



Investigating Pakistan's Revealed Comparative Advantage and competitiveness in Cotton Sector

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ARTICLE DETAILS	ABSTRACT
<p>History <i>Revised format: February 2019</i> <i>Available Online: March 2019</i></p>	<p>Cotton sector, one of the most important sectors of agriculture, plays a pivot role in the socio-economic uplift of Pakistan as its contribution to agriculture value addition is 5.5 % and to GDP is 1 %. It along with low wage cost also ensures the massive availability of raw material for textile industry which enables Pakistan to attain competitiveness in the world market. The aim of present study is ,therefore, to measure the export competitiveness in cotton sector of Pakistan by utilizing a set of Revealed competitive advantage and Revealed comparative advantage (RCA) indices such as RCA, RCA#, Symmetric Comparative index (RSCA), Revealed Import Advantage index (RMA), Net export index (NEI) and Revealed Trade Advantage index (RTA) vis-a-vis world trade. The data was taken from International Trade Center (ITC) UN-COMTRADE Statistics for Pakistani cotton from 2003-17. The results of the study explored that Pakistan had a comparative and competitive advantage in cotton exports, while comparative disadvantage in cotton imports. Moreover, Pakistan had net competitive advantage in cotton sector. The study suggests that there should be more emphasis on Infrastructure, reduction in the cost of production, utilities and finance, use of modern technology, investment in agricultural sector and marketing in international market to boost the exports volume of cotton. Net export index (NEI), Revealed, Symmetric Comparative index (RSCA) (Larsen 1998), Vollrath index (1991) (RCA#), Revealed Import Advantage index (RMA) and Revealed Trade Advantage index (RTA).</p>
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1. Introduction

Apart from Foreign Direct Investment (FDI), the exports of an economy have been one of key determinants to maintain high growth, life expectancy and better schooling due to their significance in the global economy (Azman-Saini and Ahmad, 2010). Exports are supposed to be the engine of economic growth of an economy that is essential for the welfare and prosperity of the masses (Jackson, 2009). Pakistan can enhance its markets through economies of scale in firms and then exports of commodities to the world for achieving competitiveness (Schwab, 2010). The

export performance or competitiveness is generally measured by several determinants like comparative advantage, terms of trade (TOT), real exchange rate, trade policies, geographical attention of country, world income, etc. The nature and pattern of global trade give a fairly better indication to those economies which have signed global trade agreements. The countries, in international markets, having comparative advantage produce those commodities in which they have low cost in production (Dornbusch and Samuelson, 1977).

Numerous researches have attempted to define the competitiveness of an economy in several ways, yet it is the Organization for Economic Cooperation and Development (OECD) that has defined it as, "The degree to which a country can, under free and fair market condition, produces goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people in the long term" (Stevens et al., 2012). Competitiveness, in the present scenario of global economy, is considered an impetus in uplifting economy which plays a significant role in determining the progress and development of any economy. Classical economics equips that a country's competitiveness can be measured by focusing on key production inputs: capital, land, labour and natural resources, and these determinants contribute a lot in the development and progress of an economy. At present, however, this theory is no more applicable as in the modern global world as the policy formation of an economy must be in conformity with the major determinants of global trade e.g. the political and social environment, which play a primary and comprehensive role in accomplishing competitiveness (Tan and Giap, 2004). Competitive advantage is defined as the function of a process that enables a firm to organize and manage its activities (Haque et al., 2013). Constant innovations in the product and service pave the way for a firm to sustain its competitive position in the market. Competitive strategy comprises two components, the structure of the industry and the position of a firm within the industry (Grant, 1991).

Table 1: Export growth of Cotton from Pakistan and World (US thousand dollars)

Years	Cotton Exports of Pakistan	Cotton Exports of World	Total Exports of Pakistan
2003			
2004	12.22	10.91	-27.53
2005	15.85	-4.52	21.58
2006	4.77	7.53	5.21
2007	-4.69	1.67	5.07
2008	4.33	1.95	12.03
2009	-12.22	-24.58	-15.51
2010	20.17	27.03	18.01
2011	21.26	17.51	15.50
2012	2.46	-4.62	-2.96
2013	2.02	6.12	2.019
2014	-12.73	-12.10	-1.61
2015	-17.10	-13.84	-11.92
2016	-15.52	-6.95	-7.57
2017	0.009	1.77	6.14

