Pak J Commer Soc Sci
Pakistan Journal of Commerce and Social Sciences
2013, Vol. 7 (3), 520-544

Changing Revealed Comparative Advantage of Textile and Clothing Sector of Pakistan: Pre and Post Quota Analysis

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Abstract

Many Asian countries have been beneficiaries of quota abolition for textile and clothing sector since 2005. After the implementation of the Agreement on Textile and Clothing (ATC) in December 2004, member countries of World Trade Organization (WTO) have quota-free trade except People's Republic of China (PRC). It was expected that Pakistan will be beneficiaries in textile and clothing due to expected superior export performance in this sector. Therefore, this study aims estimating revealed comparative advantage (RCA) of textile and clothing sector of Pakistan at HS-2digit level and SITC-3 digit level. It reveals Pakistan has comparative advantage in textile sector and low comparative advantage in clothing sector. Further, it analyzes RCA of textile and clothing sector during the period of pre and post quota and concludes that comparative advantage of Pakistan in textile and clothing sector has been declined during 2011-12.

Keywords: revealed comparative advantage; agreement on textile and clothing; comparative advantage; normalized revealed comparative advantage; China; India; Bangladesh; Pakistan.

1. Introduction

The export patterns of various exports are changing globally due to liberalization and technological improvements. These changes have caused shifting the comparative advantage and gains in productivity of various commodities and sectors of world economies. In the previous discussion, study explored the productivity of textile sector and concluded that exports can play important role in increasing productivity but increase in exports also shifts export patterns through comparative advantage. Pakistan presently faces big threats from the major giants of textile and clothing sector in the region, particularly from China, India and Bangladesh. Asian economies such as Bangladesh, China and India are enjoying in the present circumstances across the world, particularly after liberalization. In these changing circumstances, rapid global changing in export

patterns and success stories of Southeast Asian economies under present circumstances provide a lesson to Pakistan to follow up export led growth strategies.

Pakistan's textile and clothing sector has a potential to compete them in both restricted and unrestricted markets and to achieve higher productivity growth. Undoubtedly, trade liberalization creates competitiveness and transfer technology that leads to productivity growth. Therefore, it was thought that quota abolition would have led to changes in export patterns of textile and clothing sector through comparative advantage. This is one of the objectives of study to see the competitiveness of Pakistan's textile and clothing sector and to compare exports competitiveness with major giants. A part from this, another objective of the study is to see the impact of comparative advantage on export supply, particularly after quota abolition as theory suggests that trade liberalization and comparative advantage increase the exports and productivity. Moreover, comparative advantage of any country may be changed due to changing in factors of production and due to trade integration of various countries.

Therefore this study analyses comparative advantage of textile and clothing sector through revealed comparative advantage (RCA) Balassa index (1965) at Harmonized System HS 2-digits levels. This study aim is to provide a picture relative position of textile and clothing sector of Pakistan in the foreign markets and to compare the comparative advantage status with major giants in the region. Notwithstanding, export demand and export supply play significant role in changing export patterns through comparative advantage. In principle comparative advantage arises from factor endowments and from differences in technology.

In market economy, export determines revealed comparative advantage and this way is consistent with the traditional way of factor endowment of comparative advantage. RCA measure does not discriminate factor endowment effect from trade policy effect and it also provides signal on the movement in the comparative advantage of any region. However, different trade theories provide different determinants of comparative advantage e.g. Ricardian considered cost and technological differences as determinants of comparative advantage. On the other hand Samuelson (1948) considered factor price differences as determinants of comparative advantage. The Neo-Factor-Proportion theory focused on factor efficiency while product cycle model by Posner (1961) explained that technological innovation is a cause of differences in comparative advantage. In the recent time, Memedovic (1994) considered type of state i.e. (administrative capacity, mode of intervention and class base) according to him government intervention can bring changes in comparative advantage. The trade policies differentials between Latin American and East Asian region would provide different results of comparative advantage and not due to factor endowment.

2. Literature Review

RCA index for comparative advantage over time provides information about movement in comparative advantage over the period. Many studies used the concept of revealed comparative advantage by using export data. Balassa (1977) examined the pattern of comparative advantage for various countries over the period 1953 to 1971. The evidence supported that research intensive products when traded keeps product cycle continue. This study also measured standard deviation of RCA indices to see the association between size and exports diversification for various countries. Yeats (1997) examined

trade pattern and conclude that distortion in trade patterns due to inequitable trade barriers are features of RTAs. Richardson and Zhang (1999) estimated export patterns variation over time for different sectors and region of USA by using Balassa index. This study found that patterns differ across countries and time for different level of exports. These differentials are due to geographical immediacy of trading partners and due to per capita income. Yue (2001) measured changing export pattern of China through RCA index and found differences in export patterns due to geographical differences of costal and interiors region of China.

Bender, Siegfried and Kui-Wai Li (2002) examined shifts in exports structural performance and comparative advantage of Asian and Latin American economies for the period 1981-1987. This study measured revealed comparative advantage indices to observe export patterns of these countries for these regions. This study found that export pattern changes with the change in comparative advantage of these regions. Karakaya and Ozgen (2002) investigated the effects of trade creation and trade diversion by using RCA index. This study also examined whether trade accession would make the trade vulnerable for other southern members i.e. Spain, Portugal, and Greece, moreover results established the fact that export structure are different among EU and the Turkey.

