
Muhammad Farooq*
Nawaz Ahmad**

Dynamic Performance of Export of Knitted Garments (HS-61) of Pakistan: A Comparative analysis of selected countries (2001-2020)

ABSTRACT

This study has explored the dynamic performance of exports of knitted garments of Pakistan from 2001-2020. A comparative analysis of selected competitor countries in the export of knitted garment also analyzed. Revealed Comparative Advantage (RCA), Symmetric Revealed Comparative Advantage (SRCA) and Normalized Revealed Comparative Advantage (NRCA) techniques has been used to check the performance Pakistan and its selected competitors in the export of knitted garments. Study utilizes the observations provided by UN COMTRADE and ITC Trade map for the products covered by Harmonized System (HS), two-digit data under code HS-61 (Articles of apparel and clothing accessories, knitted or crocheted) commodities of the readymade garment sector has been analyzed. Study shows that Pakistan is having lowest NRCA as compare to China, Bangladesh, Vietnam, Turkey and India but for the last 5 years, it is improving remarkably. Due to structural changes in the Chinese economy, NRCA of China is having downward trend whereas Bangladesh's NRCA improving significantly. Vietnam is also becoming a big competitor. Estimated results are evident that Pakistan is having lowest NRCA as compare to China, Bangladesh, Vietnam, Turkey and India but for the last 5 years it is improving remarkably. Due to structural changes in the Chinese economy, NRCA of China is having downward trend whereas Bangladesh's NRCA improving significantly. Pakistan should now take advantage of its underlying comparative advantage in the export product of HS 61 as China and India are losing their underlying comparative advantage over the last few years, Bangladesh is taking full advantage of the situation and increasing its export of HS61 products significantly.

Keywords: Comparative, manufacturing, competitive, apparel, development policy

* PhD Scholar, Department of Economics, The University of Lahore, Lahore

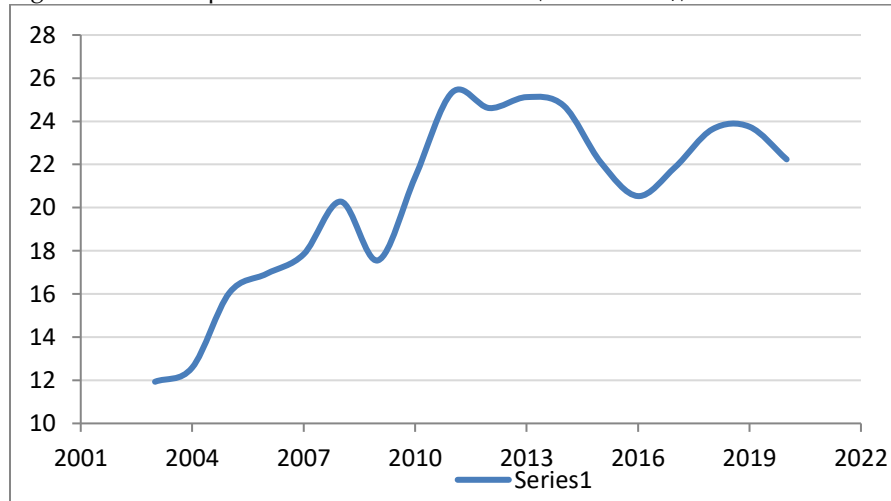
** Assistant Professor/Head, Department of Economics, The University of Lahore, Lahore

Introduction

The textile sector in Pakistan is the mainstay of national economy, accounting for more than 60% of the country's total exports by providing employment to about 15 million labor force in the country. In the FY2019-20, it accounted about 8.5% share to the GDP by contributing 25% of industrial value addition with provision of employment opportunities for 40% industrial labor force. In year 2020 Apparel exports grew 8.8 percent, 61% share in national exports and 21% large scale manufacturing share of Pakistan (PES 2020-21). Garments sector contributes 23 % in national exports, 40% share in textile exports and provide employment to 2.4% labor force of the country (PES, 2020-21).

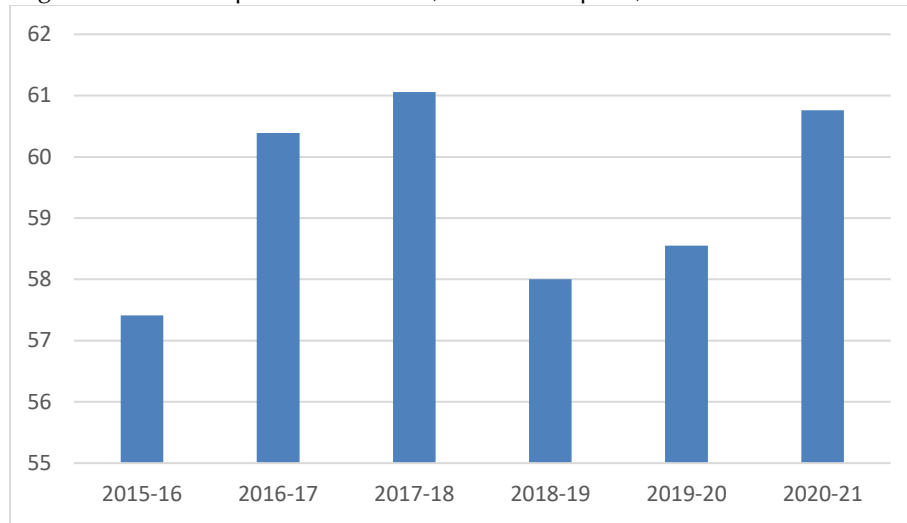
In textile sector production of knitted garments is considered a source of high value addition. Garments sector has a huge capacity to create jobs and boosting export revenues of Pakistan. EU has conferred GSP plus position to Pakistan in 2014, which permits duty free admittance to the commodities. The EU is now the principal textile export market of the country. China's gradual decline in this sector due to higher labor and other production costs, opening a new avenue for Pakistan to fulfill the international demand of these goods and become internationally competitive. However, Pakistan's garment exports suffered a setback due to a relatively narrow base. The GSP status stimulated to enhance the knitted apparel exports along with overall boom in textile sector of the country. During 2001 to 2020 garments exports has witnessed an increase from 21% to 42% in Pakistan's textile exports. Textile production has amplified by 5.90 % during first three quarters of FY2021 against 2.58 % decline in the same period in last year. During pandemic garments exporters evident of a hike in demand from EU and USA markets due to decline of regional supply to these countries because of COVID-19 severity (PES 2021).

