Determinants of Vertical Intra Industry Trade: A Case Study of Pakistan's Textile Sector

SUBMITTED BY

Mubashra Anwer

M.Phil/EAF/PIDE/39/2014

SUPERVISED BY

Dr. Usman Qadir

M. Ali Kemal

Department of Economics and Finance

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS,

ISLAMABAD

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS, ISLAMABAD

CERTIFICATE

This is to certify that this thesis entitled **"Determinants of Vertical Intra Industry Trade: A Case Study of Pakistan's Textile Sector"** submitted by **Ms. Mubashera Anwer** is accepted in its present form by the Department of Economics and Finance, Pakistan Institute of Development Economics (PIDE) Islamabad as satisfying the requirements for partial fulfillment of the Degree of Master of Philosophy in Economics and Finance.

Supervisor:

Usman Qadir

Dr. Usman Qadir
Senior Research Economist
PIDE,
Islamabad.

Co-Supervisor:

Ali Kemal

Mr. Muhammad Ali Kemal
Research Economist
PIDE,
Islamabad.

Internal Examiner:

Ejaz Ghani

Dr. Ejaz Ghani
Professor,
PIDE
Islamabad.

External Examiner:

Imtiaz Ahmad

Dr. Imtiaz Ahmad
Joint Economic Advisor
Ministry of Finance
Islamabad.

Head, Department of Economics and Finance:

Dr. Hasan Muhammad Mohsin
PIDE,
Islamabad.

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Mubashra Anwer

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Supervised By: **Dr Usman Qadir**

M. Ali Kemal

Department of Economics and finance

Pakistan Institute of Development Economics

Islamabad

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DECLARATION

I, Mubashra Anwer d/o M Saeed Anwer, declare solemnly that this thesis has been authored by me for the fulfillment of requirement of M.Phil degree from PIDE. This dissertation is the result of my own effort and use of resources quoted in the thesis explicitly. Any item copied from the internet or any other written source used has been quoted with reference to the source of citation.

Mubashra Anwer d/o M Saeed Anwer

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List of Abbreviations

HIIT	Horizontal Intra Industry Trade
VIIT	Vertical Intra Industry Trade
IIT	Intra Industry Trade
SAFTA	South Asian Free Trade Area
WTO	World Trade Organization
WDI	World Development Indicators
PES	Pakistan Economic Survey
GDP	Gross Domestic Product
SAARC	South Asian Association for Regional Cooperation
R&D	Research and Development
SITC	Standard International Trade classification
UN	United Nations
EU	European Union
FDI	Foreign Direct Investment
BC	Before Christ
GMM	Generalized Method of Moments
TDAP	Trade Development Authority of Pakistan
GSP	Generalized Scheme of Preferences
STPF	Strategic Trade Policy Framework
FTA	Free Trade Agreement

ABSTRACT

This study is a research piece that tries to examine and estimate the determinants of vertical intra industry trade of textile sector between Pakistan and its major trading partners. In the literature, along with many other variables, market size, income per capita and distance are considered to be the main and most important determinants of vertical intra industry trade. The current study adds to the debate by taking into consideration Pakistan's textile industry and its intra industry trade. To achieve the goal of this study an augmented gravity model of international trade is developed and estimated. More specifically, product wise panel data for the time period 2003 to 2015 is used to estimate vertical intra industry trade of the textile sector in Pakistan. The system generalized method of moments augmented gravity model reveals that there is a much variation in the estimated results of Vertical Intra Industry Trade of the groups of textile industry. The behavior and significance level of a single variable varies across different groups of textile sector. For example, in case of silk group products market size and DGDPP have positive, GDPP, IPR and TI have negative and Dis, Tgap, Hgap, PR and Integ are insignificant.

Chapter 1: Introduction

1.1 Background

In this modern era, where the whole world has become a global village, trade is an important factor that enhances growth and development of any country. It is widely accepted that no country can survive in isolation especially under autarky. Every country needs to exchange its goods and service in order to make its economy flourish. Historically individuals as well as economies got prosperous and flourished because of trade. Trade plays a vital role in increasing growth, reducing poverty, enhancing employment and improvement in the quality of products (Gullstrand (2000) and Caporale et al. (2014)).

Hecksher Ohlin model elucidates that every country should specialize and export the product that uses its abundant resources and import the product that uses its scarce resources. On the other hand, comparative advantage theory explains the possibility of trade if a country has comparatively lesser cost to produce a specific good than other goods. Revealed comparative advantage is an index used to calculate the advantages and disadvantages of trade of a specific product for a specific country.

The aforementioned theories are based on the assumption that markets are perfect as well as endowments of both the countries are different. However, trade can be possible even if the endowments are similar and markets are imperfect. One of the theories which explain this scenario is known as Intra Industry Trade (IIT). As Pakistan, Nepal and Bangladesh have a comparative advantage in a narrower range of products as compared to India and Sri Lanka so these countries can get more benefit from intra industry trade as compared to trading based on what comparative advantage

theory suggests. In this way these countries can increase its exports level which is quite low from other developing economies (Muslehuddin and Qadir, 2003).

1.2 Intra Industry Trade

Intra industry trade (IIT) is the exchange of the products of the same industry for example automobiles are exchanged for automobiles. It represents simultaneous import and export of a good that does not reflect the idea of comparative advantage. IIT has further two types, which includes vertical intra industry trade (VIIT) and horizontal intra industry trade (HIIT). Vertical Intra Industry Trade is based on different varieties of products for the people with different income levels while Horizontal Intra Industry Trade is based on same variety with different characteristics of products for the people with same income level (Fontagne at. al, 2005). Vertical intra industry trade takes place on various stages of output while horizontal intra industry trade implements at same stage of production.

Vertical intra industry trade is the import and export of a product from the intermediate to the final stage of production. While horizontal intra industry trade is the simultaneous import and export of the final goods with equal level of quality but different characteristics. In the vertical intra industry trade, one country has a comparative advantage in producing a good at intermediate stage while the other country has comparative advantage in producing at final stage. For example, if America is producing the capital intensive parts of computer then china will import these parts from America to join together which is labor intensive task and again export to America and European countries for further production process.

Pakistan has a great potential to perform vertical intra industry trade in the textile sector because Pakistan is a labor intensive country and its weather conditions are suitable for the production of cotton. It exports these intermediate goods (cotton

and cotton based products) to capital intensive countries like America and European countries for the final production.

Pakistan's trade mostly takes place with America and European countries, e.g., 35% of the total trade due to significant market access given to Pakistan[1].The trade between Pakistan and other Asian countries is low from its potential level because of political instability, preferential strategies and high transportation cost Fraz and Hassan (2016). So different agreements have been made to increase the opportunities of trade. SAFTA (South Asian Free Trade Agreement) is one of them which is made to enhance the economic activities and development in the region, but the implementation on this agreement is not properly done.

Since 1985, more than 90% of Pakistani exports are going to United States of America, European Union, China and United Arab Emirates. Most of these Pakistani exports consist of raw cotton, leather, rice, chemicals and sports goods. More than 55% of the total exports of Pakistan is consist of cotton and cotton based products.

Around 50% of Pakistani imports are coming from UAE, China, Kuwait, Saudi Arabia, India, Indonesia etc. There is an increasing trend in the share of Pakistan's imports from China which were 17% of the total imports in 2014 and 23% in the 2015. The share of Pakistan's imports from UAE, Saudi Arabia and Kuwait is 15%, 8% and 6% respectively in the year 2015. Petroleum products, crude oil, iron, edible oil, power generating machinery and textile machinery are main imported products of Pakistan. Total exports and imports of Pakistan are round about $22 billion and $43 billion respectively in the year 2015[2].

[1] Pakistan Economic Survey (2014-2015)
[2] Data source: UN comtrade database

Therefore, it is necessary to start new ways to increase trade among the neighboring countries especially. One of the possible solutions of the problem is to shift to intra industry trade using product differentiation and vertical specialization which may help Pakistan to boost their exports, especially in the region. To do so, we need to identify those products which are vertically used in the production processes within the same industries as well as the identical products which can be absorbed in the foreign markets.

1.3 Significance of Study

The existing literature on intra industry trade in Pakistan has not discussed vertical intra industry trade. The present study will address this gap in the literature and also identify the country specific determinants of vertical intra industry trade by using the augmented gravity model of international trade.

1.4 Objectives

This study will examine the determinants of vertical intra industry trade in case of Pakistan with its 14 major trading partners. The specific objectives of the study are as follow:

- To study the country specific determinants of vertical intra industry trade of Pakistan's textile sector with its major trading partners.
- To determine the impact of trade intensity between Pakistan and its trading partner on vertical intra industry trade of Pakistan textile sector.
- To study the impact of trade barriers forced by Pakistan's trading partners on vertical intra industry trade of Pakistan textile sector.
- To find out the consequences of technological gap between Pakistan and its trading partner on vertical intra industry trade of Pakistan textile sector.

1.5 Motivation of the Study

Economic development of any country depends upon the trade with other countries. Therefore, it is important to research the impact of various types of trade on development, and in this regard numerous studies have been done on intra industry trade and inter industry trade at world level (Krugman, 1981; Davis, 1991; Brulhart, 1995). Nevertheless, Pakistan is facing severe problems in increasing exports. Although Vision 2025 emphasizes on enhancing exports but unfortunately, for the last two years our exports are declining instead of increasing[3]. Therefore, it is important to study the crucial aspect of intra industry trade instead of just focusing on inter industry trade.

Vertical trade, especially vertical intra industry trade in the presence of different endowments is important to study to identify the products and countries. Moreover, it is important to know the determinants of vertical intra industry trade as well as the impact of vertical intra industry trade on the economy of Pakistan. Intra industry trade and vertical intra industry trade is preferable over inter industry trade; as Mawali (2005) argues that the domestic country should increase the production of most competitive variety by skipping the production of other varieties in order to get more returns. Adjustment cost of intra industry trade is less as compared to inter industry trade as the transformation of the resources is takes place within the same industry. It is difficult to expand intra industry trade without an understanding of the underlying determinants of such trade in Pakistan, and this study is an important first step in that direction.

[3] Pakistan Economic Survey 2014-2015
Pakistan Economic Survey 2015-2016

1.6 Organization of the Study

The organization rest of this proposal is as follows: chapter 2 explores the theoretical and empirical literature on intra industry trade and vertical intra industry trade. Chapter 3 discusses the structure of trade in Pakistan. Model and estimation techniques are discussed in chapter 4, chapter 5 discusses the estimation of model and interpretation of results. Chapter 6 gives the conclusion of the study.

Chapter 2: Theory and Literature

2.1 Historical and Theoretical Background

Historically, it has been found that, for the first time, international trade was done by the Sumerians who took a long distant route from the ancient Greece to exchange spices, textile and precious metals with the Harappa civilization of Indus Valley in 3000 BC. With the passage of time there come significant changes in international or national trade and now the world has turned into a globe, sitting in home, one can buy a thing from the any part of the world. Similarly, the way of exchanging of goods and services also kept on changing as in different ages people adopted different ways to exchange and buy goods and services i.e. Barter economy, coins, paper money and plastic money.

