DETERMINANTS OF EXPORTS COMPETITIVENESS: AN EMPIRICAL ANALYSIS THROUGH REVEALED COMPARATIVE ADVANTAGE OF EXTERNAL SECTOR OF PAKISTAN

Muhammad Saqib Irsahd[1+]
Qi Xin[2]

[1]*Ph.D Scholar at College of International Education, Tianjin University of Finance and Economics, Tianjin China*
[2]*President of College of International Education, Tianjin University of Finance and Economics, Tianjin, China*

(+ Corresponding author)

ABSTRACT

In this paper, we have endeavored to analyze a sector-wise export performance of Pakistan using Revealed Comparative Advantage with the global market. Data for the period 2003-2015, Harmonized System (HS) 1988/92 developed by the World Customs Organization (WCO) are employed in the analysis. We have observed that Pakistan foreign trade concentrated limited products and markets for many years and there are no serious attempts to diversify its export share to the world. Empirical results show that Pakistan is not a major trading player in the international trade. However, it is a major trading player in some of its export items such as, textile and clothing sector, Vegetable, and hides and skins sector which have prominent revealed comparative advantage. Pakistan should diversify its exports and improve its trade diplomacy.

Contribution/ Originality: The paper's primary contribution is finding of export performance of Pakistan using Revealed comparative advantage (Balassa index) for all external sectors. Empirical results revealed that some sectors in Pakistan have export potential with the world that can help Pakistan to reduce its chronic trade deficit.

1. INTRODUCTION

Apart from foreign direct investment exports has been one of the determinants of upholding higher economic growth, better schooling and life expectancy due to their assimilation in the world economy. Developing countries like Pakistan can enlarge their markets by allowing firms exporting and achieving economies of scale. Exporting is one of the prominent channels of technology transfer to other nations (Pack, 1993). Normally industrial policies are prepared to stimulate exports (see figure A in the appendix for foreign trade flow of Pakistan). The export competitiveness or export performance generally can be measured by several factors, for instance, real exchange rate, comparative advantage, terms of trade, geographic concentration, trade policies, world income etc. We have employed Revealed Comparative Advantage (RCA) to check export competitiveness of Pakistan. This study will examine the determinants of export performance of external sector of Pakistan with help of RCA Balassa index.

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Trade policy in Pakistan has a significant role in growing or lessening overall exports of Pakistan. Pakistan's economy has depended on the agricultural sector in the premature stages of development, because of lacking in industrial base and infrastructural capability in the early stage of development. Consequently, efforts were put to construct a strong industrial base for industrial and as well as for Pakistan's development. Due to favorable export policies for example reduction in tariffs and other nontariff measures changed and modestly improved the export pattern of Pakistan. The export patterns of various exports are altering globally owing to liberalization and technological improvements. These adjustments have caused changing the comparative advantage and additions in productivity of different commodities and sectors of world economies.
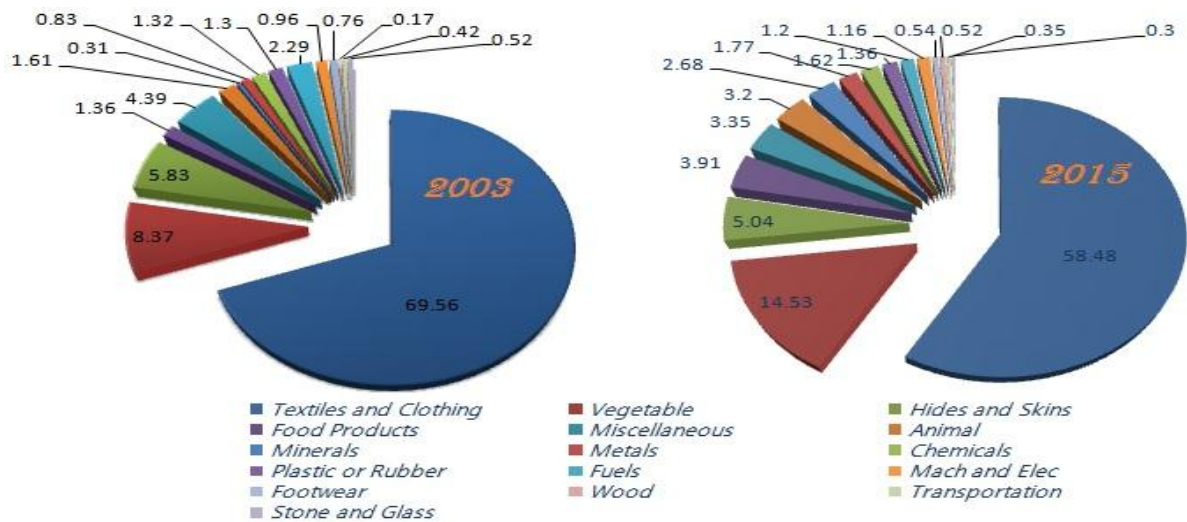

