

The Impact of the Exports of BRIC Countries Plus Turkey on the Exports of Pakistan

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Abstract

The BRIC countries (Brazil, the Russian Federation, India and China) plus Turkey contribute a significant proportion of the exports that originate from developing countries. The varieties imported from the BRIC countries plus Turkey in the textile, creative and leather industries are likely to take precedence over the imported varieties from smaller developing countries as either their production is relatively more efficient in labor-intensive industries or their resources are relatively more abundant. Therefore, the prominence of the exports of the BRIC countries plus Turkey can have implications for smaller developing countries that also specialize in the production of labor-intensive products, such as Pakistan. I study the impact of the exports of the BRIC countries plus Turkey on the exports of Pakistan to the set of importing countries based on their importance as major export destinations of Pakistan for each industry considered and the set of importing countries based on the geographical location of the importing countries as regional and non-regional destinations of the BRIC countries plus Turkey. In this paper, I aim to determine whether the exports from the BRIC countries plus Turkey either complement or substitute exports from Pakistan to the specific set of export destinations.

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Non Technical Summary

The export flow of BRIC countries plus Turkey constitutes a major proportion of global export flow that originates from developing countries¹. For instance, China contributed roughly 11.5% of the world export flow in 2012. In certain industries such as textile, creative and leather industries, China contributed more than one-third of the total world exports. The other countries have contributed approximately 7% of the total world exports. As a consequence of their domination, the BRIC countries plus Turkey are likely to impact the export flow of the other smaller developing countries. The BRIC countries plus Turkey exhibit lower costs of production in labor-intensive industries. Due to their developing nature, BRIC countries plus Turkey are likely to produce labor-intensive goods for buyer-driven commodity chains, where the demand for products and the product specification is likely to be set by the manufacturers and retailer located mainly in the developed countries. The buyer-driven commodity chains are most common in the textile, creative and leather industries. In this paper, I determine the impact of the export flow from each BRIC country plus Turkey on the export flow of Pakistan, a developing country that also specializes in the production of labor-intensive products. The textile industry has earned significant export revenue for Pakistan. The creative industry has gained prominence over the recent years as Pakistani exporters promote local art, handicraft and culture in the global market. The leather industry has contributed roughly 3% to 5% of the total export receipts. Although, the exports from Pakistan have been crowded out in the total industries, the exports from certain BRIC countries plus Turkey have complemented rather than substituted the exports from Pakistan in the textile, creative and leather industries as varieties provided by the Pakistani exporters to certain destinations have increased in prominence. Therefore, the purpose of this paper is to highlight the complementary effect as well as the substitution effect of exports from certain emerging countries on the exports from Pakistan. This study is likely to benefit researchers and policymakers that aim to increase the penetration of Pakistani exports in the foreign markets.

Importing from regional trading partners is likely to incur lower costs than importing from non-regional trading partners. Apart from the trade costs, the fixed costs to import are likely to be lower to import inputs from regional trading partners than from non-regional trading partners as the importers find it less costly to incorporate inputs from regional markets into their production process because of the similarity of such imported inputs with the domestic varieties². The characteristics of importers that trade with regional trading partners are likely to vary from the

¹The four countries that constitute the BRIC countries are Brazil, the Russian Federation, India and China.

²The regional destination for Chinese, Indian and Pakistani varieties is Asia and the Middle East. The regional

importers that trade with non-regional trading partners. The importers that import from distant markets are likely to be larger and sell multiple products to their consumers. On the other hand, the importers that import from regional trading partners are likely to be smaller and sell a single product to their consumers. In addition, they are likely to exert competitive pressure on the larger importers, particularly if the regional varieties are easily available in the local market. The larger importers may retaliate by concentrating their production on the core varieties and drop their secondary varieties. Therefore, the secondary varieties from Pakistan may suffer as the more prominent core inputs take preference in the destination markets.

The Chinese products are the most prominent products in all industries as well as textile, creative and leather industries because of their proliferation in the world exports. On the other hand, the Indian products have also gained prominence over the last few years. The prominence of the inputs in global exports is an indication of greater knowledge by the importers and the adaptability of the inputs into the production process relative to the inputs provided by the other non-regional trading partners. The importers are likely to use the profits generated from the imported inputs to add varieties to their product range and satisfy a greater range of consumer preferences. This may allow importers to invest in secondary varieties available from smaller developing countries such as Pakistan and provide the exporters in Pakistan an opportunity to sell their products to the larger trading partners. The exporters in Pakistan are likely to be the most productive of all the firms in Pakistan and the varieties they provide are likely to be similar to that of their regional countries, India and China, and vastly different from the varieties supplied by Brazil. As Turkey and Pakistan do share similar cultural, traditional and religious background, the varieties from Turkey are likely to be similar to that of Pakistan but the varieties from the Russian Federation are likely to be different.

The preferred bundle of imported inputs is likely to vary across importing countries. The exporters from Pakistan may take advantage of trade networks, participate in fairs and exhibitions in destination markets and promote their varieties in certain destinations. This may increase the knowledge of the varieties imported from Pakistan and lower the costs to adjust the inputs into the production process. Therefore, the destinations where Pakistani exporters have made an effort to increase the prominence of their varieties are likely to be ranked higher in terms of export value. The importers in the top ten export destinations will face lower costs to incorporate the varieties from Pakistan into their production process. Smaller importers may also introduce varieties from

destination for Turkish varieties is Europe and the Middle East, for the Russian varieties is Europe and Central Asia and for the Brazilian varieties is Latin America.

Pakistan in destinations where the fixed costs to import varieties from distant markets have been reduced. Larger importers may introduce the inputs as the core varieties in countries where the Pakistani exporters have put in effort to make their varieties as popular as the varieties from China and India. On the other hand, the varieties from Pakistan to non-regional export destinations will be different from the varieties from regional trading partners of its destination. For instance, the lower costs to incorporate varieties from regional trading partners into the production process may increase the competitiveness of the home market. The larger importers may reduce the number of varieties supplied and concentrate production on their core varieties and reduce the demand for inputs from Pakistan. The impact of exports from the respective BRIC countries plus Turkey on the exports from Pakistan is likely to differ on the importance of the export destination to total exports in each industry as well as the geographical location of the exporters.

In my regressions I control for importer characteristics, time fixed effects and variables that define the gravity equations. I control for the distance between Pakistan and its trading partners as well as the respective BRIC countries plus Turkey and the trading partners in order to determine the influence of the taste parameters of the consumers that may lead to complementary and substitution effect between the exports from Pakistan and the exports from the respective BRIC countries plus Turkey. The exports from BRIC countries plus Turkey are likely to substitute exports from Pakistan in destinations where Pakistani exports are prominent as the exporters have incurred substantial fixed costs to make their products competitive against core varieties supplied by the BRIC countries plus Turkey. On the other hand, the exports from Pakistan are likely to complement exports from certain BRIC countries plus Turkey to their non-regional destinations but not to their regional destinations. Varieties from the regional trading partners can be incorporated into the production process at a lower fixed cost which increases the competitiveness of the inputs from the regional sources. The lack of supply available from an origin that produces limited quantities, such as the Russian Federation, may lead to a shortage of a product and increase the demand from alternate sources such as Pakistan. However, the exports from Brazil mainly complement varieties from Pakistan as the Brazilian varieties and Pakistani varieties may not be considered as substitutes due to the vast geographical distance between the countries.

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1 Introduction

Export flow from developing and emerging economies have increased significantly during the last few decades and a major proportion of global trade is contributed by exports originating from the developing economies. Hanson (2012) reports that the share of exports originating from low and middle income economies in world exports doubled from 21 percent to 43 percent between 1994 and 2008. Hanson (2012) further reports that the average annual growth in exports ranged from 18 percent in China, 14 percent in India and 8 percent in Brazil, the Russian Federation and Turkey. In 2012, the export flow from Brazil, the Russian Federation, China, India and Turkey (henceforth collectively referred to as BRIC countries plus Turkey) constituted roughly 20% of the world exports. The BRIC countries plus Turkey captured a large share of the export flow into the developed economies as their producers were able to capitalize on the advantages in either large resources of cheap labor, as is the case of China and India, or abundant raw materials to provide low-cost alternatives to the products originating from other developing countries. The comparative advantage of the BRIC countries plus Turkey in the production of low-cost products and extraction of raw materials may have suppressed growth in other developing economies that would not provide similar goods at comparable prices and quality as provided by BRIC countries plus Turkey. On the other hand, the exports from BRIC countries plus Turkey could increase the ability of importers to meet greater levels of utility of the consumers in the destination markets as such consumers may require imports of similar varieties from other developing countries. The purpose of this paper is to determine the impact of the exports originating from BRIC countries plus Turkey on the exports of a developing country, Pakistan.

International trading activities are likely to be determined by production networks between firms in different countries. Such production networks may exist between firms within a geographical region as well as between firms across regions that specialize in the production of a particular type of product. Gereffi (1999) introduces the concept of different types of global commodity chains, namely buyer-driven and producer-driven, that influence trade patterns around the world. The buyer-driven commodity chains are likely to exist in the production of labor-intensive products where buyers located in developed countries sub-contract parts of the production process to the exporters in the low-wage countries. In addition, Gereffi (1999) considers producers as either original equipment manufacturers of parts and components of a certain branded product that is later assembled into a complete product by another producer or as original brand manufacturers of an

entire product and sell to a distributor located offshore. Such production networks commonly exist between producers in East Asian economies and buyers in Europe and the United States. Humphrey and Schmitz (2002) analyzes the implications of the impact of global value chains on the decision of firms to provide better quality inputs that are produced more efficiently. The imported bundle of varieties in the destination markets is likely to consist of imports from several countries as each imported variety is an imperfect substitute to an imported variety from another country and has a unique characteristic embedded within it that is exclusive to the exporting country. Varieties from multiple countries are imported to provide a wider range of products to their consumers³. In addition, the conversion from the original equipment manufacturers to original brand manufacturers has taken place in countries where producers have upgraded production technologies to be able to produce an entire product at the required level of quality demanded by a foreign producer and incorporate varieties from a larger number of countries. With the development of production networks and greater competitive pressure, firms in the larger emerging economies have upgraded their production capabilities in order to provide products that yield maximum utility to the consumers at competitive prices. As exports from the BRIC countries plus Turkey, particularly from China and India, have dominated the exports from all low-wage countries, it is likely that producers in these countries are the preferred choice for the buyers in the developed economies. The impact of the exports of BRIC countries plus Turkey is likely to determine the export flow originating from other developing economies as the varieties produced by such countries may either complement or substitute the varieties supplied by producers in the BRIC countries plus Turkey.

1.1 The Importance of BRIC countries plus Turkey and Pakistan to World Trade

Wilson and Purushohaman (2003), in their article titled 'Dreaming With BRICS: The Path to 2050', map out the tremendous increase in economic activity likely to be observed in the BRIC countries during the next 40 years. They suggest that the BRIC countries will individually outgrow many of the developed economies today and will eventually account for more GDP cumulatively than the UK, Germany, Japan, Italy, France and the US. I show in the figures on trade patterns

³'Variety' and 'product' are used interchangeably in this paper as products vary at the country-level. An importer that produces several products is likely to incorporate several varieties of imported inputs from different countries, while an importer that produces a single product is likely to incorporate a single variety from a single source country.

described later in this paper the importance of BRIC countries plus Turkey to the international trading activities. For instance, Chinese exports contribute to more than 11% of the world exports in 2012 and the contribution of the exports to world exports originating from the other countries is above 1%. In the textile, creative and leather industries, exports from China, India and Turkey contribute approximately 40% of the total exports. The imported products from BRIC countries plus Turkey are prominent amongst the products from all countries. The consumers are likely to be more knowledgeable about the quality of the varieties available from the non-regional BRIC countries relative to other non-regional trading partners^{4,5}. Consequently, the importers are likely to incorporate them in their production process at a lower fixed cost relative to all non-regional trading partners. Although, the exports from Pakistan contribute a negligible amount to the total world exports, its proportion in the total exports have been more prominent than that observed for the Russian Federation and Brazil in the textile and creative industries and more prominent than the exports from the Russian Federation in the leather industry. Therefore, even though Pakistan lags behind China, India and Turkey in the exports in the aforementioned industries, it has been able to contribute more in these industries than otherwise observed for the total industries. Although, the varieties available from a particular country imperfectly substitute varieties available in other countries, the varieties from regional trading partners are likely to be relatively similar than the varieties from non-regional trading partners as similarity of product attributes of imported inputs to domestically produced inputs is likely to bias international trading patterns. China and India, share a border with Pakistan, and Turkey shares the main religion practiced in Pakistan along with many customs and traditions. These countries may produce varieties that are similar to that produced in Pakistan. As taste parameters may dictate export flow, it is likely that consumers in the regional trading partners may strongly prefer exports from a dominant regional partner and importers may not choose varieties from the smaller developing countries. Therefore, the substitution effect could be stronger than the complementary effect from Chinese and Indian goods within Asia.

Although, low-wage economies like China, India and Brazil provide low-cost options to buyers in developed countries, it is the ability of the manufacturers within these economies to constantly

⁴The products from regional trading partners are likely to be similar to that produced domestically within the importing country and allow smaller importers the opportunity to readily incorporate them into their production process relative to the imports from non-regional trading partners.

⁵The definitions of the regions are specified by the dataset borrowed from the International Trade Centre. They are listed in Appendix A.

upgrade their production process and embed greater production efficiency at competitive prices within their products that allows the buyers to reap greater benefits. However, all firms in BRIC countries plus Turkey that have upgraded their production techniques are likely to differ in their ability to adopt such techniques. Consequently, their impact on exporters from other developing countries is likely to vary. Schmitz and Knorringa (2000) compares the production processes of exporters in the shoe manufacturing industry in China, India and Brazil and determines the obstacles faced in the upgrading of the production process. Schmitz and Knorringa (2000) states that exporters in India and China produce at a competitive price but the exporters in India have not been able to provide reliable quality to their suppliers, while the exporters in Brazil have provided quality, competitive price and flexibility in their production process but have failed to introduce innovative design which is important to compete with suppliers from Southern and Southeastern Europe. Schmitz and Knorringa (2000) describes India as a country that does not provide attractive new spaces to exporters as it is hindered by poor infrastructure and obstacles to custom clearance, while the manufacturers are further away from regions, such as East Asia and Central and Eastern Europe, that produce excellent components to allow production-sharing as well as production networking. In addition, the workers in India tend to be less flexible and willing to learn production efficiency from foreign sources. The exporters from Pakistan are likely to be the most similar to the exporters from India as the two countries share similar history, culture and tradition that influences the production process and the quality of the workers. However, the greater prominence of Indian products in the global market because of its larger market size and the number of exporters is likely to increase their adaptation to production processes more readily relative to the products from Pakistan. Therefore, the exporters from Pakistan may provide a low-cost option to their foreign buyers but may not necessarily provide greater efficiency in their flexible manufacturing processes as well as prominence in the global market that would make them the preferred choice of suppliers relative to the exporters from India, China and Brazil, and in the case for certain products, Turkey and the Russian Federation.

1.2 The Characteristics of Exporters and Importers

Scott (2006) considers the contribution of export oriented industrialization policies on three labor-intensive industries, clothing, footwear and furniture and determines their impact on economic growth. Locational agglomeration as suggested by Koenig (2009) for French firms and increased

efficiency in global value chains have allowed firms in the low-wage countries to generate substantial revenue and contribute towards improvements in the production process. The spillover effects from exporting firms are likely to influence other firms within their region, domestic as well as international, to enter the export market and supply their products to similar destination markets. Verhoogen (2008) suggests that expansion in export opportunities to developed markets is likely to result in quality upgrading by the exporters. In addition, Bustos (2011) determines that export revenues generated by the exporters are likely to finance the upgrading of technology to manufacture products of higher quality and offer greater returns. Importers that can afford large fixed costs to import several products from different trading partners may add multiple varieties to their product range in order to provide a bundle of goods that matches the highest preferences of the consumers⁶. Halpern, Koren, and Szeidl (2011) estimates a model of importers using Hungarian data and finds that larger and more productive importers overcome larger fixed costs than the smaller and less productive importers. The larger firms may be relatively abler and have a greater capacity but the smaller firms are likely to be greater in number and their products may cumulatively constitute a significant proportion of the economy. As every country provides varieties that are imperfect substitutes, the consumers may demand varieties that are not supplied by BRIC countries plus Turkey but rather by other developing economies. Therefore, this may provide opportunities to exporters in other developing countries to supply their own varieties. On the other hand, smaller importers that may not import multiple products from several trading partners because of their inability to pay the fixed costs associated with imports may be restricted to trade with regional partners and any change in the demand for variety imported may require them to substitute imports from one country with imports from another country. However, as per Melitz (2003) and several studies on the relationship between firm heterogeneity and exporting activities that followed, the exporters incur fixed costs to increase the number of trading partners, it is likely that exporters contribute to lower fixed costs incurred by the importers to incorporate their products into the production process and increase the availability of their products in certain markets. For instance, Pakistani exporters may hold trade fairs and exhibitions in developed countries to increase the popularity of

⁶I assume firms incur fixed costs to produce and undertake trade in each direction. This assumption allows to split firms into smaller and larger firms depending upon the ability to pay the fixed costs to participate in each trading activity. However, I consider quadratic-linear preferences of the consumers. The firms are likely to face a linear demand curve for each of its products as that allows firms to introduce multiple products. Markups across varieties offered by the firms are likely to vary and the firms decide the number of products to produce. The CES functions take product scope as given but quadratic-linear preferences allow for firms to change their product scope. In competitive markets, the firms will concentrate their sales in the core products and substitute away from their peripheral products. This explained in detail in Manova and Zhang (2013).

their varieties. Krautheim (2012) considers the benefits of export networks established to promote the exports in the destination markets. If the importers are willing to introduce new varieties to their consumers, it will be either required to substitute the varieties currently supplied or complement the varieties by incorporating them into the production process. As the ability to import from different trading partners requires firms to undertake investments that incorporate production techniques for a specific variety, firms are likely to face different cost structures dependent on the availability of the foreign inputs in the market. Therefore, the inputs from Turkey and the Russian Federation may be adjusted with relatively ease into the production process of a German importer than inputs from China and India. However, the benefits of importing from China and India may be substantially larger as their varieties may be in greater demand as the knowledge of the consumers on such products is likely to be relatively well-established. The importers that import from countries located at a further distance may need complementary assets as well as varieties in order to take advantage of the benefits that can be availed.

1.3 The Objective of the Paper

To the best of my knowledge, there is no detailed study on the impact of the export flow of the BRIC countries on the export flow of Pakistan. However, few recent studies have determined the impact of the export flow of China on the export flow of other countries. Palley (2003) tackles the impact of the growth in exports of an emerging economy, China, to the United States on the exports of industrialized Asian countries. Shafaeddin (2002) determines the impact of the accession of China to the World Trade Organization on the exports of several developing countries and finds that China exerts pressure on the exports originating from Pakistan. Eichengreen, Rhee, and Tong (2007) determine that exports from China has crowded out the exports from its less developed Asian neighbors, particularly in the demand for consumption goods. This may suggest that exports from China compete against the exports from Pakistan as the consumption goods constitute majority of the exports from Pakistan to the developed countries. Gampat and Weeratunge (2009) consider the adverse impact of the phasing out of the Agreement on Textiles and Clothing in January 2005 on the exports of several least developed Asian countries as their exports to the European Union and the United States within the textile and clothing industries declined while China recorded an impressive growth. Athukorala (2009) suggests that the integration of China into global production networks may provide other countries with opportunities to expand

their own capability of producing greater exports within their areas of specialization rather than crowd out their exports. Hanson and Robertson (2008) consider the developing countries that have a similar intensity of exports contributed by their manufacturing sectors as China and concludes that the impact of Chinese exports is minimal on such countries. Further, they determine that the competitive pressure is not as strong on the export flow from Pakistan as is observed for the export flow from Vietnam and Bangladesh. Lall, Weiss, and Oikawa (2005) suggest that Chinese exports may not reduce exports originating from the Latin American economies as the type of goods exported by the Latin American economies are not similar to the exports that originate from China. In addition, Garcia-Herrero, Fung, and Nigrinis (2013) confirm some evidence of the impact of exports from China on the exports from Latin American economies as well as the increase in the concentration of their exported products. McDonald, Robinson, and Thierfelder (2008) suggest that the growth in exports originating from developing Asian countries have increased the exports in primary products from other developing countries but has hindered their export flow of manufactured goods. The purpose of this paper is to add to the literature a detailed analysis of the impact of exports originating from BRIC countries plus Turkey on the exports of Pakistan as such a study would determine the role of larger emerging economies that have dominated the world export flow on a developing country that specializes primarily in the production of labor-intensive goods.

In this paper, I will determine the pattern of the impact of exports from BRIC countries plus Turkey on the export flow of Pakistan within the group of major export destinations of Pakistan as well as the regional and non-regional destinations of the respective BRIC countries plus Turkey with the help of OLS and IV estimations. Every country is likely to produce different varieties but the level of similarity between varieties is likely to decrease for countries that belong to different regions as the varieties cater for different taste parameters. The varieties produced in Pakistan are likely to be similar to the varieties produced in China and India but dissimilar to the varieties produced in Brazil. Within a region, the varieties from the larger emerging economies are likely to be more prevalent than the varieties from smaller non-regional developing economies. Therefore, the Chinese and Indian varieties are likely to be more prevalent in Asia as well in non-Asian countries than the varieties available from Pakistan and the varieties from Brazil are likely to be relatively more prominent in Europe and Latin America than the varieties available from Pakistan. However, as Pakistan is a regional trading partner of Asian countries, the exports from Pakistan are likely to be a preferred choice relative to the exports from the Russian Federation and Brazil within

the Asian countries, particularly for importers that produce low-cost goods. The importers in the buyer-driven commodity chains are likely to be either multi-product firms or single product firms and the former type are likely to be larger as well as abler than the latter type of firms. I consider textile, creative and leather industries in this paper as the exports from these industries contribute substantially to total exports originating from Pakistan⁷. The prevalence of China in global exports across all industries and of India in the textile and creative industries suggests that they have embedded qualities within their varieties that increase consumer welfare and hence increase the ability of importers to earn larger export revenues and expand their product range. Importers may be willing to introduce new varieties as they undertake product innovation in order to further maximize their profits by providing a product range that is closer to the ideal range demanded by consumers. The fixed costs to import varieties from regional sources and from non-regional sources may vary, with the costs for the former likely to be significantly lower than the costs for the latter as producers have greater knowledge on the inputs from regional trading partners because of their similarity with the domestically available inputs. Therefore, the proliferation of the imported varieties from the regional trading partners will increase the level of competition within the home market and compel the larger importers to reduce their product range but increase the quality of their core varieties⁸.

2 Theoretical Discussion

2.1 Buyer-driven Commodity Chains

Gereffi (1999) differentiates between buyer-driven commodity chains and producer-driven commodity chains. For the purpose of this paper, I assume that international production networks that

⁷The products for each industry is listed at the HS 6 digit-level in the supplement available online. The creative industry encompasses a wide definition of industries. A report on creative industries and micro and small-scale enterprises by the United Nations defines creative industries as "those industries which have their origin in individual creativity, skill and talent and which have the potential of wealth and job creation through the generation and exploitation of intellectual property." UNCTAD further defines the creative industries as "complex and heterogeneous field" that "represent one of the most dynamic sectors in global and trading system." Therefore, the creative industries are likely to include products that are exclusive to each country in terms of characteristics but may be closely related to products in countries that share similar cultural and traditional backgrounds.

⁸Although, smaller firms may be less abler and have lower capacity of production, the large number of smaller firms increases the presence of regional products within a country. On the other hand, the smaller firms will refrain from adding new varieties from the non-regional larger trading partners as the competitive pressure from the larger firms will make such a strategy profitable.

involve producers in emerging and developing markets are characterized by buyer-driven commodity chains instead of producer-driven commodity chains. In order to define the production process associated with buyer-driven commodity chains, Gereffi (1999) and Rauch (2001) determine the relationships between factories in developing countries and distributors and retailers in developed countries. The buyer-driven commodity chains are associated with labor-intensive industries as branded distributors and retailers in developed countries may provide designs and specifications to overseas factories that assemble parts or produce goods within a set of predefined parameters. On the other hand, producer-driven commodity chains are associated with capital-intensive industries in which the buyers within the domestic economy are likely to control the designs and specifications, sub-contract their production process to overseas subsidiaries and subcontractors. In the buyer-driven commodity chains, the buyers in developed countries are likely to outsource production to low-wage countries in order to take advantage of lower costs of production. The model employed in this paper assumes that buyers in the importing countries are likely to set the demand for the varieties produced in various countries and are likely to purchase supplies not only from the BRIC countries plus Turkey but other developing countries as well. However, the size and the ability of the importers in the developed countries will be an important factor that determines their ability to seek varieties from different sources.

The BRIC countries plus Turkey experienced significant economic growth during the last couple of decades that has promoted industrial upgrading which Gereffi (1999) defines as the shift towards production of higher value-added manufacturing activities. Verhoogen (2008) suggests that improvements in the export opportunities through exchange-rate shocks to exporters in the developing countries are likely to lead to technology upgrading as well as higher wages paid to workers within their industry. The industrial upgrading in these economies allows exporters to replicate production processes undertaken in developed countries which require more complex production tasks and involve forward and backward linkages with producers in other developing countries. The shift in the larger economies may have potentially benefited exporters in low-wage countries that produce low-cost goods as importers in trading partners demand greater variety of products. In addition, I consider buyer-driven commodity chains to be more prevalent in the exports originating from Pakistan as it is considered a relatively low-wage country that can specialize in the production of low-cost goods within the textile, creative and leather industries. On the other hand, Pakistan may have developed a competitive edge in certain products and provide quality that is not available from other countries. Importers of multiple products may choose to whether incorporate varieties

from Pakistan by adding varieties either with or without dropping varieties from other countries. If the exports from Pakistan provide additional varieties to the importers, they can adjust their production techniques to incorporate additional varieties profitably. On the other hand, if importers are limited in the expansion of their product range, they will be compelled to replace their varieties with the varieties from other countries such as Pakistan. Therefore, the availability of varieties from one country over another as well as the ability of the importers to increase their product range by incorporating the varieties into the production process will play a role in defining whether the products are complements or substitutes.

