

Ahmad, Nawaz; Kalim, Rukhsana

Article

Changing revealed comparative advantage of textile and clothing sector of Pakistan: Pre and post quota analysis

Pakistan Journal of Commerce and Social Sciences (PJCSS)

Provided in Cooperation with:

Johar Education Society, Pakistan (JESPK)

Suggested Citation: Ahmad, Nawaz; Kalim, Rukhsana (2013) : Changing revealed comparative advantage of textile and clothing sector of Pakistan: Pre and post quota analysis, Pakistan Journal of Commerce and Social Sciences (PJCSS), ISSN 2309-8619, Johar Education Society, Pakistan (JESPK), Lahore, Vol. 7, Iss. 3, pp. 520-544

This Version is available at:

<https://hdl.handle.net/10419/188109>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by-nc/4.0/>

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

Nawaz Ahmad (Corresponding Author)
Assistant Professor, National College of Business Administration and Economics
Lahore, Pakistan
Email: nawazecon@gmail.com

Rukhsana Kalim
Professor, University of Management and Technology, Lahore, Pakistan
Email: drrukhsana@umt.edu.pk

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 coastal 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, Hungary, 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 Hungary 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.

Ratkorn (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 summarize 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, data 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 X_{ij} 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.

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

This index ranges from -1 to +1 and 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.

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

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

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

Vollrath (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 these 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.

$$RCA6 = RTA = RXA - RMA$$

Where RXA is $(X_{ij} / X_{it}) / (X_{nj} / X_{nt})$ and RMA is $(M_{ij} / M_{it}) / (M_{nj} / M_{nt})$.

Another measure of Vollrath's is in logarithm form

$$RCA7 = RC = \ln RXA - \ln RMA$$

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), Proudman 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 these 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 \$.

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

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.

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.

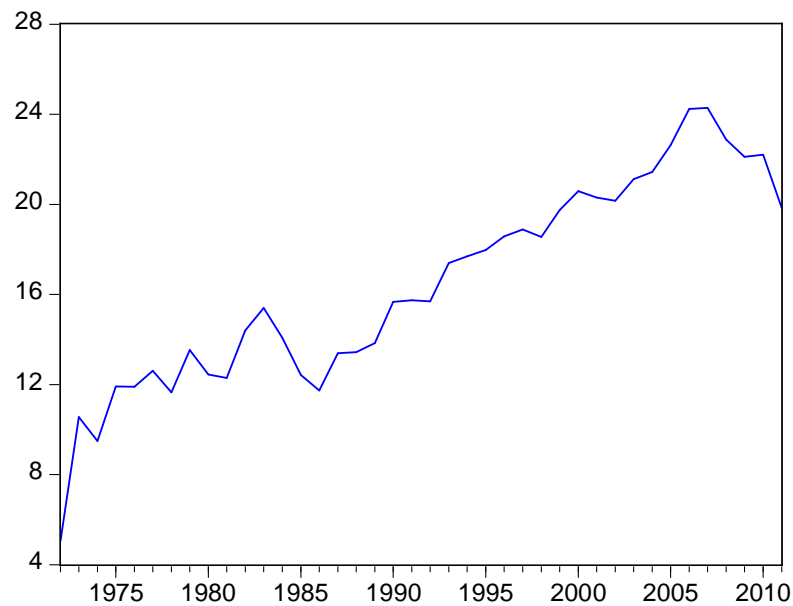


Figure 1: RCA of Textile Sector of Pakistan

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.