Figure 1: Total Exports of Pakistan 2003-2020 (Billion US \$)



Source: Author's Own Calculations

Figure 2: Textile Exports of Pakistan (% of total exports)



Source: PES (2020-21)

Figure 1 and Figure 2 show the total exports and textile exports as percent of total exports of Pakistan. There have been major shifts in the structure of textile and clothing industry in the world over time. Amongst the competitors of Pakistan in the textile & clothing export, there was a major shift to garment segment in 80's. Countries like Bangladesh, Vietnam, Cambodia, India and Turkey shifted their focus on export of value-added readymade garments. Pakistan also started focusing on value added garments in late 90's. Most of value-added products in the Garment sector of Pakistan come under Knitted apparel. The export of knitted garments is the hallmark of Pakistan and many of its competitive countries. In 2020, exports of knitted garments reached to US\$ 3.02 billion by representing 1.62% of global knitted garments exports and ranked 16th largest exporter of knitted garment globally. Despite of important role of exports for economic growth and critical balance of payment position of the country the exports remained low than its potential with less diversification and narrow base (ITC, 2020). Over 95 percent of Pakistan's garment exports are ordained for HICs. More than 50% of knitted RMG is exported in EU markets which make it the top exporting market, followed by USA where more than 33% of knitted RMG is exported destined and make USA single largest business partner for knitwear exports (Hussain et al, 2013). The scenario asserts that the Pakistan's export basket is not diversified (PES, 2020).

Harmonized System code 61(HS-61) covers the knitted apparel which remained the most value-added products in the Garment sector of Pakistan.

Figure 3: Major Countries Exporting Knitted Apparel

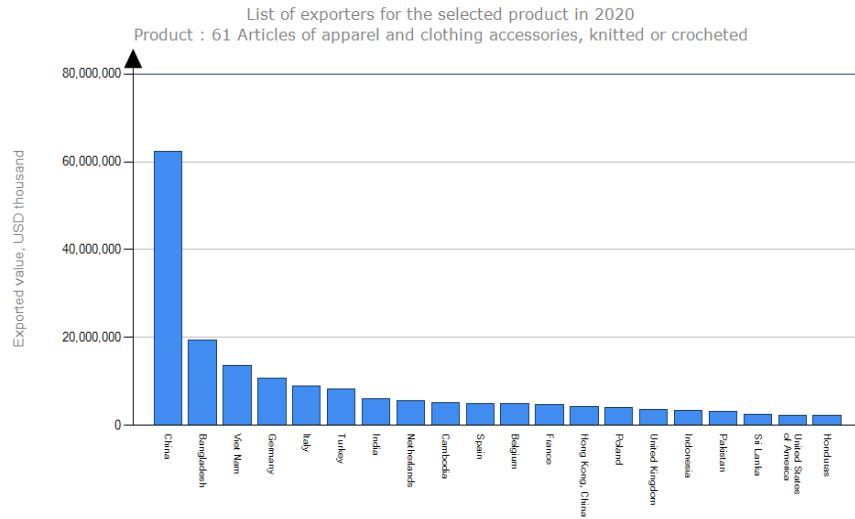
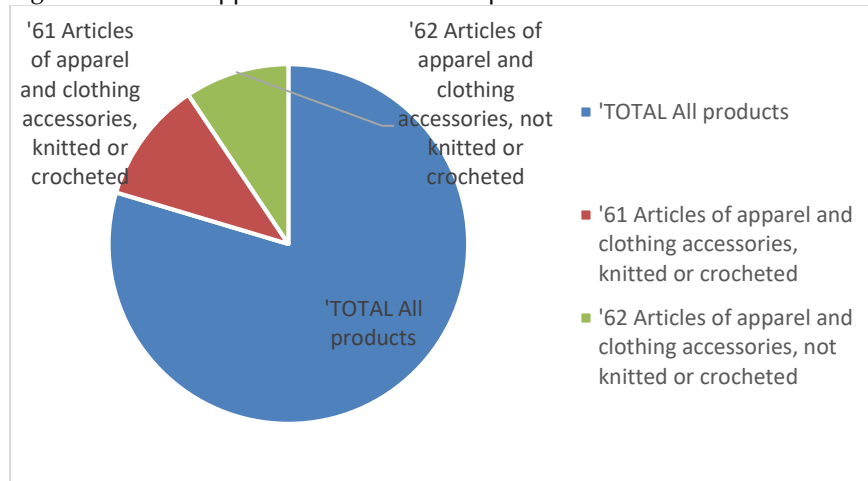


Figure 3 depicts the major competitors of Pakistan knitwear exports which includes; Bangladesh, Cambodia, China, India, Vietnam & Turkey with significant exports growth of knitted apparel (UN COMTRADE, 2020).