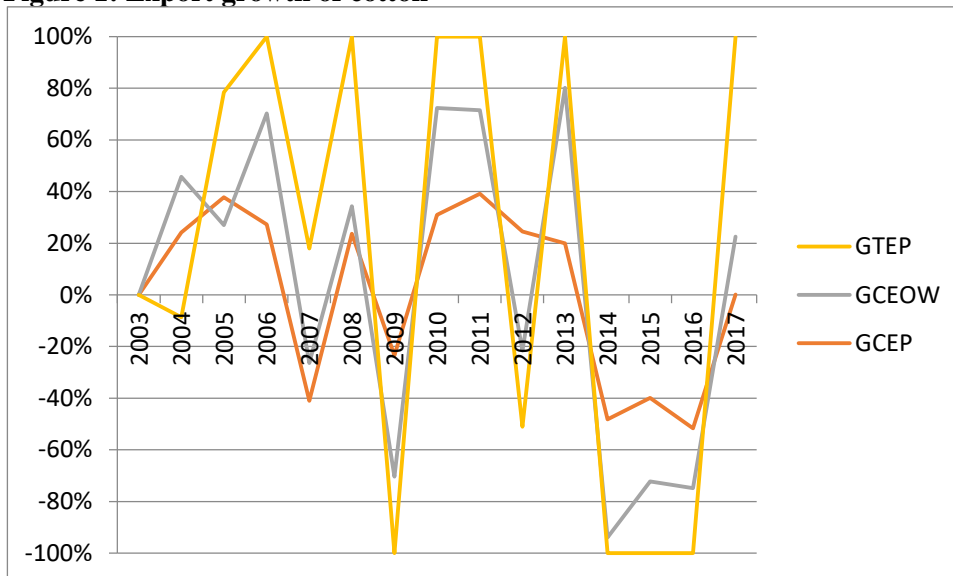
Sources; Authors own calculations based on ITC data

Table 1 shows the growth rate of cotton exports of Pakistan of the world and of the total exports of Pakistan to international market. The cotton exports of Pakistan shows an increasing trend from 2003 to 2013 and then decreasing till the year of 2017. Figure 1 illustrates export growth rate of cotton in Pakistan and rest of the world respectively. As the economy of Pakistan is agrarian, therefore, since the very inception of Pakistan, the agriculture sector has been playing a key role in its economic development by making a great contribution to its GDP. The agricultural sector contributes 21.2 % to GDP and also contains 45% of the labor force. Pakistani major crops are rice, wheat, sugarcane, maize and cotton, and the contribution of these major crops in agriculture sector of Pakistan is about 25.6 percent and 5.4% to GDP.

Cotton being a cash crop holds much significance as it provides raw material to textile industry of Pakistan; however, it contributes 1.4% to GDP. Pakistan is the fourth largest exporter of cotton in the world having worth of 3.5 billion dollars in 2017. The contribution of cotton and cotton made products is about 10% to GDP and 55% to the foreign exchange earnings of the economy. Pakistan utilizes 30% to 40% cotton in domestic purpose and the remaining is exported to the world in the form of yarn, raw cotton, garments and cloth. To measure the

competitiveness and competitive advantage of cotton, the present study has employed different indices of comparative advantage such as Balassa index (1965), Net export index (NEI), Revealed, Symmetric Comparative index (RSCA) (Larsen 1998), Vollrath index (1991) (RCA#), Revealed Import Advantage index (RMA) and Revealed Trade Advantage index (RTA).

