Determinants of Trade Costs of Afghanistan with its Major Trading Partners: An Empirical Examination

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Abstract

This study inquiries the determinants of trade Costs of Afghanistan with its Major Trading Partners. The study elaborates the determinants of trade costs include transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, local distribution costs (wholesale and retail) and legal and regulatory costs.

Introduction

International trade is significantly affected by the trade costs incurred locally and across borders. Determinants of Trade costs form a potentially important barrier to trade. Higher trade costs are an obstacle to trade and impede the realization of gains from trade liberalization, therefore Special attention is given to trade costs. Owing to the importance of trade costs in explaining the volume and direction of trade, international trade economists are increasingly focusing on trade costs and this has become an area of key interest within the modern stream of international trade research. The gradual decreeing of trade costs has resulted resulting a major rise in international trade thus this tremendous change has brought improvement in every country for international trading over the past years. The pertinent question is what exactly are the trade costs? They include all the costs incurred in getting a good to the final user, excluding the marginal cost of producing the good itself. Hence, trade costs include transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, local distribution costs (wholesale and retail) and legal and regulatory costs [Singh, et al. (2014)]. Afghanistan's major trade partners are Asian and European Union countries. These include Pakistan, Iran, Central Asia countries (Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan), China, Russia, Azerbaijan, turkey, India, Bangladesh, Saudi Arabia, Malaysia, Japan, Germany, UK, and UAE. EU has now emerged as Afghanistan's largest trading partner. Afghanistan also has very strong trade ties with Asian economies like China, India, UAE, Pakistan, and Iran. The main reason behind massive trade of Afghanistan with Asian countries is low transportation costs, similarities of consumer tastes and trading priorities. The size of Afghanistan's current trade doesn't truly reflect its trade potential. This is mainly because the direction of Afghanistan's foreign trade, which is trade cost dependent, has not changed virtually since its independence. Keeping in view the trade potential of Afghanistan and to reap full benefits

from international trade, it is thus imperative to have a detailed insight into the determinants of trade costs. Afghanistan needs to pay serious attention to the trade costs because only then it will be in a position to improve its ability to position better in global networks of trade and production. A detailed study on the determinants and calculation of trade costs will help identify the areas which need to be given special attention to identify policies and measures that have a significant effect on trade costs, and to prioritize them thus affecting the overall trade flows and composition of trade consequently. The research problem which is to be addressed and assessed in this paper is "What are the determinant's that affect trade costs incurred by Afghanistan with its major trading partners"? The study uses a set of selected trading partners of Afghanistan due to the paucity of available data. The main objective of the study is to examine the trade costs of Afghanistan with its major trading partners in two different regions of the world, i.e., Asian countries and Europe Union countries like: Pakistan, Iran, Central Asia Countries, China, Germany, UK, Japan, UAE, Saudi Arabia, Bangladesh, India and Malaysia and empirically investigate the determinants of trade costs. This area is virtually untapped in case of Afghanistan. Therefore, there is a need to have a research study that can show Afghanistan's position in terms of trade costs and identify its determinants. Here only select Pakistan, India and Turky have tarde with afghanistan Such a study can provide insights that if properly targeted, trade costs can not only be reduced but also proper policies can be formulated to help boost the overall trade as well improving Afghanistan's position in global trade network.

1.2 Statement of the Problem

Determinants of trade costs of Afghanistan with its major trading partners are considered as one most important issue in international trade. Determinant of trade costs include transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, local distribution costs (wholesale and retail) and legal and regulatory costs. This study aims to find out the determinants of trade costs of Afghanistan with its major trading partners, determinants do affect the trade costs? And recommend appropriate ways for improvement of the determinants of trade costs.

1.3 Research Questions

1. What are the Transportation costs of Afghanistan with its major trading partners (Pakistan, India and Turky)?
2. What are the Policy barriers of Afghanistan with its major trading partners?
3. What are the Information costs and regulatory costs of Afghanistan with its major trading partners?
4. What are the local distribution costs of Afghanistan with its major trading partners?

1.4 Research Objectives

Against the above backdrop, the main aim of this study is to examine Afghanistan's trade Costs with its major trading partners the specific Objectives of the study are:

1. To identify the Transportation costs of Afghanistan with its major trading partners.
2. To investigate the Policy barriers of Afghanistan with its major trading partners.

3. To describe the Information costs and regulatory costs of Afghanistan with its major trading partners.
4. To compare the local distribution costs of Afghanistan with its major trading partners.

1.5: Significance of the Study

This paper largely acknowledges the significance of Determinants of Trade Costs of Afghanistan with its Major Trading Partners. This research significantly state that trade costs? They include all the costs incurred in getting a good to the final user, excluding the marginal cost of producing the good itself. Hence, trade costs include transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), information costs, contract enforcement costs, costs associated with the use of different currencies, local distribution costs (wholesale and retail) and legal and regulatory costs of Afghanistan with other trading partners. The final result will provide the relevant information for policy makers, researcher, government, and business consulting service regarding the impact on trade costs of Afghanistan with other major trading partners.

1.6: Study limitation:

- Carefully and professionally analyzing details of the Determinants of Trade Costs of Afghanistan with its Major Trading Partners and its impact on their performance is a difficult and time-taking task. And it is not possible to analyze the whole major trading partner's countries.
- Data is secondary, so accuracy is not sure.
- For some tests I have considered Annual data, where if I could have used daily or weekly data then the finding may have fluctuated somehow.

1.7: Research Gap

In the literature review section, a study by the researcher has seen that the discussed points were about the conducted research on the topic of determinants of trade costs, including contract enforcement costs, costs associated with the use of different currencies, local distribution costs (wholesale and retail), legal and regulatory costs, transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), and information costs. Here, calculated measurement and determinants of trade costs in Afghanistan.

Measurement of trade costs is at a very early stage of its developments. This study calculated the trade costs of the Afghanistan economy within its major trading partners and then also attempted to find out the determinants of these calculated trade costs. For the calculation of trade costs, the study used the trade costs measure developed by Novy (2008). It is found that trade costs of Afghanistan with its all trading partners are declining over the whole study (2001-2020). Further, the variables, used as determinants of trade costs, are behaving in the proper way as expected. But these determinants are unable to explain the major portion of trade costs.

1.8: Scheme of the Study

This research paper consists of five chapters as follows:

Chapter One: is about general introduction of Determinants of Trade Costs of Afghanistan with its Major Trading Partners. Main objectives, difficulties and the reasons of why this topic is important discussed in the first chapter briefly.

Chapter Two: Prior developing framework of the study, related literature and published material has been reviewed both in the international and Afghanistan's contexts.
Chapter Three: this chapter explained the way of how research was conducted. Research approach and methodology, sourced of data and protocol of sampling stated in the third chapter.
Chapter Four: Overview of the economy in the context of determinant of trade costs

in this chapter.

Chapter Five: The Trade Costs Model and Theoretical Framework

Chapter Six: this chapter explained Results and Discussion Summary Statistics

Chapter Seven: this is the last chapter of the study which states Summary of finding, Conclusion and Policy Implications based on literature review and analysis of the data.

2. Review of Literature

Review of literature is as clear by its name it is the review of the examination done by various economists or scholars in the past to go the depth of the topic, efforts to figure out whatever altogether has been enclosed in the earlier period by several researchers in direction to get depth of the topic. Various studies have been done on this wide topic Determinants of Trade Costs of Afghanistan with its Major Trading Partners.

