

Trade Expansion, International Competitiveness and the Pursuit of Export Diversification in Bangladesh

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While export diversification has been central to many policy dialogues in Bangladesh, little effort has been made to investigate international competitiveness of major export sectors using longitudinal data. This paper contributes to the export diversification literature by measuring and comparing international export competitiveness of five major export sectors in Bangladesh employing data from 1980 to 2013. The expansion of readymade garments export from Bangladesh has been phenomenal. Exports of fish and seafood also increased slowly. The exports of other three sectors, however, declined. While three of the five sectors considered in this study enjoyed international competitiveness, the export competitiveness of only two sectors increased over time. These results underscore export diversification challenges faced by Bangladesh and possible pathways.

Keywords: Export Diversification, International Competitiveness, Normalized Revealed Comparative Advantage Index, Major Export Sectors, Bangladesh

JEL Classification: F13, F14, F63, O11, O13

I. INTRODUCTION

Expansion of international trade has been an important avenue for economic growth in many developing countries including Bangladesh since the 1980s. It is now widely believed that developing countries can achieve sustainable economic

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growth through trade and export diversification (World Bank 2009, Hausman, Hwang and Rodrick 2007, Dunusinghe 2009).

Diversification of export can either take the form of adding new products to the existing portfolio of exports or breaking into new geographic markets with the existing exports or a combination of the two. Export diversification enhances higher productivity, induces trade promoting externalities, facilitates faster moves into higher value-added production, reduces the extent of terms-of-trade volatility and stabilises export earnings. All these factors contribute to a country's macroeconomic stability. Empirical results suggest that while some developing countries have achieved significant export diversification and economic growth, there is enormous potential for further progress (Besedes and Prusa 2007). It is, therefore, quite fitting that export diversification issues have been prominent in many important policy discussions and dialogues in Bangladesh in recent years (Bangladesh Planning Commission 2014). While many of these discussions have been very interesting and thought provoking, they seem to have overlooked pertinent empirical dimensions. For example, which export sectors should Bangladesh focus on to pursue export diversification? Should the focus be on traditional export sectors or non-traditional export sectors? To address these issues, we need to know how well the major export sectors in Bangladesh are performing in the international market. This information related to global competitiveness will also direct our attention to what constraints may be preventing Bangladesh from diversifying its exports. Since "one size does not fit all" the results from the competitiveness analysis can highlight sector specific needs for future policy choices. No empirical study has yet been conducted to determine international competitiveness of major export sectors in Bangladesh and to develop their implications for export diversification strategies. An attempt is made in this paper to bridge this gap by determining the revealed comparative advantage of five major export sectors in Bangladesh employing annual data from 1980 to 2013.

The primary focus of this study is to measure and compare global competitiveness of five major export sectors in Bangladesh, and develop the implications of the results to shed lights on the necessity for and challenges of pursuing export diversification in Bangladesh. It is to be noted here that this paper focuses on the trade success of a sector and defined as the performance of a sector in a country relative to the same sector in other countries (Latruffe 2010). Thus, international performance is considered as a relative concept in this study.

Section II deals with the choice of the sectors in this study. Section III focuses on the choice of the measurement indicators and the data. Section IV

presents the competitiveness results and discusses their trends. This section also compares the international competitiveness of the five selected sectors and highlights the implications of the results for export diversification in Bangladesh. Section V summarises the main findings and concludes the paper.

II. CHOICE OF THE SECTORS

The readymade garments sector of Bangladesh made headlines around the world due to serious labour safety issues in recent years. Beyond these recent episodes, however, the phenomenal growth of the readymade garments sector in Bangladesh has been at the centre of many discussions by development economists, politicians, policy makers, NGOs and in the popular press both at home and abroad. These discussions highlight the contributions of this sector's growth to the economy and to the wellbeing of low-skill female workers with significant admiration (Rhee 1990, Easterly 2002). Therefore, it is not surprising that the success story of the garments sector in Bangladesh attracted significant research interests since the 1990s (Rhee 1990, Dowlah 1999, Spinanger 1987, Spinanger and Wogart 2001, USITC 2004, Chowdhury Ali and Rahman 2006, Haider 2007, Ahluwalia and Hussain 2004, Yang and Mlachila 2007, Joarder Hossain and Hakim 2010, and Mottaleb and Sonobe 2011). A quick perusal of these studies suggests that while many aspects of the garments sector in Bangladesh such as the effects of MFA-quota, performance in post-MFA period, labour utilization, etc. have been described and critically explored, the empirical analysis of this sector's performance has largely been driven by researchers' judgements rather than by relevant data. No study has used longitudinal data and employed appropriate framework to measure revealed trade competitiveness of this sector relative to the performance of the same sector in other exporting countries. Therefore, this study represents the first attempt to measure the trade competitiveness of the garments sector using longitudinal data.

Only one published study explored export performance of the fish and sea food sector in Bangladesh, but no attempt was made to empirically measure it (Ito 2007). While jute, leather and tea sectors are known as traditional and primary export sectors of Bangladesh, no published study related to export competitiveness of these sectors exists. An attempt is made in this study to measure export competitiveness of these traditional export sectors in Bangladesh using longitudinal data from 1980 to 2013.

The choice of these sectors is based on the following three considerations. First, these sectors together represent the largest segment of the economy in terms of the number of producers, employment, volume produced, the value of production and their contributions to export earnings and to income in Bangladesh. Second, in recent years, these sectors contributed to about 80 per cent of total export earnings in Bangladesh. Finally, as in most empirical analysis, the availability of a reliable data set influences the choice of the sectors and the coverage of the study. This paper is no exception.

III. CHOICE OF THE MEASUREMENT INDICATOR

To measure competitive performance of the selected export sectors in Bangladesh, this study employs competitiveness measures which focus on trade success. Alternative indicators can be used to measure and compare international competitiveness of the selected sectors. This section briefly introduces the alternative indicators commonly used in the literature and justifies the choice of the indicator employed in this study.