Figure-1. Comparative analysis of total Exports by product share of Pakistan to World market (Percentage Share)
Source: Authors own calculations based on World Integrated Trade Solution 2016.

Figure 1 demonstrates the story behind product exported by Pakistan to the global World. Textile and clothing sector prominent and have a major share in Pakistan's exports since many years. Pakistan's export commodities do not prove any noteworthy change over the years. For the last few years, Pakistan's exports are showing a waning trend. International trade without any quota restrictions has formed opportunities for developing and emerging countries. Several countries availed this opportunity and strengthened their exports, whereas others abortive to take advantage. Pakistan was among the latter category. Economic hypothesis and empirical evidence have obviously established the relations between trade, productivity, and economic development. Countries that have bulky internal markets have also gained from desegregation into the global economy and opening up their economies (Muhammad, 2017).

Pakistan has been aggressively pursuing an open gate economic policy over the past decades. It was the first country in South Asia that adopted a liberal economic policy by deregulating and lessening government control, encouraging the private sector, and privatizing state's assets and liabilities (Muhammad, 2016). Pakistan at present faces big threats from the major giants' competitors in the region. Some Asian economies like Bangladesh, India, China, Thailand, South Korea and Malaysia are enjoying a better share of exports in the present circumstances across the world, predominantly after liberalization. In these changing circumstances, fast global changing in export pattern and economic achievements of several Southeast Asian economies present an example to Pakistan to follow up export-led growth strategies. Pakistan's external sector such as textile and clothing has a potential to compete in both hindered and unhindered markets and to accomplish higher productivity growth. Certainly, trade liberalization generates competitiveness and transfers technology that directs to productivity growth. Consequently, it was thought that quota elimination would have led to changes in export structures of textile and clothing sector of Pakistan through comparative advantage (Nawaz and Rukhsana, 2013). The export competitiveness or export performance

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generally can be measured by several factors, for instance, real exchange rate, comparative advantage, terms of trade, geographic concentration, trade policies, world income etc. However, the standard practice is to use revealed comparative advantage index. This part of the study examines the determinants of export performance of external sector of Pakistan with help of RCA Balassa index. RCA index determines export performance and export pattern of countries.

2. REVIEW OF LITERATURE

There are some studies done by researcher and policy makers to highlight the determinants of exports competitiveness such as Mahmood (2004) used RCA Balassa index to calculate comparative advantage for the nonagricultural sector of Pakistan. RCA index can be used for commodity specific and region specific but cannot conclude the future comparative advantage. Rahmaddi and Ichihashi (2012) investigated competitiveness of manufacturing exports and export's structure for Indonesian economy by using RCA measure. Their study concluded that export performance of Indonesia deteriorated due to product concentration or deficiency of diversification product composition. Amongst other causes of deteriorating the export performance of Indonesian economy was the specialty in those products which utilize abundant natural resources and unskilled labor. Hence study concluded that Indonesian economy depends on the export of stumpy and intermediate technology which was not successful in improving its export performance.

