

Immiserizing Growth Pattern of Pakistan's Export 2014-2018. Analysis Based on Comparative Advantage and Unit Value Structure

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Abstract:

This study aims to specify the changing pattern of comparative advantage of Pakistani exports at the sector and product levels. Export unit value is also used, which is an additional and important factor for this research work. Furthermore, the analysis would check the presence of "immiserizing" export growth. The paper estimates Balassa's RCA Index and compares it with aggregate export value and growth in value and unit value growth in Pakistan over the period 2014-2018. Estimates are presented at the sectoral level as well as the HS six-digit product level.

The study finds that Pakistan has been experiencing "immiserizing" export growth. Unit value growth is not associated with growth in export value or RCA growth. Even in sectors where RCAs are rising, the country is exporting products mainly with low or negative unit value growth. The findings suggested that Pakistan's trade strategy should focus on vertical export diversification - *i.e.*, moving up the value chain in sectors and markets in which we already have significant presence.

Keywords: immiserizing growth; export growth; RCA, unit value; competitiveness; exports.

JEL Classification: F14; F43.

Introduction

Export is considered as life line of any economy in the world. This is one of the basic indicators of prosperity and the development. Every country has comparative advantage in certain products and therefore likely to export to the world. For this purpose, they import the input materials from both domestic as well international sources. Producers involve in export are not limited to domestic markets, the whole world is their targeted market, where opportunities are unlimited. It is therefore given special significance in the developing countries for economic growth.

A country's production depends upon factors of production (land, labor and capital) and the factors which increase productivity. So, every country has difference in factor endowment, which determines the supply of goods both for domestic market and international markets. This phenomenon is considered as "competitiveness". Though there is no agreement on the definition of competitiveness among the scholars¹, however, Reveal Comparative Advantage widely consider as export competitiveness. Low income developing countries have low quality of factor endowments, thus they produce low technological and labor intensive manufactured goods. These characteristics determine its level of comparative advantage and exportable baskets.

¹ World Economic Forum, Global Competitiveness Report 2016-17

Pakistani policy makers and economic management give special attention to the export sectors. However, it is a fact that Pakistani exports are on a declining trend from 2014. During 2013 Pakistan exports was US\$ 25.1 billion, which in 2016 dropped to a level of US\$ 20.5 billion and showed a little improvement of US\$ 23.5 billion in 2018. Its GDP is progressing with a comparatively moderate growth rate in the region, but export growth going in opposite direction. Pakistan has signed preferential trade agreements with important countries of region, which include China, Malaysia, Sri Lanka and Indonesia. The country has get the zero rated market access in European markets under GSP+ program, but its positive impact is still not seen. Low competitiveness and low comparative advantage may be the reasons of our declining export trend.

This study is concerned to specify the changing pattern of comparative advantage of Pakistani exports at the sector and product levels. Export unit value also use for our analysis, which is an additional and important factor for this research work. Furthermore, the growth in export seems immiserizing² export growth², this phenomenon suggests that Pakistan experiencing low export growth in the products which RCA is high. This is the first study which has worked on RCA with the above stated phenomenon.

This paper is organized as follows. Section II presents an eclectic review of RCA related literature. Section III presents the methodology of this study and Section IV discusses our findings. Section 4 concludes.

1. Eclectic Review of the literature on RCAs:

The concept of comparative advantage has a time honored history beginning with the writings of David Ricardo. Comparative advantage is attributed to differences in technological development among trading partners (Khatibi 2008) – these are reflected in cost differences due to differing factor endowments and factor intensities of production – the well-known Heckscher-Ohlin and Samuelson-Stolper theorems follow from Ricardo's theory. The pattern of comparative advantage in global markets that a country has changes as factor productivity changes resulting in changes in factor proportions employed in the production of different exportables. Changing product RCA patterns are an index of changes in factor productivity, reflecting technological adaptation. Comparative advantage should be seen as a dynamic concept. National policy must aim at producing changes in comparative advantage product structure which reflect increasing levels of technological sophistication in exportable. The Revealed Comparative Advantage (RCA) concept reassures mainly supply side determinants of the export structure. Equally important are demand related determinants of export performance (Bender and Lee 2002). As discussed at length by Porter (2009) comparative advantage is distinct from competitive advantage – the latter reflects a country's ability to produce exportables³ that have high income and low price elasticity of demand in targeted markets. Determinants of comparative advantage and competitiveness factors overlap but are not identical. In particular the export strategies of the major firms and the institutional infrastructure which sustains these strategies is of vital importance in determining global competitiveness level and growth, Ezoala-Hamison (2009) (Wu and Chen 2004).

Thus changing patterns of RCAs are a rough and ready measure of changes in the competitiveness of firms in global products (and services) markets. Roughly it may be said that if RCA's are increasing for products the unit value of which is also rising over time, the country's global specialization pattern is synchronized with its ability to export products with the 'right' demand elasticity. Theory then predicts a correspondence between the growth of comparative advantage and competitiveness measures – which should be reflected at least partially in correspondence between rising RCA values and rising unit value product (HS 6-digit level).

French (2014) accepts the widespread use of the RCA measure. In his view the usefulness of the RCA measure emerges from its ability to reflect changes in trade barriers (both tariff and non-tariff). He therefore advocates an RCA bilateral index which measures effects of trade barriers of specific trade partners (say China) on a country (Pakistan's) exports. Given the availability of appropriate data French advocates that a trade responsiveness index based on the RCA concept can be calculated to estimate the relative sensitivity of trade flows to changes in trade costs of different suppliers to a particular destination.