Based on the premise that higher demand for the currency of a country strengthens the real value of its currency, some analysts argued that the real exchange rate (RER) can be used to measure international competitiveness (Brinkman 1987, Ball *et al.* 2010). The RER is defined as the ratio of the price index of tradable commodities to the price of non-tradable commodities. Ball *et al.* (2010) argue that it is better to use the purchasing power parity (PPP) to measure and compare relative prices of different countries than the RER. While a strong RER might be a sign of increased competitiveness of a country, it also lowers international competitiveness by making its products more expensive to foreign buyers. Therefore, it is not a good indicator of export competitiveness of the selected sectors in Bangladesh. Secondly, since the introduction of the flexible exchange rate regime, currencies are traded as commodities in foreign exchange markets around the world. As a result, exchange rates reflect changes in economic fundamentals as well as speculative motives of currency traders. It is now widely known that speculative motives contributed to financial crisis in different countries. To reduce the effect of speculative attacks on their currencies, many countries routinely intervene in their foreign exchange markets. As countries manipulate RER and the PPP, the use of these indicators to measure

and compare export competitiveness is problematic (Sharples 1990, Harrison and Kennedy 1997). There are also unresolved methodological and measurement issues related to empirical implementation of RER as a measure of international competitiveness of an economic sector (Bose 2014).

Export market shares (EMS) has also been used to measure export competitiveness of a sector or a country. The competitiveness neutral value of this index is 0 and it is bounded by -1 and 1. However, the EMS does not take into account a country's size. Therefore, it is not appropriate to use this indicator to measure and compare export competitiveness of the selected sectors (Fischer and Schornberg 2007).

Some analysts view international competitiveness results from higher productivity. For example, Bureau *et al.* (1992) have focused on productivity differences and relative prices as sources on international competitiveness. They used multilateral Törnqvist index to investigate price and volume competitiveness for four agricultural products, wheat, beet, hog and milk, using annual data from 1984 to 1986. Similarly, Nagubaddi *et al.* (2006) examined the relative competitiveness of the sawmills and wood preservation industry in the United States and Canada using annual data on quantities and prices of inputs and outputs, and exchange rates for the period from 1958 to 2003. They estimated relative prices using purchasing power parities for outputs and inputs, relative levels of productivity and annual rate of technical change. Drescher, Klaus and Maurer (1999) have focused on the growing heterogeneity of production structures and interpreted competitiveness as the ability of firms to cope with structural changes. They performed a cluster analysis using annual export shares of selected German dairy products for the periods from 1983 to 1993 to analyse the international competitiveness of dairy products subsectors. They have used export shares, revealed comparative advantage indicators, revealed comparative advantage net export indicators and share of exports not flowing into neighbouring countries as measures of competitiveness. Note, purchasing power parity assumption is embedded in these studies, which can influence the estimates of competitiveness. Moreover, the assumptions of a competitive market and homogeneous products in Drescher, Klaus and Maurer (1999) are both problematic in light of dairy regulations in the EU during the period of their study (Table I).

A few studies also focused on firm's cost condition and the structure of demand it faces as the sources of competitiveness. Gopinath *et al.* (1996) investigated the competitiveness of U.S. food processing sector and linked that to primary agriculture using annual data for the period 1959 to 1991. This study also considered influence of government policies on the competitiveness. Gopinath *et al.* (1996) found that policies which tend to distort markets by raising the price of primary agricultural outputs tend to adversely affect the competitiveness of the food processing sector. On the other hand, policies which induce productivity growth that lowers production costs in either sector tend to increase the competitiveness of both sectors (Table I).

Kennedy and Rosson (2002) investigated the impact of currency exchange rate fluctuations and trade preferences on agricultural competitiveness among the NAFTA countries using annual market share data for beef and veal, corn, sugar, tomatoes and wheat from 1989 to 2000. This study used change in market shares as a measure of competitiveness. Fischer and Schomberg (2007) used Industrial Competitiveness Index (ICI) to analyse the current state of the EU food and drink manufacturing industry's competitiveness (Table I).

As shares can vary across inputs, heterogeneous factor shares can be used a source of competitiveness. Chowdhury *et al.* (2002) explored the relationship between productivity and competitiveness within the framework of a Ricardian model. Employing annual data from 1966 to 1990 for forty manufacturing industries in Canada and in the United States, they computed Canadian-US productivity ratio, industry-output ratio and composite-factor-price index as measures of competitiveness. They found significant positive link between improved productivity and international competitiveness. This study also revealed that factor price differences and factor intensities improved competitiveness of Canadian firms. However, this study only focused on the heterogeneity of a single factor and, hence, was unable to examine the implications of a multifactor model (Table I).

TABLE I
A SYNOPTIC VIEW OF PREVIOUS STUDIES ON COMPETITIVENESS

Author(s)	Sectors & Objectives	Data used	Measures of competitiveness	Major Findings
Bureau, J.C. and J.P. Butault (1992)	Wheat, sugar beet, hog and milk production - Investigated price and volume competitiveness	Yearly data for soft wheat, sugar beet, hogs and milk for 1984, 1985 and 1986, for ten member countries in EEC Output prices, wages and agricultural income per family worker are from RICA (Reseau d' Information Comptable Agricole)	Multilateral version of Törnqvist Index -used weighted factor shares	<ul style="list-style-type: none"> • Wheat: Best performances are obtained by two large producers-UK and France-show less labour per unit of output • Sugar beet: Most efficient producer is France due to better input use efficiency • Hog Production: Differences in total productivity mainly result from underlying structures of production. • Dairy production: Good performances are observed in countries which have high labour and capital productivity. • Overall, price advantages for inputs and outputs among countries are due largely to real exchange rates, green parities, tax policy and output quality
Gopinath, Munisamy., T.L. Roe and M. D. Shane (1996)	Food Processing Examines sources of growth in the U.S. food processing sector and compares them to those obtained for primary agriculture.	Yearly data on value of industry shipments, output price index, payments to material inputs and energy for 49 industries from National Bureau of Economic Research (NBER).	Sources of growth in GDP; Changes in relative output prices, input levels, Growth in Total Factor Productivity (TFP)	<ul style="list-style-type: none"> • Major factor contributing to growth in food processing GDP is input use efficiency. • An increase in the price of farm commodities will adversely affect the competitiveness of the food processing sector. However, policies to induce productivity growth with lowers production costs will increase the competitiveness of both sectors.

