

Evolving Patterns and Empirical Distribution of Normalized Revealed Comparative Advantage: A SAARC Countries Analysis

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Abstract

Normalized revealed comparative advantage (NRCA) index by Yu et al. (2009) has a great significance, due to its dynamic characteristics of over time, cross countries and cross products comparison in international trade. It also provides comparative picture of degree of advantage and disadvantage. This is first study that aims at estimating NRCA of SAARC countries at 17- sectorial level products to reveal their comparative and dynamic positions in international trade. This study found that Bangladesh has advantages in two sectorial products, Bhutan in two, India in two, Maldives in three, Nepal in four, Pakistan in four and Sri Lanka has advantages in three sectorial products. In textile and clothing products, Bangladesh is in better position due to rising trend in advantage over time, Nepal's advantage has been volatile, Pakistan's advantage is falling, India has volatile in textile and in clothing it is falling. Sri Lankan's advantage in clothing is falling while Maldives and Bhutan has no advantage in textile and clothing products. Bhutan is improving in iron and steel products but in fuel and mining products its advantage is falling, Maldives with three sectorial products enjoying advantages but it is falling over time i.e. Agricultural, Food and Fuels products.

JEL Codes: F11, F13

Key Words: Sectorial Products, GSP Status, SAARC, Comparative positions, degree of advantage

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1. Introduction

Since the period of trade liberalization world has witnessed the rigorous foundation of various trading blocs to enhance economic growth by means of expansion of trade, investment and technology transfer in these blocs. Performance of trading blocs can be arbitrated from trade within regional grouping. The emergence of trading bloc yield benefits to countries from trade with rest of the world. To accelerate the speed of economic development, a notion of economic cooperation among neighboring countries is always hailed. Gravity approach in trade also vindicates forming of regional trading blocs. Therefore, the objective of the present study is to examine critically recent trade performance of SAARC countries through most reliable contemporary methodology that makes this research unique.

Competitiveness has unique role in advising policy discussion and has become a center of debate among economists. Competitiveness is famous proposition of classical school in history of international trade. The classical trade models (Ricardo, 1817/1951, Ohlin, 1933) argued that a country from the given resources has an ability of low cost production of a commodity in which its resources are efficient i.e. comparative advantage and exports that commodity also, while other country imports commodity, having comparative disadvantage. Later theory of Intra-Industry trade justifies imperfect competition does not advocate comparative advantage theory. A significant number of research exists drawing attention to the scope of this issue and considerable contribution can be found in measuring comparative advantage, while each measure provided different significant and interpretations. A powerful implication of comparative advantage theory still lacking in suitable measure because of notion of autarkic variables such pre trade relative prices, pre trade production cost. From Balassa (1965) Revealed Comparative Advantage (RCA) measurement to a recent development of Normalized Revealed Comparative Advantage (NRCA) by Yu et al., (2009) significantly contributed in literature. Comparative advantage theory of Balassa,s (1965) identify pattern of trade of any country with its limitations. This measure is incomparable for cross countries and cross products, therefore several attempts have been made to cover this aspect. Other new indices have been introduced on the basis of trade-cum-production such as Lafey index, Lafey (1992) that covers exports, Dalum et al., (1998) index and weighted RCA index by Proudman and Reading, (2000), Hoen and Oosterhaven (2000) additive index and finally normalized index NRCA by Yu et al., (2009) covers comparison among countries, products over time with neutral point.

On empirical side, particularly with application of NRCA, we can find hardly, a few studies such as Sanidas and Shin (2009), Shariatullah and Kauzo (2011), Sarker and Ratnasena (2014). These studies used NRCA to provide comparative pictures of different groups of commodities. Sanidas and Shin (2009) after discussing a long debate on history of comparative advantage and its measurement, this study attempts to examine the trade performance of China, japan, and South Korea. This study estimated performance through six indices by taking trade data from international Trade Centre for the period of 1995 to 2008. This study takes HS 2 digits level and sub heads and used non-econometrics approach for trade performance. After applying indices study applied NRCA index due to its better feature of cross country and over time comparison. Finally, this study also applied econometric technique of robust and quintile regression and found South Korea comparative advantage improved during 1996-2007, while stability of cross sector ranking is below than Japan.

Another study by Shariatullah and Kauzo (2011) estimated comparative advantage of Bangladesh by using NRCA index in few agricultural commodities, and low value added labour intensive manufacturing industries like pottery, leather, footwear, textile yarn, apparel, jute, tobacco, tea etc. This study analyzed 97 products at Standard International Trade Classification 3-digit level revealing that Bangladesh enjoys comparative advantage in few primary and labor intensive manufacturing groups. Over time competitive position uncovers declining trend in competitiveness of primary products while competition rising in labor intensive commodities. Sarker and Ratnasena (2014) exposed competitiveness of agri-food sector of Canadian economy by taking longitudinal for the period of 1961 to 2011. This study focused on beef, wheat and pork sectors to uncover competitive picture and to determine the drivers of competitiveness. Empirical results revealed that Canada is enjoying competitiveness in wheat sector but not pork and beef sectors and if relative lower cost of labor may enhance competitiveness of both pork and beef sectors of Canada. Moreover, exchange rate is deemed as a major driver of determining competitiveness and decoupled farm policies do not affect competitiveness of pork and wheat significantly.

NRCA index provides degree of comparative advantage/disadvantage over time to assess the position and pattern of products, sectors within country and cross countries. So it covers (a) comparative advantage /disadvantage (b) how much comparative advantage/disadvantage country has (c) over time whether it is increasing or decreasing (d) comparable with other countries in same products and groups of products.

Sharples (1990) and Ahearn et al., (1990) believed competitiveness is ambiguous notion as economists do not agree significantly on a single definition, therefore researcher provided their own perception about competitiveness. Krugman (1994) claimed that countries' obsession with competitiveness and governments' self-defining definitions of competitiveness may lead to wrong policy advising and ultimately may lead to unfair distribution of countries' resources. This practice is harmful for any economy in the long run. Two weaknesses may be observed from recent studies on competitiveness i.e. element of performance related to different measures and unavailability of desired data.

This is the first ever study for SAARC countries that calculates the performance of merchandise trade by major commodities group (i.e. at sectorial level) through Normalized Revealed Comparative Advantage (NRCA) developed by Yu et al. (2009). Earliest studies calculated Revealed Comparative Advantage (RCA) and comparative advantages through various indices, but beauty of NRCA is that it covers time and space comparison; therefore its results are more reliable and indicate changes in patterns over time. NRCA in Particular gives us interesting results due to its quality of cross countries and over time comparison. This study has chosen merchandise trade by major commodities groups of SAARC countries from data website of World Trade Organization, which are deemed as sectorial groups. Our study estimated NRCA on sectorial level and results indicated that in manufacturing, iron and steel, chemicals, electronic data processing and office equipment, telecommunications equipment, integrated circuits and electronic components, transport equipment, automotive products, except India and Bangladesh all countries have improved. While India and Bangladesh, have rising, volatile and stable disadvantage. In case of textile and clothing where India, Pakistan, and Bangladesh were enjoying comparative advantage in the recent past, now Pakistan and India are on the losing end while

Bangladesh is gradually improving. In agricultural products and food items India and Bhutan are improving while performance of rest of the SAARC countries is falling.