Yilmaz (2003) analyzed the competitiveness and structure of specialization in trade of Turkish economy in comparison with other five economies such as Bulgaria, Romania, Czech Republic, Romania, Hungry, and Poland. This study used four different measures for estimating competitiveness such as RCA, comparative export performance, export similarity indices and trade overlap. Results of this study indicated that Turkey has strong comparative advantage in few labor intensive and few raw material intensive goods. Results of this study also revealed some comparative disadvantages in imitable research-oriented commodities. Study separated easy imitable research-oriented goods and difficulty research oriented goods, but in both type it has comparative disadvantage. Yilmaz and Ergun (2003) made a similar study to estimate competitiveness of same countries including Turkey. This study used four indices as used in the study of Yilmaz (2003) and seven measures to estimate competitiveness. The results of this study also indicated the weakness in the trade competition and performance in research –oriented goods. While, the results relate to Hungry were different and hand had relatively better performance. Results also revealed that Turkey improved its trade diversification. Utkulu and Seymen (2004) estimated the pattern of trade, trade competitiveness among Turkey and EU for various sectors. This study used other measures too, apart from RCA index to estimate comparative advantage. Mahmaood (2004) also used RCA index at HS-4 digit level to explore the competitiveness of non-agricultural exports. This study focused on shifts in comparative advantage among various labor-intensive and technology-intensive products. Results of this study revealed that some products of non-agricultural sector attained competitive position. This study also concluded that market access and liberalization of trade is a necessary condition but not a sufficient condition for achieving export competitiveness. Ferman et. al. (2004) analyzed export similarity index and RCA index to see the competitiveness of export flows of Turkish economy to EU market. Results of this study revealed that India and China is close competitor of Turkey.

Batra and Khan (2005) analyzed RCA at sector and product level. This study made comparative analysis through RCA and structure changes across sectors in China and India for the period from 2000 to 2003. By considering Balassa's (1965) to measure

performance of industry and commodities at HS 2-digit and HS 6-digit level of these countries.

Hanif and Jafri (2006) analyzed the relationship between financial development and export competitiveness of textile sector of Pakistan. This study discussed the role and importance of external finance to the textile sector of Pakistan in order to increase the export competitiveness. The results indicated that more access to external finance increases export competitiveness and comparative advantage. Bhuyan and Ray (2006), Siriwardana and Yang (2007), and Rehman et al. (2011) contributed in measuring comparative advantage of Bangladesh at regional and bilateral level, because previous studies did not make detailed analysis of comparative advantage of Bangladesh.

Ratkorm (2008) applied RCA to compare competitiveness in trade between Thailand and Australia during the period of Thai-Australia Free Trade Agreement. This study summarized that Thailand had comparative in five business sectors over Australia. These sectors were included parts and accessories, vehicles, cultured or natural precious stones, articles of iron and steel, plastic, and air conditioning machines. Serin and Civan (2008) analyzed competitiveness in exports of Turkish to European Union (EU) and found that Turkish had comparative advantage in all traded sector to European Union except tomato sector. Sheng and Song (2008) analyzed a comparative advantage in bilateral trade of China and Australia. This study found that bilateral trade is advantageous for both countries in the key commodities such as agricultural products, petroleum products, and textile and clothing products. Naseem (2008) used RCA to measure the performance of footwear industry of Pakistan. This study, further compared the results of RCA of footwear industry of Pakistan with the footwear industries of India and China. The RCA was calculated at HS 2-digit and HS 4-digit level. Covering the period of 1996 to 2006 this study revealed that at HS 2-digit level Pakistan's footwear industry faced shift in comparative advantage. According to the results, though India and china have comparative advantage since 1990 but it decreased over time.

Bhattacharyya (2011) investigated comparative advantage and competitiveness for horticultural products of India. This study compared the advantage in these commodities with major rivals of these commodities such as North American, Asian and European Union markets. This Study concluded that India had a comparative advantage in fruits and vegetable sectors.

Bano and Scrimgeour (2012) empirically investigated the linkage between kiwifruit output growth and its export by using RCA Balassa index for the period from 1981 to 2011. The results of this study indicated that comparative advantage through RCA continuously led to increase in the growth of this product.

Lalit (2013) calculated RCA of export performance of clothing sector of India and Bangladesh. This study used Harmonized System (HS up to 4-digit level) to analyze competitive advantage of various clothing products for the period of 1995 to 2003 for both countries. This study revealed that comparative advantage in clothing products of India increased from 23 products to 25 products and comparative advantage of the same products of Bangladesh increased from 21 to products to 29 products in this period. Shahab and Mahmood (2013) estimated revealed comparative advantage of leather industry and various leather products of Pakistan, China, India and Iran, by using Balassa index (1965) for the period of 2002 to 2009. This study found increasing trend of

comparative advantage movement of leather industry of Pakistan. The study indicates that Pakistan has significant potential of growth in this sector. Further, it also explores India and China also have comparative advantage but Iran has comparatively disadvantage in this sector.

3. Measuring Revealed Comparative Advantage

RCA index is a standard approach or methodology to estimate a country's comparative advantage or comparative disadvantage in commodities, industries or sectors. Theoretically, we can measure comparative advantage in terms of relative prices, when there is no trade. According to Ricardian theory, comparative advantage occurs due to technological dissimilarities across nations, while the H-O theory considers cost dissimilarities arising due to differences in factor prices across nations, assuming constant technology. Therefore, we summarizer that trade theories in classical context are based on pre-trade relative price differences across countries. However measuring comparative advantage through H-O theory has some constraints, particularly, pre-trade relative price is immeasurable Balassa (1989). On the basis of these difficulties Balassa (1965) suggested that it is not necessary to observe all ingredients effecting comparative advantage of any country rather one should observe patterns of trade. Therefore, date on trade explains revealed comparative advantage, which is practicable and commonly accepted measure. Balassa Index only focused on estimating comparative advantage of any country rather than focusing on determining its sources. However, after Balassa (1965) measure for comparative advantage, number of studies revised the definition of RCA and some other measures also exist in literature on RCA globally for example Memedovic (1994), Vollarth (1991), Donges and Riedel (1977), and Bowen (1983) etc. Another variety of RCA indices include Normalized Revealed Comparative Advantage Index (NRCA) that provides comparison over time and space (Yu et al., 2008). Some measures evaluate comparative advantage in bilateral trade such as (Dimelis and Gatsios, 1995). However, Liesner (1958) first time empirically studied RCA by following measures.