S.No	Title	Author And Year Of Publication	Objectives of the Paper	Methodology
1.	identified the Gravity Redux: Measuring International Trade Costs with Panel Data	Novy (2011), the research was conducted in the University of Warwick	The overall the paper is organized micro founded trade cost measure, trade costs with its major trading partners, analyze the growth of bilateral trade the growth of income and reduction of trade barriers	Secondary data are used for the research purpose, SPSS And MS Excel are used for the analyze
Outcomes: The finding of this research exposed that Develops measurements of international trade costs that vary across country pairs over time. This criterion is quite fundamental and indirectly inferred from trade data based on the equestrian model of international trade - the equation of gravity, a two-way ratio of domestic trade costs.				

2.	Trade Costs of Pakistan with its Major Trading Partners: Measurement and its Determinants	Altaf, Mahmood and Noureen (2017)	Objective of this study is to concentrate on trade costs for overall trade, agricultural trade and non-agricultural trade of Pakistan with its major trading partners across Asia, Europe and North America over the period 2003-2012	Secondary data has been collect from the various financial institutions of Spanish, SPSS And MS Excel have been used for the further analysis of the data.
Outcomes: they focused on relationship between trade costs and its major determinants using the panel data estimation techniques, they found Pakistan should actively participate in WTO's agreement on trade facilitation and reduce the red tape at border crossings to cut down the trade costs, tariff reduction, NTB's must be streamlined and harmonized to reduce trade costs, Improve port connectivity, cargo handling, roads, railways and air links. Shipment of perishable agricultural goods must be expedited and releasing these goods at the earliest could help reduce trade costs.				
3.	Trade Costs in Malaysia: Issues and Challenges.	Heng and Yean (2010)	Finding of this research in overall Malaysia decline in non-tariff trade costs in the past 15 years. Among the Five ASEAN countries, Malaysia is among the lowest in its average freight and insurance charges.	Secondary Data has been used for research purpose, Assembled for the year 2007-2009. SPSS And MS Excel is used for the purpose of Analyze.
Outcomes: The outcomes of this study is, first: time trend investigated are make on freight and insurance cost from 1996-2009 comparison export between to the US and Australia Export to maintained countries in 2008, and also comparison with five other ASEAN countries, Second: investigate are make to examine if freight and insurance costs vary by types				

of goods the last thing they analyzed compare the transport costs and wholesale and retail distribution costs incurred among three movements of goods.				
4.	Bilateral Trade Costs between member states in the EU and major trading partners	Beltramo (2010)	The main objectives of this study is measures trade costs between 26 bilateral countries consisting of 2001 European Union currency adopters, European Union members, continental western European nations, and large non-continental European bilateral partners	Secondary data have been used for analyze of the issue, SPSS and MS Excel was tools which were executed in the study.
Outcomes: The purpose of the research to analyze with most tariff barriers on goods going to zero, for example transport costs, informational trade costs, hidden transaction costs and the other red tape continue to substantially hinder trade in the European Union. Research on agglomeration patterns inter-regionally as this is critical to assessing the welfare effects of trade in the European Union on nations more fully.				
5.	the impact of trade cost on exports of Pakistan: An Empirical Modelling	Ahmad and Hina (2019)	The main objective of this study is to explore the effect of trade cost (Bound tariff in particular) on exports going to key trading partners. Further this study will also try to investigate how much distance, exchange rate and population in trading partner and at home influences export.	Secondary data has been used in the paper; SPSS and MS Excel have been used for the purpose of the Analyze of the data.
Outcomes: Based on this discussion this study is further organized into literature review, methodology, results and discussion followed by conclusion and policy recommendations. They take into the account empirical modeling for the impact of trade cost on exports by using the gravity model approach.				
6.	conducted research on the idea of trade cost by looking at the regions where technical barriers are not that much	Brenton, et al. (2001)	The main objective is found number of trade cost components namely; for example tariffs and transport cost significantly influencing international trade patterns,	Secondary data has been used, which are collected from the different part of the

	significant and thus lead to more trade in those regions of European Union.		infrastructure quality.	organization. SPSS and MS Excel have been used for the Analysis purpose.
Outcomes: This study presented that here exists trade cost examined the differential effects of trade on economic growth and investment based on cross-country data found consistently positive impact of trade on economic growth with variations as per the size of countries with FDI and domestic investment being key factors.				
7.	They discussing the case for Pakistan Study the cost of trade and come up with the idea of decomposition.	Khan and Kalirajan (2011)	the cost of trade into different types of costs and find a way to measure the effects of these components on changes in exports between countries in the absence of complete information on all components of trade components.	Based on secondary data. Sample is taken from 07/7/2000 to 03/08/2011. SPSS and MS Excel have been used for the analysis purpose.
Outcomes: As results it's clear from the analysis measure the effects of these components on changes in exports between countries in the absence of complete information on all components of trade components. Between home and partner countries.				
8.	Afghanistan – Pakistan Transit Trade Agreement.	Ahmed (2010).	The main objective of this study chronological information about the trade agreement between both countries, what was the benefits of this agreement for both sides, The Need to go beyond 1965 Agreement, Salient Features and Basis for APTTA and The Need to Evaluate the Socio-Economic Implications of APTTA.	It is based on the secondary data which is taken from DataStream Database; The sample of the data is from 2001-10. SPSS And MS Excel has been used for the analysis purpose.
Outcomes: The main purpose of this study is to concentrate on sustainability performance in				

trade for both sides. They used from the matched paired methodology.				
9.	Measurement of Trade Costs, its Determinants and Trade Growth Accounting for India with its Asian Trading Partners.	Singh, Arora, and Mathur (2016)	Main Objectives of this study is: Measure India's trade costs with its trading partners From Asia; to determine the determinants of these commercial costs calculated using the available data Divide proxies of trade costs and trade growth of India with Asian partners into growth share in revenue, the share of reducing bilateral trade costs and the share of multilateral reduction Resistance.	Secondary Data has been used for research purpose, Which has been compiled from the Indian's organization. SPSS and MS Excel have been used for the analysis purpose.
Outcomes: They found that trade costs of India with its all Asian partners have declined across the country; the decline in Indian trade costs was the highest with West Asia followed by Central Asia, East Asia, South Asia and Southeast Asia. Then, they research has found that the variables, used as determinants of trade costs namely: tariffs, non-tariff barriers, exchange rate, contiguity and port infrastructure behaved in the proper.				
10.	Measurement and analysis of bilateral costs between China and trading partners based on the revised gravity model.	Hong, Yu and Zhe (2009)	The main objective of this research is: China's trade costs take on a declining trend and the bilateral trade costs between China and developed countries is lower than that of developing countries.	Data collection is based on secondary data from China Banks, They have applied both parametric and non-parametric model to analysis the effects.
Outcomes: The finding of this research not only presents a new finding, Analytical perspective for our understanding, Expand China's export trade. What's more, it has provided rich political implications. . To The government can reduce the cost of exports and promote the development of bilateral trade as well As China's international trade competition increases, using a multilateral trading system, bilateral trade agreements and so on.				

