

Exploring Prospect of the Clothing and Textile Industry: Is Bangladesh Following a Right Growth Strategy?

Muhammad Akhtaruzzaman^{1*} and Syed Hasanuzzaman²

This study measures the growth contribution and competitiveness of clothing and textile industry, the highest export-earning sector of Bangladesh economy. Using the export based revealed comparative advantage (RCA) this study finds that Bangladesh has distinctive dominance in RCA among the top Asian clothing and textile exporters. Seemingly unrelated regression (SUR) shows that clothing and textile contributes positively to per capita GDP growth of Bangladesh economy while there is a strong dependency of performance in this sector among the leading CT exporters in Asia.

JEL Codes: F10, F17, F43,

1. Introduction

Export led growth strategy is not paying off equally to all developing countries and the hypothesis of a ‘fallacy of composition’ is getting more acknowledgement now a days (UNCTAD, 2002; Razmi & Blecker, 2004). Addressing the East Asian (Korea, Hong Kong, Singapore, and Taiwan) rapid growth, Cline (1982) opined against a sure success of similar model in other developing countries stating that “generalization of the East Asian model of export-led growth across all developing countries would result in untenable market penetration into industrial countries.” Kaplinsky (1999, p. 2) also supported the view inserting that most of the East Asian economies “locked themselves into a growth trajectory in which specialization in factor and product markets associated with low barriers to entry led to high rates of competition.” Though empirical finding like Kwan and Kwok (1996) supported China’s growth as being “export-led” type, Boltho (1996) found that Japan’s economic growth was mainly due to the domestic forces rather than foreign demand. The possibility of demand-side constraints on export-led growth is more vivid when we concentrate in a single industry like clothing and textile (CT, hereafter). In fact, impact analysis of apparel export on developing countries gives us a better picture of the fallacy, as it is a manufacturing product involving modern technology. Consistency of demand, market separation for heterogeneous CT items, and a healthy share of world export earnings captured by CT industry have attracted us to examining its contribution to economic growth of major Asian CT exporting countries, focusing Bangladesh.

¹Associate professor, Dept of economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh. Email: mzamanr@googlemail.com * Corresponding author

² Associate professor, Dept of economics, Shahjalal University of Science and Technology, Sylhet-3114, Bangladesh. Email: shzaman11@gmail.com

2. Literature Review

Walmsley and Hertel (2001) analyzed the effects of China's accession to the WTO over the periods of 1995 to 2020 using the dynamic GTAP model applied to 19 regions and 22 commodities. They showed while the world as a whole would benefit from China's accession, its competitors (such as South Asian countries) in the labor-intensive apparel industry will definitely be the losers. The relationship between foreign trade and economic growth, in the contrary, is getting more attention now a days. Specially, dependency of developing countries on imported raw materials along with capital goods and intermediate inputs builds an inner cyclical relationship between exports, imports and economic growth (Hossain et.al. 2009). From the classical and neo-classical schools to new trade theories, the positive impact of foreign trade on economic growth has been supported for its constructive rule in enhancing resource efficiency, productivity, capacity utilization, scale economies, capital accumulation, technology diffusion, income and substitution effect etc. (Krueger, 1978; Kavoussi, 1984;Chen, 2009). Thus, apart from the questionable existence of export led growth, there are scopes to be curious more about the relationship between foreign trade and economic growth in developing countries. A handful of studies such as Baharumshah and Rashid, 1999; Ramos, 2001; have established the export led growth hypothesis backed by supportive import growth.