A country's share in the global market can be diverse by a number of factors. Deficiency of infrastructure and macroeconomic volatility may deteriorate country's export performance. In addition, poor governess, resources endowments and degree of technology affect overall performance and export competitiveness of an economy. The geographic position of a country, cultural similarities and its relation with the trading partner also influence the export performance of a country. A study conducted by Amador and Cabral (2008) using constant market share analysis of Portuguese economy for the time 1968-2006. Explains the results of a market share of Portugal to the world export were compared with benchmark countries such as Ireland and countries of South Europe. The study also compared manufactured exports enlargement and world exports expansion and originate that if Portuguese exports growth is higher than the world export growth than its share will be higher in the world market. A stable market share analysis fragmented country's growth of its exports into four core components. Foremost component explains that boost in world exports also affects the export level of a country. The second factor explains production composition effect which may transform country's competitive advantage because of specialization in products. Thirdly export concentration that is calculated by market distribution effect which amplifies actual exports due to elevated share in the market. The study also revealed that market distribution effect is a most important component in measuring market share.

Today's World in the epoch of globalization seeing as the beginning of the third millennium because economies started out to be integrated since then in terms of goods, traditions, trade, investments and various others factors (Muhammad, 2016). Despite, export demand and export supply play a significant role in changing export shapes through comparative advantage. Theoretically, comparative advantage occurs from factor endowments and from differences in technology (Ruffin, 1988). In a market economy, export ascertains revealed comparative advantage and this way is compatible with the traditional approach of factor endowment of comparative advantage. The RCA calculation does not differentiate factor endowment effect as of trade policy effect. Furthermore, it provides a signal on the movement in the comparative advantage of every region. Nevertheless, different trade theories provide dissimilar determinants of comparative advantage, for instance, Ricardian considered cost and technological dissimilarities as determinants of comparative advantage. Alternatively, Samuelson (1948) measured factor price differences as determinants of comparative advantage. The Neo-Factor-Proportion theory paying attention to factor efficiency while product cycle model by Posner (1961) enlightened that technological innovation is a cause of differences in comparative advantage. In the later time, Memedovic (1994) explained a type of state for example

(organizational capacity, mode of intervention and class base) and regime (Government) intervention can bring alterations in comparative advantage. The trade policies differentials between Latin American along with East Asian region are responsible for variation in comparative advantage and not caused by factor endowment.

3. OBJECTIVES OF THE STUDY

The objective of the study is to distinguish the competitiveness of Pakistan's external sector over the period 2003 to 2015 with the global market and various selected Asian countries. This study examines comparative advantage of Pakistan's external sector through revealed comparative advantage (RCA) (Balassa, 1965) at Harmonized System (HS 2-digits, 1988/92) aggregative level. The Present study goal is to provide a qualified position of leading sectors such as textile and clothing, Hides and Skins, a Vegetable sector of Pakistan in the foreign markets and with major trading partners.

4. THEORETICAL FOUNDATION OF REVEALED COMPARATIVE ADVANTAGE

To estimate a country's comparative advantage or comparative disadvantage in commodities, industries or sectors many researchers uses standard approach or methodology for RCA index. Theoretically, we can measure comparative advantage in requisites of relative prices, when there is no trade. We have borrowed theoretical foundation of RCA from Nawaz and Rukhsana (2013). In accordance with Ricardian theory, comparative advantage happens due to technological dissimilarities across nations, whereas the H-O theory considers cost dissimilarities occurs due to differences in factor prices across countries, assuming constant technology. Hence, we summarize that trade theories in the classical framework are based on the pre-trade relative price differentiations across countries. Although measuring comparative advantage through H-O theory has several constraints, predominantly, the pre-trade relative price is immeasurable (Balassa, 1989). Because of these difficulties, Balassa (1965) suggested that it is not essential to observe all ingredients disturbing comparative advantage of any country rather one should examine patterns of trade. Consequently, data on exports clarifies revealed comparative advantage, which is practicable and commonly accepted the measure. Balassa Index is only paying attention to estimating comparative advantage of any nation instead of focusing on determining its sources. Nevertheless, after (Balassa, 1965) number of studies improved the definition of RCA such as Memedovic (1994); Donges and James (1977); Vollrath (1991) and Bowen (1983) etc. Another range of RCA indices comprises Normalized Revealed Comparative Advantage Index (NRCA) that gives comparison over time and space (Yu *et al.*, 2009). A number of measures estimate comparative advantage in bilateral trade such as Dimelis and Gatsios (1995). Nevertheless, Liesner (1958) first time empirically studied RCA by subsequent measure

$$RCA_1 = X_{ij}/X_{nj}$$

Where X_{ij} is the export of country i for j commodity or industry and n represent set of countries.