$$RCA_1 = X_{ij} / X_{nj}$$

Where Xij is the export of country *i* for *j* commodity or industry and n represents set of countries. Balassa (1965) considered comprehensive measure that is widely accepted in literature. The RCA Balassa index is expressed as following.

$$RCA_2 \text{ (Balassa Index)} = X_{ij} / X_{in} \div X_{wj} / X_{wn}$$

Where X_{ij} is the export of country *i*, for, *j* commodity and *n* is a set of all exported commodities of country i, while X_{wj} represents the export of world for same commodity *j* and X_{wn} is a world export of all *n* commodities. According to the results of this index if $RCA_2 > 1$ then a country has comparative advantage, if $RCA_2 < 1$then a country has comparative disadvantage in that commodity or industry.

Another RCA index takes into account the possibility of imports and exports simultaneously but it checks trade performance its own not with any reference country or rest of the world. This index is shown as following.

$$RCA_3 = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij})$$

This index ranges from -1 to +1and in case of $X_{ij} = 0$ there will be revealed comparative disadvantage but if $M_{ij} = 0$ there will comparative advantage. However zero value creates

ambiguity (Greenaway and Milner, 1993). Another version derived from the Balassa index captures the effect of imports and this index can be written as following.

$$\text{RCA4} = (X_{ij} / X_{it}) / (M_{ij} / M_{it}) = (X_{ij} / M_{ij}) / (X_{it} / M_{it})$$

Here X_{ij}, M_{ij} are exports and imports of country i for j commodity or industry respectively, while X_{it}, M_{it} are exports and imports of i country for t set of commodities *or* industries.

In another index derived from Balassa (1965) logarithm of export to import ratio is taken. This index can be shown as following

$$\text{RCA5} = \ln (X_{ij} / X_{it}) / (M_{ij} / M_{it}) * 100 = \ln (X_{ij} / M_{ij}) / (X_{it} / M_{it}) * 100$$

Vollarth (1991) suggested three alternative indices for the measurement of comparative advantage. These indices are called Relative Trade Advantage (RTA) Revealed competitiveness (RC) and Relative Export Advantage (REA). The positive values obtained in theses indices indicate comparative advantage while negative values point out comparative disadvantage. But these indices have a drawback of distorting trade patterns when government intervenes in trade policies through export subsidies and import restrictions. Greenaway and Milner (1993) suggested to use price based measure of RCA to avoid these distortions in trade pattern caused by policy intervention and this measure is called implicit revealed comparative advantage (IRCA). Vollrath confesses that revealed export advantage index may be used commonly because it reduces the effects of distortions. One must remember that indices suggested by Balassa and Vollrath are not comparable as these are based on different circumstances and concepts. RTA shows the difference between relative export and relative import advantage and calculated as mentioned below.

$$\text{RCA6} = RTA = RXA - RMA$$

Where RXA is (Xij/ Xit) / (Xnj/ Xnt) and RMA is (Mij/ Mit) / (Mnj/ Mnt).

Another measure of Vollrath's is in logarithm form

$$\text{RCA7} = RC = ln\ RXA - ln\ RMA$$

This captures the difference of relative export and import advantage in logarithm. Some authors tried to overcome the problems of Balassa (RCA) including Laursen (2000), Prouudman and Redding (1998), Hoen and Oosterhaven (2006). Although authors at different time provided alternative measures but no one succeeded in rule out all shortcomings and still Balassa index is recognized as standard index, Yu et al. (2009). The index developed by Yu et al (2009) estimates the degree of deviation of its actual export over time from neutral level i.e. (comparative advantage). This index is called normalized revealed comparative advantage index (NRCA).

But in the presence of several indices, one should be careful using these indices as theses indices may provide inconsistent results and even their consistency and stability may be questioned (e.g. Balance et al., 1987; Yeats, 1985; Hinloopen and Van Marrewijk, 2001). Therefore in applying these indices, one should look into different probabilities and trade intervention policies.

In the present study, we prefer using Balassa index because textile and clothing sector of Pakistan exports its commodities to the rest of the world under conditions imposed by

MFA, and WTO not by any strong domestic trade policy intervention. On the other hand Balassa is considered standard index for comparative advantage.

4. Data Sources and Methodology

This study calculated revealed comparative advantage (RCA) Balassa index for textile and clothing sector separately. For this purpose annual data has been taken from the website of WTO for the variables such as textile export of Pakistan, clothing sector export of Pakistan, world total textile exports, world total clothing exports, total exports of Pakistan of all commodities, total world exports of all commodities. Data is taken in million US $.

$$\text{RCA (Balassa Index)} = X_{ij} / X_{in} \div X_{wj} / X_{wn}$$

Where X_{ij} is the export of country *i* , for, *j* commodity and *n* is a set of all exported commodities of country i, while X_{wj} represents the export of world for same commodity *j* and X_{wn} is a world export of all *n* commodities. According to the results of this index if $RCA_2 > 1$ then a country has comparative advantage, if $RCA_2 < 1$then a country has comparative disadvantage in that commodity or industry.