(Contd. Table 1)

Author(s)	Sectors & Objectives	Data used	Measures of competitiveness	Major Findings
Drescher, Klaus and Oswin Maurer (1999)	Dairy Analysis of international competitiveness of dairy products (sub sectors)	Yearly data on export shares (quantity and value) of German Dairy Industry for selected dairy products, (fresh milk, whey, dry milk, evaporated milk, butter, cheese and fresh cheese) from 1983 to 1993 for 13 European Union countries	1. export Shares (Quantity and Value shares) 2. Revealed Comparative Advantage for exports (XRCA) 3. Revealed Comparative Advantage Net Export Indicators (NXRCA)	<ul style="list-style-type: none"> All three measures (i.e. Export Shares, XRCA and NXRCA) reveal that during 1988-1993 Germany has developed a competitive disadvantage in international markets for butter and cheese and Competitive advantages for evaporated milk, dried milk products and possibly fresh-milk products.
Choudhri., E.U and L. L. Schembri (2002)	Explore the relationship between productivity and competitiveness within the Richardian model	Panel data set: Annual data from 1966 to 1990 for 40 manufacturing industries in Canada and in the United States	Canadian-US productivity ratio; Industry-output ratio and A composite-factor –price index.	<ul style="list-style-type: none"> Productivity performance enhances international competitiveness; Canadian-US productivity ratio has a positive effect on shares of Canadian firms in both Canadian and U.S markets. Competitiveness of Canadian firms is influenced by a composite-factor-price index which represents the effect of interaction between factor-price differences and factor intensities.
Kennedy, L.P. and C.P. Rosson (2002)	Beef, corn, sugar, tomatoes, wheat • Investigated the impact of exchange rate fluctuations and trade preferences on competitiveness among the NAFTA countries.	Yearly data on market shares of beef and veal, corn, sugar, tomatoes and wheat for Canadian, Mexican and US markets for the period from 1989 to 2000	Change in market shares	<ul style="list-style-type: none"> After the implementation of NAFTA, the U.S agricultural exports to Canada and Mexico have grown but to other major markets have declined
Nagubadi., V . and D. Zhang (2006)	• Examine the competitiveness of the sawmills and wood preservation industry in the United States and in Canada	Yearly data on quantities of six outputs-softwood lumber. • Annual Survey of Manufacturers and Census of Manufacturing in the U.S. • Statistics Canada and CANSIM-II	Relative output and input prices, relative productivity levels	<ul style="list-style-type: none"> Competitiveness of the Canadian industry have been facilitated by both lower relative prices and higher relative productivity levels over the US industry in the earlier periods. Canadian industry's competitiveness relied predominantly on the declining value of the Canadian dollar relative to the US dollar.

(Contd. Table 1)

Author(s)	Sectors & Objectives	Data used	Measures of competitiveness	Major Findings
Fischer, C. and S. Schornberg (2007)	Investigates the current state of competitiveness in the EU food and drink manufacturing industry	Yearly data from the Eurostat from 1995 to 2002 For the food processing sector and its subsectors. Gross operating surplus, value added, turn over, production (in euro millions and number of employees for 13 EU countries)	Industrial Competitiveness Index (ICI) : comprised of three component indices (profitability index, productivity index and growth index)	<ul style="list-style-type: none"> • During 1999-2002 as compared to the average of period 1995-1998 for both EU countries and industries, overall competitiveness has slightly increased. • Beverage manufacturing, manufacturing of milled grain products, starches and starch products, and manufacture of cocoa, chocolate and sugar confectionary were the most competitive. • Industries focused on production and processing of meat and meat products as well as dairy products were least competitive. • United Kingdom and Ireland were the most competitive EU food processing nations, while Netherlands, Belgium and Finland experienced losses in overall competitiveness.
Esmaili (2014)	Export competitiveness of dates from Iran and other exporting countries.	Yearly data from eight date exporting countries including Iran from 1961 to 2005	Used BRCA index to measure export competitiveness	<ul style="list-style-type: none"> • Iran enjoyed comparative advantage in date exports • Export subsidies have enhanced export competitiveness of date's from some of the selected countries. • Comparison based on BRCA is problematic.
Yu <i>et al.</i> (2010)	Export competitiveness of major exports from Hawaii	Monthly data for major exports from Hawaii from 1995 to 2005	Used NRCA index to measure export competitiveness	<ul style="list-style-type: none"> • Export competitiveness of major exports from Hawaii increased over time • No empirical analysis to determine the drivers of export competitiveness.

The most widely used measure of export competitiveness of a sector or a country has been the revealed comparative advantage (RCA). This measure was first formulated by Balassa (1965) and is also known as the Balassa index. Balassa's revealed comparative advantage (BRCA) index defines country i 's comparative advantage in commodity j as,

$$BRCA_j^i = \frac{\left(\frac{E_j^i}{E^i}\right)}{\left(\frac{E_j}{E}\right)} \quad (1)$$

where E_j^i denotes i 's export of commodity j , E_j denotes total export of commodity j by all countries, E^i denotes i 's export of all commodities, and E denotes export of all commodities by all countries.

