through which country's transportations cost will reduced and more goods will be exported. In trade common border is also known as a low-cost land route (Mahmood, 2019).

In this study, the common language is the official language of Pakistan and a dummy variable is used, when any country has a common language with Pakistan, it can be indicated by using "1" and otherwise 0 and the same holds for common border countries.

CHAPTER 4

RESULTS DISCUSSION

4.1. Export Analysis:

Table 1 shows estimation results of total exports using both PPML and NB estimators. In this study two alternative measures of SAFTA effects (i.e. the binary dummy variable and tariff gap) are used. The results from both estimation methods are similar with few exceptions. Therefore, the following discussion is based on PPML results under tariff margin approach (Column C and D of the given table) while that of NB results are discussed where relevant.

Table 1: Estimation Results for Total Exports

	Binary Dummy		Tariff Margin	
	NB	PPML	NB	PPML
Variables	**Column A**	**Column B**	**Column C**	**Column D**
Lnrgdpi	3.13 (1.75)**	-0.19 (-0.09)	3.27 (1.82)**	0.41 (0.19)
Lnrgdpj	0.44 (16.57)***	0.64 (18.63)***	0.44 (16.57)***	0.64 (18.66)***
Lndij	-0.59 (-5.47)*	-0.67 (-6.82)*	-0.60 (-5.51)*	-0.65 (-7.20)*
Lnpopi	-4.36 (-0.89)	2.56 (0.45)	-4.69 (-0.96)	1.02 (0.17)
Lnpopj	0.26 (6.43)*	0.14 (3.43)*	0.26 (6.42)*	0.14 (3.45)*
Lnrerij	0.10 (2.22)***	0.09 (1.44)*	0.10 (2.26)***	0.09 (1.60)**
tariff_all	-0.01 (-2.43)***	-0.01 (-1.07)	-0.01 (-2.35)***	-0.01 (-1.02)
Safta	-0.72 (-2.43)***	-0.40 (-1.16)	-0.07 (-2.39)***	-0.05 (-1.36)*
Cb	-0.94 (-4.49)***	-1.78 (-4.25)***	-0.94 (-4.46)***	-1.64 (-4.44)***
Cl	-0.03 (-0.18)	0.93 (8.81)***	-0.02 (-0.14)	0.91 (9.07)***

Note: number in the parentheses are z statistics based on clustered standard errors; * Significant at 10%; ** significant at 5%, *** significant at 1%; NB = Negative binomial and PPML = Poisson Pseudo Maximum Likelihood
i = Pakistan, j = Trade partners of Pakistan
Source: Authors' computation

Both GDP of Pakistan and its export destination partners positively affect Pakistan's exports as the associated coefficients are positive. However, when PPML estimation is employed, the coefficient associated with Pakistan's GDP (i.e. 0.41) turns out to be insignificant statistically (See column D of Table 1).

Positive coefficient of GDP shows that higher levels of economic activity and income in Pakistan and its trading partners lead to increase demand for goods and services from Pakistan. Whereas, in case of SAFTA, India and Pakistan are the main trading countries with large GDPs but due to political instability and cross border issues trading with India is slow (Gilbert & Oladi, 2010). Previous studies like Iqbal and Nawaz (2017) found that factors such as GDP, cross-border distance, and socio-political factors impact the bilateral trade panel of South Asian Free Trade Area (SAFTA) member countries. Studies such as Siddique, Quddus, and Iqbal (2022) suggested that as the GDP of both Pakistan and its trading partners increase, exports from Pakistan are likely to increase as well.

The coefficient associated with distance is negative and statistically significant at 1 percent, irrespective of the estimation methods and the FTA measures (see all columns of Table 1). The negative coefficient and statistical significance of the distance variable suggests that distance has a negative impact on exports. As distance increases, the cost of transportation also increases, which in turn reduces the trade flow and decreases exports. The magnitude of the coefficient indicates the strength of this relationship, which ranges narrowly between -0.59 and -0.67, suggesting a strong negative relationship. This indicates that countries located farther away from Pakistan are likely to trade less with Pakistan due to higher transportation costs.

The population coefficient is statistically insignificant and positive. The positive, but statistically insignificant coefficient for population of "popi" in the case of Pakistan suggests that there is a positive relationship between the population of Pakistan and exports from Pakistan, but this relationship is not strong enough to be considered statistically significant.

Meanwhile, the statistically significant positive coefficient for "popj" suggests that there is a strong positive relationship between the population of the destination country and exports from Pakistan. This indicates that an increase in the population of the destination country is positively associated with an increase in exports from Pakistan. The empirical result of Shaikh (2009) showed that population adversely affect the exports and upgrading the export in under developing countries because as the population increases then the country has to produce and consume more products and country also have to import products from other countries. On the other hand, population positively effects human capital. Afzal (2009) examined that growth in population negatively effects the economic development and export growth.