X_{ij} = country *i* i.e. Pakistan and *j* shows textile sector/commodity

X_{in} = country *i* i.e. Pakistan and *n* shows total exports of Pakistan for all commodities

X_{wj} = shows world exports of textile sector *j*

X_{wn} = shows world exports of all commodities *n*

By using Balassa index study calculated revealed comparative advantage for the period before and after liberalization or quota abolition. Again this study assumes liberalization period starting from 1995, a first phase of transitional period under Uruguay Round agreement on textile and clothing for complete abolition of quota for textile and clothing exporting countries. This elimination of multi fiber agreement MFA had to be completed in the year 2005. The detail of this transitional period for the removal of quota is given in the table 1. According to which importing industrial countries will increase import volume gradually in four phases till the abolition of complete quota for exporting countries.

Table 1: Transitional Stages of Quota Abolition

Phases	Integration (based on 1990 volume)	Growth Rate of Residual Quotas (based on previously agreed MFA growth rates of quotas
Stage 1(January 1, 1995)	16 percent	16 percent higher growth than initially
Stage 2(January1, 1998)	Further 17 percent (total 33 percent)	Increase by 25 percent
Stage 3(January 1, 2002)	Further 18 percent (total 51 percent)	Increase by 27 percent
End of the 10 year transition period (January 1, 2005)	Remaining 49 percent (total 100 percent)	

Source: Francois, McDonald, and Nordstrom (1995)

On the basis of above indicated quota abolition period, this study divides the comparative advantage into two periods i.e. before and after quota abolition. The results of before and after liberalization (pre-post quota) periods are given in table 2 and 3 respectively.

The results of RCA (Before- liberalization period) are presented in table 2.

Table 2: RCA of Textile and Clothing Sector of Pakistan
(Pre Quota/Before Liberalization)

Years	**RCA of Textile Sector of Pakistan**	**RCA of Clothing Sector of Pakistan**
1972	5.048	0.190
1973	10.547	0.401
1974	9.494	0.755
1975	11.908	0.971
1976	11.898	1.252
1977	12.613	1.480
1978	11.651	1.060
1979	13.527	1.071
1980	12.447	1.469
1981	12.287	1.712
1982	14.406	2.219
1983	15.401	2.653
1984	14.079	3.438
1985	12.421	3.278
1986	11.739	4.300
1987	13.388	4.383
1988	13.438	4.643
1989	13.836	4.950
1990	15.674	5.968
1991	15.743	5.948
1992	15.693	6.307
1993	17.397	7.728
1994	17.692	7.005
Average*(Before Quota Elimination)*	**13.144**	**3.181**

Table: 3 RCA of Textile and Clothing Sector of Pakistan
(After- Liberalization/Post quota)

Years	**RCA of Textile Sector of Pakistan**	**RCA of Clothing Sector of Pakistan**
1995	17.971	6.802
1996	18.579	7.070
1997	18.888	7.419
1998	18.551	7.934
1999	19.740	8.558
2000	20.590	9.740
2001	20.302	9.583
2002	20.154	9.374
2003	21.115	9.847
2004	21.438	10.591
Average(*During Elimination Phase*)	**19.73**	**8.691**
2005	22.634	11.51
2006	24.242	12.68
2007	24.282	12.53
2008	22.873	12.43
2009	22.114	11.12
2010	22.206	9.938
2011	19.838	10.32
Average *(After complete Elimination)*	**22.59**	**11.50**

The table 3 shows RCA indices of textile and clothing sector separately. The period of estimation is from 1972 to 1994 indicating a period of before quota abolition. The results are indicating increasing trend in comparative advantage of textile sector, but after 2005 it has mixed trend. Before quota abolition average RCA remained 13.14 but during MFA phase its average was 19.73 which showed improvement in RCA of textile sector. After the period of complete quota abolition from 2005 to 2011 its average trend further improved. This means RCA of textile sector is showing improvement over all. While there has been a mixed trend in comparative advantage of clothing sector. The clothing sector of Pakistan is showing volatility in comparative advantage because its value over

the period remained unstable. Before elimination of quota RCA of clothing sector remained 3.18 on the average, which is less than the textile sector of Pakistan. During MFA phase it started improving and on the average it was 8.691. After complete quota elimination it further improved and reached to 11.50 but over all comparative advantage of clothing sector is less than the comparative advantage of textile sector during all stages.

In case of textile sector of Pakistan, showing increasing value and volume of exports as compared to the world's share of textile in the total export of world. Therefore this has increased the comparative advantage, which reveals the great potential of textile sector of Pakistan. More over after quota abolition (the period of liberalization from 1995 to 2011) showed increasing movement of comparative advantage of textile sector as depicted in table 1.3. The RCA of textile sector can be viewed with the help of figure 1 given below.