Polanyi et al. (1957) suggests that there are three different types of exchanges exist in the economy; reciprocity, redistribution and market exchange. Firstly, reciprocity (barter trade) is the real face of trade in which goods and services were exchanged with goods and services and no money is needed. In barter system, you can't assign a specific value to the tradable goods and services. Secondly, redistribution in which the goods and services are given to a central party like king, chief or government, to reallocate the goods and services. In the redistribution, people give some part of the production to a chief or organization, in this way they collect a sufficient quantity of goods to further exchange with needy people. Thirdly, market exchange where many buyers and sellers interact with each other and interchange commodities or services. In the market exchange the value of goods and services is determined through demand and supply forces. Money is used to conduct all the transactions in the market, it is the medium of exchange in market.

As the trade volume kept on increasing, there came a need to develop theories for international trade so that trade could be made beneficial. For this purpose, with the passage of time, many theories of international trade have been developed, that tell us that how countries can trade with different or same factor endowment. Hill and Jain (2000) has discussed about different theories of international trade in his book "International Business" which are as follows: the idea of mercantilism was presented by Thomas Mun in 1630, it is also known as commercialism which means that a country wants to increase its reserves of gold and other precious metals.

Adam Smith talked about Absolute Advantage Theory in his book "An Inquiry the Nature and Causes of the Wealth of Nations" which argue that each country should specialize in the production of those goods which use their abundant resources. In this way countries produce different goods and can get benefit by expanding their consumption pattern to include imported goods.[4] In 1817, Comparative advantage theory was developed by David Ricardo, which argues that any country should export that good which gives it comparatively more benefit and vice versa.

Heckscher Ohlin theory, presented by Eli Heckscher (1919) and Bertil Ohlin (1933); states that comparative advantage is due to countries factor insensitivity, i.e., land and capital. This view is contrast to Ricardo's theory, which talk only about productivity of economics. The life cycle theory of product was proposed by Raymond Vernon in 1966 in order to elaborate the system of international trade.[5] According to product life cycle theory, a product goes through four phases during its life: introduction, growth, maturity and decline. New product is launched in home country, then its demand increase in home country as well as other countries which increases

[4]http://www.ibiblio.org/ml/libri/s/SmithA_WealthNations_p.pdf
[5]Ayal, I. (1981). International product life cycle: a reassessment and product policy implications. *The Journal of Marketing*, 91-96.

the domestic exports. Then after some time the other countries also start its production. Paul Krugman (1970)'s new trade theory focuses on the determinants of comparative advantage which were ignored by David Ricardo. Every consumer wants different varieties of a product at less prices thus there is tradeoff between variety and price; economies of scale decreases average cost of a good.

International trade is divided into two categories which are inter industry trade and intra industry trade. Inter industry trade is based on the David Ricardo's comparative advantage theory, in which the products of one industry are exchanged for the products of another industry (Krugman and Obstfeld, 2003). On the other hand, intra industry trade is the exchange of the products of the same industry for example automobiles are exchanged for automobiles. Intra industry trade is a simultaneous import and export of a good and it does not reflect the idea of comparative advantage.

Trade within the industry was first highlighted by Verdoorn (1960) and Balassa (1966). Gray (1979) argues that the level of intra industry trade in developing countries is less as compare to developed countries because of demand and supply side factors. According to Falvey (1981) the intra industry trade takes place because the economies include different factor endowments exchange the variety of the same product on the basis of quality. Hummels and Levinshon (1995) argue that intra industry trade is more important for those countries which are at same level of economic development and they trade in manufacturing sector. Akram and Mahmood (2012) argue that intra industry trade rises when consumers want to get more verities of a product and industries try to produce more differentiated products.

In the empirical and theoretical literature, we have found different types of Intra industry trade:

1). Vertical Intra Industry Trade

2). Horizontal Intra Industry Trade

Vertical intra industry trade explains the same product has different varieties and horizontal intra industry trade explains the different characteristics rather than variety.

The roots of vertical intra industry trade can be found in the work of Linder (1961). The idea of horizontal intra industry trade and vertical intra industry trade is drawn from two models: firstly, from Chamberlinian models (presented by Dixit-Stiglitz, 1977; and Krugman, 1979, 1980, 1983) "love variety approach" in which a consumer wants as many varieties of the product as possible; and secondly from Neo-Hotelling models (developed by Lancaster, 1980) “ideal variety approach " in which a consumer wants an ideal variety.

Gullstrand (2000) argues that vertical intra industry trade exists due to three reasons: variation in quality, variation in taste and the firms get incentives to specialize in a product. Gabrisch (2008) stated that the level of intra industry trade is positively related with rising similarities among two nations and negatively related with rising differences in capital labor ratio.

While according to Kandogan (2003) horizontal intra industry trade refers to similar products that are simultaneously traded at the same stage of production while vertical intra industry trade refers to the simultaneous exports and imports in the same industry, but at different stages of production.

Intra industry trade in manufacturing sector between North and South rose from 8.9% to 14.9% during the interval 1970 to 1985 (Ballance, Forstner and Saywer, 1992). Sharma (2004) stated that the vertical intra industry trade is 92% of Australia and New Zeeland intra industry trade this is because of the industry protection in both the

countries. Reganati and Pittiglio (2005) argue that Italy focus on low quality vertical intra industry trade as compare to high quality vertical intra industry trade, which is 62.6 % of total vertical IIT.

Sharma (2004) argues that if the vertical intra industry trade dominated in IIT the adjustment cost will be high two reasons: (i) the factor endowments or inputs of imports and imports are different like the inter industry trade (ii) the unemployment will rise in less advanced countries as their products will replace by high quality products of advanced countries. Chang and Teng (2009) has found that VIIT is more significant among the Asian and European countries while HIIT is dominated among the Asia and United States in the period 1996-2005. Manufacturing IIT is more than 70% for United States in his total manufacturing trade [Brulhart and Thorpe 2001].

In Pakistan very few studies have been conducted related to intra industry trade and vertical intra industry trade. Akram and Mahmood (2012) find the factors of intra industry trade between Pakistan and important SAARC countries. They found that country specific determinants are more significant as compare to determinants of intra industry trade which are industry specific. They also decomposed intra industry trade into two components, vertical IIT and horizontal IIT. Pakistan's intra industry trade shows vertical pattern is 82.50% and horizontal intra industry trade is 17.50% with India, Bangladesh and Sri Lanka in the SAARC region. They that the share of Pakistani exports to SAARC region is 5% which is quite low due to the poor policies of intra industry trade.

Shahbaz, Leitao and Sabihuddin (2012) have found the country specific determinants of intra industry trade between Pakistan and its ten major trading partners. They have found a negative and significant effect of difference in the GDP, max GDP and trade imbalances on intra industry trade. While min GDP and difference in the per

capita income have a positive and significant impact on intra industry trade. The correlation between FDI and Intra Industry Trade is ambiguous.

Muslehuddin and Qadir (2003) have argued about the part of intra-regional exports of Bangladesh, Sri Lanka, Nepal and Pakistan has been decreased while the share of India has been increased during the interval 1985-2000.

2.2 Literature Review

In the literature industry specific and country specific determinants of vertical intra industry trade have been discussed. Market size, standard of living, economies of scale and product differentiation are the important determinants. Country specific variables are more important like country size, per capita income, distance and trade intensity to determine vertical intra industry trade [Stone and lee (1995), Aturupane at al. (1999) and Gullstrand (2000)]. Industry specific variables like economies of scale, consumer's taste, concentration ratio of firm and differentiation in products are main factors of vertical intra industry trade [Krugman (1981). Flam and Helpman (1987) have been explained that trade among developing and developed nations is based on technological gab, income differences and income distribution differences.

In the literature of Pakistan related studies the factors of vertical intra industry trade intra industry trade like size of country, per capita income, distance, trade tariffs, human capital gab, foreign direct investment, economies of scale, product differentiation and trade imbalance are used. The factors like intellectual property rights, trade intensity, technological gap and landlocked countries are not used as determinants of vertical intra industry trade.

The Intra industry trade level increases with the increase in per capita GDP as the consumer demand different qualities of the product. According to income and range

of different qualities of a product in a country cannot meet the demand of all the consumers of the country. Vertical intra industry trade is positively related with the difference in income distribution but there are some issues with this argument (i) Inequality remain stable with the passage of time (Durkin and Krygier, 2000; Montaner and Rios, 2002) (ii) inequality is time-variant in the era of European change (Milanovic, 1998; Aghion and commander, 1999). Reganati and Pittiglio (2005) stated that GDP per capita have a negative impact on vertical intra industry trade and low quality vertical intra industry trade but positive impact on high quality vertical intra industry trade it means that the home country should export products of high quality products. The consumers of different incomes demand different qualities of a product. Market size of the country depends on the gross domestic product of the country. Lancaster (1980) stated that the country with larger market size can get more opportunities for product differentiation because the country can divide their larger economy in different segments and attain economies of scale. Countries with large market size get more chances to increase the level of trade and high domestic demand for foreign goods (Helpman, 1981; Balassa, 1986). There has been found a positive relationship between country size and vertical intra industry trade (Gullstrand, 2000; Jones and Kierzkowski, 2004; Grossman and Helpman, 2005). Thorpe and Leitao (2013) argue that from supply side, this variable is used to check the potential for economies of scale and on demand side, a larger country has a high demand for differentiated products.

The distance among the trading partners is the indicator of relative social and cultural differences and reflects transportation cost. Intra industry trade, vertical intra industry trade and horizontal intra industry trade have an inverse relation with distance. Clark and Stanley (1999) has used the distance among two countries as a proxy for

costs of information when trade consists of non-standardized goods, IIT has a negative relation with distance among trading partners. Balassa and Bauwens (1987) investigated trading of non-standardized goods and found that more information is required as compared to standardized goods. Kandogan (2009) investigated that with the increase in the distance among the trading partners.

Intra industry trade is also affected by trade orientation in the developing countries. Falvey (1981) stated that model the countries with lower level of trade barriers get higher level of IIT. The residuals that we get from the regression of per capita trade on per capita income and population of the country is used as the proxy for trade orientation (Balassa, 1986; Balassa and Bauwens, 1987; Stone and Lee, 1995). There is a positive relationship between IIT and trade orientation of developing countries.

Economic integration means that the two countries are agree to decrease or eliminate the tariffs and other restrictions to increase the trade of final goods and factors of production. Trading partners sign an agreement in order to make a tariff free environment for their investors. Grobel and Lloyd (1975) investigated that the two countries with deep economic integration gets higher level of intra industry trade. Reganati and Pittiglio (2005) argued that the economic integration or regional integration among the trading partners increase the level of intra industry trade and vertical intra industry trade.

The risk which is faced by the investors, companies and governments is called political risk. Mawali (2005) argues that the political risk has a negative relation with total intra industry trade, horizontal IIT and vertical IIT. Political risk is measured through an index, the country with higher index have lesser risk.