2.2 Introducing the Model

Armington (1969), Krugman (1979) and Melitz (2003) form the basis of the model discussed in this paper. In addition, Eckel, Iacovone, Smarzynska Javorcik, and Neary (2011) and Manova and Zhang (2013) set the linear demand functions faced by multi-product firms that define their ability to supply various varieties to their consumers with varying markup obtained on each variety purchased from different countries. Dixon and Rimmer (2012) derives a model, appropriately titled 'Armington, Krugman and Melitz Encompassing' model, based on the combination of the their models. The Armington model conceptualizes the assumption that goods produced across countries are imperfect substitutes. The Krugman model considers monopolistically competitive firms as it introduces the assumption that fixed costs are incurred by firms to operate and sell their output in the domestic market. Every firm is likely to sell their goods at a positive markup and the industry profits will be split evenly across all firms. The Melitz model adds firm-level heterogeneity into the Krugman model as it considers that every firm faces additional fixed costs to participate in the export market. In addition, it introduces the ability of firms to increase the number of trading partners rather than just the intensity of exports to each existing importer⁹. Therefore, the most productive of the firms will participate in the export market and will produce the varieties available in each country at the lowest cost. As the number of firms increases, the extensive margin of exports also rises as firms expand their trading relationships to different countries. The market size will positively influence the number of firms that exist within a country. The larger a country,

⁹Exporters and importers draw their initial productivity parameter from a common distribution within each country. Firms are likely to be either exporters or non-exporters and importers are likely to be either larger importers or smaller importers.

the greater the mass of exporting firms and more prominent their varieties in global trade than varieties available from the smaller countries. The quality of the technology that converts labor into output differs across countries that not only produce different varieties but also implies that countries with poorer technology require more units of labor to produce a unit of output and offer lower wages. The lower costs of production may provide incentives to the importers to purchase the varieties that otherwise lack the prominence and quality observed in products available at higher costs from other countries, particularly if the importers intend to introduce low-cost alternatives to their main products.

2.3 The Importers

I assume that the importers have to pay substantial fixed costs to incorporate the imported intermediate inputs into their production process and to establish trading relationships with internationalized firms located at a further distance than their counterparts that purchase only from the domestic suppliers. The importers in the destination countries of exports from Pakistan can be categorized into multi-product and single product firms. I assume that all firms considered are importers and firms that draw a low productivity parameter are defined as single-product firms and firms that draw a high productivity parameter are multi-product firms. The single-product firms are likely to be less able firms that can only import from regional trading partners as they cannot afford to incur the fixed costs necessary to adopt inputs from more distant markets and inputs that vary significantly in taste parameters from the inputs available domestically. Halpern et al. (2011) describes the characteristics of importers in Hungary and confirms that larger and more productive importers are more likely to overcome larger fixed costs associated with greater number of products imported. However, low-cost alternatives may allow single-product firms to substitute varieties from regional trading partners with varieties from other countries, particularly if the exporters incur large fixed costs in order to increase the knowledge of their products within the destination markets¹⁰. On the other hand, Manova and Zhang (2013) consider a linear demand function for the multi-product importers which can benefit from either lower marginal costs of production for certain varieties or from expensive varieties that encompass better quality. Importers

¹⁰This is likely to occur in the top ten export destinations of Pakistan as exporters have promoted their products to the importers and have contributed to the cost in adjustment of their varieties to the demand of the consumers.

alter their product scope towards their core products in competitive markets¹¹. This decision of multi-product firms is dependent upon the preference of the consumers. I assume that importers of goods from Pakistan are likely to seek low-cost alternatives to their primary products for consumers who prefer cheaper alternatives to the varieties supplied. Importers add such varieties to their product range in order to increase their market share. This linear demand function allows firms to introduce peripheral products that are different from their core products and increases demand in varieties from smaller developing countries. However, in competitive markets where the inputs from a certain country are easily available, such as regional trading partners, multi-product importers may prefer trading more with countries that supply their core varieties¹². The imported varieties from the larger emerging economies, such as China and India, are likely to provide the greatest returns to the importers as they are more likely to be related to the core products demanded by their consumers, which in turn will provide importers the revenue to expand the range of products as well as purchase a larger proportion of inputs that are of better quality and closer to the core variety¹³.

Kasahara and Lapham (2013) find that firms which import foreign inputs and export their final products are likely to be the most productive of all the firms present within an economy. Imported inputs increase productivity levels of a firm as better input efficiencies will lead to greater output produced by the firms. Importers are likely to reveal better firm characteristics than observed for firms that are not internationalized. Bernard, Jensen, and Schott (2009) analyze the dynamics of US firms that participate in international trading activities and find that the importing activities are heavily concentrated amongst a few firms. Bernard et al. (2009) find that approximately fifty percent of the importers source their foreign inputs from one country and that approximately one-fifth of the importers have ten or more trading partners. In addition, a large share of importers and import value is associated with import from lower middle income countries such as China. Serti and Tomasi (2008) find that importers with trading partners in multiple

¹¹Redding (2011) and Mayer, Melitz, and Ottaviano (2011) discuss the reallocation across products as multi-product firms face shock that affects their production.

¹²Dhingra (2011) considers the impact of trade liberalization on the product scope of exporters, in which firms may be compelled to drop varieties and concentrate production towards their core products in order to avoid cannibalization of their own sales of core varieties. Therefore, given the availability of the regional varieties to smaller importers, increased competition from regional inputs purchased by the smaller importers may reduce the need for imported varieties from Pakistan as the larger importers will cut their product range.

¹³The technological improvements of importing from the larger emerging economies provide advantages associated with process innovation which is likely to be undertaken by firms that face cuts in their product range.

origin countries show relatively better firm characteristics relative to non-internationalized firms. Further, the more productive firms are also likely to import from destinations located at a greater distance as they will be able to afford the larger fixed costs associated with trading with remote locations. Such firms are likely to be less familiar with the customs, traditions and institutions of the source countries. Therefore, firms with a higher level of productivity are likely to trade with a larger number of countries as they are better able to adjust inputs with varied taste preferences into their production processes. On the other hand, the less productive firms that can trade with only a few trading partners are likely to be limited to their regional trading partners that provide similar varieties to that available domestically and require lower fixed costs to incorporate into their production process. The varieties from regional countries allow smaller importers to become competitive against the larger importers and compel the larger importers to drop varieties and produce only their core products.

Hummels and Lugovskyy (2005) suggest that richer consumers are willing to pay more for varieties that match their ideal preferences. Hence, firms in richer countries may be required to import varieties from a larger number of countries. As I assume that every country produces a variety that is an imperfect substitute to varieties available in other countries, multi-product firms are likely to add varieties imported from other countries that match the preferences of their consumers and drop varieties that otherwise have become obsolete. Considering the proposition put forward by Feenstra and Ma (2007) on the expansion of the varieties produced by the multi-product firms, additional varieties are likely to be produced as well as imported by firms that have access to larger markets. As firms replace varieties that are closer to the ideal preferences of the consumers, imports from Pakistan may complement imports from some countries and substitute imports from other countries as firms match the ideal preferences of their consumers¹⁴.

Eckel et al. (2011) consider flexible manufacturing processes that allow firms to undertake either a cost-based or a quality-based production configuration as firms aim to produce a product range that is closest to their core competence. The firms that prefer to achieve cost-based competence produce their core products at the minimal marginal costs and the firms that prefer to achieve quality-based competence produce their core products at the highest quality. The incentive

¹⁴The change in the product range is likely to occur in markets where the demand is greater as the impact of fixed costs to switch trading partners or expand trading relationships is alleviated when firms have access to larger markets.

to increase investments in the improvement of the quality of the varieties produced increases as similar products penetrate into the market. I assume that exports from Pakistan are more likely to provide cost-based competence to the importers as firms can take advantage of low-wages and the expertise in the production of selected varieties in the textile, creative and leather industries. Bernard, Redding, and Schott (2011) suggest that the variation in the sunk costs to produce a particular product due to demand and supply shocks induces firms to add products closer to their core range of products and drop products away from their core range of products in order to provide them with optimal returns. According to the authors, on average, majority of U.S. manufacturing firms alter their product mix and roughly 45% have added and dropped at least one product to their product range. Therefore, the older and more productive firms that have churned products for many years are likely to import a greater variety from a larger number of countries.

Chaney (2013) incorporates a gravity model into the network of input and output linkages and forms the basis for the model discussed in this section. In the importing country, the most productive importers are likely to be multi-product firms that not only import from countries located at a greater distance relative to the less productive importers within an economy but also import a larger number of varieties. The ability of importers to import inputs from greater distances provides them with greater options to select inputs that offer not only with greater production efficiencies due to lower costs but also provide them with varieties that are relatively newer to the market and of a better quality than those already available. However, long distance relationships may involve production risks with remotely located factories and lower knowledge of customs and traditions in the origin countries that may hamper the production process of importers. Foreign inputs have to be adjusted into the production process and the fixed costs associated with imports from non-regional trading partners may be significantly greater than the imports from regional trading partners. On the other hand, suppliers within the region may have greater knowledge on the culture and traditions of their neighborhood than non-regional suppliers. Profits that can be generated due to better quality, exclusivity of the inputs and production efficiency from inputs sourced in countries located at a greater distance may increase the incentives of importers. For instance, an Italian firm that imports from China may benefit from either greater quality or receive cost advantage which may not be possible for firms that import from Albania and Macedonia because of the technology advances made by the Chinese exporters that provide products closer to the ideal preferences of the consumers. The 'love for variety' present within the consumers in an economy may increase the preference for the Chinese varieties for which the consumers are willing to provide a larger

markup on the costs. Therefore, larger firms that can afford products from distant countries may have to undertake greater sunk costs initially in order to access their intermediate inputs but will ultimately benefit from the extra revenue generated as they increase their scope of the market¹⁵.

2.4 The Exporters

A source country with a larger market size is likely to have a larger number of exporting firms than a source country with a smaller market size. It is also likely to supply greater volume as well as varieties of products, where each variety is likely to embed technology specific to that country. The BRIC countries plus Turkey are each characterized with large market size. The exports originating from the BRIC countries plus Turkey are prevalent amongst the total exports of the world. Importers are likely to have a preference for the imports from BRIC countries plus Turkey as the product characteristics and product quality are likely to be well-known due to their prevalence in the total world exports. The producers within the BRIC countries plus Turkey are likely to be the preferred choice for firms in developed countries that seek to outsource their production. In addition, the producers in the BRIC countries plus Turkey are likely to incorporate industrial upgrading within their production tasks and in turn undertake complex production techniques that involved forward and backward linkages with producers in other low-cost developing countries. The evolution of the production process in the BRIC countries plus Turkey may require networks with producers in several developing countries. This will increase the complementary effect between the international trading activities of a respective BRIC country plus Turkey and another developing country. On the other hand, exports from a respective BRIC country plus Turkey to regional destinations may be preferred due to cultural preferences and trading relationships in their traditional markets. Therefore, a regional trading partner of a BRIC country plus Turkey may substitute imports away from other developing countries as consumers may have a taste preference for the products of certain origins.

¹⁵I control for the distance variable in my regressions in order to isolate the impact the remoteness of the source country may have on the trading patterns adopted by the importers. Larger importers are likely to adjust their production process in order to sell products that match the ideal preferences of the consumers relatively more readily than the smaller importers that may struggle with the large fixed costs associated with the adjustments. Therefore, it is likely that the export flow from Pakistan is likely to be dictated by the consumer preferences on varieties that it either complements or substitutes.

In Pakistan, a hierarchy within firms on the basis of their level of productivity is likely to exist. The most productive firms are likely to be exporters and the less productive are likely to be non-exporters. Firms that participate in the export market incur additional legal, marketing and distribution costs apart from greater variable costs to transport their varieties than the firms that sell only to domestic market. On the other hand, the exporters that sell their products to the regional destinations may incur lower fixed costs than the exporters that sell their products to the non-regional destinations due to vast differences in the taste parameters in the latter set of countries. For the purpose of this paper, I assume that the importers bear the cost of adjusting the varieties into the production process.

Exporters in one country may develop business networks with exporters in other countries to promote their products in foreign markets. Krautheim (2012) suggests the exporter networks increase the elasticity of trade flows with respect to variable costs as the fixed costs to participate in the export market decreases. The exporter networks magnify the impact of distance on the number of exporters to a particular destination¹⁶. An improvement in the quality of exporter networks that strengthens relationships between buyers and sellers in various markets is likely to increase export opportunities for the sellers. For instance, an exporter in China that sells to a particular exporter in Europe may establish business networks with exporters in Pakistan that sell complementary varieties in order to promote their own sales in the European markets. Therefore, the benefit of exporter networks will be experienced by Chinese exporters as well as Pakistani exporters. A drop in variable costs incurred by the Chinese exporters will magnify the benefits received by all the exporters as an increase in export volume by Chinese exporters will also increase the volume of trade in the complementary products produced by the Pakistani exporters. The exporters from Pakistan, as suggested by Koenig (2009), are likely to develop preferred destinations through agglomerations with other regional exporters that sell similar varieties, such as in China and India. The exporters may participate in trade fairs and exhibitions in several countries that increases the knowledge of their products and subsequently make their products more prominent. Therefore, even in competitive environments, importers may introduce new varieties from Pakistan in order to complement their products from other BRIC countries plus Turkey. On the other hand, the exporters from Pakistan may promote their products to such an extent that the proliferation of the

¹⁶With exporter networks, the fixed costs to participate in international trading activities will fall. Hence, the number of exporters will increase but the impact will be magnified to destinations located at a closer distance. I include the distance variable in my regressions to control for the impact of the geographical distance between the trading partners.

knowledge on the inputs may substitute the varieties from the other larger economies and have a negative relationship between the exports from Pakistan and the exports from a respective BRIC countries plus Turkey.

2.5 Summary of the Theoretical Discussion

The larger emerging markets, such as the BRIC countries plus Turkey, are likely to influence the export patterns of Pakistan. Every country produces a variety of a product that has some unique characteristics. Varieties from different countries are considered as imperfect substitutes. The importers are likely to be the most familiar with varieties originating from their regional trading partners and the varieties originating from the larger emerging economies that are prominent in world exports. The fixed cost associated with the setting up of trading relationships with regional trading partners is likely to be lower than the fixed cost incurred to import from non-regional trading partners. Therefore, the smaller importers are likely to prefer varieties from destinations that can be incorporated into the production process at lower costs. The larger importers are likely to benefit from the technology embedded within the varieties from the larger emerging economies and the inputs provide the greatest markup to the importers. For instance, the imports from China and India are likely to be prominent in world exports in the textile, creative and leather industries and will be the preferred choice of larger Western European importers. On the other hand, the smaller Western European importers will prefer varieties from Turkey and the Russian Federation as they will be similar to the varieties available domestically. However, the varieties from China and India are likely to be the preferred choices for the larger and smaller importers in the Asian region only as they are relatively easier to incorporate into the production process than for the importers in the non-regional countries. In Asia, the varieties from China and India are likely to substitute the varieties from the other smaller Asian countries.

I assume that the larger emerging markets have a greater mass of exporters and generate widespread availability for their products across their trading partners. This increases the knowledge on the quality of the inputs provided by the larger emerging markets in the global market. Multi-product importers have the ability to undertake the fixed costs to establish trading relationships across several countries. Establishment of trading relationships with the exporters in

larger emerging economies can also benefit the importers through the improvement in the efficiency and the quality of the products. Exporters that generate substantial revenue rapidly evolve their production techniques and product characteristics to meet the demand of their consumers. Consequently, the importers with multiple trading relationships are likely to generate more revenue and add varieties from that are relatively less prominent. Importers are likely to demand varieties that match the ideal preferences of the consumers in order to fulfill their love for variety. Single product firms prefer to trade with regional partners because of the similarity of the varieties with domestically produced varieties and may create pressure on the larger firms as they purchase inputs from a source country at close proximity available at lower fixed costs. The ability of smaller single product firms to proliferate the market on the aggregate by accumulating the quantity supplied due to their larger numbers is likely to create competitive pressure on the larger importers. This may force the larger importers to concentrate production on their core variety and drop secondary varieties from smaller developing countries. On the other hand, the exporters themselves may promote their exports in certain markets than others to increase the prominence of their varieties and an increase in the knowledge on their varieties in the destination market may either complement or substitute varieties from other countries. In this paper, I use econometric specifications that control for importer characteristics as well as gravity equations between the trading partners in order to determine whether the exports of the BRIC countries plus Turkey increases or decreases exports of a relatively smaller developing country, Pakistan, in selected industries.

3 Empirics

3.1 Data

The data on bilateral export flow of Pakistan and the BRIC countries plus Turkey to their respective destinations is borrowed from International Trade Center¹⁷. The classification, 'total industries' takes into account the accumulated export flow across all HS chapters. The textile, creative and leather industries take into account the total export flow by the respective industries¹⁸. In Appendix A1, I list all the export destinations of Pakistan. In Appendix A2, I list the top ten

¹⁷This dataset is available at <http://www.trademap.org>.

¹⁸The HS code at the 6 digit level for textile, creative and leather industries are listed in the supplement on product codes available at <http://sites.google.com/site/aadilnakhoda>.

export destinations of Pakistani products by export value at the industry-level. In Appendix A3, I decompose the export destinations by region of the respective BRIC country plus Turkey. In Appendix A4, I summarize the number of export destinations for each industry. It is interesting to note that Pakistan reports positive export flow to almost all countries of the world in the textile industry. The number of export destinations drops for the creative industry and is the least for the leather industry. This is as expected as the majority of the products that originate from Pakistan belong to the textile industry across all years from 2003 to 2012 and is likely to have the greatest penetration in terms of the number of trading partners.

In Appendix B, I list the variables used in the estimations below and their respective source. The variables account for the market size and the level of economic development of the importing countries, the average shipment costs incurred by the importing country and free trade agreements with Pakistan. I also include some variables that may account for the gravity between trading partners such as distance and colonial relationships. One of the major features of the three industries is that the products are likely to be homogeneous across countries, which makes them sensitive to the transportation costs¹⁹. The distance variable is likely to determine transportation costs as it accounts for the remoteness of the trading partners²⁰. Therefore, I consider not only the distance of Pakistan to its trading partners but also the distance of the respective BRIC country plus Turkey to the particular partner of Pakistan in order to determine the impact of the export flow of the respective BRIC country plus Turkey on the export flow from Pakistan. The role of the distance variable is explained in greater detail in the next section. In addition, the average costs to import takes into account the fees and costs to complete the procedure of importing a good, such as documentation and transportation within the borders of the importing country.

3.2 Econometric Specification

The econometric specification is similar to Eicher, Henn, and Papageorgiou (2012) as they sum up the various methods employed in the literature to obtain the most effective gravity equation. However, I include importer characteristics along with variables that account for multilateral re-

¹⁹The labor-intensive nature of the products produced in Pakistan can be a contributing factor to the homogeneity of the goods available in Pakistan, even in the relatively less homogeneous creative industry.

²⁰For simplicity, I assume that the transportation costs between the countries is directly proportional to the distance between the trading partners.

sistance of trade such as distance, geographical constraints and historical linkages between trading partners. If exports to several countries are determined by buyer-driven commodity chains as described earlier in this paper, it is likely that some of BRIC countries plus Turkey may share similar trend in the export value amongst themselves as well as with Pakistan, particularly if the demand is mainly created by the large retailers, marketers and manufacturers within importing countries. In addition, the buyer-driven commodity chains may generate greater trade with the respective BRIC country plus Turkey due to the cost advantage of importing from low-wage countries such as Pakistan. This pattern may result in an *endogeneity bias* as the demand of Pakistani exports results in an increase in the demand for exports from larger emerging economies that are likely to provide the core product to the importers. The endogeneity bias requires the instrumental variable estimation as an alternative method of estimation to the OLS estimation also employed in this paper.

The OLS regressions can be expressed as:

$$Y_{pit} = B_0 + \beta_1 * Y_{bit} + \beta_2 * Dist_{pi} + \beta_3 * Z_{it} + \alpha_t + \epsilon_{pit} \quad (1)$$

where Y_{pit} is the export flow between Pakistan and a particular export destination, i , and Y_{bit} is the export flow between a respective BRIC country plus Turkey to export destination, i . $Dist_{pi}$ accounts for the distance between Pakistan and its export destination, i . Disdier and Head (2008) examine approximately 1500 distance effects and conclude that the effect of distance between trading partners on international trading activities has been persistently high and only a small percentage of the variation in the distance effect can be explained by the sampling error. Eichengreen et al. (2007) employ a similar instrumental variable strategy to this paper to determine the impact of the growth of exports of China on other countries. However, the estimation strategy in this paper involves cross sectional variation of the export flow across export destinations rather than a time series analysis that studies the impact of *growth* in export flow. Z_{it} is the importer-level characteristics listed in Appendix B. α_t are the time fixed effects in order to control for shocks such in the commodity prices and global economic activity. The time fixed effects will reduce omitted variable bias due to trade policies introduced by the government in order to enhance trade and technological changes that may improve the ability of an exporter to produce more effectively. ϵ_{pit} is the error term and normalized at $(0, 1)$. The inclusion of the importer-level control variables aims to reduce the impact of importer heterogeneity.

One major cause of endogeneity, reverse causality, between the export flow of a respective BRIC country plus Turkey and the export flow of Pakistan is likely to be the desire of the importer to increase its purchases from a larger emerging economy with the profit it generates after fulfilling the demand of the consumers for the complementary Pakistani products. On the other hand, a popular variety may substitute other varieties in countries if the popular variety from the BRIC countries plus Turkey caters for preferences that are not satisfied by the variety from Pakistan that takes up production capacity and leads to lower production of the popular variety. For example, the Turkish varieties maybe popular in certain parts of Eastern Europe and are not complemented well by the non-Turkish varieties. Importers in countries that import more of the non-Turkish varieties are likely to substitute their Turkish varieties and importers that import more of the Turkish varieties are likely to substitute the non-Turkish varieties. Relatively lower fixed costs to incorporate similar varieties into the production process may lead to this endogeneity effect. This is likely to be the case if the larger emerging economy and Pakistan share many similarities based on their geographical location, such as certain product attributes that attract consumers from closely located trading partners and bias the relationship between export flow from a larger emerging economy and that from Pakistan. This biasness is likely to be due to the distance of the trading partners as importers in regional countries may be less willing to substitute their imported varieties from a regional partner. Consumers may have a preference for products from countries located at a closer distance. For instance, Korean, Thai and Indian consumers may prefer Chinese products due to their close proximity to China and other Asian countries and will substitute the varieties that are not from China. Countries that import more from Pakistan are likely to import less from China, enforcing the substitution effect. Therefore, the inclusion of an excluded variable in the first regression, the bilateral distance between the trading partner and the respective BRIC country plus Turkey, will control for the bias that is a result of the location of the destination market to Pakistan and the larger emerging economies. The idea is to isolate the preferences of consumers created by the geographical location of their trading partners as any gain in surplus from imports from Pakistan may be diverted to increase imports from a larger emerging economy because of the closer proximity of the suppliers²¹. The result of the significance of the exports of the BRIC countries plus Turkey on the exports of Pakistan should be because of the taste preferences of the consumers rather than the distance of the supplier to the destination market. The

²¹As is discussed in the model above, the demand for Pakistani products by the importers will be generated by the surplus of revenues collected from the trading relationships with the larger emerging economies.

fixed costs incurred by the exporters and the importers to penetrate the destination market that are determined by the taste preferences of the consumers and the similarity of the varieties with the domestically produced varieties rather than the distance between the trading partners play an important role to promote international trading activities. In addition, for the distance variable to be a suitable candidate, the distance of the larger emerging economy from the trading partner is unlikely to influence the export flow from Pakistan into the trading partner directly as any effect on the exports of Pakistan will be through the exports of the larger emerging economies.

Varieties from countries such as India, China and Turkey are likely to have more similarities with the varieties from Pakistan than the varieties from the Russian Federation and Brazil. If the weak instrument test fails to reject the weakness of the excluded instrument, the distance of the respective BRIC country plus Turkey to the trading partner is rendered insignificant due to geographical location of the respective BRIC country plus Turkey in relation to the geographical location of Pakistan²². The weakness of the excluded instrument may be a result of a high correlation between the distance of Pakistan and the distance of the respective BRIC country plus Turkey to their trading partners, particularly if there is similarity in the pattern of the export flow between the two countries. For instance, if Pakistan, India and China hypothetically rank the US as their top trading partner followed by Germany and the United Kingdom in the textile industry, the distance variable of India and China in the first stage regression may be highly correlated to the distance from Pakistan. On the other hand, the distance variable is a good predictor of the export flow after holding the distance between the trading partner and Pakistan constant if the weak instrument test is rejected. As the excluded instrument will control for the transportation costs and the fixed costs incurred because of the distance between the trading partners and suggests the importance of consumer preferences and product attributes that are independent of distance, it is reasonable to employ it in this paper²³.

²²One reason the distance variable may not be an effective excluded instrument for regional trading partners if the center used for the measurement of the distance variable may not be at a close proximity to the region housing majority of the export based industries, particularly for the BRIC countries plus Turkey as they have significantly large land mass. For instance, as Cassey and Schmeiser (2013) suggests, there are several exporters in the Russian Federation that are located closer to the Asian countries than their main trading partners in Europe. Eichengreen et al. (2007) describes the case of exports to Vietnam from China as Vietnam borders the southeastern industrial zone of China but is at a considerable distance from the center used to measure the distance. However, this discrepancy in distance measurement may play a much smaller role for non-regional trading partners.

²³The smaller importers are likely to consider product attributes that are independent of the distance to the respective trading partners. For instance, consumers may share similar taste preferences in the source and the destination countries and the varieties across the countries cater for the similar preferences such that a variety can

The first-stage regression for the instrumental variable estimation can be expressed as:

$$\widehat{Y}_{bit} = B_0 + \delta_1 * Dist_{bi} + \delta_2 * Dist_{pi} + \delta_3 * Z_{it} + \omega_t + \mu_{bit} \quad (2)$$

where \widehat{Y}_{bit} is the predicted value for the bilateral export flow between a respective BRIC country plus Turkey, country b , and export destination of Pakistan, i , at time t . The $Dist_{bi}$ is the excluded instrument that determines the distance between the respective BRIC country plus Turkey, country b and a particular export destination, i . The other variables are the same as in Equation 1. μ_{bit} is the error term and normalized at $(0, 1)$. The distance variable varies across trading partners rather than the time period. This fits well into the model as I consider variations across trading partners rather than across time periods.