Thus, the BRCA index compares country i 's market share in the j^{th} commodity export market relative to its market share in the world export market. The comparative advantage neutral value of this index is 1. A value greater than one indicates that country i 's market share in commodity j 's export market is greater than its market share in the world export market. Thus, country i has a comparative advantage in commodity j . Similarly, a value less than one indicates comparative disadvantage. The BRCA has a lower limiting value of zero but its upper limit is undefined. The BRCA can only indicate if a country has comparative advantage in a sector or not. Its magnitude has neither the ordinal property nor the cardinal property. Consequently, the BRCA index cannot be used to compare comparative advantage of different export sectors over time (Hoen and Oosterhaven 2006). Despite the limitations, BRCA has been employed for measuring the exports competitiveness in many recent studies such as Ferto and Hubbard (2003), Bojnec and Ferto (2012, 2014), Chien (2010), Cooper (2006), and Savin and Winker (2009).

Since the primary focus of this study is to measure international competitiveness of five selected sectors and compare competitiveness across sectors and over time, this study employs the normalized revealed comparative advantage (NRCA) proposed by Yu, Cai and Leung (2009) to measure international competitiveness of the selected export sectors in Bangladesh. The NRCA can be defined as:

$$NRCA_j^i = \left(\frac{E_j^i}{E}\right) - \left(\frac{E_j E^i}{EE}\right) \quad (2)$$

The $NRCA_j^i$ index measures the degree to which country i 's actual exports of commodity j deviates from its comparative-advantage-neutral level in terms of its relative scale with respect to the world export market. Thus, it provides a more reasonable indication of the underlying comparative advantage than does the BRCA index. If the value of $NRCA_j^i > 0$, it indicates that country i 's exports of j is higher than its comparative-advantage-neutral level and hence, it has comparative advantage in commodity j . The bigger (smaller) the $NRCA_j^i$ score, the stronger the comparative advantage (or disadvantage). Since comparative advantage is a relative concept, the magnitude of the NRCA provides a more meaningful economic interpretation in a comparative context. The comparative-advantage-neutral value of the NRCA is zero and it has a symmetric distribution. The symmetrical property of this index facilitates the comparison of comparative advantage across sectors and over time (Laursen 1998, Hoen and Oosterhaven 2006). The use of NRCA has been relatively less frequent perhaps because of its late arrival and computation is a bit more involving than the BRCA. Recent studies using NRCA to measure export competitiveness include Yu, Cai and Leung (2009), Yu, Cai, Loke and Leung (2010), Shohibul (2013), Sarker (2014) and Sarker and Ratnasena (2014).

Among a set of alternative measures, the unit-labour-cost adjusted RER appears to be more promising. This measure requires detailed sector-specific data on labour usage and labour costs over time. As I was unable to access longitudinal sector-specific unit labour cost for the selected sectors, the data used in this study their sources and basic features are presented below.

Data: Definition, Sources and Distributional Features

To measure NRCA for the selected sectors, annual export data of readymade garments (SITC:084-which includes 0842 (men's and boys' outerwear, textile fabrics not knitted or crocheted), 0843 (Womens. Girls, infants outerwear, textile not knitted or crocheted), 0844 (under garments of textile fabrics, not knitted or crocheted), 0845 (Outerwear knitted or crocheted), 0846 (under-garments, knitted or crocheted), 0847 (clothing accessories of textile fabrics) and 0848 (Articles of apparel, clothing accessories, not-textile, headgear)), fish and sea food (SITC:03-which includes 034 (fish, fresh, chilled or frozen), 035 (fish, dried, salted or in brine; smoked fish), 036 (fish, crustaceans and molluscs, fresh, chilled, frozen, salted etc.) and 037 (Fish, crustaceans and molluscs, prepared or preserved)), jute and jute products (SITC:0264- includes only jute and textile fibres made from jute, raw, processed but not spun), leather (SITC: 0611 which also includes 0612

manufactures of leather or of composition leather) and tea (SITC:0741) from Bangladesh to different export destinations were collected from the “UN Comtrade” database of the United Nations (<http://comtrade.un.org>). Other relevant data required for measuring revealed comparative advantages of these sectors were obtained from the “UN Comtrade” and the database maintained by the World Trade Organization (WTO). Export data for the selected sectors obtained from these sources span a period from 1980 to 2012. Relevant export data for 2013 were compiled from various monthly releases of *Foreign Trade Statistics* by the Bangladesh Bureau of Statistics (BBS). Special efforts were made to ensure that all export data obtained from these sources are comparable across different sources, and reliable.

TABLE II

AVERAGE ANNUAL (COMPOUND) GROWTH RATES OF THE EXPORTS OF FIVE MAJOR EXPORT SECTORS AND TOTAL AGRICULTURAL AND NON-AGRICULTURAL EXPORTS IN BANGLADESH

Sectors	Annual Compound Growth Rates Over Selected Years (%)		
	1985-1994	1995-2004	2005-2013
Readymade Garments	24.3	12.3	14.8
Fish and Sea Food	9.9	2.5	2.3
Jute and Products	-9.1	1.4	7.6
Leather	7.7	1.7	5.3
Tea	-0.3	-6.2	-18.8
Total Ag. Exports	3.6	2.9	5.7
Total Non-Ag. Exports	12.5	10.4	13.8

Source: Author’s calculation.

Compound annual growth rates of the selected export sectors in Bangladesh for three different time periods are presented in Table II. The readymade garments sector grew at more than 24 per cent during 1985-1994. But the growth rate slowed down to just over 12 per cent during the next decade. The growth rate increased to about 15 per cent after the Agreement on Textiles and Clothing (ATC) replaced the multi-fibre agreement (MFA), which governed the international trade in textiles and clothing, on January 1, 2005. While the growth rates of fish and sea food exports and leather exports followed a pattern similar to that of the garments export, the exports of jute and tea declined during the first decade. Exports of jute and jute products grew subsequently but tea export declined sharply since 1995. It can be gleaned from Table II that the growth of non-agricultural export in Bangladesh has been riding safely on the back of the exports of readymade garments. How are these growth rates influencing the international competitiveness of these sectors? This is explored in the following section.