Intellectual property rights mean that the property rights are assign to a person or a company through copyrights, patents and trademarks. Then the owner can create monopoly on the use of that product for specific period of time on the basis of these property rights. Rapp and Rozek (1990) constructed the index of intellectual property rights, they used proxy of patent laws and measured the strengths of these laws in the sample of 159 countries. The values of this index lies between 0 to 5, '0' represents no patent laws in country and '5' represents the minimum scale of patent laws in country which is constructed by the United States Chamber of Commerce Intellectual Property Rights Task Force of 1984. Mawali (2005) stated that there is a positive relationship between the intellectual property rights of South Africa's trading partners and total intra industry trade, vertical intra industry trade and horizontal intra industry trade.

Market size of the countries measured through the GDP of the country and the difference in the market size means that there is a significant difference or not in the GDP of the trading partners. In the literature mostly, average of the GDP of the countries is used as a proxy for market size of the country (Thorpe and Zhang (2005), Adnan and Mahmood (2012)). Helpman and Krugman (1985) stated that the level of IIT is based on the relative factor endowments and country size of the trading partners. The countries with greater differences in economic size have a lower level of intra industry trade. Kandogan (2009) stated that the increase in the level of similarities in the economic size of trading partners have a positive impact on intra industry trade.

Government imposes some restrictions on the imported goods to support the local products which are known as trade barriers. Sharma (2004) investigated that some countries impose trade barriers to support their domestic products that's why many tradable goods become non-tradable. So trade barriers are negatively related with vertical intra industry trade and horizontal intra industry trade. In the literature,

different proxies have been used for trade barriers such as trade orientation, effective rate of assistant and average rates (Balassa and Bauwens (1998), Sharma (2005) and Mawali (2005)). Malik (2012) used the tax revenue as a percentage of GDP as a proxy of tariff rates or trade barriers and found an inverse relationship between IIT and trade barriers.

Technological gap indicates that the trading partners have not the equal level technology, one country adopt new technology more frequently as compare to other country. In the literature different proxies are used for technological gap such as expenditures of R&D as percentage of GNP and exports of technology as a percentage of manufactured exports Mawali (2005).

Falvey (1981) has been founded that a capital intensive country produces high quality goods and a country with labor abundant produce low quality goods. Flam and Helpman (1987) stated that technological difference as the important determinant of vertical intra industry trade and capital rich countries have an upper hand in producing high quality products. The importance of a product depends on the technology which is used in the production process. Demand elasticity depends on the characteristics of the product and the price (Caves and Greene, 1996). According to Montaner and Rios (2002) in case of vertical intra industry trade of Spanish with OECD countries if the firms use advance technology in production of goods then the number of low qualities goods will decrease more significantly rather than decreasing the human capital gap or increasing the research and development gap at country level.

Gabrisch (2009) argued that intra industry trade in the sophisticated industrial goods is depended on the high level of R&D so to get the higher level of VIIT and HIIT we need higher level of research and development intensity. Clark and Stanley

(1999) stated that the differences in labor productivity which is based on the technology used, defines the level of qualities products.

Human capital depends on the skills and education of the labor as well as the technology which is used in the production. Mawali (2005) investigated that human capital gap is mostly insignificant with intra industry trade and vertical intra industry trade but it is significant in case of horizontal intra industry trade. The quality of the product is based on the human capital, this concept is driven from the discussion of 'handcraftsmanship 'in Lancaster (1979) and Brulhart and Torstensson (1996). Gullstrand (2000) stated that human capital shows a positive impact on vertical intra industry trade in the case of Poland's trade with European Union. The VIIT states the difference in the quality of varieties is due to physical capital or human capital intensity, the quality is positively related to capital-labor ratio, so a country with capital abundant will create a high quality good while a country with labor abundant will produce low quality products (Mawali, 2005).

Landlocked countries are those which have no direct excess to the ocean and they cannot trade through the seaports and ships directly. The data for the landlocked countries can be generated through dummy variables. We can use 1 for a landlocked country and for other countries zero. Landlocked countries and intra industry trade have an inverse relation (Mawali, 2005).

A capital abundant country is able to produce high quality output while a labor intensive country can produce the products of low quality (Montaner and Rios, 2002). If we take the supply side, then the differences in factor abundance in the countries cause the differences in the quality of the products, the countries with higher capital to labor ratio have comparative advantage in producing high quality products, but if we

take the demand side then differences in consumer's income cause the differences in the quality of the product (Thorpe and Leitao, 2013).

Intra industry trade is based on the economies of scale and product differentiation it is opposite to the inter industry trade which is based on the comparative advantage theory. Intra industry trade is higher in the countries with same factor endowment and vertical intra industry trade is higher in the economies with different factor endowments within the same industry. Krugman (1979) and Lancaster (1980) argue that economies of scale and consumer's taste are the main reasons to give birth the trade among the countries with same technology and same endowment factors. Falvey (1981) stated that VIIT increase with the increase in the number of firms that produce different qualities of product but there is no increasing return in production. On the other hand, VIIT increase with economies of scale and the structure of market with less number of firms (Shaked and Sutton, 1984). So there is an ambiguity in the relation between economies of scale and vertical intra industry trade.

Falvey (1981) argue that VIIT rises in a country where the market structure has a large number of firms that produce a large variety of goods of different qualities but there are no economies of scale. With the increase in the number of establishments, the variety of goods produced will also increase, but there is a condition that in equilibrium every firm will produce only one differentiated good (Krugman, 1981). The quality of a product plays a vital role in the determination of the trade patterns around the globe (Schoot, 2004 and Hallak, 2006). Intra industry trade means the rise in the production of differentiated goods, demand for foreign goods and the decrease in price (Akram and Mehmood, 2012).

According to the theory FDI (foreign direct investment) have a positive impact on the economy if it is coming to the home country but if it is going outside the country then it may or may not bring the revolution the foreign country. So the relationship between vertical intra industry trade and foreign direct investment is ambiguous. Markusen et al. (1996) stated that there is a positive relation between vertical intra industry trade and FDI if the FDI is coming to the home country in the form of technology to increase the production and there is a negative relation if FDI is supplying to the local market. Greenaway et al. (1995) argue that in the case of United Kingdom, FDI is not significant determinant of vertical intra industry trade. Fogtagne and Freudenberg (1997) refer that for the data set of European Union, the FDI is positively related with vertical intra industry trade as well as with horizontal intra industry trade.

Tinbergen (1962) and Poyhonen (1963) has developed the Gravity model of international trade that is based on the Newton's law of gravity, in which state gravity between two objects is directly related to each other and inversely related to distance. Gravity model of trade is widely used to find the determinants of trade flows between countries, it is well-suited for the diversified determinants of trade (Mawali, 2005). In the basic form of gravity model of international trade, the trade volume between two countries is positively related with their size and negatively related with the transportation cost (Soori and Tashkini, 2012).

2.3 Literature Review Gap

A lot of studies have explored the determinants of intra industry trade in Pakistan, however we have found no study on the determinants of vertical intra industry trade. The proposed study will bridge this gap by examining country specific

determinants of vertical intra industry trade in Pakistan and contribute to the debate on its impact on developing countries in general and Pakistan in particular.

Chapter 3: Trade structure of Pakistan

Pakistan's trade structure is divided into four generally classified product groups which are textile and clothing, agro and food, minerals and metals, engineering and other manufacturing. Agriculture group is the prominent sector of Pakistan's economy as it contributes approximately 22% in GDP and employs more than 45 % of labour force. But still there is large potential in this sector to increase its productivity. In the minerals and metals division Pakistan has an excellent exports potential because of its momentous natural resources.

The exports base and markets of Pakistan are extremely narrow, more than 55% of its earning is coming from textile manufactures[6]. An important feature of Pakistan's export structure is its shift from exports of primary commodities, to exports of low value-added manufacturing products. Major export groups of Pakistan are food group, textile manufactures, petroleum group and other manufactures. Food group consists of rice, sugar, fish and fish preparation, fruits, vegetable and wheat etc.

In the TDAP, agro- food division has taken various steps and projects to increase the exports. The agro food division participate in almost ten international Exhibitions every year, in which Gulf Food World Food, Anuga Food Fair and Sial Food Fair are important. This division arrange some delegations from different countries to analysis the real potential and range of products. The countries which have visited such delegations are included Maldives, Sri Lanka, Australia, South Africa and Yemen. Cold storage and common facility centers are provided for quality improvement, storage and packing of agro food commodities.

[6] Pakistan economic survey 2014-2015

Textile manufactures includes raw cotton, cotton yarn, knitwear, cotton cloth, bed wear and towels etc. The largest sector of our exports and single largest employer is textile. Pakistan is ranked at number four for the production of cotton. Cotton is cultivated by around 1.6 million farmers in which most of them holds less than five hectares. For the last several years, crops are largely stagnant. Cotton is exported as a raw material, but also provides an essential input to the domestic textiles industry. This is the need of the hour to equip this sector with advanced technology and modern techniques to meet the world-wide increased demand of clothing and progress in the fashion industry. TDAP (Trade Development Authority of Pakistan) has paid a special attention to this sector in order to increase the exports. In the recent years, value-addition in the apparel sector has been kept under consideration. In the current year trade delegations of textile sector were planned for African countries.

Carpets, sports goods, leather tanned, engineering good, cement and jewelry are included in other manufactures group. In order to increase the exports of leather, delegation was sent to Poland, Hungary, Japan and Czech Republic in the recent year.[7] Minerals and metals division in TDAP is responsible for developing new exportable products and new markets, interactions with internal and external stakeholders and preparing market plans for foreign investment. This division emphasis on the participation in international trade fairs & exhibitions in order to increase the exports of minerals & metals. They also conduct vocational trainings to contribute in human resource development.

Food, machinery, petroleum, consumer durable and raw materials are included in major imports group of Pakistan. Food group consists of milk, wheat unmilled, dry fruits, tea, spices, edible oil, sugar and pluses etc. power generating, office machinery,

[7] Trade Development Authority of Pakistan

textile, aircrafts and agriculture machinery are included in machinery group. Raw materials include raw cotton, synthetic fiber, silk yarn, fertilizers, plastic material and iron.

3.1 Trends of exports and imports

Exports

The exports of Pakistan and India are given in the below table from 2003 to 2016.

Exports from 2003-2016 in US Billion Dollars

Years	Pakistan	India
2003	11.93	59.36
2004	12.585	75.904
2005	16.05	100.352
2006	16.932	121.2
2007	17.838	145.898
2008	20.279	181.86
2009	17.554	176.765
2010	21.413	220.408
2011	25.343	301.483
2012	24.613	289.564
2013	25.12	336.611
2014	24.722	317.544
2015	22.089	264.381
2016	20.533	260.326

In the Pakistani exports there is an increasing trend from the year 2003 to 2008. From the year 2003 to 2011 India's exports are increased from $59.36 B to $301B. In 2013 the exports are 25.1 billion US dollars for the first time in history, after that there is a decreasing trend. In 2014 there is 4.78% decline in exports because of endogenous and exogenous shocks. Value added textile has shown some increase due to endowment of GSP Plus opportunity. However, world cotton prices went down and Pakistan earned lesser returns on raw cotton, cotton yarn and cotton cloth. Another reason is that China has continued to reduce its demand for yarn and fabric. In the fiscal year 2016, the export demand for readymade garments and towels are increased by 4.2% and 0.2% respectively. This happened because of GPS plus grant by European Union. Due to the lost share of basmati rice market, total food group didn't perform up to expectations. In 2016, Pakistan is ranked at 54th largest export economy in the world, with the exports stood at 20.5 billion US dollars.[8] India is ranked at No.18 as largest exporter in the world in 2016, with the export volume 260.3 billion dollars.