The rest of the study is structured as: section 1 discusses introduction of use and importance of history of comparative advantage theory and measures; Section 2 provides contemporary trade performance of SAARC countries excluding Afghanistan because of data constraint for some periods. Section 3 covers theoretical framework of the study while Section 4 covers data sources and methodology employed in this paper, section 5 exhibits results and discussion, and section 6 provides conclusion.

2. Overview of Economic Performance of SAARC Region

Over last 20 years, South Asian countries showed economic performance of an average growth of about 6% according to the World Bank Report (2014). The contribution of trade by member countries of SAARC with each other has been minimal and insignificant. The low trade of SAARC countries as compared to other trading blocs is due to countries specific differences in their fiscal, monetary and trade policy, size of their GDP tax structure and consumption and production patterns. Even that intra SAARC trade is low than other trading blocs. This can be attributed to extreme differences in population sizes, countries sizes, languages, religions, socio economic norms and their political systems. One major reason of low trade in intra-regional is high non-tariff measures. Further demand side attractions and globalization and attractive prices outside the region created enormous opportunities for SAARC countries to go beyond the region.

SAARC countries are considered a large regional bloc having huge potential. But unfortunately, so far its regional cooperation is insignificant. This is due to the fact that mostly regions engaged in trade are with the outside the region (Kiran. Subashini, Nagamani, 2014). Therefore it supports us to use NRCA because of stumpy and low interdependence of SAARC countries on each other in the production and trade of sectorial products. The South Asian region has total share about 3 percent of total world GDP with population size about 1.8 billion, which is almost 23 percent of world's population. Its share of trade in total world trade is less than 2 percent. Intra-regional trade is also less than the total trade of South Asia. Trade among SAARC countries is gradually improving with the emergence of SAARC Preferential Trading Agreement (SAPTA) in 1995. SAPTA matured as a South Asian Free Trade Area (SAFTA) in 2004. South Asia is wider region with large part of population of the world, may have attractive demand of good and services to be traded in the region by each member country. Despite the huge potential, trade opportunities are not being availed fully.

Total exports of SAARC countries are 2 percent of the world exports, which is negligible. Despite have historical perspective, beautiful locality, scenic sights, its total revenue from tourist industry is less than the total revenue of Malaysia. Variation in tax structure, tax elasticity of SAARC countries creates scope of trade among member countries. European market has been very attractive for SAARC Countries, particularly for textile and clothing products. Bangladesh, India, Pakistan, and Nepal have comparative advantage in these sectors. International trade is dependent on quality product, economic activities, good relations and so many other factors. In the recession of 2009 trade growth to GDP growth first rebounded in 2010 then again it fell down in the year 2011. It continued declining in the year 2012 due to declining demand of imports in European market. SAARC region trade fell down also due to its low import demand of USA and Japan. During 2013 (second quarter) industrial production of SAARC countries plunged, particularly

India's slowdown affected rest of SAARC countries except Pakistan. Repercussion of financial crisis of 2008 greatly affected India by portfolio outflows and this in return affected other South Asian Economies. Most of the South Asian Economies observed high inflation during 2013, particularly commodity and food prices increased, thereby held responsible for keeping inflation high. Maldives only kept stable inflation rate at 4.5 percent during 2013.

Pakistan and Sri Lanka entered into Free Trade Agreement (FTA) to offer preferential market access to each other's product. According to agreement Sri Lanka has duty free access in Pakistan on 206 products under free trade agreement which operationalized in June, 2005. This product includes coconut, tea and rubber product also, which are export earning for Sri Lanka. Bilateral trade volume decreased by million 200 US dollars in the recent year between two countries. This was 350 million US dollar in the year 2014. The major exports of Pakistan to Sri Lanka are basmati rice, sugar, cotton, cement while Pakistan imports betel leaf, black pepper, coconut products, rubber, lentils from Sri Lanka.

Being a second largest partner in trade, Sri Lanka is moving ahead in trade with India. Almost 27 percent of the total visitors of Sri Lanka are from India. Indo- Sri Lanka Free Trade Agreement operationalized in March 2000. Since then trade between two countries increased rapidly. The value of bilateral trade between India and Sri Lanka reached to 3.6 billion US dollars. India and Sri Lanka are also signatory of Asian Pacific Trade Agreement (APTA), Bay of Bengal Initiative for Multicultural Technical and Economic Cooperation (BIMSTEC), World Trade Organization (WTO), and Global System of Trade Preferences (GSTP). Sri Lanka's Imports are greater than exports, therefore balance of trade is not favorable for Sri Lanka but still it is beneficial for Sri Lanka due to huge Indian investment in Sri Lanka and meeting their requirements of import demand. Major imports from India are motor vehicles, cotton, mineral fuels and oils, pharmaceutical products, knitted and crocheted fabric, iron and steel, sugar and cement. While Sri Lanka exports to India are Spices, poultry feed, natural rubber and rubber products, insulated wires, cables, fiber board of wood, furniture, bedding mattress, apparel, Paper and Paper products, Refrigerators, freezers, ships boat floating et.

The bilateral between Pakistan and India has touched to 2.4 billion US dollars and according to statistics of Indian Ministry of Commerce and Industry bilateral trade has shown net increase of 140 million Us dollars from April 2014 to March 2015. Pakistan's exports to India have increased by 28 percent while India's export to Pakistan has grown by 19 percent this year. Despite having trade potential for both countries in the region, their trade volume is low due to poor political relation between these countries.

As far as Bangladesh is concerned, it was enjoying Generalized Scheme Preferential Plus (GSP Plus) status in European Union. Bangladesh can export Everything but Arms (EBA) to EU under this status and all of its exports are duty free and quota free. Twelve percent of the total trade of Bangladesh goes to European Union but still Bangladesh is having trade deficit of 61.60 BDT billion by the end of March 2015. Bangladesh trade with India has a great potential but till now Bangladesh has been unsuccessful to enjoy duty free access to Indian market. Practically poor procedure of exports, weak administration, infrastructure and lack of facilities are obstacles in increasing bilateral trade between India and Bangladesh.