Brakman and Marrewijk (2015) argue that while the conventional RCA concept is an appropriate measure of the structure of international trade if such trade is not fragmented – *i.e.*, computers are made and exported exclusively in country *X* rather than assembled in *X* from inputs manufactured in countries *Y*, *Z*, *n*. However, commodity trade has become increasingly fragmented. Brakman and Marrewijk (2015) therefore advocate that RCA should be calculated using value added rather than gross export value data (Johnson 2014, Johnson and

² The term immiserizing growth first introduced by Bhagwati (1958) and further explained in Bhagwati (1987). The detail explanation is also given by Shaffer (2018)

³ That is both goods and services

Norgura 2012, Tremer *et al.* 2013). Value added trade data has been provided by WIOD for the period 1995-2009 for 40 countries – including 28 EU countries, Australia, Brazil, Canada, China, India, Indonesia, Japan, Mexico, Russia, Taiwan, Turkey and the USA. It is shown by several authors utilizing this data that there is a significant difference in RCA patterns when calculated on the basis of gross output and value added basis.

Slike N. and Lu Benli (2014) estimated RCA measures for 27 products exported by Nepal – 11 of which were found to have RCA values greater than unity. Herciu (2013) compared Romania's trade competitiveness with that country's international competitiveness. RCA's exceeded unity in three out of 7 sectors but Romania ranked very low on almost all the 12 competitiveness pillars of the Global Competitiveness Index reported in 2012 Global Competitiveness Report. This shows that RCA's are a relatively weak measure of world market competitiveness. Mzumara, and colleagues, has estimated RCA structures for several African countries - Uganda and SADC member countries including Angola, Malawi and South Africa. (Mzumara 2013, Mzumara *et al.* 2013a, Mzumara *et al.* 2013b, Mzumara 2016). He finds significant differences in South Africa's RCA structure than that of other African countries. South Africa's comparative advantage is in the chemicals, metals and machinery sectors, while other African countries had high RCA values in textiles and food products.

There is another view of considering RCA as a level of competitiveness, for example studies by Abbas and Waheed (2017), and Munir and Sultan (2019) has analyzed Pakistan's trade competitiveness in selected products group and selected markets. The former study concluded that Pakistan has more competitiveness in Agriculture commodities than manufacturing commodities; however, there are serious in its methodology of conducting estimation. They have selected 2-digit HS level and claiming to represent different product sector, which are obviously nor representing any product neither representing any particular sector. Further, they considered Chapter 52 and 41 as products in agriculture sector, which misleading, as these Chapters represent Cotton yarn and fabrics and prepared leather. The later study analyzed the RCA of Pakistan's products at 3-digit SITC level in its border sharing countries. Though the products were selected at significant disaggregate level, but price of the products is not considered for making final conclusion. This study is distinct in the sense that have considered the products at most disaggregate level of 6-digit HS level and export unit price for Pakistan's changing export pattern.

Despite the limitations of the RCA concept, particularly as a tool assessing trade and macro policy its continued use illustrates the prevailing resilience of Ricardo's path breaking, insight regarding the impact of differences in factor productivity in determination of enduring trade structures at the international level. Building on the several contributions of Eaton and Kortum (2002) Costinot and Donaldson (2012) have provided some theoretical foundations for this insight relaxing the most stringent assumptions underlying Ricardo's two country model. Habib (2019) analyzed the export performance and potential through trade, reciprocity and intensity indexes, While Santos and Khan (2018) considered RCA and one of the key factor of inward FDI. If we accept the RCA measure as an (at least partial) estimator of productivity its relevance remains evident.

2. Methodology

Due to the unavailability of value added trade data we use Balassa's (1965) formula for estimating changes in Pakistan's RCA pattern at HS 6-digit level. The formula is:

$$RCA_i = \frac{X_{ij}}{X_{wi}} / \frac{X_{iw}}{X_{w.tot}} \quad (1)$$

where: X_{ij} = export of commodity j by country i ; X_{wi} = country i 's total exports; X_{iw} = the world's export of commodity j ; $X_{w.tot}$ = the world's total exports

RCA with values greater than one show that the share of a country i 's export (j) in its total export value exceeds the corresponding share of the same commodity (j) in global exports, in a given year. This has been traditionally interpreted as reflecting country i 's specialization in commodity j . RCAs < 1 indicate that country i has no comparative advantage in the exports of commodity j . (Krugel and Mathew (2009)

RCA levels at 6-digit commodity level were than compared with unit value⁴ trends at the same level over the same time period. This was done to estimate whether Pakistan's RCAs pattern is evolving in accordance with appropriate global market trends. Data was obtained exclusively from the TDAP and WITS data base on national

⁴ Unit value calculated Pakistan's export value of a specific commodity at 6-digit HS-level divided by export quantity in KG. Therefore, the unit value is in US\$ per Kg., there are some commodities which unit value is given in \$ per specific quantity, for example, leather gloves (HS420329 and 420321) unit value is in \$ per dozen etc., this is calculated by using data of PBS.

and global exports and price trends.

3. Results

Table-1 presents RCAs for the 2014-2018 period for the major sectors of the economy (defined at 2-digit level). RCAs with values greater than one in each of the five years (2014-2018) are to be found in (a) textiles (b) apparel (c) cereals (rice), (d) live animals and fish, and (e) horticulture sectors. Spices have RCA>1 values in three years as did edible products (especially sugars and confectionaries). The gems and jewelry sector recorded an RCA above unity in only one year (2014).