[8] https://atlas.media.mit.edu/en/

Imports

The imports of Pakistan and India from 2003 to 2016 are given in the below table.

Imports from 2003-2016 in US billion dollars

Years	Pakistan	India
2003	13.048	72.43
2004	15.42	98.981
2005	25.096	140.862
2006	29.825	178.212
2007	32.593	218.645
2008	42.326	315.712
2009	31.583	266.401
2010	37.537	350.029
2011	43.578	462.402
2012	43.813	488.976
2013	43.775	466.045
2014	47.544	459.369
2015	43.989	390.744
2016	46.998	356.704

There is no dramatic decreasing trend in Pakistan's imports because of inelastic demand. From the year 2003 to 2008, there is an increasing trend in imports of both countries. The global financial crises occur in 2008 that cause a shrinkage in imports for the economies of India and Pakistan. Due to the decrease in world oil prices, like other developing countries Pakistan's imports also decreased by 4.3% in 2015. In 2016

Pakistan and India are ranked at 44th and 14th respectively, largest importer in the world.

3.2 Major markets of imports and exports

Due to the concentration of exports within few markets, Pakistan has a limited number of opportunities to export its commodities. More than 60% of Pakistani exports go to ten countries in which USA, China, UAE, Afghanistan, UK, Germany, France, Bangladesh, Italy and Spain are included. In the recent years, America is the greatest importer of Pakistan as its share is 16.84 in 2016.[9] China and United Kingdom are second and third imports of Pakistan, and their shares are 8.03 and 7.60 respectively. From 2014 to 2016, our exports to china has declined while import from china has increased. In order to fix this issue, Government should review its economic agreements with China. Pakistan's imports markets are also focused on some countries. Pakistan is importing more than 50% of total imports from China, Saudi Arabia, UAE and Indonesia.

3.3 Trade Initiative by the Government

GSP Plus

The EU gives the GSP (Generalized Scheme of Preferences) status to the vulnerable developing countries in which these countries has to pay less duties on exports. The main objectives of GSP are: reduction in poverty and sustainable development in beneficiary country and enhance the economic interests of EU. Pakistan lies between the countries which have given the GSP plus status by EU. The GSP+ status gives the

[9] Pakistan bureau of statistics

full removal of tariffs on over 66% of EU tariff lines to increase the sustainable development and good governance of vulnerable low and middle income countries.[10] The current nine beneficiary countries which have given the GSP plus status are as given below:

Beneficiary countries of GSP Plus

Africa	1	Cape Verde
Europe/ Asia	2	Armenia
	3	Kyrgyzstan
	4	Mongolia
Asia	5	Pakistan
	6	Philippines
	7	Sri Lanka
South America	8	Bolivia
	9	Paraguay

3.4 Policy of trade

Although, trade policies are formulated on annual basis but the present government has also adopted three years integrated strategic trade policy framework. Strategic trade policy framework usually designed under the great consideration of public and private sector stakeholders, district chambers, trade associations, private businesses, academia, ministries and other government agencies. Regulatory adjustments and export development initiatives were two main parts of STPF 2009-2012.

[10] http://www.commerce.gov.pk

The objectives of STPE 2009-2012 are these:

- Taking rid of comparative advantage and adopt competitive advantage based policies
- Moving away from subsidies to the establishment of public good
- Try to produce sophisticated products

All regulatory adjustments were implemented during 2009-12. However, export development initiatives could be implemented only partially due to inadequate allocation of funds. During this session the performance of exports sector of Pakistan reasonable. Our exports which are US$ 20.27 Billion in 2008, increased up to US$ 25.34 billion in 2011.

Ministry of Commerce compiled the STPF 2012-2015, with the foundations provided by STPF 2009-2012. Its main object was to produce diversifies products for a large number of markets to increase the economic activity in domestic country. The prime minister allocated Rs.4.995 billion in 2012-13 and total Rs.26.108 billion for three years (2012-2015) for the successful implementation of the policy.

The main goals of this policy are given below:

- Enhance exports for rapid increase in growth
- Improve imports competitiveness in both short and long term
- Increase Pakistan's total exports to US$ 95 billion for three years 2012 to 2015

The exports stood around US$ 74 billion i.e., target of US$ 95 billion was not achieved because of exogenous and domestic factors. Exogenous factors include global demand shrinkage, reduced cotton prices and global financial crisis. Domestic factors consist of power shortages, high financing cost, security situation and loss of competitiveness.

The current mid-term Strategic Trade Policy Framework 2015-18 is formulated by keeping in mind the previous mid-term STPF 2012-2015. The targets of this policy which are set to be achieved by 30 June, 2018 are as follows:

i) Improvement of annual exports to 35 Billion US dollars

ii) Improve export competitiveness

iii) Transition from "factor driven" economy to "efficiency driven"

iv) Increase share in regional trade

These can be achieved by focusing on four pillars product diversification, market access, institutional development and trade facilitation.

Iran, Afghanistan, China and European Union are focused markets for short term export improvement because of potential for enhancement. After the approval of trade agreements with Iran, there is a room for trade channels with neighboring country. The promotion of basmati rice, kinnow and meet products will be made through land routes to Iranian market. There is a great potential to increase the Pakistani exports of rice, cotton yarn, fabrics and garments in china in short term. In the exports sector the stakeholders should be given complete know-how of China Pakistan FTA (Free Trade Agreement) by conducting seminars. After the GSP plus status, Pakistani products are promoting in European Union. Mangoes and fisheries exports are under consideration to get approval from EU.

Chapter 4: Data and Methodology

4.1 Data and Sample Size

To analyze the determinants of vertical intra industry trade in the present context; product wise data of textile sector trade, for Pakistan with its 14 major trading partners, is collected for a period of 13 years from 2003 to 2015. The data for imports and exports of one hundred and seventy-two products of fourteen different categories of textile sector is collected at the 4-digit Standard International Trade Classification (SITC) level. The countries which are included in the study are the major trading partners of Pakistan.[11]

4.2 Importance of Textile Sector

The textile sector is one of the key factors of the Pakistan's economy that is contributing a lot in its industrial growth and development. Pakistan is the 4th largest producer of cotton in the World as its weather conditions are suitable for the cultivation of cotton (PES, 2015-2016). Textile sector contributes 57% to the total exports of the country, 39% to the labor force and 8.5 % to the total GDP in 2012 (Ministry of Textile Industry). However, there are various challenges which Pakistan has to face in this sector i.e. the subsidies given by competitors (foreign countries) to their farmers, worldwide economic depression and the limited number of buyers.

4.3 Sources of Data

[11] Pakistan Economic Survey 2014-2015, Author's calculations

In order to find out the determinants of vertical intra industry trade of the textile sector in Pakistan, the data is collected from different sources. The data for the imports and exports at 4-digit SITC code of the textile sector is taken from international trade statistics: a publication of World Trade Organization (WTO)[12].While the data for market size, standard of living, technological gap and trade barriers is taken from World Development Indicators (WDI). Trade intensity data is collected from UN comtrade database. The data for intellectual property rights, political risk, and human capital gap is collected from world intellectual property organization, international political risk guide and Penn world respectively. The data for economics integration in taken from world trade organization and data for distance between the countries is collected from the web[13].

4.4 Model Specification for Empirical Analysis

Tinbergen (1962) has developed the Gravity model of international trade. According to this model, the volume of bilateral trade should increase with the increase in market size and decrease with the cost of trade. In international trade, Gravity model is extensively used to find the determinants of trade. This can also be used to find the determinants of intra industry trade and vertical intra industry trade. Basic form of the gravity model of international trade includes two countries' income, income per capita and distance between the trading partners. In this case study after looking a number of theoretical and empirical studies, we used the augmented gravity model of international trade in which some other variables are also used that explain vertical intra industry trade. Our model is consistent with empirical research work done by Mawali (2005)

[12]http://www.intracen.org/itc/market-info-tools/trade-statistics/
[13] www.distancefromto.net.

who investigated the country specific determinants of vertical and horizontal intra industry trade of South Africa. The designed model for this study is as under:

$$VIIT_{Gk} = \beta_0 + \beta_1 MS_{ijt} + \beta_2 GDPP_{ijt} + \beta_3 Dis_{ijt} + \beta_4 DGDPP_{ijt} + \beta_5 PR_{ijt} + \beta_6 IPR_{ijt} + \beta_7 Hgap_{ijt} + \beta_8 Tgap_{ijt} + \beta_9 TI_{ijt} + \beta_{10} TB_{ijt} + \beta_{11} Integ_{ijt} + \varepsilon_{ijt} \ldots\ldots\ldots\ldots$$ Equation (4.1)

Where k = 1, 2, ……14, i is for Pakistan, j is for its major trading partners and t is for time

β_0 β_1 β_2 ……. β_{11} = coefficients

ε = error term

VIIT = Vertical intra industry trade index

MS = log of average GDP of countries i and j at time t

GDPP = log of average GDP per capita of countries i and j at time t

Dis = log of distance between i and j countries at time t

DGDPP = log of difference in the GDP per capita of countries i and j at time t

PR = log of political risk of country j at time t

IPR = log of intellectual property rights of country j at time t

Hgap = log of human capital gap between country i and j at time t

Tgap = log of technological gap between country i and j at time t

TB =log of trade barriers of country j at time t

TI = log of trade intensity between country i and j at time t

Integ = dummy variables, if there is an agreement between country i and j then we give it '1' and if there is no agreement between country i and j then we give it '0'

4.5 Construction of Vertical Intra Industry Trade Index

Intra Industry trade is decomposed into horizontal and vertical intra industry trade by using the formula of unit value approach which is discussed below:

$$VIIT / HIIT = (X / Q_x) / (M / Q_m)$$

In the above expression X and M represent exports and imports respectively, while Q_x and Q_M represent quantity of exports and the quantity of imports respectively. This ratio of the unit value of exports divided by the unit value of imports is proposed by Greenway et al. (1994). Different threshold levels have been used in different studies, e.g., 0.85 to 1.15 and 0.75 to 1.25 for the composition of VIIT. If the ratio lies in this range, then it is called horizontal intra industry trade and if it lies outside this range then it is considered as vertical intra industry trade. The above mentioned formula has been used in many of the studies that includes Aturupane et al. (1999), Fukao et al. (2003), and Fontagni (2005). Mawali (2005) has used the kandogan methodology for the decomposition of intra industry trade in which data at different stages of manufacturing industry is collected. The assumption that is lies behind this formula is that the differences in price reflect the differences in quality, with the increase in the quality the price also increase.

