



Munich Personal RePEc Archive

## **Export Performance with Border Sharing Countries: An Assessment of Pakistan**

Munir, Kashif and Sultan, Maryam

University of Central Punjab

14 February 2016

Online at <https://mpa.ub.uni-muenchen.de/69535/>

MPRA Paper No. 69535, posted 15 Feb 2016 17:41 UTC

# **Export Performance with Border Sharing Countries: An Assessment of Pakistan**

**Kashif Munir<sup>\*</sup>**

**&**

**Maryam Sultan<sup>†</sup>**

**University of Central Punjab,  
Lahore, Pakistan**

---

<sup>\*</sup> Associate Professor, Department of Economics, University of Central Punjab, Lahore, Pakistan.  
Phone: +92 321 5136276, Fax: +92 42 35954892, email: kashif.munir@ucp.edu.pk, kashif\_ok@hotmail.com

<sup>†</sup> Research Associate, Department of Economics, University of Central Punjab, Lahore, Pakistan

## **Abstract**

This study analyzed the export performance of Pakistan with its border sharing countries for the year 2014. The study has followed Dalum et al. (1998) revealed symmetric comparative advantage index to measure export performance. The study has split the analysis into highest and marginal comparative advantage and disadvantage. Pakistan is exporting around 160, 155, 133 and 60 commodities at three-digit level of SITC (Rev 3) classification to Afghanistan, China, India and Iran respectively. We found that in more than half of these commodities exported to border sharing countries Pakistan has highest and marginal comparative disadvantage. Result shows that rice and cotton is of worth importance because both are cash crops of Pakistan. Rice is in marginal disadvantage segment for Afghanistan, China and Iran. Political and diplomatic channels are needed to improve the performance of cross border trading among the countries especially with border sharing countries.

***Keywords:* RCA, Exports, Pakistan, Border Sharing**

***JEL:* F04, F14, R10**

## **1. Introduction**

Trading pattern of the world has greatly changed since late 1940, multiple measures have been adopted in the form of gradual decline in trade barriers in order to endure in this world. This trade liberalization among the countries led to foster the world growth. In this era of globalization, bilateral and multilateral trading systems are endorsing the importance of export competitiveness. Earlier, the concept of competition used among industries at domestic level but nowadays it has extended to international level. Trade theories emerge from absolute advantage (Smith, 1776) and comparative advantage (Ricardo, 1817). However, Heckscher-Ohlin-Vanek (1968) presented the two commodity model and explained the comparative advantage of a country on the basis of relative factor endowment. The failure of factor price equalization theorem of HOV was confirmed by Leontief (1954) and known as Leontief paradox. Difference between HOV and Leontief paradox leads to the formation of many other trade models. Linder (1961) suggest that basis of trade among countries is the similar factor endowment rather than different factor endowment as proposed by HOV.

Balassa (1965) developed an index called “Revealed Comparative Advantage” (RCA) to make the phenomenon of comparative advantage simple and authentic. Many researchers have used this index to find the export performance of a country in the world market. To check the difference and variations in the trade pattern of countries over time, sector and regions this index is utilized (Richardson & Zhang, 1999). Batra and Zeba (2005) analyze the export performance of India and China at two and six-digit level of Harmonized System (HS) of classification of commodities being exported to world. They confirmed that over the time there is difference in the comparative advantage of commodities at different segregation level. According to classical, neo-classical and endogenous trade theories, countries should trade those commodities in which they have comparative advantage or in other words, countries should have specialized in those commodities in which they have lower opportunity cost.

Pakistan is exporting a large number of diversified commodities to several countries. Afghanistan is the border sharing country and the third largest export market of Pakistan after USA and China. From last three years Pakistan’s exports to Afghanistan is continuously increasing. During 2014-2015, exports of Pakistan to Afghanistan were approximately \$1.69 billion. The two huge economies of world, India and China are also the border sharing countries of Pakistan.

These countries have modern technology with large and more developed agricultural and industrial sector as compared to Pakistan. China is the second largest export market of Pakistan. Trade volume with India is not large due to political and military tension between both the countries. However, trade volume of Pakistan with Iran is decreasing from the last few years. During 2012 to 2013, Pak-Iran trade has decreased by approximately 26%. Iran is the huge importer of rice and Pakistan is the huge exporter of rice in the world. In 2013, Iran's import of rice was \$56 billion in which Pakistan's share was only 0.2%. Iran and Pakistan are the members of ECO but they are not utilizing the benefits of this trade agreement.

The focus of this study is to analyze Pakistan's export performance with border sharing countries i.e. Afghanistan, China, India, and Iran at three-digit level of Standard International trade code (SITC) (Rev. 3) for the year 2014. This study will analyze the highest and marginal comparative advantage as well as comparative disadvantage of Pakistan's exports with border sharing countries by using revealed symmetric comparative advantage (RSCA) proposed by Dalum et al. (1998). Earlier studies measure the comparative advantage of Pakistan by using Balassa (1965) index for agricultural commodities and manufacturing products. This study significantly differ from earlier studies on two grounds: firstly, export performance of Pakistan with its border sharing countries are analyzed for all commodities exported to them, and secondly, Delum at al. (1998) method of RSCA is used in order to avoid the problem of asymmetry in Balassa (1965) index. This study will provide suitable policies to increase the export advantage of Pakistan with border sharing countries.

## **2. Literature Review**

Balassa (1977) conducted a study on industrialized economies in order to find the trade pattern by using RCA. Following Balassa (1977), various researchers used this index to compute the comparative advantage among different nations and find the change in trade pattern over time (Jebuni et al., 1988; Yeats, 1998; Richardson & Zhang, 1999; Yue, 2001; Ferto & Hubbard, 2003). Ratkorm (2008), Serin and Civan (2008), Sheng and Song (2008) find the export performance of European countries with their different trading partners by using revealed comparative advantage.

Shinoj and Mathur (2008) analyzed the changes in comparative advantage of agricultural products after economic reforms in India for the period 1991 to 2004 with Asian countries. They

used revealed symmetric comparative advantage (RSCA) and found that in many commodities India has lost comparative advantage with other Asian countries due to economic reforms. Many researchers found the comparative advantage of Pakistan in agricultural and manufacturing sectors. Chaudhry et al. (1994) examined the pattern of specialization in agricultural sector of Pakistan. They found whether Pakistan specialized in one commodity or move towards diversification. They used domestic resource cost (DRC) coefficient for computing comparative advantage in agricultural sector of Pakistan and found that Pakistan has comparative advantage in cotton but it is more suitable for Pakistan to diversify their products to trade internationally. Shahabuddin (2000) worked with domestic resource cost (DRC) coefficient for computing comparative advantage and used it for the agricultural sector of Bangladesh. He also used economic profitability ratio for measuring comparative advantage and found that Bangladesh has comparative advantage in many crops like vegetables, potato, onion and cotton.