The first-stage regression controls for the distance of the respective BRIC country plus Turkey and Pakistan to its trading partner. The treatment of distance as a constant eliminates the impact of transportation costs on international trading activities between countries and the trading partners as they are considered equidistant to Pakistan as well as to the respective BRIC country plus Turkey. The distance of Pakistan to the trading partner is expressed in the second-stage regression.

The second-stage regression can be expressed as:

$$Y_{pit} = B_0 + \beta_1 * \widehat{Y}_{bit} + \beta_2 * Dist_{pi} + \beta_3 * Z_{it} + \alpha_t + \epsilon_{pit} \quad (3)$$

The variables in the second stage regression are similar to the ones used in Equation 1. In the next section, I will discuss the results of the OLS and IV regressions conducted as per the equations above.

3.3 Results

The discussion below is divided into two sections. Section 3.3.1 discusses the figures and section 3.3.2 discusses the tables. The discussion on the figures suggests the pattern of international trade into the top ten export destinations of Pakistan by industry as well as the regional trade of the

be incorporated into the production process of the importers with relative ease.

BRIC countries plus Turkey. The discussion on the tables explains the impact on the exports of Pakistan from the exports of the respective BRIC country plus Turkey.

3.3.1 Discussion on Figures

In Figure 1, I show the country-wise contribution of total world exports. China has the largest contribution to world exports in total industries amongst the countries considered. The percentage of exports from China to world exports is expressed on the right-hand axis. The Russian Federation ranks second amongst the BRIC countries plus Turkey, followed by India and Brazil. Exports from India overtook the exports from Brazil around year 2009. Export value from Turkey and Pakistan contribute the least to world exports amongst the sample of countries.

In Figures 2, 3 and 4 , I plot the contribution of world trade in textile, leather and creative industries. In Figure 2, Pakistan contributes more than Brazil and the Russian Federation, while the contribution of India to the world exports in the textile industry experienced a sharp increase of 1.5 percentage points between 2003 and 2012. Similarly, in Figure 3, the contribution of India to the world exports in the creative industry increased approximately 3.5 percentage points between 2003 and 2012. Pakistan contributes roughly 1% of the total world exports in the creative industry and is similar to that of the contribution of the Russian Federation and Brazil. In Figure 4, China has the largest contribution to total world exports in the leather industry amongst the countries considered and is followed by India. However, Brazil experienced a sharp decline in its contribution of about 1.5 percentage points between 2003 and 2012 in the leather industry. Turkey and Pakistan roughly contribute a similar percentage to the world exports in the leather industry. The contribution from exports of China to world exports across all industries amongst the countries considered is the largest and the significance of the contribution from China is expressed on the right-hand axis. China more than doubled its share of world exports in total industries, as well as the textile and creative industries from 2003 to 2012, which indicates the growth in prominence of its exports. The most important information from these graph is that the contribution of Pakistan to world exports is greater in the textile, creative and leather industries than in the total industries. This shows that Pakistan exports a larger proportion of world exports in the textile, creative and leather industries, than it does in the total industries.

In Figure 5, the contribution of exports in the textile industry towards total exports from Pakistan, greater than 50% across all years, is significantly higher than the contribution of the textile industry in the total exports of BRIC countries plus Turkey. The exports generated from the textile industry of Turkey, India and China, considered as major exporters of textile products, contribute less to the total exports of the respective countries than that contributed in Pakistan. The contribution to total exports is less than 20% in 2012 across Turkey, India and China. The textile exports from the Russian Federation and Brazil are an insignificant proportion of their total exports. Similarly, in Figure 6, the creative industry generates a major proportion of total exports for Pakistan. The exports in the creative industry from India, China and Turkey contribute between 5% and 10% of the total exports from 2003 to 2012. The proportion of total exports contributed by the creative industry is minimal for the Russian Federation and Brazil. In Figure 7, the leather industry also contributes between 5% and 3% of the total export receipts for China and Pakistan. The contribution to total exports from the leather industry for the Russian Federation is again negligible. Therefore, we can conclude that exports from the textile, creative and leather industries cumulatively account for more than three-quarter of total exports from Pakistan. This pattern increases the importance of the impact the export flow from BRIC countries plus Turkey have on the export flow from Pakistan within the textile, creative and leather industries.

In order to determine how much the export flow of the BRIC countries plus Turkey compete against the export flow from Pakistan, I first compare the identical top ten export destinations of the respective BRIC countries plus Turkey and Pakistan and then consider how much of the export flow from the BRIC countries plus Turkey are destined for the top ten export destinations. In Figure 8, India has the highest percentage of top ten export destinations that are identical to the top ten export destinations of Pakistan and the Russian Federation has the least for the total industries. China, Turkey and Brazil follow India in the percentage of identical top ten export destinations as Pakistan. The top ten export destinations for the textile industry have an expected pattern as India and China, belonging to the same Asian region as Pakistan, have more identical destinations than Turkey, the Russian Federation and Brazil. The pattern in the textile industry can be explained by the fact that Pakistan and India may have similarities in the quality, designs, cost of production as well as the level of demand for the particular varieties produced by these countries in the textile industry. Brazil, the farthest country may have different quality, design and level of demand from that provided by the textile industry in Pakistan. If textile products are

homogeneous within a region, it is likely that the selection of the trading partners will be similar as well. Secondly, the creative industry is more heterogeneous in terms of the quality and design of the products, which will imply less similarity in the top ten export destinations between even the closest of two countries. It is likely that the promotion of heterogeneous goods to specific export destinations is likely to play a major role in determining the trade patterns as heterogeneous goods are likely to require specific interaction between the exporters and the importers compared to homogeneous goods which can be sold through commodity exchanges. Even though the leather industry produces relatively homogeneous products, Pakistan and the Russian Federation share only one out of the top ten export destinations, Germany.

In Figure 9, India exports more than 50% of its total exports to the top ten export destinations of Pakistan in the textile, creative and leather industries. On the other hand, the Russian Federation exports the lowest proportion of its total exports to the top ten export destinations of Pakistan. Therefore, the top ten export destinations of Pakistan are also the most popular export destinations for the Indian products but not for the exports originating from the Russian Federation. The exports from China and Turkey to the top ten export destinations of Pakistan lie between the 40% and 50% for total industries and individually for textile, creative and leather industries as well. Surprisingly, more than 50% of the export flow from all the BRIC countries plus Turkey in the creative and leather industries, except the Russian Federation, is destined to the top ten export destinations of Pakistan. These destinations are likely to face minimal supply of the varieties from the Russian Federation in the selected industries and may not be able to fulfill the demand of the varieties by their consumers. Therefore, even the smaller importers that import from the Russian Federation may have to complement imports from other countries in order to fulfill the demand of the consumers.

In Figure 10, the United States and the major European economies are the most prominent trading partners of Pakistan and the BRIC countries plus Turkey. The US and Germany are the most important of all importers as they each enter the list of top ten export destinations for total industries as well as the textile industry, creative industry and leather industries a total of 19 out of possible 20 times. Interestingly, United Arab Emirates, China, Hong Kong, Bangladesh and Saudi Arabia are the non US and European countries on the list but their prominence is much lower than that of the US and the major European economies. Therefore, this signifies that the top importing markets for Pakistan are also likely to be top export destinations for the BRIC countries

plus Turkey²⁴.

In Figure 11, as expected the ratio of the distance to top ten export destinations from Pakistan to the distance of those countries from India is close to one. A ratio of less than one implies that the top ten export destinations of Pakistan are closer to Pakistan than to India. This is as predicted as Pakistan, located to the west of India, is likely to be closer to the Western countries that constitute the majority of the top ten export destinations. Similar observations are made for China and Brazil. On the other hand, the ratio of the distances of the top ten export destinations of Pakistan from Pakistan relative to the distance from Turkey and the Russian Federation is greater than one. This implies that Turkey and the Russian Federation are located at a closer proximity to the top ten export destinations of Pakistan than Pakistan itself. In theory, the transportation costs from Turkey and the Russian Federation should be significantly lower than the transportation costs from Pakistan to the top ten export destinations of Pakistan. The ratio for the creative industry is higher than the ratios of other industries, which can further reveal the importance of trading partners located at a much closer distance to Turkey and the Russian Federation than Pakistan. The ratios observed are as expected as the major trading partners for Pakistan, the US and the European countries, are located closer to Turkey and the Russian Federation than Pakistan but located further from India, China and Brazil.

The results in Figure 11 show the distance of the BRIC countries plus Turkey from Pakistan. In Figure 12, the ratio is that of the distance of BRIC countries plus Turkey to the top ten export destinations of Pakistan relative to the rest of the export destinations of Pakistan. A ratio of 1 suggests that the top ten export destinations of Pakistan are as far from a particular BRIC country plus Turkey considered as the rest of the export destinations of Pakistan. For instance, India and China are as far in distance to the top ten export destinations of Pakistan as they are to the rest of the export destinations of Pakistan. However, Turkey and the Russian Federation are closer in distance to the top ten export destinations of Pakistan as the rest of the export destinations of Pakistan in the creative and leather industries, while for Brazil I observe the opposite relation for total industries, as well as the textile, creative and leather industries. The top ten export destinations of Pakistan, particularly for the creative and leather industries, are concentrated within

²⁴Identical partners do not necessarily increase competitive pressure on Pakistani exporters. It can also imply that Pakistani exporters may benefit from the complementary effect created on the demand of its products. This detail is the most important aspect of this paper and has been discussed in the introduction and theoretical discussion sections.

the European region, which is at a close proximity to Turkey and the Russian Federation. This suggests that the smaller importers in the top ten export destinations that are sensitive to the costs required to adjust the inputs into the production process are likely to import from the Turkey and the Russian Federation rather than Pakistan unless Pakistani exporters are likely to provide strong incentives to the importers to cover the additional costs of importing Pakistani products.

In order to understand whether intra-regional exports of the respective BRIC country plus Turkey plays a significant role in influencing the pattern of exports from Pakistan, I have included figures that reveal the importance of the specific region to world exports as well as to exports from Pakistan. India and China intra-regionally trade within Asia²⁵. Turkey trades intra-regionally within Europe and the Middle East and the Russian Federation trades intra-regionally within Europe and Central Asia. Brazil trades intra-regionally within Latin America. Basically, the immediate region as well as the extended region of the respective country accounts for the regional trading partners. In Figure 13, Europe and the Middle East import the largest proportion of goods across the total industries, all as well as the textile, creative and leather industries, and Latin America imports the least. Asia imports between 32% and 22% in total industries, textile, creative and leather industry. In Figure 14, the percentage of exports to top ten destinations of Pakistan that are intra-regional are listed for the respective BRIC countries plus Turkey and Pakistan. A high percentage will indicate that the top ten export destinations contribute significantly to the regional exports of a respective country. On the other hand, a low value will suggest that the export flow to the top ten export destinations are extra-regional. Turkey and the Russian Federation are heavily dependent upon regional trade as a significant proportion of their total trade to the top ten export destinations of Pakistan is intra-regional. However, Brazil, India and Pakistan are less dependent upon intra-regional trade as the export flow to the top ten export destinations is likely to be outside their region. This suggests that their major trading partners lie outside the region. This is in particular for the leather industry for all three countries and the textile industry for the latter two. Similar to Brazil, Pakistan relies heavily on its non-regional trading partners for exports in total industries as well as the three individual industries.

In Figure 15, I consider exports from Pakistan to the regional partners of the respective BRIC country plus Turkey as a proportion of the exports to the rest of the destinations. The significance of the Asian region is small relative to the regional partners of Turkey and the Russian Federation,

²⁵The Asian region includes several Middle Eastern countries.

particularly for the leather industry and to some degree for the creative industry. The regional trade for Turkey includes the Middle East, which is a major export region for Pakistani products within the creative industry. On the other hand, the exports of the leather industry are strongly concentrated towards Europe. Exports to Latin America are negligible. Therefore, this asserts the fact that exports from Pakistan are extra-regional and are mostly concentrated towards the regional trading partners of Turkey and the Russian Federation.

The results in Figure 16 supplement the results in Figure 14 as it shows the importance of the regional trading partners with respect to world exports. It again asserts the fact that Turkey and the Russian Federation export mainly to their regional partners and Brazil exports the least to its regional partners except for the leather industry, which is evenly divided between exports to the regional partners and the rest of the world. On the other hand, the exports from China are evenly divided between total trade to its regional trading partners and the rest of the world for total industries and the textile industry. On the other hand, India has almost a one to one ratio for total industries and the creative industry but a ratio that is considerably less than one for the textile and the leather industries.

In Figure 17, the distance from Pakistan to the regional trading partners and the rest of the trading partners of the respective BRIC countries plus Turkey is represented as a proportion of the distance from their trading partners to the respective BRIC countries plus Turkey. This ratio is the largest for Brazil and the smallest for China. This implies that Brazil should have a distance advantage in Latin America relative to Pakistan and China should have a distance disadvantage relative to Pakistan in Asia. The result for China could be based on the relative size of China as well as the land mass of its neighboring countries which increases its distance to its trading partners. In addition, the majority of the Asian countries are located at a closer proximity to Pakistan than to China. India and Pakistan have a one to one ratio for the distances, while Turkey and the Russian Federation are much closer to their regional trading partners than Pakistan giving them a large distance advantage relative to Pakistan. This relationship is important as exports from Pakistan are concentrated towards the regional trading partners of Turkey and the Russian Federation.

One of the most important facts that the figures bring forward is the similarity in the trade patterns observed by the exports originating from Pakistan and the BRIC countries plus Turkey, specially China and India. A large percentage of the exports is destined for the European countries

and the top ten export destinations of Pakistan. As the volume of imports is substantially large in the European countries and the literature confirms buyer-driven commodity chains that set the demand for products from China, India and Pakistan, it is likely that the demand for imports from China, India and Pakistan is being influenced by the larger multi-product importers. Such importers may complement their core varieties imported from China and India with secondary varieties imported from Pakistan. The ratio of the distance of the trading partners from Pakistan to the distance of the trading partners from the respective BRIC countries plus Turkey is close to 1 for India and China to the top ten export destinations across industries and regional and non-regional destinations. This suggests that the distance covered is similar for products that originate from China and Pakistan as well as India and Pakistan. As China, India and Pakistan are all low-wage countries that specialize in mainly varieties that are similar, the taste preferences of the consumers are likely to drive the import patterns amongst the three countries rather than the cost structure of the goods that are imported from the three countries²⁶. On the other hand, the trading patterns for Turkey and the Russian Federation seem to be concentrated towards their regional trading partners. Turkey is likely to supply to smaller importers but some larger importers may demand varieties from Turkey as is indicated by the prominence of Turkish exports within its own region. The imports from these countries are likely to be similar to the varieties available locally and are demanded by the smaller importers. The competitive pressure created on the larger importers by the prominence of the smaller importers may reduce the demand for varieties from Pakistan as the larger importers are compelled to concentrate on their more profitable core varieties. The imports from Brazil will cater to vastly different preferences of the consumers than that of Pakistan. Therefore, the larger importers in Europe and the other non-regional trading partners of Brazil are likely to complement the core varieties from Brazil with the secondary varieties from Pakistan as the substitution effect between the varieties will be minimal.

3.3.2 Discussion on Tables

In Table 1, I list the results of the OLS regressions for the impact of the export value originating from BRIC countries plus Turkey on the export value of the exports from Pakistan to its trading partners in total industries. I observe a positive and significant effect at 1% level for the export

²⁶Even though the cost structure of the exports are likely to be similar, the markup will be different as the price the consumers are willing to pay vary for different varieties.

value of India, China, Turkey and Brazil²⁷. However, I observe a negative effect that is significant at 1% level for the Russian Federation. The distance of Pakistan to its export destination is negative and significant at 1% level of significance across the BRIC countries plus Turkey. The relationship between distance and export value is as expected. The export value is likely to fall as the distance between Pakistan and the trading partner increases.

In Table 2, I list the results of the IV regressions for the impact of the export value originating from BRIC countries plus Turkey on the export value of exports from Pakistan to its trading partners in total industries. The effect changes direction in respect to the OLS regressions as the effect is now negative and significant at 1% level for exports value of China, India and the Russian Federation, and significant at 5% level for export value of Turkey. On the other hand, the export value of Brazil continues to have a positive effect at 1% level of significance on the export value of goods from Pakistan. As I include the distance of the BRIC countries plus Turkey to the export destinations, the negative impact suggests that not only is the distance of Pakistan to its trading partner important but also the distance of the corresponding country. Therefore, if all trading partners of Pakistan are at a constant distance to China as well as Pakistan, a significant effect of the export value of China suggests that exports from China divert exports from Pakistan in total industries. The inclusion of the distance variable in the first stage as well as the second stage suggests that the bias is not a result of distance from the exporting country but the result of preferences of exports from a particular destination, or the influence of taste parameters, that leads to either trade creation or trade diversion. Trade creation is a result of the complementary effect on exports but trade diversion is a result of the substitution effect on exports from Pakistan. A positive value in the OLS but a negative value in the IV suggests that export value of Pakistan is likely to increase to destinations that import a greater value from China but once the distance variables are considered constant, the preference for Chinese goods will divert trade from Pakistan towards China. The preference of consumers to import Chinese products in the European countries as well as Singapore reduces the demand for Pakistani products in total industries. The taste parameters of Chinese exports work against the exports from Pakistan. It is only in the case of the

²⁷The positive effect suggests that exports from one country complement exports from another. As the imports from BRIC countries plus Turkey are preferred over other non-regional smaller developing countries, it is likely that only the multi-product firms contribute towards the complementary effect. On the other hand, the substitution effect is likely to be generated by single-product firms which are forced to drop varieties to add newer varieties and because of the pressure created on the larger firms to produce their core varieties. For simplicity, I will not discuss multi-product and single product firms in this section.

Russian Federation, that the OLS and the IV follow the same direction. Therefore, exports from the Russian Federation are likely to substitute the exports from Pakistan regardless of the inclusion of the control variable on the distance of the Russian Federation from the trading partner. I reject that the export values of the respective BRIC countries plus Turkey are exogenously related to the export value of Pakistan at 5% level of significance across all regressions, suggesting that the covariates are likely to be correlated to the error term in main regression accounting for the *omitted variable bias*. The rejection of the weak instruments suggest that the distance from BRIC country plus Turkey significantly influences the export value of the respective BRIC country plus Turkey. The weak identification and the under-identification tests suggest that the instrumental variable regression is consistent. The endogeneity test suggest that the instrumental variable estimations are consistent and efficient and that the OLS is inconsistent²⁸.

In Table 3, the OLS regressions determine a positive effect, significant at 1% level, for the export value from India and Brazil on the export value from Pakistan to its top ten export destinations. The export value for India, China and Brazil has a positive effect which is significant at 1% level to the rest of the destinations as well. The export value of Turkey has a positive effect at 1% level and the export value of the Russian Federation is negative and significant at 1% level to the rest of the export destinations in total industries. The effect of the export value of Turkey is insignificant to the top ten destinations of Pakistan but the export value of the Russian Federation is significant at 1% level. Therefore, the export flow in total industries from India and Brazil to the top ten exports destinations of Pakistan as well as to the rest of the destinations is likely to have a complementary effect on the export flow in total industries from Pakistan. The complementary effect exists for the exports from China to the non top ten export destinations of Pakistan. On the other hand, the complementary effect to the rest of the destinations is likely for the export flow from Turkey but a substitution effect is likely for the export flow from the Russian Federation to the rest of the destinations for exports from Pakistan.

In Table 4, the effect of the export value from China, Turkey and the Russian Federation on the export value from Pakistan is negative and significant at 5% level for China and 1% level for Turkey and the Russian Federation respectively to the top ten export destinations of Pakistan.

²⁸When the IV estimations are consistent, the exports of Pakistan are likely to increase the exports of the respective BRIC country plus Turkey. For instance, the revenue generated from Pakistani varieties can be used to purchase larger quantities of Chinese varieties similar to the purchases of Pakistani varieties from the revenue generated by selling Chinese varieties.

However, the effect of the export value from India and Brazil is not statistically significant for the same group of countries. This implies that export value from Pakistan to its top ten export destinations is not impacted by India and Brazil but an increase in the export flow from China, Turkey and the Russian Federation is likely to substitute the export flow away from Pakistan. In the IV regressions, I control for the distance of the top ten destinations with the respective BRIC countries plus Turkey. On the other hand, the effect of the export value from China and the Russian Federation on the export value from Pakistan to the rest of the destinations is negative at 1% level of significance. The effect of the value of Indian exports to the top ten destination of Pakistan is more complex due to the results of the endogeneity test and is discussed later in this paragraph. On the other hand, the weak instrument test suggests that the distance variable does not explain trade patterns for the exports of Indian, Chinese and Brazilian products to the top ten export destinations of Pakistan. The excluded instrument is weak for the export value of China to the rest of the export destinations as China may not necessarily export more to the rest of the destinations located at a closer distance. The impact of the export flow from Turkey and the Russian Federation plays an important role on the export flow from Pakistan into the top ten export destinations. The preference of Turkish and Russian products can be explained by the similarities in cultural preferences with the trading partners as a large proportion of the top ten export destinations of Pakistan are European countries²⁹. Interestingly, the effect is also negative for the export value of the Russian Federation to the rest of the countries, which implies that exports from Pakistan and the exports from the Russian Federation are substitutes to all trading partners in total industries. Brazilian exporters are located at a much greater distance from the European markets than the exporters from Pakistan but their preference for the selected European countries which also trade significantly with Pakistan, after controlling for the distance, could explain the positive correlation on the export value from Pakistan of the export value from Brazil. The test statistics suggest that instruments may be weak and the exogeneity of the export flow cannot be rejected at 10% level of significance when considering the case of Indian exports to the top ten export destinations of Pakistan. Further, the exogeneity of the export flow cannot be rejected at 10% level of significance when considering the export value of Russian exports to the non top ten export destinations of Pakistan. This suggests that the OLS estimates are consistent and efficient for the two cases. The weak instruments are likely due to the close proximity of Pakistan and India and the distance to the top ten export destinations of Pakistan is likely to be uniform for Pakistan

²⁹As I control for the distance between the trading partners and Turkey and the Russian Federation, the proximity to these countries should not influence the trading pattern.

and India. The impact of the distance variable to the top ten export destinations of Pakistan from India is insignificant. The two distance variables in the first stage regression can be highly correlated. As the IV estimations are likely to be as good as the validity of the instruments, I will not interpret the results of the OLS as I cannot confirm the consistency of the results.

In Table 5, the OLS regressions show that the effect of the export value of goods from India, China, Turkey and Brazil on the export value of goods from Pakistan for total industries is positive and significant at 1% level across both groups of countries within their regional and non-regional trading partners, except to the regional trading partners of the Russian Federation which is insignificant. On the other hand, the effect of the export value of goods from the Russian Federation to the non-regional trading partners is negative and significant at the 1% level.

In Table 6, the IV regressions show that the export value of India, China, and Turkey to their regional trading partners on the export value from Pakistan is negative and significant at 5%, 10% and 1% level. On the other hand, the export value from India and China to their non-regional destinations has a positive effect on the export value from Pakistan at 1% level of significance. The effect is not significant for the export value of Turkey to its non-regional trading partners. The effect of the export value from the Russian Federation to its regional trading partners on the export value of Pakistan is negative and significant at 1% level but to the non-regional trading partners is negative and significant at 5% level. However, the effect of the export value from Brazil to its regional trading partners and non-trading partners is positive and significant at 1% level. Therefore, there is generally a complementary effect between the export value from Pakistan and the export value from India, China and the Brazil to their non-regional trading partners after controlling for the distance of the respective BRIC country plus Turkey. The complementary effects hold for the effect of the export value of Brazil to the regional trading partners as well. Therefore, this pattern suggests that Pakistan increases its export flow as the exports rises in total industries to the non-regional trading partners of the respective BRIC country plus Turkey, excluding the Russian Federation, in a similar fashion as the trend observed by the countries considered. The export flow from Pakistan to the Asian region in total industries is likely to face competitive pressure from India and China and the export flow from Pakistan to Europe and Middle East as well as to Europe and Central Asia will observe a similar impact from the export value of Turkey and the Russian Federation respectively. Export networks between exporters in Pakistan and the exporters in India and China will create trade opportunities for exporters in Pakistan that export to destinations outside Asia

as Pakistani exporters can maximize on the taste preferences of the consumers that tilt towards Chinese and Indian products. On the other hand, the exporters in BRIC countries plus Turkey, except Brazil, are likely to divert trade away from exporters in Pakistan as they substitute trade within their regional export destinations. Brazilian exporters create trade for Pakistani exporters in Latin America as well as outside Latin America. The endogeneity test suggest that the IV estimations are inconsistent only for the regional destinations of Brazil and non-regional destinations of the Russian Federation but the results obtained are similar to the results from the OLS estimations.

In Table 7, the OLS estimations are reported for the effect of the export value of the respective BRIC country plus Turkey on the export value from Pakistan in textile, creative and leather industries. The effect of the export value of India, China, Turkey and Brazil is significant and positive at 1% level of significance across the three industries. The effect of the export value of the Russian Federation is negative and significant at 5% level for the textile industry but positive and significant at 5% level for the creative and leather industries. Interestingly, the influence of the distance variable on the export flow from Pakistan is positive and significant at 5% level in the textile industry with the export value of India as control variables. This implies that controlling for the export value of India in the textile industry, a trading partner located at a greater distance from Pakistan is likely to record a greater amount of the export flow in the textile industry. In other words, if all export destinations for the textile product received an equal amount of exported textile products from India, the export value of Pakistan in textile products is likely to be greater for countries located at a further distance. This pattern suggests that exports from Pakistan are likely to increase in relation to exports from India in the textile industry to the non-regional export destinations.

