Industrial exports of Pakistan and competition from China in global market

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Abstract

Pakistan‟s industrial sector has major share in the exports, GDP, and employment of the country. A strong and growing industrial sector is pivotal for economic development of any country. Trade and industry are inseparable. Currently like many other countries of the world Pakistan‟s industrial sector is facing fierce competition by China in domestic and international markets. China has largest share in world trade and world GDP. After joining the WTO in 2001, China has increased its exports tremendously. China‟s rise as a huge economic power has many direct and indirect effects for other developed and developing economies. China is also the largest trading partner of the Pakistan. Despite the growing domestic trade share of industrial sector, Pakistan‟s share in international trade is not improving. Industrial sector can sustain and contribute positively to the economy of a country only if it can maintain its market share, and can compete successfully in global market. This paper is an attempt to recognise the threat posed by china‟s increasing exports on the market share of Pakistan‟s major exports in world and USA markets. Change in relative market share and export similarity index is used to recognise the vulnerable exports of Pakistan. Role of Revealed comparative advantage (RCA) is also discussed in this regard. It is found that products which have RCA more than that of china at the beginning of the study period were more likely to maintain or improve their market share. Though higher RCA does not mean that a product is performing well in world market.

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INTRODUCTION

Industrial growth is key to economic prosperity of any country. Vicious circle of underdevelopment can also be broken through y industrial revolution. Industrialization can improve the balance of payment, whether it is import substitution or export orientated. Pakistan‟s industrial sector is a major contributor to trade, employment and GDP of the country. Developed industrial sector provides employment to a major portion of population and increases productivity per worker. Share of industrial sector in Pakistan‟s GDP is about 21% (GOP, 2016a). Only cotton based textile products and garment manufacturing industries accounts for nearly 66% of exports, showing lack of diversification. Manufacturing sector provide employment to nearly 15% of the labour force of the country. Other prominent industries of Pakistan‟s are fertiliser, cement, sugar, edible oil, chemicals, steel, tobacco, food processing and machinery (GOP, 2016b).

International trade has key role in economic and industrial development of any country. In this era of globalization, no country can grow and develop in isolation. International trade enhances industrial productivity through competitive pressure and imports of better raw martials and know how. Trade also decreases poverty and increases supply of goods. Pakistan is also not an exception and depends on trade for imports of important raw material and exports of its industrial and agricultural goods for better prices in international markets, though its share in international trade is still very low. Pakistan‟s share in global exports is only 0.13% (WTO, 2016). GDP and exports share of the manufacturing and industrial goods have increased in past decade but trade deficit of Pakistan is not improving. Pakistan‟s trade deficit increased by 2.1% during 2016. Overall trade volume increased but increase in imports was 4% more than the increase in exports (GOP, 2016c). Industries play a major role in improvement of balance of payment of any country. Import substitution industrialization decreases demand for imports and export led growth policy enhances exports. Industrial and manufacturing sector can contribute to economic growth of the country if it can expand and maintain its share in domestic and global markets.

In last two decadesChina, has emerged as an economic giant in world economy. It is largest exporter of the goods to world since 2009 (WTO, 2010), and has largest share in world GDP based on PPP (WB, 2015). China is so large that changes in its demand (imports) and supply (exports) has potential to distort the pattern of relative prices in world market. Economic repercussions of china on economies of other countries can be distinguished as direct effects, related to bilateral trade and indirect effects as effects through third channel as international

markets and globalization. These direct and indirect effects, both may be competitive or complementary in nature. China‟s goods are considered complementary when these are used as inputs and competitive when these goods are substitutes for the products of other countries (Kaplinsky*et. al.,* 2006).

Since joining WTO in 2001, China‟s exports increased tremendously in low tech less sophisticated goods. With the passage of time China is reallocating its production mix and emphasising on production of comparatively high tech goods (Amiti and Freund, 2008; Rodrick, 2006). Keeping in view the trade patterns and performances, it can be concluded that even though Chinese products has improved a lot over time, economies producing high tech goods are still relatively in better position to compete with china. While economies whose dependence is on low tech labor intensive production are losing their market share to China (Fontagné *et al.,* 2008; Schott, 2008).

Pakistan is particularly vulnerable in this aspect as it has export structure very similar to that of china. After the completion of CPEC China‟s exports toward Pakistan and to the rest of world will increase manifold.Pakistan‟s major export destinations are USA, China, UK and Germany. These countries are also among the top export destinations of China (UN-COMTRADE, 2016). Pakistan‟s industrial goods are limited to some traditional products and there is lack of variety and innovation. Innovation, introduction of variety and improving productivity are not on priority list of Pakistani entrepreneurs (Bari and Ejaz, 2012). Though Pakistan has comparative advantage in production of textile related goods but is still facing fierce competition in domestic and international markets from China (Ahmad, 2013; Akhtar *et. al.,* 2008).Pakistan . Pakistan‟s comparative advantage depends on low cost labour but so has China a large supply of low wage labour from rural areas. So, it is largest supplier of low cost low tech goods to the world. Over time productivity of its labourer has increased more thanthe wages so ensuring its competitiveness in the world market for low tech labour intensive goods. China is not only increasing the value and volume of its exports but also expanding its export base (Lall *et.al*., 2005).

Pakistan is facing both complementary and competitive effects of China‟s exports. Focus of this paper is on competitive effects. Pakistan‟s and china‟s exportsimilarityhas increased in apparel, textile, stitched garments and vegetables, while decreased in cereals during the 2000 to 2011(Winters, 2012).