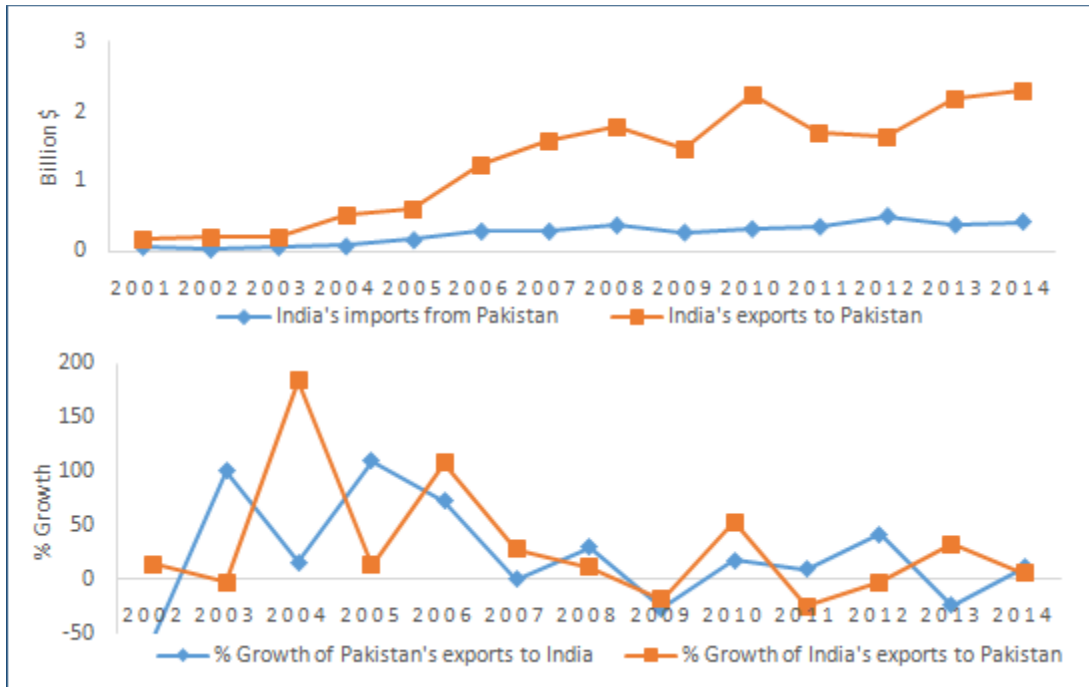


Figure 1: India-Pakistan Bilateral Trade

Data Source: International Trade Center & Ministry of Commerce and Industry (India), 2014

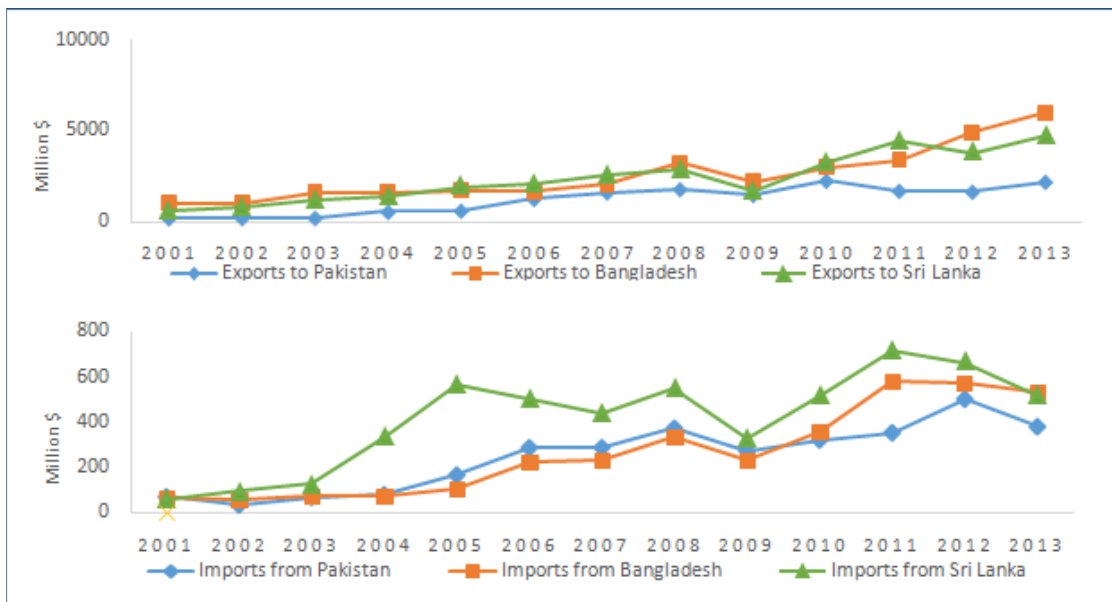


Figure 2: Bilateral Trade of India with Bangladesh, Pakistan and Sri Lanka

Data Source: International Trade Center, 2014

Major exports of Bangladesh are apparel, edible fruits, knitted fabric, waste of food industry, skin, cotton, footwear and vehicles. Value of these exported items increased considerable in the year 2014 as compared to the year 2011. While Pakistan's most of the exports to Bangladesh are textile yarn, fabrics, made-up articles and Pakistan is enjoying favorable balance of payment. Pakistan's trade volume with Bangladesh is very small. Bangladesh does not have complete chain of textile products; therefore it has to depend on other countries. Bangladesh has trade imbalance with SAARC countries including Nepal, Pakistan, India. Nepal's trade volume has increased by 21.1 percent during 2014. Four years ago Nepal joined SAFTA but Nepal is a major trade partner with India in the region and having total imports from India about Rs. 214.266 billion. Nepal's major exports to India are iron and steel goods, jute, polyester, textile, yarn, tea toothpaste, ginger, rosin juice, etc. while Nepal imports petroleum products, battery, machinery, vegetable, soybean, electrical goods, cement, rice etc. Pakistan and Nepal are also trying to promote bilateral trade in the region. So far Nepal has been failed to take benefit of SAFTA. Maldives as member of SAARC countries has a very low trade with in region. Most of its trade is outside the region like others but only Sri Lanka is in the list of top ten trading partners out of the region. However Maldives imports from India and Sri Lanka in the region to substantial extent as compared to other countries of the region. From India its import share was 9.5 percent and from Sri Lanka 5.8 percent of its total import in the year 2013. Its major exports Seafood, Iron and Steel, prepared meats, copper etc. while its major imports are machinery, furniture, electrical machinery, dairy products. Maldives also faced trade deficit of 116 US million dollars in April of 2015. The balance of trade of Maldives, on average remained deficit of 89.69 US million dollars from 2005 to 2015. Bhutan's case is not much different from Maldives, on average Bhutan has a trade deficit of 6112.80 million BTN from 1991 to 2014, while in 2014 Bhutan's balance of trade was deficit of 22526.90 million BTN. Trade balance with India was negative of 10406.20 million USD dollars, while with Pakistan was deficit of 192781million PKR and with other SAARC countries it is also deficit. Its major export partner has been india in the region. Its major imports are animal, animal products, vegetables, mineral products, plastic, wood, textile articles, and vehicles etc. Afghanistan joined SAARC countries in April 2007, so its scope of trade with SAARC existence in this period has been narrow, therefore study did not cover its NRCA.

A few SAARC countries are analogous in terms of low trade with each other, because of protectionism policy as compared to the other trading blocs of the rest of world. Some countries have weak trade relation due to political issues, therefore despite the advantages and need of bilateral trade; these countries are reluctant to promote trade relations. Particularly India-Pakistan can play vital role in the region by enhancing bilateral trade, and resolving political issues. Presently entire region observed vibrant democratic process. Bilateral tense relation of India and Pakistan, uncertainty and political flux in Bangladesh, internal insurgence in Pakistan, and global slowdown kept behind SAARC region as compared to other regions in terms of economic growth. Global slowdown and cyclical movements first hit India then rest of the Asian Economies (World Bank Report, 2013).