In Table 8a, the IV estimations suggest that effect of the export value of Turkey is negative and significant at 1% level on the export value of Pakistan in the textile industry but no significant effect is reported for the other countries. The test statistics suggest that the instruments that account for the distance of China and India to their trading partners are weak and render them inconsistent. This is possible if the export destinations of China, India and Pakistan are not geographically dispersed as the distance variable does not explain much of the variation in the export flow. The endogeneity test does not reject exogeneity for the export value of the Russian Federation and Brazil, suggesting that the OLS is the consistent estimator. The test statistics for the export value of Turkey suggest consistent instruments as well as the consistency of the IV estimator. In

the textile industry, the export value of Brazil has a positive effect on the export value of Pakistan as confirmed by the IV regressions. The export value of China is negative and the IV regression is consistent but the excluded instrument fails to explain the impact of the distance of China on the export flow of China. Therefore, the pattern of the effect of the export value suggests that exports from Brazil complement exports from Pakistan in the textile industry, while the exports from Turkey and the Russian Federation substitute exports from Pakistan.

The effect of the export value of India and China is negative but insignificant on the export value of Pakistan in the creative industry. The effect of the export value of Turkey, the Russian Federation and Brazil is positive and significant at 5% level for the former two countries and 1% level for latter country on the export value of Pakistan in the creative industry. However, the test statistics suggest that the excluded instrument that accounts for the distance of China and India to their trading partners is weak. This may suggest that the distance of the export destinations from China and India do not explain the differences in the export value in the creative industry. The endogeneity tests do not reject the exogeneity of the export flow of the Russian Federation and Brazil. This suggests that the IV estimations are inconsistent but as the OLS estimations are positive, the export flow from the Russian Federation and Brazil is likely to complement the export flow from Pakistan in the creative industry.

In Table 8b, the effect of the export value of the India, Russian Federation and Brazil is positive and significant at 5% and 1% level on the export value of Pakistan in the leather industry, while the effect of the export value of China and Turkey on the export value of Pakistan is statistically insignificant. The test statistics suggest that the instruments for the export value of India and China are inconsistent. The weakness of the instruments can again be attributed to the fact that there are only a few import destinations of leather goods from Pakistan, India and China and they import a large proportion of total exports originating from these countries. The concentration of the trading partners within a specific region and the location of the exporters at a close proximity to each other may contribute to the lack of strength of the excluded instruments observed in the textile, creative and leather industries. On the other hand, the instruments for the export value of Turkey, the Russian Federation and Brazil are consistent. The endogeneity tests for the export value of Turkey suggests consistent IV results but I fail to reject the exogeneity of the export value of the Russian Federation and Brazil. However, as the OLS estimations observe similar results as the IV estimations for the export value of the Russian Federation and Brazil, I assume a positive

relationship. I cannot confirm the impact of the export value of India and China on the export value of Pakistan in all the three industries.

In Table 9, I report the OLS estimations of the effect of the export value of BRIC countries plus Turkey on the export value of Pakistan to the top ten export destinations and rest of the destinations of Pakistan in the textile, creative and leather industries respectively. The effect of the export value of India and China is positive and significant at 1% level in the textile industry across the both samples of countries. The effect of the export value of Turkey is negative and significant at 1% level to the top ten export destinations of Pakistan and positive and significant at 1% level to the rest of the destinations. The export value of the Russian Federation in the textile industry is negative and significant at 1% level to top ten export destinations of Pakistan and negative and insignificant to the rest of the destinations. The export value of Brazil is positive and significant at 1% level to the top ten export destinations of Pakistan and positive and significant at 10% level to the rest of the export destinations of Pakistan.

In Table 9, the effect of the export value of India and Turkey is positive and significant at 1% level to the top ten export destinations and rest of the destinations of Pakistan, while the effect of the export value of China, the Russian Federation and Brazil is positive and significant at 1% level to the rest of the export destinations of Pakistan in the creative industry. On the other hand, the effect of the export value of the Russian Federation is negative and insignificant to the top export destinations of Pakistan in the creative industry and the effect of the export value of Brazil is positive and insignificant to the top ten export destinations of Pakistan. Therefore, the BRIC countries plus Turkey generally have a positive impact on the export value of Pakistan in the creative industry as there is little evidence of negative impact, except for the effect of the export value of the Russian Federation.

In Table 9, the effect of the export value of India is positive and significant at 5% level and 1% level of significance to the top ten export destinations and the rest of the destinations of Pakistani exports respectively in the leather industry. The effect of the export value of China and Brazil is positive and significant at 1% level to the rest of the export destinations of Pakistan in the leather industry. On the other hand, the effect of the export value of Turkey is negative and significant at 1% level to the top ten export destinations of Pakistan in the leather industry and the effect of the export value of the Russian Federation is positive and significant at 5% level to the top ten export

destinations of Pakistan. The effect of the export value of Turkey on the export value of Pakistan is similar to the top ten destinations of Pakistan in the textile and leather industries as an increase in export value of Turkey lowers the export value of Pakistan. The export value of Turkey is positive and significant at 5% level to the rest of the export destinations of Pakistan.

In Table 10a, the effect of the export value of India on the export value of Pakistan to the top ten export destinations is positive and significant at 1% level but insignificant to the rest of the destinations in the textile industry. I cannot reject the test for weak instruments when I consider the effect of the export value of India on the export value of Pakistan to the top ten export destinations as well as the rest of the destinations in the textile industry. The effect of the export value of China is insignificant across the top ten export destinations of Pakistan and the rest of the export destinations in the textile industry but I fail to reject the weak instruments for the export flow of China to the rest of the destinations. The effect of the export value of Turkey is negative at 1% level of significance to the top ten export destinations and insignificant to the rest of the export destinations in the textile industry. The effect of the export value of the Russian Federation is negative at 1% level to the top ten export destination of Pakistan. However, the inconsistency of the IV estimations for the export value of the Russian Federation to the rest of the export destinations suggest a negative effect on the export value of Pakistan at 10% level of significance in the textile industry. The effect of the export value of Brazil on the export value of Pakistan is insignificant to the top ten export destinations and to the rest of the destinations but the IV estimations are rendered inconsistent. I fail to reject the weak instruments in the case of the export value of Brazil to the top ten export destinations of Pakistan. The IV estimations reveal insignificant results for the impact of the export value of India and China to the top ten export destinations of Pakistan and insignificant results for the impact of the export value of India to the rest of the export destinations of Pakistan in the creative industry. The effect of the export value of China is negative and significant at 5% level to the rest of the export destinations of Pakistan. However, the IV estimations are plagued by weak instruments across the four regressions for India and China. The IV estimations for the export value of Turkey suggests an insignificant effect on the export value of Pakistan to the top ten export destinations of Pakistan in the creative industry but is plagued by weak instruments. The effect of the export value of the Russian Federation on the export value of Pakistan to the rest of the export destinations of Pakistan is positive at 5% level of significance in the creative industry, similar to the effect observed for the OLS estimations. The

effect of the export value of Brazil to the rest of the export destinations is positive and significant at 10% in the creative industry. Although, the export value of Brazil to the rest of the destinations does not pass the endogeneity test, the result is similar to that reported for the OLS estimations in Table 9.

In Table 10b, the test statistics suggest consistent IV estimations and excluded instruments for the export value of India and Turkey to the top ten export destinations of Pakistan in the leather industry and as well as the export value of the Russian Federation to both sets of destination, top ten export destinations and the rest of the destinations. The effect of the export value of India is negative and significant at 10% level to the top ten export destinations of Pakistan in the leather industry. This negative sign is opposite from the positive sign observed for the corresponding OLS estimation. This implies that the export flow from India is likely to substitute export flow from Pakistan if export destinations are considered as equidistant from India as well as equidistant from Pakistan. On the other hand, the effect of the export value of the Russian Federation on the export value of Pakistan to the non top ten export destinations of Pakistani exports in the leather industry is positive and significant at 1% level. The weak instrument test cannot be rejected for India to the rest of the export destinations and for China to both top ten export destinations of Pakistan and rest of the export destinations in the leather industry. The endogeneity test suggests that the export value of Brazil to the rest of the export destinations in the leather industry is exogenous. In addition, the weak instrument test cannot be rejected for Brazil to the top ten export destinations in the textile, creative and leather industries.

In Table 11, the OLS estimations of the export value of India, China and Turkey reveal positive and significant effect at 1% level to their regional and non-regional destinations in the textile industry. On the other hand, the effect of the export value of the Russian Federation is positive and significant at 5% level and negative and significant at 5% level to their regional and non-regional destinations in the textile industry respectively. The effect of the export value of Brazil is negative and significant at 10% level and positive and significant at 1% level to their regional and non-regional destinations in the textile industry respectively. The effect of the export value of India and Turkey on the export value of Pakistan is positive and significant at 1% level to their regional and non-regional destinations in the creative industry. The effect of the export value of Brazil on the export value of Pakistan is positive and significant at 5% level and at 1% level to its regional and non-regional destinations respectively in the creative industry. The effect of the

export value of China is positive and significant at 1% level to their non-regional destinations in the creative industry. On the other hand, the effect of the export value of the Russian Federation on the export value of Pakistan is positive and significant at 1% to its regional destinations in the creative industry. The effect of the export value of India and China on the export value of Pakistan in the leather industry is similar to the pattern observed in the textile industry. The effect of the export value of Turkey is negative but insignificant to its regional destinations, while the effect of the export value of the Russian Federation is positive and significant at 1% level to its regional destinations. The effect of the export flow of Brazil is positive and significant at 5% level and 1% level to the regional and non-regional destinations respectively.

In Table 12a, I observe that the effect of the export value of India is negative but insignificant on the export value of Pakistan to its regional destinations in the textile industry and the effect is positive and significant at 1% level to its non-regional destinations. Similarly, the effect of the export value of China is positive and significant at 5% level to its non regional destinations in the textile industry but negative and insignificant to its regional destinations. I fail to reject that the export value of China is exogenous and the excluded instrument is inconsistent to its non-regional destinations. The effect of the export value of Turkey is negative and significant at 1% level to regional destinations in the textile industry, while the effect is negative but insignificant to the non-regional destinations. The OLS estimations for the former effect is insignificant but the latter effect is positive as well as significant. Therefore, the IV estimations suggest that the export value of Turkey plays has a significant effect that is negative on the export value of Pakistan to the regional destinations, opposite of the result obtained for the OLS estimations. The IV estimations are inconsistent for the export value of the Russian Federation to the regional and non-regional destinations in the textile industry. The effect of the export value of Brazil is positive and significant at 5% level to its regional destinations. The effect of the export value of Brazil to the non-regional destinations is positive and significant at 5% level but I fail to reject the weak instrument test. The excluded instruments are inconsistent for the export value of Brazil to its non-regional destinations in the textile industry.

The test statistics in Table 12a suggest that the excluded instruments are consistent for the export value of all BRIC countries plus Turkey, across both regional and non-regional destinations, except for the export value of China to its non-regional destinations in the creative industry. The effect of the export value of India on the export value of Pakistan is negative and significant at 10%

level to the regional destination but positive and significant at 1% level to the non-regional destinations in the creative industry. The effect of the export value of China is negative and significant at 1% level to the regional destinations in the creative industry. As the impact of the Chinese culture is more prevalent in the Asian countries, the export value of Pakistan is likely to be negatively associated with the export value of China in countries where there is a stronger preference for art and culture of Chinese origin rather than that of Pakistani origin. The effect of the export value of Turkey on the export value of Pakistan to the regional destinations is the same as the effect of the export value of China to its regional destination. Therefore, Turkey could specialize its creative industry towards the preference of consumers in its region and Pakistan would export more of the creative products to countries that trade less with Turkey. The effect of the export value of the Russian Federation is negative and significant at 1% level to its non-regional destinations, while the effect of the export value of the Russian Federation is insignificant to its regional destinations. This suggests that creative products from the Russian Federation in its non-regional destinations tend to substitute creative products imported from Pakistan. On the other hand, the effect of the export value of Brazil on the export value of Pakistan is positive and significant at 1% level to both regional and non regional destinations. As the export value of Pakistan is likely to be almost negligible in the Latin American economies, there is rather a complementary effect for Brazilian exports to its regional destinations in the creative industry. Similarly, as the varieties from Brazil are likely to be vastly different than the varieties from Pakistan, particularly in the creative industry which is more heterogeneous than other industries considered, the positive effect of the exports from Brazil on the exports from Pakistan to the regional and non-regional destinations is as expected.

In Table 12b, the excluded instruments and the IV estimations are consistent for the export value of India to its non-regional destinations and for the export value of Turkey to regional and non-regional destinations in the leather industry. The IV estimations are inconsistent to the regional destinations of the Russian Federation and Brazil but are consistent to their non-regional destinations. The effect of the export value of India is positive and significant at 1% level to the non-regional destinations in the leather industry. This pattern of the export value of India is consistent with the pattern observed in the textile and creative industries. Therefore, the export value of India has a positive impact on the export value of Pakistan to non-regional destinations. The effect of the export value of China is negative and significant at 10% level to its regional destinations and insignificant to its non-regional destinations. The effect of the export value of Turkey is negative and significant at 1% level and 5% level to its regional destinations and non-regional destinations

respectively in the leather industry. This is consistent with the pattern observed for the effect of the export value of Turkey in the textile industry. The effect of the export value of Brazil on the export value of Pakistan is positive and significant at 5% and 1% level to regional and non-regional destinations respectively in the leather industry. This is consistent with the pattern observed for the effect of the export value of Brazil in textile and creative industries. The IV estimations for the effect of the export value of the Russian Federation to the regional and non-regional destinations is insignificant. The export flow from the Russian Federation in the textile and leather industries is minimal and thus has no effect on the exports of Pakistan to the regional and non-regional destinations. Therefore, even the smallest of importers cumulatively may not have their demand fulfilled by the imports from the Russian Federation and it is likely to not play a major role in threatening the exports of Pakistan when the destinations are split according to their regional location relative to the Russian Federation. As I fail to reject weak instruments for the export value of India to its regional destinations and the export value of China to both regional and non-regional destinations, I cannot conclude whether the impact of the OLS and the IV estimations hold in the leather industry.

3.3.3 Summary of the Results

In summary, the effect of the export flow of India, China, Turkey and the Russian Federation on the export flow of Pakistan is negative and that of Brazil is positive in the total industries³⁰. The effect of the export flow of Turkey and the Russian Federation on the export flow of Pakistan is negative to its top ten export destinations in the total industries. The effect of the export flow of the Russian Federation is negative and the export flow of Brazil is positive to the rest of the destinations in the total industries. The effect of the export flow of India, China, Turkey and the Russian Federation on the export flow of Pakistan is negative to their regional destinations and the effect of the export flow of the Russian Federation is negative to the non-regional destinations of the Russian Federation as well. The effect of the export flow of China, India and Brazil on the export flow is positive to their non-regional destinations in the total industries.

The effect of the export flow of Turkey and the Russian Federation on the export flow of

³⁰The results are presented in tabular form in the online supplement available at <https://sites.google.com/site/aadilnakhoda>.

Pakistan is negative and that of Brazil is positive in the textile industry. Similarly, the effect of the export flow of Turkey and the Russian Federation is negative to the top ten export destinations of Pakistan but that of Brazil is positive to the rest of the export destinations. The effect of the export flow of India on the export flow of Pakistan is positive to the non-regional destinations of India but the effect of the export flow of the Russian Federation and Brazil is positive on the export flow of Pakistan to their regional destinations in the textile industry. The effect of the export flow of Turkey is negative on the export flow of Pakistan to the regional as well as non-regional destinations of Turkey in the textile industry.

The effect of the export flow of Turkey, the Russian Federation and Brazil on the export flow of Pakistan is positive in the creative industry. The effect of the export flow of the Russian Federation and Brazil on the export flow of Pakistan is positive to the non top ten export destinations of Pakistan in the creative industry. The effect of the export flow of India, China, and Turkey is negative to the regional destinations and the effect of the export flow of Brazil on the export flow of Pakistan is positive to the regional destinations in the creative industry. The effect of the export flow of India and Brazil on the export flow of Pakistan is positive to their non-regional destinations in the creative industry.

The effect of the export flow of the Russian Federation and Brazil on the export flow of Pakistan is positive in the leather industry. The result in terms of the positive and negative effects is similar to that in the creative industry as the export flow of the Russian Federation and Brazil has a positive effect on the export flow of Pakistan to the non top ten export destinations. However, the effect of the export flow of India on the export flow of Pakistan is negative to the top ten export destinations of Pakistan in the leather industry. The effect of the export flow of India on the export flow of Pakistan is positive to the non-regional destinations. However, Turkey and Brazil have the opposite impact as the former country has a negative impact on the export flow of Pakistan to the regional and non-regional destinations, and the latter has a positive impact to the regional and non-regional destinations in the leather industry. This pattern may suggest that the varieties imported from Turkey and Brazil have sufficiently different qualities that one substitutes the imports from Pakistan and the other complements the imports from Pakistan. The effect of the export flow of the Russian Federation is positive on the export flow of Pakistan to the regional destinations of the Russian Federation in the leather industry.

4 Conclusion

One of the main findings of this paper is that the impact of the exports originating from BRIC countries plus Turkey on the export flow of Pakistan varies for each country. I consider this effect in all industries, as well as in textile, creative and leather industries and find complementary effect on the export flow of Pakistan in one industry and a substitution effect in another. All importers seek to provide the varieties to their consumers that provide the maximum utility to their consumers and in turn generate greater profits. Apart from the higher transportation costs that increases the price of goods that flow through international borders, the importers are likely to incur fixed costs to import their inputs from foreign sources and the exporters are likely to do the same to export their products to foreign destinations. The fixed costs to import varieties from different sources involve costs to adjust the varieties by the importers into their production process and the fixed costs to export varieties require legal, distribution and marketing costs. The importers and the exporters can lower their costs by establishing networks that increase the knowledge of their products in the destination markets and allow easier integration into the production process. Therefore, exporters in certain countries may take advantage of trade networks of other larger economies to integrate their product in the destination market to lower the costs of integration of their product. Such exporters may have incurred substantial fixed costs to increase the knowledge of their varieties in the destination market and make it count as one of their top export destinations. The importers are likely to be divided into multi-product importers and single product importers based on their level of productivity and the former likely to be more productive than the latter. The multi-product importers that purchase inputs from developing countries are likely to belong to buyer-driven commodity chains that generate greater demand for varieties from multiple countries. The multi-product importers are likely to benefit from trade networks than single product importers as they have the capacity to add varieties from other countries. On the other hand, the single-product importers may be forced to substitute varieties from one country with varieties produced in another country as they lack the capacity to incorporate several varieties into their production process.

The export value to each destination is likely to vary depending upon the purchasing power and the market size of the export destinations. As penetration of exporters into a certain market involves distribution and marketing costs, the major export destinations are likely to be those countries in which the exporters have paid substantial costs to increase the knowledge of their products.

Therefore, the costs to incorporate inputs into the top ten export destinations of Pakistan are likely to be lower for the importers and provide the smaller single-product importers as well as the larger multiple-product importers an opportunity to purchase the products. In these markets, it is likely that the exports from Pakistan may compete with exports from other larger emerging economies in order to displace some varieties in favor of other varieties. Therefore, I observe that exports from Pakistan substitute exports from Turkey and the Russian Federation in all industries and the textile industry in the top ten export destinations of Pakistan. In addition, smaller importers may purchase inputs from regional trading partners in order to easily incorporate the inputs into their production process. In Asia, the larger multiple-product as well as the smaller single-product importers will demand varieties from the regional trading partners, China and India. Therefore, Chinese products substitute exports from Pakistan to the regional destinations and complement exports from Pakistan to the non-regional destinations where the larger importers can add varieties from other countries. On the other hand, Turkey and the Russian Federation export mainly to their regional destinations, where the former substitutes the imports from Pakistan as their varieties are likely to make the export destination more competitive and may lead to larger importers to cut down on varieties from Pakistan to concentrate on their core varieties. The varieties from the Russian Federation complement the imports from Pakistan in the textile and leather industries. Although, the European and the Middle Eastern markets are the primary export destinations for the Pakistani products, the substitution effect with Turkey is likely because of the prevalence of the varieties from Turkey in Europe and Middle East. The negligible amount of trade by the exporters in the Russian Federation may contribute to the complementary effect observed as the demand of the varieties produced by the importers may exceed the supply and smaller importers that are not able to purchase inputs from the Russian Federation may need to import varieties from Pakistan as well. The exports from Brazil tend to complement the exports from Pakistan across regional and non-regional destinations as the varieties produced by Brazil and Pakistan may be vastly different and cater to different markets.

In conclusion, I find that the impact of exports from the BRIC countries plus Turkey on the exports of Pakistan varies for each country. The fact that the varieties complement exports of certain BRIC countries plus Turkey to some destinations and substitute in other destinations suggests that the demand for the varieties from Pakistan are likely to vary for different groups of trading partners. I believe that the results presented in this paper are important to researchers and policy-makers alike as they suggest that the export flow of larger emerging economies may complement as

well as substitute exports from Pakistan depending upon the preferences of the consumers in the export destinations and the ease of availability of Pakistani varieties relative to varieties from other countries. Further studies at more disaggregated product-levels as well as for other countries are needed to understand the export patterns undertaken by smaller developing countries as a result of the proliferation of varieties into several export markets by their larger counterparts.