When RER is concerned, the coefficient is positive and statistically sig nificant in all estimation specifications. Actually, the "RE" real exchange rate relates to the net exports, the coefficient of real exchange rate is a measure of the relationship between the relative price of a country's exports (in terms of foreign currency) and the quantity of exports. A positive coefficient indicates that as the relative price of exports increases (i.e. the exchange rate strengthens), the quantity of exports will also increase. In other words, a stronger currency makes exports cheaper for foreign buyers, which leads to an increase in exports. But in the case of Pakistan, according to our result, the coefficient of real exchange rate is positive and statistically significant, it means that there is a strong relationship between the exchange rate and exports. Studies like Vicard (2011), Shaikh (2009), Siddique, Quddus, and Iqbal, (2022) indicates that a weaker Pakistani rupee (compared to other currencies) lead to an increase in exports from Pakistan, as it makes the exports cheaper for foreign buyers. Alternatively, as the RE (real exchange) is lesser then the domestic products are less expensive comparative to foreign products and net export are greater. Eichengreen and Gupta (2013) study suggested that real exchange rate strongly effects the service sector exports as compare to exports of goods.

The coefficients associated with common border and common languages are negative and positive, respectively, both of which are statistically significant at 1%. The negative coefficient in the former would reflect the long-lasting conflict in relations between Pakistan and India. On the other hand, a positive coefficient for common languages indicates that Pakistan's exports increases with the countries that have common language with Pakistan. This could be because of increased ease of communication, shared cultural and business practices, or other factors that make it easier to export goods to these countries.

The coefficient associated with tariff variable $(Tariff)_{ijt}$ is negative in both PPML and NB estimations but found statistically significant in the latter method only at 1 percent. Nonetheless, the magnitude of coefficient is very small. This might be due to export composition of Pakistan otherwise it would not mean that tariff reduction in export destination partners would have negligible effect. Pakistan's export is dominated by textile and clothing, whose market destinations are the developed countries, the US in particular.

When an FTA effect is concerned, both the dummy variable and tariff gap yield similar results to a certain extent. The effect of SAFTA on export is weakly statistically significant in PPML model but strongly significant and negative in NB one. The failure behind SAFTA might be due to poor implementation of SAFTA despite of the fact that tariff gap is positive of SAFTA. Moreover as discussed in the literature that poor implementation of this agreement is attributed to the persistent political conflicts between two large markets of the region i.e. India and Pakistan while cross border smuggling is still huge in the region (Hassan, 2001).

The coefficients of -0.07 and -0.05 for SAFTA under NB and PPML respectively indicate that the SAFTA agreement has a negative effect on Pakistan's exports. This means that despite being a member of the South Asian Free Trade Area, Pakistan's exports to other member countries have decreased.

Intuitively, the negative coefficients suggest that the SAFTA agreement has not delivered the expected benefits to Pakistan's economy. Despite the reduction of tariffs and trade barriers, Pakistan's exports have not increased as expected. This could be due to various reasons, including the fact that Pakistan's exports may not be competitive enough to meet the demands of the regional market or that other member countries may not be willing to import from Pakistan due to quality concerns or other factors.

The statement that Pakistan and other countries under SAFTA are unable to capitalize on the benefits of the agreement can be justified by the negative coefficients and the lack of significant increase in exports. The main aim of this agreement was expected to boost trade and economic growth among member countries, but the results suggest that this has not been the case for Pakistan. The reasons behind this could be complex and require further analysis, but the negative coefficients indicate that the agreement has not had a positive impact on Pakistan's exports.

Finally, it is evident from table 1 that, how FTA is measured (i.e. either dummy or tariff gap) affects the magnitude of estimates while the sign remains same in most of the cases.

4.2 Tariff Gap analysis:

The tariff gap is measured by taking the difference between the MFN tariff rate and the FTA tariff rate and taking the ratio of the MFN tariff rate of each product category under the World Trade Organization (WTO) rules. Tariff gap of all SAFTA countries has been measured of each year.

An increase in the tariff gap implies that a country has room to increase its applied tariffs up to the bound tariff level without violating WTO rules. This could potentially lead to increased protection for domestic industries against foreign competition. This is the condition that the

high tariff gap could lead to greater market access for exporters and potentially increased export.

However, an increase in the tariff gap could also lead to greater market access for exporters. When a country has a lower applied tariff than its bound tariff, it creates an opportunity for exporters to increase their access to that market. This is because the exporter can benefit from the lower tariff rate, which makes their products more competitive in the market.

Therefore, an increase in the tariff gap could lead to increased exports if other countries are able to take advantage of the lower applied tariff rates. However, it is important that this relationship is not necessarily straightforward and can be influenced by other factors such as non-tariff barriers, exchange rates, and overall market conditions.