11.	The Impact of Various Trade Arrangements on Malaysia's Bilateral Trade Costs	Woei, Chin, Azali and Ismail (2018)	The main purpose of this research is: to estimate the impact of trade arrangements on trade costs for Malaysia and her 116 trading partners.	Secondary data has been collected from various organization; Multiple regressions Analysis have been Implemented, SPSS and MS Excel have been used for the analysis of the data.
Outcomes: founded that all trade agreements reduce trade costs. Although, it is surprising that bilateral free trade arrangement (BFTA) had led to a much greater cost reduction compared to Regional Trade Arrangement (RTA). Besides, Bilateral Trade Arrangement (BTA) showed a dismal and insignificant reduction on Malaysia's trade costs which implies that Malaysia should focus more on the other three types of trade agreements. It is recommended to other researcher; that Malaysia realign its focus towards BFTA with the hope that Malaysia and her trading partners will experience a greater reduction of trade costs in the coming years. And also policy makers shall identify the potential trading partners for bilateral free trade arrangement (BFTA) and take initiative to have more bilateral free trade arrangement (BFTA) talks with these trading partners. However empirical result shows otherwise where bilateral free trade arrangement (BFTA) gave the highest reduction in trade costs for Malaysia.				
12.	Trade Costs, Barriers to Entry, and Export Diversification in Developing Countries" in European Union content.	Dennis and Shepherd (2007)	The main objective of this study was to evaluate trade costs, barriers to entry and export diversification in overall the developing country specific in European Union country	Secondary data has been used in the research which is collected from the various organization of European Union country. SPSS and MS Excel have been used for the analysis of

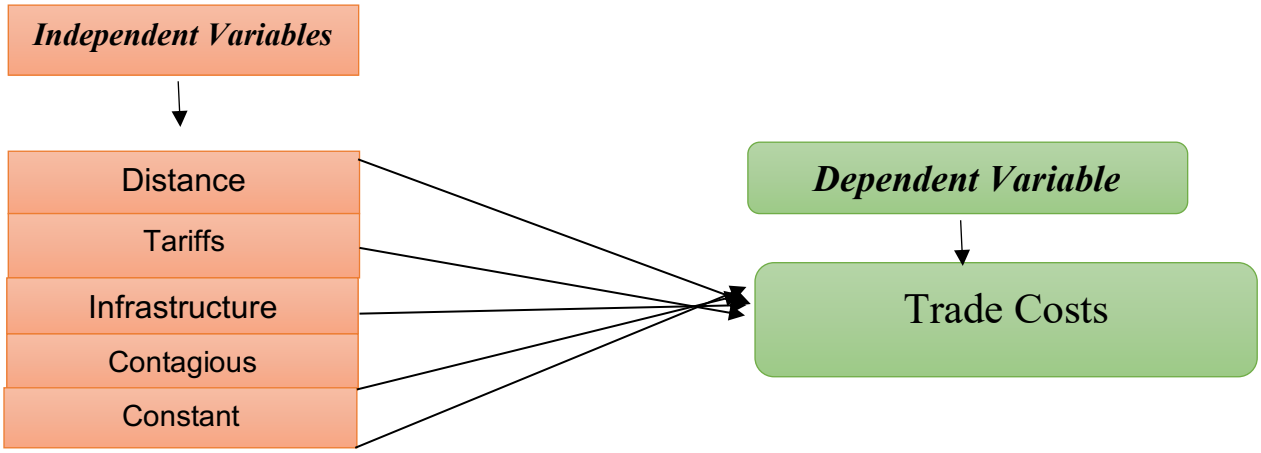
				the data.
Outcomes: The outcomes was that trade costs and entry restriction are direct related to export diversification here mentioned international transport costs, export costs, and domestic market entry costs all impact negativity on export diversification.				
13.	Trade Costs of India with in Asia: Measurement and Its Determinants" in India's content.	Singh and Mathur (2015)	it attempted to find out the determinants of these calculated trade costs. For the calculation of trade costs the study used trade costs measure developed by Novy (2008).	Secondary research has been done; SPSS and MS Excel have been used.
Outcomes: It is found that trade costs of India with its all Asian partners are declining over the whole study period except the years of Asian financial crisis. Further, the variables, used as determinants of trade costs. Are behaving in the proper way as expected.				
14.	An Empirical Analysis of Policy Barriers Related to Trade Costs for Exporters.	Noureen and Mahmood (2019)	The main purpose of this study was measure the trend of previous years in total trade costs and the trend of trade costs related to policy barriers.	Based on the secondary data. SPSS and MS Excel have been used for the analysis purpose.
Outcomes: The study found that total trade costs for the rest of the world are declining, while developing countries such as Pakistan are the least declining. Estimates of trade costs related to tariff barriers show a declining trend, while trade costs related to non-tariff barriers are increasing compared to developed countries. The study used secondary data that was obtained with the help of product of other research, or may have been collected by some individuals. An empirical results show that compared to other countries in the world Pakistan has lowest rate of a declining trend in total trade costs.				
15.	Trade Costs in the Developing World: 1995 – 2010.	Arvis, Duval, Shepherd, and Utoktham (2012)	The main purpose of the study was the author wants to discuss the costs of trading in agricultural products and manufactured goods for the period 1995-2010.	Based on secondary data which is taken from which is taken from the developing counties of the world. Data used in this

				research from 1995-2010. SPSS and MS Excel have been used for the Analysis purpose.
Outcomes: they found that the absolute level of trade costs was significant in terms of equivalent value: at least 100% for manufactured goods and more than 200% for agriculture. Our results show that although the international economy has consolidated significantly in recent decades, it is still possible to reap huge profits from further wedge reductions between exports and import prices. In terms of development, our results are significant because they show that trade costs are disproportionately borne by developing countries. Low-income countries not only face high rates the absolute level of trade costs, but their position does not improve compared to other income groups: in fact, trade costs in developed countries are much faster than in developing countries. The world in manufactured goods; In contrast, the situation in agriculture is stable.				
16.	Trade Costs and Productivity in Services Sectors	Miroudot, Sauvage and Shepherd (2011)	The main objective of this research was efficiency and costs of services in services sectors.	Secondary data has been used for the analysis purpose of the study. SPSS and MS Excel have been used for the simplification of the analysis.
Outcomes: Researchers have found strong evidence that service sectors with lower business costs are more productive, and some evidence suggests that they are experiencing higher productivity growth. As is the case in the commodity market, this result is consistent with models in which lower business costs lead to the exit of lower-productivity companies and the transfer of resources to larger and more productive companies. The effect found is economically as well as statistically significant: a 10% reduction in business costs is accompanied by an increase in TFP of about 0.5%. Further research in this area can use firm-level data covering service departments to confirm our findings.				
17.	Trade costs in empirical New Economic	Bosker and Garretsen (2010)	The main purpose of this research was Trade costs, excluding trade costs, are an important element in new	Secondary Data has been used for research purpose and

	Geography.		economic geography (NEG) models, and Geography does not matter in NEG.	also they have looked into the previous regime policies. SPSS And MS Excel are used for analyze.
Outcomes: As per this paper the researcher's main message for future experimental work on NEG is to choose business costs the approximation, which every NEG empirical study faces, needs much more attention. That in in particular, the resistance results due to the choice of trade cost proxy guarantees A closer look at the current practice in experimental work on NEG.				
18.	Trade Costs, Conflicts, and Defense Spending.	Seitz, Tarasov and Zakharenko (2013)	The main purpose of this paper is that increasing international trade, especially trade between hostile nations, may lead to positive effects on well-being much greater than those estimated by existing business models.	It is based on secondary data. Data used in this research.
Outcomes: The findings of this paper are that it is dependent on the extent of the additional welfare effects of declining defense spending around the world is comparable to the direct welfare effects of increased trade. They also show that the welfare effects of increased trade apply not only to the two trading partners, but also to other countries, often on other continents, due to the interdependence of global political relations and national defense spending.				
19.	the impact of trade costs of exports: an empirical modeling.	Khan and Kalirajan (2011)	The researchers discussed some important topics in measuring business costs, acknowledging that the literature is still in the early stages of understanding and measuring real costs.	It is based on the secondary data. SPSS and MS Excel have been used for the analysis purpose.
Outcomes: In this context, by decomposing trade costs into "natural" costs, "trans boundary" costs, "explicitly trans boundary" costs, and "implicitly trans boundary" costs, the researcher proposed a way to measure the effects of this sector on Export changes between countries in the absence of complete information on all components of trade costs in domestic and partner				