Trade liberalisation was an welcoming policy for Bangladesh after decades of slow growth, contractionary fiscal policy, inefficient financial management, and a weak industrial base etc. initiated by inward looking import substitution policy in her early days. The outward looking trade strategy incorporated in the early eighties, mainly by relaxation of tariff and non-tariff barriers and capital market liberalization in the early ninties are marked with a strong upward trend of growth rate, thereafter along with higher trade, higher capital inflow and a stronger manufacturing base led by the CT industry. Along with tariff and non-tariff liberalization, measures have also been taken to enhance exports mainly to facilitate the CT industry. In addition to duty free import facilities for inputs, tax exemption, cash incentives, income tax rebate, and back-to-back L/Cs, there are more intensive measures like bonded warehouse facility, tax holidays, export credits, repatriation of profits of foreign investors specially designed for CT industry. The benefit of such policies is realized straight way. In the period 1992-2008 the compound trade growth rate was raised to 9.38 with an export growth rate of 10.33 and an import growth rate of 8.78 (Hossain et. al. 2009, BBS and Bangladesh Export Promotion Bureau). The CT exports contributed about 80 percent of Bangladesh's total manufacturing exports. But with services accounting for about 52 percent of our GDP compared to 19 percent by agriculture and 29 percent by industry (WDI 2011) it is obvious that exports are only a part of the growth dynamics in Bangladesh. Also in addition to a narrow export base, we are lacking market diversification of our export items and imports are also sourced from a few countries (Hossain et. al. 2009, BBS, 2009; EPB, 2009).Table 1(see appendix) shows the dynamics of three decades averaged growth rates of GDP per capita and its three major sectors (agriculture, industry and service) and it compares manufacturing sectors contribution to industry and in turn to GDP per capita growth. It is evident from table 1 that industry growth rate is the driving force of the per capita GDP growth. It is also notable that industrial growth rate is driven by the manufacturing growth rates and CT value added share in manufacturing is almost 50 percent (WDI 2011). The share of CT exports in merchandise trade is almost 80 percent (Table 1). This indicates an excessive dependency of Bangladesh's industrial sector on manufacturing sector at the same time

Akhtaruzzaman & Hasanuzzaman

an excessive dependency of exports earning on CT. This also led us to investigating the sustainability of this relationship empirically.

Despite this enormous contribution of CT industry, few studies have been conducted in examining RCA of Bangladesh. Joarder and Hasanuzzaman (2006) used own country RCA index and measured RCA of traded (two digit SITC code) commodities of Bangladesh. They showed that Bangladesh has comparative advantage in fish, vegetables, jute, tea, leather, textile yarn, made up articles and clothing. To the best of our knowledge, there is lack of studies in the literature exploring competitiveness of this industry of Bangladesh among the leading CT exporters in Asia. Our research interest is to explore the growth contribution and competitiveness of Bangladesh's CT industry among the leading CT exporters in Asia. The paper is organized as follows. Section 3 gives an overall review showing Bangladesh's position in world CT market, dynamics of RCA and pair-wise correlation of RCA of Bangladesh economy with Asian competitors and beyond Asia. Section 4 describes methodology to examine the fallacy in the CT industry among the leading Asian CT exporters. Major findings are discussed in section 5. Section 6 concludes.

3. Top Asian CT Exporters in Global Context

The global trade CT was US\$ 852 billion in 2010, which was only US\$ 150 billion in 1980 (WTO 2011). One third of this total sales was occurred in Western Europe, one third in North America and a quarter in Asia. CT also constituted about seven percent of world total exports at that period generating more than 26.5 million employment worldwide (Euratex 2011). In the late eighties, developing countries took the lead in CT industries and currently they captured 50% of world exports of textile and 70% of clothing. Another salient feature of this potential industry is the rise of Asian countries in the last couple of decades regarding the production and export of CT. Table (2) shows the comparative scenarios of world's top CT exporters and its dynamics over recent three decades.

It is evident from the Table 2 that world clothing export is now led by China. In 1980, this leading position was secured by the EU. Currently, the top clothing exporters in the world market after China, according to the order, are EU (27), Hong Kong (China), Turkey, India, Bangladesh, Vietnam, Indonesia, USA, Mexico, Thailand and Pakistan. This postulates the growing strength in clothing exports of a number of Asian countries including Bangladesh. China constitutes almost 31 percent of total world clothing exports where this figure was only 4 percent in 1980. Bangladesh is now the *6th largest* clothing exporter in the world market contributing almost 3.4 percent of the total world exports, a dramatic rise from a meagre no contribution situation in 1980. Among the Asian top clothing exporters, Bangladesh is only lagged by three Asian giants China, Hong kong and India. However, Bangladesh's share in world clothing export is continuously increasing from 0.6 percent in 1990 to 3.4 percent in 2009 (Table 2).