Review of literature

There are number of studies which have analysed the direct and indirect effects of economic expansion of china on the other countries and regions. Here is review of some of theses which are more relevant to the current work.

Bhattacharya *et al.,* (2001) focused on manufactured goods to study the china‟s effect on trade of selected Asian economies. Study used two digits disaggregated data for the time period 1998 to 1996. Fixed effect, panel regression analysis was used for the analysis of the data. The research found a little effect before 1994 but after it results suggested that there was a strong correlation between declining market share of these countries and increasing share of china in the third markets. The study also emphasised on the role of devaluation of the Chain‟s currency in this trade effect. Findings suggested that more affected economies were Malaysia, Thailand and Pakistan. Findings of the study recommended that these countries need to upgrade and diversify their products. Improvements in technology, skills, and R&D was also suggested for maintaining the market share.

Eichengreen *et al.,* (2004) studied direct and indirect effects of China on other Asian exporters. The study used data of 13 Asian countries and all 180 remaining countries as importers. The research used complementarity index and competitive index and import and export penetration techniques for their study. The finding was that crowding-out effect was more in consumer goods markets as China was good player in those markets. While the Asian economies exporting capital goods or technology embodied goods were found in safe position. They also found that in the said period China‟s imports from these Asian countries also increased rapidly and had an uplifting impact on these economies. But this positive effect was for developed and high income capital exporting countries while crowding-out effects were for low tech goods exporters.

Akhtar *et al.,* (2008) analysed the competitiveness of footwear industry of Pakistan in world market. Revealed comparative advantage index at 2 and 4-digit level of classification for 1996 to 2006 was calculated. RCA of Pakistan was compared with that of China and India. Results showed that industry has potential to expand trade. It was found that comparative disadvantage changed to advantage as compared to India and China during the study period. The study recommended that keeping in view the global competition government should decrease the cost of energy and inputs for industry.

Greenaway *et al.,* (2008) used gravity model to explore the displacement effect of China‟s exports on the exports of other Asian countries in third market. Study period was from 1990 to 2003. Two separate models were estimated, one for the exports from China only and second model included also Hong Kong re-exports of China‟s goods. Findings were that displacement effect was present and was more prominent in case of developed third markets. This effect was more strong in combined model of China and Hong Kong. It was also observed that effect was robust for high income exporters from Asia. Study also showed that two Asian countries in sample, Japan and Korea had some reverse effect as their exports increased toward china during the observed period.

Freund and Ozden (2009) explored the economic opportunities and threats posed by China‟s growth to the Latin America. They used 4-digit SITC level bilateral trade data for the period 1985 to 2004.Major findings of the study were that among LAC countries Mexican industrial goods exports were more effected by China‟s exports growth. China‟s low priced industrial goods put a downward pressure on prices, so if there was any gain from improvement in quality during the said period it was cancel by fall in prices.

Fu *et al.,* (2009) explored the effects of Chinese‟s exports on the prices of manufactured goods from other countries. Disaggregated data for the major imports market as USA Japan and EU was used. Study period was 1989 to 2006. Results showed that exports from China not hurt only the exports of low income countries but also of the other countries with sophisticated goods and in all above-mentioned markets. Middle income countries were found to be most affected specially by the price competition posed by the China‟s exports.

Giovannetti *et al.,* (2011) explored the indirect competitive effects of China‟s exports on exports of Italy to their joint trading partners. Gravity trade model was used on the data for the period 1995 to 2007. It was classified at 6-digits level, per HS. Study found that as Italian exports were traditional and low tech so it was more at risk from china‟s exports. Results showed a significant adverse effect on its exports especially in developed markets. Traditional sectors such as textile was found to be at higher risk while specialization within the sectors had provide some safeguard against the competition.

Edwards and Jenkins (2015) explored the effect of China‟s export penetration on industrial products and employment of South Africa using the data from 1992 to 2010. They applied econometric analysis and a Chenery decomposition to study the data (Chenery,1979). The findings of the study were that China‟s exports to South Asia has decreased African industrial

output by 5% in 2010 than it should be otherwise. While reduction in employment in manufacturing sector was found about 8%. Reduction in employment was 3% more than the reduction in output. Reason was that china‟s exports were labour intensive so decrease in output was more pronounced in labour intensive industries which caused more reduction in employment. Positive effect was increase in labour productivity in some industries.

Kong and Kneller (2015) adopted a robust approach to study the effect of China on its neighbouring countries, instead of using gravity model on aggregate data they used it on trade of inputs, intermediate goods and final products separately. Results suggested that there was a positive relationship between exports of Asian neighbours and China‟s exports.

Wang (2015) examined the data on export similarity index between China and European Union for the period 2007 to 2013. Focus was on United States of America (USA) and Indian markets. Empirical analysis of the data showed that there was higher level of similarity in the exports of China and EU, but it was more for America than was in Indian Market. This similarity in exports has induced a severe competition between China and EU. Conclusion of the study was that China and European union have competition in American market while their exports are more complementary in case of Indian market. Wang 2015 suggested that China and EU should enhance cooperation in inter regional markets and should take measures to reduce trade frictions.