Figure 4: Knitted apparel Share in Total Exports of Pakistan



Source: Developed by the author based upon data extracted from UN COMTRADE and ITC

Figure 4 shows that product HS 61 is the most important commodities group in overall exports of Pakistan. HS 61 category in the year 2020 contributed more than 13 percent of total export.

In 19th century classical economists like Ricardo, Adam Smith and John Stuart Mill suggest the positive relationship between international trade and economic growth. Handsome quantity of literature on exports trade policy has been evolved (Hausman, 1981; Melitz, 2003). Exports assist in economic development and growth of a country. Countries interact and make relationships with each other through international trade to achieve their economic goals (Chaney, 2008). Exports help to improve foreign exchange reserves and increase economic growth and expansion opportunities of a country. It improves the level of local competition, enhance technology acceptance and improve knowledge and skills of the workforce in a country (Krugman, 1982). Exports can play a central role during the economic downturn of a country (Han-Mo Oh, Dennis & Sang, 2016; Larsson, Hedelin & Garling, 2003; Vatne, 1995). Exports improve the balance of payment by improving trade deficit and generating employment opportunities and overall high standards of living in a country. To achieve high export performance, it is imperative for government and industry to understand the antecedents of export performance. Because of rapid growth in the world's exports, trade barriers are now decreasing and it is becoming tough for local manufacturers to isolate themselves from international competition and foreign markets (Andersson, Gabrielsson & Wictor, 2004; Fillis, 2007). Nabi and Kaur (2019) employ RCA and Symmetric Revealed Comparative Advantage (SRCA) to gauge competitiveness. Nagy and Jambor (2019) calculated RCA in EU and demonstrated that some countries of EU secure admirable comparative advantage. Salvador et al. (2020) investigated the export performance of China by using RCA and suggested that the value addition of technological specialized goods improved it.

Export gears the domestic economic activities by improving trade deficit, resolving the balance of payment problem, employment rate, tax to GDP ratio and overall improve the standards of living in a country. To achieve high export performance, it is imperative for government and industry to understand the antecedents and moderators of export performance. Because of rapid growth in the world's exports, trade barriers are now decreasing and it is becoming tough for local manufacturers to isolate themselves from international competition and foreign markets (Andersson, Gabrielsson & Wictor, 2004; Fillis, 2007). Local firms have realized that export is not an optional activity anymore, as it is the only way to survive in the market. Local firms, irrespective of industry, size and origin, are now involving themselves in export activities. So, firms' export performance has become the area of importance for researchers, individual firms and government (MacGregor & Varazalic, 2005).

Exports have grown significantly in recent years. Currently exports are contributing nearly 23% to the global GDP (World Bank, 2015). World exports have improved by 220% in the last two decades. The figures increased by 720% for Asia Pacific countries and reduced to 80% for Middle Eastern countries. The top export performers such as China, Republic of Korea and Cambodia have more than 15% of annual export growth (UNECA, 2014). Exports-led growth of East Asian countries and the recent high exports achievements of India and China have brought export promotion to the forefront in development policy agendas of most developing countries (Ghani et al, 2012). Local firms have realized that export is not an optional activity anymore, as it is the only way to survive in the market. Local firms, irrespective of industry, size and origin, are now involving themselves in export activities. So, firms' export performance has become the area of importance for researchers, individual firms and government (MacGregor & Varazalic, 2005).

Exports have grown significantly in recent years. Exports are contributing nearly 23% to the world gross domestic product (GDP) (World Bank, 2015). World exports have improved by 220% in the last two decades. The figures increased by 720% for Asia Pacific countries and reduced to 80% for Middle Eastern countries. The top export performers such as China, Republic of Korea and Cambodia have more than 15% of annual export growth (UNECA, 2014). Exports-led growth of East Asian countries and the recent high exports achievements of India and China have brought export promotion to the forefront in development policy agendas of most developing countries (Ghani et al, 2012).

There is lack of literature which investigates the roots of volatile exports, comparative advantage, and trade complementarity and draw attention for the export potential of knitted apparel. This situation calls for a serious study to analyze the multi-item to measures the export performance of knitted apparel. There is a need for significant effort to measure RCA, SRCA & NRCA to investigate the competitiveness and export performance of knitted apparel of Pakistan. This study investigates the export performance of knitted apparel of Pakistan and compare this performance with competitive countries. In this regard following questions will be focused which may led light the path for better policy insinuation.

- i. What is the export performance of knitted apparel of Pakistan and its comparative position with the selected competitive countries?
- ii. Does Pakistan have degree of deviation relative to world export in knitted apparel?

The study will contribute to the ongoing academic debate of export performance of knitted apparel. It will interrogate the export performance concerns of knitted apparel of Pakistan from 2001 to 2020 and compare it

with selected competitive countries measuring Balassa index 1965. The enumeration of NRCA will gauge the departure of exports regarding the global export market of knitted apparel. Scientifically robust approach is used by using multiple indicators such as RCA, SRCA and NRCA which reflects export performance of selected competitive countries for comparative analysis. The findings of the study will benefit export managers and policy makers to design appropriate export growth strategies and policies to put this sector on the progressive growth track.

Next section explores the methodology to analyze the export performance of knitted apparel in selected countries followed by Results and discussion. Conclusion and policy recommendation are given before the references and appendix is given in the end.