Table 1. RCAs at 2-digit sectoral level 2014-2018

Sectors	HS Chapter	YEARS				
		2014	2015	2016	2017	2018
Live animal, meat and fish	01-03	1.325	1.427	1.631	1.593	1.832
Dairy and honey	04-05	0.950	1.082	1.065	0.904	0.925
Horticulture	06-08	2.372	2.163	2.737	2.369	2.572
Spices	09	0.773	0.979	1.256	1.139	1.219
Cereals and products	10-11	15.842	11.433	11.966	12.534	13.201
Oil seed and veg oil	12-15	1.138	1.609	1.364	1.218	0.802
Edible products	16-22	0.859	0.965	1.896	1.544	1.395
Meals	23	0.377	0.508	0.599	0.693	0.392
Tobacco	24	0.583	0.426	0.450	0.405	0.218
Minerals petroleum	25-27	0.430	0.270	0.303	0.346	0.335
Chemicals and Pharma	28-38	0.161	0.170	0.182	0.191	0.174
Plastic and rubber	39-40	0.482	0.491	0.421	0.347	0.305
leather and fur	41-43	7.923	7.797	7.986	8.200	7.454
wood and products, paper book	44-49	0.144	0.182	0.221	0.235	0.215
Textiles	50-60	14.381	15.637	15.314	14.192	12.879
Apparel	61-63	11.784	11.863	11.996	12.536	12.917
Footwear and hedger umbrella	64-67	0.618	0.562	0.555	0.623	0.562
Stones and glass products	68-70	0.232	0.259	0.269	0.282	0.195
Gems/Jewel	71	0.579	1.756	0.430	0.152	0.016
Metal and products	72-83	0.266	0.354	0.309	0.308	0.249
Machineries	84-85	0.037	0.034	0.044	0.039	0.028
Transportation	86-89	0.032	0.033	0.031	0.025	0.019
Miscellaneous	90-99	0.372	0.438	0.316	0.339	0.316

Source: UNCOMTRADE through WITS, author' calculation

Sectors with increasing RCA value trends included (a) live animals and fish, (b) edible products and food manufactures, (c) food residues and wastes (meals), (d) chemicals and pharmaceuticals, (e) cereals and products, (f) leather, (g) stones and glass and most importantly (h) apparel. On the other hand, RCAs are relatively stagnant in the textile sector. We have argued elsewhere (Ansari and Siddiqui 2017) that a vertical export diversification strategy is most suitable for Pakistan. Vertical export diversification involves focusing on expanding exports along a supply value chain in sectors within which Pakistan already has a foothold in key global markets. This is in contrast to a horizontal export diversification⁵, where focus is on opening up new markets and penetrating sectors in which the country does not at present have a significant presence.

We advocate a vertical export diversification strategy on the grounds that linking up in global value chains of selected multinationals opens up opportunities for construction of long term trade and investment partnerships with major market players. Also it is relatively easier for our leading exporting firms to efficiently upgrade production and marketing operations in commodities/areas of current specialization. We therefore consider a vertical export diversification strategy more beneficial for Pakistan than an export strategy targeting new markets or products not linked to supply chains in which Pakistan's leading export firms do not at present have significant market presence.

Table 2 presents data on the number of products with RCAs>1 in 2014 and 2018. There are 658 commodities in which Pakistan has had a comparative advantage in 2018, 31.2% of these are from the textile and 26.9% from the apparel sector, thus more than 40% of relatively specialized products are in other sectors – live animal and fish, leather products, chemicals and metal products sectors together account for 153 products

⁵ Which may or may not involve product diversification of country exports.

(about 25%) of the total, with RCA values greater than unity during most of the 2014-2018 period. However, in 2018 products with $RCA > 1$ in these sectors had decreased to 121 - just 18% of total such products.

Table 2. Number of products with $RCA > 1$ classified by sectors for 2014-2018

HS Chapters	Sectors	Years	
		2014	2018
50-60	Textiles	202	201
61-63	Apparel	170	159
01-03	Live animal, meat and fish	40	40
25-27	Minerals petroleum	22	30
28-39	Chemicals and Pharma	35	28
72-83	Metal and products	39	28
41-43	leather and fur	23	25
06-08	Horticulture	21	19
16-22	Edible products	19	19
12-15	Oilseed and veg oil	18	18
90-99	Miscellaneous	19	16
84-85	Machineries	28	14
68-70	Stones and Glass products	11	11
04-05	Dairy and honey	11	10
44-49	Wood and products, paper book	8	9
09	Spices	10	8
10-11	Cereals and products	12	6
64-67	Footwear and Headger Umbrella	9	6
23	Meals	5	5
40	Rubber	3	4
24	Tobacco	3	1
71	Gems/Jewel	3	1
86-89	Transportation	2	0
01-99	TOTAL	712	658

Source: Author's calculation

Mineral products, food manufactures, horticulture, machinery and miscellaneous product account for an additional 12% of the total in 2018. A vertical export diversification strategy should then focus on these sectors. Sectors with a very small number of commodities with relatively high RCA values are wood and paper products, stone and glass, footwear and headgear dairy products, vegetable and edible oils jewelry and tobacco.

Table 3 shows that nearly a fourth of total products exported by Pakistan have RCA values greater than one – and this proportion has remained relatively constant during 2014-1 with a small decline in both total number of products exported and the number of exports with $RCA > 1$. There is thus no evidence that export structure is evolving in a manner which reflects our global comparative advantage. However, the share of products with $RCA > 1$ has increased modestly in apparel, fish, and leather sectors. But the number of products with $RCA > 1$ exported in the fish and leather sectors remains small. In the textile sector the number of products with $RCA > 1$ has remained constant while in the apparel sector products with $RCA > 1$ has decreased in 2018 as against 2014.