Ting (2016) analysed the competition between Chinese exports and Malaysian exports in electrical goods and other electronics. More competition was in American and Japanese market. The indirect effect of competition was that, it increased standard of Malaysian exports and quality of electronic products. Both qualitative and quantitative methods were used. Exports complementarity index and competitiveness index was calculated for the trade data 1992 to 2012.Study also found a short run decline in employment rate in Malaysia but an increase of demand of semiconductors by china from Malaysia had a positive effect on Malaysian electronic industry.

Competitiveness in International Trade

In business, firms compete for market share and increase in market share is loss for some other firm. In business studies, it is referred as competitive threat; expansion of market share of one is considered threat for others. On international level, same is considered for countries, where loss of export market share means incompetence. But countries trade in many

commoditiesso if some of its industries arenot performing well and losing market share it does not mean that whole economy is not competent (Lall et.al., 2005).

According to Krugman (1994), competitiveness is a misguiding term when used for countries. Trade increases the welfare of all partners through specialization. He argues that in given scenario addition of a competitor will enhance the specialization and gain will increase the welfare of all participatingcountries‟ there is no such thing as competitive threat. Krugman‟s conclusion depends on Heckscher and Ohlin trade model. The model explains that comparative advantage rises from resource endowment pattern of individual countries. And if the assumptions of the model are fulfilled, trading countries can consume beyond their production possibility frontier after specialization under free trade. Some of the assumptions are full employment, perfect competition, perfect information, no economies of scale, factors of production are completely mobile within the country (Blaug, 1992).

Unfortunately, this does not happen as the assumptions are not realistic especially for developing countries. Though trade always enhance specialization but when markets are not efficient and resources are not perfectly mobile as assumed, adjustment of resources according to changing trade pattern just not required trade openness but also policy inducement. This adjustment is not costless (Lall, 2000).

When it comes to China and Pakistan, Competitive threat becomes a real thing to deal with. Pakistan will have to bear a significant adjustment cost even if it recognizes well before time that what and which type of adjustment is required. If the adjustment is not quick and to required extent it may cause welfare lose on permanent basis. Its highly depends on similarity of export pattern of china and Pakistan. More similarity means that more competition and more adjustment required. Pakistan‟s 50% exports goes to only five countries, and these are also major destinations for China‟s exports (UN COMTRADE, 2016).

Lall and Albaladejo (2004) considered the threat imposed by Chinese export onEastAsian countries manufacture exports.They found the loss of market share to some extent but threat was not serious. Reason was greater distance and that the export structure was rather complementary with that of the China‟s. Above mention both factors are not found in case of Pakistan, as Pakistan share border with china and exports are also not complementary as both countries are labour abundant.

Objective of the Study

The study is an attempt to explore the competitive threat from China to Pakistan in world market and in the USA market.

Methodology

There is not any standard method for estimating „competitive threat" for trade data. In business studies, market share is used to measure the extent of competitive pressure. Following the Lall & Albaladejo (2004), and Lall & Weiss (2005) threat matrices approach is used. The paper make use of this method to find the indication for competition and more vulnerable exports of Pakistan in world market.World market share (WMS) of exports of a country is calculated by dividing exports of that country by total exports of that good in world market.

In this context, RCA (Revealed comparative advantage) of both countries is also considered. The Index is originated from David Ricardo classical theory of comparative advantage in trade. Most commonly used index is given by Balassa (1965):

$$RCA, P = \frac{Ep \ \ /Ept}{En \ \ /Ent}$$

Where *RCA, P* is revealed comparative advantage of Pakistan, Numerator is share of that commodity in total export of Pakistan and denominator is share of that commodity in the world exports. If RCA is more than one it shows comparative advantage of the country, i.e.Pakistan in that commodity. In other words, share of that commodity in the country"s exports is more than its average share in world market.

Export Similarity Index (ESI), is mainly used to measure the intensity of competition between two countries or country groups in the world market or the third market. Basic index was proposed by Finger and Kreinin (1979) and is calculated as follow,

$$S_{pc,i} = \{ \sum_1 \min(\frac{X^1_p}{X_p} , \frac{X^1_c}{X_c}) \} \times 100$$

Where $S_{pc,1}$ is similarity index between Pakistan and China for good 1, is share of that good export in Pakistan total exports and is share of that good export in China"s total exports. Its value varies between 0 and 100. Zero showing zero percent similarity while hundred showing hundred percent similarity of export structure of the countries under consideration. Like

many other indices, this one is also sensitive to the level of data disaggregation, as data are more finely disaggregated, the value of index falls (Finger and Kreinin, 1979).

Data for the study is taken from UN COMTRADE on line data base (http://comtrade.un.org) and World Bank (WB), World Integrated Trade Solution WITS (http://wits.worldbank.org).

Empirical outcomes

World market share of China and Pakistan is compared at aggregate level for 2003 and 2015.Calculations show that China‟s overall share in world market has increased from 5% to 15% while Pakistan share is same as was in 2003 and is very small as 0.14% in world market. Table 1 shows that china‟s world market share has increased three times from 2003 to 2015 for capital, consumer and intermediate goods while that of Pakistan is constant in capital and is decreased in consumer and intermediate goods. Pakistan share has doubled in raw materials while China‟s share of raw materials increased only by 0.17%. These calculations are on aggregate level of products and do not prove any direct effect of China‟s exports share on Pakistan‟s exports share. But there is an indication for further analysis of competitive threat from China‟s exports to Pakistan‟s exports as Pakistan share has increased only in that category in which China‟s share is almost constant, i.e. Raw Materials. It is also possible that due to China‟s increasing demand for raw materials, Pakistan exports have increased in this category.