Figure 1: calculated tariff gap
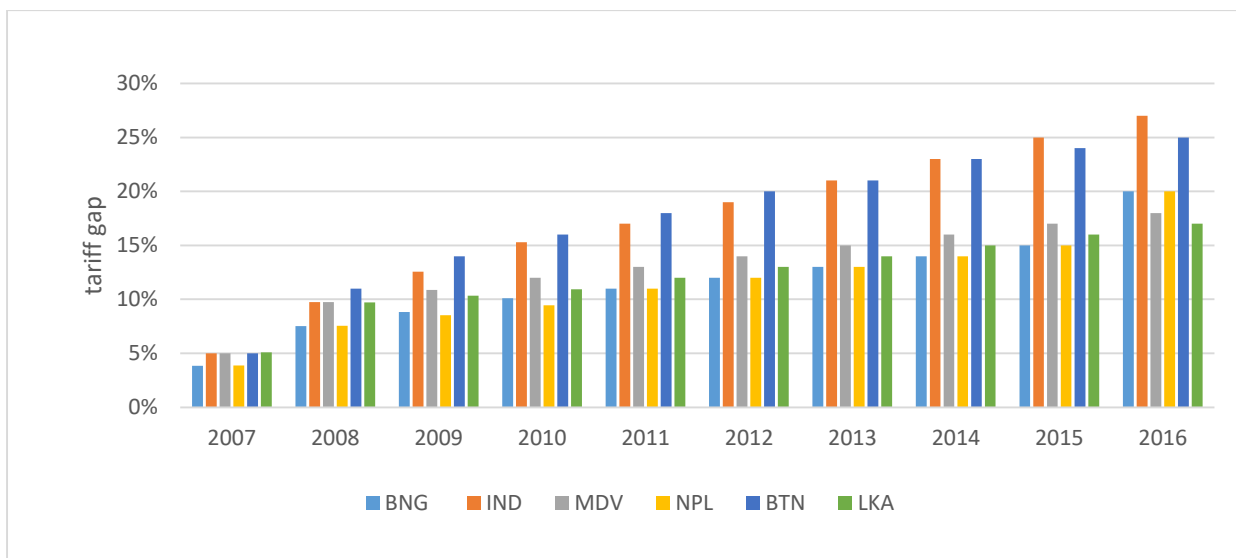
Sources: Authors' computation

Figure 1 shows the comparison of tariff gap of all SAFTA member countries. In the above table, India has the highest tariff gap and lowest tariff gaps with Sri lanka. Moreover, as investigated in the study, table 2 shows the tariff gap of SAFTA member countries.it is evident

that across SAFTA years tariff gap has increased. Still, the commodities remained the same for a few years but with the passage of time tariff gap getting higher, but the trade with member countries slowed down, and countries also cut down the list of trading products. This shows the poor implication of SAFTA, as the tariff rate is increasing. Still, trade with member countries is low market access (e.g., in 2007, Pakistan and India traded 6108 products in 2007 under SAFTA, while in 2010, it reached 5936. The total number of products Pakistan and India traded under SAFTA in 2016 was 4,804. The tariff gap of Bangladesh, 18918 products, India 17983, Maldives 17168, Nepal 19160, and Sri Lanka, 18350 of each product, have been calculated from 2006-2016.

Table 2: Calculated tariff gap:

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BNG	4%	8%	9%	10%	11%	12%	13%	14%	15%	20%
IND	5%	10%	13%	15%	17%	19%	21%	23%	25%	27%
MDV	5%	10%	11%	12%	13%	14%	15%	16%	17%	18%
NPL	4%	8%	9%	9%	11%	12%	13%	14%	15%	20%
BTN	5%	11%	14%	16%	18%	20%	21%	23%	24%	25%
LKA	5%	10%	10%	11%	12%	13%	14%	15%	16%	17%

Sources: Authors' computation

At the beginning of the period in 2007, the highest percentage of Pakistan's total exports went to India at 5%, followed by the Maldives at 5%, Bhutan at 5%, Bangladesh at 4%, Nepal at 4%, and Sri Lanka at 5%. Over the years, the percentage of tariff gap is increased in all SAFTA countries. As the overtime tariff gap increased, India reached up to 27%, followed by the

Maldives at 18%, Bhutan at 25%, Bangladesh at 20%, Nepal at 20%, and Sri Lanka at 17%. The highest tariff gap is with India, Bhutan, and Bangladesh, and the lowest tariff gap is with Sri Lanka at 17% .all this shows that the overall tariff rate is increasing. Still, the export rate is not increased as much because, with time, the tariff gap increased, but the list of trading commodities was the same, or cutting down their list of trading commodities shows less market access. In above table 2 shows the individual tariff gap of all SAFTA member countries. Especially tariff rate is reduced, or special concessions are given to under-leased developing countries to enhance their trade, but trade with these countries is still not improved.

It is a myth that when the tariff gap increases, it is an exception that exports will also increase, but in our case, the tariff gap is increasing. However, Still, trade with member countries is not increasing much because the tariff rate is getting low, but the list of commodities is cutting down, or fewer products are trading.

4.3 Qualitative Analysis:

For qualitative analysis, I visited NTC (National Tariff Commission) and conducted a detailed interview with Mr. Imran Zia (Director General of NTC). Ma'am Sidrah, the second interviewer from ministry of commerce, looks after all SAFTA-related trade issues at MOC (ministry of commerce). I have taken a small interview with Mr. Tariq Mahmood, the trade policy expert at the ministry of commerce. In these meetings, different questions were asked related to the SAFTA agreement and discussed different tariff rates & and their effect on Pakistan's economy. I also asked SAFTA related trade issues, such as why SAFTA is fully implemented, what kind of trade issues Pakistan faces in enhancing trade with member countries, and what are the primary solutions to strengthen trade with SAFTA member countries—in the end, I also asked about the third phase of SAFTA that is not implemented yet. Following is the review of the discussion.

The SAFTA agreement was signed in 2006, but implementation took around 2-3 years. Two phases have been implemented, Phase-I (2008-2016) and Phase II (2008-2016). However, according to the interviewers, phase III is not implemented, so phase II is still in process, and there is no specific schedule for phase III.