Methodology

RCA index is a typical method to measure the comparative advantage/disadvantage of export performance of sectors, industries and commodities. Ricardian theory considers the technological variations across the competitive entities will bring up the comparative advantage while the H-O theory assume the technological similarity and considers the prices of production factors those will provide foundation of export performance. Pre-trade relative prices in H-O theory weakens the enumeration of export performance Balassa (1989) and proposed that without considering all the observable factors patterns of trade may facilitate to measure the comparative advantage Balassa (1965). Balassa Index focused on revealed comparative advantage without focusing its sources and the literature evident of its acceptability. Refining the findings of Balassa (1965) by revising the interpretation of RCA multiple times as (Donges and Riedel, 1977; Bowen, 1983; Vollarth, 1991; Memedovic, 1994) and so on, while Liesner (1958) analyzed RCA using factual observations by measuring

$$RCA_{ji} = \frac{K_{ji}/K_j}{X_{gi}/X_g}$$

Here K_{ji} is country j 's export of good i and K_j is country j 's total export, K_{gi} is global export of product i and K_g is global exports. The $RCA > 1$ conveys that the country has competitive superiority for that product which means the export growth of the country for the product may further capture the export market. While the value of $RCA < 1$ means that the country has relatively competitive disadvantage for that commodity and future growth for that product will lose the export market for that market.

Differences in endowment factors and technological advancement may result the emergence of comparative advantage (Ruffin, 1988). This difference may also signal the movement of comparative advantage from one

country to another country, one sector to another or one product to another. Trade theories provide the foundation for various factors which determine comparative advantage. Technological and cost variation as determinant of comparative advantage is explained in Ricardian theory while Samuelson (1948) asserts the variation in factors prices as influencing factors in determining comparative advantage. Whereas, theory of Neo Factor Proportion dedicated for explanation of factor efficiency and Posner (1961) suggests the innovation as the major cause of comparative advantage. Memedovic (1994) described the state type (administrative capacity and intervention mode) may influence the comparative advantage.

A shortcoming of RCA calculation is asymmetric i.e. its limit less values for the products those bears revealed comparative advantage while zero lower limit for the products which have comparative disadvantage. The simple solution of this asymmetric is recommended by Laursen (2000) by normalization of RCA, called it symmetric RCA i.e. SRCA. Which is measured as

$$SRCA = \frac{RCA + 1}{RCA - 1}$$

By construction, SRCA is between -1 and 1.

Yu et al., (2009) presented Normalized Revealed Comparative Advantage (NRCA) index which measures the degree of variation of exports of a country from relative scale of rest of the world export of the product. NRCA enumerates the indication of comparative advantage of the commodity in comparison of the world export in that product which seems more suitable in describing comparative advantage.

The NRCA index can be expressed as follows:

$$NRCA_{p,k} = \frac{E_{p,k}}{E} - \frac{E_p E_k}{EE}$$

Here, $NRCA_{p,k}$ denotes normalized revealed comparative advantage of product k in country p , $E_{p,k}$ shows the product k export by country p , E_k represents the total global exports of product k ; E_p shows the country p 's total exports and E denotes the total global exports. A higher $NRCA_{p,k}$ value shows more underlying comparative advantage and a smaller value of $NRCA_{p,k}$ denotes the lesser underlying comparative advantage.

Data Sources

The investigation utilizes the observations provided by UN COMTRADE and ITC Trade map for the products covered by Harmonized System (HS) two-digit data under code HS-61 (Articles of apparel and clothing accessories, knitted or crocheted) commodities of the readymade garment sector.

Table 1
Commodities in HS-61 category

HS-Code	Product Category Description
6101	Men's or boys' overcoats, car coats, capes, cloaks, anoraks, incl. ski jackets.....
6102	Women's or girls' overcoats, car coats, capes, incl. ski jackets, windcheaters.....
6103	Men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace
6104	Women's or girls' suits, ensembles, jackets, blazers, dresses, skirts, trousers, ...
6105	Men's or boys' shirts, knitted or crocheted (excluding nightshirts, T-shirts.....
6106	Women's or girls' blouses, knitted or crocheted (excluding T-shirts ...
6107	Men's or boys' underpants, briefs, nightshirts, pyjamas, bathrobes, gowns
6108	Women's or girls' slips, petticoats, briefs, panties, nightdresses, pyjamas.....
6109	T-shirts, singlets and other vests, knitted or crocheted.....
6110	Jerseys, pullovers, cardigans, waistcoats and similar articles, knitted....
6111	Babies' garments and clothing accessories, knitted or crocheted (excluding hats)
6112	Track-suits, ski-suits and swimwear, knitted or crocheted
6113	Garments, knitted or crocheted, rubberised or impregnated, coated or covered.....
6114	Special garments for professional, sporting or other, knitted or crocheted....
6115	Pantyhose, tights, stockings, socks and other hosiery, compression hosiery ...
6116	Gloves, mittens and mitts, knitted or crocheted (excluding for babies)
6117	Made-up clothing accessories, knitted, knitted or crocheted parts of garments ...

Table 1 shows the subcategories of HS-61. Time series data from 2001-2020 on the export of the flagship product of Pakistan textile sector i.e., knitted apparel, which counted under category HS-61 is used for this research. Data is collected from UN COMTRADE, TDAP, Pakistan Bureau of Statistics, Ministry of Textile, and Ministry of finance.

Results and Discussion

Patterns of various exports categories are changing globally. As a result, there is a shifting of the comparative advantage. Pakistan presently has strong competitors in the readymade garment sector particularly in the HS-61 category. China, India, Bangladesh Vietnam and Turkey are the key player in the export of this category. Asian countries such as Bangladesh, China and India are enjoying handsome share of exports in the world.