3. Theoretical Framework

3.1 Notion of Comparative Advantage

According to classical and neo-classical school theory of trade, comparative advantage is determined by low cost production of any country or pre trade relative prices based on low cost. Country's having comparative advantage ultimately produces and exports that commodity while

Heckscher-Ohlin (1933) captures factor endowment and its intensity determines exports pattern. Heckscher-Ohlin- Vanek focuses on factor content of trade to determine patterns.

Latter theory of Intra-Industry trade accounts imperfect competition and economies of scale for trade instead of comparative advantage. Krugman (1979) provided general equilibrium model based on non-comparative advantage theory of trade in the context of increasing return to scales or economies of scale determines intra-industry trade. This means pattern of trade consists of exports and imports of same commodities instead comparative advantage based trade. This employs wider notion of comparative and non-comparative advantage of trade. Tybout (1993) believes that internal return to scales is a basis for comparative advantage and product differentiation determines sources of comparative advantage (Hummels and Levinsohn, 1993).

A step away from traditional and non-traditional view of comparative advantage, Davis (1997) established important connection between trade volumes and endowment that with the help of traditional comparative advantage model, a huge volume of trade (North-North trade) may be explained. Therefore, in the presence of the New Trade Theory, traditional theory of comparative advantage can still be applicable for determining trade patterns (De Benedictis and Tamberi, 2001).

3.2 Revealed Comparative Advantage

A problem that we face in estimating comparative advantage is the lack of pre trade data, that one cannot analysis the pattern of trade. Balance et al. (1987) developed theoretical idea to measure comparative advantage i.e.

$$EC \rightarrow CA \rightarrow TPC \rightarrow RCA \quad (1)$$

Where (EC) country specific economic conditions (CA) comparative advantage pattern (TPC) production and consumption in trade and (RCA) revealed comparative advantage. Comparative advantage requires pre trade cost and production data which seems impossible to obtain, therefore another way to understand revealed comparative advantage that it uses post trade data of import and exports. Till now many RCA indices have been developed with TPC variables or with transformation and combination of TPC variables. Second demerit of the RCA indices is that it does not account more than two factors, more than two countries and more than two commodities. Moreover researches are interested in determining the degree of comparative advantage and variation in degree over time, considering more than two products and countries. Therefore issue arises, how we can measure comparative advantage in isolation or in connection with theory. One thing is to remember from the above discussion that RCA is not exclusively linked with CA. Deardoff (1980) argued negative relationship between autarkic prices and net exports. Despite all these issues RCA indices still helpful in providing information or determining comparative advantage.

4. Data Sources and Methodology

Present study measures normalized revealed comparative advantage of major sectors of SAARC countries by taking merchandize trade of major commodity groups of time interval of 2000, 2005, 2010, 2011, 2012, 2013, and 2014 to check over the time comparison. Data obtained from the website of WTO. Five years' gap between two periods is taken to see any significant changes in comparative advantage, while from 2010 to 2014 is taken to check current comparative picture of various sectors.

In this section, discussion spin around the measurement of RCA indices that they are transformation and combination of post-trade data (Balance et al. 1987). Many RCA indices have been developed so far but a few mostly used indices are part of discussion. In this regard Balassa (1965) famous index and other subsequent developed indices have been discussed with their shortcomings.

In the absence of pre-trade relative prices and pre-trade cost of production, Balassa (1965) index is widely used index, till now despite the availability of several other index. According to Hillman, (1998) and Yeats (1985) RCA only indicates whether country has comparative advantage. So it is preferable when objective is to analyses only advantage not its economic implication. . Harvila and Gunawardana (2003) criticized on the interpretation of Balassa index as it uses post trade data Yeats (1985) also argued that RCA neither has cardinal nor ordinal properties and leads to misleading and inconsistent results. It also has asymmetric distribution around mean. Yeats (1985) also pointed out that BRCA is sensitive for small countries .Vollrath (1991) given an alternative measure of RCA by making logarithm of Balassa index, thus makes it symmetrical. Another Symmetrical index provided by Laursen (1998) has a range of -1 to +1 with 0 being neutral point but attention drawn on the weakness of unclear interpretation of symmetry by (Benedictis and Tamberi, 2001).

Proudman and Reading (1998), Hoen and Oosterhaven (2006) and Yu et al. (2009) developed alternative indices. These indices somehow contributed to cover up the problems of Balassa index. Yu et al. (2009) formulated normalized revealed comparative advantage NRCA that helps to assess the magnitude of comparative advantage over time and compares cross countries comparative advantages, so in this way this index is dynamic and better than Balassa index. For the first-time post trade measure given by Liesner (1958) can be expressed as:

$$RCA_1 = X_{ij} / X_{nj} \quad (2)$$

Where X_{ij} is the export of i country of j product or sector/industry and n shows set of countries. Balassa index can be expressed as

$$RCA_2 (\text{Balassa Index}) = X_{ij} / X_{in} \div X_{wj} / X_{wn} \quad (3)$$

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} indicates world exports for commodity j and X_{wn} is export of all n commodities of world. BI index is famous and still in use, in the presence of all other trade performance measures due to its simplicity and probably ease in handling but reasoning always required to use it (Sanidas, 2007, 2009). Hinloopen and Van Marrewijk (2001) indicated that derivation of theoretical distribution of Balassa index is not possible and consequently parallel empirical studies have been conducted in literature Laursen (1998), Dalum et al. (1998) and (De Benedictic and Tamberi, 2001, 2004). Hoen and Oosterhaven (2006) provided four properties for an ideal trade performance index by indicating shortcoming of Balassa index and suggested to overcome these shortcomings.

Net Export Ratio (NER) by Balassa captures the possibility of exports and imports simultaneously but it does not depict trade performance in comparison with rest of the world. This index is shown as following.

$$RCA_3(NER) = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij}) \quad (4)$$

This index ranges from -1 to +1 however zero value makes ambiguity (Greenaway and Milner, 1993). Another form of the Balassa index captures the effect of imports and this index can be written as following.

$$RCA4 = (X_{ij} / X_{it}) / (M_{ij} / M_{it}) = (X_{ij} / M_{ij}) / (X_{it} / M_{it}) \quad (5)$$

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

In another index derived from Balassa (1965) logarithm form of export, import ratio was taken. This index can be expressed as

$$RCA5 = \ln(X_{ij} / X_{it}) / (M_{ij} / M_{it}) * 100 = \ln(X_{ij} / M_{ij}) / (X_{it} / M_{it}) * 100 \quad (6)$$

Vollrath (1991) confesses that famous RCA index is commonly used as it reduces the properties of distortions. We should remember that indices suggested by Vollrath and Balassa are not comparable because both reflect different picture and used in different circumstances. RTA shows the difference between relative export and relative import advantage is calculated as mentioned below.

$$RCA6 = RTA = RXA - RMA \quad (7)$$

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

Another measure of Vollrath's (1991) is in logarithm form.

$$RCA7 = RC = \ln RXA - \ln RMA \quad (8)$$

Vollrath (1991) 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 Redding (1998), Hoen and Oosterhaven (2006).