Mahmood (2004) found those commodities, for which Pakistan has maintained, lose or gain comparative advantage at world level during the period from 1990 to 2004 by using Balassa index for 978 manufacturing products of Pakistan. The study found that among top twenty-five manufacturing industries twenty industries are labor intensive. Anwar et al. (2005) used nominal protection coefficient (NPC) and effective protection coefficient (EPC) in order to measure policy distortion while domestic resource cost (DRC) ratio was used to measure comparative advantage for wheat in Punjab and Sindh during the period of three years (2001, 2002 and 2003). They found that Pakistan has no comparative advantage in wheat production at world level. Javed et al. (2006) used domestic resource cost (DRC), nominal protection coefficient (NPC) and effective protection coefficient (EPC) to find the comparative advantage of cotton in two provinces of Pakistan i.e. Punjab and Sindh from 1999 to 2003. They found that production of cotton in Sindh has more comparative advantage than Punjab.

Akhtar et al. (2008) computed the RCA of footwear industry of Pakistan for the period 1996 to 2006. He compared the results of RCA of Pakistan's footwear industry with RCA of India and China. They found that at 2-digit level competitiveness of Pakistan is improving over time, while at 4-digit level China has better RCA for all sub-sectors. Ilyas et al. (2009) analyzed the top Asian rice exporter and computed Balassa and White index for the period 1985 to 2005. The study concluded that Pakistan is the most competitive country in rice trade in the whole world.

Quddus and Mustafa (2011) examined the comparative advantage of four major crops (wheat, rice, sugarcane and cotton) of Pakistan through domestic resource cost (DRC) ratio. The study also computed economic profitability of these four major crops for the period of 1999 to 2005. They found that Punjab has comparative advantage for only domestic production not for export for wheat, while in rice Punjab has comparative advantage for export as well. Riaz and Jensen (2012) analyzed revealed comparative advantage of Pakistan's major exports related to agricultural sector with different regions and border sharing countries. They found top exports markets for Pakistan's exports and concluded that agricultural products of Pakistan have competitiveness in many developed countries.

Taneja et al. (2011) worked on comparative advantage of India and Pakistan by incorporating 686 items included in negative list of India. They found that Pakistan has no comparative advantage in majority of the products included in negative list. Ahmad and Kalim (2013) examined the impact of quota-free trade of textile and clothing sector of Pakistan. Their analysis include before liberalization for the period 1972 to 1994 and after quota abolishment for the period 1995 to 2011. They found declining trend of revealed comparative advantage of Pakistan in textile and clothing sector during the year 2011 to 2012. Memon et al. (2014) found the revealed comparative advantage of manufacturing sector for the period of 2003 to 2012 for Pakistan, India and China. They found that many products require attention in order to sustain in global competitiveness.

Previous research in Pakistan focused on export performance of agricultural products by using Balassa index and DRC ratio, while few studies analyzed manufacturing commodities. However, Balassa index suffer from asymmetric problem. This study analyze the export performance of Pakistan with border sharing countries for all commodities exported to them by using revealed symmetric comparative advantage (RSCA) proposed by Dalum et al. (1998).

### **3. Methodology and Data**

There are various economic approaches to measure competitiveness. Competitiveness is the ability and capacity of an industry to maintain its market share and compete with foreign counterparts in both foreign and domestic markets under free trade. Heckscher-Ohlin theory explains comparative advantage, while Porter diamond model explains competitive advantage (Lall, 2001). Balassa (1965) developed an index called "Revealed Comparative Advantage

(RCA)" to measure the trade specialization as well as comparative advantage. This index shows relative comparative advantage of a country's export. This index is computed as:

$$RCA_{ij} = (X_{ij}/X_{wj}) / (X_i/X_w) \quad (3.1)$$

Where,  $RCA_{ij}$  is revealed comparative advantage of country  $i$  for commodity or sector  $j$ ,  $X_{ij}$  is exports of a country  $i$  for a sector or commodity  $j$ ,  $X_{wj}$  is total exports of world for commodity or sector  $j$ ,  $X_i$  is total exports of country  $i$ , and  $X_w$  is total exports of world.

The value of RCA lies between zero to infinity with one as a break-even point. If the value of  $RCA_{ij}$  is greater than one, it means that the country  $i$  has comparative advantage in export of that commodity or sector and vice versa. Balassa index of RCA deals with comparative advantage of a product in the world market. RCA index can be converted from world level to regional or bilateral level as well. Modified RCA for a single country as a reference market can be expressed as:

$$RCA_{ij}^C = (X_{ij}^C / X_i^C) / (X_{ij}/X_i) \quad (3.2)$$

Where,  $RCA_{ij}^C$  is the revealed comparative advantage for export of commodity or sector  $j$  of country  $i$  into country  $C$ ,  $X_{ij}^C$  is the exports of a commodity or sector  $j$  of country  $i$  to a particular country  $C$ ,  $X_i^C$  is the total exports of country  $i$  to a particular country  $C$ ,  $X_{ij}$  is the total exports of commodity  $j$  of country  $i$ , and  $X_i$  is the total exports of country  $i$ .

The value of  $RCA_{ij}^C$  lies between zero to infinity with one as a break-even point. If the value of  $RCA_{ij}$  is greater than one it means that country  $i$  has comparative advantage in the export of commodity  $j$  in particular country  $C$ . However, on both sides of the break-even point the value of RCA ( $RCA_{ij}^C$ ) is not comparable because the value of RCA lies between zero to one, and this is due to asymmetry in its values. Dalum et al. (1998) provide a modification of RCA that makes it symmetric and known as revealed symmetric comparative advantage (RSCA). Mathematically,  $RCA_{ij}^C$  is converted into  $RSCA_{ij}^C$  as:

$$RSCA_{ij}^C = (RCA_{ij}^C - 1) / (RCA_{ij}^C + 1) \quad (3.3)$$

The value of  $RSCA_{ij}^C$  is not suffering from the problem of skewness as its value lies between  $-1$  to  $+1$ . If the value of RSCA is positive, then the corresponding commodity has revealed comparative advantage and vice versa.



This study uses Dalum et al. (1998) RSCA index in order to compute comparative advantage of Pakistan with its border sharing countries for the year 2014. The data for the commodities exported at three-digit level of Standard International trade code (SITC) (Rev. 3) classification for the year 2014 collected from United Nations Commodity Trade Statistics Database (COMTRADE). Pakistan's border sharing countries are Afghanistan, China, India and Iran. Pakistan is exporting 160 commodities to Afghanistan, 155 to China, 133 to India and 60 commodities to Iran in the year 2014.

#### **4. Results**

We have ranked the commodities according to their comparative advantage into four segments. Commodities whose comparative advantage lies between 0.5 to 1 and -0.5 to -1 are termed as highest comparative advantage and disadvantage respectively. However, commodities whose comparative advantage lies between 0 to 0.4 and 0 to -0.4 are termed as marginal comparative advantage and disadvantage respectively.