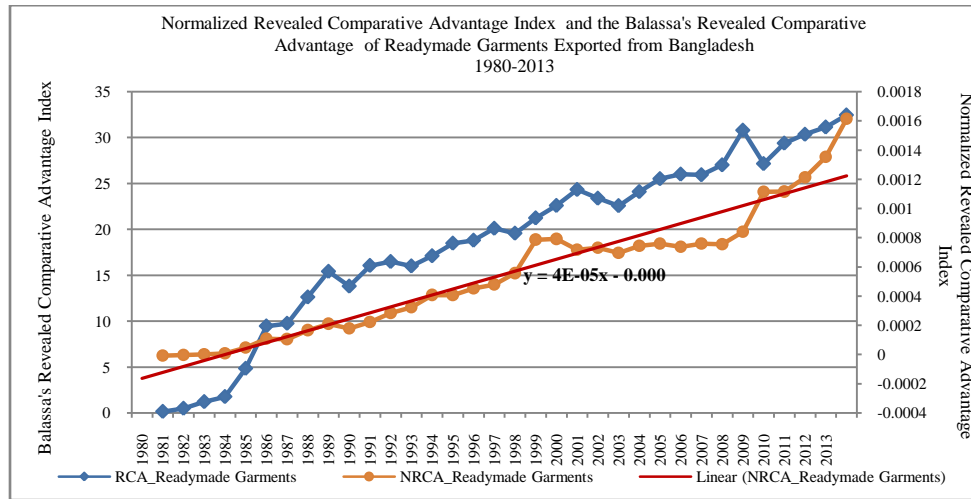
IV. COMPETITIVENESS OF THE SELECTED EXPORT SECTORS

The formula for NRCA presented in the previous section (equation 2) is used to measure the international competitiveness of the selected sectors in Bangladesh. The international competitiveness of these sectors are also measured based on the BRCA index (equation 1) for comparative purposes, although this measure has some serious weaknesses as highlighted in the previous section. The basic distributional statistics of the estimated BRCA and NRCA indices are presented in Table III. Since the BRCA index cannot be used to compare comparative advantage of different export sectors over time, the discussion related to international comparative advantage of each sector and its comparison is based only on the NRCA values.

**TABLE III
DISTRIBUTIONAL FEATURES OF THE NORMALIZED REVEALED COMPARATIVE ADVANTAGE (NRCA) INDEX OF SELECTED EXPORT SECTORS IN BANGLADESH: 1980-2013**

Sector	Measure	Mean	St. Deviation	Minimum	Maximum
Readymade Garments	NRCA	0.00055	0.00042	-0.00001	0.00162
Fish and Sea Food	NRCA	0.00390	0.00190	-0.00020	0.00810
Jute and Jute Products	NRCA	0.00020	0.00013	0.00007	0.00051
Leather and Products	NRCA	0.00024	0.00005	0.00010	0.00037
Tea	NRCA	0.00006	0.00003	-0.00002	0.00023

Figure 1: International Competitiveness of the Readymade Garments Sector in Bangladesh: 1980-2013



Bangladesh enjoyed international competitiveness in the readymade garments sector as the value of NRCA has been greater than zero (Figure 1). While the NRCA values fluctuated over time, the global competitiveness of the garments sector increased in a sustained manner during the study period. The results also reveal that the international competitiveness of this sector increased at a faster rate after the complete deregulation of the MFN quota system in January 2005 than in the previous period (Figure 1 and Table IV). Thus, as an exporter of readymade garments, Bangladesh is enjoying the benefits of a complete deregulation of the MFN quota system.

Figure 2: **International Competitiveness of Fish and Sea Food Exported from Bangladesh: 1980-2013**

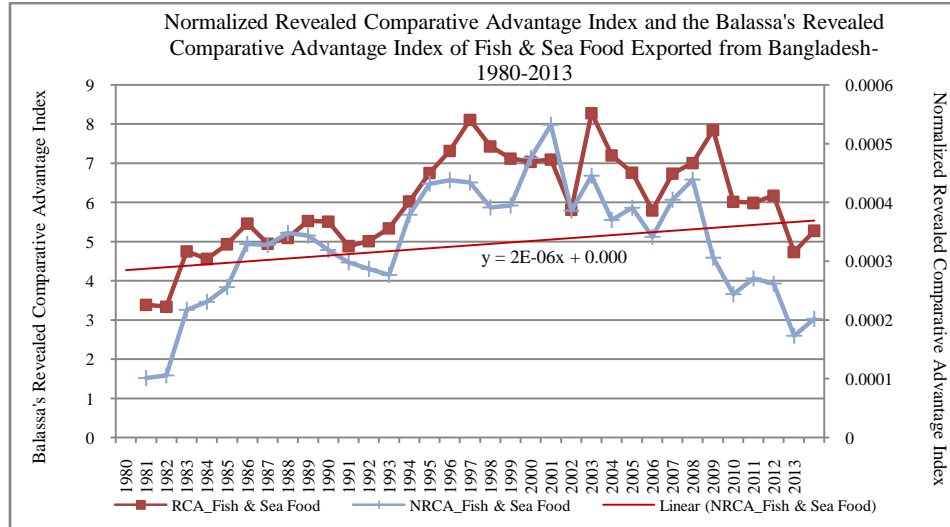


TABLE IV
**TREND ANALYSIS OF THE COMPETITIVENESS OF
SELECTED EXPORT SECTORS IN BANGLADESH**

Dependent Variables	Intercept	Time Trend	R ² Adjusted	F-Statistic ¹
NRCA-Readymade Garments	-0.0809* (19.78)	0.000041* (19.91)	0.923	572.44*
NRCA-Fish and Sea Food	-0.0046 (1.324)	0.0000025 (1.418)	0.03	2.01 (0.166)
NRCA-Jute and Products	0.0213* (7.265)	-0.0000106* (7.196)	0.606	51.78* (0.00)
NRCA- Leather	0.0075* (3.81)	-0.0000037* (3.70)	0.278	13.68* (0.001)
NRCA-Tea	0.0119* (11.91)	-0.0000059* (11.84)	0.808	140.19* (0.00)

Note: The figures in the parentheses are t-values. 1 indicates that the figures in the parentheses for F-Statistics are p-values.