Table 1: World market share of Pakistan and China

Product Group	China % share in 2003	China % share in 2015	Pak % Share in 2003	Pak % share In 2015
All Products	5.22	14.64	0.14	0.14
Capital goods	5.83	19.58	0.01	0.01
Consumer goods	6.87	16.71	0.27	0.26
Intermediate goods	4.00	11.23	0.24	0.20
Raw materials	2.20	2.37	0.07	0.14

Source: calculated from WITS data

At aggregate level it is possible that China‟s exports are increasing in footwear and that of Pakistan is decreasing in textile but both comes under consumer goods so showing that Chinas increase in foot wear export taking share of textile of Pakistan. It is obviously not conceivable.For a disaggregated level analysis, we started from relative changes in market share for different products classification[2]. First, we identified the most vulnerable

[2] Products classification and HS CODES are given in the Appendix A & B.

commodities depending on the relative changes of WMS of both countries. Following the technique of Lall and Albaladejo (2004), Lall and Weiss (2005), matrix of competitive threat between China and Pakistan is made. Nine possibilities are recognised based on changing market share of both countries, given in table 2.

Table 2: Threat Possibilities Matrix between China and Pakistan

		China″s exports share in world Market		
		Increased	Decreased	Constant
Pakistan″s exports share in world market	Increased	No Threat or limited threat to Pakistan if share of Pakistan″s is increased less than China″sVice versa	Threat to china	China″s exports are at risk
	Decreased	Facing Competitive Threat from china	Both countries lost market share to some other country	No Threat from China
	Constant	Pakistan″s exports are at risk	No Threat from China	No Threat from China

These possibilities are defined below according to the type of threat posed by each combination of world market share.

Facing Threat: when share of one country is increasing and that of other is decreasing i.e. china is increasing and Pakistan is decreasing. ***At Risk:*** When share of one country is increasing and that of the other is constant. ***Limited Threat:*** Share of both countries is increasing but share of one is increasing more than the other. ***No Threat:*** Both countries share is increasing in the world market or both countries share is decreasing or share of both countries is constant. ***Threat Reverse:*** Threat to china

Classification of the Pakistan″s exports for each of five categories of competitive threat depending on the changes in market share of each product over time are given below, taken from table 3.

Facing Threat: Footwears, Fuels, Hides and Skins, Miscellaneous, Plastic or Rubber, Stone and Glass. ***At Risk:*** Plastic and rubber, Textile and clothing and Transportation. ***Limited Threat:*** Chemicals and Wood, Mechanicals and Electronics, Metal. ***No threat:*** Animals, Food products, Vegetables and wood. ***Threat reverse:*** Minerals.

Table 3 displays the percentage WMS of both countries in 2003 and 2015.To see the direction of change in WMS for both countries ratio of WMS in 2015 to the share in 2003 is

calculated. If the ratio is more than one, it shows that share of the country has increased during the period. Examination of Table 3 reveals that China‟s Market share increased in almost all products except minerals. While Pakistan could not improve even textile and clothing which is its major export goods. Pakistan market share increased only in primary goods as Animals, Food products, Vegetables, wood and Minerals. While all other goods as Textile and clothing and Transportation, Footwear‟s, Fuels, Hides and Skins, Miscellaneous, Plastic or Rubber, Stone and Glass did not perform well in the world market for the said period. Again, these measures are just indicative and are not evidence that China is cause of changes in international market share of Pakistan. Pakistan‟s share improved a little in Mechanicals, Electronics and Metal.

Table 3: Changes in world market share of Pakistan and China

Product Group	china % share in 2003	China % share in 2015	Pak % Share in 2003	Pak % share in 2015	Direction of Change of China‟s WMS share	Direction of Change of Pakistan‟s WMS share	*Competitive threat to Pakistan
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Animal	3.39	5.63	0.12	0.23	1.7	1.9	No threat
Chemicals	2.33	7.49	0.02	0.03	3.2	1.3	Limited threat
Food Products	3.01	5.49	0.06	0.17	1.8	2.7	No threat
Footwear	23.20	46.37	0.13	0.08	2.0	0.6	Facing threat
Fuels	1.52	1.80	0.04	0.02	1.2	0.5	Facing threat
Hides and Skins	17.61	30.97	1.06	0.98	1.8	0.9	Facing threat
Mach and Elec	7.32	23.22	0.005	0.01	3.2	1.3	Limited threat
Metals	4.77	16.90	0.02	0.04	3.5	2.0	Limited threat
Minerals	3.20	2.10	0.07	0.32	0.7	4.4	Threat reverse
Miscellaneous	5.33	16.13	0.07	0.05	3.0	0.8	Facing threat
Plastic or Rubber	3.66	12.54	0.05	0.04	3.4	1.0	At risk
Stone and Glass	3.85	11.56	0.02	0.01	3.0	0.4	Facing threat
Textiles & Clothing	15.97	38.37	1.81	1.81	2.4	1.0	At risk
Transportation	1.50	6.41	0.005	0.005	4.3	1.0	At risk
Vegetable	3.63	4.56	0.47	0.64	1.3	1.4	No threat
Wood	2.65	11.11	0.01	0.03	4.2	4.5	No threat

Source: Author calculations from WITS data.