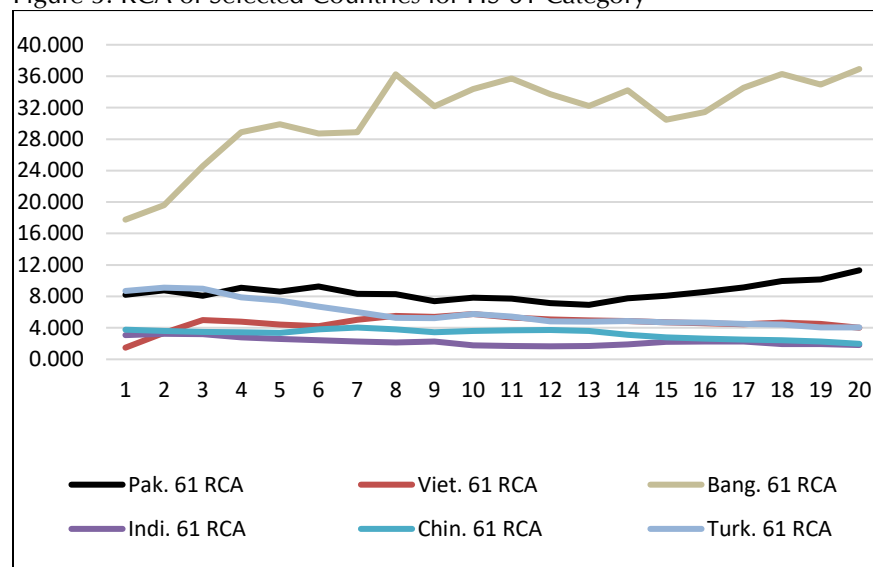
Table 2
RCA of Competitive Countries in HS-61 Category

Year	Pakistan	Vietnam	Bangladesh	India	China	Turkey
2001	8.198	1.484	17.764	3.071	3.777	8.680
2002	8.774	3.356	19.619	3.247	3.616	9.116
2993	8.067	5.013	24.556	3.214	3.493	8.981
2004	9.117	4.785	28.877	2.782	3.453	7.873
2005	8.601	4.422	29.916	2.597	3.379	7.481
2006	9.263	4.207	28.706	2.434	3.821	6.689
2007	8.324	5.014	28.897	2.270	4.044	5.999
2008	8.306	5.541	36.233	2.149	3.795	5.287
2009	7.411	5.388	32.191	2.271	3.463	5.248
2010	7.860	5.759	34.372	1.759	3.590	5.764
2011	7.723	5.332	35.729	1.684	3.692	5.434
2012	7.149	5.085	33.709	1.656	3.727	4.843
2013	6.928	4.956	32.232	1.709	3.622	4.792
2014	7.770	4.886	34.212	1.884	3.140	4.863
2015	8.085	4.723	30.450	2.231	2.781	4.697
2016	8.559	4.580	31.453	2.269	2.651	4.649
2017	9.161	4.465	34.529	2.248	2.524	4.486
2018	9.966	4.679	36.281	1.926	2.427	4.433
2019	10.147	4.489	34.946	1.945	2.282	4.062
2020	11.319	4.001	36.914	1.826	1.975	4.063

Source: Author's calculation

Table 2 shows that Pakistan and all competitive countries having $RCA > 1$ in case of products HS-61. So, all these countries having competitive advantage. Bangladesh is having more revealed comparative advantage throughout years from 2001 to 2020. For the last 20-year, RCA trend of Bangladesh is upward that is why Bangladesh in this category increasing exports significantly. On the other hand, Tukey's RCA over the past 05 years having downward trend. For the last 05 years, Pakistan is having consistent increase in its RCA which indicate that this is the potential category to enhance exports from Pakistan. Vietnam, India and China are having mixed trend and seems that these countries are losing their knitted apparel markets. This may be justified with the probable occurrence of structural transformation in these economies where the resources are shifted toward more productive sectors of the economies.

Figure 5: RCA of Selected Countries for HS-61 Category



Source: Developed by the author based upon data extracted from UN COMTRADE and ITC

Note: Vertical axis measures \$1000.

Figure 5 shows RCA of selected countries for HS-61 category that Bangladesh is having RCA more than all of these countries from 2001 to 2020. Pakistan's RCA is also having upward trend. Trend in case of Turkey is downward. Disadvantage of RCA is that its value is limitless so the higher the value of RCA conveys the message of higher RCA and the value near to zero represent the disadvantage. This is called the asymmetric problem of RCA.

Laursen (2000) suggested the solution of asymmetric problem by simply limits the values of RCA between 1 and -1 as described in methodology section and called Symmetric Revealed Comparative Advantage (SRCA). SRCA of selected countries is measured and presented below.

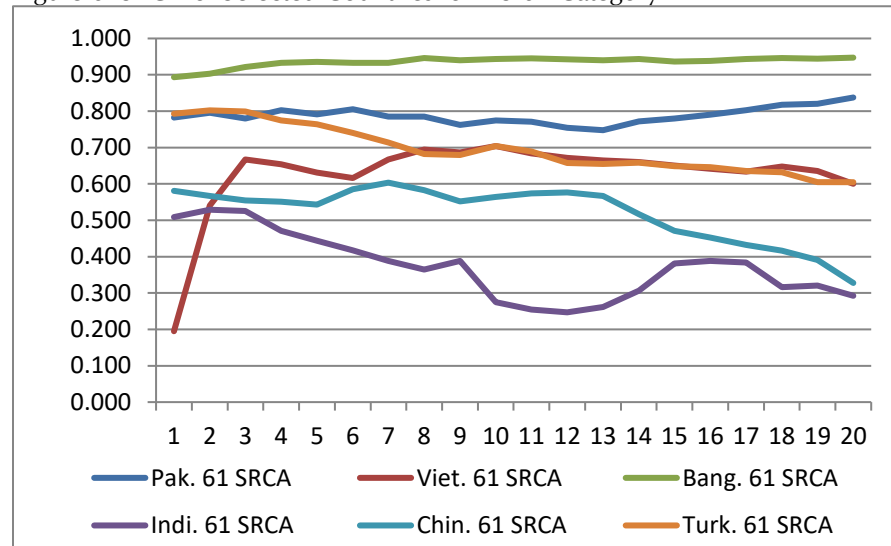
Table 3
SRCA of Selected Countries for HS-61 Category