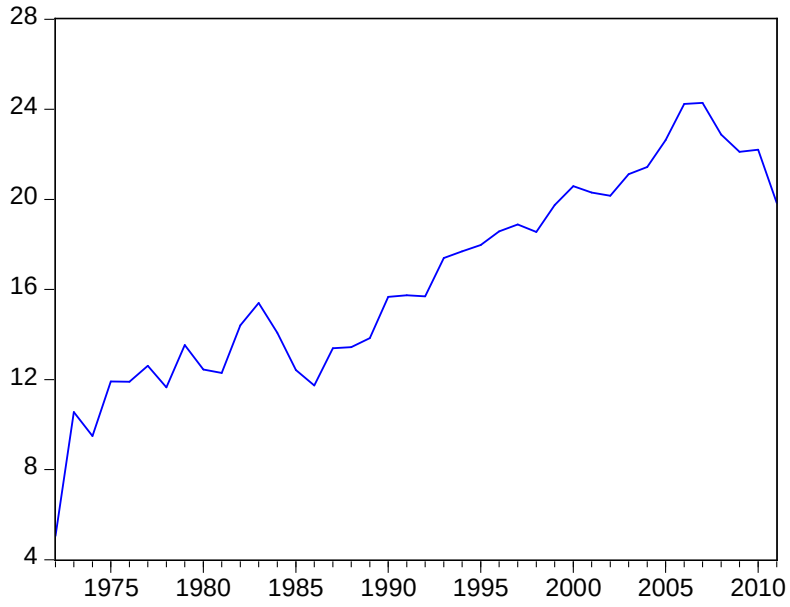

Figure 1: RCA of Textile Sector of Pakistan

The above figure 1 indicates inclining trend in the comparative advantage movement except for the period of 2006-2011 that shows after complete abolition of quota i.e. (After phasing out of MFA in 2005) the comparative advantage of textile sector of Pakistan started declining. This means trade liberalization decreased the comparative advantage instead of increasing the comparative advantage of textile sector of Pakistan. Though, it was expected that phasing out of MFA in 2005 will benefit the textile sector of Pakistan, because just 15 % increase in quota by European Union market and duty free policy for textile sector just few years before 2005 (i.e. year of complete quota elimination), may increase exports for Pakistan. But the outcomes were different. In fact quota removal provided the ground of competition to major competitors but Pakistan's textile sector did not get benefit due to some possible deteriorating factors such as electricity crisis, competition with China, India and Bangladesh, unskilled workers, government policies

and high fundamental production cost etc. Although Pakistan is moving towards market economy under vulnerable economic environment for industries and on the other hand India and China are also major cotton producers with strong industrial infrastructure than Pakistan. Another important aspect is that China's complete accession to WTO had been postponed until 2015 which could be advantageous for Pakistan. Therefore textile sector of Pakistan should have gained from this but on contrary Pakistan lost this opportunity. Another possible reason is that developed countries removed quota restrictions but continued tariff restrictions. The trend of RCA of clothing sector can be presented in the figure 2 given below.

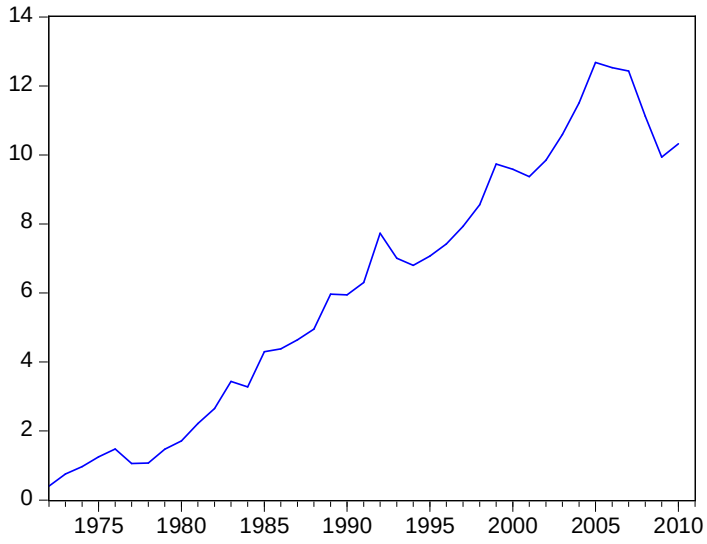

Figure 2: RCA of Clothing Sector of Pakistan

Figure 2 clearly indicates the inclining trend of clothing sector of Pakistan production but it started declining after 2005 for few years but after 2008 it again improved. But textile sector export share of Pakistan in the world declined from 3.46% to 3.09% after quota elimination.

Pakistan has to face competition from giants of textile and clothing exporter in the region. Its major competitors are India, China, Bangladesh, Indonesia, Thailand, Malaysia, Macao, Vietnam, South Korea, and Taiwan etc. However in European Union (EU) four major exporting countries of textile sector are China, India, Bangladesh and Pakistan. (See table:4). The table has been taken for the period of starting of trade liberalization era (i.e. complete removal of quota from EU).

Table 4: Share in the Value of EU Imports of Textiles and Clothing Products (2004-06)

EU Imports from Country Region **Extra EU trade** **(ranked by 2004 value of imports)**		**Market Share (%)**			**Growth Rate (%)**	
		2004 **100**	**2005** **100**	**Jan-Aug 2006** **100**	**2004-05** **6.4**	**Jan-Aug 2005-06** **12.4**
Asian 12 (ranked by 2004 value of imports)		45.9	51.5	52.8	19.6	13.9
1.	China	21.8	29	28	41.9	5.5
2.	India	6.6	7.3	8.1	18.3	18.4
3.	Bangladesh	5.8	5.2	6.1	-5	34.8
4.	Pakistan	3.4	2.8	2.9	-13.2	14.9

Source: Eurostat external trade database (COMTEXT).

The table 4 depicts that China has major share in textile and clothing products in the years 2004 , 2005 and 2006 but Pakistan is on fourth in the list. Similarly for the US market, major textile and clothing exporting countries are China, India, Indonesia, Vietnam and Pakistan (See table: 5). Therefore this study calculated RCA of textile and clothing for these countries in order to make comparison and to assess the export pattern. Because this depicts the situation of ranking of top countries in US and EU markets, just before quota elimination.