Figure 1: Export growth of cotton



2. Review of literature

The methodology of Revealed Comparative Advantage has been employed by a number of researchers to study the competitiveness of an economy, and Balassa and Marcus (1989) also utilized this methodology to measure the comparative advantage between two countries, Japan and the USA, from 1967 to 1983. The findings of the analysis illustrated that Japan shifted its specialization from labour intensive products to human capital intensive products. It was also noted that the United States (USA) had a comparative advantage in the production of natural resources intensive products. Another study conducted by Haddad (2000) also applied intra industry index and RCA to examine the export competitiveness of Middle East and North Africa in the world during 1985 to 1997. The results of the study illustrated that diversifications in the exports were nominal and in the absence of this, export competitiveness was not evident. Benders and Li (2002) utilized the RCA to measure the export performance of Latin American and Asian economies. The findings of the analysis showed that comparative advantage of East Asian economies deteriorated as compared to Latin America and South East Asian economies. Kosekahaoglu (2003) also employed RCA to explore the competitiveness and the deviation in the comparative advantage of Turkey with respect to the European Union for the period after 1980 in which Turkey adopted liberal trade strategy. The findings of the study illustrated that the degree of competitiveness in some of its labour intensive manufacturing industries decreased after liberalization program. Another study to measure the competitiveness and pattern of trade specialization between Turkey and European Union was conducted by Uthkulu and Seyman (2004) who utilized Balassa index for empirical analysis. The results of the research indicated that Turkey had CA for seven of the 63 product groups: vegetables and fruit, clothing and clothing accessories, honey, sugar, sugar preparations, oil seeds and oleaginous fruits, tobacco, textile yarn, rubber manufactures, fabrics and related products. To investigate the competitiveness of China and India, Batra and Khan (2005) utilized Balassa index to examine comparative advantage of product and sector level from 2000-2003. The findings of the study showed that India and China had gained a comparative advantage in different products and in different sectors. A study conducted by Erkan and Kazim (2014) measured the competitiveness of the export of science based goods of Turkey from 1993 to 2012 by utilizing several revealed comparative advantage indices. The study took data from the trade industries of the United Nations and found out that the export share of science based products in the world trade did not increase. Different indices of revealed comparative advantage were employed by Lgnjatijevic et al (2014) to measure the competitiveness in exports of food sector of Serbia in comparison to the region of Danube from 2005 to 2011. The study applied RXA, LNRXA, RTA, RC, RCA, GL, SM and LFI techniques to examine the comparative advantage of food sector exports. The findings of the Balassa index showed that the products of dairy farm, fruits, vegetables, starch, sugar, edible products, animals and vegetable fats had the comparative advantage in exports.

Asmara et al (2015) scrutinized the export performance and comparative advantage of the Indonesian fiber industrial sector by utilizing time series data from UN-Comtrade, and applied Descriptive and RCA index analysis from 2008 to 2012. The progress of RCA index of South Korea and India for the fiber product kept fluctuating during the time frame mentioned above, while the progress of RCA index of Indonesia remained higher than both the countries. The same method was also utilized by Obadi and Korcek (2016) to measure the competitiveness and export performance of EU with its trade partner, the USA. The findings of the research pointed out that the EU succeeded in achieving a comparative advantage and specialization in production than the USA. Deb and Sengupta (2017) examined the empirical distribution of RCA indices in global trade. The study equips that these indices are helpful to identify the comparative advantage or disadvantage of economies in various commodities and thus help the policy makers in the formulation of policies towards the export expansion of the economies. The RCA method was also applied by Ali et al (2017) to examine the export competitiveness of ready-made garments of Bangladesh and major competitors such as Pakistan, Vietnam, China, Sri Lanka, India, Turkey and Cambodia from 2012-15. The study found that the export share of Bangladesh in the United States market declined from 6% to 5.68% in 2014 after the suspension of the US-GSP. On the other hand, the market share in EU markets remained constant which illustrated that the US-GSP status was significant to increase the positive image and enhanced the volume of trade of the world market. Abteu et al (2017) measured the competitiveness and export performance of developing economies with respect to developed economies of the world by employing Balassa index in textile fabrics from 2006 to 2015. The results found that for HS code 51 (animal hair, wool, horsehair yarn and fabric), developed countries had a high comparative advantage as compared to developing economies, but for the commodities such as cotton, silk, man-made fibers and filaments, developing countries had better circumstances for worldwide export. The RCA method was also employed by Mahmood (2000) to explore the competitiveness and exports specialization in Malaysia. This study, utilizing RCA, located the competitiveness between ASEAN economics and Malaysia. As far as Pakistan is concerned, The RCA method was employed by Mehmood and Nishat (2004) to examine the competitiveness of exports in the sector of non-agricultural production of Pakistan for the year 1999-2000. The findings of the study illustrated that 34.7% products from textile and clothing sector had competitive positioned products and 23.9% are from the chemical industry. Zia (2007) investigated the position of competitiveness in world markets and what Pakistan learnt from other emerging economies from 1960 to 2007. The study also extended the discussion by utilizing Asian Development Bank value added analysis and value chain method of World Bank, and the findings showed that the countries experienced a considerable increase in their exports with the passage of time.