countries.				
20.	Determinants of Bilateral Trade between Ethiopia and Its Major Trading Partners': A Gravity Model Approach.	Negussie Zeray and Dessalegn Gachen, (2014),	The main objective of this paper is to identify factors influencing bilateral trade between Ethiopia and its major trading partners'. The gravity model of trade was employ for the purpose. A gravity model based on a panel data for the period of 10 years (2000-2009) of sample countries was estimated by fixed effect estimators. The coefficients obtained are then used to predict the basic total trade and export trade potentials for Ethiopia.	It is based on the secondary data. SPSS And MS Excel is used for the Analyze.
Outcomes: As a result, they found that the total trade flow was determine by mass (economic size) of the importing and exporting countries, real bilateral exchange rate, FDI of Ethiopia, weighted distance and bordering between Ethiopia and the major trading parents. Ethiopia's export performance to those major trading countries' are also determine by GDP of the importing countries, GDP of the exporting country, the weighted distance. The results of this study indicate that a depreciation of the real exchange rate would affect the international competitiveness of Ethiopian exports, therefore, we recommends Depreciation of a country's real exchange rate because it will cause a gain in competitiveness of that country and government needs also to pay adequate attention to destination markets with cheaper transport costs.				

2.2- Conceptual framework



2.3- Hypotheses of the study

Based on the above Conceptual Framework, the following five hypotheses were formulated to study of trade costs of Afghanistan with its major trading partners. (Dependent Variable: Determinant of trade costs), Independent Variables: (Transportation costs, Policy barriers, Information costs and regulatory costs, Contract enforcement costs and Local distribution costs)

The five hypotheses guiding this study are as follows:

H_1: Connectivity constraints are more important trade deterrents than tariff barriers.

H2: Determinants of trade costs have similar effect on agricultural and non-agricultural sectors.

H_3: Policy barriers ((tariffs and non-tariff barriers) will significantly affect the trade costs of Afghanistan with its major trading partners.

H_4: Information costs and regulatory costs will significantly affect the Trade Costs of Afghanistan.

H_5: Contract enforcement costs will insignificantly affect the Trade Costs.

2.4- Summary of literature section

The literature review concentrated on the determinants of trade costs of Afghanistan with its major trading partners. The papers in this regard were reviewed from different countries with a diverse environment, like Pakistan, Iran, India, Malaysia, Turkey, China, United Arab Emirates, Central Asia countries, European Union countries, and the USA. It shows the high level of variety in the literature review location, which makes it more reliable according to the different content. All articles considered the topic of the trade costs of the different countries.

Trade costs between different countries are high. However, Pakistan, Iran, China, the United Arab Emirates, and most of the other Central Asia and South Asia countries are making progress in

reducing trade costs among themselves as compared to other countries like the European Union and the USA, which is mainly due to the enhanced regional connectivity.

The study highlighted the importance of information costs, contract enforcement costs, costs associated with the use of different currencies, local distribution costs (wholesale and retail), legal and regulatory costs, transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariff barriers), and overall as important issues to reduce the trade costs between countries. Several studies have been conducted in different countries of the world as far as measurement and determinants of trade costs are concerned, but there is hardly any research on measurement of trade costs in Afghanistan and investigation of determinants of trade costs with its major trading partners. Thus, the study at hand becomes all the more important to fill this research gap.

3. Research Methodology

Research methodology refers to the process of conducting the research which includes various methods and techniques. It not only describes the steps involved in conducting the research but also justifies the choice of various methods.

3.1: Research Design and Data Collection

The type of research is descriptive and comparative in nature. It is conducted among the Afghanistan trade sector. This study is based on a secondary source of information. Annual data from the different years about the determinants of trade costs with its major trading partners (Pakistan, India and turkey).were collected from the following sources: Afghanistan GDP and the major trading partners GDP are collected from World Bank, International Financial Statistics database. Afghanistan‘s bilateral exports and imports are from the Afghanistan Economic Association (AEA) statistical Database, Government of Afghanistan, National Statistics and Information Authority – Statistical Yearbook from different years, Ministry of Commerce & Industry, Department of Commerce, that I have also taken data from the databases of DAB. Various journals and many other authentic online sources were also used. All monetary values are measured in dollar at the current prices. Population data (in millions) was accessed from the world Economic Outlook Database. The exchange rates are gathered from the central Bank of Afghanistan. As the bilateral exchange rates between the Afghani (AFN) and trading partner‘s currencies are not available, they are calculated through the US dollar (USD) by multiplying the value of foreign currencies per US dollar with the AFN/USD exchange rate.

3.2: Population and sample of the study

The population of this study was that organization which is working in specifically in trade sector in actives offices in trade sector of Afghanistan. As per report of ministry of industry and commerce in 2018, we have 10 offices as active export and import which are operating under rule and regulation of the Afghanistan government. The respondent of this sampling was from each office which was working in trade cost, chamber of commerce in Afghanistan relation with other countries. And the duration for the study.

3.3: Method of Data Analysis

In this section, data has been analyzed and interpreted with help of the mean, median, Standard deviation, Minimum, Maximum, Regression analysis, and also graphic representations of the data.

Variable Justification

1. Dependent Variable

 Determinant of trade costs

2. Independent Variables

 Transportation costs, Policy barriers, Information costs and regulatory costs, Contract enforcement costs and Local distribution costs.

Research Philosophy

Research philosophy in this proposed study will be positivism because it will use the quantitative method in this research study, and also According to Saunders et al. (2012) deductive approach relates to the positivism, deductive approach put emphasis on the collection of quantitative data It is positivism because the researcher will scientifically research the subject, and the researcher will test the relationship between variables; therefore, it is positivist philosophy, which causes to use from a quantitative approach to see the connection between variables.

Research Approach

The research approach for this research is deductive because this proposed study is testing an existing theory in the context of Afghanistan, which already exists. The investigation is based on a hypothesis that required observation and confirmation of the observation result. In this regard, this proposed study will start from general to a specific point and result in the content of Afghanistan.

Reliability and validity of the study

This proposed study will use from gravity module for analysis of reliability in the SPSS software. The construct validity will be used for validity by using a convergent approach to ensure the measurement tools have the required validity for the research.

Unit of analysis

The issue is about Analysis of Determinant of Trade Costs of Afghanistan with its Major Trading Partners so its sector-level analysis but a unit of study is Trade Costs of Afghanistan with its Major Trading Partners will be based on organizational-level judgments, perception, and experience. The organizational-level analysis done by has annual report, from a different organization to have their point of view from a different perspective.

Scope of the Study

Scope is the extent of the subject matter or area that something deals with and to which it is relevant. Scope of study is the areas for the betterment of a situation. The main scope of the study is to understand Determinants of Trade Costs of Afghanistan with its Major Trading Partners.

Need of the Study

Several researches have been conducted in different countries of the world as far as determinants of trade costs are concerned, but there is hardly any research on measurement of trade costs of Afghanistan and investigation of determinants of trade costs with its major trading partners. Thus, the study at hand becomes all more important to fill this research gap.

The research problem which is to be addressed and assessed in this paper is "What are the factors that affect trade costs incurred by Afghanistan with its major trading partners"? The study uses a set of selected partners (Pakistan, India and turkey) of Afghanistan due to the paucity of available data. The main objective of the study is empirically investigating the determinants of trade costs with its major trading partners (Pakistan, India and turkey).