Additive index measure by Hoen and Oosterhaven (2006) transformed BI into additive index. This can be expressed in this way

$$AI_{ij} = \frac{X_{ij}}{X_{in}} - \frac{X_{wj}}{X_{wn}} \quad (9)$$

Where X_{ij} is export of commodity j from country i , X_{wj} world export of j commodity of and X_{in} is export from country i of all commodities and X_{wn} world export of all commodities. It has zero as a neutral point and value lies between -1 to $+1$.

Weighted RCA introduced by Proudman and Reading (1998) fixed the mean of Balassa index by normalizing Balassa index with cross-section mean. This is written as

$$W_{ij} = \frac{BI_{ij}}{1/N \sum_{j=1}^n BI_{ij}} \quad (10)$$

Weighted index makes comparison within country over time and its value is equal to 1 and remains constant, but problem of asymmetry still exists.

Although authors at different time provided alternative measures but no one succeeded in rule out all shortcomings and still Balassa index is recognized as 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).

Important feature of NRCA is symmetrical distribution and independence of cross product and countries. The NRCA index is shown as follows;

$$NRCA_{ij} = E_{ij}/E - E_j E_i / EE \quad (11)$$

Where $NRCA_{ij}$ means normalized revealed comparative advantage of product j of country i ; E_{ij} is the export of product j of country i ; E_j represents total world export of same j product; E_i means total export of country i and E represent total world export. $NRCA_{ij}$ has both positive and negative signs, while neutral point is zero. If NRCA has positive value that means comparative advantage and negative indicates comparative disadvantage in products or sector. Its symmetrical distribution property represents magnitude or scores of NRCA which has ranging from $-1/4$ (disadvantage) to $+1/4$ (advantage). Higher the positive value stronger will be advantage, and higher the negative value stronger will be disadvantage. The next empirical section of this study estimates NRCA of major sector of SAARC countries.

Table 1 is given to show measures of mostly used indices and table 2 provides statistical properties of these indices.

Table 1. Mostly Used RCA Indices

<i>Index</i>	<i>Construction</i>
Balassa Index (1965)	$\frac{X_{ij}}{X_{in}} \div \frac{X_{wj}}{X_{wn}}$
Weighted Index by Proudman and Reading (1998)	$W_{ij} = \frac{B_{lij}}{1/N \sum_{j=1}^n B_{lij}}$
Additive Index by Hoen and Oosterhaven (2006)	$AI_{ij} = \frac{X_{ij}}{x_{in}} - \frac{X_{wj}}{X_{wn}}$
Normalised Revealed Comparative Advantage Index by Yu et al. (2009)	$NRCA_{ij} = E_{ij}/E - E_j E_i / EE$

Table 2: Statistical Properties of Some Indices

	<i>Balassa Index</i>	<i>Weighted Index</i>	<i>Additive Index</i>	<i>NRCA index</i>
Neutral Point	1	1	0	0
Sum of Sectors	-	-	0	0
Sum of Countries	-	-	-	0
Free from aggregate level	No	No	Yes	Yes
Free from reference country	No	No	No	Yes
Symmetry	No	No	Yes	Yes
Normality	No	No	No	No

5. Empirical Results and Discussion

Since this is first study covering NRCA picture of merchandise trade of major commodity groups of SAARC countries, therefore its results with rest of those studies covering RCA indices are not comparable. However a study of Shariatullah and Kauzo(2011) can be compared to some extent. Study of Shariatullah and Kauzo (2011) only focuses Bangladesh at SITC 3-digit level commodities and our study is at sectorial level. Therefore, sub-groups of commodities of previous study can be compared with major trading groups of present studies in case of Bangladesh.

All tables are presented in APPENDIX. Table 3 shows that Bangladesh has comparative advantage in two (2) sectorial products i.e. textile and clothing, which is consistent with the result of Shariatullah and Kauzo (2011) as they support sub group commodities of textile and clothing by showing normalized comparative advantage in these products. While in rest of the sectors Bangladesh has disadvantage. Table 3 shows that in five (5) sectorial products Bangladesh disadvantage is stable, while in four (4) sectorial products it has volatile disadvantage and in one of the sectors disadvantage is falling which is good indicator. In five (5) sectors Bangladesh has poor performance as its disadvantage is rising. These sectors are machinery and transport equipment, agricultural products, food, fuels, and fuel and mining products. Table 4 represents NRCA of Bhutan, which shows Bhutan has comparative advantage in three (3) sectors i.e. iron and steel, fuels and mining, and fuels. Overall Bhutan is improving because in fourteen sectorial products its disadvantage is falling over time but with this alarming point is that its comparative advantage is also falling over time in three (3) sectorial products i.e fuels and mining products, fuels and iron and steel.

Table 5 shows that India has comparative advantage in two (2) sectorial products (textile and clothing) which is falling in clothing sector but showing volatile advantage in textile sector. In five (5) of the sectors India has been facing volatile comparative disadvantage over time i.e. iron and steel, telecommunication equipment, office and telecom equipment, chemicals, automotive products etc. In five (5) sectors, its comparative disadvantage is falling i.e. pharmaceuticals, electronic data processing and office equipment, integrated circuits and electronic components, agricultural products, food etc. In further five (5) sectors India's comparative disadvantage is rising i.e. manufacturing sector, machinery and transport equipment, transport equipment, fuels and mining and fuels.

In table 6 Maldives sectorial advantage and disadvantage is estimated and we found in 12 sectors it has disadvantage which is falling overtime. This shows improvement in these sectors as mentioned in table 10 (table 10 represent comparable picture of last three years) Maldives has volatile disadvantage in transport equipment, fuels and mining and in three (3) sectors Maldives is enjoying comparative advantage, which is also falling that indicates alarming for Maldives. Nepal has comparative disadvantage in thirteen (13) sectors and comparative advantage in four (4) sectors. In 7 of the 13 sectors comparative disadvantage is falling, while in 5 of 13 volatile disadvantages is found and in 1 of 13 comparative disadvantages is rising. In 3 of the 4 sectors its comparative advantage has been volatile, while in one of the sectors comparative advantage is falling overtime. Detail of the sectors can be viewed from table 10. Pakistan has comparative disadvantage in thirteen (13) sectorial products. Out of thirteen (13) in 10 sectors comparative disadvantage is falling overtime and in one sector i.e. steel and iron Pakistan has volatile disadvantage, while in fuel and fuel and mining sector disadvantage is rising over time. Pakistan is enjoying comparative advantage in textile, clothing, agricultural products, food etc. in textile and clothing sector comparative advantage is falling, while in agricultural products and food comparative advantage has been volatile overtime. Sri Lanka has disadvantages in fourteen (14) of seventeen (17) sectors and comparative disadvantages in three (3) sectors. In eight sectors disadvantages is falling while in six (6) sectors disadvantages have been volatile i.e. iron and steel, textile, fuels, automotive products, chemicals, and fuels and mining etc. In food and agriculture sectors, Sri Lanka is enjoying comparative advantages but falling over time and in clothing sector it faces volatile comparative advantage.