Column (6),(7) are calculatedby dividing the %share of each country in world market 2015 to its share in 2003.If this ratio is more than one it shows that WMS has increased in.

*competitive threat category is decided by comparing the values of column (6), & (7).

In table 3 changes in WMS are considered and threat categories are assigned accordingly. To make this analysis meaningful for Pakistan, absolute dollar values of these exports and their

percentage share in total exports of Pakistan is calculated for each category of threat. Calculated value of threat is given below in table 4. Calculations show that exports which are under one or other type of threat are 75.7% of total value of Pakistan‟s export. It seems clearly that industrial goods of Pakistan are not competent in world market and it requires some attention of policy makers. Percentage changes in WMS appeared to be negligible as were considered on world level but value of these changes is not negligible for Pakistan.

Table 4: ThreatDistribution by value in US$ Million and as percentage of total exports of Pakistan, 2015

Categories of threat as are defined in Table 1	Value of exportsunder given category in 2015 (US$ Million)	% Distribution of threat
Threat	2604.4	11.8
At risk	13641.7	61.8
Limited threat	472.13	2.1
No threat	4778.7	21.6
Threat reverse	592.04	2.7
Total	22089	100

Source: Computed from WITS data.

ESI between China and Pakistan:

Export similarity index (ESI) between china and Pakistan is calculated for 2003 and 2015.Index is calculated for aggregate groups and at product level, given in table 5.

Table 5: ESI between China and Pakistan

ESI	2003	2015
Aggregate level	63 %	57%
Product Level	37%	29%

Source Author calculation from UNCOMTRADE data base.

ESI between China and Pakistan has decreased from 2003 to 2015. ESI is also used as competitiveness measure between two countries or group of countries. For present study decline in ESI does not mean that Pakistan is facing less competitive threat from china in 2015 as compared to 2003.It only suggests that China has diversified its export base and is shifting from labour intensive low tech goods to more sophisticated value added production (Amiti and Freund, 2008; Rodrick, 2006). As mentioned in methodology ESI value is high at aggregate level but declined when it is calculated for product level. At aggregate level, it produces exaggerated results and is misguiding. So, its results are not emphasised.

RCA and world market share comparison of China and Pakistan

Country which has RCA more than one is said to have comparative advantage in that good. Table 6 shows RCA of Pakistan and China for the 2003 and 2015. Ratio of RCA of Pakistan to RCA of china is calculated for 2003 and 2015.A ratio more than one shows that Pakistan RCA is more than China (Shafaeddin 2002). It appears that mainly those products of Pakistan maintained their market share which has RCA more than that of the China at the beginning of period, in 2003 and are primary goods. As are Animals, Food products and Vegetables except hides and skins. Pakistan RCA is more than China in hides and skin but China‟s market share has doubled during the said period while that of Pakistan‟s has decreased. In case of minerals Pakistan‟s RCA and market share has improved a lot from 2003 to 2015.Pakistan‟s RCA ratio to China‟s RCA for minerals was 0.7 in 2003 but has improved to 12 in 2015 which shows that Pakistan has a lot of potential in this category. All other goods which has RCA less than that of the China in 2003 are under one or other category of threat.

Table 6: Comparison of RCA and market share, for China and Pakistan, 2003-2015

Product Group	china RCA 2003	China RCA 2015	Pak RCA 2003	Pak RCA 2015	Competitive threat to Pakistan based on WMS	Relative RCA 2003 *PAKr/ CHINAr	Relative RCA 2015 PAKr/ CHINAr
All Products	1	1	1	1	---------		
Animal	0.47	0.29	0.81	1.15	No threat	1.7	4.0
Chemicals	0.34	0.46	0.13	0.12	Limited threat	0.4	0.3
Food Products	0.4	0.28	0.53	0.94	No threat	1.3	3.4
Footwear	5.31	2.96	0.65	0.78	Threat	0.1	0.3
Fuels	0.17	0.07	0.13	0.26	Threat	0.8	3.7
Hides and Skins	3.88	2.14	8.22	7.7	Threat	2.1	3.6
Mach and Elec	1.46	1.89	0.03	0.03	At risk	0.0	0.0
Metals	0.78	1.03	0.17	0.3	At risk	0.2	0.3
Minerals	0.44	0.13	0.29	1.58	Threat to China	0.7	12.2
Miscellaneous	1.62	1.24	0.47	0.51	Threat	0.3	0.4
Plastic or Rubber	0.71	0.79	0.37	0.28	Threat	0.5	0.4
Stone and Glass	0.78	0.59	0.32	0.24	Threat	0.4	0.4
Textiles and Clothing	2.56	2.21	12.67	14.63	At risk	4.9	6.6
Transportation	0.13	0.27	0.02	0.02	At risk	0.2	0.1
Vegetable	0.48	0.21	2.88	3.03	No threat	6.0	14.4
Wood	0.55	0.66	0.06	0.08	Limited threat	0.1	0.1