In the current study unit value approach is used for the decomposition of intra industry trade into horizontal IIT and vertical IIT. The values lie between 0.85 to 1.15 represents horizontal IIT and the values outside this range represents vertical IIT.

4.6 Justification of Standardizing the Data

The value of imports and exports is in thousands US Dollars while the quantity of imports and exports is measured in different units like tons, square meters and units. In order to make the data comparable we normalize it by using the formula of Z score.

$$Z = \frac{X - MEAN}{SD}$$

To get the unit value of imports and exports we divided the total value with the total quantity under considered. Total value is measured in thousand dollars and quantity is

measured in tons. The results of ratio of unit value of exports and unit value of imports show that most of the values lie outside the range 0.85 to 1.15; it means most of the trade is vertical intra industry trade and the level of the horizontal intra industry trade is very low.

4.7 Descriptions of Variables

Details of the variables used in the study, their notation and description is given in table below.

Variables	Notations	Expected Sign	Definition
Vertical intra industry trade	VIIT		VIIT index is measured through the formula $\frac{unit\ value\ of\ exports}{unit\ value\ of\ imports}$
Market Size	MS	+	The market size of the country is measured through the average of the GDP of trading partners
Standard of living	GDPP	+	Average of the GDP per capita is used as a proxy for standard of living of trading partners
Difference in the standard of living	DGDPP	-/+	Difference in GDP per capita of trading partners
Political risk	PR	-	Political stability and absence of violence, its value lies between 0 and 1. '0' shows maximum risk and '1' shows minimum risk.
Intellectual property rights	IPR	-/+	Total patent applications
Human capital gap	Hgap	+	Difference in the index of Human capital per person (based on years of schooling) among trading partners
Technological gap	Tgap	+	Difference High technology exports (percentage of manufactured exports) among trading partners
Economic integration	Integ	+	This is a dummy variable if there is an agreement between Pakistan and its trading partner then its value is '1' if there is no agreement then its value is '0' List of Pakistan's trade agreements • Economic Cooperation Organization (Eco) • Global System of Trade Preferences Among developing countries (GSTP) • Mauritius Pakistan • China Pakistan • Pakistan Malaysia • Pakistan Sri Lanka • Protocol On Trade Negotiation (PTN)

			• South Asian Free Trade Agreement (SAFTA) • South Asian Free Trade Agreement (SAFTA)Accession of Afghanistan • South Asian preferential trade agreement (SAPTA)
Distance	Dis	-	This is the geographical distance among the capitals of trading partners. Data is measured in kilometers from the capital of home country to the capital of foreign country.
Trade barriers	TB	-	Tax revenue as a percentage of GDP
Trade intensity	TI	+	The formula for the trade intensity index is as follows: $$TI = \frac{exports_{ij}}{exports_{iw}}$$ The formula for the trade intensity index is the ratio of the value of the exports from the home country to the foreign country and the value of the exports from the home country to the world (Mawali, 2005). If the value of this index is greater than '1' then it means the bilateral trade flow is greater than expectation if its value is less than '1' then it means the bilateral trade flow is less than expectations.

4.8 Estimation Methodology

To find the determinants of vertical intra industry trade of textile sector in Pakistan, this study uses a panel data set of 15 countries from 2003 to 2015. Panel data is preferred over time series data or cross section data because of: (i) It is used to control the effect of cross-sections; it means the problem of heterogeneity that leads towards biasedness is no more a problem. (ii) Panel data set is more capable to identify and estimate the effects that are not measurable in pure time series or pure cross section data set [Koutsoyannis (1977)].

In a number of studies fixed effect and random effect are used to find the determinants of intra industry trade and vertical intra industry trade across countries. The constant coefficient approach does not incorporate with the variation in time and space in pooled data. Fixed effect model is appropriate to control the heterogeneity among the countries which are included in the model. But if the error term is correlated with the independent variables then fixed effect model will not give better results and then random effect model will be a better choice (Verbeek, 2008). The countries which are included in the sample size if they are randomly choose then we should go for random effect model (Egger, 2000). The selection of the best suitable model among the fixed effect and random effect can be described by using the Hausman test.

But this study does not employ these models because it might be beset by model uncertainty e.g. Omitted variable bias that can arise: firstly, if we cannot fully and correctly specify the model and secondly because of inconsistent estimates e.g. endogeneity problem which can arise if the independent variables are assumed to be

endogenous but they are in fact exogenous. Moreover, previous studies of Shahbaz, Leitao and Sabihuddin (2012) and Mahmood and Akram (2012) confirms the existence of endogeneity in the models of augmented gravity model of international trade.

To address these problems of omitted variable bias, measurement errors and endogeneity, the prominent econometric technique is Generalized Method of Moment, which is alternatively used to 3SLS or 2SLS or general IVLS method. In the current study, panel data set is used in which developed and developing countries are included so here arise the problem of heterogeniety. The main advantage of GMM estimation is that the model need not to be homoscedastic and serially independent (Blundell and Bond (1998) and Caporale et al. (2014)). Another advantage is that it finds the parameters estimates by maximizing the objective function which includes the moment restriction that the correlation between the error term and lagged regressor is zero. It is also appropriate for the small size of data (15 countries and 12 years in the current study).

Moreover, Binder et al. (2005) showed that system GMM does not break down in the presence of a unit root while the standard GMM breaks down when the data is not stationary. In essence, the GMM takes into account the time series dimension of the data, non-observable country specific effects, inclusion of lagged dependent variables among the explanatory variables and the possibility that all explanatory variables are endogenous (see e.g. Caselli et al., 1996; Bond et al., 2001). Thus GMM produce consistent and efficient estimates even in the presence of heteroscedasticity (Perera and Lee 2013).

System GMM is the augmented version of the difference GMM estimator. Initially it was developed to improve the difference GMM estimators as lagged levels

were often poor instruments for first differenced variables. Arellano and Bover (1995) and Blundell and Bond (1998) modified the difference GMM estimator by adding the original level equation to the system. The instruments for the variables in levels are their own lagged first differences.

Shahbaz, Leitao and Butt (2012) has used the GMM system estimators to find the determinants of intra industry trade with a panel data set. For the estimation of the augmented gravity model, standard cross section methods (ordinary least square) gives biased results as it doesn't address the problem of heterogeneity. Static panel data techniques (fixed effect, random effect and fixed effect vector decomposition) gives the unbiased and efficient estimators as it takes into account the time invariant estimators (distance). In order to estimate the gravity model, Dynamic panel data techniques (generalized method of moment) is more suitable as it take into account two-way causality, simultaneously biased and omitted variables caporale et al. (2014).

In order to avoid problem of endogeneity and reverse causality, this study prefers to use system GMM technique. System GMM is a preferable technique as it deals with the problem of reverse causality, autocorrelation and also handle non stationary process in the data. Moreover, it also takes into accounts the possibility of the time dimensions of the data, non-observable country specific effects and inclusion of lagged dependent variable among the explanatory variables and the problem of endogeneity among all the explanatory variables.

Chapter 5: Empirical Analysis

5.1 Empirical Results

This sections presents the results of augmented gravity model of vertical intra industry trade. Market size, GDPP and Distance are the main variables in this study while some control variables are also used to determine the VIIT. The control variables are Human Capital Gap, Intellectual Property Rights, Technological Gap, Trade Barriers, DGDPP, Political Risk, Trade Intensity and Economic Integration. The econometric results of the fourteen groups of products of textile sector are discussed one by one and linked these results with the theory and literature.

Estimated results of group '1'

In case of group 1 (silk) estimated results shows a positive and highly significant effect of market size on VIIT. It implies that a country with a larger market size have more chances to increase its trade with other countries. These results are consistent with the findings of Gullstrand (2000), he concludes that if we take the demand, then the market size has a positive effect on the degree of vertical intra industry trade. The GDP per capita difference has a positive and significant effect on VIIT. Montaner and Rios (2002) have also found that with the increase in per capita income differences, Vertical Intra Industry Trade also increased.

Human capital gap has a negative and highly significant effect on VIIT. These results are against the findings of Brulhart and Torstensson (1996) and Gullstrand (2000), they found a positive impact of difference in Human Capital Gap on VIIT. The reason behind this phenomenon may be that Human Capital Gap is not suitable proxy for human capital differences in bilateral trade.

Intellectual Property Rights has also a significant and inverse effect on the vertical intra industry trade. Against the theory Trade Intensity has a negative and significant effect on Vertical Intra Industry Trade. Distance has a negative but insignificant effect on trade VIIT. Standard of living, Trade Barriers, Technological gap, Political Risk and Economic Integration are insignificant; they have no effect on VIIT in case of silk products. Intercept is significant and its value is -67.71064.

Estimated results of group '2'

In case of group '2' (wool) there is positive and significant relationship between size of market and VIIT. It means a country with greater market size has more chances to engage in VIIT because of increasing return to scale. These results are consistent with findings of Turkcan and Ates (2008) and Rummana et al. (2014). Standard of living of the country has a positive and significant effect on VIIT. These results are according to the theory because with the improvement in the standard of living of the people the trade should also increase.

Difference in standard of living has a highly significant and negative effect on vertical intra industry trade of group '2' in textile sector. These results are in line with the findings of Greenaway at al. (1994) and Reganati and Pittiglio (2005), they also concluded that an increase in the difference of per capita income, decrease the VIIT. The reason behind this phenomenon is that endowment differences are used as a proxy for per capita income differences and with the increase in capital abundance, the share of VIIT in gross trade decrease. As expected distance has a negative and significant effect on Vertical Intra Industry Trade. The transportation cost expressively effect the integration of production across the border, this result is consistent with the empirical research of Jones and Kierzkowski (2004) and Shehbaz at el. (2012).

Human capital gab has a negative and highly significant effect on VIIT. These results are against the findings of Brulhart and Torstensson (1996) and Gullstrand (2000), they found a positive impact of difference in Human Capital Gap on VIIT. The reason behind this phenomenon may be that Human Capital Gap is not suitable proxy for human capital differences in bilateral trade. Trade barriers have a positive and statistically significant effect on VIIT. Intellectual Property Rights has a positive and significant effect on vertical intra industry trade. This is the first study in which the relationship between Intellectual Property Rights and VIIT is traced in case of Pakistan. Technological gap, trade intensity, political risk and economic integration are insignificant in case of group '2'.

Trade Intensity has a positive and significant effect on VIIT. This is consistent with the results of Turkcan and Ates (2008) he concludes that in case of South Africa if the total trade increase then there are more chances to merge trade in different components.

Estimated results of group '3'

In case of group '3' (cotton) market size has a significant but negative effect on VIIT. Difference in standard of living has a highly significant and negative effect on vertical intra industry trade of group '2' in textile sector. Distance is highly significant in case of cotton and its effect is according to the theory as with the increase in the distance VIIT also increase. Human capital gap has a positive and significant effect on vertical intra industry trade in case of group '3'. Standard of living, technological gap, trade barriers, intellectual property rights, political risk, trade intensity and economic integration are insignificant.