Akhtaruzzaman & Hasanuzzaman

Table 2: World's Leading Clothing and Textile (CT) Exports

Leading Clothing Exporters	Share in World Export (%)				Leading Textile Exporters	Share in World Export (%)			
	1980	1990	2000	2009		1980	1990	2000	2009
China	4.0	8.9	18.2	34	EU (27)	49.4	48.7	36.0	29.5
EU (27)	42.0	37.0	26.9	30.7	China	4.6	6.9	10.3	28.3
Hong Kong, China	12.3	14.2	12.2	10.2	Hong Kong China	3.3	7.9	8.5	6.4
Turkey	0.3	3.1	3.3	3.8	United States	6.8	4.8	7.0	4.7
India	1.7	2.3	3.1	3.6	Korea Republic	4.0	5.8	8.1	4.3
Bangladesh	0	0.6	2.6	3.4	India	2.4	2.1	3.5	4.3
Vietnam	-	-	0.9	2.7	Taipei, Chinese	3.2	5.9	7.6	3.7
Indonesia	0.2	1.5	2.4	1.9	Turkey	0.6	1.4	2.3	3.7
United States	3.1	2.4	4.4	1.3	Pakistan	1.6	2.6	2.9	3.1
Mexico	0	0.5	4.4	1.3	Japan	9.3	5.6	4.5	2.9
Thailand	0.7	2.6	1.9	1.2	Indonesia	0.1	1.2	2.2	1.5
Pakistan	0.3	0.9	1.1	1.1	Thailand	0.6	0.9	1.2	1.4

Source: Authors Calculation from WTO 2011

Table 2 also shows that the world's leading exporter of textile is EU followed by China, Hong Kong, USA, Korea and India. China has successfully captured the second position in the world textile export uplifting its textile export share from a 4.6 percent in 1980 to a 28.3 percent in 2009. Other leading Asian economies in textile exports are Hong Kong, Korea Republic, India, Taipei, Pakistan, Indonesia and Thailand, while Bangladesh stays nowhere close. The revealed comparative advantage (RCA)ⁱ indices indicating the movements in comparative advantages of major Asian clothing and textile exporting countries are reported in Table 3.

Changes in factor endowment along with changes in trade policies may have provided necessary stimulation to boost up Bangladesh's clothing industry. Despite the global recession, demand for Bangladeshi cheap clothing did not fall. Bangladesh is obviously in a better position regarding the price competitiveness of clothing sector compared to other major Asian clothing exporters. The RCA of Bangladesh's clothing (see Table 3) maintains its increasing trend even though there were global economic downturns in years 1999, 2008-09 etc. and even after the removal of quota restrictions in 2005. However, countries like China and India show a decreasing trend in their respective RCA indices, specially, in the later years probably due to the global economic recession. Comparing RCAs among the top Asian clothing exporters, it can be clearly indicated that export based RCA of Bangladesh is continuously increasing compared to the other Asian competitors (Figure 1).