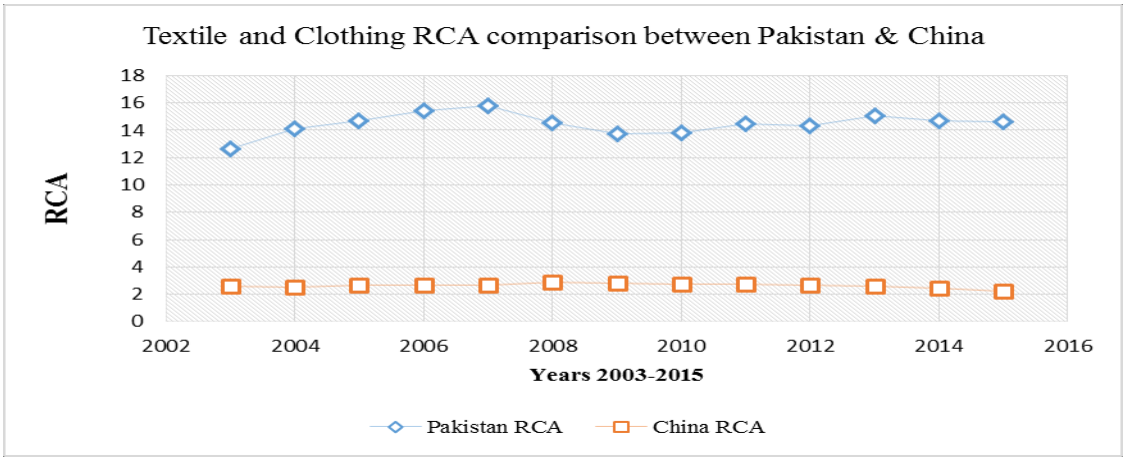
Source: Calculated from UN COMTRADE & WITS.

*PAKr/ CHINAr is Ratio of Pakistan‟s RCA to China RCA in given year, If its value is more than one it shows that Pakistan RCA is more than that of China in that year.

Textile and clothing sector of Pakistan exhibit the opposite trend. Pakistan‟s RCA in textile and clothing was 12.67 in 2003 and is 14.63 in 2015 while that of the China was 2.6 in 2003 and fall to 2.2 in 2015. Despite such a huge RCA, Pakistan‟s performance is very discouraging in this sector when WMS is considered, table 3. Pakistan‟s higher RCA in textile and clothing is in accordance with its factor endowment. As Pakistan is labour intensive country with a large production of cotton. According to Heckeser Ohlin theorem, RCA is determined by factor endowment of the country (Jones, 1956). Share of China in textile and clothing has increased from 16% to 38% and Pakistan share is stagnant at only 1.8% in world market regardless of its RCA. It appears that a higher RCA does not mean that a sector or industry is performing well in world market. Higher RCA and lower WMS is an indication of competitive threat. Textile sector of Pakistan required more value addition to secure a better position in value chain, and to be able to export better valued exports. It should enhance quality and product planning. Export competitiveness can be achieved and maintained by international marketing, quality and design improvement and capacity building (Mahmood, 2004).

Figure 1, shows the comparison of Pakistan‟s and China‟s RCA for the period 2003-15 in textile and clothing

Figure1: Textile and Clothing RCA of Pakistan and China:

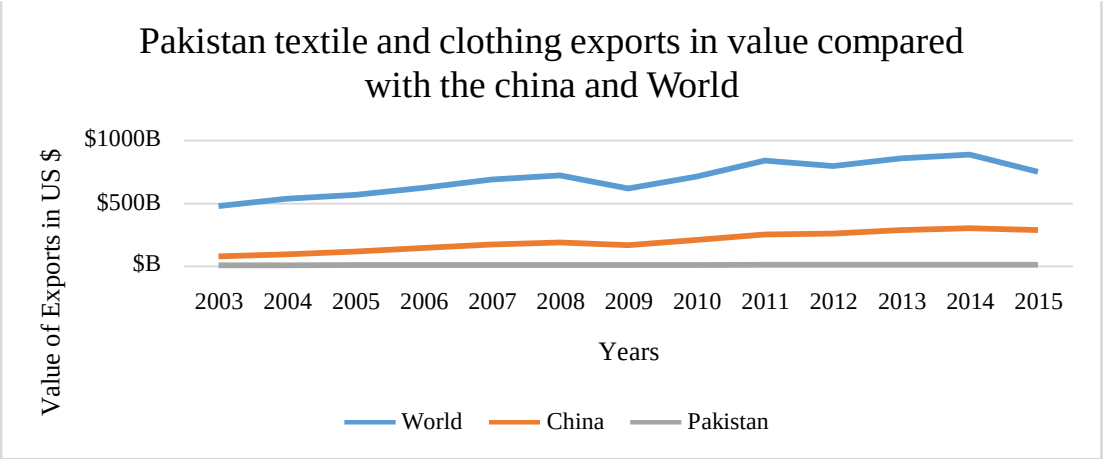


Source: Drawn from UN COMTRADE data.

Figure 2 is a comparison of dollar values of textile and clothing exports of Pakistan, with China and the world exports. Though Pakistan has maintained it share over the time but its share is negligible. World‟s and China‟s exports growing trend shows that world exports or demand for textile and clothing is increasing but Pakistan is not availing the opportunity.

Pakistan‟s RCA is well above then that of the China‟s while dollar value of exports is well below the China‟s, during the same period for textile.

Figure 2: Textile and Clothing exports of Pakistan, China and the world.



Source: Drawn from UN COMTRADE data.

Pakistan's exports and competition from China in USA market

In the first part analysis of WMS is conducted on aggregate and product level. Results have indication of threat from China‟s exports to Pakistan‟s WMS of exports. USA is major export destination of both China and Pakistan. 16.58% of total exports of Pakistan and 18% of total exports of China is destined to USA (WITS, 2016). In the World market collective analysis it is possible that threat indication is exaggerated or camouflaged due to different export destinations of China and Pakistan even if the products are same.For better insight of the issue analysis is conducted for USA market also.