It is clear that we need to develop a strategy for greater product specialization within both the chemical and the machinery sectors, where total number of products exported is relatively large but number of products exported with RCA values > 1 is miniscule. It is depressing that products with $RCA > 1$ and total number of products exported have declined during the 2014-2018 period. It is thus clear that Pakistan has lost comparative strength in global markets. The total number of exports with $RCA > 1$ has declined during 2014-1 and the total number of products with $RCA > 100$ remained constant at about 1.5% during 2014-2018. For the textile sector products with $RCA > 100$ declined from 7.6% in 2014 to 6.2% in 2018. For apparel RCA products with value greater than 100 as proportion of total products exported were 4.1% in 2014 and 4.6% in 2018.

Table 3. Share of products with RCA>1 in sectors in 2014 and 2018

Sectors	Products with RCA>1		Total products		Share of RCA>1 products in total	
	2014	2018	2014	2018	2014	2018
Fish	25	26	48	46	52.1	56.5
Food items	78	69	289	289	27.0	23.9
Chemicals	35	28	353	310	9.9	9.0
Leather	28	30	63	59	44.4	50.8
Textiles	202	201	395	370	51.1	54.3
Apparel	170	159	266	260	63.9	61.2
Machineries/Tools	43	27	668	616	6.4	4.4
TOTAL	581	540	2082	1950	27.9	27.7

Source: UNCOMTRADE through WITS, author's calculation

We now present a disaggregated analysis of export value, value growth rate, RCAs and unit value growth in the major sectors of our export portfolio. This analysis consists of four sectors, which total export value is above US\$ 1 billion.

Table 4. Food items which had high export value

HS Code	Product description	RCA		Export value in \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit value
Total Fish Exports				4,600,950	4,010,982		
100630	Semi-milled/wholly milled rice, wheat	63.15	52.78	1,892,481	1,416,145	-5.83	-3.59
100640	Broken rice	74.99	193.31	157,699	490,358	45.42	-5.94
110100	Wheat/meslin flour	43.57	46.94	351,781	323,007	3.40	6.10
220710	Undenatured ethyl alcohol of an alc	16.63	29.77	161,429	231,498	42.23	-38.90
170199	Cane/beet sugar and chemically pures	0.00	14.63		230,133	47.03	-7.37
080520	Mandarins, incl. tangerines and satsu	20.97	27.20	120,896	171,720	9.42	3.37
070190	Potatoes other than seed potatoes,	19.36	32.58	102,111	122,499	29.10	5.14
080410	Dates, fresh/dried	52.14	59.38	64,082	83,200	7.38	4.33
220720	Ethyl alcohol and other spirits, dena	18.42	32.92	87,001	76,678	-0.47	-42.08
081340	Dried fruit (excl. of 08.01-08.06)	19.39	53.51	22,736	66,387	39.92	3.34

Source: UNCOMTRADE through WITS and author's calculation.

Table 4 presents data on the ten leading food sector exports ranked in terms of value, RCA and aggregate value and unit value growth. The top ten commodities in this sector accounted for 64.3% of total food sector export value in 2014 and 80.1% in 2018. Of these ten products five had negative unit value growth rate – milled rice, broken rice, un-denatured ethyl alcohol, cane and beat-sugar and denatured ethyl alcohol – together these five products accounted for about 61% of total food sector exports in 2018. Positive growth rates of the remaining five leading unit value growth food sector exports ranged from 3.37 to 6.10 (*i.e.*, quite low). Average value growth rates were high for broken rice, un-denatured ethyl alcohol and cane sugar. RCA values were high and rising for all major food sector commodities – though there was a declining trend for milled rice.

Table 5 lists commodities within the food sector, which have experienced the highest unit value growth during 2014-2018. They accounted for just 2% of total food sector export value in 2014 and also in 2018. However, vigorous growth has been experienced by several product groups in this table, cane sugar, potatoes, vegetables products and mixtures, fresh fruit and mucilages & thickeners. Their RCA however remain low and have fallen in many cases. High value and high unit value growth has been experienced by cane sugar potatoes, vegetable products, cereal straw, fresh fruit and thickeners. Clearly we are not specializing to take account of unit value growth in the food sector. This illustrates our weakness in moving up the supply chain – from raw products to food manufactures.

Table 5. Food items which had high growth rates in unit value

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit value
Total Food sector Exports				4,600,950	4,010,982		
170111	Cane sugar, raw, in solid form, not	0.10	0.29	2,576	4,223	33.50	865.86
071010	Potatoes, uncooked/cooked by steami	0.35	1.52	109	273	244.14	38.98
140490	Vegetable products.(excl. of 1404.2	4.86	5.52	2,939	4,643	144.83	29.27
120799	Oil seeds and oleaginous fruits (excl	5.01	1.12	3,783	1,567	0.63	25.57
080450	Guavas, mangoes and mangosteens, fres	22.46	14.57	44,732	40,901	-0.22	25.42
071090	Mixtures of vegetables, uncooked/co	16.07	2.36	19,384	2,405	-38.84	23.83
121300	Cereal straw and husks, unprepared, w	36.92	59.45	14,474	21,309	10.63	22.79
120921	Lucerne (alfalfa) seed, of a kind u	3.77	3.32	1,371	1,616	8.89	22.35
081090	Fresh fruit, n.e.s. in Ch. 8	1.87	2.93	5,102	11,844	45.09	22.33
130239	Mucilage's and thickeners (excl. of 13	0.00	1.90	3	2,569	2589.97	20.79