Akhter et al (2009) examined the fruit competitiveness in Pakistan by employing the method of revealed comparative advantage. The findings of the study showed that Pakistan had a higher competitive and comparative advantage in the production of mangoes and dates as compared to the major competitors, while in the production of oranges, Pakistan failed to achieve a higher competitive and comparative advantage. Other than Ballasa index some other techniques were utilized to measure comparative advantage as Anwar et al (2010) utilized policy analysis matrix approach to measure the CA of Pakistan in cotton sector from 1971 to 2008. The study applied Johanson co-integration test for empirical analysis, and its results showed that the international as well as national policies of trade had a significant impact on cotton exports. Balassa and white index applied by Mukhtar and Ilyas (2010) measured the competitiveness among five major economies of Asia during the time span from 1985 to 2005. The results of the study showed that Pakistan had a comparative and competitive advantage in the global rice market, followed by Thailand and Vietnam. Another study was conducted by Ghafoor et al (2010) to investigate the factors affecting the exports of mangoes of Pakistan by utilizing double log regression analysis from 2005-06. The findings of the study revealed that experience, education, average price of purchase, the average cost of marking, ISO certificate and average price of sale had a significant impact on the exports of mangoes. Furthermore, the results showed hot water treatment had a fruitful effect, while government policies had not a significant impact on exports of mangoes.

Amjad et al (2012) examined the export barriers in Pakistan to underline the problems faced by the firms in the export sector. The findings of the study revealed that energy crises, skilled labour shortage, rigidities in institutions, imperfections in markets and weakness in infrastructure were the major impediments to achieve competitiveness in the export sector. Another researcher, Iqbal et al (2013), measured the competitive and comparative advantage of white gold of Pakistan by employing both white and Balassa index from 1970-2010. The findings of the analysis illustrated that Pakistan had a comparative and competitive advantage during analysis except the year 1999. The comparative advantage was observed by Shahzad (2015) in the clothing and textile sector in India, Pakistan and

Bangladesh from 1980-2010. The study applied Balassa index for measuring the comparative advantage in the static and dynamics analysis. The findings of the study indicated that Pakistan, in textile sector, had gained a high comparative advantage as compared to Bangladesh and India, whereas India successfully gained comparative disadvantage in textile sector as compared to Bangladesh and Pakistan. Another study conducted by Niazi et al (2015) to measure the competitiveness in the cotton export by employing Balassa index concluded that Pakistan had a high CA in the above mentioned sector. Similarly, Saqib et al (2017) employed revealed comparative advantage index to measure the sector-wise export performance and competitiveness of Pakistan vis-a-vis global world from 2003-15. The results of the study illustrated that though Pakistan was not a major trading partner in international market; it successfully gained and maintained a high comparative advantage in the export of some selected products such as vegetables, skins and hides and textile and clothing products.

The current study is anticipated to be a better addition in the field of cotton's competitiveness as global markets have become far more competitive than ever before. Throughout the world, it can be seen that the leading factor of prosperity is economic growth which in return heavily depends upon imports and exports as well. As no valuable study employing a number of indices has been conducted yet to measure the competitiveness in cotton sector of Pakistan, this study has utilized such indices as RCA, RCA#, RSCA, RMA, NEI and RTA to measure Pakistani cotton competitiveness, and it will be highly productive and beneficial for the future research also.

3. Methods and Materials

The data has been collected from International Trade Center (ITC) UN-COMTRADE Statistics for Pakistani cotton during 2003-17. The current study has employed different indices such as Balassa index (1965), Net export index (NEI), Revealed, Symmetric Comparative advantage index (RSCA) (Larsen 1998), Vollrath index (1991) (RCA#), Revealed Import Advantage index (RMA) and Revealed Trade Advantage index (RTA) for the measurement of competitiveness of cotton in Pakistan.