5 Figures and Table

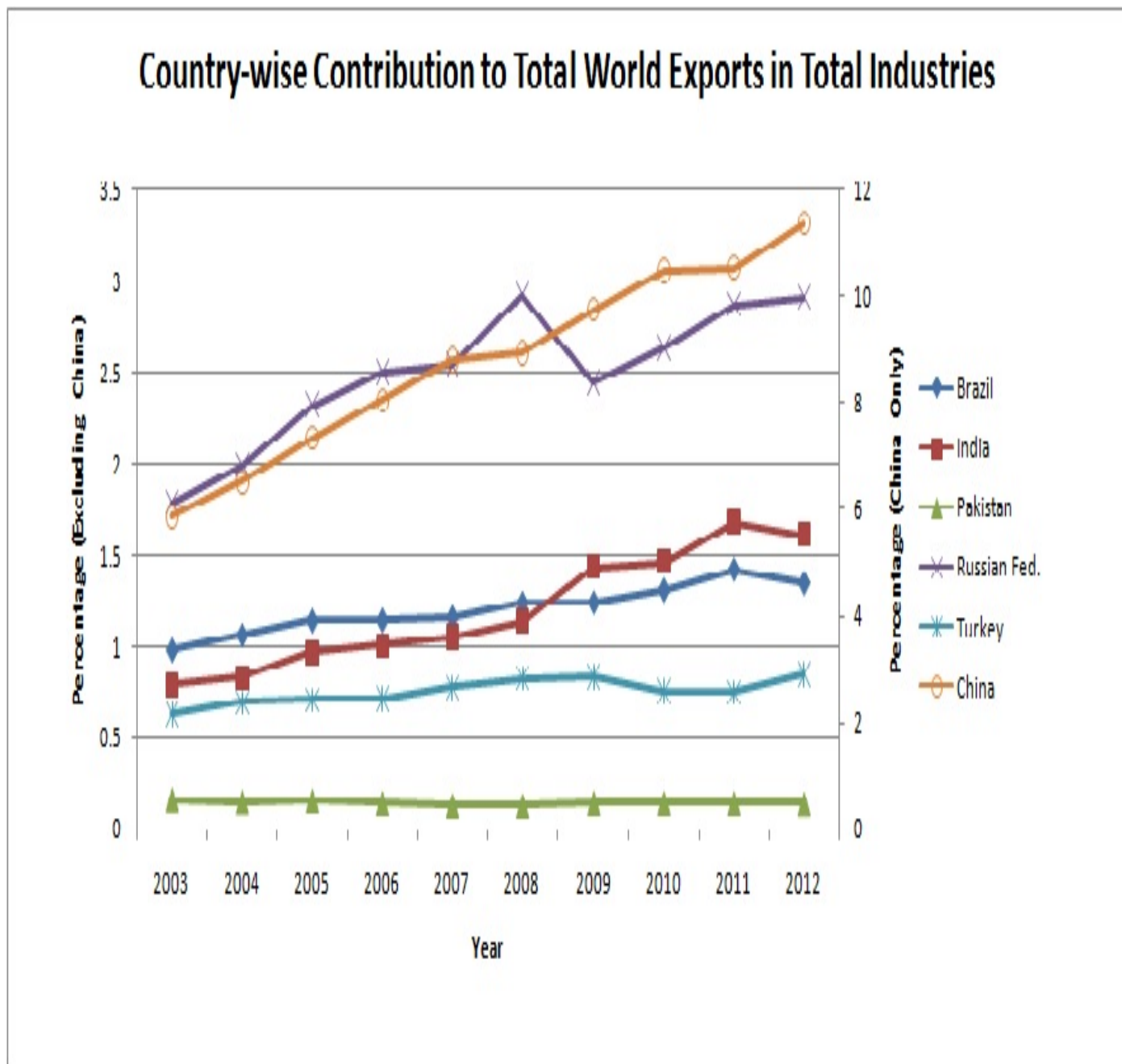


Figure 1: Country-wise Contribution to World Exports in Total Industries

Country-wise Contribution to World Exports in the Textile Industry

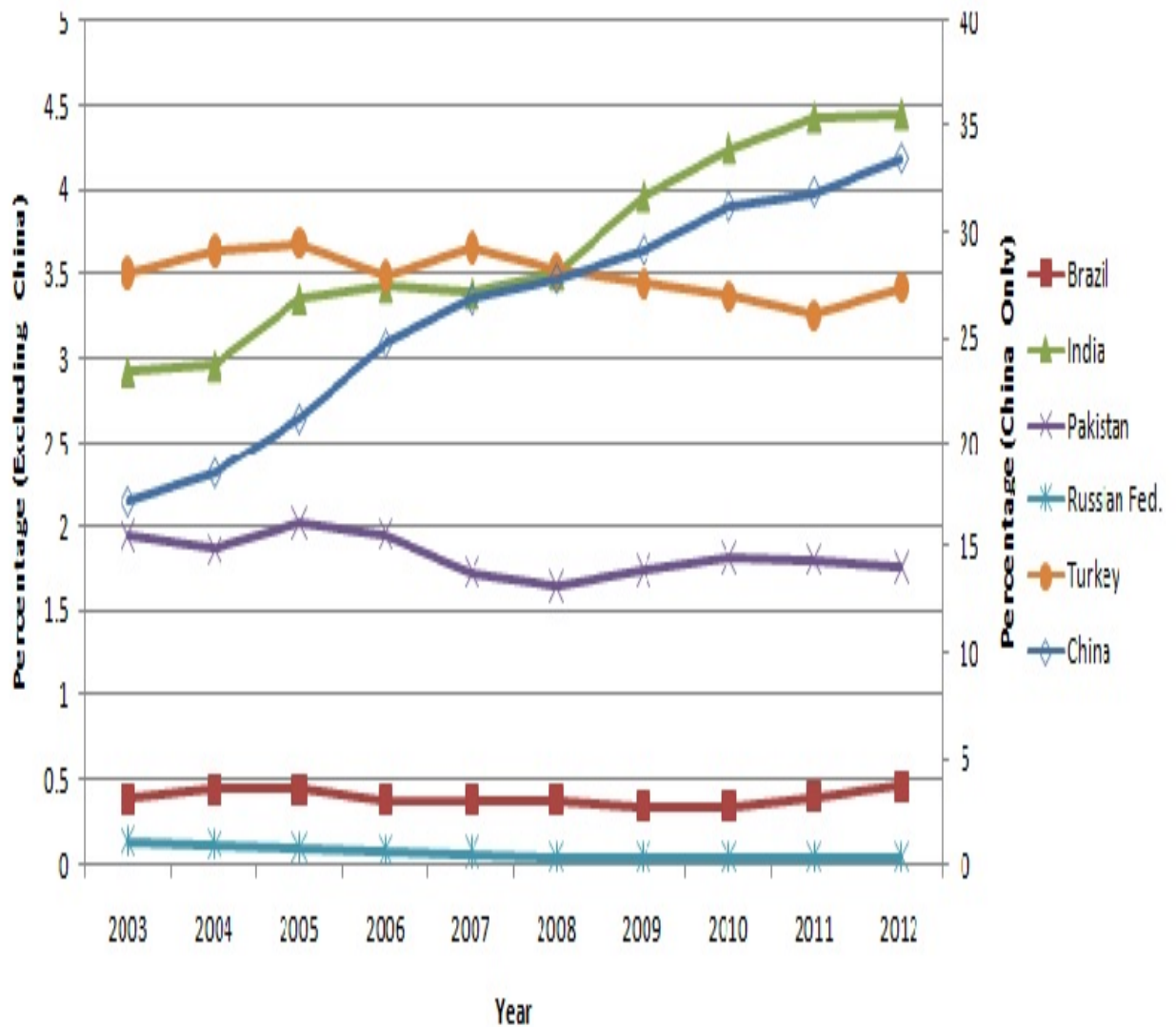


Figure 2: Country-wise Contribution to World Exports in the Textile Industry

Country-wise Contribution to World Exports in the Creative Industry

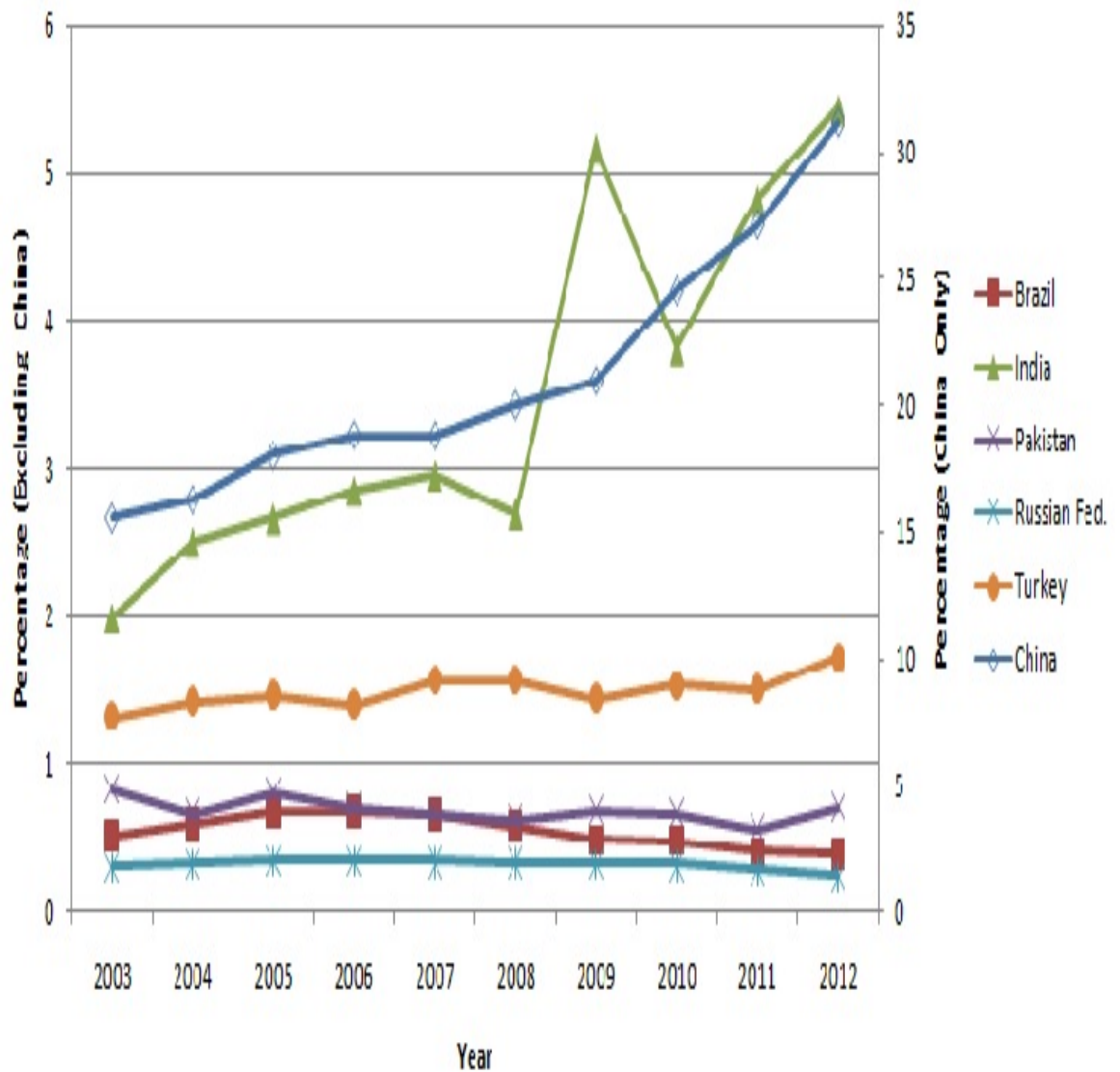


Figure 3: Country-wise Contribution to World Exports in the Creative Industry

Country-wise Contribution to World Exports in the Leather Industry

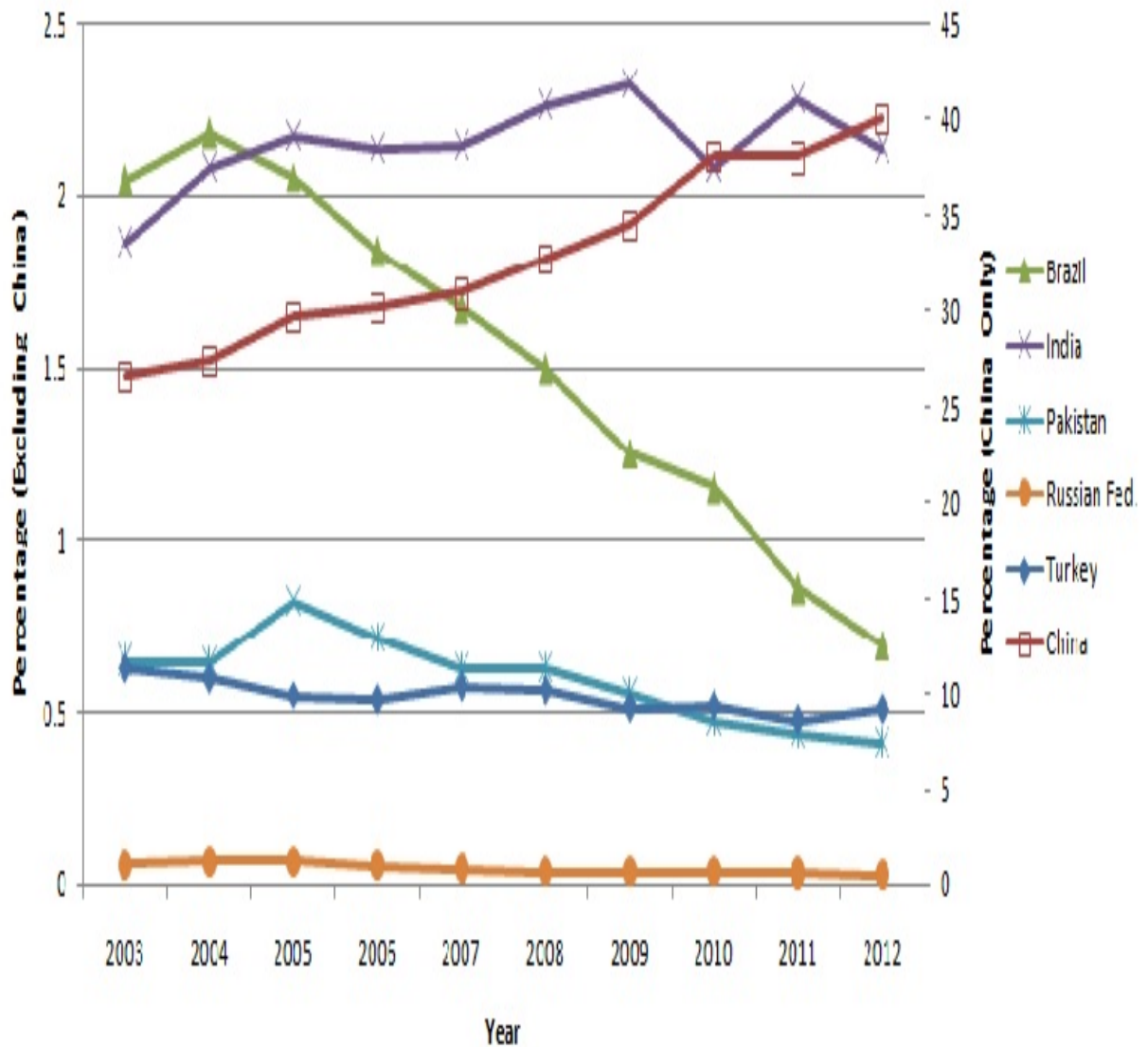


Figure 4: Country-wise Contribution to World Exports in the Leather Industry

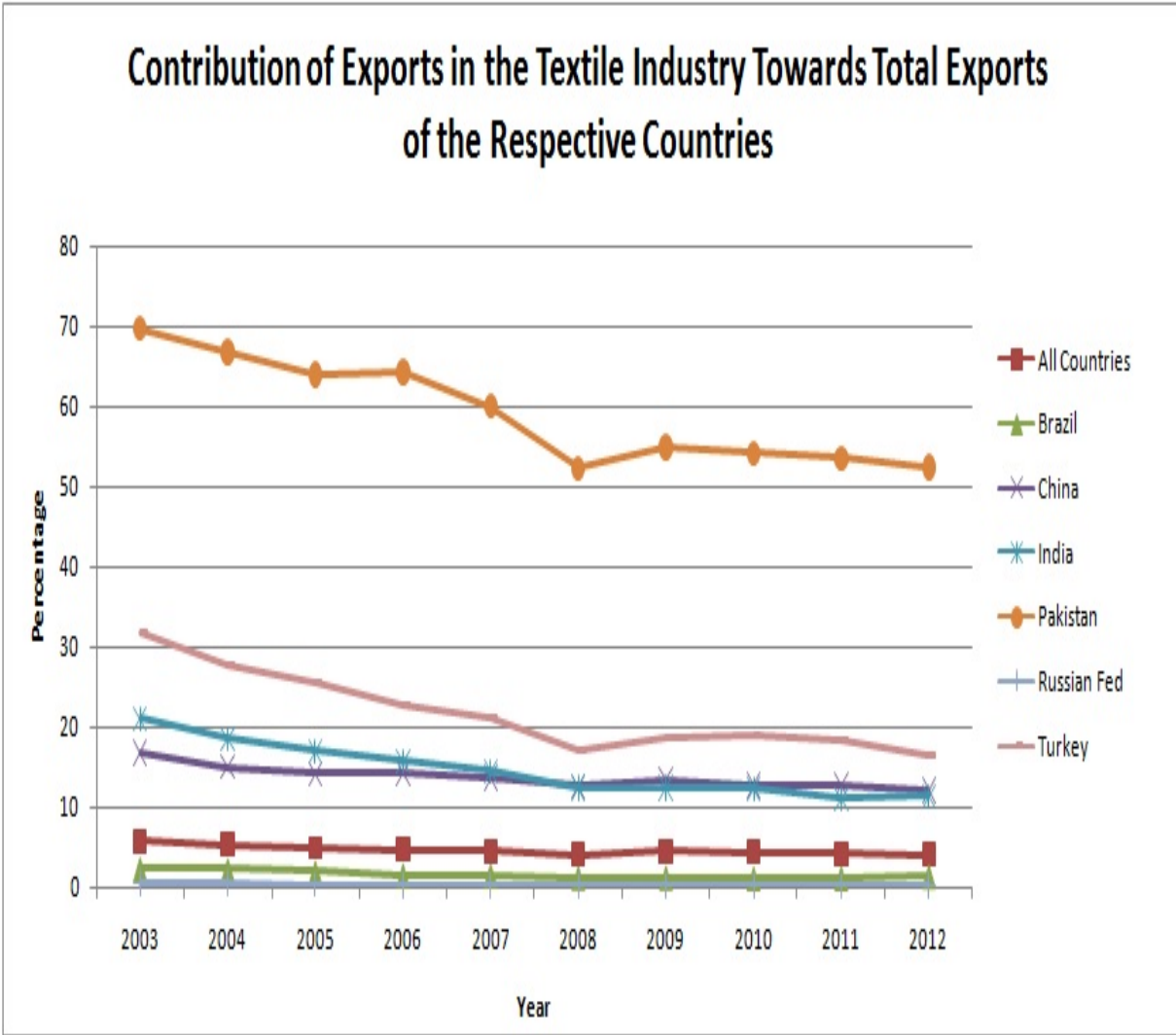


Figure 5: Contribution of Exports in the Textile Industry Towards Total Exports

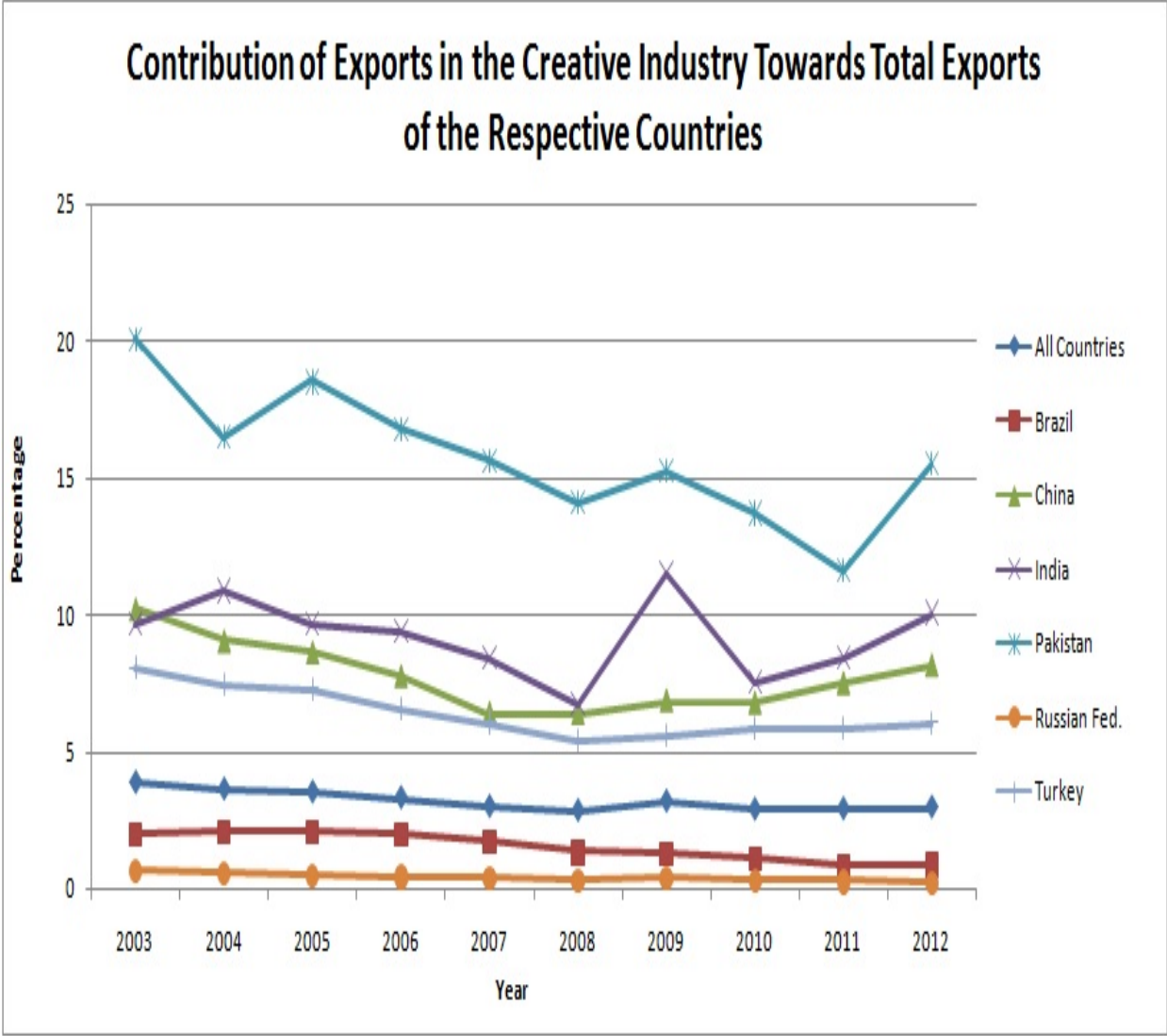


Figure 6: Contribution of Exports in the Creative Industry Towards Total Exports

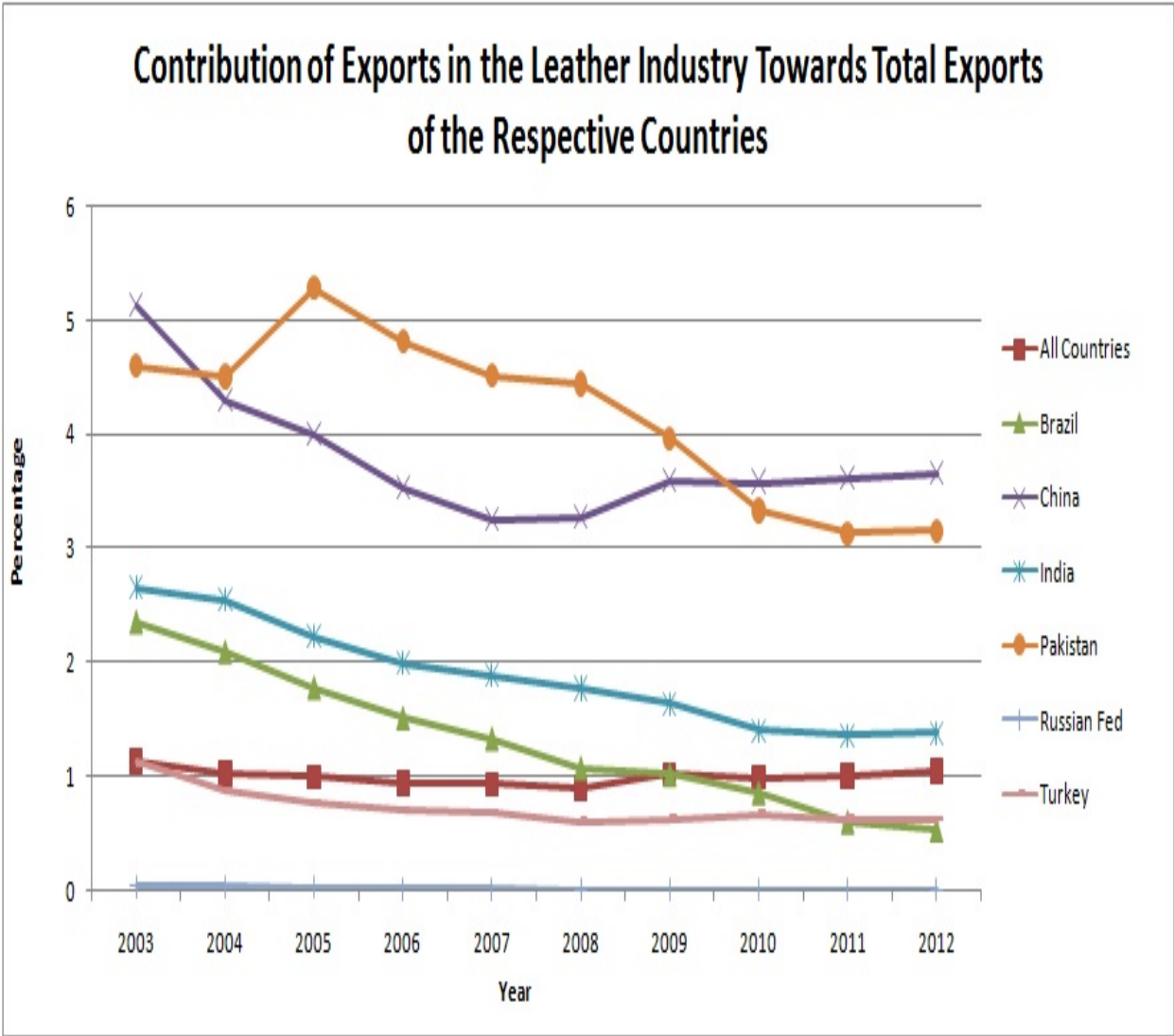


Figure 7: Contribution of Exports in the Leather Industry Towards Total Exports

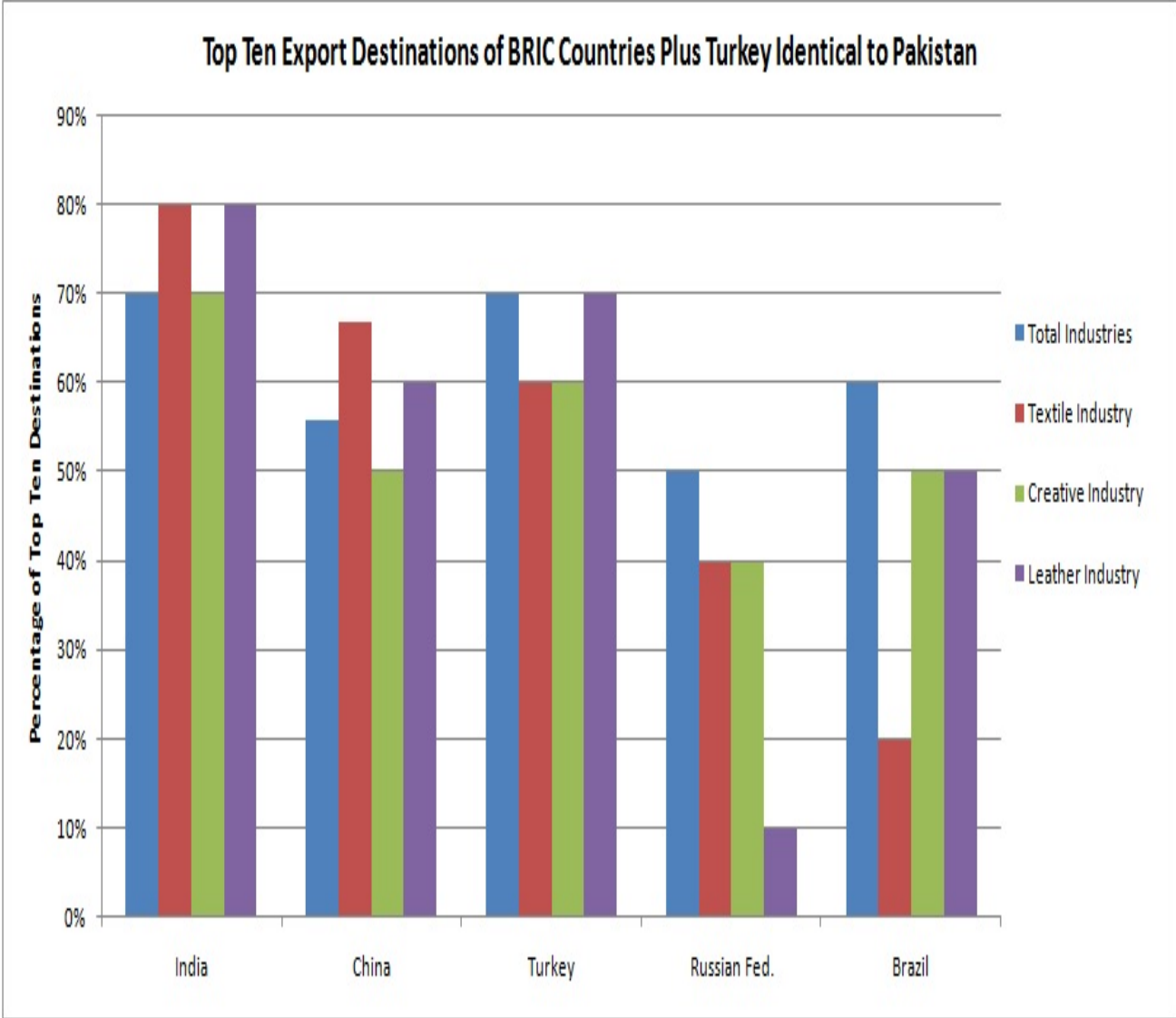


Figure 8: Top Ten Export Destinations of BRIC Countries Plus Turkey Identical to Pakistan