Table 7: USA market share of Pakistan and China

Product Group	China % share in 2003	China % share in 2015	Pak % Share in 2003	Pak % share In 2015
All Products	6.47	19.96	0.19	0.18
Capital goods	7.43	23.29	0.01	0.02
Consumer goods	8.49	24.55	0.41	0.42
Intermediate goods	2.87	10.13	0.20	0.07
Raw materials	1.28	2.51	0.02	0.04

Source: calculated from WITS data

China‟s percentage share in USA market has increased from 6% to 20%, while that of the Pakistan has decreased from 0.19% to 0.18%, table 7. It is different from World market where Pakistan maintained the overall share for the same period. Though decline in Pakistan share appears to be small as share of USA market but it‟s not small when the value of change is considered as total exports of the Pakistan. USA a is major export destination of Pakistan and 16% of total exports of Pakistan goes to USA. China‟s share increased 14% in USA market and was 9% in world market. This comparison is suggestive of competitive threat. Further we check the changes in percentage share at product level in the USA market only, table 8. For comparison purpose same products categories and classification is used as was in WMS analysis.

Table 8: Changes in USA market share of Pakistan and China

Product Group (1)	china % share in 2003 (2)	China % share in 2015 (3)	Pak % Share in 2003 (4)	Pak % share in 2015 (5)	Direction of Change of China‟s share (6)	Direction of Change of Pakistan‟s share (7)	*Competitive threat to Pakistan (8)
All Products	6.47	19.96	0.19	0.18	3.1	0.9	Facing Threat
Animal	5.06	7.61	0.01	0.01	1.5	0.7	Facing threat
Chemicals	2.11	7.19	0.00	0.00	3.4	0.9	Facing threat
Food Products	2.42	6.69	0.01	0.08	2.8	6.6	No threat
Footwear	36.53	63.76	0.005	0.014	1.7	2.9	No threat
Fuels	0.42	0.74	0.00	0.00	1.8	0.0	----------
Hides and Skins	30.56	50.17	0.94	0.81	1.6	0.9	Facing threat
Mach and Elec	10.08	29.76	0.002	0.003	3.0	1.8	Limited threat
Metals	8.73	20.42	0.03	0.04	2.3	1.5	Limited threat
Minerals	7.45	6.92	0.03	0.40	0.9	14.1	Threat revers
Miscellaneous	10.71	26.38	0.07	0.08	2.5	1.1	Limited threat
Plastic or Rubber	9.18	24.75	0.01	0.04	2.7	3.3	No threat
Stone and Glass	4.15	16.67	0.03	0.01	4.0	0.4	Facing threat
Textiles & Clothing	9.58	41.04	3.30	2.84	4.3	0.9	Facing Threat
Transportation	1.43	5.05	0.001	0.002	3.5	2.2	Limited threat
Vegetable	1.80	3.59	0.15	0.15	2.0	1.0	At risk
Wood	3.98	21.00	0.004	0.01	5.3	2.9	Limited threat

Source: Author calculations from WITS data.

Column (6),(7) are calculated by dividing the %share of each country in USA market 2015 to its share in 2003.If this ratio is more than one it shows that its share in USA market has increased.

*competitive threat category is decided by comparing the values of column (6), & (7).

China‟s share in USA market has almost doubled in all categories. It seems that Pakistan‟s Share has also improved not only in primary goods but also for some value added goods as foot wears, mechanicals and electronics and transportation. Point is that this improvement is from very lower WMS. Considering Foot Wears industry China‟s share doubled from 36% to 64% while Pakistan share rise more than doubled but only from 0.005% 0.014%. Same is the case for other goods. Textile sector of Pakistan maintained its WMS but its fall from 3.3% to 2.8% in USA market.

Pakistan‟s exports classification according to the threat category[3] are given as, ***Facing Threat:*** Animal, Chemical, Hides and Skin, Stone and Glass, Textiles & Clothing. ***At Risk:*** Vegetable. ***Limited Threat:*** Mach and Electronics, Metals, Miscellaneous, transportation and wood. ***No Threat:*** Food products, Footwear, Plastic or Rubber. ***Threat reverse:*** Minerals. Important change as compared to world is that Textile sector now falls under the category of facing threat and foot wear has improved its category to no threat.

Table 9: Threat Distribution by value in US$ Million and as percentage of total exports of Pakistan, 2015.For USA market share .

Categories of threat as are defined in table 1	Value of exports under given category in 2015	% Distribution of threat
Facing threat	3248.1	88.7
At risk	62.5	1.7
Limited threat	253.3	6.9
No threat	75.7	2.1
Reverse Threat	22.0	0.6
Total	3661.6	100

Source: Computed from WITS data.

Table 9 shows dollar value of threat for Pakistan‟s exports in USA market. Dollar value of the exports falling under the category of facing threat is 88.7% of total exports value of the Pakistan‟s exports, in case of world market it was only 11.8%. Destination specific analysis at disaggregated level of exports reveals that competing with China in third market is a serious issue for Pakistan‟s export. If other categories of threat are ignored and we focus only on “facing Threat” which is obviously negative, is not small enough to ignore.

[3] See table 1.