Balassa (1965) considered a comprehensive measure that is widely accepted in literature. The RCA Balassa index is expressed as following.

$$RCA_2(Balassa\ Index) = (X_{ij}/X_{in})/(X_{wj}/X_{wn})$$

Where X_{ij} is the export of country i, for, j commodity and n is a set of all exported commodities of country i, while X_{wj} represents the export of world for same commodity j and X_{wn} is a world export of all n commodities. According to the results of this index if RCA_2 >1 then a country has a comparative advantage, if RCA_2<1 then a country has a comparative disadvantage in that commodity or industry. Another RCA by Balassa explains Net Export Ratio (NER) takes into account the possibility of imports and exports simultaneously but it checks trade performance its own not with any reference country or rest of the world. This index is shown as following.

$$RCA_3(NER) = (X_{ij}/M_{ij})/(X_{ij}/M_{ij})$$

This index ranges from -1 to +1 and in the case of $X_{ij} = 0$ there will be revealed comparative disadvantage but if $M_{ij} = 0$ there will comparative advantage. However, zero value creates ambiguity (Greenaway and Milner, 1993). Another version derived from the Balassa index captures the effect of imports and this index can be written as following.

$$RCA_4 = (X_{ij}/X_{it})/(M_{ij}/M_{it}) = (X_{ij}/M_{ij})/(X_{it}/M_{it})$$

Here X_{ij}, M_{ij} are exports and imports of country i for j commodity or industry respectively, while X_{it}, M_{it} are exports and imports of i country for t set of commodities or industries.

In another index derived from Balassa (1965) logarithm of export to import ratio is taken. This index can be shown as following

$$RCA_5 = log(X_{ij}/X_{it})/(M_{ij}/M_{it}) * 100 = log(X_{ij}/M_{ij})/(X_{it}/M_{it}) * 100$$

Vollrath (1991) suggested three alternative indices for the measurement of comparative advantage. These indices are called Relative Trade Advantage (RTA) Revealed competitiveness (RC) and Relative Export Advantage (REA). The positive values obtained in theses indices indicate comparative advantage while negative values point out comparative disadvantage. But these indices have a drawback of distorting trade patterns when government intervenes in trade policies through export subsidies and import restrictions. Greenaway and Milner (1993) suggested using a price-based measure of RCA to avoid these distortions in trade pattern caused by policy intervention and this measure is called implicit revealed comparative advantage (IRCA). Vollrath (1991) confesses that revealed export advantage index may be used commonly because it reduces the effects of distortions. One must remember that indices suggested by Balassa and Vollrath are not comparable as these are based on different circumstances and concepts. RTA shows the difference between relative export and relative import advantage is calculated as mentioned below.

$$RCA_6 = RTA = RXA - RMA$$

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

$$RCA_7 = RC = log(RXA) - log(RMA)$$

Vollrath (1991) published another measure of comparative advantage in Logarithm form. Where captures the difference of relative export and import advantage in logarithm. Some authors tried to overcome the problems of Balassa (RCA) including Laursen (2000); Proudman and Stephen (1998); Hoen and Oosterhaven (2006). Although authors at the different time provided alternative measures but no one succeeded in rule out all shortcomings and still Balassa index is recognized as a standard index, Yu *et al.* (2009). The index developed by Yu *et al.* (2009) estimates the degree of deviation of its actual export over time from neutral level i.e. (comparative advantage). This index is called normalized revealed comparative advantage index (NRCA). In the present study, we prefer using Balassa index because foreign trade sector of Pakistan exports and its commodities to the rest of the world under conditions imposed by World Trade Organization (WTO) but not by any strong domestic trade policy intervention. Therefore, factors determined by domestic policies may not influence exports data. According to Balassa exports data is enough to measure RCA. On the other hand, Balassa is also considered standard index for comparative advantage.