Years	Pakistan	Vietnam	Bangladesh	India	China	Turkey
2001	0.783	0.195	0.893	0.509	0.581	0.793
2002	0.795	0.541	0.903	0.529	0.567	0.802
2993	0.779	0.667	0.922	0.525	0.555	0.800
2004	0.802	0.654	0.933	0.471	0.551	0.775
2005	0.792	0.631	0.935	0.444	0.543	0.764
2006	0.805	0.616	0.933	0.418	0.585	0.740
2007	0.785	0.667	0.933	0.388	0.603	0.714
2008	0.785	0.694	0.946	0.365	0.583	0.682
2009	0.762	0.687	0.940	0.389	0.552	0.680
2010	0.774	0.704	0.943	0.275	0.564	0.704
2011	0.771	0.684	0.946	0.255	0.574	0.689
2012	0.755	0.671	0.942	0.247	0.577	0.658
2013	0.748	0.664	0.940	0.262	0.567	0.655
2014	0.772	0.660	0.943	0.306	0.517	0.659
2015	0.780	0.651	0.936	0.381	0.471	0.649
2016	0.791	0.642	0.938	0.388	0.452	0.646
2017	0.803	0.634	0.944	0.384	0.432	0.635
2018	0.818	0.648	0.946	0.317	0.416	0.632
2019	0.821	0.636	0.944	0.321	0.391	0.605
2020	0.838	0.600	0.947	0.292	0.328	0.605

Source: Author's calculation

Table 3 shows the SRCA of selected competitive countries where SRCA of Pakistan from 2001 to 2020 is showing upward tendency and approaching to 1. This means that under this commodity Pakistan's export performance is improving. Bangladesh is way ahead of all competitive countries including Pakistan. SRCA is nearly approaching to 1. Here the value near to 1 means more comparative advantage while the value near to -1 means comparative disadvantage. SRCA shows that in knitted apparel Bangladesh and Pakistan are retain the highest competitive advantage compare with other countries.

Figure 6: SRCA of Selected Countries for HS-61 Category



Source: Developed by the author based upon data extracted from UN COMTRADE and ITC

Note: Vertical axis measures \$1000.

Figure 6 shows SRCA of selected countries for HS-61 category that Bangladesh SRCA is far higher than its competitors are. Pakistan's SRCA is also having upward trend in SRCA from 2013-2020. SRCA ignore the global growth export trends of the product which reduces its scope and interpretation for policy insinuation.

NRCA considered the global export patterns by revising the RCA formula. NRC A measures the degree of variations of exports of a country in its relative scale of global exports market which delivers a suitable measure for the underlying comparative advantage as explained in methodology section. A higher value of NRCA represents more comparative advantage while the smaller value indicates comparative disadvantage.

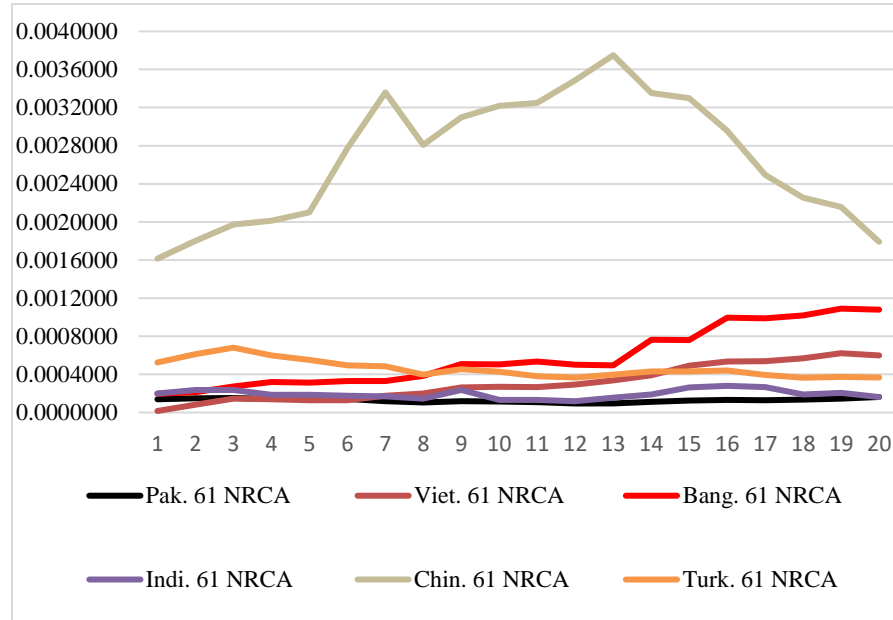
Table 4
NRCA of Selected Countries for HS-61 Category