Objective of the Study

An objective is a result that system or a person aims to achieve within a limited period of time and resources present. Generally, the objectives are highly accurate and it makes easier to measure the respective goal.

The study is conducted to find out solutions to the problems. The main objectives of the study are;

1. To identify the Transportation costs of Afghanistan with its major trading partners.
2. To investigate the Policy barriers of Afghanistan with its major trading partners.
3. To describe the Information costs and regulatory costs of Afghanistan with its major trading partners.

Summary of methodology

Research philosophy in this proposed study will be positivism because it will use the quantitative method in this research study, Determinants so its sector-level analysis but a unit of study is Determinants Trade Costs of Afghanistan with its Major Trading Partners will be based on organizational-level judgments, perception, and experience, Under the sampling method, have selected probability sampling because as per our prior knowledge about the title of study Determinants Trade Costs of Afghanistan with its Major Trading Partners. The construct validity will be used with gravity module with SPSS analysis. The histogram and test normality data analysis methods will be used in this research to check the data normality. According to the data the independent sample T-test.

4. Data Analysis

Overview of the economy in the context of the determinant of trade costs

Economics trip of Afghanistan has faced different and serious internal and external challenges since 2001, despite the critical circumstances the country, however managed to gain a momentum, based on that, from 2002 to 2011 was select as the golden economic era of Afghanistan. Economics and trade policies in that era focused on improvement the construction, national income, income per capita, capacity building and import substitution, different thing like tax rebates and exemptions as

well as export bonuses were offered on export which finding in a remarkable increase in export volume, with exports showing a growth rate of 11.15%, in the began 2006 in the other hand the economy growth rate of the country also increased the showing rate of 8.5%, Afghanistan initiated the process of trade reforms and its intensity increased in the late 2009s, wide ranging through liberalization programmers started in 2005 – 2006 in the different sector particular agriculture sector, ministry of commerce and industry reduced average tariff to a level of 10 percent compared, to a high tariff rate of 35 percent in 2004 [WTO(2011)], trade amount of Afghanistan increased sharply in the 2002s. total trade amount increased from 17.2 million in 2005 to $47.32 million in 2014 [GDP(2016)], based on data trade costs of Afghanistan for agriculture and non-agriculture sector with it is Pakistan, turkey and India shows that on average Afghanistan is facing high levels of trade costs despite substantial fall in tariffs worldwide. Quality of organization and infrastructure differs across countries thus causing a difference in their levels of trade and trade costs, therefore, todays trade strategy goes beyond the traditional mechanisms of tariffs and quotas and includes "behind the border" issues, such as the role of infrastructure and governance in supporting a well-functioning trading economy for instance, analysis shows that liberalization of international transport services faster international trade similar to tariff liberalization.

Prediction of trade costs equivalents show that trade costs have declined throughout study thus showing an increase in international trade volumes of the country. It may note that the agriculture sector's trade costs are comparatively higher than the non-agriculture sector due to the existence of policy barriers including high tariffs and non-tariff barriers, in addition, arguable the processing and storage costs of agriculture commodities are higher than such costs on industrial consumer goods.

Table 1. Trend in Trade Costs of Afghanistan for Agricultural & Non-Agricultural Sectors

Year	TC NAgr	TC NAgr	LSCI	AFG Tariff	ΔER (Dep/App)	TV US$ (million)
2010	48.09	34.56	5.56	4.57	0.05676	4320
2011	47.89	33.67	6.78	4.23	0.05432	4150
2012	45.78	32.76	4.52	4.34	0.01342	4650
2013	46.66	34.88	5.91	4.99	0.00569	4030
2014	44.76	31.45	6.01	5.34	0.13436	3908
2015	45.34	32.34	5.56	4.11	0.76894	4456
2016	46.87	33.45	6.45	4.45	0.34208	3790
2017	45.66	30.45	5.34	5.13	0.76121	4123
2018	43.40	31.23	4.99	5.89	0.98743	4560
2019	42.43	30.43	6.12	4.56	0.34216	4750
2020	43.55	32.32	5.46	5.01	0.87147	4470

Source: Authors' estimations, except for LSCI, average tariff based on World Bank (2020) and trade volume based on GOP (2020). Note: Positive change in exchange rate represents depreciation and negative change in exchange rate represents appreciation. LSCI stands for liner shipping connectivity index represents Port infrastructure, TV represents the trade volume

Trade costs of Afghanistan in agriculture and non-agriculture sectors on average show a declining trend for the period 2010-2020, the decrease in trade costs is consistent with the lowering of tariffs rates, and tariffs not only make imports costs but also discourage exports by raising the cost of imported inputs and act as an implicit tax on exports. Thus, a fall in simple average tariff from 4.57% in 2010 to 5.01% in 2020 has resulted into a rise in exports and imports, also consistent with trade costs reduction.

A study of change in the national exchange rate (ER) shows depreciation of nominal exchange rate (ER) over the period of study. Depreciation of exchange rate (ER) has increased the bilateral trade flows relative to domestic trade, thus causing a reduction in overall trade costs; hence depreciation of nominal exchange rate is seen as a factor helping in trade costs reduction.

Reduction in trade costs can also be attributed to improvement in port infrastructure and shipment table 1 shows a significant improvement in liner shipping connectivity index (LSCI) from 5.56% in 2010 to 5.46% in 2020, an improved and efficient port infrastructures facilities trade and reduces trade costs, keeping this in view, ministry of commerce and industry of Afghanistan is focused to achieve the objective of modernization and corporatization of ports introducing modern technology and data base in line with the present day trends.

Sectoral trade costs

In trade costs equivalent terms, Afghanistan and Pakistan on average have the lowest levels of trade costs in their bilateral trade, i.e., 45.11% for agriculture sector and 33.45% for non-agriculture sector. Table 2 and 3 provide trade costs of agriculture and non-agriculture sectors there are many factors behind these lower trade costs between two partners: these include geographical proximity, culture border, religions and culture linkage, no currency restrictions from Pakistan, abundant energy supplies and no corporate taxation. Trade costs between two countries are expected to declines further with the decrease in oil prices and border political issues which will reduce transportation costs.

Table 2. Estimates of Trade Costs Equivalents for Agricultural Sector US Dollar (USD)

year	Pakistan	India	Turkey
2010	45.11	21.123	10.12
2011	49.34	23.34	12.23
2012	47.12	20.13	13.34
2013	49.11	19.34	9.55
2014	41.23	18.77	10.43
2015	46.19	22.89	11.67
2016	48.34	20.46	12.14
2017	40.66	17.16	8.99
2018	39.45	19.49	9.34
2019	38.23	20.09	10.46
2020	42.34	21.01	11.56

Avg.			

Another interesting finding of trade costs analysis is that despite being neighboring countries, Afghanistan and Pakistan are leading trading partners and neighboring countries, sharing a common border. However, bilateral trade costs between two countries remain high. The government of Afghanistan promotes domestic consumption through structural tax reduction policies and there is a strong domestic demand in Afghanistan although, bilateral trade flows between two countries are very large, bilateral costs of trade between two countries can be reduced by upgrading the torkham highway which is the shortest overland route between the two neighbor countries. Strategies that can further reduce trade costs, at present there is no direct air link between two countries especially between Kabul and Islamabad. Afghanistan and Pakistan have not been able to bring about a significant reduction in their bilateral trade costs, though trade between two countries is growing progressively and has crossed hundred million dollars mark but there is a need to develop trade facilitation.