3.1 Revealed comparative advantage index (RCA)

The RCA index was first introduced by Liesner (1958) and employed by Balassa (1965) in order to measure CA (Balassa, 1965). The revealed comparative advantage index of exports (RCA) is described as the ratio of exports of an economy in a particular product group to its share in total merchandise exports (Balassa and Noland, 1989).

$$\text{RCA(Balassa Index)} = \frac{X_i^B / \sum X_i^B}{X_i^W / \sum X_i^W} \quad (\text{Source; Erkan and Sariçoban, 2014})$$

Where

$$\begin{aligned} X_i^B &= \text{Pakistan's cotton exports} \\ \sum X_i^B &= \text{Pakistan's total exports} \\ X_i^W &= \text{World's cotton exports} \\ \sum X_i^W &= \text{Total exports of world} \end{aligned}$$

A more comprehensive analysis, in order to illustrate the power of CA, the index of Balassa's RCA can be classified into four classifications.

Table 2:

Sr. No	Classifications	Interpretations
1	$0 < \text{RCA} \leq 1$	No CA
2	$1 < \text{RCA} \leq 2$	Weak CA
3	$2 < \text{RCA} \leq 4$	Moderate CA
4	$\text{RCA} > 4$	Strong CA

Source; Hinloopen, 2001

The study also employed logarithms to the RCA and if $\ln \text{RCA} > 0$ reveals CA; on the contrary, when $\ln \text{RCA} < 0$ shows comparative disadvantage (Faustino, 2008).

3.2 Net Export Index (NEI)

Balassa also used Net export index (NEI) for revealed comparative advantage, described as net exports divided by the sum of exports and imports for a particular manufacturing industry or economy (Balassa and Noland, 1989). Net Export Index (NEI) is utilized to examine whether an economy has specialization in exports (as net-exporter) or in imports (as net-importer) for a specific product groups (Erkan and Saricoban, 2014). The absolute value of $|NEI_{i,j}|$ explains the portion of inter-industry trade relative to the total international trade of any product group, and $(1-|NEI_{i,j}|)$ therefore corresponds to the portion of intra-industry trade (Vixathep, 2011).

$$NEI = \frac{X-M}{X+M} \quad (\text{Source; Erkan and Saricoban, 2014})$$

3.3 Vollrath index (RCA#)

The RCA index of Vollrath (1991) is deemed a better measurement for competitiveness of an economy and eradicates the problem of double counting in global trade. The index of Vollrath is described as

$$RCA(\text{Vollrath index}) = \frac{\left\{ \frac{x_{ij}}{(\sum_i x_{ij}) - x_{ij}} \right\}}{\left\{ \frac{(\sum_j x_{ij}) - x_{ij}}{[(\sum_j \sum_i x_{ij}) - (\sum_j x_{ij})] - [(\sum_i x_{ij}) - x_{ij}]} \right\}} \quad (\text{Source; Khai et al., 2016})$$

Where

x_{ij} = Pakistan's Cotton exports

$\sum_i x_{ij}$ = Total exports of Pakistan

$\sum_j x_{ij}$ = World's Cotton exports

$\sum_j \sum_i x_{ij}$ = Total exports of world

3.4 Revealed symmetric comparative advantage index (RSCA)

The present study to solve the issue of upward biased values of revealed comparative advantage utilized Larsen (1998) index which adjusted the values of RCA index in symmetric values. The position of adjusted values of RCA lies between +1 and -1. Larsen (1998) illustrated his index as RSCA, which is expressed as

$$RSCA = \frac{RCA-1}{RCA+1} \quad (\text{Source; Erkan and Saricoban, 2014})$$

3.5 Relative Trade Advantage Index (RTA)

Relative trade advantage index (RTA) describes the net trade advantage or trade disadvantage. It is given by the difference between Revealed export advantage index (RCA) and Revealed import advantage index (RMA).

$$RMA = \frac{M_i^B / \sum M_i^B}{M_i^W / \sum M_i^W}$$

M_i^B = Imports of cotton of Pakistan

$\sum M_i^B$ = Total imports of Pakistan

M_i^W = Cotton imports of world

$\sum M_i^W$ = Total imports of world

$$RTA = RCA - RMA = \frac{x_i^B / \sum x_i^B}{x_i^W / \sum x_i^W} - \frac{M_i^B / \sum M_i^B}{M_i^W / \sum M_i^W} \quad (\text{Source; Akhtar et al., 2013})$$

3.6 Product Mapping

In addition, the present study constructed "products mapping" by utilizing the RSCA and NEI indexes (Widodo, 2009). Cotton sector can be categorized into four groups A, B, C and D as illustrated in