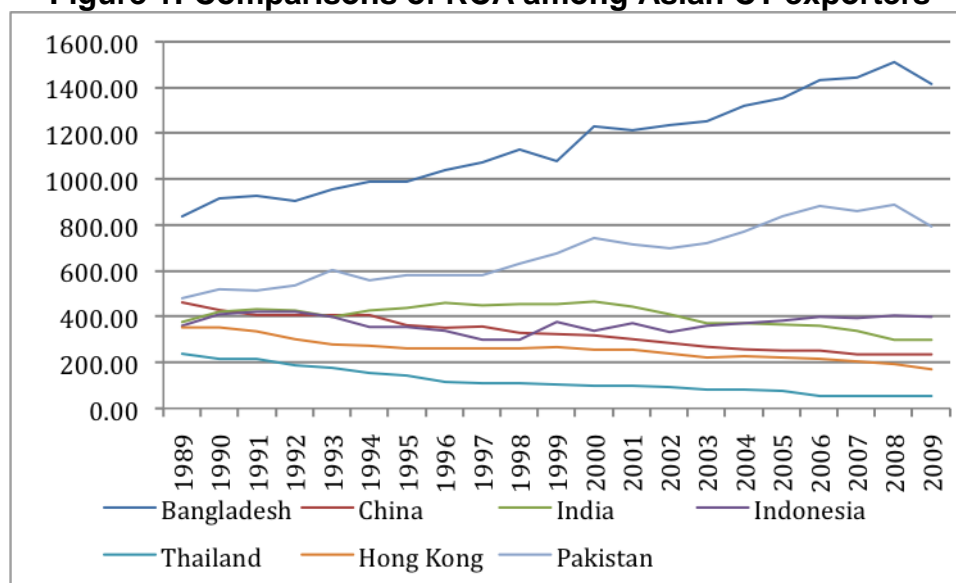
Akhtaruzzaman & Hasanuzzaman

Table 3: Revealed Comparative Advantage among the Asian Competitors

Year	Bangladesh	China	India	Hong Kong	Indonesia	Pakistan	Vietnam	Thailand
1989	837.81	462.39	379.30	353.27	361.39	480.70	355.10	238.24
1990	919.69	428.90	423.17	351.39	409.89	519.28	365.32	217.47
1991	927.98	408.08	430.81	333.88	418.97	513.02	354.73	215.27
1992	903.95	405.41	426.06	301.56	421.75	536.34	347.44	185.98
1993	955.53	404.92	397.73	281.59	396.89	603.42	357.59	174.27
1994	991.22	406.15	428.39	274.35	352.59	560.81	369.13	156.69
1995	990.75	363.56	436.83	261.44	352.11	578.58	452.98	145.43
1996	1042.65	352.72	458.44	261.56	339.67	578.89	454.28	113.59
1997	1073.89	353.94	450.49	261.30	312.25	583.35	438.77	108.09
1998	1129.57	328.21	454.88	265.30	299.66	632.82	421.39	110.49
1999	1081.30	322.71	454.30	270.83	379.05	673.41	419.73	103.06
2000	1230.65	314.55	466.19	259.14	339.54	743.28	489.68	96.39
2001	1212.71	298.74	443.66	258.17	373.36	716.61	488.26	97.85
2002	1236.06	280.53	412.25	240.45	333.51	697.77	468.99	89.90
2003	1253.35	268.56	370.32	227.06	357.69	721.56	451.17	81.21
2004	1318.14	254.93	372.43	228.54	373.03	770.54	472.56	79.32
2005	1354.07	248.81	362.74	222.19	380.62	836.87	498.98	73.30
2006	1432.16	250.85	359.51	216.43	401.55	884.59	470.01	67.36
2007	1445.29	244.53	335.66	206.29	394.15	863.04	458.44	56.64
2008	1511.03	236.24	299.08	195.39	403.84	888.85	549.65	56.47
2009	1415.68	235.65	303.94	170.62	401.22	792.39	513.28	54.01

Source: Authors' calculation from WTO 2011

Figure 1: Comparisons of RCA among Asian CT exporters



Akhtaruzzaman & Hasanuzzaman

It is also good to check whether RCA of clothing industry of Bangladesh is complementary or competingⁱⁱ with her major trade partners. For Bangladesh's major Asian competitors- China, India, Indonesia and Thailand, the correlation coefficients are positive and in most of the cases are close to unity as predicted (Table 4a). The highest correlation coefficient value of Pakistan, Indonesia and India indicates their strong rivalry towards our CT in world market. Relatively lower values of the correlation coefficient with China and Thailand postulate a gradual declining competitiveness with Bangladesh.

Table 4: (a) Correlation with Asian contesting countries

	Bangladesh	China	India	Indonesia	Thailand	Hong Kong	Pakistan
Bangladesh	1.00						
China	0.32	1.00					
India	0.77	0.75	1.00				
Indonesia	0.87	0.69	0.88	1.00			
Thailand	0.01	0.88	0.50	0.44	1.00		
Hong Kong	-0.90	0.92	0.58	.04	0.95	1.00	
Pakistan	0.97	-.94	-0.64	0.15	-0.89	-0.87	1.00

Table 4: (b) Correlation with major trade partners beyond Asia

	Bangladesh	USA	EU27	Germany	Belgium	France	UK	Netherland	Italy
Bangladesh	1.00								
USA	-0.92	1.00							
EU27	0.93	-0.85	1.00						
Germany	-0.10	0.15	-0.14	1.00					
Belgium	0.96	-0.91	0.82	-0.08	1.00				
France	0.84	-0.72	0.65	0.02	0.86	1.00			
UK	0.56	-0.38	0.41	0.62	0.57	0.71	1.00		
Netherland	0.32	-0.15	0.15	0.69	0.34	0.60	0.95	1.00	
Italy	0.77	-0.66	0.59	0.46	0.79	0.81	0.93	0.81	1.00