Estimated results of group '4'

In case of group '4' (fibres) there is positive and significant relationship between size of market and VIIT. Standard of living has a positive and significant effect on VIIT. The GDP per capita difference has a positive and significant effect on VIIT. Montaner and Rios (2002) have also found that with the increase in per capita income differences, Vertical Intra Industry Trade also increased. Human capital gab has a negative and highly significant effect on VIIT.

Trade barriers are not important in determining the VIIT of textile sector in case of Pakistan this is because government helps worldwide business to boost Pakistan VIIT. Against the theory Trade Intensity has a negative and significant effect on Vertical Intra Industry Trade in case of woven and paper yarn. Economic integration has a positive and significant effect on vertical intra industry trade in case of group '4'. Distance, technological gap, intellectual property rights, and political risk are insignificant.

Estimated results of group '5'

In case of group '5' (Manmade filaments) Market Size has a significant and positive effect on vertical intra industry trade. Standard of living has a positive and significant effect on VIIT. Human capital gab has a negative and highly significant effect on VIIT. Intellectual Property Rights is significant and negatively affect the trade. Difference in the standard of living, distance, Political Risk, Trade Barriers, Technological gap, Economic Integration and trade intensity are insignificant in case of manmade filaments group products VIIT.

Estimated results of group '6'

In case of group '6' (Manmade staple yarn) Market Size has a significant and positive effect on vertical intra industry trade. GDPP and DGDPP are insignificant,

they have no effect on vertical intra industry trade. As expected distance has a negative and significant effect on Vertical Intra Industry Trade. The transportation cost expressively effect the integration of production across the border, this result is consistent with the empirical research of Jones and Kierzkowski (2004) and Shehbaz at el. (2012). Human capital gab has a negative and highly significant effect on VIIT.

There is inverse and highly significant relationship between Trade Barriers and VIIT. Bhattacharyya (2005) has also find the same in case of Republic of korea's Intra Industry Trade. Intellectual Property Rights is significant and negatively affect the trade. Against the theory Trade Intensity has a negative and significant effect on Vertical Intra Industry Trade. Technological gap, political risk and economic integration are insignificant in case of group '6'

Estimated results of group '7'

Market size has significant and negative effect on VIIT in case of group '7' (wedding felt) products. With the increase in the differences of the market size VIIT goes down (Turkcan, 2005). Standard of living has positive and significant effect. Technological gap has a negative and significant effect on vertical intra industry trade. Intellectual Property Rights has a positive and significant effect on vertical intra industry trade.

According to the theory, there is positive relationship between Economic Integration and VIIT. Reganati and Pittiglio (2005) concluded that there is significant and positive relation between VIIT and economic relation, the reason can be that their integration is based on region and in this study agreements are used to generate the

integration dummy variable. Difference in the standard of living, distance, human capital gap, trade barriers, political risk and trade intensity are insignificant.

Estimated results of group '8'

In case of group '8' (carpets) Market Size is not significant, which is in accordance with the findings of Caetano and Galego (2007). They also concluded that the GDP of the country has no effect on vertical intra industry trade of European Union countries. As expected distance has a negative and significant effect on Vertical Intra Industry Trade. Difference in market is also significant and positively affect the VIIT. There is inverse and significant relationship between Trade Barriers and VIIT. Human capital gab has a negative and highly significant effect on VIIT. Standard of living, Intellectual Property Rights, Trade Barriers, Technological gap, political risk, trade intensity and economic integration are insignificant.

Estimated results of group '9'

In case of group '9' (special woven) Market Size and Difference in Standard of Living are insignificant. In case of group '9' distance is significant and its effect is against the theory. Technological gap has a positive and significant effect on VIIT. Technological gap is defined as an absolute difference in High technology exports as a percentage of manufactured exports between Pakistan and its major trading partners. Vertical Intra Industry Trade is based on quality (price) of the product, that's why Technological gap is an important factor [Shaked and Sutton (1984), Flam and Helpman (1987), Fukao at al. (2003) and Reganati and Pittiglio (2005)]. There is a positive correlation between Technological gap and VIIT. Human capital gab has a negative and highly significant effect on VIIT. Trade barriers and intellectual property rights has a negative and significant effect on VIIT. Trade Intensity has negative and

significant effect on VIIT against the theory while political risk has a positive effect against the theory. Economic integration has no effect in case of group '9'.

Estimated results of group '10'

In case of group '10' (laminated textile fabrics) the p-value of Arellano-Bond AR test is 0.336 and Hansen over identification test is 1.000, which shows that the model is good, instruments are valid and exogenous as a group. In case of group '10' products VIIT, Market Size, Difference in Standard of Living, trade barriers, Political Risk, and trade intensity are insignificant. Distance has a negative and statistically significant effect on VIIT. Technological gap has also negative but significant effect on VIIT. Standard of living of the country has a negative but significant effect on VIIT. These results are against the theory because with the improvement in the standard of living of the people the trade should increase but in line with the findings of Caetano and Galego (2007) and Gabrisch (2009). Human capital gab has a positive and significant effect on VIIT.

Intellectual Property Rights has a positive and significant effect on vertical intra industry trade. This is the first study in which the relationship between Intellectual Property Rights and VIIT is traced in case of Pakistan. According to the theory, there is positive relationship between Economic Integration and VIIT.

Estimated results of group '11'

Market size and difference in the standard of living are insignificant in case of group '11' (knitted fabrics). GDPP has a positive and significant effect on VIIT. Distance, technological gap, human capital gap, trade barriers, intellectual property rights and trade intensity has a negative and significant effect on VIIT in case of this group. Against the literature, political risk has a positive and significant effect on VIIT.

economic integration has a positive and significant effect on VIIT in case of group '11' products.

Estimated results of group '12'

Political Risk has a negative and significant effect on VIIT in case of '12' (Articles of apparels, knit) products. PR has a greater negative and significant effect on VIIIT. Fukao at al. (2003) have used political risk as an instrumental variable in their study of VIIT and FDI in East Asia.

Intellectual property rights have also negative and significant effect on VIIT. Human Capital gap has no impact on VIIT, these results are in line with the findings of Sharma (2004), he concluded that in case of VIIT among Australia and New Zealand there is no relationship between VIIT and Human Capital gap. Market Size, Standard of Living, Distance, Technological gap, Trade Intensity, trade barriers and Economic Integration are insignificant in case on group '12'.

Estimated results of group '13'

Market size has a negative and significant effect on VIIT in case group'13' (Articles of apparels, not knit) products. Intellectual Property Rights has a positive and significant effect on vertical intra industry trade. Dis has a negative and significant on VIIT. Difference in the standard of living negatively and significantly affect VIIT. These results are in line with the findings of Greenaway at al. (1994) and Reganati and Pittiglio (2005), they also concluded that an increase in the difference of per capita income, decrease the VIIT. The reason behind this phenomenon is that endowment differences are used as a proxy for per capita income differences and with the increase in capital abundance, the share of VIIT in gross trade decrease.

Trade Intensity has a positive and significant effect in case of woven and paper yarn group products VIIT. With the increase in the trade volume of a country, there are more chances for the differentiated products to be traded. In case of Mexico's intra industry trade, Ekanayke (2000) also found that trade intensity has positive impact on IIT. Intellectual property rights have a positive effect on VIIT. Standard of living, Human Capital gap, Technological gap, political risk, Trade Barriers, and Economic Integration are insignificant in case of group '13' products VIIT.

Estimated results of group '14'

In case of group '14' (bedsheets, curtains, blankets) Standard of Living, difference in Standard of Living, technological gap, political risk, trade barriers and economic integration has no effect on VIIT, they are all insignificant. Human capital gab has a negative and significant effect on VIIT. There is a direct relation between market size and vertical intra industry trade. Distance has a negative and significant effect on '14' group products VIIT. Against the literature intellectual property rights and political risk has a negative and significant effect on VIIT.

Aggregate discussion on groups of textile industry

There is a much variation in the estimated results of Vertical Intra Industry Trade (VIIT) of the groups of textile industry. The significance level of a single variable varies across the groups. Variables are significant at 1%, 5% and 10% level of significance. According to the literature, VIIT has a positive correlation with market size, technological gap, human capital gap, intellectual property rights, trade intensity and economic integration. But in this study, Market Size, Technological gap, Human capital gap, Intellectual Property Rights, Trade Intensity and Economic Integration have positive and negative correlation with VIIT. Trade barriers, political risk and distance have negative relation with vertical intra industry trade in the literature. But

the current study concluded that there is a negative and positive correlation between Distance, Political Risk and Trade Barriers with VIIT. According to the theory, there is an ambiguity between the relationship of Standard of Living and difference in Standard of Living with VIIT. In the current study, VIIT has a positive and negative correlation with GDPP and DGDPP.

Chapter 6: Conclusion and Policy Recommendations

6.1 Conclusion

As Pakistan is exporting a narrower range of commodities to few markets in the world which can be increased by focusing on the vertical intra industry trade. In the current study, we have investigated the determinants of vertical intra industry trade of textile sector in Pakistan by using the augmented gravity model of trade. One hundred and seventy-two products of fourteen different groups of textile industry are included. Product wise data of imports and exports in taken from 2003 to 2015 with Pakistan's fourteen major trading partners. The countries which are included in this study are USA, UK, India, Malaysia, Saudi Arabia, China, Indonesia, Germany, France, Japan, Kuwait, UAE, Russian Federation and Spain.

Different determinants of vertical intra industry trade have been discussed: which are classified as industry specific and country specific determinants. The current study has examined the country specific determinates of VIIT. The index for vertical intra industry trade is established by using a latest approach which is known as 'unit value approach' proposed by Greenway at al. (1994). The results of the unit value approach show that most of the trade in textile sector between Pakistan and its major trading partners is vertical intra industry trade (vertical integration). The system GMM approach is used to find out the results of augmented gravity model of vertical intra industry trade for fourteen different groups of textile sector. The significance level and impact of the explanatory variables varies across the groups of textile industry VIIT.

6.2 Policy Recommendations

Different types of international trade have become an important part of Pakistan textile industry. Inter industry trade and intra industry trade and its two components vertical intra industry trade and horizontal intra industry trade plays a vital role for increasing the imports and exports of Pakistan.

Pakistan should follow the vertical intra industry trade even with its developed trading partners by focusing on the most competitive products. Pakistan has a great potential to improve the current status of textile sector by using its resources more efficiently.

Pakistan should consider the regional integration which is essential to enhance the trade between two countries. Regional integration in easy to implement with the neighboring countries but so many factors cause problem like the political stability and geographical conditions.

The factors of vertical intra industry trade varies across the groups of textile sector the reason behind this may be the nature of the product which is being traded i.e. it is an intermediate good or a final good.