6. Conclusion

In this study, we tried to explore empirical findings through the application of NRCA index by analyzing sectorial level products of SAARC countries. This revealed the comparative position of competitive sectorial products and provided insight of fluctuations of comparative advantage over time. Though, NRCA and other indices have vague theoretical foundation due to absence of pre trade data, seemingly not appropriate to suggest any policy on the basis of empirical findings, as this study did not explore determinants because of pre trade data constraint. However, we may indicate contemporary comparative picture of products, industries and sectorial products of countries. In this study, we used post trade data of total exports of countries, total world exports, exports of products of countries and world. Therefore, by focusing on exportable products comparative positions may be improved while many other possible reasons exist but we are unable to identify due to pre trade data constraint. On the basis of the estimated NRCA, we can suggest SAARC countries to focus on their emerging sectors which have potential and their exports in that sectors improving over time. A matter of concern is falling NRCA in few sectorial products over time indicates poor performance in these sector; therefore these sectors should give attentions.

SAARC countries have different trade patterns and variation in tax elasticities that may be helpful to enhance their bilateral trade. Individually each country is trying to enhance exports through increase in domestic and foreign investments. Boosting exports quite possible through depreciation and strengthening world demand. Bangladesh has advantages in two sectorial products, Bhutan in two, India in two, Maldives in three, Nepal in four, Pakistan in four and Sri Lanka has advantages in three sectorial products. In textile and clothing products, Bangladesh is in better position due to rising trend in advantage over time, Nepal's advantage has been volatile, Pakistan's advantage is falling, India has volatile in textile and in clothing it is falling. Sri Lanka's advantage in clothing is falling while Maldives and Bhutan has no advantage in textile and clothing products. Bhutan is improving in iron and steel products but in fuel and mining products its advantage is falling, Maldives with three sectorial products enjoying advantages but it is falling over time i.e. Agricultural, Food and Fuels products. Pakistan and Nepal have volatile advantage, while Sri Lanka has falling in Agricultural and Food products respectively. India, Bangladesh and Pakistan have 15, 14, and 13 weaker sectorial products respectively. Bhutan has 14 weaker sectorial products and Maldives has 13 weaker sectorial products but interestingly their disadvantages are falling. Nepal and Sri Lanka have 9 and 10 weaker sectorial products respectively whose disadvantages are falling over time. Pakistan has stronger advantage in textile and clothing sectorial products in the entire region over all SAAR countries despite of Bangladesh is enjoying GSP Plus status, while Pakistan got it in 2014.

Appendices

Table:3 Presentation NRCA of Bangladesh

<i>COUNTRY</i>	<i>BANGLADESH</i>							<i>NRCA</i>
	<i>NRCA*1000</i>							
	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	
Manufactures	-0.004	-0.003	-0.003	-0.003	-0.003	-0.003	-0.0029	NO
Iron and Steel	-0.00043	-0.0004839	-0.00065	-0.00073	-0.00068	-0.00069	-0.00068	NO
Chemicals	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002	-0.002	NO
Pharmaceuticals	-0.00032	-0.0004335	-0.00071	-0.00068	-0.0007	-0.00068	-0.00068	NO
Machinery and Transport Equipment	-0.007	-0.006	-0.007	-0.007	-0.008	-0.0082	-0.0082	NO
Office and Telecom Equipment	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	NO
Electronic data processing and office equipment	-0.00111	-0.0007649	-0.00085	-0.00077	-0.00079	-0.00078	-0.00077	NO
Telecommunications equipment	-0.00085	-0.0007489	-0.0009	-0.00088	-0.0009	-0.00091	-0.00088	NO
Integrated circuits and electronic components	-0.00092	-0.0005632	-0.00075	-0.00068	-0.00069	-0.00069	-0.00068	NO
Transport equipment	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	-0.002	NO
Automotive products	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	NO
Textiles	0.000146	0.0003385	0.000431	0.000456	0.00048	0.000492*	0.00051*	YES
Clothing	0.007257	0.00610138	0.009157	0.009903	0.010236	0.01136*	0.01138*	YES
Agricultural products	-0.00087	-	-0.00147	-0.00162	-0.00165	-0.00166	-0.00171	NO
Food	-0.00064	-	-0.00125	-0.00138	-0.00144	-0.00152	-0.00155	NO
Fuels and mining products	-0.002	-0.002	-0.004	-0.005	-0.005	-0.0052	-0.0053	NO
Fuels	-0.001	-0.002	-0.003	-0.004	-0.004	-0.0048	-0.0049	NO

Note: NRCA *1000 to make value short it leaves the result unchanged

Table: 4 Empirical presentations NRCA of Bhutan

<i>COUNTRY</i>	<i>BHUTAN</i>							<i>NRCA</i>
	<i>NRCA*1000</i>							
	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	
Manufactures	NA	NA	-0.02829	-0.02231	-0.01991	-0.018261	-0.017432	NO
Iron and Steel	NA	NA	0.008656*	0.007308*	0.006717*	-0.006592	-0.0063534	YES
Chemicals	NA	NA	-0.00563	-0.00475	-0.00409	-0.003598	-0.003309	NO
Pharmaceuticals	NA	NA	-0.00218	-0.00172	-0.00155	-0.00152	-0.00148	NO
Machinery and Transport Equipment	NA	NA	-0.024	-0.01963	-0.01763	-0.01760	-0.016982	NO
Office and Telecom Equipment	NA	NA	-0.0076	-0.00574	-0.00512	-0.00502	-0.00505	NO
Electronic data processing and office equipment	NA	NA	-0.00257	-0.00189	-0.0017	-0.00168	-0.00163	NO
Telecommunications equipment	NA	NA	-0.00275	-0.00217	-0.00194	-0.001891	-0.00181	NO
Integrated circuits and electronic components	NA	NA	-0.00228	-0.00169	-0.00148	-0.00145	-0.00142	NO
Transport equipment	NA	NA	-0.00795	-0.00671	-0.00606	-0.00591	-0.00581	NO
Automotive products	NA	NA	-0.00514	-0.00438	-0.00397	-0.00394	-0.00382	NO
Textiles	NA	NA	-0.0028	-0.00233	-0.00209	-0.001923	-0.00190	NO
Clothing	NA	NA	-0.00166	-0.00142	-0.00129	-0.00121	-0.00120	NO
Agricultural products	NA	NA	-0.00445	-0.00353	-0.00312	-0.00302	-0.00301	NO
Food	NA	NA	-0.00333	-0.00256	-0.00231	-0.00231	-0.00224	NO
Fuels and mining products	NA	NA	0.006875	0.003782	0.003134	0.003125	0.003122	YES
Fuels	NA	NA	0.004112	0.001396	0.000806	0.000803	0.000791	YES