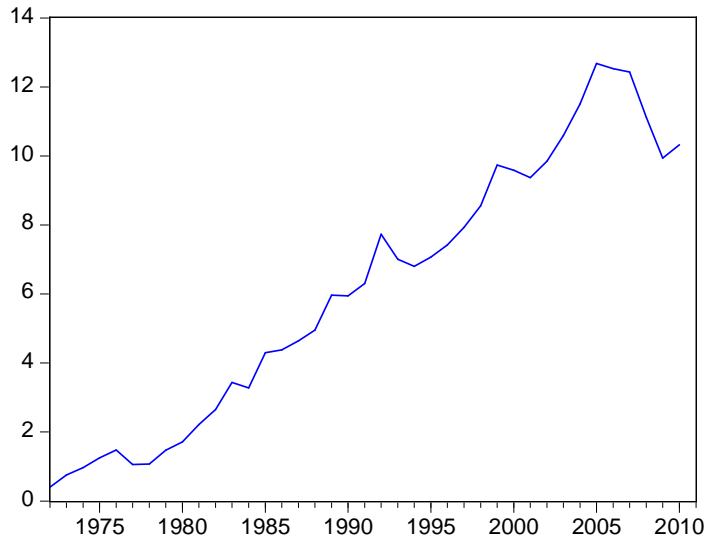


Figure 2: RCA of Clothing Sector of Pakistan

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 | | Market Share (%) | | | Growth Rate (%) | |
|--|------------|------------------|------|-----------------|-----------------|--------------------|
| | | 2004 | 2005 | Jan-Aug 2006 | 2004-05 | Jan-Aug 2005-06 |
| Extra EU trade (ranked by 2004 value of imports) | | 100 | 100 | 100 | 6.4 | 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 | | Market Share (%) | | | Growth Rate (%) | |
|---|------------|------------------|------|-----------------|-----------------|--------------------|
| | | 2004 | 2005 | Jan-Aug 2006 | 2004-05 | Jan-Aug 2005-06 |
| World | | 100 | 100 | 100 | 6.8 | 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.

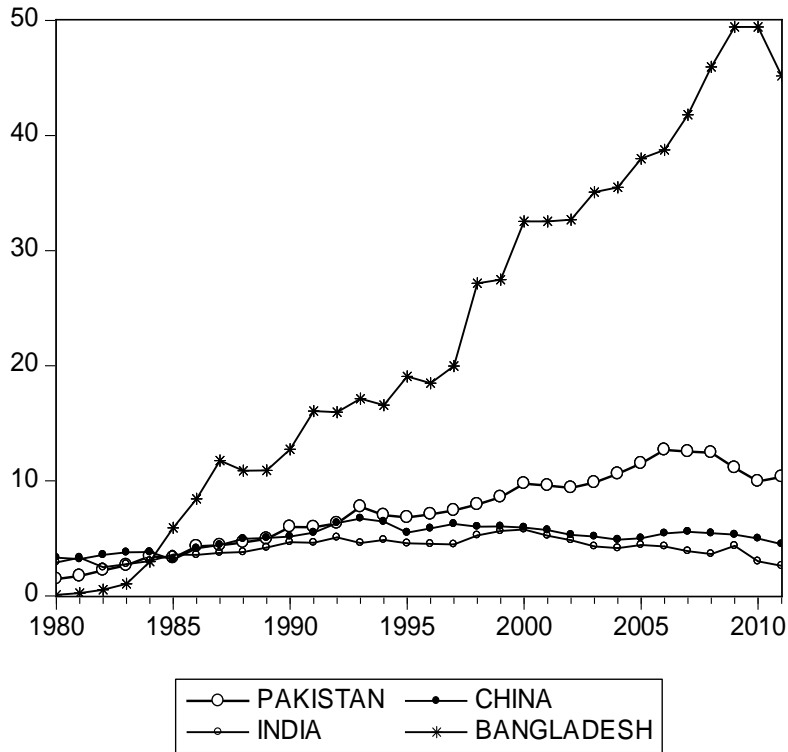


Figure 3: RCA of Textiles Sectors of Bangladesh, India, China and Pakistan

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).

REFERENCES

- APTMA, (2010). Annual Review of All Pakistan Textile Mills Association, Karachi APTMA House.
- Bano, S. & Scrimgeour, F. (2012). The Export Growth and Revealed Comparative Advantage of the New Zealand Kiwifruit Industry. *International Business Research*, 1 February. 73-82.
- Balassa, B. (1965), Trade Liberalisation and 'Revealed' Comparative Advantage. *The Manchester School*, 33, 99-123.
- Balassa, Bela (1979). The Changing Pattern of Comparative Advantage in Manufactured Goods. *Review of Economics and Statistic*. 61(2), 259-266.
- Balassa, B. (1986). Comparative Advantage in Manufactured Goods: A Reappraisal. *Review of Economics and Statistic*. 68(2), 315-319.
- Barone, S. & Franco, E.L. (2009). Design of a university course quality by teaching experiments and student feedback. *Total Quality Management*, 20(7), 687-703.