##### **4.1 Exports Performance with Afghanistan**

Table 4.1 presents the ranks of commodities based on highest revealed symmetric comparative advantage of Pakistan with Afghanistan. Pakistan is exporting around 160 commodities to Afghanistan in the year 2014. Only 51 out of 160 commodities fall in the highest RSCA segment. Pakistan has strongest comparative advantage in "Animal, vegetable fat and oils" as it has highest rank among the exported commodities to Afghanistan. The rank of wheat and iron is 3 and 11 respectively. The ranks of electric machine, vegetables and Sugars, Molasses, Honey are 23, 28 and 32 respectively. Pakistan is the biggest exporter of leather and leather products and has highest RSCA in leather in Afghanistan. Sugar confectioner, wood manufactured, medicaments, petroleum products and fruits, nuts also have highest RSCA in Afghanistan during the year 2014. The highest relative rank of first five commodities indicates that Pakistan has highest RSCA in food related products like meat, milk, cream and wheat.

Table 4.2 presents the ranks of commodities based on highest revealed symmetric comparative disadvantage (RSCDA) of Pakistan with Afghanistan. Around 67 out of 160 commodities lie in the highest revealed symmetric comparative disadvantage segment. Result shows the relative ranking of commodities according to their highest disadvantage. Pakistan has highest comparative disadvantage in "plastic and primary form" as its rank is 1 among the export

*Table 4.1: Highest Revealed Symmetric Comparative Advantage of Pakistan in Afghanistan*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Animal, Veg. Fat, Oil, Nes	27	Elect Power Machny. Parts
2	Veneers, Plywood, Etc	28	Vegetables
3	Wheat, Meslin, Unmilled	29	Tea And Mate
4	Meal, Flour Of Wheat, Msln	30	Pulp And Waste Paper
5	Milk And Cream	31	Articles, Nes, Of Plastics
6	Metallic Structures Nes	32	Sugars, Molasses, Honey
7	Monofilament Of Plastic	33	Leather
8	Prefaricated Buildings	34	Electr Distribt. Eqpt Nes
9	Plastic Tube, Pipe, Hose	35	Tubes, Pipes, Etc. Iron, Stl
10	Chocolate, Oth. Cocoa Prep	36	Cereal Preprations
11	Iron, Stl. Shapes Etc	37	Sugar Confectioner
12	Pigments, Paints, Etc	38	Edilble Prod, Preprtns, Nes
13	Flat- Rolled, Alloy Steel	39	Lime, Cement, Constr. Matrl
14	Other Cereals, Unmilled	40	Wire Products Excl. Elect
15	Eggs, Birds, Yolks, Alumin	41	Nails, Screws, Nuts, Etc
16	Dom.Elec, Non-Elec.Equipt	42	Wood Simply Worked
17	Soap, Cleaners, Polish, Etc	43	Wood Manufactured, Nes
18	Heating, Cooling Equip, Part	44	Fruit Preserved, Prepared
19	Barley, Unmilled	45	Madicaments
20	Cycles, Motorcycles Etc	46	Photo. Cinematogrph.Suppl
21	Wire Of Iron Or Steel	47	Misc Manufctrd Goods Nes
22	Elec. Switch. Relay. Circuit	48	Polymers Of Ethylene
23	Electric. Mach. Appart. Nes	49	Margirine
24	Ingots Etc.Iron Or Steel	50	Petroleum Products
25	Live Animal	51	Fruit, Nuts, Excl. Oil Nuts
26	Non-Alcohol. Beverage,Nes		

commodities. The ranks of coffee, pottery, mechanical handling equipment and lightening fixtures are 15, 16, 18 and 20 respectively. Textile sector is the backbone of Pakistan's export industry. Pakistan is the 4<sup>th</sup> largest producer of cotton in Asia but in Afghan market Pakistan has high comparative disadvantage in textile articles, cotton, textile yarn and clothing etc. Similarly, insecticides, cotton, medicines, tobacco manufactured, fertilizers, medical instruments, cotton fabric woven, textile yarn and clothing accessories have high comparative disadvantage in Afghanistan as indicated by their relative ranking. Despite of having comparative disadvantage in these 67 commodities, Pakistan is exporting these commodities to Afghanistan in bulk quantity.

Table 4.2: Highest Revealed Symmetric Comparative Disadvantage of Pakistan in Afghanistan

Rank	Commodity Name	Rank	Commodity Name
1	Oth.Plastic, Primary Form	35	Cotton
2	Oth. Nonelec Mch, Tool,Nes	36	Medicines, Etc. Exc. Grp542
3	Flat- Rolled Plated Iron	37	Other Chemical Compounds
4	Butter Other Fat Of Milk	38	Cutlery
5	Preprd Additives, Liquids	39	Civil Engineering Equipmt
6	Worn Clothing Textile	40	Trunk, Suit-Cases, Bag, Etc
7	Pig Iron, Spiegeleisn, Etc	41	Fish,Dried,Salted, Smoked
8	Crud Veg Material,Nes	42	Tobacco, Manufactured
9	Polymers Of Styrene	43	Polymers, Vinyl Chloride
10	Containers, Storage, Trnsp	44	Mach-Tools, Metal-Working
11	Other Crude Minerals	45	Othr. Textile Apparel, Nes
12	Food-Process. Mch.Non Dom	46	Fertilizer, Crud
13	Maize, Unmilled	47	Watches And Clocks
14	Spice	48	Intrnl Combust Pstn Engin
15	Coffee, Coffee Substitute	49	Special Yarn, Txtl. Fabric
16	Pottery	50	Wool Other Animal Hair
17	Ball Or Roller Bearings	51	Tulle, Lace, Embroidry. Etc
18	Mechanical Handling Equip	52	Medical Instruments Nes
19	Bovine Meat	53	Tobacco, Unmanufactured
20	Lighting Fixtures Etc. Nes	54	Musical Instruments, Etc
21	Floor Coverings, Etc	55	Baby Carriage, Toys, Games
22	Trailers, Semi-Trailr, Etc	56	Crustaceans, Molluscs
23	Furniture, Cushions, Etc	57	Cotton Fabrics Woven
24	Textile Articles Nes	58	Fish Etc, Prepd, Preserved
25	Stone And Gravel	59	Textile Yarn
26	Fish, Fresh, Chilled, Froen	60	Clothing, Nontxtl; Headgear
27	Telecomm. Equip. Part Nes	61	Mens, Boys Clothng, X-Knit
28	Spec. Transact. Not Classd	62	Women, Gril Clothing, Xknit
29	Paper, Pulp Mill Machines	63	Gold, Silverware, Jewl New
30	Oil Seed(Sft,Fix Veg. Oil)	64	Misc. Chemicals Prods. Nes
31	Ferrous Waste And Scrap	65	Non-Ferrous Waste, Scrap
32	Insecticides, Etc	66	Fabrics, Man-Made Fibres
33	Parts, Tractors, Motor Veh	67	Clothing Accessrs, Fabrics
34	Printed Matter		

Table 4.3 presents the ranks of commodities based on marginal revealed symmetric comparative advantage of Pakistan with Afghanistan. Around 29 out of 160 commodities lie in the marginal

revealed symmetric comparative advantage segment. Paper, paperboard, glassware, tractors, fruit and vegetable juice, aluminium and metals etc. are those commodities that lie in the marginal comparative advantage segment. These commodities also have comparative advantage in Afghanistan but their comparative advantage is smaller as compared to those commodities presented in table 4.1.