Table 10: ESI between China and Pakistan in USA market

ESI	2003	2015
Aggregate level	59.7 %	56%
Product Level	20.08%	22.35%

Source Author calculation from UNCOMTRADE data base.

Table 9 is a presentation of ESI between china and Pakistan in USA market.ESI between China and Pakistan in USA market at aggregate level is not much different from that it was in the world market. At product level, its value is less than that of in the world market. Value is decreased as at world level calculations, differences in destination markets are not considered, and all markets is lumped together. Important point is that value of ESI at product level in USA market has increased from 20% to 22%, showing that at product level competition between China and Pakistan has become intense. Comparison of RCA of China and Pakistan in USA market (Appendix C) gave the same results as were in the world market.

Conclusion and policy options

World trade structure has diversified a lot during last two decades. Overall trade volume of the world has amplified. However, Pakistan‟s exports have not experienced much change or diversification. Not only the export base is limited and narrow, it has failed to take advantage of growing world demand. Instead of growing overtime Pakistan‟s share in world market is stagnant. Pakistan‟s export products and export destinations, both lacked in diversification. Pakistan exports are limited to some major destinations. On the other hand, China has not only successfully followed the export led growth policy, but also at the top in the world‟s ranking of exports. Results show that RCA is not a guarantee of better performance at world level. It only shows that a sector or industry is growing fast as compared to other sectors domestically.

Changes in market share, Threat value as percentage of total export value, and ESI, all measure have some shortcomings when used as measure for competitive threat. Nevertheless, in this analysis all three measures have pointed out in same direction. It appears that Pakistan‟s exports are facing threat from China‟s enormously growing exports in world and USA markets.

Pakistan is facing competitive threat from Chins in all major industrial products and in some primary products also. Pakistan‟s trade and industrial sector needs a comprehensive renovating. For improving the trade competitiveness of Pakistan efforts are required at both

micro and macro level. On the one hand, agricultural sector productivity should be improved to provide raw material to industrial sector at competitive prices and on the other hand productivity of industrial sector itself is required to be improved.

For the productivity of industrial sector, energy prices should be in accordance with competitor‟s prices. Supply of energy should be continuous. Transportation and infrastructure facilities should be enhanced. Labourer sought to be trained per the requirement of different industries. Industrial need based research and development should be encouraged. Industries should be facilitated to import the intermediate inputs and technology. Providing quality at competitive prices in world market is the only way to exports growth in this era of free trade and globalization.

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Appendix A: Aggregate Products, HS Classification and codes

All Products	HS 1988/92
Capital goods	Number of Products at HS 6 digit: 905
Consumer goods	Number of Products at HS 6 digit: 1532
Intermediate goods	Number of Products at HS 6 digit: 2049
Raw materials	Number of Products at HS 6 digit: 584

Source UNCOMTRADE data base

Appendix B: Products and Codes HS 1988/92

Products	Codes HS 1988/92
Animal	HS 01-05
Chemicals	HS 28-38
Food Products	HS 16-24
Footwear	HS 64-67
Fuels	HS 27
Hides and Skins	HS 41-43
Mach and Electronics	HS 84, 85
Metals	HS 72-83
Minerals	HS 25, 26
Miscellaneous	HS 90-99
Plastic or Rubber	HS 39, 40
Stone and Glass	HS 68-71
Textiles and Clothing	HS 50-63
Transportation	HS 86-89
Vegetable	HS 06-15
Wood	HS 44-49

Source: UN COMTRADE & WITS. Online data base.

Appendix C: Comparison of RCA and market share for China and Pakistan

Product Group	china RCA 2003	China RCA 2015	Pak RCA 2003	Pak RCA 2015	Competitive threat to Pakistan based on WMS	Relative RCA 2003 *PAKr/ CHINAr	Relative RCA 2015 PAKr/CHINAr
Animal	0.59	0.36	0.10	0.05	Facing threat	0.2	0.1
Chemicals	0.27	0.33	0.00	0.01	Facing threat	0.0	0.0
Food Products	0.26	0.22	0.22	0.59	No threat	0.8	2.7
Footwear	5.45	2.96	0.08	0.12	No threat	0.0	0.0
Fuels	0.02	0.01	0	0	----------	0.0	0.0
Hides and Skins	4.85	2.71	5.27	4.9	Facing threat	1.1	1.8
Mach and Elec	1.45	1.69	0.00	0.00	Limited threat	0.0	0.0
Metals	1.14	1.00	0.22	0.28	Limited threat	0.2	0.3
Minerals	0.63	0.37	0.04	2.85	Threat revers	0.1	7.7
Miscellaneous	1.89	1.28	0.40	0.56	Limited threat	0.2	0.4

Plastic or Rubber	1.26	1.18	0.11	0.24	No threat	0.1	0.2
Stone and Glass	0.86	0.61	0.32	0.19	Facing threat	0.4	0.3
Textiles and Clothing	1.21	1.71	13.43	15.77	Facing Threat	11.1	9.2
Transportation	0.12	0.22	0.00	0.01	Limited threat	0.0	0.0
Vegetable	0.21	0.16	0.75	0.93	At risk	3.6	5.8
Wood	0.73	1.06	0.02	0.05	Limited threat	0.0	0.0

Source: Calculated from UN COMTRADE & WITS.

*PAKr/ CHINAr is Ratio of Pakistan"s RCA to China RCA in given year, If its value is more than one it shows that Pakistan RCA is more than that of the China.