Figure 2

Group; A CA Net-exporter economy (RSCA >0 and NEI >0)	Group; B CA Net-importer economy (RSCA >0 and NEI <0)
Group ; C Comparative Disadvantage Net-exporter economy (RSCA <0 and NEI >0)	Group; D Comparative Disadvantage Net-importer economy (RSCA <0 and NEI <0)

Source: Widodo, 2009

4. Results and Discussions

In table 1, Pakistan has the CA in the cotton sector because the values of RCA are greater than 1 from 2003-2017. The above mentioned result highlights that Pakistan gained and maintained the high CA in cotton sector up to 2017 having the values of RCA greater than 4 (Shahzad, 2015). The positive values of NEI shows that Pakistan is the net exporter of cotton. Moreover, the findings of RCA indicate that cotton had a revealed comparative advantage having both increasing and decreasing trend. The findings also illustrate that the portion of inter-industry and intra-industry trade relative to the total international trade of cotton sector exists in Pakistan. According to the 'Product mapping', cotton sector of Pakistan lies in the group A. The financial crises in the world in 2008-2009 had a significant impact on global trade at world level as 12% decline was reported by world trade organization in the volume of global trade in 2009. This turn down in trade channels caused by financial collapse decreased the demand for trading products and created shortage in trade financing (WTO, 2010).

The decreasing trend of above mentioned indices were because of regional devaluation in the currency, inconsistency in yield of cotton crop, shrinking global demand resulted in decrease of cotton prices in the market, low wages, high cost of energy, high tax rate, bad government policies, energy crisis, high running cost, shortage of raw material, less productivity of labour, low level of technology, law and order circumstances in the economy and global financial crisis (Syed, 2009 and Malik et al, 2017).

The index LnRCA also indicates that Pakistan had a CA in the cotton sector. The values of RSCA describe that Pakistan concentrate in the exports of cotton during the selected time span. The findings of RSCA illustrate that Pakistan had a CA during 2003-2017 in cotton sector. The competitive advantage of this sector was also observed by employing an alternative index commenced by Vollrath (1991). The Vollrath index (RCA#) values indicate a high competitive advantage in above mentioned sector. The values of RMA>1 indicate that Pakistan has competitive disadvantage in imports of cotton. The index of RTA having values greater than zero illustrate that Pakistan has net competitive advantage in cotton sector (Ahmad and Kalim, 2013).

Table 3

Years	RCA	RSCA	LNRC A	RCA#	RMA	RTA	NEI	(1- NEI)
2003	26.83	0.92	3.28	33.54	4.64	22.18	0.77	0.22
2004	42.22	0.95	3.74	57.79	7.38	34.83	0.67	0.32
2005	46.73	0.95	3.84	63.70	4.86	41.86	0.73	0.26
2006	49.72	0.96	3.90	67.58	3.74	45.98	0.78	0.21
2007	51.29	0.96	3.93	67.71	8.23	43.05	0.57	0.42
2008	53.41	0.96	3.97	69.34	8.91	44.50	0.49	0.50
2009	52.94	0.96	3.96	69.70	4.89	48.05	0.73	0.26
2010	48.48	0.95	3.88	63.75	6.21	42.27	0.65	0.34
2011	51.41	0.96	3.93	69.01	5.51	45.90	0.69	0.30
2012	57.73	0.96	4.05	79.06	4.59	53.13	0.76	0.23
2013	55.98	0.96	4.02	76.38	7.22	48.75	0.67	0.32
2014	56.55	0.96	4.03	75.16	5.28	51.27	0.72	0.27
2015	53.50	0.96	3.97	70.21	4.95	48.55	0.71	0.28
2016	51.70	0.96	3.94	66.44	5.45	46.24	0.65	0.34
2017	51.85	0.96	3.94	65.75	5.92	45.93	0.56	0.43

Source UN COMTRADE Database, Authors own calculations

5. Conclusion

This study measure the competitiveness of cotton sector in Pakistan by utilizing different indices of revealed comparative advantage such as, RCA, RCA#,RSCA, RMA,NEI and RTA. The data has been collected from ITC UN-COMTRADE Statistics for Pakistani cotton for the time period from 2003-17. The results of the analysis describe that Pakistan has a comparative and competitive advantage in cotton exports, while comparative disadvantage in cotton imports during 2003-17. Furthermore, the results also indicate that Pakistan has net competitive advantage in cotton sector. Pakistan should lay emphasis on Infrastructure, as there is inconsistency in yield of cotton crop, should decrease the cost of production, utilities and cost of finance, human resource (mainly unskilled labour). And moreover, there should be use of modern technology, investment in agricultural sector and marketing in international market to increase the exports of cotton.