*Table 4.3: Marginal Revealed Symmetric Comparative Advantage of Pakistan in Afghanistan*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Paper Paperboard, Cut Etc	16	Agric. Machines, Ex. Tractr
2	Pumps For Liquids, Parts	17	Other Cereal Meal, Flours
3	Clay, Refract. Constra.Matrl	18	Other Meat, Meat Offal
4	Plumbng, Sanitry, Eqpt. Etc	19	Explosives, Pyrotechnics
5	Inorganic Chemi. Elements	20	Vegetables, Prepd, Presvd,Nes
6	Essntl. Oil, Perfume, Flavr	21	Fruit, Vegetables Juice
7	Glassware	22	Carboxylic Acid
8	Household Equipment, Nes	23	Pumps Nes, Centrifuges Etc
9	Other Organic Chemical	24	Aluminium
10	Flat- Rolled Iron Etc	25	Briquettes, Lignite, Peat
11	Starches, Insuline, Etc	26	Perfumery, Cosmetics, Etc
12	Tractors	27	Office, Stationery Suppls
13	Rotating Electric Plant	28	Manufacts. Base Metal, Nes
14	Arms And Ammunition	29	Metals. Salts, Inorganic. Acid
15	Glass		

Table 4.4 presents the ranks of commodities based on marginal revealed symmetric comparative disadvantage of Pakistan with Afghanistan. Around 13 out of 160 commodities lie in the marginal revealed symmetric comparative disadvantage segment. The commodities lie in marginal revealed symmetric comparative disadvantage segment are mineral manufactures, animal feed, rice, textile and leather machine, footwear and plastic plate and sheets. The major share of Pakistan's export earnings comes from rice. Pakistan has comparative and competitive advantage in rice over all countries (Ilyas et.al, 2009). But our results indicate that Pakistan has no comparative advantage in rice in Afghanistan.

Table 4.4: Marginal Revealed Symmetric Comparative Disadvantage of Pakistan in Afghanistan

Rank	Commodity Name	Rank	Commodity Name
1	Mineral Manufactures,	8	Pass. Motor Vehcls. Bus
2	Animal Feed Stuff	9	Footwear
3	Other Man-Made Fibres	10	Nitrogen-Functn Compound
4	Oth. Mach, Pts, Spcl Indust	11	Polyacetal, Polycarbonate
5	Paper And Paperboard	12	Steam Gener. Boilers, Etc
6	Rice	13	Plastic Plate, Sheets, Etc
7	Textile, Leather Machines		

#### 4.2 Exports Performance with China

Table 4.5 presents the ranks of commodities based on highest revealed symmetric comparative advantage of Pakistan with China. Pakistan is exporting around 156 commodities to China in the year 2014. Pakistan has highest comparative advantage in only 18 commodities out of 156 commodities. Animal oil and fats, textile yarn, animal feed stuff, fish, crud vegetables and oil seeds are only agricultural products in which Pakistan has highest comparative advantage in Chines market. China is the largest exporter of vegetables (Riaz & Jansen, 2012). Pakistan has its market for crude vegetable material in China. As compared to Afghanistan and India, Pakistan has highest comparative advantage in textile yarn in China having 8<sup>th</sup> rank in the commodity list. Among agricultural products, Pakistan also has highest comparative advantage in copper ores, copper, Sulphur, polymers of ethylene and steam turbines having relative ranking 4, 14, 16, 17 and 18 respectively.

Table 4.5: Highest Revealed Symmetric Comparative Advantage of Pakistan in China

Rank	Commodity Name	Rank	Commodity Name
1	Animal Oil And Fats	10	Coal, Not Agglomerated
2	Iron Ore, Concentrates	11	Fish,Dried,Salted, Smoked
3	Pig Iron, Spiegeleisn, Etc	12	Crud Veg Material,Nes
4	Copper, Ores, Concentrates	13	Pearls, Precious Stones
5	Ore, Concentr. Base Metals	14	Copper
6	Synth. Colours, Lakes, Etc	15	Oil Seed (Oth. Fix. Veg. Oil)
7	Stone And Gravel	16	Sulphur, Unrusted, Iron Pyrs
8	Textile Yarn	17	Polymers Of Ethylene
9	Animal Feed Stuff	18	Steam Turbines

Table 4.6 presents the ranks of commodities based on highest revealed symmetric comparative disadvantage of Pakistan with China. The exports of Pakistan consist of around 156 commodities to China in the year 2014. There are large number of commodities in which Pakistan has highest comparative disadvantage in Chines market, 105 commodities out of 156 commodities are in the list of highest comparative disadvantage. The highest disadvantage is for the product “Insecticides” having rank 1<sup>st</sup> in the list. The other commodities included in this list are related to clothing, different types of instruments, medicines, different types of equipment, food items and machinery and parts. Despite of having strong comparative disadvantage in these commodities, Pakistan is exporting all these commodities in large amount to China.

*Table 4.6: Highest Revealed Symmetric Comparative Disadvantage of Pakistan in China*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Insecticides, Etc	54	Polymers Of Styrene
2	Ingots Etc.Iron Or Steel	55	Women, Gril Clothing, Xknit
3	Works Of Art, Antique Etc	56	Tulle, Lace, Embroidry. Etc
4	Medical Instruments Nes	57	Paper And Paperboard
5	Aluminium	58	Fixed Veg. Fat, Oils, Soft
6	Other Man-Made Fibres	59	Oth.Plasric, Primary Form
7	Mach-Tools, Metal-Working	60	Mens, Boys Clothing, Knit
8	Inorganic Chemi. Elements	61	Heating, Cooling Equip, Part
9	Nitrogen-Functn Compound	62	Taps, Cocks, Valves, Etc
10	Misc. Chemicals Prodt. Nes	63	Civil Engineering Equipt
11	Oth. Mach, Pts, Spcl Indust	64	Musical Instruments, Etc
12	Starches, Insuline, Etc	65	Sugar Confectioner
13	Fabrics, Man-Made Fibres	66	Worn Clothing Textile
14	Elect Power Machny. Parts	67	Household Equipment, Nes
15	Matal Woring Machinery	68	Soap, Cleaners, Polish, Etc
16	Knit. Crochet.Fabric Nes	69	Intrnl Combust Pstn Engin
17	Oth. Textile Fabric, Woven	70	Electr Distribt. Eqpt Nes
18	Telecomm. Equip. Part Nes	71	Clothing, Nontxtl; Headgear
19	Medicines, Etc. Exc. Grp542	72	Clothing, Nontxtl; Headgear
20	Synth Colour, Lakes. Etc	73	Electr Distribt. Eqpt Nes
21	Mens, Boys Clothng, X-Knit	74	Plastic Plate, Sheets, Etc
22	Meters, Counters, Nes	75	Pigments, Paints, Etc
23	Vegetables, Prepd, Presvd,Nes	76	Manufact. Leather Etc. Nes
24	Transmissions Shafts Etc	77	Rubber Tyres, Tubes Etc
25	Crude Animal Materls. Nes	78	Spec. Transact. Not Classd