India is also among the top three major trading partners of Afghanistan trade costs between the two countries are high owing to the long distance as well as many other contributing factors, India domestic trade relative to international trade with Afghanistan is very high as compared to Afghanistan. The reason behind high values of domestic trade is that there is an excellent working relationship between India manufacturing and other distribution that provides wholesale customers with access to large product wherever and whenever they need it, trade cost Afghanistan with India are high because of large distance, stressed relationship between the government, licensing and quality control requirement from India government, Afghanistan is a country that is included in the list of restricted entities by the world countries.

Table 3. Estimates of Trade Costs Equivalents for Non-Agricultural Sector US Dollar (USD)

year	Pakistan	India	Turkey
2010	33.45	18.11	14.13
2011	31.78	18.56	15.56
2012	32.23	19.30	13.77
2013	30.99	17.56	12.87
2014	29.78	16.45	15.78
2015	28.56	17.13	11.34
2016	34.56	18.66	12.88
2017	37.43	19.76	13.55
2018	34.51	15.14	12.78
2019	36.68	17.76	13.98
2020	36.11	18.78	14.77
Avg.			

Turkey is an important trading partner of Afghanistan there is a huge potential for further increase in trade volume between the two countries, trade costs estimates, however do not present a very encouraging picture, trade costs equivalents are very high, the import regulations applicable

standards and quarantine requirements make it all the more difficult to export Afghani exports also have the disadvantage of being more distant from the market, then its competitors, such as Iran, Tajikistan and Uzbekistan etc.

This not only increases transportation costs but also delays the delivery of goods, whereas turkey importers prefer small size lots with short delivery schedules both countries need to overcome these impediments to bilateral trade in the modern time, importance of trade costs as a determinant of national trade performance and competitiveness has been seriously, recognized by the developed countries. Their governments have been critically analyzing and performing research for making effective policies for reduction of trade costs, on the other hand, developing countries have been rather ignorant and little efforts have been made so far at policy level to address this issue. Afghanistan is not different from other developing countries. By looking at trade costs estimates, we find that the country still faces high bilateral trade costs viz a viz its major trading partners. This show lack of government's policy attention towards trade facilitation, Afghanistan still exports large volume of agricultural products, while trade costs for agricultural sector are substantially higher than that of non-agricultural sector, which speaks of sectoral inefficiency and bias in policies. Thus, the key need is to identify the primary sources of trade costs and formulate what government should do to address them so that trade can be used to sustain high rate of economic growth over a longer period of time.

The detailed trade profile of Afghanistan with Pakistan, India and turkey is given in the following table.

Table 4: Afghanistan Trade Profile with Pakistan, India and turkey

Country	Major Exports	Major Imports	Trade Deficit/Surplus2019-202
Pakistan	Fruits, natural gums, resins, plants, almonds, carpets of wool, apples, essential oils and vegetable, etc.	Food preparation, antibiotics, motor vehicle parts, parts of telephone sets, telephones for cellular networks, women/girls suits, Beverages, Iron, Steel, Machinery, Sugar, Pharmaceutical Products, etc.	Trade Deficit : US $500.64 M Afghanistan has A trade deficit with Pakistan.
India	Fruits and Nuts, Vegetable, Spirits, Cotton raw & Cotton yarn, Lac, Gums, Resine, Extracts, Wool, Fine, Oil Seeds, Olea Fruits, etc.	Sugars and Sugar Confectionery, Tobacco ,Manufactured Tobacco Substitutes, Pharmaceutical Products, Miscellaneous Chemical Products, Iron, Steel, Electrical Machinery and Equipment, Tea, Mate, Spices Coffee, etc.	Trade Deficit : US $47.64 M Afghanistan has A trade deficit with India.
Turkey	carpets of wool,	Clothing, Iron, Steel, Transport,	Trade Deficit : US

	Fruits, Oil Seeds, Olea Fruits, Hand Embroidery, etc.	Equipment Project goods, Fertilizers, Electrical Machinery, Electronics, etc.	$27.54 M Afghanistan has A trade deficit with India.

4.2: The Trade Costs Model

Theoretical Framework

International trade is said to be significantly influenced by trade expenses. The Gravity model of global commerce is best suited to identify the variables influencing trade costs given the type and pattern of trade costs. This is due to the main connection that the model makes between trade flows and trade barriers. [Evenett and Hutchinson (2002)] The Gravity model has grown to be a crucial tenet of applied international economics. It is primarily driven by Newton's gravitational law, which states that the gravitational force between two bodies is dictated by their mass and separation from one another. Thanks to Tinbergen's groundbreaking work, this model became widely used in international economics (1962). It ties the GDP, geographic distance, and other factors, such as trade restrictions, to bilateral trade flows. Anderson (1979), Deardoff (1998), Hummels (1999), Baier and Bergstrand (2001), Limao and Venables (2001) have applied it in a wider sense to infer trade flow effects of institutions such as customs unions, exchange rate mechanisms, ethnic ties, linguistic identity and international borders.

The trade costs metric developed by Novy in 2008 is used in this study. This is a microfounded measure of trade cost that was generated from the Gravity equation-based model developed by Anderson and Van Wincoop in 2003. The most popular tool for simulating bilateral trade flows is the gravity equation. As the workhorse of global commerce, it connects bilateral trade between nations with their respective economic sizes and trade costs. The theoretical gravity equation for the trade cost parameters, which represent the obstacles to international trade, is analytically solved by this measure.

Multilateral trade impediment concerns were thoroughly explored and handled by Novy (2007). These fresh tactics can be used to counter both home and foreign trade resistance. Basically, when a certain good's price drops, those goods are moved out of the country, which means that such obstacles have a significant impact on domestic trade as well. Previous ideas don't support this border restriction, and they don't account for domestic commerce either. A little change in trade barriers can cause resources to change noticeably and move from non-tradable to tradeable sectors, which will alter trade flows (either bilaterally or multilaterally). Thus, domestic trade can be explained very well by the multilateral resistance of the trading nations, so it is crucial to take domestic factors into account as well to eliminate home bias.

Novy's method was developed in order to address problems with Anderson and Van Wincoop's (2003) theory-based gravity framework, which imposed some arbitrary trade cost functions. The theory-based gravity formulation improved the conventional gravity equation by adding variables representing multilateral trade opposition.

Anderson and Van Wincoop [AvW (2003)] derived a micro founded trade cost measure based on a multi-country general equilibrium model expressed as:

$$x_{ij} = \frac{y_i y_j}{y_w}\left(\frac{t_{ij}}{\Pi_i P_j}\right)^{1-\sigma} \quad \ldots (1)$$

where, x_{ij} is the bilateral trade from i to j, y_i & y_j are nominal income of country i and j, y_w is the world income, Π_i is the outward multilateral resistance of country i, P_j is the outward multilateral resistance of country j, and t_{ij} is the bilateral trade cost measure, σ is the elasticity of substitution between goods. The main advancement in AvW's (2003) model is the addition of exporter and importer price indices (Π and P), so that trade is dependent not only on the costs of bilateral trade between the two countries, but also on the trade "resistance" they encounter with all of their trading partners in the rest of the world. In other words, if ΠI is higher—that is, if nation I is more multilaterally resistant to all other partners—country I is more likely to trade with country j.