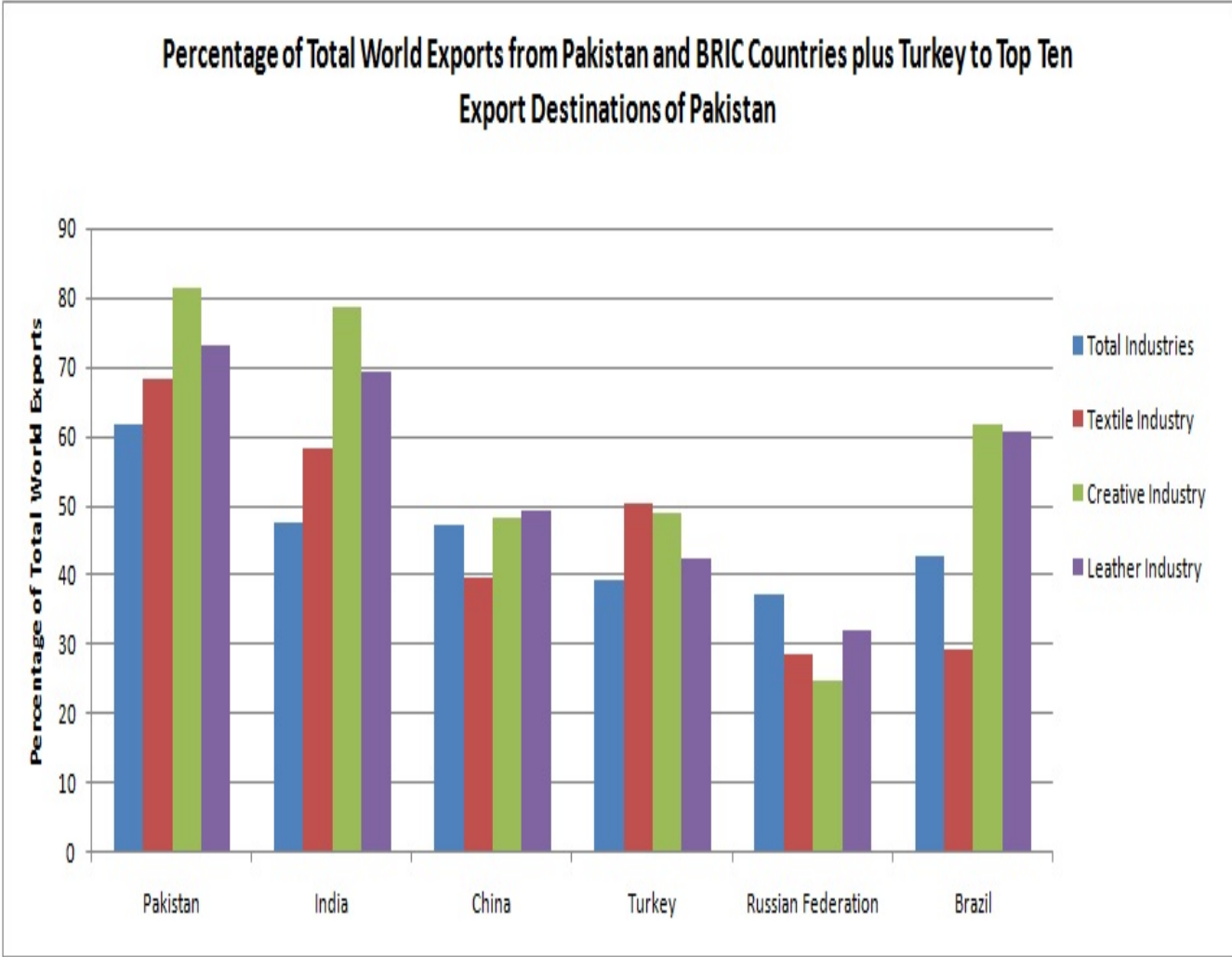


Figure 9: Percentage of Total World Exports to Top Ten Export Destinations of BRIC Countries Plus Turkey Identical to Pakistan

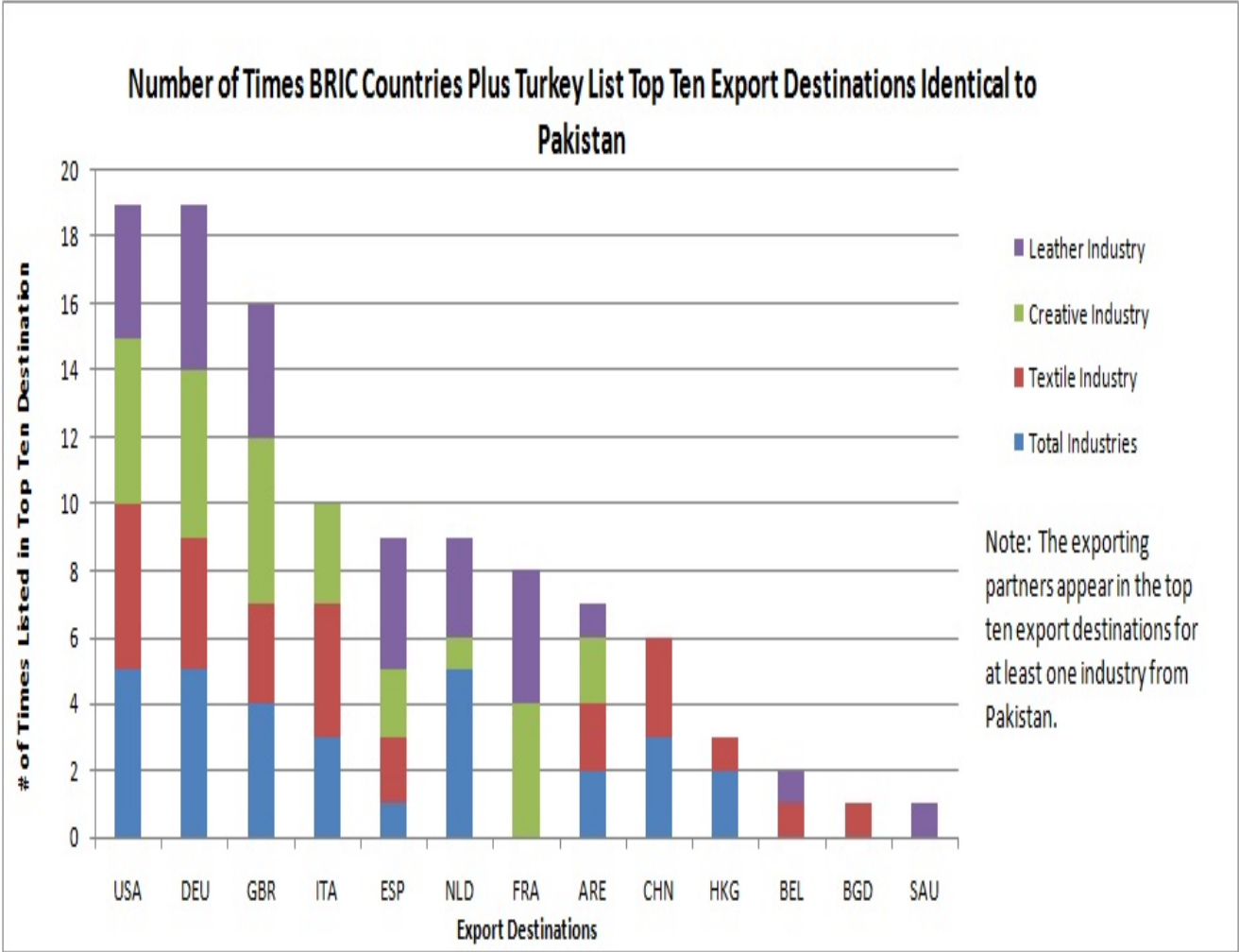


Figure 10: Number of Times BRIC Countries Plus Turkey List Top Ten Export Destinations Identical to Pakistan

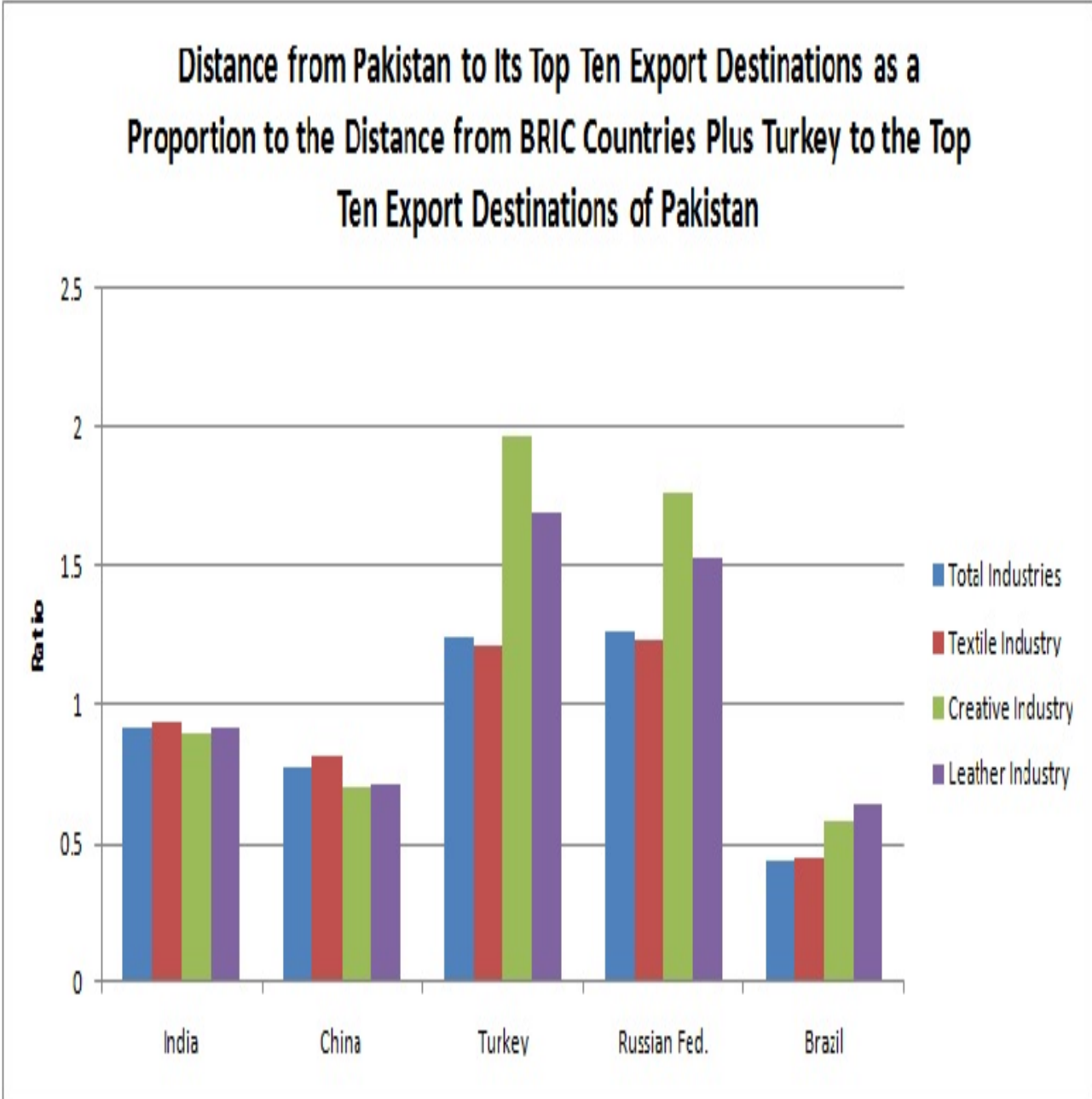


Figure 11: Distance from Pakistan to its Top Ten Export Destination as a Proportion of the Distance from BRIC Countries Plus Turkey

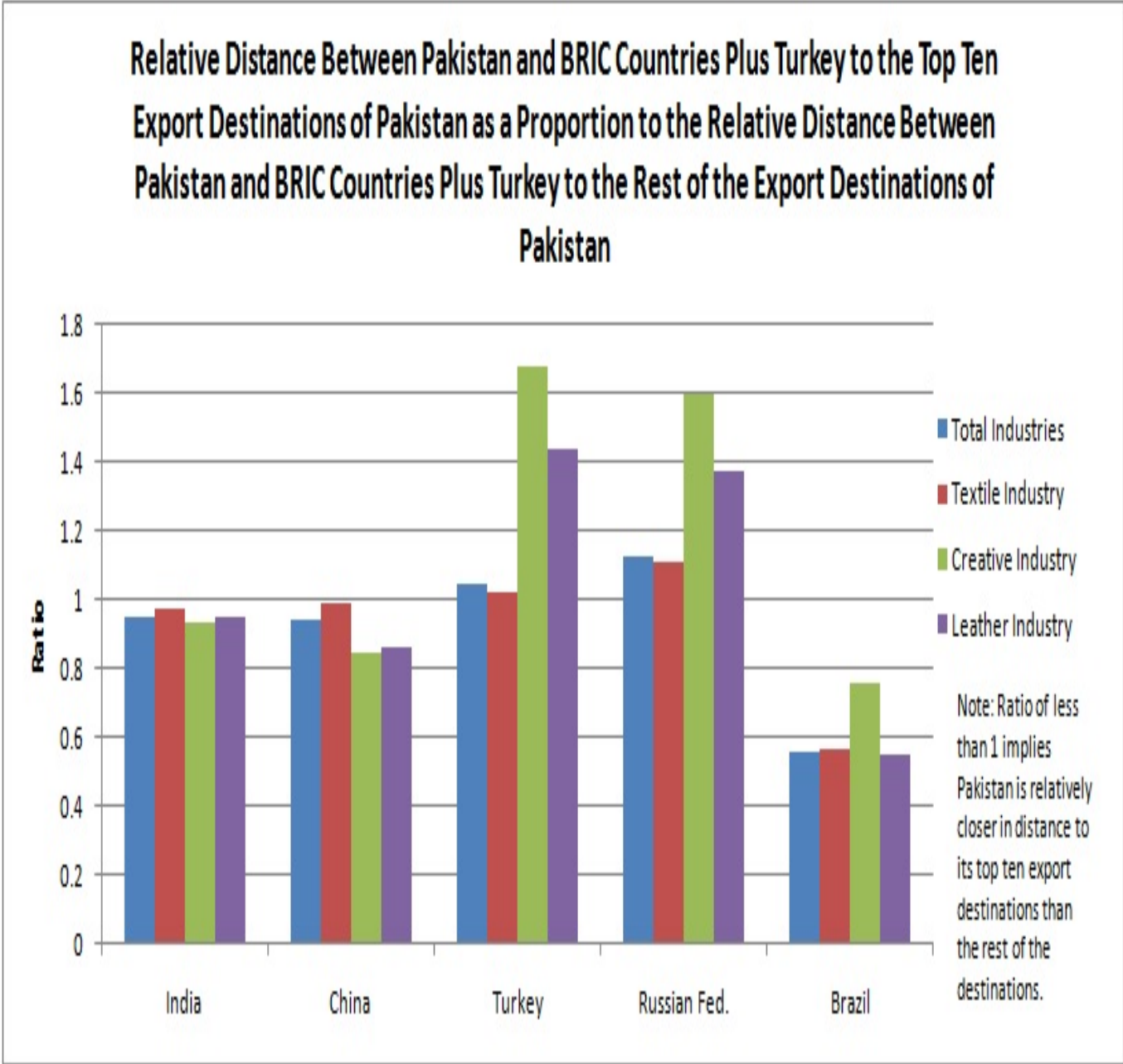


Figure 12: The Relative Distance of Pakistan to Its Top Ten Destinations as a Proportion of the Relative Distance to the Rest of Its Destinations

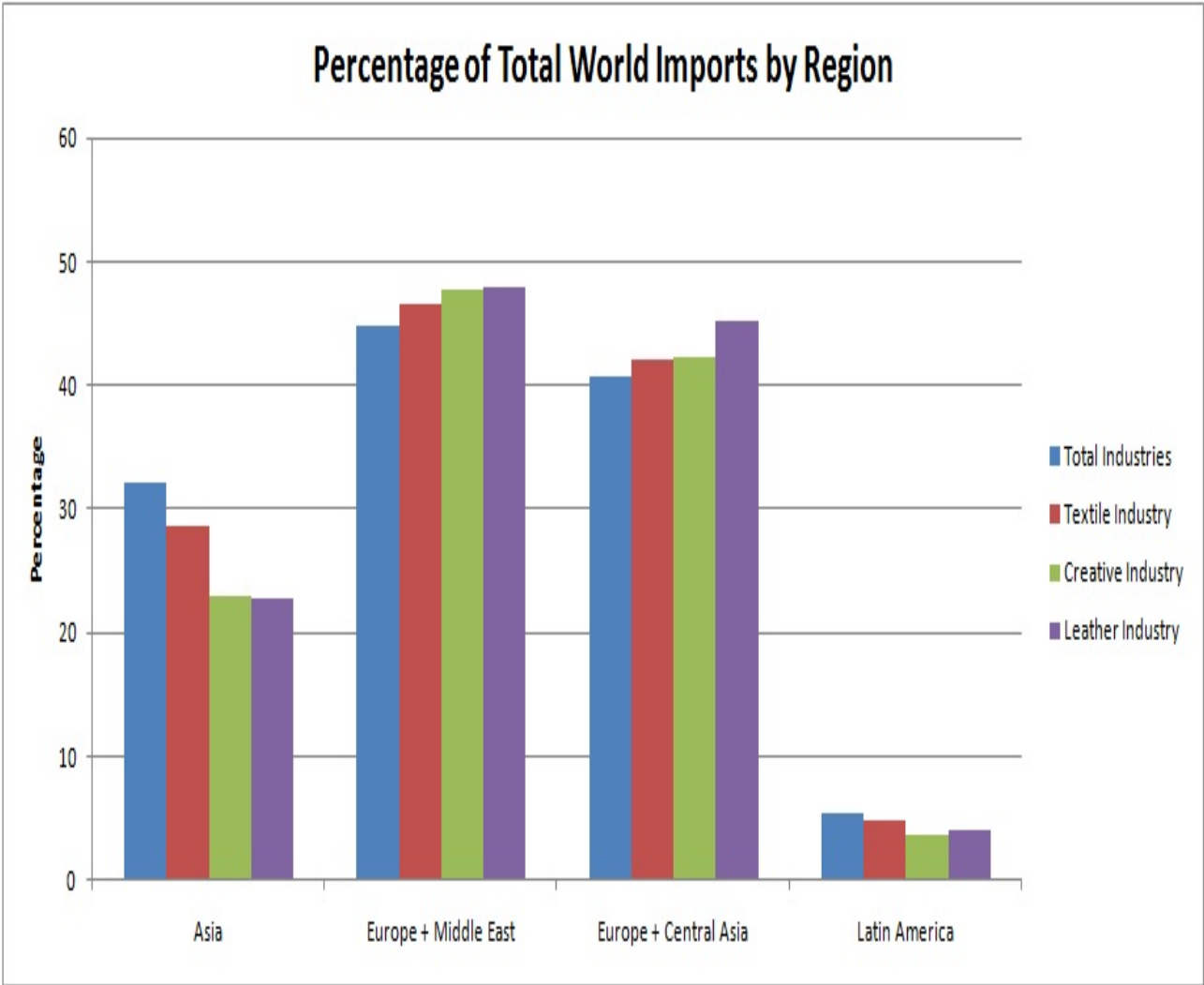


Figure 13: Percentage of Total World Imports by Region

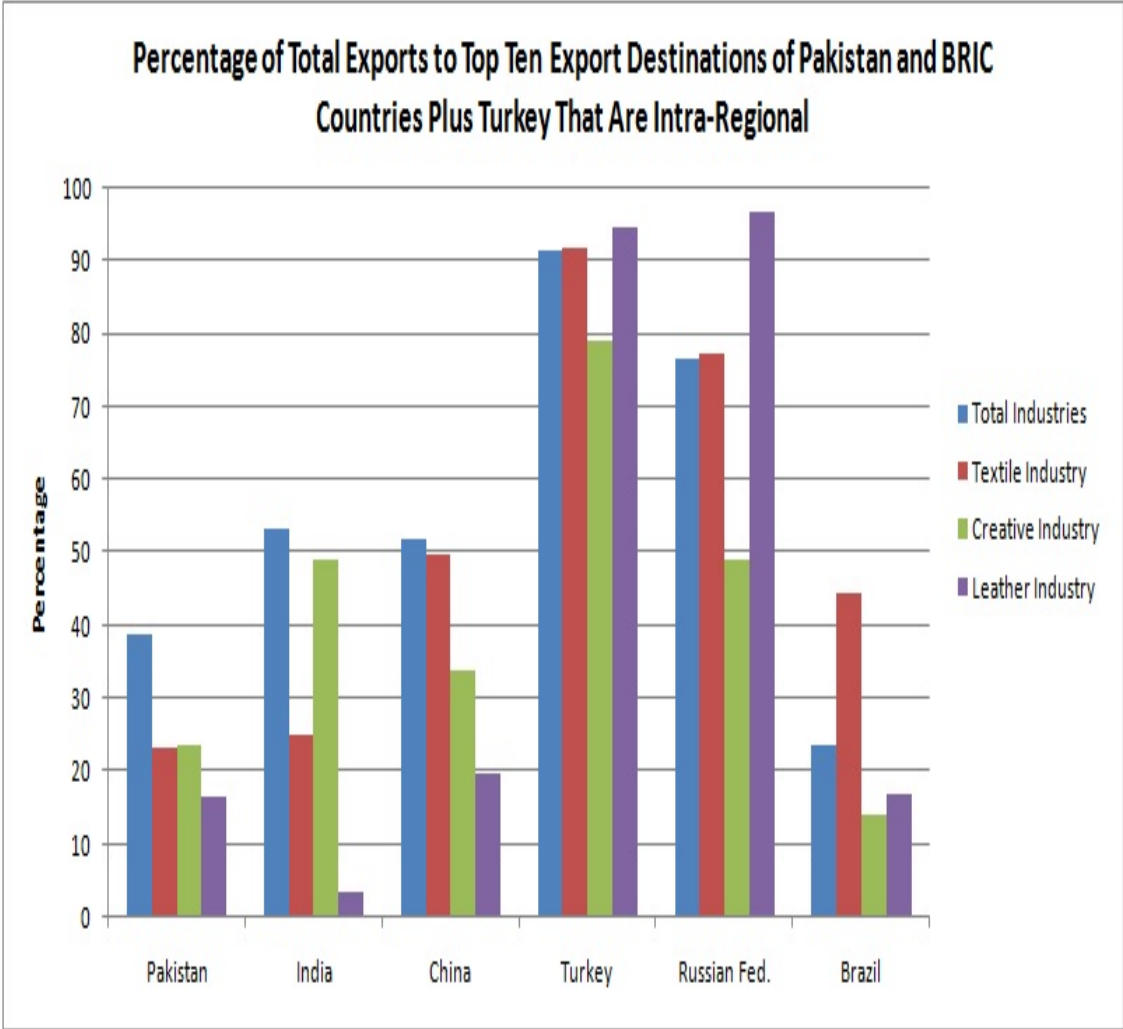


Figure 14: Percentage of Total Exports to Top Ten Destinations of Pakistan and BRIC Countries Plus Turkey That Are Intra-Regional

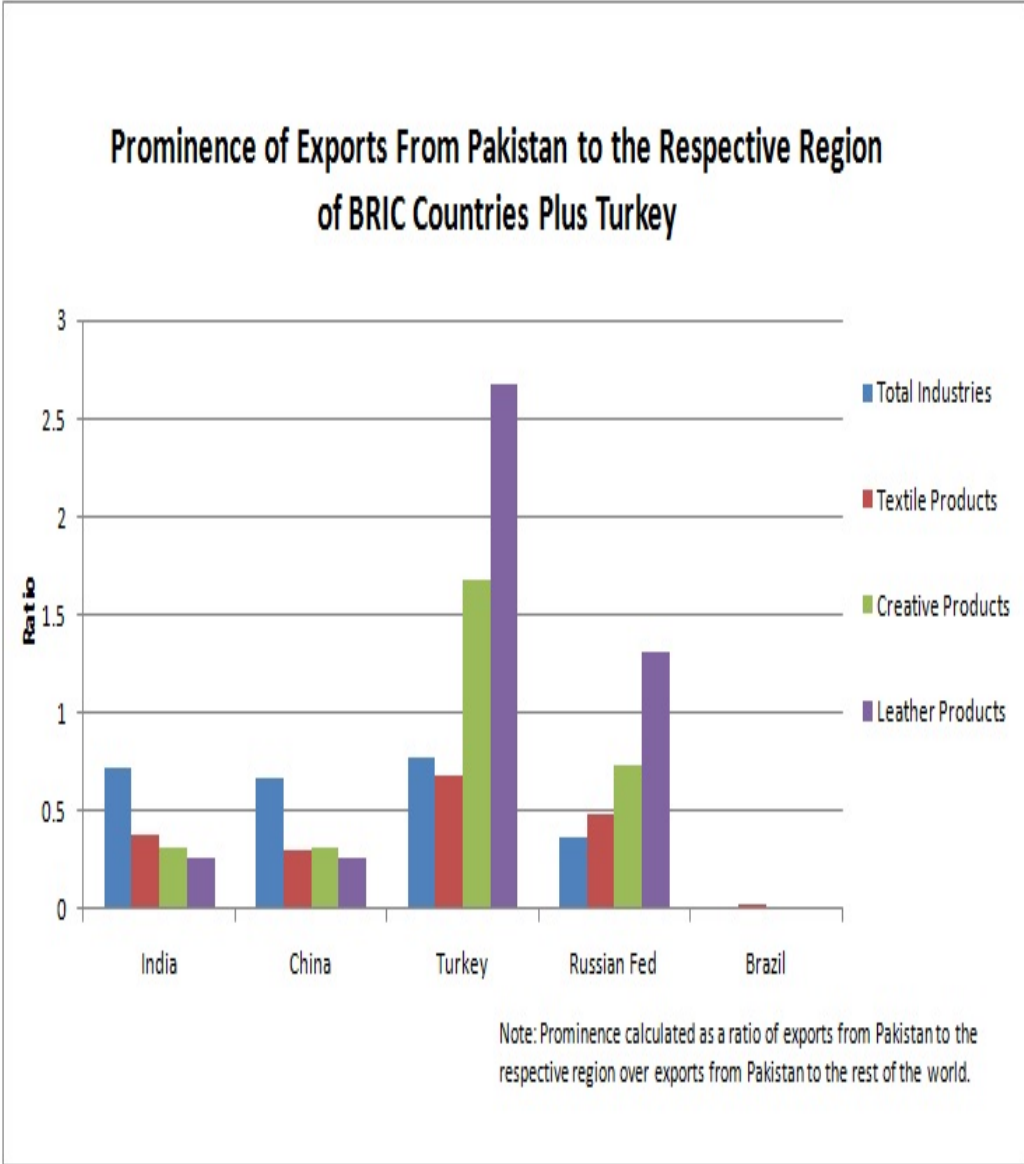


Figure 15: Prominence of Exports From Pakistan to the Respective Region of BRIC Countries Plus Turkey