26	Misc Manufctrd Goods Nes	79	Metal Removal Work Tools
27	Trunk, Suit-Cases, Bag, Etc	80	Electric. Mach. Appart. Nes
28	Containers, Storage, Trnsp	81	Office, Stationery Suppls
29	Othr. Textile Apparel, Nes	82	Fixed Veg. Fat, Oils, Other
30	Articles, Nes, Of Plastics	83	Articles Of Rubber, Nes
31	Measure, Control Instrmnt	84	Parts, For Office Machins
32	Special Yarn, Txlt. Fabric	85	Spice
33	Lighting Fixtures Etc. Nes	86	Footwear
34	Baby Carriage, Toys, Games	87	Other Chemical Compounds
35	Textile Articles Nes	88	Pumps Nes, Centrifuges Etc
36	Steam Gener. Boilers, Etc	89	Perfumery, Cosmetics, Etc
37	Trailers, Semi-Trailr, Etc	90	Polymers, Vinyl Chloride
38	Lime, Cement, Constr. Matrl	91	Transistprs, Valves, Etc.
39	Vegetables	92	Tubes, Pipes, Etc. Iron, Stl
40	Women, Girls Clothing. Knit	93	Sugars, Molasses, Honey
41	Elec. Switch. Relay. Circuit	94	Printing, Bookbinding Machs
42	Edible Prod, Preprtns, Nes	95	Dom.Elec, Non-Elec.Equipt
43	Textile, Leather Machines	96	Fruit, Vegetables Juice
44	Materials Of Rubber	97	Cereal Preparations
45	Wood Simply Worked	98	Madicaments
46	Metallic Structures Nes	99	Gold, Silverware, Jewl New
47	Clothing Accessrs, Fabrics	100	Petroleum Products
48	Metals. Salts, Inorganic. Acid	101	Aircraft, Assoctd. Equipnt
49	Printed Matter	102	Non-Alcohol. Beverage,Nes
50	Floor Coverings, Etc	103	Paper Paperboard, Cut Etc
51	Pumps For Liquids, Parts	104	Glassware
52	Agric. Machines, Ex. Tractr	105	Parts, Tractors, Motor Veh
53	Tools		

Table 4.7 presents the ranks of commodities based on marginal revealed symmetric comparative advantage of Pakistan with China. The exports of Pakistan consist of around 156 commodities to China in the year 2014 out of which only 17 commodities are there in marginal comparative advantage segment. In engines, hides and skin, ship and boat, mineral manufactures, leather and cotton fabrics woven Pakistan has marginal comparative advantage in Chines market. By improving all these sectors, Pakistan can gain strong comparative advantage in these commodities.

*Table 4.7: Marginal Revealed Symmetric Comparative Advantage of Pakistan in China*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Non-Ferrous Waste, Scrap	10	Fish, Fresh, Chilled, Froen
2	Engines, Motors Non- Elect	11	Mineral Manufactures, Nes
3	Residual Petrol. Products	12	Silk
4	Hides, Skins(Ex.Furs), Raw	13	Maize, Unmilled
5	Mechanical Handling Equip	14	Electro-Medcl, Xray Equip
6	Ship, Boat, Structrs	15	Leather
7	Furskins, Tanned, Dressed	16	Cotton Fabrics Woven
8	Crustaceans, Molluscs	17	Non-Elect Mach.Parts, Etc
9	Rotating Electric Plant		

Table 4.8 presents the ranks of commodities based on marginal revealed symmetric comparative disadvantage of Pakistan with China. Around 16 out of 156 commodities lie in the marginal revealed symmetric comparative disadvantage segment. Pakistan is a big exporter of rice in Asian countries. But in China, Pakistan has no market for rice. This may be due to difference in preferences of Chinese rice consumers. In agricultural products especially cotton Pakistan has marginal comparative disadvantage. By improving these sectors, Pakistan can achieve advantage in these commodities.

*Table 4.8: Marginal Revealed Symmetric Comparative Disadvantage of Pakistan in China*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Oil Seed (Sft,Fix Veg. Oil)	9	Cotton
2	Fish Etc, Prepd, Preserved	10	Automatc.Data Proc. Equip
3	Other Crude Minerals	11	Polyacetal, Polycarbonate
4	Manufacts. Base Metal, Nes	12	Organo-Inorganic Compnd
5	Rice	13	Wood Manufactured, Nes
6	Synthetic Fybers	14	Wool Other Animal Hair
7	Clay, Refrct. Constr.Matrl	15	Oth. Power. Genrtng. Machnry
8	Fruit, Nuts, Excl. Oil Nuts	16	Cutlery

### **4.3 Exports Performance with India**

Table 4.9 presents the ranks of commodities based on highest revealed symmetric comparative advantage of Pakistan with India. Pakistan is exporting around 133 commodities to India in the year 2014. Only 31 out of 133 commodities lie in the highest RSCA segment. Pakistan has



export potential in Indian market (Sultan & Munir, 2015). The commodities in which Pakistan has highest RSCA are aluminium ores, hydrocarbons, glass and synthetic rubber as indicated by their relative ranking. The top ten ranked commodities do not have agricultural products. Pakistan has high comparative advantage in chemicals, metals, organic and inorganic compounds, leather and plastic materials in Indian market since 2014. Only few commodities related to agricultural products are included in this segment.