The fish and sea food sector also enjoyed international competitiveness during the study period (Figure 2). While the trend line shows a positive coefficient, it is not significant (Table IV). The NRCA values not only fluctuated with high amplitude, they also declined precipitously since 2001. A number of factors may have contributed to slow and volatile growth in exports of fish and seafood from Bangladesh. There has been a sustained increase in health concerns and awareness of the impacts of human actions on natural environment in Western Europe and in North America since the late 1980s. These regions also welcomed a large number of immigrants from Bangladesh and other Asian countries since the early 1990s. These developments may have contributed to higher export demand for fish and seafood from Bangladesh since the mid-1990s.

As fish and seafood became an important component of a healthy diet in the West, particularly in the EU, Australia, Canada and in the United States, growth in consumer demand increasingly outpaced availability from local sources. As fish imports grew over time, many importing countries introduced new food safety standards to protect human, animal and plant health. In many instances, the new food safety measures are stricter and more stringent than those based on the Codex Alimentaries (Beghin, Maertens and Suinnen 2015, Henson and Loader 2001). Finally, some large importing countries have also initiated unfair trade investigations and imposed anti-dumping and countervailing duties on fish and seafood imports to protect domestic producers (Asche, Bremnen and Wessells 1999). The volatility in fish and seafood export competitiveness can be attributed to these issues. As a relatively new exporter of fish and seafood to North America and to Western Europe, perhaps Bangladesh was not adequately prepared to deal with the growing complexities of fish and seafood exporting to developed countries. It is important to empirically explore relative contribution of these factors to growth and volatility of fish and seafood exports from Bangladesh. The results can be incorporated in meaningful future efforts to enhance the vigour of this export sector.

Figure 3: International Competitiveness of Jute and Jute Products Exported from Bangladesh: 1980-2013

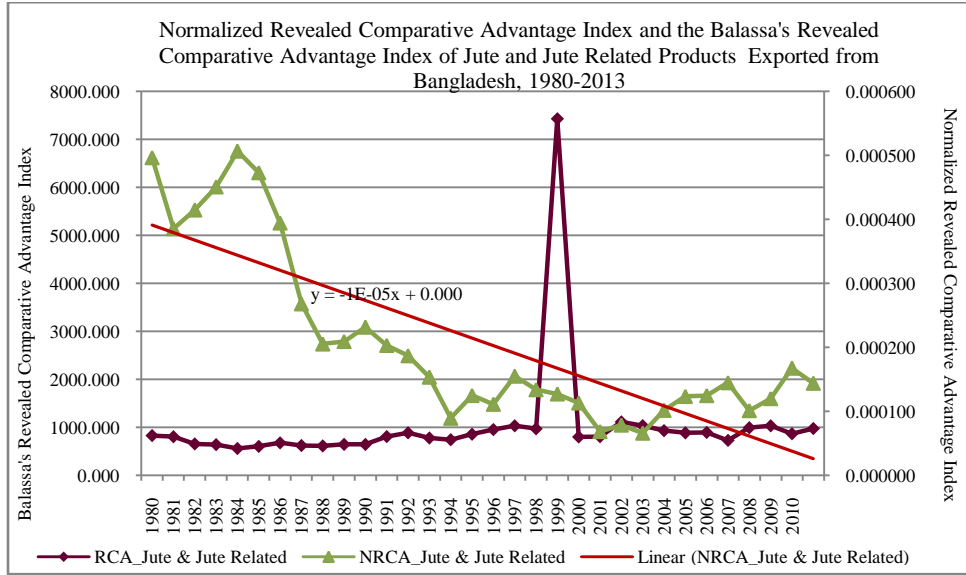
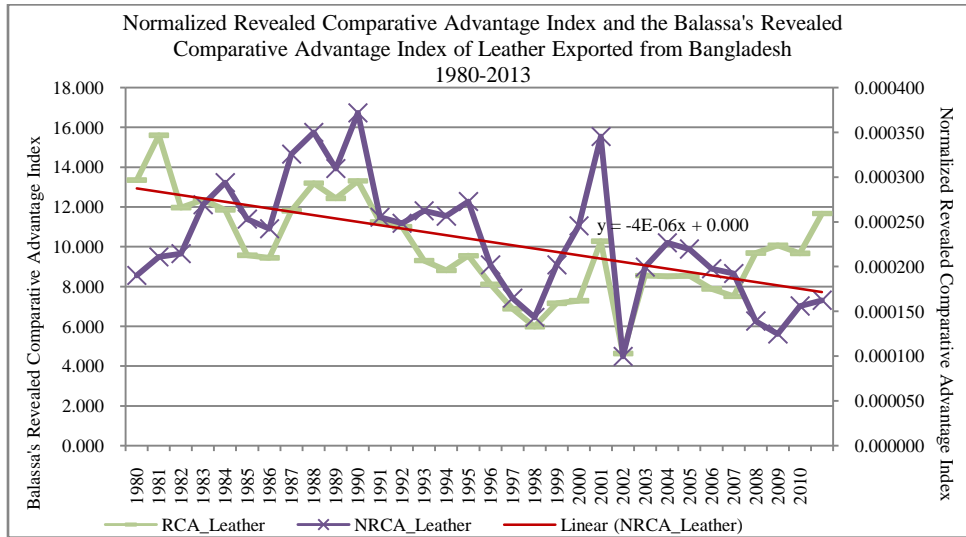
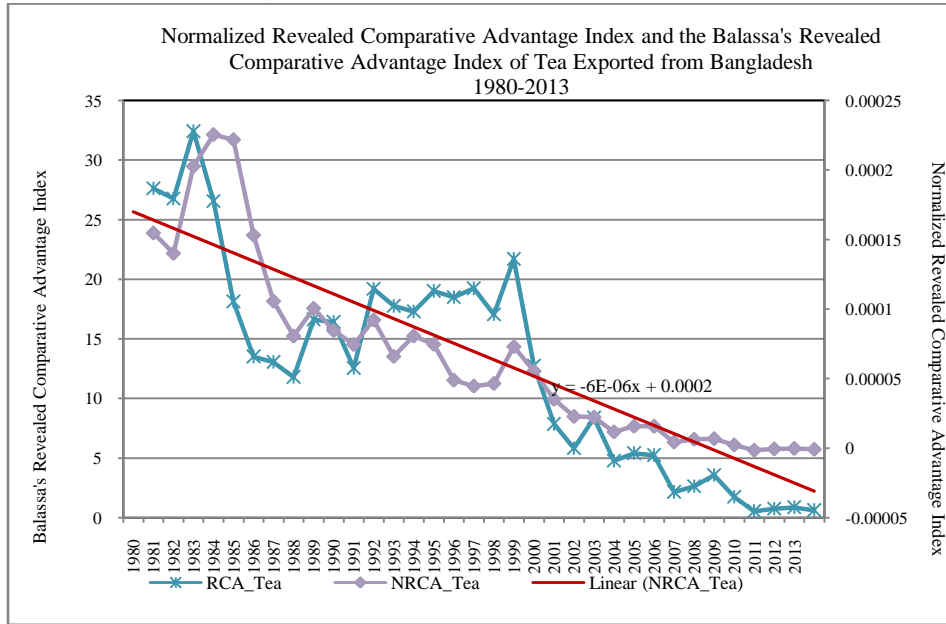