Years	Pakistan	Vietnam	Bangladesh	India	China	Turkey
2001	0.0001386	0.0000159	0.0001974	0.0001985	0.0016147	0.0005258
2002	0.0001488	0.0000832	0.0002132	0.0002379	0.0017999	0.0006134
2003	0.0001521	0.0001459	0.0002722	0.0002371	0.0019715	0.0006805
2004	0.0001414	0.0001387	0.0003190	0.0001872	0.0020140	0.0006004
2005	0.0001414	0.0001287	0.0003128	0.0001858	0.0021016	0.0005520
2006	0.0001419	0.0001295	0.0003287	0.0001762	0.0027727	0.0004936
2007	0.0001182	0.0001763	0.0003316	0.0001676	0.0033589	0.0004850
2008	0.0001040	0.0001999	0.0003837	0.0001467	0.0028083	0.0003975
2009	0.0001178	0.0002622	0.0005079	0.0002352	0.0030977	0.0004541
2010	0.0001156	0.0002706	0.0005052	0.0001317	0.0032168	0.0004271
2011	0.0001083	0.0002669	0.0005368	0.0001311	0.0032486	0.0003803
2012	0.0000945	0.0002922	0.0005007	0.0001186	0.0034884	0.0003659
2013	0.0000964	0.0003382	0.0004961	0.0001545	0.0037497	0.0003965
2014	0.0001119	0.0003904	0.0007632	0.0001877	0.0033518	0.0004301
2015	0.0001271	0.0004899	0.0007590	0.0002638	0.0033004	0.0004319
2016	0.0001312	0.0005345	0.0009940	0.0002800	0.0029578	0.0004400
2017	0.0001288	0.0005370	0.0009894	0.0002660	0.0024935	0.0003942
2018	0.0001351	0.0005681	0.0010184	0.0001901	0.0022550	0.0003653
2019	0.0001469	0.0006223	0.0010900	0.0002059	0.0021584	0.0003733
2020	0.0001629	0.0005995	0.0010807	0.0001615	0.0017921	0.0003689

Source: Author's calculation

Table 4 indicates underlying comparative advantage of Pakistan and other selected competitive countries. Data shows that Bangladesh & China is having clear underlying comparative advantage over its selected competitors. For example, the NRCA index of China measures the deviation of China's exports in relations to the global exports. NRCA index of China remained highest during 2001 to 2020. When we talk about Bangladesh it remained 2nd highest in period from 2001 to 2020. Pakistan's NRCA improved in the last 5 years. Vietnam is the 3rd highest NRCA which has improved in the last 5 years. Data shows that NRCA of India is having downward trend

Figure 7: NRCA of Selected Countries



Source: Developed by the author based upon data extracted from UN COMTRADE and ITC

Note: Vertical axis measures \$1000

Figure7 NRCA of selected countries for HS-61 category indicates the underlying comparative advantage of Pakistan and other selected competitive countries. Data shows that Bangladesh & China is having clear underlying comparative advantage over its selected competitors. For example, the NRCA index of China calculates the degree of deviation of a country's actual exports from its comparative- advantage-neutral level in terms of its relative scale with respect to the world exports market. NRCA index of China remained highest during 2001 to 2020. When we talk about

Bangladesh it remained 2nd highest in period from 2001 to 2020. Pakistan's NRCA improved in the last 5 years. Vietnam is the 3rd highest NRCA which has improved in the last 5 years. Data shows that NRCA of India is having downward trend.

Bangladesh and China are having largest NRCA which indicate their underlying comparative advantage in product 61 but NRCA of china is gradually going downward. One of the reasons may be that China is gradually going towards Hi-tech. China is the largest exporter of HS 61 Products to the world. Its export stood at \$62.24 billion in 2020 which is 2.043 percent of total exports of all products of China. In the last four years from 2016 to 2020 growth rate of exports of China remained -4 percent per annum, which validate that China is gradually shifting to other hi tech industry. On the other side exports of Bangladesh for Product HS61 were \$19.4 billion in 2020 and growth rate in Product HS61 for the last four years i.e. from 2016 to 2020 was 5 percent which clearly indicate that Bangladesh will be emerging as the major player in the export products of HS 61. It is important to mention here that according to UN COMTRADE, it accounts 45 percent of total exports of all products of Bangladesh. Pakistan's NRCA is the lowest amongst its competitors but it is improving in the last four years. Pakistan's total exports of HS61 products in 2020 were \$3.02 billion which is 13.77 percent of total exports of Pakistan. For the last four years i.e. from 2016 to 2020 export growth remained 7 percent per annum which is very encouraging, It is also evident from NRCA data. Vietnam's exports of HS61 products in 2020 were \$ 13.33bn and 4.74 percent of its total exports. Export in the last four years in the HS 61 grew at the rate of 5 percent. Vietnam's major partner in the export of HS61 are USA, Japan, S Korea and China. Pakistan's major trading partner in the export of HS61 remained the same i.e. EU countries and USA. We could not diversify our market as in the case of Vietnam. India's total export of Hs61 is \$6.12 billion which is 2.22 percent of its total exports of all products. For the last four years export growth remained -6 percent per annum. NRCA also indicate negative underlying comparative advantage in the later years. Turkey's export of Products HS61 is \$8.39 billion and it is 5.30 percent of its total exports of all products. For the last 04 years its growth rate in the export of HS61 product remained -1. NRCA data of Turkey also indicate that Turkey is losing its underlying comparative advantage in the last four years.

Conclusion and Policy Implications

Estimated results are evident that Pakistan is having lowest NRCA as compare to China, Bangladesh, Vietnam, Turkey and India but for the last 5 years it is improving remarkably. Due to structural changes in the Chinese economy, NRCA of China is having downward trend whereas Bangladesh's NRCA

improving significantly. Vietnam is also becoming a big competitor. Negative growth rate shows that China, India and Turkey are losing their underlying comparative advantage. On the other hand, Pakistan, Vietnam having gradual increase in the underlying advantage.