*Table 4.9: Highest Revealed Symmetric Comparative Advantage of Pakistan in India*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Aluminium Ore, Contr. Etc	17	Fruit, Nuts, Excl. Oil Nuts
2	Cock-Semi Cock-Rat Carbn	18	Articles of Rubber, Nes
3	Hydrocarbons,Nes, Derivts	19	Natural Abrasive, Nes
4	Ferrous Waste And Scrap	20	Pulp And Waste Paper
5	Other Chemical Compounds	21	Jute, Oth Textl.Bast Fibr
6	Glass	22	Dyeing, Tanning Material
7	Wool Other Animal Hair	23	Oth. Textile Fabric, Woven
8	Polymers, Vinyl Chloride	24	Organic-Inorganic Compound
9	Sulphur Unrstd Iron, Pyrs	25	Nitrogen-Functn Compound
10	Metals. Salts, Inorganic. Acid	26	Oth.Plasric, Primary Form
11	Synthetic Rubber Etc	27	Mineral Manufactures, Nes
12	Oil Seed(Oth,Fix Veg. Oil)	28	Lime, Cement, Constr. Matr
13	Non-Ferrous Waste, Scrap	29	Leather
14	Stone And Gravel	30	Plastic Plate, Sheets, Etc
15	Copper	31	Butter Other Fat Of Milk
16	Oil Seed (Sft, Fix Veg. Oil)	32	Pearls, Precious Stones

Table 4.10 presents the ranks of commodities based on highest revealed symmetric comparative disadvantage of Pakistan with India. Around 68 out of 133 commodities lie in the highest RSCDA segment. Results show relative ranking of commodities according to their highest disadvantage. Pakistan has highest comparative disadvantage in “alcohol, phenol etc” as its rank is 1<sup>st</sup> among export commodities in India. In spite of 4<sup>th</sup> largest producer of cotton in Asia, Pakistan has highest comparative disadvantage in Indian market in textile articles, textile yarn, clothing appraisal and men and women clothing knit. All these 68 commodities in which Pakistan have strong comparative disadvantage are exporting to India in bulk quantities.

Table 4.10: Highest Revealed Symmetric Comparative Disadvantage of Pakistan in India

Rank	Commodity Name	Rank	Commodity Name
1	Alcohol, Phenol, Etc, Deriv	35	Flat- Rolled, Alloy Steel
2	Parts, Tractors, Motor Veh	36	Furniture, Cushions, Etc
3	Works Of Art, Antique Etc	37	Clothing Accessrs, Fabrics
4	Civil Engineering Equipt	38	Oth. Nonelec Mch, Tool,Nes
5	Synthetic Fibber	39	Women, Girls Clothing. Knit
6	Baby Carriage, Toys, Games	40	Cycles, Motorcycles Etc
7	Cutlery	41	Mens, Boys Clothng, X-Knit
8	Agric. Machines, Ex. Tractr	42	Vegetables, Prepd, Presvd,Nes
9	Elec. Switch. Relay. Circuit	43	Trunk, Suit-Cases, Bag, Etc
10	Trailers, Semi-Trailr, Etc	44	Insectcides, Etc
11	Polyacetal, Polycarbonate	45	Textile Articles Nes
12	Medicines, Etc. Exc. Grp542	46	Tea And Mate
13	Polymers Of Styrene	47	Tobacco, Unmanufactured
14	Oth. Mach, Pts, Spcl Indust	48	Mens, Boys Clothing, Knit
15	Nails, Screws, Nuts, Etc	49	Manufact. Leather Etc. Nes
16	Ore Concentr. Base Metals	50	Soap, Cleaners, Polish, Etc
17	Special Yarn, Txtl. Fabric	51	Textile Yarn
18	Floor Coverings, Etc	52	Fabrics, Man-Made Fibres
19	Glassware	53	Aircraft, Assoctd. Equipnt
20	Misc Manufctrd Goods Nes	54	Tubes, Pipes, Etc. Iron, Stl
21	Sugar Confectioner	55	Veneers, Plywood Etc
22	Taps, Cocks, Valves, Etc	56	Paper Paperboard, Cut Etc
23	Pottery	57	Othr. Textile Apparel, Nes
24	Cereal Preprations	58	Sugars, Molasses, Honey
25	Clay, Refrct. Constr.Matrl	59	Other Meat, Meat Offal
26	Clothing, Nontxtl; Headgear	60	Tulle, Lace, Embroidry. Etc
27	Gold, Silverware, Jewl New	61	Starches, Insuline, Etc
28	Animal Feed Stuff	62	Fish, Fresh, Chilled, Froen
29	Footwear	63	Household Equipment, Nes
30	Fruit Preserved, Prepared	64	Metallic Structures Nes
31	Iron Ores, Concentrates	65	Steam Turbines
32	Madicaments	66	Pigments, Paints, Etc
33	Crustaceans, Molluscs	67	Parts, For Office Machins
34	Women, Gril Clothing, Xknit	68	Paper And Paperboard

Table 4.11 presents the ranks of commodities based on marginal revealed symmetric comparative advantage of Pakistan with India. Around 18 out of 133 commodities lie in the

marginal RSCA segment. Pakistan has highest marginal advantage in synthetic colour, inorganic chemicals, rubber tyres, medical instruments and fruit and vegetable juice having relative ranks 1, 2, 4, 8 and 16 respectively. A deep look on the commodities having highest and marginal comparative advantage, it shows that there are few commodities relating to food and other agricultural products in which Pakistan has RSCA in Indian export market.

*Table 4.11: Marginal Revealed Symmetric Comparative Advantage of Pakistan in India*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Synth Colour, Lakes. Etc	10	Wood Simply Worked
2	Inorganic Chemi. Elements	11	Crud Veg Material,Nes
3	Containers, Storage, Trnsp	12	Worn Clothing Textile
4	Rubber Tyres, Tubes Etc	13	Spice
5	Furskins, Tanned, Dressed	14	Other Crude Minerals
6	Printed Matter	15	Carboxylic Acid
7	Other Organic Chemical	16	Fruit, Vegetables Juice
8	Medical Instruments Nes	17	Knit. Crochet.Fabric Nes
9	Textile, Leather Machines	18	Petroleum Products

Table 4.12 presents the ranks of commodities based on highest revealed symmetric comparative disadvantage of Pakistan with India. Around 15 out of 133 commodities lie in the marginal RSCDA segment. Miscellaneous chemical products, plastic waste, cotton fabric woven, musical instrument and fertilizer are included among those commodities in which Pakistan has marginal comparative disadvantage.

*Table 4.12: Marginal Revealed Symmetric Comparative Disadvantage of Pakistan in India*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Spec. Transact. Not Classd	9	Manufacts. Base Metal, Nes
2	Tools	10	Cotton Fabrics Woven
3	Ingots Etc.Iron Or Steel	11	Measure, Control Instrmnt
4	Misc. Chemicals Prodts. Nes	12	Musical Instruments, Etc
5	Pumps For Liquids, Parts	13	Furtilizer, Crud
6	Plastic Waste, Scrap Etc	14	Electro-Medcl, Xray Equip
7	Articles, Nes, Of Plastics	15	Edilble Prod, Preprtns, Nes
8	Wood Manufactures, Nes		

#### 4.4 Exports Performance with Iran

Table 4.13 presents the ranks of commodities based on highest revealed symmetric comparative advantage of Pakistan with Iran. Pakistan is exporting around 60 commodities to Iran in the year 2014. Out of 60 only 18 commodities are there in which Pakistan has strongest comparative advantage in Iran. Mostly, the commodities in this sector are related to machinery, equipment and metals. Only “vegetables, preserved & prepared” is the agricultural product in which Pakistan has strong comparative advantage in Iranian market as found by Riaz and Jansen (2012).