Source: UNCOMTRADE through WITS, and author's calculation

Table 6. Leather items which had high export value 2014-2018

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit value
Total Leather sector Exports				1,388,506	1,380,053		
420310	Articles of apparel, of leather/com	64.86	70.19	370,060	320,666	-2.99	-23.74
420329	Gloves, mittens and mitts, of leather	57.76	81.56	154,597	201,449	7.15	0.58
950662	Inflatable balls	82.28	85.18	148,496	168,832	4.19	-29.98
411310	Leather further prepared after tann	80.64	139.18	137,253	121,848	-2.08	7.97
410712	Leather further prepared after tann	7.93	20.24	46,398	120,461	29.19	-29.11
420321	Gloves, mittens and mitts, of leather	148.80	158.15	116,614	107,123	-1.87	-28.41
640399	Other footwear without outer soles	1.77	2.08	65,414	74,260	3.67	-28.55
410792	Leather further prepared after tann	13.84	15.74	53,282	60,618	5.20	-30.08
410719	Leather further prepared after tann	34.11	22.91	67,070	38,315	-11.38	-28.23
411200	Leather further prepared after tann	42.84	33.09	54,885	33,693	-10.28	-25.30

Source: UNCOMTRADE through WITS, and author's calculation

Table 6 lists leading leather exports ranked in terms of value, RCA and value unit value AAGR. They accounted for 87.5% of total sectoral export value in 2014 and 90% in 2018. Unit value growth was negative in the case of eight of the ten commodities. Positive unit value growth was experienced only by leather prepared after tanning (411310) and gloves (420329). Value AAGR was negative for five of the ten leading leather exports – this included only one commodity for which unit value growth was positive, 411310. Relatively higher value AAGR was experienced by only two commodities one of which had high negative unit value growth rate. RCA's on the other hand were high and showing an increasing trend for eight of these ten commodities. Leather gloves had high AAGR and moderate unit value growth.

Table 7. Leather items which have high growth rates of unit value 2014-2018

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit Value
Total Leather sector Exports				1,388,506	1,380,053		
420340	Clothing accessories (excl. of 4203	9.46	16.79	2,749	4,363	33.26	16.91
411310	Leather further prepared after tan	80.64	139.18	137,253	121,848	-2.08	7.97
410441	Tanned/crust hides and skins of bovine	0.08	1.63	150	2,647	1699.86	2.07

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit
420329	Gloves, mittens and mitts, of leather	57.76	81.56	154,597	201,449	7.15	0.58
420100	Saddlery and harness for any animal	5.52	3.94	9,167	7,736	-2.11	-2.60
420500	Articles of leather/of composition	1.87	1.09	6,304	4,772	-6.59	-7.12
640320	Footwear with outer soles of leather	19.47	14.18	15,825	12,453	30.90	-21.51
640420	Footwear with outer soles of leather	1.58	1.83	1,311	1,425	16.49	-22.01
640319	Sports footwear other than ski-boot	0.40	0.10	2,371	454	-27.02	-23.29
410419	Tanned/crust hides and skins of bovine	0.02	1.01	39	1,555	1790.16	-23.49

Source: UNCOMTRADE through WITS, and author's calculation

Table 7 presents data on the ten leather sector commodities which experienced the highest unit value growth during 2014-1. They account for 23.7% of sectoral value in 2014 about 26% in 2018. Six of these ten leading unit value products actually have negative unit value AAGR during 2014-2018. Unit value growth is positive only for clothing accessories, leather prepared after tanning, tanned hides and skin and leather gloves. RCA values have risen significantly for clothing accessories, tanned leather, gloves and footwear. RCA values are significantly higher for leading leather commodities. The share of the positive unit value growth leather sector commodities in total sectoral exports in 2018 was about 29% with leather prepared after tanning (411310) and gloves (420329) accounted for 23.5% of sectoral exports.

Table 8. Clothing/Apparels items having high Export value 2014-2015

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit value
Total Clothing Exports				7,582,738	8,246,419		
630260	Toilet linen and kitchen linen, of te	78.42	93.41	746,683	820,717	2.42	-1.24
620342	Men's/boys' trousers, bib and brace o	19.28	26.80	636,311	762,104	4.84	-35.75
630231	Bed linen (excl. knitted/crocheted)	140.59	160.98	796,473	744,958	-0.11	-3.53
630210	Bed linen, knitted/crocheted	288.68	360.98	521,550	654,701	7.17	-3.11
630239	Bed linen (excl. knitted/crocheted)	470.06	472.84	573,595	588,002	1.02	-2.59
620462	Women's/girls', trousers, bib and bra	16.41	20.90	435,464	528,521	5.13	-36.36
630710	Floor-cloths, dish-cloths, dusters	123.40	131.95	358,220	396,831	2.64	-28.69
610590	Men's/boys' shirts, knitted/crochet	233.10	257.76	258,468	262,020	1.05	-2.44
610510	Men's/boys' shirts, knitted/crochet	41.00	41.94	350,389	240,342	-8.57	-33.13
610910	T-shirts, singlets and other vests, k	6.74	6.76	265,714	203,756	-6.23	-32.50

Source: UNCOMTRADE through WITS, and author's calculation

Table 8 lists ten leading clothing sector exports ranked in terms of export value, RCAs and value and unit value growth rates in 2014 and 2018 – export value growth is negative in three product group (non-knitted bed linen, men's shirts and T-shirts). The share of the top ten commodities in total clothing export value fell from 59.9% in 2014 to 54.9% in 2018. Value AAGR of these ten commodities is modest during 2014-2018, the highest earning recorded by knitted bed linen (7.2%). Unit value growth is negative in all ten leading clothing products (ranging from minus 36% to minus 1.24%). High negative unit value growth was recorded for women's/girls' trousers (-36.4%), men's/boy's trousers (-35.8%), men's/boys' knitted shirts (-33.1%), T-shirts (-32.5%) and Floor cloths (-28.7%). RCA's in most cases were very high and in most cases rising moderately.