One of the main objectives of MFN implication is to promise to impose an equal tariff on imports of all member countries of WTO unless they are part of the PTA (Preferential trade agreement). It is highly restrictive, and there shouldn't be any kind of discrimination in the MFN rate[8]. Now, Pakistan had discriminated against India and didn't provide any other type of concessions in the early years of the WTO foundation. Secondly, even by giving MFN status to India, India still faces problems with transit facilities, which would be helpful to expand its trade by using the land route to central Asia. Moreover, both countries have added a big list of sensitive products under SAFTA. Among other factors behind the failure of SAFTA, other main reasons for negative relations are the security issue and cross-border disputes, especially the Kashmir issue.

Taking the example from chapter 85 of tariff rates, Pakistan's CD rate is 0%. Still, at that time SAFTA rate was 5% after implementation, and with time tariff rate was reduced gradually on yearly bases. When Pakistan had an agreement with India in 2006, at that time, we were facing five slabs of tariff rate, i.e., 25%, 20%,15%,10%, and 5%. Pakistan has given these rates to India after the implementation of the SAFTA.

According to the schedule of SAFTA, phase 1 concession rates (CD rate)[9] in 2006 were 20%, but this CD rate cut down with time and came to 18% in 2008, and the CD rate further reduced

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[8] Most favored nations (MFN) is a status or level of treatment accorded by one state to another in international trade. The term means the country which is the recipient of this treatment must nominally receive equal trade advantages as the "most favored nation" by the country granting such treatment. **(**Trade advantages include low tariffs or high import quotas)

[9] CD rate is the customs duty rate and CD is known as the MFN rate

to 11%. After every two years, the CD rate may be decreased by 2%, and it may be possible that from that 11% (actual reduction of 10% and by adding 1% additional customs duty), it became stagnant. This custom duty is the same for all MFN member countries of WTO.

After the completion of SAFTA phase 1, the tariff rate and the sensitive list changed in the second phase. Whereas both countries prefer to pay trade concessions to each other, it is linked with ROO products.

FTA flourishes by giving concessions to each other in trade. So Pakistan has special arrangements with India through which it can block trade with India because, in the early years, both countries were facing some difficulties. Lately, in 2019, both are facing socio, political and religious issues in trading with each other. Finally, very suddenly, India finished the special status of Kashmir, and so Pakistan reacted as it would not restore trade unless Kashmir were given special status.

Every SAFTA member countries have its sensitive list and their own tariff rates. SAFTA is further categorized into Developing and least developing countries (Bhutan, Nepal, and Bangladesh).

Pakistan has a limited export capacity as compared to other countries, to increase the export capacity, it needs better infrastructure, better equipment, better industrial production, and good quality products, and most importantly, FDI is needed to get more export receipts to enhance the BOP. Infrastructure plays an essential role in trading as better infrastructure is required to stabilize supply. For decades, due to political instability, Pakistan's economic issues have been neglected every year; essential industrial resources like gas and electricity are not fulfilling the fundamental requirement of the industry in development, so Pakistan lags behind other South ASEAN countries. Industries can't fulfill the basic resources in production; first, it would

become too expensive, and second, it's impossible to attain all demands with limited production capacity.

Finally, it is concluded that Pakistan is not getting many benefits from SAFTA. The sensitive list is a list of products on which every country doesn't include a tariff concession which is quite big under SAFTA. This list is used to protect local industries but to make SAFTA beneficial, and this list should be shortened.

CHAPTER 5

CONCLUSION AND POLICY RECOMMENDATIONS

5.1 Conclusion

This study has examined the effects of SAFTA on exports of Pakistan during the period 2006-2016 using the gravity model. In this study, SAFTAs effect is measured by both the difference between MFN and preferential tariff rates (i.e. tariff gap) as well as the zero-one dummy variable. In previous studies, with a few exceptions, a zero-one dummy variable in the gravity equation over and above the standard controlling variables is used. This approach seems to be problematic when an FTA takes time to have a full effect and when there is a mix between preferential and free trade agreements. The preferential agreements allowed only partial liberalization and so the ultimate preferential tariff rate is not zero but in case of FTAs the ultimate tariff rate is zero. In order to deal with this problem, tariff gap, which is difference between most-favored nation (MFN) and preferential tariffs is used along with the dummy variable of SAFTA.

Poisson pseudo-maximum-likelihood (PPML) estimation is employed in order to avoid possible bias and inconsistent estimators due to the use of OLS estimation. Negative binomial (NB) model has also been used as a robustness check. The estimation results suggest that when tariff gap is used, the coefficients associated with SAFTA is negative and significant only under NB model. Interestingly, how FTA is measured (i.e. either dummy variable or tariff gap) affects only the magnitude of estimates. While tariff gap is more theoretically favorable in capturing the effect of an FTA, this implies that analysis based the use of dummy variable have a tendency to underestimate impacts of FTAs.

GDP of export destination partners positively affect Pakistan's exports while Pakistan's own GDP has also a positive effect on its exports. The coefficient associated with distance is

negative and statistically significant at 1 per cent. Population coefficient of export destination partners is statistically significant and positive. The coefficients associated with common border and common languages are negative and positive, respectively, both of which are statistically significant at 1 percent.