Pakistan should take advantage of its underlying comparative advantage in the export product of HS 61. China and India are losing their underlying comparative advantage over the last few years, Bangladesh is taking full advantage of the situation, and Pakistan should capitalize the situation by enhancing its exports of HS61. Pakistan should also diversify its product within HS61.

Statement: Authors have no conflict of interest.

Contribution: Muhammad Farooq wrote the paper and Nawaz Ahmad reviewed and improved the quality.

REFERENCES

- Andersson, S., Gabrielsson, J., & Wictor, I. 2004. International activities in small firms: examining factors influencing the internationalization and export growth of small firms. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration*, 21: 22–34.
- Balassa, B. 1965. Tariff protection in industrial countries: an evaluation. *Journal of Political Economy*, 73: 573–594.
- Balassa, B. 1989. Policy responses to exogenous shocks in developing countries. In *New Directions in the World Economy* (pp. 32–38). Palgrave Macmillan, London.
- Bowen, H. P. 1983. On the theoretical interpretation of indices of trade intensity and revealed comparative advantage. *Weltwirtschaftliches Archiv*, 119: 464–472.
- Donges, J. B., & Riedel, J. 1977. The expansion of manufactured exports in developing countries: An empirical assessment of supply and demand issues. *Review of World Economics*, 113: 58–87.
- Chaney, T. 2008. Distorted gravity: the intensive and extensive margins of international trade. *American Economic Review*, 98: 1707–21.
- Hussain, S. T., Malik, K., Khan, M. U., Faheem, A., Nabi, I., & Hamid, N. 2013. A comparative analysis of the garments sector of Pakistan. Available at SSRN 3117709.
- Fillis, I. 2007. A methodology for researching international entrepreneurship in SMEs: a challenge to the status quo. *Journal of Small Business and Enterprise Development*.
- Hausman, J. A. 1981. Exact consumer's surplus and deadweight loss. *The American Economic Review*, 71: 662–676.
- International Trade Centre (ITC, 2020), *Pivoting with purpose*. Annual report
- Krugman, P. 1982. The macroeconomics of protection with a floating exchange rate. In *Carnegie-Rochester Conference Series on Public Policy* 16:141–182. North-Holland.
- Larsson, E., Hedelin, L., & Gärling, T. 2003. Influence of expert advice on expansion goals of small businesses in rural Sweden. *Journal of Small Business Management*, 41: 205-212.

- Laursen, K. 2000. Trade specialisation, technology and economic growth. Books.
- Liesner, H. H. 1958. The European common market and British industry. *The Economic Journal*, 68: 302–316.
- MacGregor, R. C., & Vrazalic, L. 2005. A basic model of electronic commerce adoption barriers: A study of regional small businesses in Sweden and Australia. *Journal of small business and enterprise development*.
- Melitz, M. J. 2003. The impact of trade on intra-industry reallocations and aggregate industry productivity. *econometrica*, 71:1695–1725.
- Memedović, O. 1994. On the theory and measurement of comparative advantage: an empirical analysis of Yugoslav trade in manufactures with the OECD countries 1970–1986 (No. 65). Thesis Pub.
- Ministry of Finance, Pakistan Economic Survey 2019-20, Government of Pakistan.
- Ministry of Finance, Pakistan Economic Survey 2020-21, Government of Pakistan.
- Ghani, E., Mahmood, T., & ud Din, M. 2012. Market diversification and firms' characteristics of export-oriented manufacturers in Pakistan. *The Pakistan Development Review*, 103–115.
- Nabi, T., & Kaur, T. P. 2019. Export specialization of India with top five agricultural economies: An application of RCA and RSCA. *International Journal of Innovative Technology and Exploring Engineering*, 8: 4705, 4708.
- Nagy, J., & Jámbo, Z. 2019. Competitiveness in dairy trade—the case of EU and the Visegrad group countries. *AGRIS on-line Papers in Economics and Informatics*, 11: 61–74.
- Oh, H. M., Arnett, D., & An, S. B. 2016. Export Expansion through Indirect Learning: Evidence form Korean exporters. *Journal of Korea Trade*, 1–14.
- Posner, M. V. 1961. International trade and technical change. *Oxford Economic Papers*, 13: 323–341.
- Ruffin, R. J. 1988. The missing link: The Ricardian approach to the factor endowments theory of trade. *The American Economic Review*, 759–772.

- Salvador, R. B., & Cunha, C. M. 2020. Natural history collections and the future legacy of ecological research. *Oecologia*, 192: 641–646.
- Samuelson, P. A. 1948. Consumption theory in terms of revealed preference. *Economica*, 15: 243–253.
- United Nations Commodity Trade Statistics Database (UN COMTRADE, 2020), International Trade Statistics, year book.
- United Nations Economic Commission for Africa (UNECA, 2014) Economic Report on Africa 2014: Dynamic industrial policy in Africa. Addis Ababa
- Vatne, E. 1995. Local resource mobilisation and internationalisation strategies in small and medium sized enterprises. *Environment and Planning A*, 27: 63–80.
- Vollrath, T. L. 1991. A theoretical evaluation of alternative trade intensity measures of revealed comparative advantage. *Weltwirtschaftliches Archiv*, 127: 265–280.
- World Bank (WB,2015), Financing the post-2015 sustainable development agenda, The World Bank, Annual report.
- Yu, R., Cai, J., & Leung, P. 2009. The normalized revealed comparative advantage index. *The Annals of Regional Science*, 43: 267–282.