5. METHODOLOGY AND SOURCE OF DATA

The Balassa (1965) of RCA is defined as a country's share in global exports of a commodity/product divided by its share of total worldwide exports. First, we will estimate RCA of all external sectors of Pakistan against global market. Second, calculate top three sectors where Pakistan has a comparative advantage over competitors in the region and in the end to compare top three sectors of Pakistan with major competitors in the region. Finally, we will categorize the comparative analysis of Pakistan with his competitors such as India, China, Bangladesh, Indonesia,

Thailand, Malaysia, Vietnam, and Taiwan. For this purpose, annual data has been taken from the website of WTO, WITS, and UNCTAD. Data is taken in million USD for RCA analysis. The study may also facilitate in understanding the composition of goods traded between Pakistan and global market. The outcomes will also help to realize if Pakistan has RCA for the same goods in its bilateral trade with other countries as in the trade with the whole world. We have shortlisted the commodity categories at the HS-2 digit level. We have analyzed all external sectors of Pakistan time period 2003 to 2015. This index is calculated as follows;

$$RCA_{ij} = (X_{ij}/X_{it})/(X_{wj}/X_{wt})$$

Where X_{ij} is the export of country i, for, j commodities and t is set of all exported commodities of country i, while X_{wj} represents the export of world for same commodity j and X_{wt} is a world export of all t commodities. According to the results of Balassa index if $RCA_2 > 1$ then a country has a comparative advantage, if $RCA_2 < 1$ then a country has a comparative disadvantage in that commodity or industry.

6. ECONOMETRIC RESULTS OF RCA

The Export pattern of Pakistan is enormously concentrated in few of product classification such as textiles and clothing sector which cover 60 percent of Pakistan's exports to the world. The cause behind is a dependency on agricultural based commodities such as cotton.

Table-1. Pakistan Revealed comparative advantage for Sector wise products exports to World (HS 1988/92)

HS	Product Group	03	04	05	06	07	08	09	10	11	12	13	14	15
50-63	Textiles and Clothing	12.7	14.1	14.7	15.4	15.8	14.5	13.8	13.87	14.5	14.3	15.07	14.6	16.6
41-43	Hides and Skins	8.21	8.31	8.73	8.46	9.41	10.1	9.21	8.91	8.11	8.14	8.79	8.62	8.47
06-15	Vegetable	2.87	2.69	3.65	3.79	3.39	3.88	2.95	4.4	3.89	3.23	3.99	3.54	2.37
01-05	Animal	0.81	0.82	0.73	0.9	0.86	0.92	0.88	0.96	1.05	1.03	1.25	1.21	0.81
64-67	Footwear	0.66	0.74	0.77	0.71	0.72	0.69	0.65	0.59	0.61	0.76	0.8	0.86	0.8
16-24	Food Products	0.53	0.69	0.46	0.6	0.57	1.1	0.77	0.64	0.79	0.96	1.33	1.05	0.79
90-99	Miscellaneous	0.47	0.48	0.55	0.55	0.5	0.58	0.49	0.45	0.45	0.44	0.47	0.5	0.52
39-40	Plastic/Rubber	0.37	0.29	0.34	0.27	0.25	0.38	0.33	0.37	0.35	0.41	0.35	0.33	0.28
68-71	Stone and Glass	0.32	0.32	0.27	0.31	0.56	1.13	2	1.79	1.4	2.46	0.7	0.34	0.11
25-26	Minerals	0.29	0.36	0.31	0.31	1.26	2.76	1.9	1.34	1.13	1.22	1.58	1.58	1.67
72-83*	Metals	0.17	0.2	0.22	0.27	0.29	0.26	0.34	0.37	0.38	0.5	0.39	0.32	0.32
28-38	Chemicals	0.13	0.08	0.14	0.13	0.09	0.1	0.13	0.13	0.13	0.13	0.18	0.15	0.08
27	Fuels	0.13	0.09	0.11	0.2	0.23	0.21	0.12	0.17	0.18	0.16	0.16	0.26	0.24
44-49	Wood	0.06	0.05	0.05	0.06	0.05	0.05	0.05	0.13	0.1	0.09	0.11	0.1	0.05
84-85	Mach and Elec	0.03	0.03	0.03	0.03	0.03	0.04	0.05	0.04	0.05	0.03	0.03	0.03	0.03
86-89	Transportation	0.02	0.02	0.03	0.04	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.02	0.02