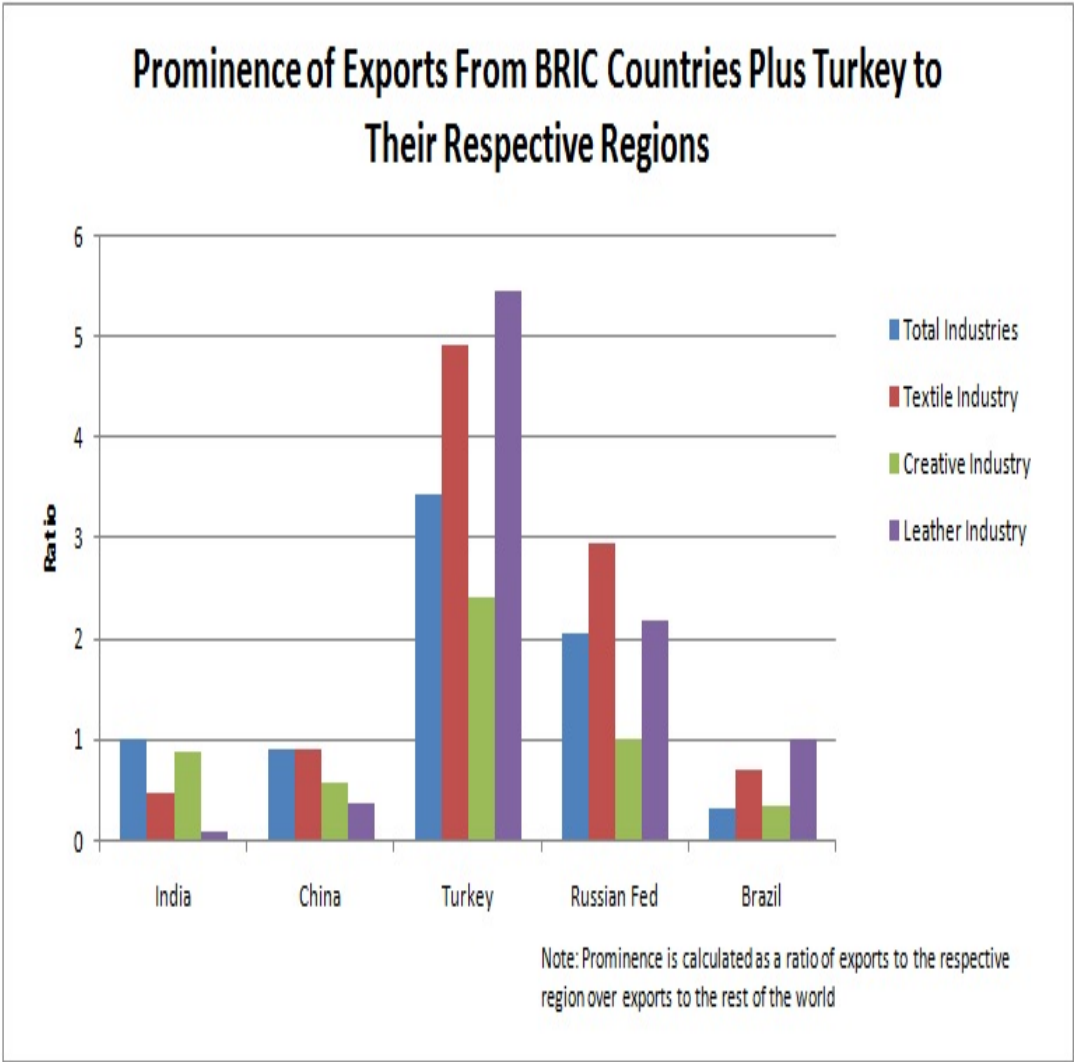


Figure 16: Prominence of Exports From BRIC Countries Plus Turkey to Their Respective Regions

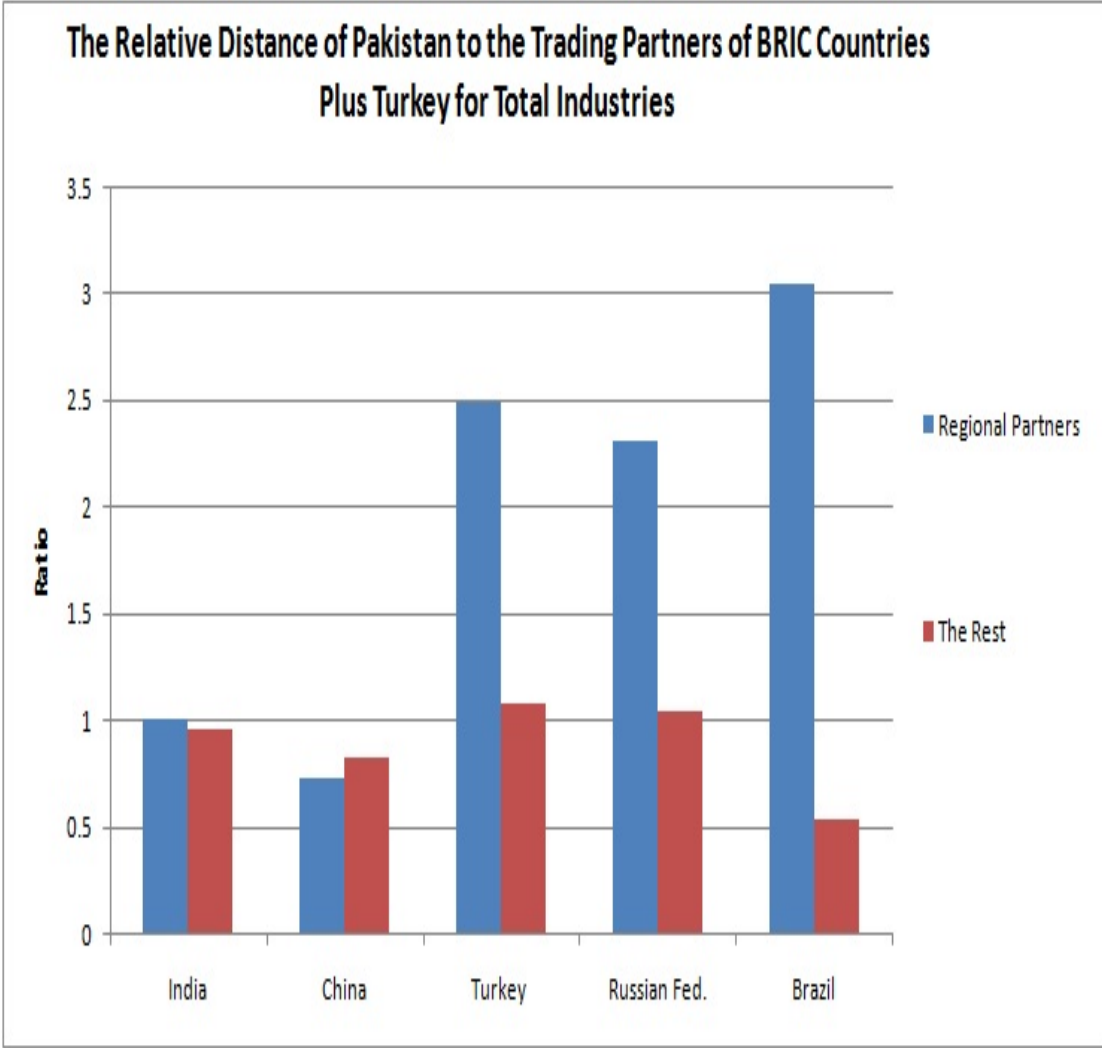


Figure 17: The Relative Distance of Pakistan to the Trading Partners of BRIC Countries Plus Turkey for Total Exports

Table 1: OLS Regressions for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Total Industries

	(1)	(2)	(3)	(4)	(5)
Dep. Var: Export Value (Pakistan)					
Export Value (India)	0.69*** (0.04)				
Export Value (China)		0.33*** (0.04)			
Export Value (Turkey)			0.18*** (0.03)		
Export Value (Russian Fed.)				-0.09*** (0.02)	
Export Value (Brazil)					0.27*** (0.03)
Distance (Pakistan)	-0.21*** (0.07)	-0.52*** (0.06)	-0.45*** (0.07)	-0.88*** (0.07)	-0.93*** (0.07)
Constant	-0.38 (1.08)	0.54 (1.20)	1.31 (1.22)	0.01 (1.24)	5.19*** (1.45)
Observations	1,639	1,641	1,612	1,500	1,625
R-squared	0.78	0.71	0.69	0.68	0.71

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 2: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Total Industries

	(1)	(2)	(3)	(4)	(5)
Dep. Var: Export Value (Pakistan)					
Export Value (India)	-0.59*** (0.20)				
Export Value (China)		-3.24*** (0.83)			
Export Value (Turkey)			-0.11** (0.04)		
Export Value (Russian Fed.)				-0.15*** (0.03)	
Export Value (Brazil)					0.46*** (0.05)
Distance (Pakistan)	-1.24*** (0.19)	-1.67*** (0.30)	-0.85*** (0.09)	-0.98*** (0.08)	-1.11*** (0.09)
Constant	1.55 (1.62)	-12.38*** (4.57)	0.93 (1.25)	-1.21 (1.24)	10.45*** (1.66)
Underident. Test (p-value)	0	0	0	0	0
Weakident. Test (KP rk value)	85.44	22.39	802.12	621.66	775.56
Endogeneity Test (p-value)	0	0	0	0.03	0
Observations	1,639	1,641	1,612	1,500	1,625
R-squared	0.51	-0.92	0.66	0.68	0.71

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 3: OLS Regressions for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan Distributed by the Prominence of Export Destinations for Pakistani Products in Total Industries

Effect of Exports From: Significance of Trading Partner: Dep. Var: Export Value (Pakistan)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	India		China		Turkey		Russian Federation		Brazil	
	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest
Export Value (India)	0.37*** (0.10)	0.65*** (0.04)								
Export Value (China)			0.11 (0.09)	0.30*** (0.04)						
Export Value (Turkey)					-0.07 (0.06)	0.15*** (0.03)				
Export Value (Russian Fed.)							-0.07*** (0.02)	-0.09*** (0.02)		
Export Value (Brazil)									0.16*** (0.06)	0.25*** (0.03)
Distance (Pakistan)	-0.82*** (0.15)	-0.10 (0.06)	-1.34*** (0.32)	-0.45*** (0.06)	-1.21*** (0.27)	-0.32*** (0.07)	-0.96*** (0.19)	-0.73*** (0.06)	-1.33*** (0.26)	-0.76*** (0.07)
Constant	-10.64*** (2.79)	-0.94 (1.09)	-13.89*** (2.77)	0.65 (1.20)	-13.46*** (3.06)	0.88 (1.24)	-14.10*** (3.09)	-1.56 (1.30)	-9.22** (3.60)	4.63*** (1.46)
Observations	98	1,541	88	1,553	98	1,514	98	1,402	98	1,527
R-squared	0.91	0.75	0.88	0.69	0.88	0.66	0.89	0.66	0.89	0.69

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 4: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan Distributed by the Prominence of Export Destinations for Pakistani Products in Total Industries

Effect of Exports From: Significance of Trading Partner: Dep. Var: Export Value (Pakistan)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	India		China		Turkey		Russian Federation		Brazil	
	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest
Export Value (India)	0.12 (0.29)	-0.11 (0.12)								
Export Value (China)			-0.83** (0.37)	-4.59*** (1.51)						
Export Value (Turkey)					-0.46*** (0.11)	-0.06 (0.04)				
Export Value (Russian Fed.)							-0.13*** (0.03)	-0.11*** (0.03)		
Export Value (Brazil)									-1.95 (2.02)	0.38*** (0.04)
Distance (Pakistan)	-0.95*** (0.15)	-0.64*** (0.10)	1.35 (1.00)	-1.81*** (0.48)	-2.24*** (0.45)	-0.62*** (0.08)	-0.91*** (0.17)	-0.75*** (0.07)	2.87 (3.91)	-0.89*** (0.08)
Constant	-12.42*** (3.26)	-0.17 (1.31)	-4.01 (5.99)	-19.75** (7.69)	-14.38*** (3.11)	0.41 (1.28)	-14.88*** (2.66)	-1.62 (1.29)	-64.32 (49.45)	7.90*** (1.56)
Underident. Test (p-value)	0.02	0	0	0	0	0	0	0	0.24	0
Weakident. Test (KP rk value)	4.95	135.31	15.99	11.63	76.57	753.59	150.35	533.82	1.07	804.73
Endogeneity Test (p-value)	0.32	0	0	0	0	0	0	0.65	0	0
Observations	98	1,541	88	1,553	98	1,514	98	1,402	98	1,527
R-squared	0.89	0.64	0.74	-2.70	0.84	0.65	0.88	0.66	-0.60	0.69

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 5: OLS Regressions for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Total Industries (Regional Decomposition)

Effect of Exports From: Region of Trading Partner: Dep. Var: Export Value (Pakistan)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	India		China		Turkey		Russian Federation		Brazil	
	Asia	The Rest	Asia	The Rest	E & ME	The Rest	E & CA	The Rest	LA	The Rest
Export Value (India)	0.29*** (0.07)	0.72*** (0.05)								
Export Value (China)			0.28*** (0.07)	0.42*** (0.05)						
Export Value (Turkey)					0.35*** (0.08)	0.21*** (0.03)				
Export Value (Russian Fed.)							0.09 (0.06)	-0.07*** (0.02)		
Export Value (Brazil)									0.34*** (0.07)	0.35*** (0.04)
Distance (Pakistan)	-2.27*** (0.25)	-0.13* (0.08)	-2.10*** (0.20)	-0.54*** (0.08)	-1.79*** (0.17)	-0.40*** (0.08)	-1.70*** (0.22)	-1.10*** (0.08)	0.79 (1.19)	-0.77*** (0.10)
Constant	13.81*** (3.57)	1.45 (1.17)	18.69*** (3.62)	3.05** (1.42)	0.62 (2.35)	2.33* (1.34)	-7.16** (3.33)	2.02 (1.35)	-7.54 (11.76)	4.87*** (1.58)
Observations	371	1,268	371	1,270	480	1,132	391	1,109	281	1,344
R-squared	0.84	0.78	0.77	0.71	0.77	0.68	0.82	0.69	0.80	0.70

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

(i) 'The Rest' implies all countries not within the mentioned region

(ii) *E & ME* is Europe and Middle East, *E & CA* is Europe and Central Asia and *LA* is Latin America

Appendix B lists the variables that are used in the regressions but are not shown above

Table 6: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Total Industries (Regional Decomposition)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Effect of Exports From:	India		China		Turkey		Russian Federation		Brazil	
Region of Trading Partner:	Asia	The Rest	Asia	The Rest	E & ME	The Rest	E & CA	The Rest	LA	The Rest
Dep. Var: Export Value (Pakistan)										
Export Value (India)	-0.27** (0.13)	1.14*** (0.15)								
Export Value (China)			-0.31* (0.16)	3.13*** (0.86)						
Export Value (Turkey)					-1.30*** (0.21)	0.09 (0.05)				
Export Value (Russian Fed.)							-0.28*** (0.10)	-0.12** (0.05)		
Export Value (Brazil)									0.46*** (0.12)	0.88*** (0.08)
Distance (Pakistan)	-3.46*** (0.40)	0.12 (0.10)	-2.21*** (0.19)	-0.31 (0.20)	-2.18*** (0.30)	-0.55*** (0.10)	-2.06*** (0.22)	-1.15*** (0.10)	0.69 (1.15)	-0.97*** (0.11)
Constant	26.72*** (4.73)	1.98 (1.31)	13.14*** (4.01)	19.05*** (5.61)	-8.62** (3.69)	1.83 (1.33)	-4.42 (3.50)	1.56 (1.30)	-4.88 (11.59)	14.67*** (2.16)
Underident. Test (p-value)	0	0	0	0	0	0	0	0	0	0
Weak ident. Test (KP rk value)	170.02	58.97	69.55	17.34	167.48	180.30	324.59	315.94	163.80	426.63
Endogeneity Test (p-value)	0	0.01	0	0	0	0.01	0	0.30	0.27	0
Observations	371	1,268	371	1,270	480	1,132	391	1,109	281	1,344
R-squared	0.81	0.75	0.72	-0.18	0.49	0.67	0.78	0.69	0.80	0.64

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

(i) 'The Rest' implies all countries not within the mentioned region

(ii) *E & ME* is Europe and Middle East, *E & CA* is Europe and Central Asia and *LA* is Latin America

Appendix B lists the variables that are used in the regressions but are not shown above

Table 7: OLS Regressions for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Textile, Creative and Leather Industries

Effect of Exports From: Dep. Var: Export Value (Pakistan)	(1) India	(2) China	(3) Turkey	(4) Russian Fed.	(5) Brazil
<u>Textile Industry</u>					
Export Value	0.59*** (0.03)	0.43*** (0.03)	0.09*** (0.03)	-0.05** (0.02)	0.08*** (0.02)
Distance (Pakistan)	0.13** (0.07)	0.11 (0.07)	0.02 (0.09)	-0.21** (0.10)	-0.40*** (0.10)
Constant	-5.73*** (0.99)	-5.58*** (1.13)	-4.68*** (1.25)	-9.62*** (1.46)	-2.78* (1.47)
Observations	1,551	1,562	1,433	938	1,261
R-squared	0.77	0.71	0.67	0.71	0.70
<u>Creative Industry</u>					
Export Value	0.72*** (0.03)	0.55*** (0.05)	0.29*** (0.03)	0.07** (0.02)	0.26*** (0.03)
Distance (Pakistan)	-0.14* (0.08)	-0.31*** (0.09)	-0.15 (0.10)	-0.45*** (0.11)	-1.33*** (0.13)
Constant	-9.38*** (1.15)	-7.47*** (1.41)	-9.39*** (1.47)	-16.87*** (1.61)	-2.35 (1.90)
Observations	1,410	1,415	1,349	1,053	1,281
R-squared	0.72	0.63	0.60	0.59	0.63
<u>Leather Industry</u>					
Export Value	0.56*** (0.03)	0.37*** (0.04)	0.14*** (0.03)	0.07** (0.03)	0.17*** (0.03)
Distance (Pakistan)	-0.60*** (0.08)	-0.77*** (0.09)	-0.55*** (0.12)	-0.41*** (0.15)	-1.08*** (0.12)
Constant	-10.60*** (1.33)	-11.53*** (1.48)	-15.54*** (1.68)	-23.42*** (2.33)	-14.56*** (1.95)
Observations	1,164	1,205	1,017	597	943
R-squared	0.72	0.64	0.61	0.62	0.68

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 8a: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Textile and Creative Industries

	(1)	(2)	(3)	(4)	(5)
Effect of Exports From:	India	China	Turkey	Russian Fed.	Brazil
Dep. Var: Export Value (Pakistan)					
<u>Textile Industry</u>					
Export Value	2.74 (3.56)	-4.65 (3.07)	-0.07*** (0.04)	-0.07 (0.05)	0.10 (0.07)
Distance (Pakistan)	1.20 (1.76)	-2.07 (1.36)	-0.28** (0.11)	-0.24** (0.11)	-0.43** (0.17)
Constant	-4.96* (3.00)	-21.83* (11.49)	-5.86*** (1.26)	-9.68*** (1.46)	-2.32 (2.48)
Underident. Test (p-value)	0.5	0.12	0	0	0
Weak ident. Test (KP rk value)	0.44	2.62	913.80	250.94	179.04
Endogeneity Test (p-value)	0.11	0	0	0.55	0.81
Observations	1,551	1,562	1,433	938	1,261
R-squared	-0.42	-4.93	0.66	0.71	0.70
<u>Creative Industry</u>					
Export Value	-3.04 (2.79)	-11.35 (8.95)	0.14** (0.07)	0.15** (0.07)	0.23*** (0.07)
Distance (Pakistan)	-2.98 (2.18)	-5.29 (3.72)	-0.39*** (0.15)	-0.31* (0.17)	-1.25*** (0.19)
Constant	-14.96** (6.00)	-88.05 (61.74)	-10.17*** (1.49)	-16.66*** (1.61)	-3.74 (2.89)
Underident. Test (p-value)	0.17	0.22	0	0	0
Weak ident. Test (KP rk value)	1.99	1.64	447.30	179.10	473
Endogeneity Test (p-value)	0	0	0.02	0.19	0.54
Observations	1,410	1,415	1,349	1,053	1,281
R-squared	-2.65	-19.29	0.59	0.59	0.63

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 8b: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Leather Industry

	(1)	(2)	(3)	(4)	(5)
Effect of Exports From:	India	China	Turkey	Russian Fed.	Brazil
Dep. Var: Export Value (Pakistan)					
<u>Leather Industry</u>					
Export Value	2.00** (0.81)	10.57 (9.79)	0.00 (0.04)	0.16** (0.08)	0.25*** (0.07)
Distance (Pakistan)	0.43 (0.59)	0.82 (1.87)	-0.79*** (0.14)	-0.25 (0.22)	-1.22*** (0.16)
Constant	2.02 (7.62)	98.67 (104.66)	-16.88*** (1.70)	-23.14*** (2.24)	-11.88*** (2.71)
Underident. Test (p-value)	0.02	0.28	0	0	0
Weak ident. Test (KP rk value)	4.21	1.13	714.13	109.11	280.9
Endogeneity Test (p-value)	0	0	0	0.21	0.19
Observations	1,164	1,205	1,017	597	943
R-squared	0.12	-19.50	0.60	0.62	0.68

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are used in the regressions but are not shown above

Table 9: OLS Regressions for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan Distributed by the Prominence of the Export Destinations for Pakistani Products in Textile, Creative and Leather Industries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Effect of Exports From:	India		China		Turkey		Russian Federation		Brazil	
Significance of Trading Partner:	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest
Dep. Var: Export Value (Pakistan)										
<u>Textile Industry</u>										
Export Value	0.72*** (0.09)	0.56*** (0.03)	0.68*** (0.10)	0.40*** (0.03)	-0.23*** (0.03)	0.09*** (0.03)	-0.21*** (0.03)	-0.04 (0.02)	0.18*** (0.03)	0.04* (0.02)
Distance (Pakistan)	1.28*** (0.27)	0.21*** (0.07)	-1.26*** (0.25)	0.18** (0.07)	-0.46** (0.22)	0.19** (0.09)	-0.56*** (0.20)	0.02 (0.10)	-0.81*** (0.27)	-0.19* (0.10)
Constant	6.45*** (1.46)	-5.66*** (1.05)	-12.07*** (2.59)	-4.61*** (1.18)	-5.20*** (1.80)	-4.04*** (1.29)	-10.76*** (1.90)	-8.30*** (1.54)	2.31 (1.70)	-2.70* (1.54)
Observations	99	1,452	89	1,473	99	1,334	94	844	99	1,162
R-squared	0.89	0.72	0.88	0.67	0.85	0.62	0.88	0.65	0.83	0.65
<u>Creative Industry</u>										
Export Value	0.28*** (0.08)	0.65*** (0.04)	0.25 (0.17)	0.48*** (0.05)	0.52*** (0.11)	0.23*** (0.03)	-0.03 (0.03)	0.07*** (0.03)	0.02 (0.06)	0.16*** (0.03)
Distance (Pakistan)	0.81*** (0.22)	-0.16** (0.08)	0.08 (0.37)	-0.28*** (0.09)	0.74*** (0.17)	-0.17* (0.10)	0.51** (0.23)	-0.28** (0.11)	0.48** (0.22)	-1.05*** (0.12)
Constant	2.14 (4.71)	-7.73*** (1.25)	-4.27 (4.85)	-4.93*** (1.43)	-5.15 (4.73)	-6.16*** (1.52)	-5.29 (4.77)	-12.35*** (1.76)	-3.65 (5.31)	-2.41 (1.90)
Observations	98	1,312	98	1,317	98	1,251	97	956	98	1,183
R-squared	0.85	0.63	0.83	0.54	0.86	0.50	0.83	0.48	0.83	0.52
<u>Leather Industry</u>										
Export Value	0.16** (0.07)	0.48*** (0.03)	-0.13 (0.13)	0.30*** (0.04)	-0.16*** (0.06)	0.06** (0.03)	0.05** (0.02)	0.05 (0.03)	-0.06 (0.05)	0.10*** (0.03)
Distance (Pakistan)	0.20 (0.27)	-0.60*** (0.08)	0.42 (0.39)	-0.72*** (0.09)	-0.10 (0.28)	-0.59*** (0.12)	-0.03 (0.28)	-0.26* (0.15)	0.30 (0.28)	-0.93*** (0.12)
Constant	8.10*** (2.71)	-9.01*** (1.37)	3.27 (2.64)	-7.95*** (1.52)	0.97 (2.34)	-11.08*** (1.75)	5.87** (2.65)	-16.86*** (2.58)	3.53 (2.60)	-11.45*** (1.91)
Observations	98	1,066	98	1,107	98	919	92	505	98	845
R-squared	0.64	0.64	0.63	0.56	0.65	0.52	0.65	0.53	0.63	0.60

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are included in the regressions but are not shown above

Table 10a: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan Distributed by the Prominence of the Export Destinations for Pakistani Products in Textile and Creative Industries