Table 9 lists clothing sector commodities with the highest unit value growth during 2014-2018. These accounted for just 1.7% of sectoral export value in 2014 and 1.8% in 2018. Unit value growth was negative or negligible in three of the ten leading unit value growth product group. It exceeds 100% in the case of sacks and bags and 10% in the case of men's overcoats, other sacks/bags and rags. Together these four products accounted for less than one percent of total clothing sector export value in 2018. RCA values for most high unit value products are high but relatively stagnant.

Table 9. Clothing/Apparels items having high Export value 2014-2018

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit Value
Total Clothing Exports				7,582,738	8,246,419		
630533	Sacks and bags, of a kind used for th	2.19	4.09	6,145	11,476	26.84	122.94
610190	Men's/boys' overcoats, car-coats, c	14.87	44.00	4,240	14,593	39.81	20.28
630539	Sacks and bags, of a kind used for th	24.33	39.87	9,642	21,008	33.15	10.52
631090	Used/new rags, scrap twine, cordage	40.93	54.72	18,231	19,337	1.84	10.41
630900	Worn clothing and other worn articles	1.33	2.04	7,543	11,388	15.25	8.95
630251	Table linen (excl. knitted/crochete	18.85	34.04	14,147	16,754	9.97	5.56
630291	Toilet linen and kitchen linen other	25.85	12.36	24,604	11,096	-6.47	2.62
630229	Bed linen (excl. knitted/crocheted)	148.24	132.13	33,145	19,781	25.45	0.03
610310	Men's/boys' suits, knitted/crochete	20.90	52.25	5,530	13,539	29.98	NA
620329	Men's/boys' ensembles (excl. knitte	8.87	38.60	7,491	12,362	21.73	-52.82

Source: UNCOMTRADE through WITS, and author's calculation

We are experiencing “immiserizing growth” with respect to our clothing exports⁶. Leading clothing exports have negative unit value growth and high and moderately rising RCAs. The commodities which have high unit value growth within this sector yield a miniscule share of total clothing sector export value. We are failing to link up to a global clothing sector value chains which can enhance the value added content of our clothing sector exports.

Table 10. Textiles items having high export value, 2014-2018

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit Value
Total Textiles sector Exports				5,998,148	4,670,456		
520512	Cotton yarn, single (excl. sewing t	180.35	214.26	843,545	1,017,987	7.60	-3.39
520942	Woven fabrics of cotton, containing	75.18	125.91	348,869	447,171	7.45	-27.29
520812	Woven fabrics of cotton, unbleached	78.30	96.41	131,888	214,956	14.27	-33.68
520932	Woven fabrics of cotton, containing	88.93	130.81	151,975	168,766	3.12	-36.20
520912	Woven fabrics of cotton, containing	211.70	412.41	104,283	162,881	15.51	-5.93
520532	Cotton yarn, multiple(folded)/cable	366.10	328.49	298,642	152,229	-11.45	-10.76
551341	Woven fabrics of polyester staple f	233.63	73.19	175,822	136,102	-4.20	-30.19
521021	Woven fabrics of cotton, containing	350.12	456.91	83,351	114,907	10.68	-27.51
520100	Cotton, not carded/combed	12.28	7.19	359,348	105,092	-24.17	-11.08
520522	Cotton yarn, single (excl. sewing t	131.95	86.36	215,622	102,651	-16.05	-9.20

Source: UNCOMTRADE through WITS, and author's calculation

Table 10 lists highest export value yielding textile sector products. Together these ten leading products accounted for 45% of sectoral export value in 2014 and 57% in 2018. Value AAGR was negative in three cases and exceeded 10% in the case of unbleached woven fabrics (520812), cotton woven fabrics (520920), cotton yarn and cotton woven fabrics (521021). Unit value growth was highly negative in all of the ten cases. RCA values were high and rising in most cases. Our share of world trade was increasing but we were earning less and less per unit of export from the textile sector.

Table 11 lists highest unit value growth products from the textile sector. Export value from these accounts for 3.1% of total sectoral export value in 2014 and 4.2% in 2018. Thus while the share of thigh unit value growth textile sector products remains very low it nevertheless has doubled during the 2014-2018 period. Negative

⁶ This concept formulated by Jagdish Bhagwati in the 1950s connotes a situation in which exports are growing at the cost of declining unit values.

growth in export value has been experienced by four of the high unit value growth commodities but very high value AAGR has been experienced by woven fabrics of jute, knitted netting of twine woven fabrics of cotton (521151), cotton waste and yarn waste. Unit value average growth has been high and increasing in seven of the ten leading unit value growth rate products. This illustrates that we are more market competitive in certain segments of the textile sector than we are in the clothing sector. However, the share of products with high RCA and high growth unit value remains small and in the overwhelming majority of textile sector product group (at HS 6-digit level) we continue to experience immiserizing growth.