(*Excluding 77) **Source:** Author own calculations based on WITS database 2016

Hence, cotton-oriented manufactured products for example yarn, knitted, cotton clothes and woven products of Pakistan captured the demand of overseas markets. Product concentration deteriorated overall exports earning not merely for Pakistan but for other developing countries too. Lower tendencies in exports are the consequences of mutually supply and demand side factors. On the supply side, structural impediments in commodity producing sector, an elevated cost of production, low-level expertise and in competitiveness have also hurled the exports. Investment both domestic and foreign in exporting sectors has lingered disturbingly low, as aggressive competitions with economies like Vietnam and Bangladesh, bestows tough time to Pakistan's exports. On the demand side, the leading factors impeding Pakistan's exports growth is the slouch in the economies of major trading partners, like China and EU. In the case of USA, although its import demand remained modest through these years, Pakistan has not been proficient to supply into this market for the reason that of change in market preferences (Pakistan Economic Survey

2015-16). Textile and clothing sector of Pakistan witnessed highest share in exports similarly it has a maximum comparative advantage among other product groups. Hides and skins also show revealed comparative advantage for many years (see table 1).

A careful analysis of table 1 reveals that textiles and clothing sector have clear RCA over the year following are hides and skins, vegetable also has prominent RCA throughout the years. The results are also indicating a mounting but constant trend in comparative advantage of textile and clothing sector, hides and skins, and vegetable sector. While there has been a mixed trend in comparative advantage of animal and food products sector. Animal sector of Pakistan is showing volatility in comparative advantage because its values over the period remained unstable. The composition and size of global trade have witnessed major changes during the previous two decades. Trade liberalization, growing income, and technological advancements have been the major determinants. Against the backdrop of a rapidly shifting global export pattern, and the economic achievements of Southeast Asian economies, there is a well-built case for Pakistan to practice an export-led growth strategy that leads eventually to improve living standards. Nonetheless, given Pakistan's past macroeconomic performance and its existing export structure, such a turnaround would demand a major structural revolution and transformation of the economy and changes in its export specialization patterns.

In the Asia region, many other countries are a specialist in the textile and clothing related goods such as China, India, Bangladesh, Thailand, and Vietnam. Pakistan faces gigantic competition market environment in the export market while exporting to the same regions as competitors'. We have calculated the RCA of top three exports of Pakistan in the major competitor country's exports. International trade is important to the economy of Pakistan because the country needs to import a variety of products to fulfill the increasing demands resulting from its economic recovery and expansion (Muhammad and Qi, 2015).

Table-2. RCA Comparative analysis with major competitors in the region

Product ---> Group	Textiles and clothing			Hides and Skins			Vegetable		
	2005	2010	2015	2005	2010	2015	2005	2010	2015
RCA of Pakistan	14.7	13.87	16.6	8.73	8.91	8.47	3.65	4.4	2.37
RCA of China	2.67	2.72	2.21	3.62	2.95	2.22	0.36	0.25	0.22
RCA of India	3.62	3.34	3.61	3.11	2.45	2.87	1.94	1.54	1.76
RCA of Bangladesh	18.20	22.63	23.36	3.7	2.36	2.28	0.19	0.18	0.16
RCA of Thailand	1.19	0.94	0.73	0.92	0.74	0.77	1.31	1.39	1.36
RCA of Malaysia	0.26	0.29	0.26	0.06	0.06	0.06	1.63	2.22	1.63
RCA of Indonesia	1.84	1.78	2	0.55	0.51	0.58	2.59	3.49	4.05
RCA of Vietnam	3.40	4.68	4.10	2.82	3.23	3.19	3.74	2.98	1.84
RCA of South Korea	0.92	0.68	0.61	0.56	0.39	0.44	.07	0.05	0.04
RCA of Sri lanka	11.03	12.45	13.58	0.89	0.53	0.50	6.29	5.55	4.35