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Appendix

Appendix A.1: Regression Results

The results of empirical analysis are presented in the table below:

	CONS	MS	GDPP	DGDPP	DIS	TGAP	HGAP	TB	IPR	PR	TI	INTEG
G1	-67.71064*** 0.000	1.623037*** 0.000	1.351863 0.292	1.236192*** 0.000	-.204924 0.816	-.5977093 0.337	-1.663142*** 0.000	.5430572 0.481	-.2859283* 0.08	.4156816 0.85	-.3464876** 0.016	2.047159 0.246
G2	-8.979633 0.589	2.400893*** 0.000	8.735982*** 0.000	-.7961209*** 0.000	-2.518703*** 0.002	.0815953 0.900	-3.065628*** 0.000	2.108297** 0.037	1.830638*** 0.000	1.788562 0.181	.0635305 0.563	2.047038 0.299
G3	4.14e+16 0.22	-1.14e+15* 0.077	-1.64e+15 0.307	-1.13e+15*** 0.000	-2.04e+15*** 0.001	2.72e+14 0.582	4.78e+14* 0.093	3.13e+14 0.725	9.65e+13 0.555	1.44e+15 0.512	3.44e+14 0.416	-1.79e+15 0.375
G4	-104.7917*** 0.001	1.440021* 0.098	4.631136*** 0.003	1.013785*** 0.000	.8997466 0.244	-.3486885 0.638	-2.281122*** 0.000	.1438038 0.899	-.2884674 0.35	-2.379953 0.471	-.9473922** 0.03	5.225117** 0.014
G5	-46.46507*** 0.000	.9628892*** 0.000	3.704312*** 0.001	.1463845 0.603	-.7392481 0.448	-.1268898 0.837	-.7586079** 0.037	-1.201658 0.202	-.5065163*** 0.001	1.638916 0.373	-.2346295 0.214	.1124574 0.941
G6	-8.47e+16 0.103	1.75e+15*** 0.005	1.27e+15 0.603	2.34e+14 0.367	-2.35e+15** 0.044	-5.75e+12 0.993	-6.16e+14* 0.053	-2.08e+15** 0.0158	-3.07e+14* 0.071	-1.23e+16 0.238	-8.69e+14* 0.064	2.55e+15 0.47
G7	23.06623 0.33	-2.486775*** 0.007	4.79508*** 0.002	.0548761 0.869	-.8543347 0.53	-1.577056* 0.089	-.9735917 0.159	.3325059 0.777	1.045239** 0.027	-.0208229 0.99	-.1710069 0.643	4.654433** 0.049
G8	-1.355612 0.956	.2520076 0.611	.7102921 0.692	2.045576*** 0.000	-1.322002* 0.089	-.0659949 0.927	-1.687493*** 0.002	-1.914574* 0.065	-.1476071 0.577	-2.277155 0.168	-.1659166 0.469	.9479258 0.696
G9	-34.91728 0.288	-.0295649 0.969	3.91434** 0.012	.0564452 0.816	1.908556** 0.037	1.589686** 0.017	-3.409233*** 0.000	-3.966953*** 0.000	-.848375*** 0.001	4.945911** 0.038	-.6625161** 0.048	-.3506575 0.855
G10	-6.48e+14 0.669	-4.55e+13 0.340	-1.25e+14* 0.098	1.05e+14 0.286	-9.55e+13** 0.034	-1.05e+14* 0.063	5.14e+13* 0.051	2.16e+13 0.779	9.82e+13** 0.047	-8.85e+14 0.254	-5.27e+12 0.817	5.77e+14* 0.075
G11	-32.89363** 0.047	.2973648 0.401	4.952525*** 0.000	-.1894323 0.210	-.9395679*** 0.009	-1.315386*** 0.006	-.6758151*** 0.002	-1.803696*** 0.002	-.3286541* 0.058	6.928147*** 0.000	-.5793235** 0.018	2.347143* 0.062
G12	-1.33e+16 0.301	2.79e+14 0.235	6.09e+14 0.354	7.08e+13*** 0.000	-1.56e+14 0.305	-9.07e+13 0.714	8.14e+12 0.935	5.47e+13 0.864	-6.41e+13** 0.042	-1.20e+15* 0.062	-8.61e+13 0.403	4.66e+14 0.575
G13	4.32e+16** 0.049	-1.09e+15** 0.022	-6.98e+14 0.503	-1.07e+14* 0.094	-5.44e+14* 0.058	2.78e+14 0.523	1.29e+14 0.522	-7.85e+13 0.902	2.23e+14** 0.015	1.86e+15 0.157	3.96e+14* 0.051	-1.29e+15 0.340
G14	-8.47e+16 0.103	1.75e+15*** 0.005	1.27e+15 0.603	2.34e+14 0.367	-2.35e+15** 0.044	-5.75e+12 0.993	-6.16e+14* 0.053	-2.08e+15 0.158	-3.07e+14* 0.071	-1.23e+16 0.238	-8.69e+14* 0.064	2.55e+15 0.470

Appendix A.2: Groups of Products

In this tables the categories of different products are mentioned:

No.	SITC code	Description
Group 1	50	Silk
Group 2	51	Wool, animal hair horsehair yarn and fabrics
Group 3	52	Cotton
Group 4	53	Vegetable textile fibres, paper yarn, woven fabrics
Group 5	54	Manmade filaments
Group 6	55	Manmade staple fibres
Group 7	56	Wedding felt, nonwovens, yarns, twine, cordage etc
Group 8	57	Carpets and other textile floor coverings
Group 9	58	Special woven or tufted fabrics, lace, tapestry
Group 10	59	Impregnated, coated or laminated textile fabrics
Group 11	60	Knitted or crocheted fabrics
Group 12	61	Articles of apparels, accessories, knit or crochet
Group 13	62	Articles of apparels, accessories, not knit or crochet
Group 14	63	Other made textile articles, sets, worn clothing

Appendix A.3: List of Products

	SITC code	Description
Group 1	50	Silk
	5001	Silk-worm cocoons suitable for reeling
	5002	Raw silk (not thrown)
	5003	Silk waste, nes
	5004	Silk yarn (other than yarn spun from silk waste)
	5005	Yarn spun from silk waste, not put up for retail sale
	5006	Silk yarn&yarn spun from silk waste, put up for retail sale
	5007	Woven fabrics of silk or of silk waste
Group 2	51	Wool, animal hair horsehair yarn and fabrics
	5101	Wool, not carded or combed
	5102	Fine or coarse animal hair, not carded or combed
	5103	Waste of wool
	5104	Garnetted stock of wool or of fine or coarse animal hair
	5105	Wool & fine or coarse animal hair, carded or combed
	5106	Yarn of carded wool, not put up for retail sale
	5107	Yarn of combed wool, not put up for retail sale

	5108	Yarn of fine animal hair, not put up for retail sale
	5109	Yarn of wool or of fine animal hair, put up for retail sale
	5110	Yarn of coarse animal hair or of horsehair
	5111	Woven fabrics of carded wool or of carded fine animal hair
	5112	Woven fabrics of combed wool or of combed fine animal hair
	5113	Woven fabrics of coarse animal hair or of horsehair
Group 3	52	Cotton
	5201	Cotton, not carded or combed
	5202	Cotton waste (including yarn waste and garneted stock)
	5203	Cotton carded or combed
	5204	Cotton sewing thread
	5205	Cotton yarn (not sewing thread) 85% or more cotton, not retail
	5206	Cotton yarn (not sewing thread) less than 85%cotton, not retail
	5207	Cotton yarn (not sewing thread) put up for retail sale
	5208	Woven cotton fabrics, 85% or more cotton, weight less than 200 g/m2
	5209	Woven cotton fabrics, 85% or more cotton,weight over 200 g/m2
	5210	Woven cotton fabrics, less than 85% cotton, mxd with manmade fibers,
	5211	Woven fab of cotton,less than 85%,mxd with man madefibre,weight>200
	5212	Woven fabrics of cotton
Group 4	53	Vegetable textile fibres, paper yarn, woven fabrics
	5301	Flax, raw or processed but not spun; flax tow and waste
	5302	True hemp, raw, processed, not spun; tow and waste of true hemp
	5303	Jute & other textile bast fibers (not flax, true hemp, ramie), raw,
	5304	Sisal&othertexfibres of genus Agave,raw/processed,notspun;tow&waste
	5305	Coconut, abaca, ramie & other vegetable fibers, raw, processed
	5306	Flax yarn
	5307	Yarn of jute or of other textile bastfibres of hd no 53.03
	5308	Yarn of other vegetable textile fibres; paper yarn
	5309	Woven fibres of flax
	5310	Woven fabrics of jute or of other texbastfibres of hd no 53.03
	5311	Woven fabric of other vegetable textile fibre& woven fabric of paper
Group 5	54	Manmade filaments
	5401	Sewing thread of man-made filaments
	5402	Synthetic filam yarn, not put up
	5403	Artificial filam yarn, not put up
	5404	Synth mono>/=67dtex,...,syntex mat wd<=5mm
	5405	Arti mono>/=67dtex,...,artitexmatwd<=5mm
	5406	Man-made filament yarn, put up for retail sale
	5407	Woven fabrics of synth. filam yarn (incl. hd no 54.04)
	5408	Woven fabrics of synth. filam yarn (incl. hd no 54.05)
Group 6	55	Manmade staple fibres
	5501	Synthetic filament tow
	5502	Artificial filament tow
	5503	Synthetic staple fibres, not carded
	5504	Artificial staple fibres, not carded
	5505	Waste of man-made fibres
	5506	Synthetic staple fibres, carded, combed

	5507	Artificial staple fibres, carded, combed
	5508	Sewing thread of man-made staple fibres
	5509	Yarn of synth staple fibre,not put for retail sale
	5510	Yarn of artif staple fibre,not put up for retail sale
	5511	Yarn of man-made staple fibres, put up for retail sale
	5512	Woven fab of syn staple fibre (> 85% of such fiber)
	5513	Woven fab of syn staple fib (< 85% of such fiber),mixed with cotton
	5514	Woven fab of syn staple fib (> 85% of such fiber), mxd with cotton
	5515	Woven fabrics of synthetic staple fibres
	5516	Woven fabrics of artificial staple fibres
Group 7	56	Wedding felt, nonwovens, yarns, twine, cordage etc
	5601	Wadding of textile mat&art thereof;tex fib<=5mm le(flock)
	5602	Felt, w/n impregnated, coated, covered or laminated
	5603	Nonwovens, w/n impregnated, coated, covered or laminated
	5604	Rubber thread,cord, strip
	5605	Metallised yarn
	5606	Gimped yarn nes; chenille yarn; loop wale-yarn
	5607	Twine,cordge&cable, with rubber/plastic
	5608	Knotted nettg of twine,cordage/rope made up fishing nets
	5609	Articles of yarn, strip, twine, cordage, rope and cables
Group 8	57	Carpets and other textile floor coverings
	5701	Carpets and other textile floor covering knotted
	5702	Carpets&o tex floor covg, woven,not tufted/flocked
	5703	Carpets and other textile floor covering tufted
	5704	Carpets&other textile floor covering of felt,not tufted/flocked
	5705	Carpets and other textile floor coverings
Group 9	58	Special woven or tufted fabrics, lace, tapestry
	5801	Woven pile & chenille fabrics
	5802	Terry toweling
	5803	Gauze, o/t narrow fabrics of hd 58.06
	5804	Tulles&other net fab not inclwoven,knit/crocheted fab
	5805	Hand-woven and needle-worked tapestries
	5806	Nar woven fabrics,o/t those of hd 5807
	5807	Label, badge &sim art of textile
	5808	Braid in the piece; orn trim, in pce,o/t knit/crocheted
	5809	Woven fabrics of metallisedyarn,for apparel
	5810	Embroidery in the piece, in strips or in motifs
	5811	Quilt textile product in the piece other than embroidery of hd no5810
Group 10	59	Impregnated, coated or laminated textile fabrics
	5901	Text fab ctd with gum,for book covering
	5902	Tire cord fab of high tenac yarn of nylon,orpolyamide,polyester
	5903	Textile fabrics impregnated, coated, covered/laminated w plastics
	5904	Linoleum; floor coverings with a coating or covering on tex backing
	5905	Textile wall coverings
	5906	Rubberised textile fabrics (excl 59.02)
	5907	Textile fabric impreg;paintdcanva (eg theatrical scenery)