Table 4(b) shows correlation coefficients of clothing with major trading partners: USA and EU. Because we have different trade relationships with different countries included in EU, we have separated the correlation coefficients for EU27 (aggregate effect) and some major trade partners in the EU27 (bilateral effect). The correlation coefficient value for the USA is highly negative, as expected (Table 4b), because USA has long been providing great support or complementary force to our clothing export through various trade facilities. Interestingly correlation coefficient with the EU27 is positive, setting them as our competitors in clothing exports. But a detailed investigation of bilateral correlation coefficients with some individual countries shows that Germany is the only country among our leading trading partners in EU which boosts up our clothing export. That is, Germany is the solitary country in EU serving as a complementary force for our clothing export and all others are competing with us in this sector. Positive and high correlation exist between Bangladesh and several EU countries. This is because lots of EU countries like Belgium, Italy, UK etc. are veteran producer and exporter of clothing to the global market, which possesses higher value compared to our low value adding clothing products. Such countries host most of the reputed fashion brands and fashion houses, and they lead the global trend in fashion and design in all sorts of clothing. Thus our lower valued clothing products are not always become close substitutes to such products and can even enter the markets of many of EU countries.

Akhtaruzzaman & Hasanuzzaman

This is also supported by the fact that the RCA of our clothing manufacturing is still growing defying the adverse effect of recent global recession, while it decreases for many of our competing economies. With economic downturn demand for cheaper products like our clothing product usually increases everywhere. This finding suggests that in the long run, many countries could be pure competitors of Bangladesh if we want to enter the market for high valued clothing items. In addition to this, countries like Romania, Poland, Slovakia, Slovenia, Hungary, Greece etc., which have lower trade relationship with Bangladesh, are also competing hard regarding clothing exports.

4. Methodology

Competitiveness of CT exporting countries will counter effect country's growth. Since Solow, the analysis of growth incorporates detection of a proper production function and thereby identification of input efficiency in major studies. In the present case we are dealing with possible impacts on the growth of an economy by a combination of positive and negative forces that are enhancing or constraining growth. The CT is a source of export led growth to these economies. Again a possibility of competition among these countries about capturing similar markets may provide a negative blow towards this particular industry driven growth. Such ambiguity in the extent and direction of the impact is absent in less export-oriented sectors like agriculture and service. We can divert our analysis of growth from a deterministic one to a relative influence determining one following Levine, Loayza and Beck (2000), Nasrudin (2004) and others, who analyzed the impact of financial assets on real per capita GDP growth. The benchmark growth equation is as follows:

$$g_{ti} = \alpha + \beta(CT)_{ti} + \gamma_1 ag_{it} + \gamma_2 sg_{it} + \gamma_3 m_{it} + \varepsilon_{ti}$$

Where,

g_{ti} = Per capita GDP growth

CT_{ti} = Clothing and textile export growth in real terms

ag_{it} = Growth rates of agriculture value added

sg_{it} = Growth rate of service value added

m_{it} = Growth rate of import value added

Econometric Technique

Cross country relative efficiency of a competing sector can be examined by checking its relative contribution on respective economic growth context. With the usual assumptions of factor specialization, non-saturated markets and continuous technological change the sector specific influences on economic growth should not be correlated to each other across different countries unless they are competing each other to capture greater share of the global market. Thus the system of equations explaining country specific growth are likely to be correlated across equations, given the nature of the clothing and textile export in this region. Seemingly Unrelated Regression (SUR) is the appropriate model to estimate such a system of equations as proposed by Zellner (1962). Thus it can be checked whether multiple panel of country specific growth functions bear statistically different results. Seemingly unrelated regression (SUR) can be approached as a method of estimations to identify if error components are correlated in such growth model following Baltagi (2001). Following Wooldridge (2002), the fixed effect for such models can be estimated with dummy variable regression technique, while the coefficients of constant terms are restricted across the panels in their equations as suggested by Judge et al.(1988). The countries chosen based on

Akhtaruzzaman & Hasanuzzaman

leading average performance in CT exports averaged of last five years in Asia. The SUR matrix specifications of our sample of seven countries can be presented as follows:

$$y = \begin{bmatrix} x_1 & 0 & \dots & 0 \\ 0 & x_2 & \dots & 0 \\ \vdots & \vdots & \ddots & \vdots \\ 0 & 0 & \dots & x_7 \end{bmatrix} \begin{bmatrix} \beta_1 \\ \vdots \\ \beta_7 \end{bmatrix} + \varepsilon$$