References

- Abteew, M. A, Annu Kumari & Srinivasa Moorthy (2017). Export Performance and Revealed Comparative Advantage of Developing and Developed Economies for Textile Fibers or Fabrics. *Journal of Global Economics*.2017, 5:3
- 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.
- Akhtar, W., Akmal, N., Shah, H., Niazi, M. A., & Tahir, A. (2013). Export competitiveness of Pakistani horticultural products. *Pakistan Journal of Agricultural Research*, 26(2).
- Akhtar, W., Sharif, M., & Shah, H. (2009). Competitiveness of pakistani fruits in the world market. *TheLahore Journal of Economics* 14(2): 125-133
- Amjad, R., Ghani, E., & Mahmood, T. (2012). Export Barriers in Pakistan: Results of a Firm-Level Survey. *The Lahore Journal of Economics* 17 : SE (September 2012): pp. 103–134
- Anwar, S., Shaukat, F., & Hussain, Z. (2010). Impact of trade liberalization on export of cotton from Pakistan: a time series analysis. *Sarhad Journal of agriculture*, 26(2).
- Asmara, A., Purnamadewi, Y. L., Mulatsih, S., Meiri, A., & Si, M. (2015). Comparative Advantages and Export Performance of Indonesian Fiber Industry Product and Some Major Exporter Countries in the World Market. *Journal of Economics*, 3(1), 173-191.
- Azman-Saini, W. N. W., Baharumshah, A. Z., & Law, S. H. (2010). Foreign direct investment, economic freedom and economic growth: International evidence. *Economic Modelling*, 27(5), 1079-1089.
- Balassa. B. (1965). Trade liberalization and “revealed” comparative advantage. *The Manchester School*, 33(2), 99–123.
- Balassa, B., & Noland, M. (1989). “Revealed” Comparative Advantage in Japan and the United States. *Journal of International Economic Integration*, 8-22.
- Batra, A., & Khan, Z. (2005). Revealed comparative advantage: An analysis for India and China. *Indian Council for Research on International Economic Relations*, 168, 1-85.
- Bender, S., & Li, K. W. (2002). The changing trade and revealed comparative advantages of Asian and Latin American manufacture exports. *Yale Economic Growth Center Discussion Paper*, (843).
- Deb, K., & Sengupta, B. (2017). On Empirical Distribution of RCA Indices. *IIM Kozhikode Society & Management Review*, 6(1), 23-41.
- Dornbusch, R., Fischer, S., & Samuelson, P. A. (1977). Comparative advantage, trade, and payments in a Ricardian model with a continuum of goods. *The American Economic Review*, 67(5), 823-839.
- Erkan, B., & Sariçoban, K. (2014). Comparative Analysis of the Competitiveness in the Export of Science-Based Goods Regarding Turkey and the EU+ 13 Countries. *International Journal of Business and Social Science*, 5(8).
- Giap, T. K. (2004). The IPS-NTU ASEAN 9+ 1 economic competitiveness ranking indices. *ASEAN Economic Bulletin*, 21(2), 234-238.
- Ghafoor, A., Mustafa, K., Zafar, I., & Mushtaq, K. (2010). Determinants of mango export from Pakistan. *J. Agric. Res*, 48(1), 105-119.
- Grant, R. M. (1991). The resource-based theory of competitive advantage: implications for strategy formulation. *California management review*, 33(3), 114-135.
- Hashmi GJ, Dastageer G, Sajid MS, Ali Z, Malik MF, Liaqat I. (2017). Leather Industry and Environment: Pakistan Scenario. *International Journal of Applied Biology and Forensics* 1(2):20-25
- Haque, A., Yasmin, F., Anwar, N., & Ibrahim, Z. (2013). Export of Furniture Product from Malaysia: Market Prospects and Challenges. *Journal of Economics and Behavioral Studies*, 5(7), 406.