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Effect of Exports From:	India		China		Turkey		Russian Federation		Brazil	
Significance of Trading Partner:	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest
Dep. Var: Export Value (Pakistan)										
<u>Textile Industry</u>										
Export Value	1.96*** (0.36)	5.99 (12.73)	-0.19 (0.30)	-16.06 (30.73)	-0.31*** (0.04)	-0.04 (0.04)	-0.28*** (0.05)	-0.04 (0.05)	0.07 (0.17)	0.03 (0.07)
Distance (Pakistan)	4.41*** (0.91)	2.17 (4.58)	-0.25 (0.44)	-5.89 (11.41)	-0.43** (0.20)	-0.06 (0.11)	-0.60*** (0.18)	0.02 (0.12)	-0.65* (0.35)	-0.17 (0.19)
Constant	12.34*** (3.57)	-10.13 (16.39)	23.53 (17.59)	-19.91 (12.22)	-14.73*** (1.95)	-4.44*** (1.29)	-26.19*** (4.70)	-8.83*** (1.62)	-25.31 (31.13)	2.49 (3.00)
Underident. Test (p-value)	0	0.65	0	0.61	0	0	0	0	0.01	0
Weak ident. Test (KP rk value)	14.98	0.19	16.79	0.28	158.45	791.69	50.30	158.20	6.96	154.76
Endogeneity Test (p-value)	0	0.01	0	0	0	0	0.07	0.97	0.53	0.9
Observations	99	1,452	89	1,473	99	1,334	94	844	99	1,162
R-squared	0.62	-8.13	0.75	-69.10	0.84	0.61	0.88	0.65	0.82	0.65
<u>Creative Industry</u>										
Export Value	0.39 (0.50)	-1.46 (1.01)	1.91 (3.70)	-5.40** (2.58)	-6.14 (16.06)	0.09 (0.07)	-0.03 (0.03)	0.14** (0.07)	-2.44 (4.06)	0.13* (0.07)
Distance (Pakistan)	0.93 (0.57)	-1.62** (0.76)	-2.84 (6.50)	-2.68** (1.07)	-1.97 (6.78)	-0.39*** (0.14)	0.51** (0.20)	-0.16 (0.17)	6.41 (9.43)	-0.97*** (0.19)
Constant	4.75 (13.90)	-5.28* (3.14)	-5.46 (7.52)	-38.21** (15.71)	8.47 (37.02)	-6.56*** (1.52)	-5.71 (3.74)	-12.48*** (1.75)	-58.15 (95.88)	-3.56 (2.89)
Underident. Test (p-value)	0.02	0.02	0.63	0.05	0.68	0	0	0	0.55	0
Weak ident. Test (KP rk value)	4.63	5.91	0.2	4.57	0.14	446.27	148.02	147	0.33	439.78
Endogeneity Test (p-value)	0.81	0	0.44	0	0.03	0.02	0.79	0.28	0.04	0.62
Observations	98	1,312	98	1,317	98	1,251	97	956	98	1,183
R-squared	0.84	-0.65	0.63	-5.95	-4.87	0.49	0.83	0.47	-0.86	0.52

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are included in the regressions but are not shown above

Table 10b: IV Regressions (Second Stage) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan Distributed by the Prominence of the Export Destinations for Pakistani Products in Leather Industry

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Effect of Exports From:	India		China		Turkey		Russian Federation		Brazil	
Significance of Trading Partner:	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest	Top Ten	The Rest
Dep. Var: Export Value (Pakistan)										
<u>Leather Industry</u>										
Export Value	-0.23*	2.59*	0.97*	166.25	-0.02	-0.02	-0.03	0.22**	-3.03	0.10
	(0.12)	(1.56)	(0.51)	(3,742.83)	(0.04)	(0.09)	(0.04)	(0.10)	(4.02)	(0.08)
Distance (Pakistan)	0.28	0.85	-1.20	22.38	0.19	-0.73***	0.13	0.04	3.43	-0.93***
	(0.29)	(1.07)	(0.78)	(523.25)	(0.31)	(0.13)	(0.32)	(0.24)	(4.51)	(0.16)
Constant	-1.00	-0.29	13.32**	1,572.66	3.99*	-11.45***	4.89*	-17.61***	-42.05	-11.46***
	(3.48)	(7.36)	(5.69)	(35,614.52)	(2.39)	(1.73)	(2.59)	(2.59)	(64.03)	(2.65)
Underident. Test (p-value)	0	0.12	0	0.96	0	0	0	0	0.46	0
Weak ident. Test (KP rk value)	42.27	2.12	15.57	0	206.86	692.94	48.02	66.04	0.46	218.94
Endogeneity Test (p-value)	0	0	0.01	0	0	0.02	0	0.05	0	0.99
Observations	98	1,066	98	1,107	98	919	92	505	98	845
R-squared	0.51	-0.92	0.45	-7,160.60	0.63	0.52	0.59	0.51	-6.90	0.60

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are included in the regressions but are not shown above

Table 11: OLS Regressions for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan for Textile, Creative and Leather Industries (Regional Decomposition)

Effect of Exports From: Region of Importing Partner: Dep. Var: Export Value (Pakistan)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	India		China		Turkey		Russian Federation		Brazil	
	Asia	The Rest	Asia	The Rest	E & ME	The Rest	E & CA	The Rest	LA	The Rest
<u>Textile Industry</u>										
Export Value	0.51*** (0.05)	0.55*** (0.04)	0.35*** (0.06)	0.49*** (0.04)	0.19*** (0.07)	0.12*** (0.03)	0.10** (0.04)	-0.07** (0.03)	-0.15* (0.08)	0.14*** (0.03)
Distance (Pakistan)	-0.98*** (0.27)	0.28*** (0.09)	-1.80*** (0.22)	0.17* (0.10)	-0.50*** (0.19)	0.14 (0.11)	-1.39*** (0.36)	-0.34*** (0.12)	3.45** (1.58)	-0.23* (0.12)
Constant	6.36* (3.28)	-7.46*** (1.19)	18.13*** (3.57)	-5.90*** (1.34)	-9.26*** (2.97)	-3.16** (1.40)	-17.56*** (3.61)	-5.11*** (1.54)	-42.45*** (15.49)	-2.81* (1.56)
Observations	362	1,189	359	1,203	468	965	344	594	250	1,011
R-squared	0.86	0.74	0.78	0.72	0.76	0.65	0.83	0.69	0.70	0.72
<u>Creative Industry</u>										
Export Value	0.59*** (0.07)	0.67*** (0.04)	0.13 (0.13)	0.76*** (0.09)	0.28*** (0.09)	0.29*** (0.03)	0.25*** (0.04)	0.00 (0.03)	0.38** (0.17)	0.40*** (0.03)
Distance (Pakistan)	-1.49*** (0.32)	-0.44*** (0.09)	-2.07*** (0.28)	-0.78*** (0.11)	-0.23 (0.20)	-0.03 (0.11)	-1.37*** (0.39)	-0.76*** (0.12)	4.14** (1.84)	-0.47*** (0.15)
Constant	3.61 (3.82)	-5.72*** (1.35)	14.08*** (4.29)	-0.10 (1.54)	-22.87*** (2.57)	-7.94*** (1.61)	-24.91*** (3.78)	-11.81*** (1.70)	-51.31*** (18.52)	-7.50*** (2.01)
Observations	337	1,073	336	1,079	464	885	354	699	219	1,062
R-squared	0.74	0.73	0.60	0.71	0.77	0.52	0.82	0.53	0.64	0.66
<u>Leather Industry</u>										
Export Value	0.50*** (0.08)	0.49*** (0.03)	0.38*** (0.08)	0.40*** (0.05)	-0.11 (0.10)	0.09** (0.04)	0.09*** (0.03)	-0.01 (0.07)	0.25** (0.11)	0.30*** (0.04)
Distance (Pakistan)	-2.25*** (0.40)	-0.76*** (0.10)	-2.19*** (0.32)	-1.10*** (0.11)	-0.39** (0.18)	-0.39** (0.15)	-1.60*** (0.38)	-0.37* (0.21)	1.20 (2.79)	-0.23 (0.16)
Constant	4.82 (4.79)	-10.12*** (1.49)	12.57** (5.11)	-7.97*** (1.63)	-28.04*** (2.70)	-15.54*** (1.96)	-26.67*** (3.71)	-18.27*** (2.93)	-23.91 (28.13)	-20.79*** (2.16)
Observations	302	862	304	901	458	559	308	289	164	779
R-squared	0.60	0.77	0.49	0.73	0.73	0.52	0.82	0.51	0.54	0.70

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

Appendix B lists the variables that are included in the regressions but are not shown above

Table 12a: IV Regressions (Second Stages) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Textile and Creative Industries (Regional Decomposition)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Effect of Exports From:	India		China		Turkey		Russian Federation		Brazil	
Region of Importing Partner:	Asia	The Rest	Asia	The Rest	E & ME	The Rest	E & CA	The Rest	LA	The Rest
Dep. Var: Export Value (Pakistan)										
<u>Textile Industry</u>										
Export Value	-0.11 (0.25)	1.15*** (0.20)	-0.02 (0.18)	1.11** (0.48)	-0.42*** (0.12)	-0.15* (0.08)	-0.01 (0.10)	-0.12 (0.09)	0.26* (0.14)	1.51** (0.72)
Distance (Pakistan)	-2.91*** (0.81)	0.41*** (0.12)	-2.03*** (0.23)	0.20 (0.14)	0.13 (0.23)	-0.32* (0.17)	-1.57*** (0.38)	-0.36*** (0.12)	2.21 (1.80)	-1.92** (0.91)
Constant	20.19*** (6.33)	-6.90*** (1.36)	14.82*** (4.17)	-2.50 (2.85)	-22.48*** (3.82)	-5.04*** (1.43)	-16.00*** (3.91)	-5.27*** (1.52)	-26.11 (18.28)	27.13* (15.72)
Underident. Test (p-value)	0	0	0.03	0	0	0	0	0	0	0.03
Weak ident. Test (KP rk value)	21.08	37.96	36.72	10.69	168.02	285.63	117.48	63.36	185.24	4.81
Endogeneity Test (p-value)	0.01	0	0.03	0.11	0	0	0.17	0.54	0	0
Observations	362	1,189	359	1,203	468	965	344	594	250	1,011
R-squared	0.79	0.65	0.75	0.64	0.72	0.62	0.82	0.69	0.67	-0.14
<u>Creative Industry</u>										
Export Value	-0.51* (0.29)	1.08*** (0.13)	-1.68*** (0.40)	0.16 (0.68)	-1.03*** (0.21)	0.12 (0.10)	0.01 (0.09)	-0.35*** (0.11)	0.56* (0.29)	0.86*** (0.09)
Distance (Pakistan)	-4.41*** (0.95)	-0.17 (0.12)	-2.77*** (0.41)	-0.87*** (0.15)	-1.25*** (0.36)	-0.29 (0.18)	-1.97*** (0.47)	-1.19*** (0.18)	3.88** (1.81)	-1.16*** (0.19)
Constant	29.92*** (8.94)	-5.03*** (1.41)	2.93 (6.10)	-5.31 (5.93)	-29.80*** (3.56)	-8.88*** (1.67)	-19.33*** (5.34)	-13.50*** (1.90)	-48.37*** (18.39)	8.05** (3.42)
Underident. Test (p-value)	0	0	0	0.01	0	0	0	0	0	0
Weak ident. Test (KP rk value)	27.56	99.94	36.90	8.4	120.09	201.7	85.73	94.89	146.63	277.47
Endogeneity Test (p-value)	0	0	0	0.38	0	0.06	0	0	0.45	0
Observations	337	1,073	336	1,079	464	885	354	699	219	1,062
R-squared	0.47	0.70	0.11	0.67	0.60	0.51	0.80	0.44	0.64	0.60

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

(i) 'The Rest' implies all countries not within the mentioned region

(ii) *E & ME* is Europe and Middle East, *E & CA* is Europe and Central Asia and *LA* is Latin America

Appendix B lists the variables that are included in the regressions but are not shown above

Table 12b: IV Regressions (Second Stages) for the Export Values of BRIC Countries Plus Turkey on the Export Value of Pakistan in Leather Industry (Regional Decomposition)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Effect of Exports From:	India		China		Turkey		Russian Federation		Brazil	
Region of Importing Partner:	Asia	The Rest	Asia	The Rest	E & ME	The Rest	E & CA	The Rest	LA	The Rest
Dep. Var: Export Value (Pakistan)										
<u>Leather Industry</u>										
Export Value	-2.22 (1.79)	0.80*** (0.18)	-2.01* (1.11)	-0.83 (0.96)	-0.98*** (0.15)	-0.19** (0.07)	0.00 (0.10)	-0.42 (0.26)	0.38** (0.17)	1.82*** (0.31)
Distance (Pakistan)	-8.66** (4.41)	-0.49*** (0.19)	-2.29*** (0.67)	-1.27*** (0.21)	-0.60** (0.26)	-0.79*** (0.18)	-1.85*** (0.46)	-0.66** (0.28)	0.94 (2.84)	-0.94*** (0.27)
Constant	49.02* (28.71)	-8.35*** (1.73)	-8.71 (14.83)	-20.01** (9.68)	-42.38*** (3.63)	-18.05*** (2.05)	-23.73*** (5.87)	-23.63*** (4.07)	-20.54 (29.07)	18.05** (8.00)
Underident. Test (p-value)	0.12	0	0.01	0.22	0	0	0	0	0	0
Weak ident. Test (KP rk value)	2.83	30.64	6.34	1.69	68.03	286.10	130.89	21.55	56.99	27.37
Endogeneity Test (p-value)	0.01	0.07	0	0.18	0	0	0.3	0.08	0.42	0
Observations	302	862	304	901	458	559	308	289	164	779
R-squared	-0.82	0.75	-1.11	0.50	0.57	0.48	0.81	0.44	0.53	0.02

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Export Value has been converted from nominal to real values using US CPI 2005 and transformed using a natural logarithmic function

(i)'The Rest' implies all countries not within the mentioned region

(ii) *E & ME* is Europe and Middle East, *E & CA* is Europe and Central Asia and *LA* is Latin America

Appendix B lists the variables that are included in the regressions but are not shown above

Appendix A1 : List of Importers

Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape Verde, Cayman Islands, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa Rica, Croatia, Cuba, Cyprus, Czech Republic, Cte d'Ivoire, Democratic People's Republic of Korea, Democratic Republic of the Congo, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Faroe Islands, Fiji, Finland, France, French Polynesia, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Greenland, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong (China), Hungary, Iceland, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kuwait, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lebanon, Lesotho, Liberia, Libya, Lithuania, Luxembourg, Macao (China), Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Marshall Islands, Mauritania, Mauritius, Mexico, Micronesia (Federated States of), Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Caledonia, New Zealand, Nicaragua, Niger, Nigeria, Northern Mariana Islands, Norway, Oman, Palau, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Rwanda, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, Somalia, South Africa, Spain, Sri Lanka, Sudan, Suriname, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Thailand, The former Yugoslav Republic of Macedonia, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Turks and Caicos Islands, Tuvalu, Uganda, Ukraine, United Arab Emirates, United Kingdom, United Republic of Tanzania, United States of America, Uruguay, Uzbekistan, Vanuatu, Venezuela, Viet Nam, Yemen, Zambia, Zimbabwe

Appendix A2: List of Top Ten Export Destinations For Pakistan by Industry

Total Industries: United States of America, United Arab Emirates, Afghanistan, United Kingdom, Germany, China, Italy, Hong Kong, Spain, Netherlands

Textile Industry: United States of America, United Kingdom, Germany, China, Italy, Hong Kong, United Arab Emirates, Spain, Belgium, Bangladesh

Creative Industry: United States of America, United Arab Emirates, Germany, United Kingdom, France, Netherlands, Belgium, Italy, Spain, Saudi Arabia

Leather Industry: United States of America, Germany, United Arab Emirates, United Kingdom, France, Spain, South Africa, Saudi Arabia, Netherlands, Belgium

Appendix A3: Regional Decomposition of Importing Countries

Asia: Afghanistan , Armenia, Azerbaijan, Bahrain^{ME}, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Cyprus, Democratic People’s Republic of Korea, Georgia, Hong Kong (China), India, Indonesia, Iran (Islamic Republic of)^{ME}, Iraq^{ME}, Japan, Jordan^{ME}, Kazakhstan^{*CA}, Kuwait^{ME}, Kyrgyzstan^{CA}, Lao People’s Democratic Republic, Lebanon^{ME}, Macao (China), Malaysia, Maldives, Mongolia, Myanmar, Nepal, Oman^{ME}, Philippines, Qatar^{ME}, Republic of Korea, Saudi Arabia^{ME}, Singapore, Sri Lanka, Syrian Arab Republic^{ME}, Tajikistan^{CA}, Thailand, Timor-Leste, Turkey^{ME}, Turkmenistan^{CA}, United Arab Emirates^{ME}, Uzbekistan^{CA}, Viet Nam, Yemen^{ME}

Europe & Middle East: Albania , Andorra, Austria, Bahrain, Belarus*, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Faroe Islands, Finland, France, Germany, Greece, Hungary, Iceland, Iran (Islamic Republic of), Iraq, Ireland, Italy, Jordan, Kuwait, Latvia, Lebanon, Lithuania, Luxembourg, Malta, Netherlands, Norway, Oman, Poland, Portugal, Qatar, Republic of Moldova, Romania, Russian Federation, Saudi Arabia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syrian Arab Republic, Turkey, Ukraine, United Arab Emirates, United Kingdom, Yemen

Europe & Central Asia: Albania , Andorra, Austria, Belarus*, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan*, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkmenistan, Ukraine, United Kingdom, Uzbekistan

Latin America: Antigua and Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bolivia, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico,

Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, Venezuela

1. As countries may overlap between Asia and other regions, *CA* indicates that the country also belongs to Central Asia and *ME* indicates that the country also belongs to the Middle East.

2. When considering export flow from the Russian Federation, Belarus and Kazakhstan are included only for the classification of 'Total Industries' as export flow from the Russian Federation is not recorded for textile, creative and leather industries.

Appendix A4: Number of Export Destinations of Pakistani Products by Industry

Industry	Average	Minimum	Maximum
Total Industries	185.64	181	189
Textile Industry	178.35	172	186
Creative Industry	161.35	154	168
Leather Industry	145.54	132	152

The average is calculated for the time period from 2003 to 2012.

The maximum and minimum are the largest and smallest number of trading partners for the time period respectively.

Appendix B: List of Variables

Variable	Description	Source
Export Flow (All Calculations)	Annual data collected from UN COMTRADE	International Trade Center (2012)
Distance	Geodesic distances between the most important cities in trading partners are calculated using longitude and latitude	Mayer and Zignago (2011)
<i>GDP at PPP (Constant 2005 International Dollars)</i>	GDP converted using purchasing power parity rates	The World Bank (2012)
<i>GDP per Capita at PPP (Constant 2005 International Dollars)</i>	GDP per capita converted using purchasing power parity rates	The World Bank (2012)
<i>Average Cost to Import (US Dollars per Container)</i>	All costs are included such as document, administrative, custom broker, terminal handling and inland transportation. However tariffs and trade taxes are excluded. The average cost is calculated as the mean of the real value at constant 2005 US Dollars across the time period.	The World Bank (2012)
<i>Free Trade Agreements with Pakistan</i>	Free Trade Agreements between Pakistan and its trading partners.	World Trade Organization (2013)
<i>Contiguity</i>	Whether trading partners share a common international border	Mayer and Zignago (2011)
<i>Landlocked</i>	Whether trading partner is a landlocked country	Head, Mayer, and Ries (2010)
<i>Common Colonizer post 1945</i>	Trading partners were colonized by the same colonizer post 1945 (India, Kenya, Malaysia and Jamaica had common colonizer as Pakistan)	Mayer and Zignago (2011)
<i>Common Official or Primary Language</i>	Examples include India, Kenya and Jamaica as countries with a common official language as Pakistan	Mayer and Zignago (2011)

Note: Variables in *italics* are entered into the regressions but are not shown in the tables in order to conserve space.

References

- Armington, P. S. (1969). A theory of demand for products distinguished by place of production. *Staff Papers-International Monetary Fund*, 159–178.
- Athukorala, P.-C. (2009). The rise of China and East Asian export performance: Is the crowding-out fear warranted? *The World Economy*, 32(2), 234–266.
- Bernard, A. B., Jensen, J. B., & Schott, P. K. (2009). Importers, exporters and multinationals: a portrait of firms in the US that trade goods. In T. Dunne, J. B. Jensen, & M. Roberts (Eds.), *Producer dynamics: New evidence from micro data* (pp. 513–552). University of Chicago Press.
- Bernard, A. B., Redding, S. J., & Schott, P. K. (2011). Multiproduct firms and trade liberalization. *The Quarterly Journal of Economics*, 126(3), 1271–1318.
- Bustos, P. (2011). Trade liberalization, exports, and technology upgrading: Evidence on the impact of MERCOSUR on Argentinian firms. *The American Economic Review*, 101(1), 304–340.
- Cassey, A. J., & Schmeiser, K. N. (2013). The agglomeration of exporters by destination. *The Annals of Regional Science*, 51(2), 495–513.
- Chaney, T. (2013). The gravity equation in international trade: An explanation. *National Bureau of Economic Research Working Paper No. 19285*.
- Dhingra, S. (2011). Trading away wide brands for cheap brands. *CEP Discussion Paper No 1103*.
- Disdier, A.-C., & Head, K. (2008). The puzzling persistence of the distance effect on bilateral trade. *The Review of Economics and Statistics*, 90(1), 37–48.
- Dixon, P. B., & Rimmer, M. T. (2012). Deriving the Armington, Krugman and Melitz models of trade. In *15th annual conference on global economic analysis*.

- Eckel, C., Iacovone, L., Smarzynska Javorcik, B., & Neary, J. (2011). Multi-product firms at home and away: Cost-versus quality-based competence. *CEPR Discussion Paper No. DP8186*.
- Eichengreen, B., Rhee, Y., & Tong, H. (2007). China and the exports of other Asian countries. *Review of World Economics*, 143(2), 201–226.
- Eicher, T. S., Henn, C., & Papageorgiou, C. (2012). Trade creation and diversion revisited: Accounting for model uncertainty and natural trading partner effects. *Journal of Applied Econometrics*, 27(2), 296–321.
- Feenstra, R., & Ma, H. (2007). Optimal choice of product scope for multiproduct firms under monopolistic competition. *National Bureau of Economic Research Working Paper No. 13703*.
- Gampat, R., & Weeratunge, C. (2009). The rise of China: What does it mean for the least developed countries in the Asia-Pacific? *Asia-Pacific Trade AND Investment*, 11.
- Garcia-Herrero, A., Fung, K., & Nigrinis, M. (2013). Latin American commodity export concentration: Is there a China effect? *BBVA Working Paper 13/06*.
- Gereffi, G. (1999). International trade and industrial upgrading in the apparel commodity chain. *Journal of international economics*, 48(1), 37–70.
- Halpern, L., Koren, M., & Szeidl, A. (2011). Imported inputs and productivity. *CeFiG Working Paper No. 8*.
- Hanson, G. H. (2012). The rise of middle kingdoms: Emerging economies in global trade. *National Bureau of Economic Research Working Paper No. 17961*.
- Hanson, G. H., & Robertson, R. (2008). China and the manufacturing exports of other developing countries. *National Bureau of Economic Research Working Paper No. 14497*.
- Head, K., Mayer, T., & Ries, J. (2010). The erosion of colonial trade linkages after independence. *Journal of International Economics*, 81(1), 1-14.
- Hummels, D., & Lugovskyy, V. (2005). Trade in ideal varieties: Theory and evidence. *National Bureau of Economic Research Working Paper No. 11828*.

- Humphrey, J., & Schmitz, H. (2002). How does insertion in global value chains affect upgrading in industrial clusters? *Regional studies*, 36(9), 1017–1027.
- International Trade Center. (2012). *Trade map*. Retrieved from 'http://www.intracen.org/marketanalysis' (Accessed: 2013-06-20)
- Kasahara, H., & Lapham, B. (2013). Productivity and the decision to import and export: Theory and evidence. *Journal of International Economics*, 89(2), 297–316.
- Koenig, P. (2009). Agglomeration and the export decisions of French firms. *Journal of Urban Economics*, 66(3), 186–195.
- Krautheim, S. (2012). Heterogeneous firms, exporter networks and the effect of distance on international trade. *Journal of International Economics*, 87(1), 27–35.
- Krugman, P. R. (1979). Increasing returns, monopolistic competition, and international trade. *Journal of international Economics*, 9(4), 469–479.
- Lall, S., Weiss, J., & Oikawa, H. (2005). China's competitive threat to Latin America: An analysis for 1990–2002. *Oxford Development Studies*, 33(2), 163–194.
- Manova, K., & Zhang, Z. (2013). Multi-product firms and product quality. *Stanford University, mimeo*.
- Mayer, T., Melitz, M. J., & Ottaviano, G. I. (2011). Market size, competition, and the product mix of exporters. *National Bureau of Economic Research Working Paper No. 16959*.
- Mayer, T., & Zignago, S. (2011). Notes on CEPII's distances measures: The geoDist database. *CEPII Discussion Paper 2011-25*.
- McDonald, S., Robinson, S., & Thierfelder, K. (2008). Asian growth and trade poles: India, China, and East and Southeast Asia. *World Development*, 36(2), 210–234.
- Melitz, M. J. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71(6), 1695–1725.
- Palley, T. (2003). Export-led growth: evidence of developing country crowding-out. *Globalisation*,

- Regionalism and Economic Activity*, 175–97.
- Rauch, J. E. (2001). Business and social networks in international trade. *Journal of Economic Literature*, 1177–1203.
- Redding, S. J. (2011). Theories of heterogeneous firms and trade. *Annual Review of Economics*, 3(1), 77–105.
- Schmitz, H., & Knorringa, P. (2000). Learning from global buyers. *Journal of development studies*, 37(2), 177–205.
- Scott, A. J. (2006). The changing global geography of low-technology, labor-intensive industry: clothing, footwear, and furniture. *World Development*, 34(9), 1517–1536.
- Serti, F., & Tomasi, C. (2008). Firm heterogeneity: do destinations of exports and origins of imports matter? *LEM Papers Series 2008/14*.
- Shafaeddin, S. M. (2002). The impact of China's accession to WTO on the exports of developing countries. *United Nations Conference on Trade and Development Discussion Paper No. 160*.
- The World Bank. (2012). *World development indicators*.
- Verhoogen, E. A. (2008). Trade, quality upgrading, and wage inequality in the Mexican manufacturing sector. *The Quarterly Journal of Economics*, 123(2), 489–530.
- Wilson, D., & Purushohaman, R. (2003). Dreaming with BRICs: The path to 2050. *Goldman Sachs Global Economics Paper No. 99*.
- World Trade Organization. (2013). *Regional trade agreements information system*. Retrieved from 'rtais.wto.org/' (Accessed: 2013-10-15)