Where,

$$y = \{y_{11}, \dots, y_{1N_1}, \dots, y_{71}, \dots, y_{7N_7}\}'$$

$$x_1 = \{c_1; ctgr_1, agr_1, sg_1, mg_1\}$$

$$x_2 = \{c_2; ctgr_2, agr_2, sg_2, mg_2\}$$

$$\vdots$$

$$x_7 = \{c_7; ctgr_7, agr_7, sg_7, mg_7\}$$

$$\beta_1 = \{b_{10}, b_{11}, \dots, b_{17}\}'$$

$$\vdots$$

$$\beta_7 = \{b_{70}, b_{71}, \dots, b_{77}\}'$$

n = Panels with T time periods (1-----7)

t= Time period (1980-2009)

$$\varepsilon = \{\varepsilon_{11}, \dots, \varepsilon_{1N_1}, \dots, \varepsilon_{71}, \dots, \varepsilon_{7N_7}\}'$$

and where error structures are assumed to be characterized by panel heteroskedasticity, panel autocorrelation and contemporaneous correlation (HPAC).

5. Results and Findings

Table 5: SUR Regression Output

Correlates	Bangladesh	China	India	Indonesia	Thailand	Hong Kong	Pakistan
Clothing & Textile	0.03***	0.05*	0.23***	.05	-0.03**	0.00	0.07
Agriculture growth	0.21***	0.30***	0.23***	-0.26	0.28***	0.03	-0.04
Service growth	0.80***	0.80***	1.27***	0.23*	0.89***	1.02***	1.19***
Import growth	0.00	0.04**	-0.19***	0.00	0.10***	0.07	-0.02
Constant	-1.53**	-1.86**	-4.1	3.54**	-1.5***	-1.38***	-3.76***

Note: ***, **, *, indicate 1%, 5%, 10% significance levels respectively

The seemingly unrelated regression (SUR) results are shown in Table 5. Breusch Pagan test results (Table 6) reject the independence among the panel countries and indicate that CT exports and other growth determinants of one country in the sample depend on the performance of those indicators on other countries. For example, a higher volume of exports of CT from India reduces the export of that from Bangladesh. This validates the 'Fallacy of decompositions' among the sample countries.

CT industry has a positive and a high statistically significant impact on per capita GDP growth in case of Bangladesh and India. A 1 percent point increase in export growth of CT of Bangladesh is predicted to increase GDP per capita growth by 0.03 percent point, ceteris paribus. In case of India, 1 percent point increase in export growth of CT is predicted to increase GDP per capita growth by 0.23 percent point. Larger value of the coefficient of India suggests the bigger size of the industry compared to Bangladesh. Among the other Asian CT exporters, China shows less dependency on CT for per

Akhtaruzzaman & Hasanuzzaman

capita GDP growth, while China has already developed a diversified manufacturing industries compared to the countries in the sample. For Bangladesh, agricultural contribution to per capita GDP growth is higher while service sector's contribution to GDP growth is the highest. The stronger and statistically significant coefficient of service growth implies the dominance of informal activities of Bangladesh economy.

Differences between countries each other is tested and results are shown in Table 7. The null hypothesis is that there is no difference in structure between countries. The structural difference in production and difference in the use of technology exists between Bangladesh and China, India, and Hong Kong while there is a similarity in technology use between Bangladesh, Thailand, Indonesia and Pakistan. This structural difference suggests that the skill of labor force and technology used in CT industry in China and India might be better than that of Bangladesh. However labor skill and technology used in CT industry of Thailand, Indonesia and Pakistan are more or less similar.

Table 6: Correlation matrix of residuals of SUR Regression

	Bangladesh	China	India	Indonesia	Thailand	Hong Kong	Pakistan
Bangladesh	1.00						
China	-0.04	1.00					
India	-0.28	-0.45	1.00				
Indonesia	-0.03	0.01	-0.07	1.00			
Thailand	0.15	0.76	-0.33	0.14	1.00		
HongKong	-0.45	0.02	0.22	0.49	-0.33	1.00	
Pakistan	0.07	-0.63	0.63	-0.18	-0.18	-0.15	1.00