Table 11. Textiles items having high unit value growth 2014-2018

HS Code	Product description	RCA		Export value in US \$ thousand		Average annual growth rate	
		2014	2018	2014	2018	Value	Unit value
Total Textiles sector Exports				5,998,148	4,670,456		
520821	Woven fabrics of cotton, containing	72.90	93.76	39,417	37,529	-1.09	90.45
531090	Woven fabrics of jute/other textile	54.41	37.35	3,921	1,346	84.41	21.96
520291	Garnetted stock of cotton	33.50	60.62	3,369	3,161	8.50	21.29
560819	Knotted netting of twine, cordage/r	0.02	81.11	22	93,841	90104.3	16.68
520210	Yarn waste (incl. thread waste), of	188.70	149.91	33,013	12,285	-18.08	14.09
560129	Wadding; other articles of wadding	64.19	67.80	5,554	3,749	-7.49	10.05
520299	Cotton waste other than yarn waste	40.90	76.25	29,326	29,940	5.52	10.03
590700	Textile fabrics othw. impregnated,	3.10	4.59	4,163	5,204	19.11	5.84
521225	Woven fabrics of cotton (excl. of 5	86.86	80.45	7,976	5,896	-4.99	4.93
521151	Woven fabrics of cotton, containing	26.30	60.66	1,031	3,336	141.41	4.78

Source: UNCOMTRADE through WITS, and author's calculation

Table 12. Commodities with high RCA, high value and high unit value growth 2014-18

Sector	Commodities	Value in 2018 (\$ thousand)	RCA		AAGR 2014-2018	
			2014	2018	Value	Unit Value
Fish	Prawns	59,732	1.81	2.83	24.07	6.37
	Fish	14,385	3.61	1.59	23.80	14.49
Food	Cereal straw	21,309	36.92	59.45	21,309.00	10.63
	Fresh Fruits	11,844	1.87	2.93	45.09	22.35
Clothing	Sacks/bags	11,476	2.19	4.09	26.84	122.94
	Men's overcoat	14,593	14.87	44.00	39.81	20.28
	Other sacks	21,008	24.33	39.87	33.15	10.52
	Worn clothing	11,388	1.33	2.04	15.25	8.95
	Table linen	16,754	25.88	34.04	9.97	5.56
Textiles	Knitted twine	93,841	0.02	81.11	90,104.30	16.68
	Cotton waste	29,940	40.90	76.25	5.52	10.03

Source: UNCOMTRADE through WITS, and author's calculation

Table 12 lists commodities of 4 major sectors, with high RCAs, high value and unit value growth rates over 2014-2018, the export value of which exceeded \$ ten million in 2018.

Of the 1950 products in 2018 exported by Pakistan only 14 meets the criteria of (yielding value in excess of \$ 10 million, (b) having rising RCA values in excess of unity with the exception of fish HS-030379) and toilet articles HS-392490), (c) value AAGR in excess of 5% and (d) unit value AAGR in excess of 5% during 2014-2018. Total value yielded by these 14 products amounts to about US\$ 380 million - *i.e.*, about 2% of total export value realized in 2018. Products with these characteristics - substantial revenue yields, rising RCAs relatively high value and unit value AAGR during 2014-2018 - represent 0% of total export revenue in the leather and machinery sectors, about 22% of sectoral value in the fish sector, less than 1% of food sectoral value 12% of chemical sector export value, less than 1% of clothing sector revenue and less than 3% in the textile sector aggregate value in 2018. Overall it is clear that the technological content of our export portfolio is very low. It

cannot be compared with even a relatively small member of the BRICS group - South Africa. As Mzumara (2016) has shown of the 657 products with $RCA > 1$ that South Africa currently exports. 300 products are in the chemical, metal, machinery and transportation equipment sectors.

Spearman's rank correlation coefficient was estimated for 6-digit HS level sectors, ranked by RCA values on the one hand and unit value growth values on the other. Table 13 reports our results Spearman's rank correlation was negative for 9 out of 16 sectors - alarmingly including the clothing sector. Spearman's rank correlation was below 0.1 for as many as 5. Positive and significant rank correlation was estimated for spices and oil seeds. Exports of these commodities accounted for only 1.3% of total exports revenue in 2018.

Table 13. Correlation between RCA and unit value average growth rate

Sectors	Rank Correlation
Meat and Fish products	-0.09
Dairy and Honey	-0.26
Horticulture	-0.08
Spices	0.45
Cereals	0.01
Oil seed and Vegetable oils	0.16
Food items	0.07
Minerals and Petroleum	-0.01
Chemicals and Pharmaceuticals	0.07
Leather	-0.02
Textiles	0.02
Clothing/Apparels	-0.29
Stones/Glass and products	-0.10
Metals & products	-0.02
Machineries	-0.03
Miscellaneous	0.03

Conclusion

This article compares Pakistan's RCA with export value growth and unit value growth for the period 2014-1 and found immiserizing export growth. Our analysis provides sufficient evidence that our trade structure is out of sync with world trade patterns. RCA, value and unit value growth is significant as about 12% RCA values are high and rising in the rice, leather, textiles and clothing sector, but the share of products with relatively high RCA values in total export value has remained constant and has fallen in the clothing sector. Major exports have negative unit value growth – this is especially true for the textile and clothing sectors.

Products with high unit value growth have a miniscule share of total sectoral value in all sectors with the exception of minor sectors such as pharmaceuticals and fish products. There is a positive association between high value growth and high unit value growth also in the food sectors. Association between aggregate value growth and unit value growth is particularly low in the major sectors *i.e.*, leather and apparel sectors. Textile sector performance is also weak however the share of high unit value growth products in aggregate sectoral value has doubled during 2014-2018 (from approx. 2% to 4%). It is clear that we are slightly more competitive in some segments of the textile as against the clothing sector.