Using Equ. (1), consider the intra-national trade of country i as:

$$x_{ii} = \frac{y_i y_j}{y_w}\left(\frac{t_{ii}}{\Pi_i P_i}\right)^{1-\sigma} \quad \ldots (2)$$

and rewrite it as:

$$\Pi_i P_i = \left(\frac{x_{ii}/y_i}{y_i/y_w}\right)^{\frac{1}{\sigma-1}} t_{ii} \quad \ldots (3)$$

which solves for country i's multilateral resistance. Multiplying Equ. (1) with x_{ji}, we obtain:

$$x_{ij}x_{ji} = \left(\frac{y_i y_j}{y^w}\right)^2\left(\frac{t_{ij}\, t_{ji}}{\Pi_i P_i \Pi_j P_j}\right)^{1-\sigma} \quad \ldots (4)$$

substitute Equ. (3) for country i and j into (2), we can derive the bilateral trade costs relative to domestic trade costs expressed as tariff equivalent by subtracting 1:

$$\tau_{ij} = \left(\frac{t_{ij}t_{ji}}{t_{ii}\,t_{jj}}\right)^{\frac{1}{2}} - 1 = \left(\frac{x_{ii}\,x_{jj}}{x_{ij}\,x_{ji}}\right)^{\frac{1}{2(\sigma-1)}} - 1 \quad \ldots (5)$$

where, τij = tariff equivalent trade cost (i.e., measures domestic trade relative to bilateral trade).

tij = international trade costs from country i to country j.

tji = international trade costs from country j to country i.

tii= intra-national trade costs of country i tjj denotes intra-national trade

costs of country j.

xij =international trade flows from country i to country j.

xji =international trade flows from country j to country i.

xii =intra-national trade of country i.

xjj =intra-national trade of country j.

σ denotes the elasticity of substitution between all goods.

τij is defined as a ratio of trade cost across national border relative to trade cost within national border weighted by the elasticity of substitution. It must be noted that τij is not directional, i.e., τij measures the barrier between country i and j on average, so that it is a two-way trade cost measure. Intuitively, it measures the bilateral trade cost for both importing and exporting countries. Trade costs τij, thus represent the geometric average of international trade costs between countries i and j relative to domestic trade costs within each country. Intuitively, trade costs are higher when countries tend to trade more with themselves than they do with each other, i.e., as $XiiXjj/XijXji$ increases. As the ratio falls and countries trade more internationally than domestically, international trade costs must be falling relative to domestic trade costs. The ability to quantify bilateral trade barriers over time is another benefit of Novy's trade cost metric. We are able to measure and explain the factors that determine bilateral border impacts using easily accessible trade and production data in tradable goods categories.

One of empirical economics' greatest achievements is the gravity equation, which defines the value of bilateral commerce as a function of the size of the markets of importers and exporters, and distance among them [Lili (2011)]. Market sizes embody push and pull factors that affect value of trade flows, and are usually characterized by the GDP. Distance is generally measured by geographic distance among two regions (absolute distance). It is anticipated that large distance between trading partners leads to a decrease in trade, as trade will become complicated and bring transaction costs. The basic Gravity model is as the following:

$$T_{ij} = G\left(\frac{Y_i Y_j}{D_{ij}}\right) \qquad \ldots (6)$$

where, Tij is bilateral trade volume, for sum of exports and imports; Yi is country i's GDP; Yj is country j's GDP, Dij is the distance among country i and country j; and G is a constant; and is

independent of any subscript as it links to a standard Gravity equation in the following form. The multiplicative nature of Equ. (6) Suggests that by taking logs it can be made linear in parameters:

$$lnT_{ij} = lnG + a_1 lnGDP_i + a_2 lnGDP_j - a_3 lnD_{ij} + \varepsilon_{ij} \quad \ldots (7)$$

The relationship between trade costs and its determinants is difficult to capture given the paucity of data on all the factors involved. However, in order to explore the determinants of trade costs, our empirical analysis has used several gravity-type variables including distance, infrastructure development, exchange rate, tariff, area and two dummy variables for contiguity and free trade agreement between the trading partners.

Empirical Model

Following Novy (2007), joint observation of non-bilateral variables for country i and j are constructed by multiplying the single country variables to lead to symmetric and constant interaction effects. All variables are taken in the log natural form.

$$\tau_{ij} = f\ (DIST, TARIFF, EXCH, LSCI, AREA, CONT, FTA) \quad \ldots (8)$$

where, τij is the dependent variable representing tariff equivalent of trade costs, DIST is the distance among Afghanistan and partner country(Pakistan, Inida and turkey), TARIFF is the product of tariffs imposed by Afghanistan and other trading partner(Pakistan, Inida and turkey), EXCH is the official exchange rate with respect to Afghanistan (taken in current US dollars), LSCI is the linear shipping connectivity index of Afghanistan and partner country (Pakistan, Inida and turkey), AREA represents product of land area of two trading partners, CONT and FTA are dummies for contiguity and free trade area, which take the value one if two partner countries are contiguous and members of FTA and zero otherwise.

The Gravity model uses distance as a proxy for remoteness or transportation costs, indicating that the coefficient of distance is anticipated to have a favorable effect on trade costs. The liner shipping connectivity index (LSCI) is used in this study to gauge the infrastructure development of the trade nations. A dummy variable that represents the trading partner's shared border is part of our model.

The contiguity dummy variable, which has a single unitary value, represents the nations that border each other. Another proxy for transportation and information costs is a common border, which tends to be lower for infectious trading partners since they are more aware of consumer preferences and trading opportunities, making reciprocal commerce less expensive. A negative coefficient of contiguity is anticipated. Ample land is an indicator of big economy and bigger population with high domestic demands. In order to fulfil that high demand foreign goods are also accepted and larger countries have cultural diversity, residents have greater acceptability for a variety of cultures, which calls for greater imports. Thus, trade increases and overall trade costs decrease. Coefficient of area of trading partners is expected to have a negative sign. Another dummy has also been included to

evaluate the effect of Free Trade Area (FTAs) on trade costs. Dummy for FTA is expected to have a negative impact on trade costs.

Tariffs and exchange rate are two policy related or institutional determinants of trade costs. Tariffs imposed by partner countries are used as a measure of restrictiveness to trade flows. Aggravation of tariffs imposed by the trading partners is expected to increase the bilateral trade costs, not only it affects imports but the level of exports also declines if tariffs are imposed on raw materials. Issues of duty draw back further add to the level of trade costs. Thus, overall international trade declines and intra national trade increases consequently increasing trade costs. Exchange rate is used as a measure of competitiveness in international trade flows. The study uses official exchange rate as a determinant of trade costs. Increase in nominal exchange rate leads to an increase in overall volume of trade is a well-established fact. An increase in trade flows with nominal depreciation therefore leads to decline in trade costs as trade flows and trade costs are inversely related. Keeping this in view, coefficient of exchange rate is expected to have a negative sign.

Empirical Specification

The general empirical model reported in Equ. (8) is transformed as the following econometric equation, which links tariff equivalents of trade costs with its determinants and is given as:

$$\tau_{ij} = \beta_0 + B_1 EXCH_{ijt} + B_2 TR_{it} * TR_{jt} + B_3 DIST_{ij} + B_4 LSCI_{it} * LSCI_{jt} + B_5 CONT_{ij} + B_6 AREA_i * AREA_j + B_7 FTA_{ijt} + \varepsilon_{ijt} \quad \ldots (9)$$

In our opinion, model in Equ. (9) will help us determine the impact of these variables on trade costs of Afghansitan. The findings from this model will have important implications for the policy, as it will help the policy makers to figure out those areas that can bring about significant reductions in trade costs and prioritize policies accordingly.