When an FTA effect is concerned, both the dummy variable and tariff gap yield similar results to a certain extent. The effect of SAFTA on export is weakly statistically significant in PPML model but strongly significant and negative in NB one. Finding shows that SAFTA is not properly implemented or the implication of SAFTA is poor. Findings also suggest that SAFTA has negative effect on total exports of Pakistan as the coefficient of SAFTA is negative in both PPML and NB models. The failure behind SAFTA might be due to poor implementation of SAFTA despite of the fact that tariff gap is positive of SAFTA. Moreover, as discussed in the literature that poor implementation of this agreement is attributed to the persistent political conflicts between two large markets of the region i.e. India and Pakistan while cross border smuggling is still huge in the region (Hassan, 2001).

It is a myth that when the tariff gap increases then exports should also increase but in our case tariff gap is increasing but exports are not increasing as much because countries prefer to trade with other regions or with other countries through which member countries trading few products.

Finally, it is evident from table 1 that, how FTA is measured (i.e. either dummy or tariff gap) affects the magnitude of estimates while the sign remains same in all cases.

5.2 Policy Recommendations:

1. Individual bilateral free trade agreements with SAFTA countries will be more beneficial.

2. Pakistan needs to diversify its exports by identifying new products and markets. This can be done through market research and developing new products that cater to the demands of specific markets.

3. The poor implementation of SAFTA is not much associated with the tariff gap which is positive in case of SAFTA, therefore there is a need to improve other non-tariff barriers.

4. Improvement of trade infrastructure: Infrastructure such as transportation, communication, and technology must be improved to facilitate trade. This can be achieved through public-private partnerships and foreign investment.

5. Reduction of trade barriers: Tariff and non-tariff barriers must be reduced to encourage trade. This can be achieved through negotiations with other member countries and by implementing trade facilitation measures.

6. Promotion of export-oriented industries: Pakistan should promote export-oriented industries by providing incentives, subsidies, and other forms of support. This will encourage local industries to produce goods that are competitive in the global market.

7. Capacity building: The government and private sector should work together to build the capacity of Pakistani businesses to export their products. This can be done through training and education programs, as well as the provision of financial support.

8. Overall, a stable and sensitive approach is required to improve Pakistan's exports under SAFTA. This will require a concerted effort from the government, private sector, and other stakeholders to address the challenges and take advantage of the opportunities presented by the regional trade agreement.

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Appendix

Exports of Pakistan

Table 3: Exports of Pakistan with south Asian countries in 2019.

Pakistan exports has been become stable after the whole world facing the covid-19 pandemic.

Reporting country	South Asian countries	Exports Thousands of US$	Percentage to total Exports
Pakistan	Nepal	$19337	0.081%
Pakistan	India	$66306	0.279%
Pakistan	Sri Lanka	$322,915	1.36%
Pakistan	Afghanistan	$1,180,107	4.97%
Pakistan	Bangladesh	$790,699	3.33%
Pakistan	Maldives	$6,286	0.026%
Pakistan	Bhutan	$0.32	0.000040
Pakistan	Total	$2385650	10.05%

Whereas covid-19 pandemic has paralyze the whole economy and many economic setbacks

Source: World Integrated Trade Solution (WITS) country profile

has been recorded in last two years. After that with passage of time the whole economy comes on normal routine and trade restriction has been abolished. In this way in 2019, 23,749 million total volume of trade has recorded.

Where about 2,824, HS 6 products were exported to different countries (194 countries) and from 208 countries 4,039 number of products were imported. In 2019 Pakistan; exported $2385650 to SAFTA member countries, to Nepal $19337 , India $66306 , Sri Lanka $322,915 , Afghanistan $1,180,107 , Bangladesh $790,699 , Maldives $6,286 , Bhutan $0.32 .

Table 4: Pakistan's Trade Overview (2018-2020).

Value ('000 US$)	July-June '19-20	July-June '18-19	% Change
Import Value ('000 US$)	44,573,834	54,762,982	-18.61
Export Value ('000 US$)	21,393,860	22,958,322	-6.81
Trade Balance ('000 US$)	-23,179,974	-31,804,660	-27.12

source: World Integrated Trade Solution (WITS) country profile

In above table show the over view of Pakistan's trade balance over the period of 2018-20.In June-July fy2018-19 ,Pakistan's total imports 54,762,982 and in period of 2019-20 under same period line 44,573,834,all these shows that Pakistan imports change with -18.61%.on the other side, in fy2019-20 exports value were 21,393,860 and total imports 22,958,322 in fy2018-19.by comparing the imports and exports sides of last four years shows that the BOP is deficit (balance of payment is negatively affected).

Exports of Pakistan:

Pakistan trading through Karachi and Gawader seaport by using the Arabian Sea & along with Gulf of Oman. Pakistan also trade through land border to its neighboring country like along with northwest with China, southwest with Iran, east with India & through west side trade with Afghanistan. Exports of Pakistan ,In fiscal year 2021, $22.7 billion were targeted to export with world trade. After strick restriction and sharp triumph during pandemic, Pakistan springs up its trade with world economy. Global the exports of Pakistan become stable from the previous fiscal year 2020 $21.4 billion to FY 2021 $25.3 billion and also recorded an impressive growth by 18.3% during 2021.