Figure 4: International Competitiveness of Leather and Leather Products Exported from Bangladesh: 1980-2013



While the jute and leather sectors both enjoyed comparative advantage during the study period, the global competitiveness of both sectors declined over time (Figures 3 and 4 and Table IV). Advances in polymer technologies and development of synthetic products may have contributed to the decline of the competitiveness of jute and leather products over time (Boyce 1995). As we gain more experiences with synthetic products which compete head-on with jute and leather products and better understand the long-term environmental consequences of our choices, things will gradually change on the demand side for these products. If thoughtful innovations are made on the supply side as well as on new product development ideas, the competitiveness of jute and leather products exports from Bangladesh will improve in the future.

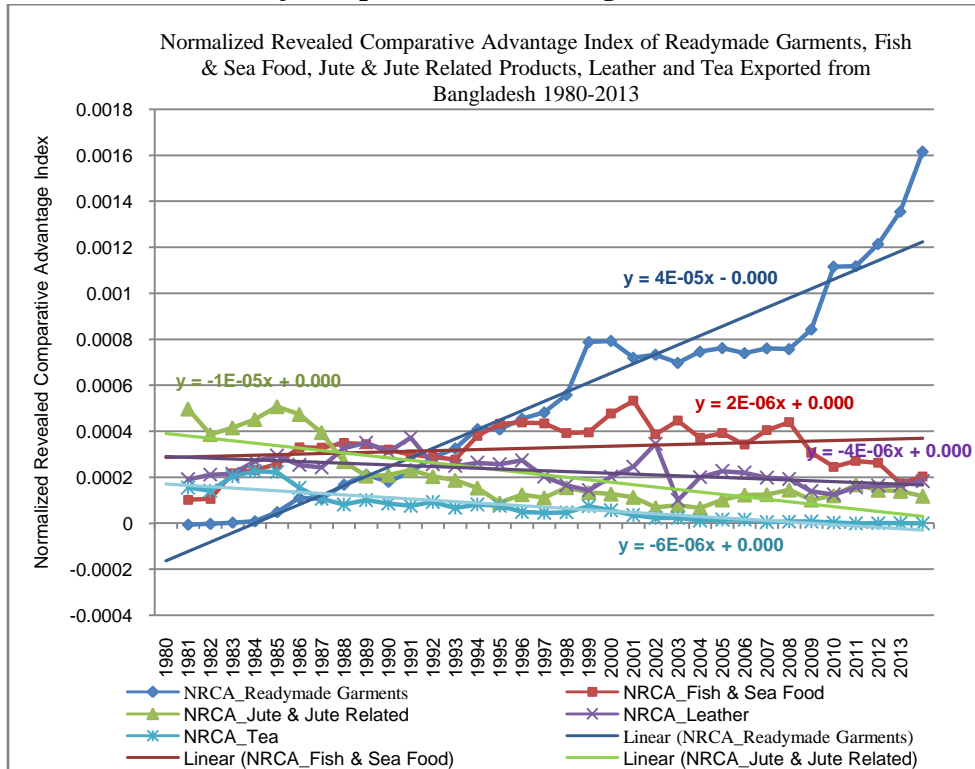
Figure 5: **International Competitiveness of Tea Exported from Bangladesh: 1980-2013**



Historically, tea has been an important beverage in Bangladesh. Although tea as a social drink was limited to people living mostly in urban centres, the spread of education, increased migration of people to major cities and overall economic development made tea the most preferred warm beverage in Bangladesh. Bangladesh was also an important tea producing and exporting country in the past. However, from an export perspective, the tea sector has not been performing well in recent years. The NRCA values for the tea sector in Bangladesh fluctuated considerably from one year to the next and comparative

advantage turned into comparative disadvantage in recent years as the value of NRCA ventured into the negative territory (Figure 5). The trend analysis also reveals that the global competitiveness of the tea sector dropped significantly over time (Table IV). It is important to develop a good understanding what factors may be contributing to the declining relevance of tea in the export basket of Bangladesh. Bangladesh is experiencing unprecedented enterprise diversification in agriculture. Some of the tea orchards have been converted to other more profitable agri-food enterprises. Secondly, economic growth created through the expansion of readymade garments industries and a number of service sectors may have created a larger domestic demand for tea in Bangladesh. Reduced domestic supply may be struggling to satisfy growing domestic demand for tea. This demand for tea is likely to grow even further in the near future with the addition of shift works in newly emerging feed, food and drug manufacturing establishments in Bangladesh.