Table 5: Share in the Value of US Imports of Textiles and Clothing Products (2004-06)

US Imports from Country Region **World**		**Market Share (%)**			**Growth Rate (%)**	
		2004 **100**	**2005** **100**	**Jan-Aug 2006** **100**	**2004-05** **6.8**	**Jan-Aug 2005-06** **2.6**
Asian 12 (ranked by 2004 value of imports)		41.3	49.8	54.8	28.6	11.8
1.	China	17.2	24.2	26.4	50.2	7.3
2.	India	4.6	5.4	5.8	26	11.7
3.	Indonesia	3	3.3	4.1	18.9	27.2
4.	Vietnam	3	2.9	3.5	5.9	24.1
5.	Pakistan	2.9	3.1	3.4	13.2	16.2
6.	Thailand	2.5	2.4	2.3	-1.3	1.5
7.	Bangladesh	2.3	2.6	3.1	19.8	24.4

Source: USITC Interactive Tariff and Trade Data Web

Table 5 indicates share of the exports of textile and clothing products of major countries in the US market. According to table China was top exporter of textile and clothing sector in US market at the start of the period of quota abolition but for China complete accession to WTO was deferred until 2015 and for rest of the countries it was 2005. Therefore keeping in view exports volume and share of exports of these developing countries in US and EU countries, present study calculated comparative advantage of textile and clothing sectors of major competitors of Pakistan in order to see the position of Pakistan. Table 6 indicates competitive positions of RCA of these four major countries such as Pakistan, China, India and Bangladesh.

Table 6: RCA of Textile Sector (Before Liberalization or Quota Elimination)

Years	RCA of Pakistan	RCA of China	RCA of India	RCA of Bangladesh
1980	12.44725	5.190944	5.626256	20.17557
1981	12.28707	5.590903	5.110573	16.74787
1982	14.40607	4.559415	4.230815	14.80678
1983	15.40191	5.314406	3.510297	17.66172
1984	14.07946	5.275499	4.271913	16.68971
1985	12.42134	4.721042	4.046148	12.88985
1986	11.73967	5.52573	3.551256	9.500317
1987	13.38819	4.954076	4.194534	8.527055
1988	13.43891	4.947699	4.00923	7.362441
1989	13.83658	4.434036	3.688038	7.744088
1990	15.67493	3.842665	4.009744	6.784249
1991	15.74382	3.596316	4.605566	5.827308
1992	15.69348	3.247118	4.800198	4.962617
1993	17.39706	3.160829	4.507704	4.374899
1994	17.69239	3.208683	5.027512	3.773632

In the table 6 RCA of textile sector of major competitors in the world market is shown for the period of 1980 to 1994 (i.e. period before liberalization) because under Uruguay Round agreement on textile and clothing, multi fiber agreement (MFA) has to be eliminated in the ten years transitional period. This period started from January 1, 1995 with the entrance of World Trade Organization (WTO). Transitional stages were earlier mentioned in the table 1. According to table 6 Pakistan has greater comparative advantage in textile than India China and Bangladesh, while Bangladesh had more advantage than Pakistan during the period of 1980 to 1985. After 1985 Pakistan's RCA of textile sector started inclining but RCA of Bangladesh started declining.

RCA of textile sector of these major competitors is calculated in the context of quota removal and transitional period of removal of quota. Results of these estimations are given in the table 7.

Table 7: RCA of Textile Sector (After Liberalization or Quota Elimination)

Years	RCA of Pakistan	RCA of China	RCA of India	RCA of Bangladesh
1995	17.971	3.171498	4.823612	4.183346
1996	18.57975	2.836428	5.274149	3.704624
1997	18.88859	2.715778	5.376562	3.454762
1998	18.5514	2.561467	5.004803	3.104367
1999	19.7408	2.613208	5.569129	2.934282
2000	20.59004	2.655672	5.390925	2.523007
2001	20.30292	2.620784	5.143769	3.176875
2002	20.15471	2.634101	4.820641	3.364522
2003	21.11568	2.661012	4.531873	2.561342
2004	21.43841	2.638318	4.464191	3.366238
2005	22.63455	2.761827	4.263585	3.887387
2006	24.24279	2.760552	4.019113	6.9562
2007	24.28231	2.697887	3.763552	4.171459
2008	22.87358	2.955608	3.443863	4.587619
2009	22.11459	2.963586	3.288769	3.496652
2010	22.2067	2.951519	3.434704	3.986387
2011	19.83816	2.753178	2.729234	3.602152

In the table7: RCA of Pakistan, India, China and Bangladesh is calculated for the transitional period of elimination of MFA from 1995 to 2005 and after complete elimination of MFA (i.e. period of 2005) and onwards. Table 7: clearly indicates that Pakistan has greater comparative advantage and improved RCA during phasing out of MFA and after liberalization. However in the year 2011 it declined by 10.67 percent. In the year 2011, RCA declined of China, India and Bangladesh too but overall Pakistan has better advantage than these countries. After liberalization or complete abolition of quota, RCA of China almost remained stable, while for Pakistan, India and Bangladesh it remained volatile.

Similarly this study calculated RCA of clothing sector of these competitive countries before quota elimination. The results of RCA of clothing sector are given in the table 8.