*Table 4.13: Highest Revealed Symmetric Comparative Advantage of Pakistan in Iran*

<b>Rank</b>	<b>Commodity Name</b>	<b>Rank</b>	<b>Commodity Name</b>
1	Paper And Paperboard	10	Textile, Leather Machines
2	Paper, Pulp Mill Machines	11	Essntl. Oil, Perfume, Flavr
3	Ship, Boat, Structrs	12	Heating, Cooling Equip, Part
4	Paper Paperboard, Cut Etc	13	Food-Process. Mch.Non Dom
5	Aluminium	14	Wood Manufactured, Nes
6	Polymers Of Ethylene	15	Electr Distribt. Eqpt Nes
7	Bovine Meat	16	Vegetables, Prepd, Presvd,Nes
8	Oth. Mach, Pts, Spcl Indust	17	Articles, Nes, Of Plastics
9	Plastic Plate, Sheets, Etc	18	Plumbng, Sanitry, Eqpt. Etc

Table 4.14 presents the ranks of commodities based on highest revealed symmetric comparative disadvantage of Pakistan with Iran. The exports of Pakistan consist of around 60 commodities to Iran in the year 2014. There are 26 commodities in this segment. Pakistan has comparative advantage in vegetables and fruit juices, dried fruits/nuts (Riaz & Jansen, 2012). But in 2014 Pakistan has high comparative disadvantage in vegetables and fruit nets. This indicates that Pakistan has no more market in Iran for these commodities. Likewise, Afghanistan, India and China Pakistan has no market for textile yarn in Iran.

Table 4.15 presents the ranks of commodities based on marginal symmetric comparative advantage of Pakistan with Iran. Out of 60 commodities, there are only 9 commodities that fall in this segment. In rice Pakistan has marginal comparative advantage in Iranian market. The results are consistent with Riaz and Jansen (2012). In meat, meat offal, fruit and vegetable juice, medical instruments etc., Pakistan has marginal comparative advantage.

*Table 4.14: Highest Revealed Symmetric Comparative Disadvantage of Pakistan in Iran*

Rank	Commodity Name	Rank	Commodity Name
1	Manufacts. Base Metal, Nes	14	Vegetables
2	Tubes, Pipes, Etc. Iron, Stl	15	Oil Seed(Sft,Fix Veg. Oil)
3	Agric. Machines, Ex. Tractr	16	Fruit, Nuts, Excl. Oil Nuts
4	Worn Clothing Textile	17	Clothing, Nontxtl; Headgear
5	Pearls Precious Ston	18	Non-Ferrous Waste, Scrap
6	Printed Matter	19	Aircraft, Assoctd. Equipnt
7	Furniture, Cushions, Etc	20	Textile Articles Nes
8	Sugar Confectioner	21	Crud Veg Material,Nes
9	Other Crude Minerals	22	Textile Yarn
10	Stone And Gravel	23	Misc Manufctrd Goods Nes
11	Clothing Accessrs, Fabrics	24	Mens, Boys Clothng, Knit
12	Baby Carriage, Toys, Games	25	Spec. Transact. Not Clasdd
13	Cotton Fabrics Woven	26	Mens, Boys Clothng, X-Knit

*Table 4.15: Marginal Revealed Symmetric Comparative Advantage of Pakistan in Iran*

Rank	Commodity Name	Rank	Commodity Name
1	Intrnl Combust Pstn Engin	6	Civil Engineering Equipt
2	Medical Instruments Nes	7	Other Meat, Meat Offal
3	Preprd Additives, Liquids	8	Fruit, Vegetables Juice
4	Sugars, Molasses, Honey	9	Perfumery, Cosmetics, Etc
5	Rice		

*Table 4.16: Marginal Revealed Symmetric Comparative Disadvantage of Pakistan in Iran*

Rank	Commodity Name	Rank	Commodity Name
1	Cereal Preparations	5	Misc. Chemicals Prods. Nes
2	Cutlery	6	Special Yarn, Txtl. Fabric
3	Medicaments	7	Edilble Prod, Preprtns, Nes
4	Fruit Preserved, Prepared		

Table 4.16 presents the ranks of commodities based on marginal revealed symmetric comparative disadvantage of Pakistan with Iran. Out of 60 commodities, there are only 7 commodities that fall in this segment. Pakistan is the huge producer of cereals, but in Iran Pakistan has no market for this product. Medicaments, fruit preserved, miscellaneous chemicals, special yarn and edible products are those commodities in which Pakistan has marginal

comparative disadvantage. A slight improvement in these products Pakistan can obtain comparative advantage in these commodities.

## **5. Conclusion**

Pakistan is blessed with abundant natural resources and have diversified export commodities. Despite of rich and generous water resources, agro-ecological conditions for agricultural products and partially developed manufacturing sectors, Pakistan is still unable to utilize its untapped export potential in the world market. From last few years, it is widely believed that the agricultural export performance of Pakistan is declining. Most of the studies are conducted to find the comparative advantage of agricultural products of Pakistan with different export regions and world. Few studies have worked on revealed comparative advantage of Pakistan at regional and bilateral level. Few studies have been conducted by incorporating all commodities that Pakistan is exporting to its border sharing countries. This study has computed the RCA of exports of Pakistan with its border sharing countries at three-digit level of SITC classification by using Delum et al., (1998) index of revealed symmetric comparative advantage.

The segregation of results into High RSCA, RSCDA and marginal RSCA and RCSDA help us in explaining that in which commodities we can improve our comparative advantage in neighboring countries. Pakistan is exporting around 160 commodities to Afghanistan but out of which in 51, 67, 26 and 13 commodities Pakistan has highest RSCA, RSCDA, marginal RSCA and RCSDA respectively. This clearly indicates that Pakistan is exporting more than half of those commodities in which Pakistan has high and marginal RSCDA. Pakistan has highest RSCA in food related products like meat, milk, cream and wheat. Textile sector is the backbone of Pakistan's export industry. Pakistan is the 4<sup>th</sup> largest producer of cotton in Asia but in Afghan market Pakistan has highest comparative disadvantage in textile articles, cotton, textile yarn and clothing etc. Similarly, insecticides, cotton, medicines, tobacco manufactured, fertilizers, medical instruments, cotton fabric woven, textile yarn and clothing accessories have highest comparative disadvantage in Afghanistan as indicated by their relative ranking. The major share of Pakistan's export earnings comes from rice. Pakistan has competitive advantage in rice over all countries (Ilyas et al., 2009). But our results indicate that Pakistan has no comparative advantage in rice in Afghanistan.

Pakistan is exporting around 156 commodities to China. China is the largest exporter of vegetables (Riaz & Jansen, 2012). Pakistan has its market for crude vegetable material in China. As compared to Afghanistan and India, Pakistan has highest comparative advantage in textile yarn in China having 8<sup>th</sup> rank in the commodity list. Pakistan is exporting 156 commodities out of which 105 are those commodities in which Pakistan has highest RSCDA. Pakistan is the biggest exporter of rice in Asian countries. But in China, Pakistan has no market for rice. This may be due to difference in preferences of Chinese rice consumers. In agricultural products especially cotton Pakistan has marginal comparative disadvantage.