Table: 5 Empirical presentation of NRCA of India

<i>COUNTRY</i>	<i>INDIA</i>							<i>NRCA</i>
	<i>NRCA*1000</i>							
	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	
Manufactures	-3.04192	-4.284503	-8.06275	-8.31424	-8.42183	-8.5325	-8.59254	NO
Iron and Steel	-0.04375	0.024837	-0.03181	-0.27236	-0.17867	-0.18934	-0.2041	NO
Chemicals	-0.34481	-0.564733	-1.38073	-1.48729	-1.22648	-1.23194	-1.9235	NO
Pharmaceuticals	-0.01079	-0.14008	-0.32639	-0.28681	-0.21467	-0.21263	-0.2025	NO
Machinery and Transport Equipment	-4.08927	-4.678009	-6.62485	-6.8922	-6.96687	-6.99421	-7.2135	NO
Office and Telecom Equipment	-1.61412	-1.686375	-2.51278	-2.33515	-2.35914	-2.3892	-2.3315	NO
Electronic data processing and office equipment	-0.61141	-0.623028	-0.89298	-0.84449	-0.83879	-0.83521	-0.83192	NO
Telecommunications equipment	-0.48133	-0.576820	-0.8401	-0.73353	-0.77335	-0.74125	-0.73931	NO
Integrated circuits and electronic components	-0.52153	-0.486526	-0.77963	-0.75718	-0.747	-0.7321	-0.7320	NO
Transport equipment	-1.26645	-1.589026	-1.85925	-2.00945	-2.09747	-2.1392	-2.1612	NO
Automotive products	-0.90932	-1.148455	-1.35123	-1.60608	-1.50753	-1.5193	-1.5082	NO
Textiles	0.597457	0.49989	0.407297	0.366843	0.377166	0.36249	0.37413	YES
Clothing	0.58055	0.345745	0.129906	0.136607	0.081704	0.08042	0.07912	YES
Agricultural products	-0.03474	-0.268133	-0.81878	-0.76499	-0.32219	-0.31241	-0.31104	NO
Food	0.09064*	-0.126194	-0.7302	-0.69438	-0.52058	-0.51934	-0.48294	NO
Fuels and mining products	-1.07466	-0.903213	-1.59256	-2.76836	-3.12296	-3.59256	-3.6125	NO
Fuels	-0.92308	-0.924050	-1.53025	-2.05328	-2.39427	-2.42591	-2.4582	NO

Table: 6 Empirical presentation of NRCA of Maldives

<i>COUNTRY</i>	<i>MALDIVES</i>							<i>NRCA</i>
	<i>NRCA*1000</i>							
	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	
Manufactures	-0.01168	-0.0198400	-0.00619	-0.00566	-0.00505	-0.004923	-0.004901	NO
Iron and Steel	NA	NA	-0.00026	-0.00026	-0.00021	-0.00020	-0.00019	NO
Chemicals	-0.00214	-0.0035119	-0.00106	-0.00098	-0.00086	-0.00085	-0.00084	NO
Pharmaceuticals	NA	NA	-0.00029	-0.00025	-0.00022	-0.00021	0.00021	NO
Machinery and Transport Equipment	NA	NA	NA	-0.00283	-0.00253	-0.00245	-0.00242	NO
Office and Telecom Equipment	NA	NA	-0.001	-0.00083	-0.00074	-0.00072	-0.00071	NO
Electronic data processing and office equipment	NA	NA	-0.00034	-0.00027	-0.00024	-0.00023	-0.00022	NO
Telecommunications equipment	NA	NA	-0.00036	-0.00031	-0.00028	-0.00027	-0.00027	NO
Integrated circuits and electronic components	NA	NA	-0.0003	-0.00024	-0.00021	-0.00020	-0.00020	NO
Transport equipment	NA	NA	-6.1E-05	-7E-05	-6.6E-05	-6.2E-05	-6.7E-05	NO
Automotive products	NA	NA	-0.00068	-0.00063	-0.00057	-0.00056	-0.00055	NO
Textiles	NA	NA	-0.00016	-0.00014	-0.00013	-0.00012	-0.00012	NO
Clothing	0.00469*	0.0024471*	-0.00022	-0.0002	-0.00019	-0.00018	-0.00017	NO
Agricultural products	0.00434*	0.00709*	0.003797*	0.003604*	0.003238*	0.003233*	0.003114*	YES
Food	0.00477*	0.00762*	0.003945*	0.003752*	0.003362*	0.003361	0.003263	YES
Fuels and mining products	-0.00312	-0.00214	-0.00168	-0.00184	-0.00167	-0.001634	-0.001636	NO
Fuels	NA	-0.00111	0.00562*	0.00559*	0.005036*	0.005031*	0.00492*	YES

Table: 7 Empirical presentation of NRCA of Nepal

COUNTRY	NEPAL							NRCA	
	2000	2005	2010	NRCA*1000					
				2011	2012	2013	2014		
Manufactures	-0.04848	-0.0305294	-0.02798	-0.02097	-0.02058	-0.02055	-0.02051	NO	
Iron and Steel	-0.00372	NA	0.005618*	0.004996*	0.005247*	0.00524*	0.00525*	YES	
Chemicals	-0.00576	-0.0088236	-0.00891	-0.00727	-0.00701	-0.00691	-0.00682	NO	
Pharmaceuticals	-0.00173	NA	-0.00275	-0.00192	-0.00193	-0.00189	-0.00188	NO	
Machinery and Transport Equipment	-0.06785	-0.051652	-0.03352	-0.02826	-0.02812	-0.02801	-0.2800	NO	
Office and Telecom Equipment	-0.02504	-0.017095	-0.01069	-0.00836	-0.00826	-0.00823	-0.00821	NO	
Electronic data processing and office equipment	-0.00963	-0.006409	-0.0037	-0.00277	-0.00275	-0.00269	-0.00268	NO	
Telecommunications equipment	-0.00744	-0.005768	-0.0037	-0.00312	-0.0031	-0.0030	-0.0029	NO	
Integrated circuits and electronic components	-0.00797	-	0.00491727	-0.00329	-0.00247	-0.00241	-0.00240	-0.00238	NO
Transport equipment	-0.02161	NA	-0.01119	-0.00977	-0.00978	-0.00977	-0.00991	NO	
Automotive products	-0.01496	NA	-0.00728	-0.00641	-0.00644	-0.00643	-0.00645	NO	
Textiles	0.0241*	0.010502*	0.015674*	0.01446*	0.014501*	0.0144*	0.01481*	YES	
Clothing	0.0272*	0.011195*	0.003093*	0.003159*	0.003116*	0.00321*	0.00313*	YES	
Agricultural products	-0.0028*	0.003705*	0.004549*	0.002513*	0.002581*	0.00241*	0.002401*	YES	
Food	-0.0002	0.004927*	0.003951*	0.00243*	0.002404*	0.00230*	0.00228*	YES	
Fuels and mining products	-0.02188	-0.019560	-0.01822	-0.01823	-0.01863	-0.01865	-0.01901	NO	
Fuels	NA	-0.017958	-0.09711	-0.12816	-0.09862	-0.09761	-0.09824	NO	