Source: Author own calculations based on WITS data base 2016

Table 2 reveals the comparative advantage of three major sectors in Pakistan exports where Pakistan has a highest comparative advantage and other competitors also witnessing revealed comparative advantage in the same sectors. Exports of Bangladesh in textile and clothing sector are higher than Pakistan and have a bigger figure in RCA results too. The share of China exports in world market accounts USD 273.64 billion compared to the Pakistan USD 13 billion in the same year 2015 (see table B in the appendix). China also has a clear RCA in textile and clothing sector and hides and skins sector but in vegetable, sector showing disadvantage. China being a major player in world trade and has the highest share of world exports (Qi, 2014).While Bangladesh got the benefit of Generalized Scheme of Preference (GSP) plus status that was given to 49 Least Developed Countries by EU in early 2001 including Bangladesh. EU permitted complete access to quota and tariff free exports from these Least Developed Countries to EU, and Bangladesh improved his level textiles and clothing sector to get maximum output which will help the

economy to reduce balance of payments and Bangladesh boosts his exports and almost doubled than Pakistan in the 2015 year which was less than Pakistan in 2005 in the textile and clothing sector (see table B in appendix). China had an almost stable position in clothing sector too, while India has a low comparative advantage than its competitor and RCA of Indian clothing sector remained volatile and declined after liberalization. Similarly, for Hides and Skins Pakistan has high comparative advantage followed by China, India, Bangladesh, and Vietnam. Vegetable sector of Pakistan also has an increasing trend in comparative advantage and chase by Sri Lanka, Indonesia, Vietnam, and India. China's international trade has witnessed brisk growth in recent years. China's emergence as a major player in world trade is a significant development in the global trade system (Muhammad and Qi, 2015).

7. CONCLUSION AND POLICY RECOMMENDATIONS

After critically examine the external trade sector of Pakistan, we have identified that there have been structural and repeated changes in external sector of Pakistan. Internally there has been a gigantic increase in import demand due to economic growth. Conversely, the world economy grew by approximately 5 percent during same time period except for world economic crises year and brought an extensive expansion in world's trade. This rapid growth in worldwide trade has been a motivating energy for growth in almost every country of the world.

Pakistan's economic growth has been impressive since 2000, mainly in consequence of its moderate macroeconomic strategies and structural reforms. The government of Pakistan should protect infant industries through tariffs and various tax concessions. Pakistan still lags behind in export diversification. Textiles and clothing sector still contributes more than 65 percent of the total exports. This sector is now experiencing greater competition in international markets. There is a great need to concentrate on the issues that make obstacles in securing market access and economic associations with global markets especially with friend countries if Pakistan really wants to chase the policy of export-led growth profitably. Reducing industrial and non-industrial expenditures of manufacturing, improving labor productivity and growing industrial productivity are significant factors for persistent economic growth in Pakistan.

The estimations for the year 2003 to 2015 provide evidence on the movement in the pattern of revealed a comparative advantage for Pakistan's all external sectors at HS-2 digit level and comparison analysis with selected countries such as China, India, Bangladesh, Thailand, Malaysia, Indonesia, Vietnam, South Korea and Sri Lanka. Pakistan has a growing movement in comparative advantage in textiles and clothing sector following by hides and skins and Vegetable sectors. The revealed comparative advantage index is greater than other countries for Pakistan's top three product group and nearly stable over the years.

The dominance of the textiles and clothing sector is reliable with Pakistan's existing natural and human factor endowments. Conversely, Pakistan has failed to move from low value-added unqualified labor-intensive to technology-intensive high-value-added manufacturing. Presently climate of rapid trade liberalization, Pakistan's textiles and clothing sector and the rest prominent sectors will come under increasing competitive pressure from lower cost producers. The extent to which Pakistan can be achieved in its drive to shift into high-value-added export industries, in which information and technology intensive industries play an essential role, depends upon an importance of research and development, technology capacity, and pace of technology transfer. Likewise, the capability of Pakistan's institutional and socio-economic infrastructure to provide supportive conditions for industrial restructuring should not be underestimated. The quality and nature of human capital desired for an industrial transformation would become an essential issue to overcome.