In case of India, Pakistan is exporting around 133 commodities in the year 2014. Around 68 out of 133 commodities lie in the highest RSCDA segment. Pakistan has highest comparative disadvantage in Indian market in textile articles, textile yarn, clothing appraisal and men and women clothing knit. Pakistan has highest marginal advantage in synthetic colour, inorganic chemicals, rubber tyres, medical instruments and fruit and vegetable juice. There are few commodities relating to food and other agricultural products in which Pakistan has RSCA in Indian export market.

In Iranian market, the agricultural products of Pakistan have no RSCA. Only “vegetables, preserved & prepared” is the agricultural product in which Pakistan has strong comparative advantage in Iranian market. Like Afghanistan, India and China, Pakistan has no market for textile yarn in Iran. In rice Pakistan has marginal comparative advantage in Iranian market. Despite of large producer of cereals, Pakistan has no market for these products in Iran. All these results are consistent with the findings of Riaz and Jansen (2012).

On the basis of above results, we can recommend that Pakistan should adopt strategies to improve the performance of those commodities lie in the marginal comparative advantage and disadvantage segments. Particularly, Pakistan should improve its market for rice in Afghanistan, China and Iran. Special measures and productive efforts are required to improve the export performance of cotton, textile yarn, cotton fabric in border sharing countries. Last but not the least, political and diplomatic channels are needed to improve the performance of cross border trading among the countries especially with border sharing countries.

## References

- Ahmad, N., & Kalim, R. (2013). Changing Revealed Comparative Advantage of Textile and Clothing Sector of Pakistan: Pre and Post Quota Analysis. *Pakistan Journal of Commerce and Social Sciences*, 7 (3), 520-544.
- Anwar, S., Hussain, Z., & Javed, M. S. (2005). Comparative Advantage and Competitiveness of Wheat Crop in Pakistan. *The Lahore Journal of Economics*, 10 (2), 101-110.
- Akhtar, N., Zakir, N., & Ghani, E. (2008). Changing revealed comparative advantage: a case study of footwear industry of Pakistan. *The Pakistan Development Review*, 7 (4), 695-709.
- Balassa, B. (1965). Trade Liberalization and Revealed Comparative Advantage. *The Manchester School of Economics and Social Studies*, (33), 99-117.
- Balassa, B. (1977). Revealed' Comparative Advantage Revisited: An Analysis of Relative Export Shares of the Industrial Countries; 1953-1971. *The Manchester School of Economic & Social Studies*, 45 (4), 327-44.
- Batra, A., & Khan, Z. (2005). Revealed Comparative Advantage: An Analysis for India and China. *Indian Council for Research on International Economic Relations Working Paper No. 168*.
- Chaudhry, M. H., J. Anwar, S. H., & Din, S.S.U. (1994). Interrelationships between wheat yield and its components. *J. Agric. Res*, 32 (2), 119-126.
- Dalum, B., Laursen, K., & Villumsen, G. (1998). Structural change in OECD export specialization patterns: de-specialization and stickiness. *Int Rev Appl Econ*, 12 (3), 447-467.
- Ferto, I. & Hubbard, I. J. (2003). Revealed Comparative Advantage and Competitiveness in Hungarian Agri-Food Sectors. *World Economy*, 26 (2), 247-59.
- Ilyas, M., Mukhtar, T., & Javed, M. T. (2009). Competitiveness among Asian exporters in the world rice market. *The Pakistan Development Review*, 48 (4), 783-794.
- Javed, M. S., Hassan, S., Adil, S. A., Bakhsh, K., & Siddique, A. (2006). Comparative advantage of cotton production & its policy implication in Pakistan. *Pak. J. Agri. Sci*, 43, (3-4), 193-196.
- Jebuni, C. D. (1988). Market Structure and LDCs's Manufactured Export Performance. *World Development*, (12) 1511-20.



- Lall, S. (2001). Competitiveness Indices and Developing Countries: An Economic Evaluation of the Global Competitiveness Report. *World Development*, 29 (9),1501-1525.
- Laursen, K. (1998). Revealed Comparative Advantage and the Alternatives as Measures of International Specialization. *Danish Research Unit for Industrial Dynamics*, Working Paper No. 98-30.
- Leontief, W. (1954). Domestic Production and Foreign Trade: The American Capital Position Reexamined. *Proceeding of the American Philosophical Society*, 97, 332-349.
- Linder, S. B. (1961). *An Essay on Trade and Transformation*. Stockholm: Almqvist & Wicksell.
- 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.
- Memon, N., Rehman, F., & Rabbi, F. (2014). Should Pakistan Liberalize Trade with India Against the Backdrop of the FTA with China? A Comparative Advantage Analysis for the Manufacturing Sector. *The Lahore Journal of Economics*, 19, 327-348.
- Quddus, M. A., & Mustafa, U. (2011). Comparative advantage of major crops production in Punjab: An application of policy analysis matrix. *The Lahore Journal of Economics*, 16 (1), 63-94.
- Ratkorm, N. (2008). Comparative Advantage of Thailand's export product in Australia During Free Trade Agreement Thailand-Australia.
- Ricardo, D (1817). *Principles of Political Economy and Taxation*, London: John Murray.
- Richardson, D. & Zhang, C. (1999). Revealing Comparative Advantage: Chaotic or Coherent Patterns Across Time and Sector and U.S Trading Partner? *National Bureau of Economic Research*, Working Paper No. 7212.
- Riaz, K., & Jansen, H. G. (2012). Spatial patterns of revealed comparative advantage of Pakistan's agricultural exports. *Pakistan Economic and Social Review*, 50 (2), 97-120.
- 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.

- Shahabuddin, Q. (2000). Assessment of comparative advantage in Bangladesh agriculture. *The Bangladesh Development Studies*, 26 (1), 37-76.
- Sheng, Y., & Song, L. (2008). Comparative Advantage and Australia-China Bilateral Trade. *A journal of applied economics and policy*, 27 (1), 41-56.
- Shinoj, P., & Mathur, V. C. (2008). Comparative advantage of India in agricultural exports vis-à-vis Asia: a post-reforms analysis. *Agricultural Economics Research Review*, 21 (1), 60-66.
- Smith, A. (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations*. London: W. Strahan.
- Taneja N, Kalita P, Prakash S (2011a) Issues in India-Pakistan trade negotiations. *Economic & Political Weekly*, 46 (30), 24–28.
- Yeats, A. J. (1998). Does Mercosur's trade performance raise concerns about the effects of regional trade arrangements? *The World Bank Economic Review*, 12 (1), 1-28.
- Yue, C. (2001). Comparative Advantage, Exchange Rate and Exports in China. Paper Prepared for the International Conference on Chinese Economy, CERDI, France.
- Vanek, J. (1968). The Factor Proportions Theory: the *N*-Factor Case. *Kyklos* 21: 749–756.