- Haddad, M. (2000, October). Export competitiveness: where does the Middle East and North Africa region stand?. Economic Research Forum.
- Hinloopen, J. (2001). On the empirical distribution of the Balassa index. *Reviewed of world economics* .137(1).13 1-49
- Ilyas, M., Mukhtar, T., & Javed, M. T. (2009). Competitiveness among Asian exporters in the world rice market. *The Pakistan Development Review*, 783-794.
- Iqbal, M., Hussain, Z., Noorka, I. R., Akhtar, M., Mahmood, T., Suleman, S., & Sana, I. (2013). REVEALED COMPARATIVE AND COMPETITIVE ADVANTAGES OF WHITE GOLD OF PAKISTAN (COTTON) BY USING BALASSA AND WHITE INDEX. *Int. J. Agric. Appl. Sci.* Vol, 5(1).
- Irshad, M. S., & Xin, Q. (2017). Determinants of Exports Competitiveness: An Empirical Analysis through Revealed Comparative Advantage of External Sector of Pakistan
- Ignjatijevic, S., Matijasevic, J., & Milojevic, I. (2014). Revealed comparative advantages and competitiveness of the processed food sector for the Danube countries. *Custos e@ gronégocio*, 10, 256-281.
- Jackson, T. (2009). Prosperity without growth?: The transition to a sustainable economy.
- Kosekahyaoglu, L. (2003). Comparative Advantage of Turkey with Regard to the EU. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 8(2).
- Laursen, K. (1998). Revealed Comparative Advantage and the alternatives as Measure of International Specialisation, Danish Research Unit for Industrial Dynamics, DRUID Working Paper No. 98-30, Copenhagen, Denmark.
- Mahmood, A. (2000). Export specialization and competitiveness of the Malaysian manufacturing: trends, challenges, and prospects. Fifth Annual Conference on International Trade Education and Research Melbourne. 26 – 27 October. 2000.
- Mahmood, A., & Nishat, M. (2004). Export Competitiveness and Comparative Advantage of Pakistan's Non-agricultural Production Sectors: Trends and Analysis [with Comments]. *The Pakistan Development Review*, 541-561.
- Malik, A., Ghani, E., & ud Din, M. (2017). An Assessment of Pakistan's Export Performance and the Way Forward (No. 2017: 153). Pakistan Institute of Development Economics.
- Niazi, R. Z. M. F. K., & Nizami, U. (2015). Cotton Export Potential: A Case Study of Pakistan. *Journal of Economics and Sustainable Development* ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.6, No.5, 2015.
- Obadi, S. M., & Korcek, M. (2016). The " Revealed" Comparative Advantage and Competitiveness of the EU's International Trade vis à vis the USA 1. *Ekonomicky Casopis*, 64(5), 397.
- Schwab, K. (2010, September). The global competitiveness report 2010-2011. Geneva: World Economic Forum.
- Shahzad, K. (2015). An RCA Analysis of Textiles and Clothing in Pakistan, India, and Bangladesh. *The Lahore Journal of Economics* 20 : 1 (Summer 2015): pp. 157–168
- Stevens, L. K., Neelankavil, J. P., Mendoza, R., & Shankar, S. (2012). The economic competitiveness of countries: a principal factors approach. *International Journal of Economics and Finance*, 4(12), 76.
- Syed, R. (2009). Leather Industry Demands Support amid Stiff International Competition. Article downloaded from [www. iin. com. pk](http://www.iin.com.pk) on, 28, 2011.
- Utkulu, U., & Seymen, D. (2004, September). Revealed Comparative Advantage and Competitiveness: Evidence for Turkey vis-à-vis the EU/15. In European trade study group 6th annual conference, ETSG.
- Vixathep, S. (2011). Trade liberalization and comparative advantage dynamics in Lao PDR. *Lao Trade Research Digest*, 2(1), 1-33.
- Widodo, T. (2009). Comparative advantage: theory, empirical measures and case studies. *Review of Economic and Business Studies*, 4(1), 57-82.
- WTO, 2010. Trade to Expand by 9.5% in 2010 After a Dismal 2009, WTO Reports. WTO Press Release. 26 March 2010. Retrieved from http://www.wto.org/english/news_e/pr598_e.htm.
- Zia, U. (2007). International Competitiveness—Where Pakistan Stands? (PIDE working papers No. 2007: 28). Pakistan Institute of Development Economics.