- Batra and Khan (2005). Revealed comparative advantage: an analysis for India and China, Working Paper (168). Indian Council for Research on International Economic Relations.
- Bhattacharyya, R. (2011). *Revealed Comparative Advantage and Competitiveness: A Case Study for India in Horticultural Products*. International Conference On Applied Economics – ICOAE 2011.
- Bhuyan, A. R. and Ray, S. (2006). Feasibility study on bilateral FTA within SAARC region. Report 2, ACE, Spain.
- Dimelis, S. and K. Gatsios (1995). Trade with Central and Eastern Europe: The Case of Greece, in R. Faini and R. Portes (eds.), *EU Trade with Eastern Europe: Adjustment and Opportunities*, London: CEPR
- Blanchard, K. (1992). Meetings can be effective. *Supervisory Management*, 37, 5-6.
- Bowen, H.P. (1983). On the theoretical interpretation of indices of trade intensity and revealed comparative advantage. *Weltwirtschaftliches Archiv* 119 (3), 464-72.
- Caggiano, C. (1999). The right way to brainstorm. *Inc*,21(10), 94.
- Chien, T.K. (2007). Using the learning satisfaction improving model to enhance the teaching quality. *Quality assurance in Education*, 15(2), 192-214.
- Debra, D. C., Rosmery, R. & Amanda, B. S. (1998). Curriculum revision : reaching faculty consensus through the nominal group technique. *Journal of Nursing Education* , 37, 326-330.
- Delbecq, A. L., Van de Ven, A. H. & Gustafson, D. H. (1975). *Group Techniques for Program Planning: A Guide to Nominal Group and Delphi Process*. Glenview, IL: Scott-Foresman.
- Donges, J. B. & Riedel, J. (1977). The expansion of manufactured exports in developing countries: an empirical assessment of supply and demand issues. *Weltwirtschaftliches Archiv* 113, 58-87.
- Ditkoff, M. (1998). Ten skills for brainstorming breakthrough thinking. *The Journal for Quality & Participation*, 21, 30-32.
- Ferman, M., S. and Yüksel, A.H. (2004). The Competitiveness of Turkey and Its Sustainability: A comparison in the EU Market from the Perspectives of the Rival Countries and Turkey (in Turkish), *Economy Congress of Turkey*, İzmir, organised by the State Planning Organisation, 4-29.
- Finlay, M. (1992). Belling the bully. *HR Magazine* , 37, 82-86.
- Greenaway, D. and C. Milner (1993). *Trade and Industrial Policy in Developing Countries: A Manual of Policy Analysis*, The Macmillan Press, esp. Part IV Evaluating Comparative Advantage, 181-208.
- Hanif, M. N. and Jafri, S. K. (2006) Financial Development and Textile Sector Competitiveness: A case study of Pakistan. *South Asian Economic Journal*. 9(1), 141-158.
- Havelka, D. & Merhout, J.W. (2008). Toward a theory of information technology professional competence. *Journal of Computer Information systems*, 50(2), 106-116.

- Hegedus, D. M. & Rasmussen, R. V. (1986). Task effectiveness and interaction process of a modified nominal group technique in solving an evaluation problem. *Journal of Management*, 12, 545-560.
- Hofemeister, T. L. (1991). Goal to guide the interactions of the mental health and justice systems. *Journal of Mental Health Administration*, 18, 178-197.
- Hoen, A.R, and Oosterhaven, J. (2006). On the measurement of Comparative Advantage, *The Annals of Regional Sciences*, 40, 677–691.
- Hsu, J.L. & Chiu, H.Y. (2009). Perceived differences in teaching performance from viewpoints of lecturers and students. *International Journal of Educational Management*, 23(7), 564-573.
- Johnes, J. (2006). Data envelopment analysis and its application to the measurement of efficiency in higher education. *Economics of Education Review*, 25(3), 273-288.
- Karakaya, E. and F.B. Özgen (2002), *Economic Feasibility of Turkey's Economic Integration with the EU: Perspectives from Trade Creation and Trade Diversion*. Paper presented at the METU VI. International Conference in Economics, September 11-14 2002, Ankara.
- Lalit, M. K. (2013). Analyzing competitiveness of clothing export sector of India and Bangladesh: Dynamic Revealed Comparative Advantage Approach. *An International Business Journal incorporating Journal of Global Competitiveness*, 23(2), 131 – 157.
- Lane, A. J. (1992). Using Havelock's model to plan unit-based change. *Nursing Management*, 23, 58-60.
- Laursen, K. (2000). *Specialization, Trade and Growth*. Routledge Publishers.
- Liesner, H. H. (1958). The European Common Market and British Industry. *The Economic Journal*, 68, 302-316.
- Macphail, A. (2001). Nominal Group Technique: a useful method for working with young people. *British Educational Research Journal*, 27, 161-170.
- Mahmood, A. (2004). Export Competitiveness and Comparative Advantage of Pakistan's Non-agricultural Production Sectors: Trends and Analysis. *Pakistan Development Review*, 43(4), 541-561.
- Mendelow, A. L. & Liebowitz, J. S. (1989). Difficulties in making organizational development a part of organizational strategy. *Human Resource Planning*, 12, 317-329.
- Memedovic, O. (1994). On the theory and measurement of comparative advantage : an empirical analysis of Yugoslavia trade in manufactures with the OECD countries 1970-1986, Amsterdam, Thesis Publishers.
- Moore, C. M. (1987). *Group Techniques for Idea Building*. Newbury Park, California: Sage Publications.
- Naseem, A., Zahir, N. & Ghani, E. (2008). Changing Revealed Comparative Advantage: A Case Study of Footwear Industry of Pakistan. *The Pakistan Development Review*, 47(4), 1-17.
- Osborne, A. F. (1957). *Applied Imagination*. New York: Scribner.