Breusch-Pagan test of independence: $\chi^2(21) = 20.428, Pr = 0.4943$

Table 7: Chi-square value: Country differences test

	China	India	Indonesia	Thailand	HongKong	Pakistan
Bangladesh	1.77 (0.41)	3.49 (0.17)	10.66 (0.00)	20.06 (0.00)	2.90 (0.23)	5.74 (0.05)
China	-	1.33 (0.51)	8.01 (0.01)	1.25 (0.53)	0.28 (0.86)	3.66 (0.16)
India	-	-	6.19 (0.04)	0.81 (0.66)	1.90 (0.38)	3.72 (0.15)
Indonesia	-	-	-	9.27 (0.00)	10 (0.00)	15.84 (0.00)
Thailand	-	-	-	-	1.58 (0.45)	16.6 (0.00)
HongKong	-	-	-	-	-	8.70 (0.01)

Note: p-values are in the brackets

6. Conclusion

This study has investigated growth strategies of CT based export of top Asian CT exporters mainly focusing Bangladesh. Export based RCA has been used to calculate the revealed comparative advantage of Bangladesh economy over the other Asian CT exporters. RCA measurements indicate that Bangladesh has distinctively better RCA among the top Asian CT exporters. Pair-wise correlation coefficients presented in Table 4a and 4b show Bangladesh's complementarily and rivalry relationships among the Asian CT exporters economy as well as with western trade partners. Regression analysis of SUR suggests that CT positively contributes to per capita GDP growth and

this finding is highly statistically significant. However, major growth contribution results from the performance growth in service sector. Agriculture also positively and significantly influences the per capita GDP growth. We found a strong dependency in export performances of the countries in the sample. From the Chi-square test (Table 7), we found that the level of skill of labor force and advancement of technology differs between Bangladesh, China, India, Hong Kong. This reflects a weak prospect of CT for Bangladesh as she is competing with comparatively advanced countries like China, India and Hong Kong. The relatively higher RCA (Table 3), in the midst of global recession, is merely a result of higher world demand for Bangladesh's cheap CT products. On the other hand, a very narrow export base along with lack of market diversification makes it difficult for Bangladesh to rely simply on CT based export led growth strategies. Though the import growth shows an insignificant impact on Bangladesh's growth, it has strong relationship with the growth of informal sector, which in turn, has the strongest positive effects on growth (Table 5).

From the policy point of view, Bangladesh could rely on trade liberalization policy but need to put more effort to diversify her export items as well as finding new trade partners. Secondly, Bangladesh needs to take strategic plan to acquire advanced technology as well as uplift labor efficiency to meet challenges that is likely to emerge from her competitors in CT exports. Last but not least, Bangladesh needs to put more emphasis on import substitution strategies along with establishment of backward linkages.

Endnotes

ⁱ Balassa (1965) derives an index (called the Balassa Index) that identifies whether a country has a "revealed" comparative advantage without determining the underlying sources of comparative advantage. The concept of revealed comparative advantage (RCA) pertains to the relative trade performance of individual countries in particular commodities. Following model measures a country's share of world exports of a commodity divided by its share of total world exports.

$$RCA_{ij} = \frac{X_{ij} / X_{wj}}{X_i / X_w} (100)$$

X_{ij} = i-country's exports of commodity j

X_{wj} = World exports of commodity j

X_i = Total exports of country i

X_w = Total world exports

The index of revealed comparative advantage (RCA_{ij}) has a relatively simple interpretation. If it takes a value greater than unity, the country has a revealed comparative advantage in that product. The higher the RCA value is the greater the importance of clothing exports relative to other manufacturing exports. Thus, an index value of 150 would indicate that a country's clothing exports share for a given year is 50% higher than its share in total world exports of manufacturing goods.

ⁱⁱ We can check the competitiveness of any industry, like clothing industry of Bangladesh respective to any other country of the world using the RCA correlation coefficients. If there is a high positive correlation coefficient close to 1 then the countries involved are competing with each other. On the other hand for the pattern of trade between the countries to be complementary, we should find a high negative correlation coefficient close to -1.

References

Baharumshah, AZ and Rashid, S. 1999, 'Exports, Imports and Economic Growth in Malaysia: Empirical Evidence Based on Multivariate Time Series', *Asian Economic Journal*, Vol.13, no.4, pp. 389-406.