APPENDIX

Figure-A. Foreign Trade Flow of Pakistan (US$ billions)

Source: Author's own calculations based on ITC & UN COMTRADE statistics

Table-A. Sector wise exports of Pakistan (US$ Million)

Product Group	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All Products	11930	13379	16050	16933	17838	20279	17555	21413	25344	24614	25121	24722	22089
Textiles and Clothing	8298	8917	10259	10870	10739	10628	9640	11610	13582	12921	13671	13773	12918
Vegetable	999	1019	1591	1618	1769	3020	2357	2904	4138	3344	3569	3438	3210
Hides and Skins	695	783	999	998	1084	1150	849	1035	1150	1132	1274	1290	1113
Food Products	162	211	244	294	305	571	350	429	590	656	1275	1054	863
Miscellaneous	524	658	576	592	520	646	558	601	669	954	702	768	739
Animal	192	166	207	241	259	337	361	458	581	616	720	711	706
Minerals	37	66	144	159	349	769	644	679	689	841	858	797	592
Metals	100	128	201	202	273	307	314	414	523	641	536	545	391
Chemicals	158	162	293	231	206	249	335	308	376	371	400	421	358
Plastic or Rubber	155	173	307	299	203	306	315	418	559	535	467	376	301
Fuels	273	362	675	841	994	1230	715	1203	1312	331	527	648	265
Mach and Elec	114	148	215	233	287	446	321	393	349	290	294	353	256
Footwear	91	106	156	136	115	135	119	95	114	104	111	135	119
Wood	20	30	31	33	32	52	54	60	87	100	126	135	114
Transportation	50	378	80	101	527	126	87	170	100	83	89	82	77
Stone and Glass	63	72	71	83	178	305	535	637	524	1694	502	197	67

Source: Author own calculations based on WITS data base 2016

Table-B. Comparative analysis of Pakistan with Competitors' export to the world in the same sector and their percentage share in total world exports (Values in US$ billions)

Product Group	Year/ Percentage Share in World Total exports	Pakistan	China	India	Bangladesh	Thailand	Malaysia	Indonesia	Vietnam	Sri Lanka	Total
Textiles and clothing	2005	10	108	17	8	7	3	13	5	5	542
	% share	1.8	19.9	3.1	1.5	1.3	0.6	2.4	0.9	0.9	100
	2010	12	200	27	17	8	3	11	13	4	678
	% share	1.8	29.5	4	2.5	1.2	0.4	1.6	1.9	0.6	100
	2015	13	274	37	21	7	3.1	9	25	5	880
	% share	1.5	31.1	4.2	2.4	0.8	0.4	1	2.8	0.6	100
Hides and Skins	2005	1	16	2	.24	1	.06	.5	.42	.02	80
	% share	1.3	20	2.5	0.3	1.3	0.1	0.6	0.5	0	100
	2010	1.1	23	2	.3	.8	.07	.4	1	.02	104
	% share	1.1	22.1	1.9	0.3	0.8	0.1	0.4	1	0	100
	2015	1.2	35	4	.4	1	.13	.3	3	.02	148
	% share	0.8	23.6	2.7	0.3	0.7	0.1	0.2	2	0	100
Vegetable	2005	2	9	6	.16	4	6	27	3	2	256
	% share	0.8	3.5	2.3	0.1	1.6	2.3	10.5	1.2	0.8	100
	2010	3	16	10	.15	9	18	19	8	2	470
	% share	0.6	3.4	2.1	0	1.9	3.8	4	1.7	0.4	100
	2015	3.2	23	17	.2	10	15	7	13	2	630
	% share	0.5	3.7	2.7	0	1.6	2.4	1.1	2.1	0.3	100

Source: Author own calculations based on WITS data base 2016

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