Figure 6: A Comparative Analysis of International Competitiveness of Five Major Export Sectors in Bangladesh



To compare the export performances of the selected export sectors in Bangladesh relative to their competitors on the global market, the NRCA values for all five sectors are presented in Figure 6. It can be gleaned from Figure 6 that of the five major export sectors, the readymade garments sector is the lone star, sprinting boldly and consistently in an increasingly globalised market. While the other four sectors are alive and moving, they are definitely no sprinting ahead. Three of the four export sectors appear to be moving forward at a slow pace while the tea sector is falling behind (Figure 6). Clearly, each of these four sectors requires additional investigation to determine the drivers of their less than desirable performances on the global stage. The results of this investigation will be very valuable for future policy choices aimed at improving sectoral competitiveness in the future.

What are the implications of these results for pursuing export diversification in Bangladesh? While it is not a good idea for a country like Bangladesh to be content with spectacular trade performance of the readymade garments sector, the results related to the revealed comparative advantages of five major export sectors presented above demonstrate that accomplishing any reasonable export diversification in next five to ten years would be a challenging task. The readymade garments sector depends heavily on the U.S. and the EU markets. While both markets are mature and stable, the lucrative features of these markets will always encourage competitors to innovate. Special focus on innovations in fabrics and designs along with sustained improvement in product quality will ensure sustainable growth in these markets and allow Bangladesh to capture additional shares in Canada and in Nordic countries. For the other sectors, sector specific research is needed to develop a good understanding of their export destinations, the stability of exports to these destinations and the factors responsible for their rather disappointing trade performances. Some of the factors could be within the control of the country while the others could be beyond. A good understanding of these factors will enable policy makers to develop strategies to enhance trade competitiveness of these sectors. Even if the most effective strategy can be formulated for each of these sectors, it would be naive to think that such strategies will turn things around in a year or two. Therefore, a long-term goal and short-run alternative strategies could be developed and put them to work for each of these sectors. Since each of these sectors has some distinguishing features, sector-specific strategies backed by empirical research would generate more desirable outcomes gradually than any grand scheme to revive them in a short period of time.

For a meaningful policy dialogue and informed policy choices in Bangladesh, it is important to identify the drivers of competitiveness of the selected export sectors and to determine the relationship between the drivers and the state of competitiveness for each sector. To achieve this, one could use the Heckscher-Ohlin-Vanek (H-O-V) trade model. Using the H-O-V trade model, Chor (2010) demonstrates that the comparative advantage of a sector is determined by factor endowments, country and industry characteristics and the institutions. In addition, Peterson and Valluru (2000) show that government interventions in commodity markets can also have an impact on the comparative advantage of a sector and on the trade patterns. Based on these studies, one can focus on three groups of explanatory variables: factors related to cost of production or total factor productivity of the sector, relevant exchange rates and relevant policy variables to determine the sources of revealed comparative advantage for five major export sectors in Bangladesh. Sarker and Ratnasena (2014) employed such a framework to determine the factors driving competitiveness of wheat, beef and pork sectors in Canada.

As the global trading environment is increasingly challenged by a tariff war initiated by President Donald Trump, it is also important to look into destination-specific export competitiveness of major export sectors. This will provide additional insights into a country's destination specific competitiveness of different commodities and their drivers. This information will be very useful for repositioning exports should change in the trading environment and other developments present such opportunities in the future.

V. CONCLUDING REMARKS

As the level of protection drops and commodity markets become increasingly globalised, there is a growing optimism that many developing countries can achieve sustainable economic growth through trade expansion and export diversification. While export diversification can confer many potential benefits to a country, harnessing the full benefits of export diversification requires that the major export sectors are competitive on the world market. Spectacular trade performance of the readymade garments sector in Bangladesh since the mid-1980s brought much needed growth in labour employment, foreign exchange earnings and in the overall economy. However, it also made many economists and policy makers weary about too much dependence of Bangladesh on the

export of just one sector. Therefore, export diversification issues have fared prominently in many policy discussions in recent years in Bangladesh. Despite significant policy discussion and sporadic media attention to the issue of export diversification, no study has investigated international competitiveness of major export sectors in Bangladesh. An attempt is made in this paper to bridge this gap by measuring and comparing the revealed comparative advantage of five major export sectors in Bangladesh using longitudinal data.

The results demonstrate that the five major export sectors enjoyed comparative advantage for most of the years considered in this study. However, the international competitiveness of only one sector, the readymade garments sector, has been growing over time. The competitiveness of the other selected sectors is either stagnant or declining over time. While the Uruguay Round of Agreements on Agriculture is believed to have created new agri-food trade opportunities, it appears that the traditional export sectors of Bangladesh did not benefit much from the URAA. The results also demonstrate that the removal of the MFN quota certainly benefited the clothing exports from Bangladesh. An important implication of these results is that achieving any reasonable export diversification in the future would be a challenging task in Bangladesh. Future research should focus on the factors contributing to international competitiveness of the selected sectors in Bangladesh.

A caveat of this study is in order. This study relies on macroeconomic data and investigates export competitiveness of five major export sectors in Bangladesh. While the results are informative, a number of growth-enhancing initiatives and development promoting activities at micro level have not been captured in the results. Significant crop and enterprise diversification are taking place in agriculture and agri-food sectors in this country. Bangladesh is now a leading producer of fresh water fish and an emerging exporter of pharmaceuticals. None of these developments have made its way into the macroeconomic data set employed in this study. Future research should pay close attention to these developments and employ monthly data to explore destination specific export competitiveness of traditional and emerging export sectors in Bangladesh.

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