Table:8 Empirical presentation of NRCA of Pakistan

<i>COUNTRY</i>	<i>PAKISTAN</i>							<i>NRCA</i>
	<i>NRCA*1000</i>							
	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>	<i>2013</i>	<i>2014</i>	
Manufactures								
Iron and Steel	-0.74415	-0.766101	-0.65631	-0.63378	-0.47499	-0.47123	-0.4581	NO
Chemicals	-0.05749	-0.080804	-0.06563	-0.06613	-0.05213	-0.05314	-0.05915	NO
Pharmaceuticals	-0.21829	-0.257738	-0.23837	-0.22358	-0.20171	-0.20052	-0.1963	NO
Machinery and Transport Equipment	-0.03812	-0.068246	-0.06983	-0.06286	-0.05625	-0.05620	-0.05519	NO
Office and Telecom Equipment	-1.06707	-1.028750	-0.82889	-0.78614	-0.7215	-0.7161	0.6821	NO
Electronic data processing and office equipment	-0.39554	-0.34240	-0.27146	-0.23404	-0.21246	-0.21211	-0.12082	NO
Telecommunications equipment	-0.15241	-0.128219	-0.09232	-0.07781	-0.07113	-0.07105	-0.07048	NO
Integrated circuits and electronic components	-0.11699	-0.119346	-0.09679	-0.08672	-0.07886	-0.07823	-0.07734	NO
Transport equipment	-0.12615	-0.09474	-0.08235	-0.06952	-0.06247	-0.06239	-0.06212	NO
Automotive products	-0.33844	-0.35203	-0.27663	-0.27062	-0.25046	-0.25042	-0.20531	NO
Textiles	-0.23582	-0.251151	-0.18239	-0.17847	-0.16512	-0.16502	-0.16341	NO
Clothing	0.6382*	0.61862*	0.47005*	0.45404*	0.436185*	0.43601*	0.43581*	YES
Agricultural products	0.25075	0.266487	0.196829	0.189653	0.174506	0.17346*	0.17125*	YES
Food	-0.03537	-0.029441	0.02603*	0.06915*	0.057059*	0.05629*	0.05761*	YES
Fuels and mining products	-0.02795	-0.004753	0.03998*	0.07602*	0.050293*	0.05034*	0.051236*	YES
Fuels	-0.32797	-0.429398	-0.41369	-0.48166	-0.49334	-0.50346	-0.50452	NO
	-0.25123	-0.336645	-0.32043	-0.38215	-0.41694	-0.41892	-0.42089	NO

Table: 9 Empirical presentation of NRCA of Sri Lanka

COUNTRY	SRI LANKA							NRCA
	NRCA*1000							
	2000	2005	2010	2011	2012	2013	2014	
Manufactures	-0.29133	-0.318345	-0.27215	-0.2385	-0.2242	-0.2156	0.2134	NO
Iron and Steel	NA	-0.031335	-0.02682	-0.02815	-0.0241	-0.0235	-0.2464	NO
Chemicals	NA	-0.102787	-0.10189	-0.09951	-0.0906	-0.0901	-0.0993	NO
Pharmaceuticals	NA	-0.025149	-0.02916	-0.02686	-0.0253	-0.02501	-0.02489	NO
Machinery and Transport Equipment	NA	-0.358164	-0.29409	-0.27914	-0.2582	-0.2534	-0.2519	NO
Office and Telecom Equipment	NA	-0.121332	-0.10124	-0.08959	-0.0830	-0.0823	-0.08156	NO
Electronic data processing and office equipment	NA	-0.041550	-0.0346	-0.02966	-0.0276	-0.0255	-0.02451	NO
Telecommunications equipment	NA	-0.045694	-0.03632	-0.03375	-0.0313	-0.0310	-0.0298	NO
Integrated circuits and electronic components	NA	-0.034087	-0.03039	-0.02618	-0.0240	-0.0236	-0.02131	NO
Transport equipment	NA	-0.120733	-0.09518	-0.09335	-0.0876	-0.0845	-0.0841	NO
Automotive products	NA	-0.090417	-0.06863	-0.06801	-0.0641	-0.0655	-0.0649	NO
Textiles	0.0069*	-0.007361	-0.00475	-0.00497	-0.0020	-0.0019	-0.00213	NO
Clothing	0.39616	0.245678	0.205781	0.207488	0.1963*	0.1992*	0.1913*	YES
Agricultural products	0.0596*	0.057047*	0.08105*	0.07377*	0.06517*	0.06511*	0.06123*	YES
Food	NA	0.06162*	0.07479*	0.06785*	0.06269*	0.06245*	0.06123*	YES
Fuels and mining products	NA	-0.160267	-0.18595	-0.21234	-0.2043	-0.2089	-0.2041	NO
Fuels	NA	-0.145746	-0.14787	-0.17006	-0.1678	-0.1633	-0.1723	NO

Table: 10 Empirical competitive positions of SAARC Countries

	<i>Bangladesh</i>	<i>Bhutan</i>	<i>India</i>	<i>Maldives</i>	<i>Nepal</i>	<i>Pakistan</i>	<i>Sri Lanka</i>
<i>TREND OF NRCA</i>							
Manufactures	SD	FD	RD	FD	FD	FD	FD
Iron and Steel	VD	FA	VD	FD	VA	VD	VD
Chemicals	SD	FD	VD	FD	FD	FD	VD
Pharmaceuticals	FD	FD	FD	FD	VD	FD	FD
Machinery and Transport Equipment	RD	FD	RD	FD	FD	FD	FD
Office and Telecom Equipment	SD	FD	VD	FD	FD	FD	FD
Electronic data processing and office equipment	VD	FD	FD	FD	FD	FD	FD
Telecommunications equipment	VD	FD	VD	FD	FD	FD	FD
Integrated circuits and electronic components	VD	FD	FD	FD	FD	FD	FD
Transport equipment	SD	FD	RD	VD	VD	FD	FD
Automotive products	SD	FD	VD	FD	VD	FD	VD
Textiles	RA	FD	VA	FD	VA	FA	VD
Clothing	RA	FD	FA	FD	VA	FA	VA
Agricultural products	RD	FD	FD	FA	VA	VA	FA
Food	RD	FD	FD	FA	FA	VA	FA
Fuels and mining products	RD	FA	RD	VD	RD	RD	VD
Fuels	RD	FA	RD	FA	VD	RD	VD

Note: 1. Rising Advantage (RA), Falling Advantage(FA), Volatile Advantage (VA), Volatile Disadvantage(VD), Rising Disadvantage(RD), Falling Disadvantage(FD), Stable Advantage(SA), Stable Disadvantage(SD)

2. These positions have been estimated on the basis of last three years' trends.

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