Pakistan dispatched around $28.9 billion worth of goods have been shipped globally in 2021.the dollar amount in shipping have been increased up to 31.8 percent in last five years from 2017.overall trade value of exports increased by 29.8% in 2020-2021.

Pakistan mostly deliver to continental over 35%, 24.2% to European countries and around 22.8% shipped to North America. Now, taking the small percent of worth of trade to Africa up to 5.2 percent, to Latin America 1.6 percent including Caribbean & excluding Mexico and to Australia 1.3 percent.

Now, most Pakistan trading partners of Pakistan are shown as showcase in table 1, where more than 10 countries are listed and the value and % of value of shipment are shown in dollar during 2020-21.

in above table 3 show the over view of Pakistan's trade balance over the period of 2018-20.In june-july fy2018-19 ,Pakistan's total imports 54,762,982 and in period of 2019-20 under same period line 44,573,834,all these shows that Pakistan imports change with -18.61%.on the other side, Pakistan's total exports in 2019-20 were 21,393,860 and same period line in 2018 22,958,322 were exported , whereas the total percentage change were recorded between the two is -6..81. Which shows that comparing to previous years number of exports has been decreased and Pakistan trade deficit increased by -27.12 between the year 2018-2020. Because in this era due to lockdowns (covid-19 pandemic) has completely push back the whole economy towards recession and the trade is not fully operating in 2021.

In table 4, different time series data has been taken from 2005-06 to 2019-20, here total exports and imports.

Table 5: Exports to major countries

YEARS	EXPORT (Billion US$)	IMPORT (Billion US$)	BALANCE OF TRADE (Billion US$)
2005-06	16.453	28.588	-12.134
2006-07	16.976	30.541	-13.565
2007-08	19.132	40.163	-21.031
2008-09	17.627	34.696	-17.069
2009-10	19.301	34.736	-15.435
2010-11	24.805	40.412	-15.607
2011-12	23.652	44.927	-21.275
2012-13	24.465	44.971	-20.505
2013-14	25.117	45.018	-19.902
2014-15	23.669	45.848	-22.179
2015-16	20.788	44.695	-23.907
2016-17	20.423	52.912	-32.489
2017-18	23.212	60.794	-37.581
2018-19	22.958	54.763	-31.805
2019-20	21.394	44.553	-23.159

Source : Pakistan Business Council (PBC).

The exports of Pakistan are shown by country wise. Where more than 10 countries are listed taking under the same period of last 2 years **Jul-Jun** 2020 and 2021. The value of exports are measured under Million US$.where Pakistan export its goods and services to U.S.America ,China , United Kingdom ,Germany , Netherlands , Afghanistan , United Arab Emirates , Spain

, Italy , Bangladesh , Belgium , Saudi Arabia ,France , Canada , Poland ,Australia , Sri Lanka.over all total exports 25,304.14   shows are stable as compare to 2020 exports 21,393.69.all over the world ,Pakistan mostly export to US 21,393.69 - 25,304.14. In south asia mostly exports to Afghanistan 1,025.49 to 1,025.49.

Direction of exports

the volume of Europe union (EU) exports increased from 34.59 % -35.09% during 2020-21 on the other hand share to other Asian also increased from 23.91% - 23.73% , Asian countries 9.24 - 11.67 through the same period of 2020-2021.

Table 6 : Exports by Territories/Regions

		Jul-Jun, 2021		Jul-Jun, 2020	
1.	**Countries**	**Value**	**% Share**	**Value**	**% Share**
2.	T O T A L	25,304.14	100.00	21,393.69	100.00
3.	European Union	8,879.33	35.09	7,399.60	34.59
4.	Other Asia	6,049.14	23.91	5,076.04	23.73
5.	North America	5,476.56	21.64	3,989.99	18.65
6.	Middle East	2,564.61	10.14	2,735.20	12.79
7.	Asian Countries	2,337.09	9.24	2,495.89	11.67
8.	African Countries	227.52	0.90	239.31	1.12
9.	Other Africa	1,146.35	4.53	1,241.60	5.80
10.	Oceania	352.79	1.39	249.77	1.17
11.	Eastern Europe	314.16	1.24	239.16	1.12

Source: World Integrated Trade Solution (WITS) country profile.

Exports by countries:

Table 7: Exports by countries

	Countries	Jul-Jun, 2021		Jul-Jun, 2020	
		Value	**% Share**	**Value**	**% Share**
12.	**Countries**	**Value**	**% Share**	**Value**	**% Share**
13.	T O T A L (**millions**)	25,304.14	100.00	21,393.69	100.00
14.	U.S.America	5,155.96	20.38	3,716.52	17.37
15.	China	2,428.76	9.60	1,735.47	8.11
16.	United Kingdom	2,032.49	8.03	1,521.36	7.11
17.	Germany	1,509.95	5.97	1,263.39	5.91
18.	Netherlands	1,247.89	4.93	1,018.74	4.76
19.	Afghanistan	1,025.49	4.05	852.31	3.98
20.	United Arab Emirates	1,007.26	3.98	1,135.88	5.31
21.	Spain	878.26	3.47	827.19	3.87
22.	Italy	788.16	3.11	730.22	3.41
23.	Bangladesh	651.84	2.58	651.32	3.04
24.	Belgium	637.20	2.52	553.06	2.59
25.	Saudi Arabia	416.56	1.65	442.44	2.07
26.	France	413.20	1.63	366.54	1.71
27.	Canada	320.52	1.27	273.41	1.28
28.	Poland	309.07	1.22	242.59	1.13
29.	Australia	281.68	1.11	207.62	0.97
30.	Sri Lanka	276.07	1.09	299.51	1.40