	5908	Textile wick for lamps,stoves,etc
	5909	Textile hosepiping and similar textile tubing
	5910	Transmission or conveyor belts
	5911	Textile products&articles for tech uses
Group 11	60	Knitted or crocheted fabrics
	6001	Pile fabrics incl. long pile fabrics and terry fabrics, knitted or crocheted
	6002	Knitted/crocheted fabrics width<=30cm, cont>= 5% elast.yarn/rubber thread
	6003	Knitted/crocheted fabrics width<=30cm other than those of heading
	6004	Knitted/crocheted fabrics width>30cm, cont>= 5% elast. yarn/rubber thread
	6005	warp knit fabrics (incl. those made on galloon knitting machines)
	6006	Other knitted or crocheted fabrics
Group 12	61	Articles of apparels, accessories, knit or crochet
	6101	Men's overcoats, capes,etc, knitted/crochetd
	6102	Women's overcoat, cape, etc, knitted/crochetd
	6103	Men's suits, jackets, trousers etc& shorts, knit/croch
	6104	Women's suits, dresses, skirt etc&short, knit/croch
	6105	Men's shirts, knitted or crocheted
	6106	Women's blouses & shirts, knitted or crocheted
	6107	Men's underpants,pyjamas,bathrobesetc,knit/croch
	6108	Women's slips,panties,pyjamas, bathrobes etc, knitted/crocheted
	6109	T-shirts, singlets and other vests, knitted or crocheted
	6110	Jerseys, pullovers, cardigans, etc, knitted or crocheted
	6111	Babies' garments, knitted or crocheted
	6112	Track suits, ski suits and swimwear, knitted or crocheted
	6113	Garment,made up of knitted/crochetd fabric of hd no 59.03,06,07
	6114	Garments, knitted or crocheted
	6115	Panty hose, tights, stockings & other hosiery, knitted or crocheted
	6116	Gloves, mittens and mitts, knitted or crocheted
	6117	Clothing access nes,knitted/croch
Group 13	62	Articles of apparels, accessories, not knit or crochet
	6201	Men's overcoats, capes, wind jackets
	6202	Women's overcoats,capes,wind-jackets
	6203	Men's suits, jackets, trousers etc& shorts
	6204	Women's suits, jackets, dresses skirt sets &shorts
	6205	Men's shirts
	6206	Women's blouses & shirts
	6207	Men's singlets, briefs, pajamas, bathrobes
	6208	Women's singlets, slips, briefs, pajamas, bathrobes
	6209	Babies' garments and clothing accessories
	6210	Garment made up of fabric
	6211	Track suits, ski suits and swimwear; other garments
	6212	Brassieres, girdles, corsets, braces, suspenders etc &parts
	6213	Handkerchiefs
	6214	Shawls, scarves, mufflers, mantillas
	6215	Ties, bow ties and cravats
	6216	Gloves, mittens and mitts
	6217	Clothing accessories nes; o/t of hd 62.12

Group 14	63	Other made textile articles, sets, worn clothing
	6301	Blankets and travelling rugs
	6302	Bed, table, toilet and kitchen linens
	6303	Curtains, drapes & interior blinds
	6304	Furnishing articles
	6305	Sacks and bags of a kind used for the packing of goods
	6306	Tents & camping goods, tarpaulins, sails for boats
	6307	Made up articles nes, including dress patterns
	6308	Set consisting of woven fab & yarn for making up into rugs, tapestrie
	6309	Worn clothing and articles
	6310	Rags, scrap twine, crodage, rope

Appendix A.4: Imports

Major Imports Markets of Pakistan

(US million dollars)

Sr.No	COUNTRY	1985	1990	1995	2000	2005	2010	2014
1	United Arab Emirates	237.9945	157.5249	562.0914	1190.928	2480.738	5247.779	7077.18
2	China	144.0718	336.6801	515.2643	550.1076	2349.395	5247.713	9588.418
3	Kuwait	482.1025	438.7142	668.298	1292.748	1264.215	2608.034	2954.979
4	Saudi Arabia	578.9937	459.9596	583.9804	1162.67	2650.629	3837.918	4417.354
5	Malaysia	256.7077	244.3312	988.2467	433.0377	731.3576	2054.747	1280.078
6	Japan	741.5152	874.8145	1253.998	618.369	1632.767	1594.711	1752.971
7	India	15.431	45.57052	82.3666	183.1766	576.7008	1559.921	2104.804
8	USA	822.2351	943.6159	1093.194	666.9796	1530.953	1627.801	1799.568
9	Germany	376.3982	543.3081	734.5456	395.3028	1145.04	985.5877	1070.466
10	Indonesia	66.43517	47.10938	119.1107	170.7282	684.0788	675.6555	2107.232
11	United Kingdom	360.299	358.7015	553.9188	350.9398	720.8249	635.5705	599.7162
12	France	81.8953	165.2362	257.7843	214.3787	297.2103	399.1749	398.3726
13	Italy	144.5449	230.6481	585.0616	177.9331	437.2366	566.7072	469.0948
14	Russian Federation/USSR	23.31482	62.87316	107.5053	76.48226	356.0663	156.8824	224.9264
15	Spain	39.08247	46.46153	63.99606	46.10961	100.2194	134.417	147.1198
16	Brazil	35.7251	42.25793	108.5997	49.94228	322.5763	369.3036	165.1784
17	Canada	81.80729	92.49182	130.0069	84.31775	213.505	463.7334	357.52
18	Mexico	1.787037	3.272343	14.18496	10.93889	14.04148	34.09461	38.98898
19	Australia	228.3558	154.4224	164.7716	306.6571	450.9216	466.9929	336.494
20	Netherlands	68.31823	126.1362	152.975	155.0815	214.7616	345.9857	324.5062
21	Poland	10.12183	23.89384	54.2939	12.85224	52.87562	41.82157	74.97164
22	Switzerland	96.96244	184.9968	366.3027	304.5811	488.3429	336.9082	319.7217
23	Sweden	46.3871	72.37206	81.16567	52.26311	385.947	173.938	259.5475
24	Norway	21.90197	23.66356	11.31656	5.539391	14.96327	24.22749	13.87407
25	Thailand	18.71059	92.05571	110.3105	202.5112	538.4867	872.3793	730.0622
26	Singapore	96.66664	229.2709	225.0041	306.895	448.1821	913.6026	1149.128
27	Turkey	23.24225	42.42426	86.86621	81.98031	186.8235	155.7035	192.8601
28	Iran	118.5675	171.2526	191.0686	334.8523	363.1683	883.5906	185.7306
29	Sri Lanka	30.49163	36.88162	50.69171	35.54	59.17702	53.36945	62.97115
30	Afghanistan	18.15694	6.363802	15.76953	39.38769	53.21817	138.3755	392.1663

Source=http://comtrade.un.org/data/

Appendix A.5: Exports

Major Exports Markets of Pakistan

(US million dollars)

Sr.No.	Country Name	1085	1990	1995	2000	2005	2010	2014
1	U.S.america	822.2351	693.093	1230.758	2276.337	3979.485	3674.481	3646.509
2	China	144.0718	66.90682	121.16109	244.6492	435.6816	1435.944	2252.9
3	United Kingdom	360.299	412.67	529.12803	600.9305	907.4961	1113.869	1654.645
4	Afghanistan	18.15694	1.996643	20.170456	124.0459	1064.748	1684.666	1879.143
5	Germany	376.3982	474.5928	561.568	517.826	724.4125	981.2164	430.8688
6	United Arab Emirates	237.9945	184.9108	373.98192	573.4868	1256.776	1834.906	1324.075
7	Spain	39.08247	93.79854	129.92199	162.8017	386.098	474.1375	789.8276
8	Bangladesh	45.41328	102.4183	154.72531	141.6438	234.411	636.8094	687.6409
9	Netherlands	68.31823	112.0472	271.92666	241.586	378.2975	408.0836	684.7404
10	Belgium	57.41592	96.71785	206.05	185.1696	342.0521	518.8724	658.0599
11	Italy	144.5449	249.2325	235.93496	221.5327	582.5019	642.2432	767.1876
12	Saudi Arabia	578.9937	162.9546	229.58074	246.0353	354.8951	409.0459	509.6982
13	France	81.8953	221.9307	274.58896	283.6838	363.2528	357.6016	328.3132
14	India	15.431	48.80526	39.790064	64.9946	337.2179	274.9825	392.2143
15	Viet Nam	#VALUE!	0.650823	31.582116	20.10432	35.69983	129.1178	260.5297
16	Kenya	89.43584	7.685572	19.915374	17.12545	66.44795	129.1929	332.8133
17	Rep.of Korea	83.79982	165.8692	277.39744	264.474	200.1124	279.3781	377.8919
18	Sri Lanka	30.49163	68.69512	56.460408	82.02839	153.6625	283.87	266.1474
19	Turkey	23.24225	86.11002	136.53557	101.1406	299.4801	644.119	391.0751
20	Canada	81.80729	94.80621	144.40013	190.5793	211.7065	227.8803	224.2581
21	South Africa	0.459332	7.23832	9.789565	73.89162	221.6835	254.5703	290.2304
22	Australia	228.3558	61.61276	92.437024	121.0492	120.2921	148.1502	167.2171
23	Hong Kong	20.92674	277.4628	617.54086	542.856	598.9171	495.2328	1215.478
24	Japan	741.5152	456.6853	552.42368	238.3482	143.3518	123.3818	193.9179
25	Portugal	2.657616	39.36392	74.143288	84.79826	104.3886	126.4984	166.9723
26	Russian Federation/USSR	63.57937	0.029196	14.537164	5.458692	48.43705	144.3367	187.6331
27	Poland	10.12183	1.92525	3.41761	8.084913	40.13781	58.84467	146.1729
28	Malaysia	256.7077	28.90852	47.07752	53.3017	66.61359	145.5851	233.9253
29	Indonesia	66.43517	51.10634	108.4025	112.2932	68.16669	73.85335	138.1652
30	U.R.of Tanzania	4.057265	6.903773	16.517461	16.51099	15.43855	44.60254	124.5736

Source=http://comtrade.un.org/data/