Table 5. Definition and Sources of Data Variables

Variable	Definition	Proxy of	Data Source
Export/Import	Bilateral trade flows between country i and j	Direct Variable	UN Comtrade
GDP	Output of agricultural and non-agricultural sectors of country i and j in current US Dollars	Direct Variable	World Bank
TARIFF	Product of simple average tariffs imposed by Afghanistan and Pakistan, India and Turkey.	Measure of restrictiveness	World Bank
EXCH	Average official exchange rate of	Competitiveness	ACKU

	Afghanistan (US Dollar)		
DIST	Distance between Afghanistan with Pakistan, India and turkeycapital cities.	Transportation costs	WTO
AREA	Product of country i and j land area.	Size of economy	WTO
FTA	Dummy equal to unity if two countries are a member of free trade area.	Market access	World Bank
CONT	Dummy equal to unity if two countries share a common border.	Information costs	WTO
LSCI	Product of country i and j scores on liner shipping connectivity index.	Trade infrastructure	World Bank

Results and Discussion

Summary Statistics

A quantitative description of the key characteristics of the study's data is provided via summary statistics. Mean and median are employed as indicators of central tendency, whereas maximum and minimum values, standard deviation, and other values serve as indicators of variability. In relation to the study's factors, Table 5 gives a summary of the trade costs for Afghanistan. A quick glance at the summary statistics reveals that Afghanistan has the greatest mean value of total trade expenses at 138.50%, the highest value at 141.7%, and the lowest value at 77.5% Analyzing the time series qualities of each variable is necessary before determining whether or not there is a long-term link between trade costs and explanatory variables. In light of the co-integration tests

Table 6. Summary Statistics

Variable	Mean	Median	Std.Dev	Minimum	Maximum	Observations
TC	138.50	121.42	17.702	77.5	141.7	70
TARIFF	0.924	0.233	0.243	0.103	2.47	70
DIST	3288.12	2915.24	1888.14	564.245	8950	70
AREA	842613	435300.8	562028.7	352429	1906083	70
LECI	23.045	32.564	12.456	8.403	56.146	70
CONT	0.123	0	0.310	0	1	70
FTA	0.155	0	0.315	0	1	70

can only be performed when the panels are non-stationary. For the purpose of checking the stationarity of the series, panel unit root test [Levin, Lin and Chu (2002)] is run on the basis of the following hypothesis:

H1: Connectivity constraints are more important trade deterrents than tariff barriers,

H2: Determinants of trade costs have similar effect on agricultural and non-agricultural sectors,

H3: Policy barriers ((tariffs and non-tariff barriers) will significantly affect the trade costs of Afghanistan with its major trading partners,

H4: Information costs and regulatory costs will significantly affect the Trade Costs of Afghanistan,

H5: Contract enforcement costs will insignificantly affect the Trade Costs and.

Empirical Results

Empirical Results of Pooled Unit Root Test

Using the Eviews-8 Software, a pooled unit root test is carried out to determine whether unit root is present in particular nations. The variables TC, TARIFF, EXCH, and LSCI are stationary at the initial difference, i.e., I, according to the stationarity test results from Levin, Lin, and Chu (2002). (1). Due to their independence from time, distance between countries and geographic area are unable to provide any results. The model's final two variables are made up of dummy variables.

Empirical Results of Kao (1999) Co-integration Test

To determine whether variables with first difference orders of integration, i.e., I(1) yield spurious regression or a long run relationship does exist, Kao (1999) panel co-integration test is run based on the null hypothesis of no co-integration. Table 7 shows that the null hypothesis of no co-integration is rejected thus confirming that a long run relationship does exist. In other words, the possibility of spurious results has been ruled out.

Table 7. Levin, Lin & Chu Test for Stationarity

Variable	Level		First Difference		Order of intgration
	Stat.	Prob.	Stat.	Prob.	1(1)
TC	-1.341	0.0345	-6.314	0.000	1(1)
TARIFF	0.151	0.0235	-3.45	0.000	1(1)
EXCH	-18.001	0.000	0	0.000	1(1)
LSCI	0.240	0.2453	-4.36	0.000	1(1)

The findings of the co-integration tests conducted by Kao (1999) demonstrate that the dependent and explanatory variables have a long-term relationship. As a result, using the OLS approach will result in biased and inconsistent estimators. Models incorporating time-invariant variables, like distance, cannot use fixed effects since it creates an endogeneity issue. As a result, we must use a different approach to estimate the co-integrated panel. In this regard, Pedroni (1996) created the Panel Fully Modified Ordinary Least Square (FMOLS) method, which employs a correction strategy to handle the nuisance parameters and provides long run coefficients for the estimated model correcting for endogeneity and serial correlation. FMOLS has an advantage over other techniques as it allows for estimation of common co-integration vectors while allowing for heterogeneity both across time and cross sections [Pedroni (2004)]. Thus, the resultant estimates are more consistent, free of serial correlation and endogeneity.

7. Conclusion and Policy Implications

This study analyzed the estimates of trade costs for Afghanistan's overall trade with Pakistan, India, and Turkey as well as for agricultural and non-agricultural trade. Additionally, panel data estimation techniques were used to analyze the link between trade costs and its key variables. By dividing trade into the two macro sectors of agriculture and non-agriculture, the study contributes to the body of literature. Studies that have hitherto been done have only looked at total trade, not at specific sector's trade data.

The body of knowledge regarding the factors that influence trade costs is still in its infancy. This study evaluated the costs of trade between Afghanistan and Pakistan, India, and Turkey and made an effort to identify the factors that contributed to these calculated trade costs. The study employed a trade costs measure created by the Gravity Model to calculate trade costs. It has been discovered that Afghanistan's trade expenses with Pakistan, India, and Turkey have decreased throughout the entire study period. Additionally, the factors that are used to determine trade costs are acting as expected and in an appropriate manner. However, the majority of trade costs cannot be explained by these variables, which means that additional factors, like transportation costs, non-tariff obstacles, and local distribution costs, among others, must be taken into account.

Despite the fact that the global economy has become significantly more integrated, our analysis of the tariff equivalents of trade costs highlights the fact that there are still significant untapped profits to be had by further narrowing the gap between the cost of producing a good and the price paid by the final consumer, or by lowering the trade costs.

According to our estimations of trade expenses, Afghanistan's costs are disproportionally high compared to those of its trading partners. Even though the estimates suggest a significant decline in trade costs, they also reveal that there is still a lot of space for additional reductions. Policies that might successfully lower trade costs between Pakistan, India, and Turkey are especially needed due to the country's high bilateral trade costs with some of its biggest trading partners. In order to strengthen the nation's absolute and relative position in international trade, policymakers must address the dynamics of increased trade costs.

The costs of trade for the agricultural sector often avoid the costs of trade for the non-agricultural sector at the sectoral level. Focusing on trade facilitation efforts for the agricultural sector would be particularly fruitful for Afghanistan given that the WTO's agreement on trade facilitation also emphasizes the release of perishable goods at the earliest possible time and that agricultural trade costs in many developing countries are relatively higher than those of the non-agricultural sector.

In addition to charting Afghanistan's trade costs over the last ten years, we employed an econometric approach to look at a number of their contributing factors. We divide the trade cost components into several policy and non-policy aspects for this reason. One important result is that trade expenses are influenced by distance, maritime transit, and trade facilitation. The trade infrastructure and free trade zones with trading partners are two areas that are quite open to policy intervention for reduction of trade costs.

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The study evidently shows that there is ample room for reduction in trade costs if proper policy actions are taken.

The study's findings have the following policymaking implications:

- In order to lower trade costs, Afganistan should actively participate in the WTO's agreement on trade facilitation and minimize red tape at border crossings.
- Agricultural products that need to be shipped quickly must be released as soon as possible, which could lower trade expenses.
- Enhance cargo handling, port connectivity, and transportation infrastructure, including roads, railroads, and air links.
- The development of both hard and soft infrastructures using contemporary technological techniques, such as the internet, publicity campaigns, and electronic media.
- Afghanistan joining the CPEC, Trans-Afghan, One Belt, One Road (OBOR), and other regional and international projects, can limit the effects of longer distances.

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