Source: Pakistan Bureau Of Statistics [10]

[10]https://www.pbs.gov.pk/sites/default/files/external_trade/annual_analytical_report_on_external_trade_statistics_of_pakistan_2020-21.pdf
nctad.org/news/international-trade-back-not-all

According to annual analytical report of PBS has shown that some of the economic category has been decreases but some of them become stable like the manufacture good. As the export of Primary goods has been decreased by 1.26% and semi-manufacture goods export decreases by 0.91% but the export rate of manufacture goods has been increased by 25.49 percent.

Pakistan Afghanistan trade under FTA.

Afghanistan is the one of the largest trade partner of Pakistan , both countries have sign on FTA agreement in 2010 .This trade is sign to strengthen the trade relation among both countries & to facilitate the transit trade under Pakistan but both countries are facing some border complications in implementing trade and these hurdles were limiting the trade. Both nations needed to work on to improve the trade facilitations, this can done by imposing the modernized payment settlement. Visa issuance, proper tax collection, documentation, reducing the trade tariff rate , upgrading the insurance mechanisms, improved trade financing and by providing easy visa issuance.

Figure 2: Pakistan Afghanistan trade
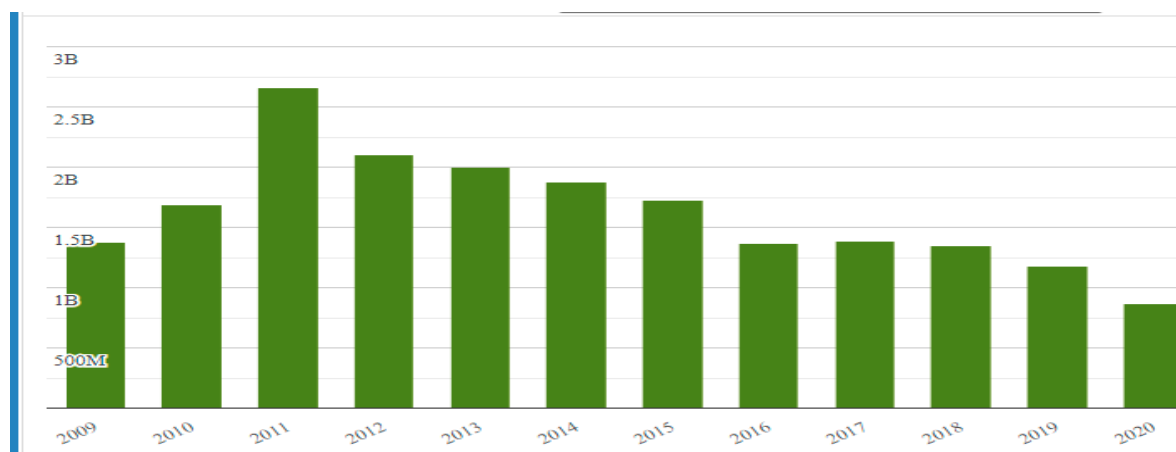
Source: PBC

Both nations need to improve trade facilitation through modernized payments settlement and improved insurance mechanisms, the use of bonded carriers, visa issuance, trade financing, tax.

THE STORY OF INDIA PAKISTAN

Henry George once said that trade has been the extinguisher of war, the eradicator of prejudice and the diffuser of knowledge. India and Pakistan are yet to reap these benefits of trade and end the era of political tensions that have been shadowing the economic activities of these nations.

Even though the trade potential between the neighboring nations is estimated at USD 37 billion by the World Bank, bilateral trade remains meager at around USD 2 billion per year. The advantage of geographical proximity and a long border remains unused as political and military tensions along with an inefficient trading procedure, have kept bilateral trade between the nations at a bare minimum.

In 2008, Pakistan increased the size of its positive list. In 2011, the nations signed three agreements: Customs Cooperation Agreement, Mutual Recognition Agreement and Redressed of Trade Grievances Agreement to encourage trade. In 2011, Pakistan agreed to confer the MFN status to India but the decision was never made official. In 2012, for the first time, the ministers of Commerce of both the nations visited the other country. An Integrated Check Post was also inaugurated at Attari in a major boost to trade infrastructure between the nations. In 2019, after a terrorist attack in Pulwama, India revoked Pakistan's MFN status.

Trade between India and Pakistan has been fluctuating due to a variety of factors. Policy related factors like tariff and non-tariff barriers, negative and positive lists, Most Favored Nation (MFN) status impact the volume of trade. Custom procedures, regulatory requirements, communication with traders across the border, transparency of the trading system are also

making the trade volume fluctuate. Non-economic factors perhaps play the biggest role in affecting trade volume. Political decisions, terrorist activities, military ceasefires are measures that impact trade.