Table 8: RCA of Clothing Sector (Before Quota Elimination)

Years	RCA of Pakistan	RCA of China	RCA of India	RCA of Bangladesh
1980	1.46	3.320	2.899	0.097
1981	1.712	3.183	3.303	0.229
1982	2.219	3.567	2.485	0.532
1983	2.653	3.770	2.740	1.047
1984	3.438	3.799	3.021	2.981
1985	3.278	3.143	3.570	5.900
1986	4.300	4.113	3.547	8.428
1987	4.383	4.423	3.738	11.745
1988	4.643	4.958	3.814	10.860
1989	4.950	5.017	4.197	10.886
1990	5.968	5.146	4.653	12.717
1991	5.948	5.494	4.600	16.048
1992	6.307	6.319	5.073	15.960
1993	7.728	6.700	4.589	17.119
1994	7.005	6.443	4.859	16.561

In table 8 RCA of clothing sector of Pakistan, China, India, and Bangladesh is shown. According to results Pakistan and China almost have comparative advantage in clothing exports while Bangladesh have greater comparative advantage in clothing sector and improved continuously. Though comparative advantage in clothing sector also improved but it remained less than Bangladesh. On the other hand China's comparative advantage in clothing sector also improved but remained less than that of Pakistan. While comparative advantage of Indian in clothing products remained less than these all countries but improved gradually.

Table 9 provides the results of RCA of these countries of clothing sector during MFA transitional phase and after complete quota elimination.

Table: 9 RCA of Clothing Sector
(During Quota Elimination Phases & After Quota Elimination)

Years	RCA of Pakistan	RCA of China	RCA of India	RCA of Bangladesh
1995	6.802	5.48005127	4.54911566	19.06714895
1996	7.070	5.86254347	4.50589240	18.46484297
1997	7.419	6.24601488	4.45363518	19.97075341
1998	7.934	6.00506914	5.25076078	27.14349712
1999	8.558	6.02622747	5.64249310	27.48135897
2000	9.740	5.93695435	5.76838646	32.5294567
2001	9.583	5.70886988	5.2259778	32.53228976
2002	9.374	5.29100472	4.83165083	32.6819853
2003	9.847	5.14999760	4.28557526	35.06495388
2004	10.591	4.88200884	4.15566225	35.50055905
2005	11.51	4.98965572	4.42311526	37.99162467
2006	12.68	5.40898683	4.28527948	38.72936549
2007	12.53	5.56217646	3.88604289	41.78537334
2008	12.43	5.44418390	3.64175551	45.96036701
2009	11.12	5.31368909	4.33340701	49.43066029
2010	9.938	4.98453533	3.00539953	49.42741511
2011	10.32	4.48429917	2.61091158	45.17189434

Table 9: indicates the comparative advantage of clothing sector of four major competitors during and after quota elimination phase. During this period Pakistan had better comparative advantage and increased over time except for two years 2010 and 2011. While Bangladesh got advantage of Generalized Scheme of Preference (GSP) + status that was given to 49 Least Developed Countries by EU in 2001 including Bangladesh. EU allowed full access of quota and tariff free exports from these Least Developed Countries to European Union. China had almost stable position in clothing sector too, while India has low comparative advantage than its competitor and RCA of Indian clothing sector remained volatile and declined after liberalization.

A comparative picture of comparative advantage of clothing sector of these countries can be viewed in the figure 3.

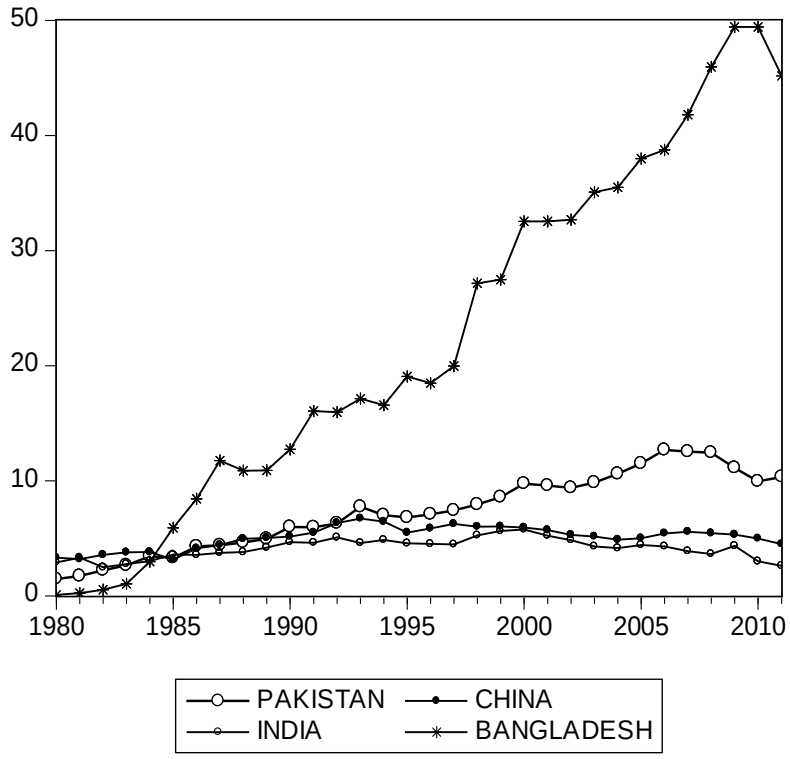

Figure 3: RCA of Textiles Sectors of Bangladesh, India, China and Pakistan

Figure 3 clearly indicates the difference in the movement of the pattern of RCA. RCA of Pakistan continuously increased from the year 1985 till 2005 but after quota elimination it declined. Nevertheless, its trend is significantly higher than China and India in case of clothing sector. Comparative advantage of clothing sector of Bangladesh remarkably improved due to GSP plus status.

This study covers detailed analysis of RCA of textile and clothing products of Pakistan from the period of quota elimination from 2005 to 2011 at three-digit level Standard of International Trade Classification (SITC). RCA of various textile and clothing products of Pakistan is given in table 10.