Spearman's rank correlation coefficient shows a depressing fact that we have not succeeded in moving up the value chain in the product groups in which we specialize - clothing, textiles, leather, and chemicals. Our trade strategy is focused on opening up new markets - through FTAs, PTAs etc. What is required is pursuit of vertical export diversification in markets in which we already have a foothold through building up firm to firm supply chain linkages.

References

- [1] Abbas, S., Waheed, A. 2017. Trade competitiveness of Pakistan: Evidence from the revealed comparative advantage approach. *Competitiveness Review*, 27(5): 462-475. DOI: <https://doi.org/10.1108/CR-12-2015-0092>
- [2] Ansari, J.A., and Siddiqui, A.H. 2017. *Analysis of export growth 2010-2015 and Policy suggestion*, Karachi, Trade Development Authority of Pakistan (TDAP)
- [3] Balassa, B. 1965. *Trade liberalisation and revealed comparative advantage*, Yale University, Economic Growth Center. DOI: <https://doi.org/10.1111/j.1467-9957.1965.tb00050.x>

- [4] Bender, S., and Li, K. 2002. *The changing trade and revealed comparative advantage of Asian and Latin American manufacture exports*, Yale University, Economic Growth Center, Discussion Paper, 843 p.
- [5] Bhagwati, J.N. 1958. Immiserizing growth: A geometrical note. *Review of Economic Studies*, 25(3): 201–205.
- [6] Bhagwati, J.N. 1987. *Immiserizing growth*, in J. Eatwell, M. Milgate and P. Newman (eds.), *The New Palgrave*, 2, 718-720 pp.
- [7] Brakman, S., and van Marrewijk, C. 2015. *A closer look at revealed comparative advantage: Gross-versus value added trade flows*, CESifo Working Paper Series 5321, CESifo Group Munich
- [8] Costinot, A., and Donaldson, D. 2012. Ricardo's theory of comparative advantage: Old idea, new evidence. *American Economic Review*, 102(3): 453-58. DOI: <https://doi.org/10.1257/aer.102.3.453>
- [9] Eaton, J., and Kortum, S. 2002. Technology, geography, and trade. *Econometrica*, 70(5): 1741-1779.
- [10] French, S. 2014. *Revealed comparative advantage: What is good for?* UNSW Business School Research Paper No. 2014-39B, 47 p.
- [11] Habib, D.S. 2019. Iraq's Foreign Trade Performance: A Critical Analysis. *Journal of Applied Economic Sciences*, Volume XIV, Summer, 2(64): 393 – 402. DOI: [https://doi.org/10.14505/jaes.v14.2\(64\).09](https://doi.org/10.14505/jaes.v14.2(64).09)
- [12] Herciu, M. 2013. Measuring international competitiveness of Romania by using Porter's diamond and revealed comparative advantage. *Procedia Economics and Finance*, 6, 273-279.
- [13] Khatibi, A. 2008. *Kazakhstan's revealed comparative advantage vis-à-vis the EU- 27*, ECIPE WP, 03
- [14] Munir, K., and Sultan, M. 2019. Export competitiveness with border-sharing countries: An assessment of Pakistan. *Competitiveness Review: An International Business Journal*, 29(2): 96-118. DOI: <https://doi.org/10.1108/CR-08-2017-0046>
- [15] Mzumara, M., and Chingarande, A. 2016. Inter-sectoral comparative and competitive advantages of South Africa. *Pakistan Journal of Applied Economics*, 26(1): 1-14.
- [16] Mzumara, M., Chingarande, A., and Karambakuwa, R. 2013. An analysis of the revealed comparative in Southern African development community member states. *Journal of Sustainable Development in Africa*, 15(4):1-15.
- [17] Mzumara, M., Chingarande, A., and Karambakuwa, R. 2013. Intra-sectoral competitiveness of Angola, *Greener Journal of Economics and Accountancy*, 2(3): 74-82.
- [18] Mzumara, M., Karambakuwa, R., and Chingarande, A. 2013. Malawi's intra-industry competitive advantage, *Greener Journal of Economics and Accountancy*, 2(3): 92-100.
- [19] Porter, M.E. 1990. The competitive advantage of nations. *Harvard Business Review*, 68(2): 73-93.
- [20] Santos, E., Khan, S. 2018. Foreign direct investment policies and catching-up. *Journal of Applied Economic Sciences*, Volume XIII, Winter, 7(61): 1821-1853.
- [21] Shaffer, P. 2018. *Explaining immiserizing growth*. In A. deHaan (Ed.) Forthcoming. *The Edward Elgar Handbook on Inclusive Growth and Development*. (Reprinted as Q-Squared Working Paper No. 69. Trent University, Canada. Available at: https://www.researchgate.net/publication/327403156_Explaining_Immiserizing_Growth_In_A_deHaan_Ed_Forthcoming_The_Edward_Elgar_Handbook_on_Inclusive_Growth_and_Development_Reprinted_as_QSquared_Working_Paper_No_69_Trent_University_Canada_Summer_2018
- [22] Slike, N., and Benli, L. 2014. *An examination of Nepal's export choice based on revealed comparative advantage*, NRB Economic Review, 75-89 pp.
- [23] Wu, H.L., and Chen, C.H. 2004. Changes in the foreign market competitiveness of East Asian export, *Journal of Contemporary Asia*, 34(4): 505-522. DOI: <https://doi.org/10.1080/00472330480000241>