- Samuelson, P.A. (1948). International Trade and Equalization of Factor Prices, *Economic Journal*, 58, 163-184.
- Proudman, J. and Redding, S. (1998). Evolving patterns of international trade. *Review of international economics*, 8(3), 373-396.
- Ralston, D. A. & Pearson, A. (2010). The cross-cultural evolution of the subordinate influence ethics measure. *Journal of Business Ethics*, 96, 149-168.
- Raheman, A., Afza, T., Qayyum, A., and Bodla, M.A., (2008). Estimating Total Factor Productivity and its Components: Evidence from Major Manufacturing Industries of Pakistan. *The Pakistan Development Review* 47(4). 677-694.
- Ratkorm, N., (2008). *Comparative Advantage of Thailand's export product in Australia During Free Trade Agreement*. Thailand.
- Richardson, D. J. and Chi, Z. (1999). *Revealing Comparative Advantage: Chaotic or Choerent Patterns Across Time and Sector US Trading Partner?* National Bureau of Economic Research [Working Paper 7212].
- Roth, P. L. (1994). Group approach to the Schmidt-Hunter global estimation procedure. *Organizational Behavior & Human Decision Processes*, 59, 428-451.
- Ruzevicius, J., Daugviliene, D., & Baceviciute, R. (2009). The study of the improvement of administration quality in colleges. *Issues of Business and Law*, 1, 19-31.
- Samson, S. & McCrea, D.E. (2008). Using peer review to foster good teaching. *Reference Service Review*, 36 (1), 61-70.
- Serin, V. & Civan, A., (2008). Revealed Comparative Advantage and Competitiveness: A Case Study for Turkey towards the EU. *Journal of Economic and Social Research*, 10(2) 25-41.
- Shahab, S. Mahmood, T. M. (2013). Comparative Advantage of Leather Industry in Pakistan with Selected Asian Economies, *International Journal of Economics and Financial Issues* 3(1),133-139
- Sheng, Y. & Song, L., (2008). Comparative Advantage And Australia-China Bilateral Trade. *Economics Papers*, 27(1), 41-56.
- Siegfried, B. and Kui-Wai, L. (2002). *The Changing Trade and Revealed Comparative Advantages of Asian and Latin American Manufacture Exports*. Yale Economic Growth Center, [Discussion Paper No. 843].
- Sink, S. D. (1985). Strategic planning: a crucial step toward a successful productivity measurement program. *Industrial Engineering*, 17, 52-60.
- Siriwardana, M. and Yang, J. (2007). Effects of Proposed Free Trade Agreement between India and Bangladesh. *South Asia Economic Journal*, 8(1), 21-38.
- Thor, C. (1987). Nominal group technique. *Incentive Marketing*, 101, 28-29.
- Tribus, M.(1992). A simple method for promoting cooperation in an enterprise built on internal cooperation. *National Productivity Review*, 11, 421-424.
- Van der Waal, C. & Uys, J. (2009). Applying the nominal group technique in an employment relations conflict situation: A case study of a university maintenance section in South Africa. *SA Journal of Human Resource Management*, 7(1), 1-7.

- Vollrath, T.L. (1991). A Theoretical Evaluation of Alternative Trade Intensity Measure of Revealed Comparative Advantage. *Weltwirtschaftliches Archiv*, 130, 265-79.
- Ahmed, Y. (2007). *Textile Industry of Pakistan*. Report on Textile Industry of Pakistan, Horizan Security.
- Utkulu, U. and Seymen, D. (2004). *Revealed Comparative Advantage and Competitiveness: Evidence for Turkey vis-à-vis the EU/15*. Paper prepared for the European Trade Group 6th Annual Conference, ETSG 2004, Nottingham.
- Yeats, A.J. (1985). On the Appropriate Interpretation of the Revealed Comparative Advantage Index: Implications of a Methodology Based on Industry Sector Analysis. *Weltwirtschaftliches Archiv*, 121(1), 61-73
- Yılmaz, B. (2003). *Turkey's Competitiveness in the European Union: A Comparison with Five Candidate Countries – Bulgaria, The Czech Republic, Hungary, Poland, Romania – and the EU15*, Ezoneplus [Working Paper, No.12].
- Yılmaz, B. and Ergun, S.J. (2003). *The Foreign Trade Pattern and Foreign Trade Specialisation of Candidates of the European Union*. Ezoneplus [Working Paper, No.19].
- Yu, R., Cai, J. and Leung, P. S. (2009). The normalized revealed comparative advantage index. *Annals of Regional Science*, 43, 267-282.
- Yue, C. (2001). *Comparative Advantage, Exchange Rate and Exports in China*. Paper prepared for the international conference on Chinese economy, CERDI, France.