Fig 3: trade between India and Pakistan
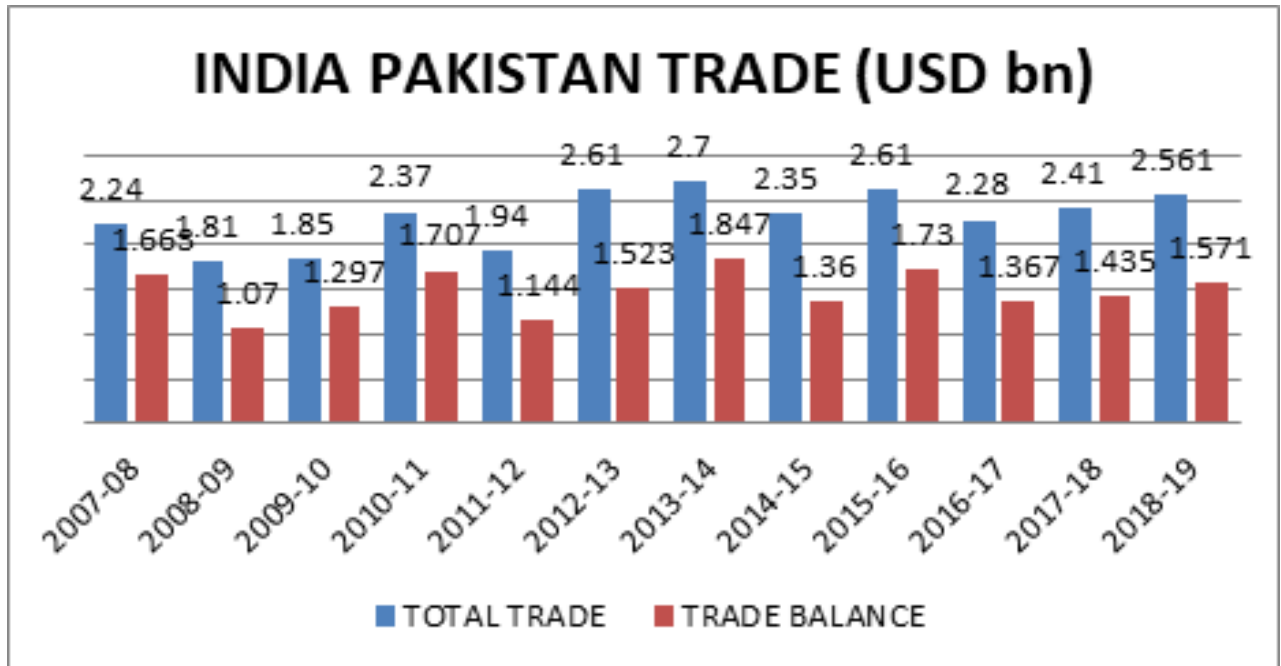
Source : Pakistan Business Council (PBC).

The top exports from India to Pakistan (2018-19) were: cotton, organic chemicals, plastic and plastic articles, tanning or dyeing extracts; tannins and their derides, pigments and other coloring matter; paints and putty and other mastics; inks, nuclear reactors, boilers, machinery and mechanical appliances; parts thereof.[5]

The top imports to India from Pakistan (2018-19) were: edible fruit and nuts; peel or citrus fruit or melons, mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes. salt; sulphur; earths and stone; plastering materials, lime and cement, ores, slag and ash raw hides and skins (other than fur skins) and leather [6]

The various modes of transport used for trade are land via the Attari-Wagah border, sea via Mundra, Nhava Sava, Sikka, Chennai, Tuticorin, rail via Amritsar and air via Delhi, Kolkata.

Another interesting fact is that while formal trade between the nations is little, informal trade[7] has been flourishing. In the year 2012-13, informal trade between the countries was estimated to be USD 4.71 billion (Taneja and Bimal, 2016) which was twice the value of formal trade that year.

As per an ICRIER Survey September 2013- March 2014, the main reasons for the large volume of informal trade is the negative list, ease of trading via a third country and political tensions between the nations. Dubai acts as a major hub for India Pakistan trade as Dubai has duty free zones and a business friendly environment for trade. The top commodities traded via the informal route are jewelry, textiles and machinery. (ICRIER Survey September 2013- March 2014) Majority of the commodities exported informally are ones present on Pakistan's negative list or sensitive list or both. Other than that, low tariffs and efficiency make informal trade look attractive vis-à-vis formal trade even as transportation costs along the informal route are higher.

In a significant blow to trading relations, Pakistan's MFN status was revoked by India after a terrorist attack in Pulwama this year. It basically means India will now charge higher tariffs from Pakistan and this step was indeed followed by a 200% hike on all Pakistani imports. This move however, is deemed to be more symbolic than economic as the imports from Pakistan to India are abysmally low and slapping a custom duty on them will hurt Pakistan very little and only till it doesn't find alternate markets. It may actually hurt India as the major trade between the nations consists of Indian exports and Pakistan is bound to increase its tariffs in response to the Indian side doing so.

The neighbors have enormous trade potential and must continue to have dialogue, trade and travel to ease the differences between them, interlink their economies and have a healthy exchange of documentation.