Table10: RCA of SITC at 3-Digit Level for Textile and Clothing Products of Pakistan

(After Quota Elimination)								
codes	**Commodities**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
265	Vegetable textile fibers, not spun; waste of them	0.32	0.14	0.09	0.003	0.021	0.08	0.02
266	Synthetic fibers suitable for spinning	4.16	1.60	1.70	0.67	0.17	0.05	0.06
267	Other man-made fibers suitable for spinning	0.18	0.06	0.30	0.21	0.01	0.05	0.02
269	Worn clothing and other worn textile articles	4.22	4.23	4.83	3.45	3.94	4.19	4.44
651	Textile yarn	20.1	24.1	23.8	20.98	24.71	23.8	23.9
652	Cotton fabrics, woven	47.1	49.9	51.00	56.35	49.80	51.73	53.7
654	Other textile fabrics, woven	1.41	1.30	0.82	0.22	0.33	0.49	0.29
655	Knitted or crocheted fabrics, n.e.s.	2.19	1.76	2.15	2.18	2.01	2.24	1.09
656	Tulles, trimmings, lace, ribbons & other small wares	0.64	0.73	0.38	0.10	0.16	0.21	0.26
657	Special yarn, special textile fabrics & related	1.08	0.85	0.75	0.67	0.60	0.66	0.52
658	Made-up articles, of textile materials, n.e.s.	63.0	67.0	65.6	59.25	52.84	52.06	43.0
659	Floor coverings, etc.	16.0	13.8	12.3	10.19	7.64	6.581	4.99
841	Men's clothing of textile fabrics, not knitted	9.55	9.98	11.4	10.72	10.05	11.04	9.23

842	Women's clothing, of textile fabrics	3.48	4.32	3.84	3.79	3.52	4.36	4.82
843	Men's or boy's clothing, of textile, knitted, croche.	34.6	35.6	28.6	28.17	25.19	26.52	22.3
844	Women's clothing, of textile, knitted or crocheted	3.82	4.89	4.75	4.85	4.14	4.17	3.15
845	Articles of apparel, of textile fabrics, n.e.s.	3.94	3.67	3.02	2.92	2.79	2.80	2.64
846	Clothing accessories, of textile fabrics	12.2	12.8	13.1	13.18	11.89	11.71	9.97
848	Articles of apparel, clothing access., excluding textile	19.1	22.7	22.3	22.32	16.24	13.97	11.6

Table 10 indicates the analysis of 19 exportable commodities of textile and clothing sector at the three-digit of the Standard International Trade Classifications (SITC). The three-digit SITC is taken because three-digit level shows the production of these commodities with similar factors across countries (Greenaway and Milner, 1986). According to the results of the table (SITC 265) had comparative disadvantage while (SITC 266) had comparative advantage for the period 2005 to 2007 but moving forward to 2007 it did not maintain its advantage. (SITC 267) also had comparative disadvantage over the period. Among other commodities group SITC 654,656, 657 had comparative disadvantage. Rest of the thirteen commodities had comparative advantage during this time period. But almost comparative advantage of SITC 269, 651, 652, 655, 658, 659, 841, 843, 844, 845, 846, 848 declined with the passage of time and for some commodities remained volatile. However, comparative advantage of (SITC 842) improved in the year of 2010 and 2011.

5. Conclusions and Policy Recommendations

The declining position in RCA of textile and clothing sector of Pakistan after quota elimination for few particular years may be the consequence of several problems e.g. investment boom in textile sector between the years 2003 to 2007 came to an end in 2008. This increase in investment was due to integration of China to WTO and phasing out of quota. On the globe, yarn fabric productions fell down since the second quarter of 2008. The global economic crisis also hit the trade in Oct 2007 (Ahmed, 2011). Among

other reasons electricity and energy crisis are constraint for textile and clothing sector of Pakistan. Increase in yarn prices and increase in minimum wage from Rs.6000 to Rs. 7000 raised the cost of value added textile sector (Ahmed, 2011).

On the policy side, European Commission declared simplified GSP scheme as incentive to encourage the efforts against drug production that allowed 12 percent import duties of total import duties had to be paid since January 2005. However, later on, since January 2006 Pakistan received 9.6 percent of GSP rates of import duties on many commodities belonging to textile and clothing sector and other categories. But Bangladesh with zero duty and Sri Lanka due to special advantage had not to face any duty. On contrary, Pakistan had to face import duties from developed countries; as a consequence Pakistan could not get benefit.

Moreover after 2005 both buyers and sellers of textile and clothing sector did not depend on quota in the major markets and earlier trade relations were abandoned due to entrance of new players in the market who had offered competitive rates and better quality. This means competition on price and quality for textile and clothing products over time increased. Particularly, since 2001 China's entrance in the WTO and due to cost efficient production had become threatened for many textile and clothing exporting countries such as Asian, African, Latin American countries.

Our textile and clothing industry has been focusing on low value added fabrics and yarn instead of focusing on made-ups and garments. Pakistan textile and clothing sector has been facing upgrading problem of technology at all stages of production, lack of skilled force and human resource development, and poor marketing.

Abolition of quota in January 2005 did not push Pakistani exporters, particularly to US and EU markets. According to statistics total exports of textile and clothing sector of Pakistan slightly increased after quota abolition. However, textile made-ups kept continue its growth performance despite higher costs and anti dumping duties. Many products of cotton, fabric, yarn, woven and knit apparel had faced lower prices in the market after quota abolition (APTMA, 2010).

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