- Balassa, B 1965, 'Trade Liberalisation and Revealed Comparative Advantage¹', *The Manchester School*, Vol. 33, no.2, pp. 99-123.
- Baltagi, BH, and Kao, C 2001, 'Nonstationary panels, cointegration in panels and dynamic panels: A survey', Vol.15, pp. 7-51
- Boltho, A 1996, 'Was Japanese growth export-led?' *Oxford Economic Papers*, Vol. 48, no. 3, pp.415-432
- Bangladesh Bureau of Statistics (BBS), 2007, 2009, 2010, *Annual Report*, Statistics Division, Ministry of Planning, GoB, Dhaka
- Chen, H 2009, 'A Literature Review on the Relationship between Foreign Trade and Economic Growth', *International Journal of Economics and Finance*, Vol.1 no.1, pp. 127-130
- Cline, WR 1982. 'Can the East Asian model of development be generalized?' *World development*, Vol.10, no.2 pp.81-90
- Export Promotion Bureau (EPB), 2009, *Annual Report*, GoB, Dhaka
- EURATEX (The European Apparel and Textile Confederation), 2011, :<http://www.euratex.org>, viewed on 10 October 2011
- Hossain, ML, Haseen and Jabin, N 2009. 'Dynamic Causality among Export, Import and Income in Bangladesh', *Bangladesh Development Studies*, Vol. 32, no.2
- Joarder MAM and Hasanuzzaman S 2006, 'Trade Performance of Bangladesh Since 1980', *Development Review*, Vol.18.
- Judge, GG, Hill, RC, Griffiths, W, Lutkepohl, H, & Lee, TC 1982, *Introduction to the Theory and Practice of Econometrics*. John Wiley, pp.189-198.
- Kaplinsky, R 1999, 'If You Want to Get Somewhere Else, You Must Run at Least Twice as Fast as That !: The Roots of the East Asian Crisis', *IDS Bulletin*, Vol. 30, no.1, pp.74-85.
- Kavoussi, RM 1984, 'Export expansion and economic growth: Further empirical evidence', *Journal of Development Economics* , Vol.14, no.1, pp. 241-250.
- Krueger, AO 1978, 'Foreign trade regimes and economic development: Liberalization attempts and consequences', *National Bureau of economic research*.
- Kuo, CC, and Yang, CH 2008, 'Knowledge capital and spillover on regional economic growth: Evidence from China', *China economic review*, Vol.19, no.4, pp. 594-604.
- Kwan, ACC, Cotsomitis, JA and Kwok, B 1996, 'Exports, economic growth and exogeneity: Taiwan 1953-88', *Applied Economics*, Vol. 28, no. 4, pp. 467-471.
- Levine, R, Loayza, N and Beck, T 2000, 'Financial intermediation and growth: Causality and causes', *Journal of monetary Economics*, Vol. 46, no. 1, pp. 31-78.
- Ramos, FFR 2001, 'Exports, imports, and economic growth in Portugal: evidence from causality and cointegration analysis', *Economic Modelling*, 18, pp. 613-623.
- Razmi, A and Blecker, RA 2004, 'The Limits to Export-Led Growth: An Empirical Study', New York Center for Economic Policy.
- UNCTAD 2002, *Trade and Development Report*, United Nations Commission on Trade and Development, United Nations Publication, New York and Geneva.
- Walmsley, TL, and Hertel TW 2001, 'China's Accession to the WTO: Timing is Everything', *The World Economy*, Vol. 24, no. 8, pp. 1019-1049.
- Wooldridge, JM 2002, *Econometric analysis of cross section and panel data*, The MIT press, Cambridge.
- World Development Indicators, 2011, Washington, D.C., February 2012, Online Version
- World Trade Organization, 2011, Geneva, Switzerland, February 2012, Online Version
- Zellner, A 1962, 'An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias', *Journal of the American statistical Association*, Vol.57, no. 298, pp. 348-368.

Appendix

Table 1: Three Decades of Growth Dynamics: Bangladesh

Decades	GDP Growth Rate	Agricultural Growth rate	Industry		Manufacturing		Service Growth rate	Clothing & Textile Export growth
			Value added (% of GDP)	Growth	Value added (% of GDP)	Growth		
1980-1989	0.66	1.61	4.56	13.76	4.37	3.79	-1.48	4.56
1990-1999	2.69	3.27	7.03	14.87	7.19	4.25	14.29	7.03
2000-2009	4.06	3.76	7.57	16.59	7.33	6.24	5.96	7.57

Source: Authors' calculation from WDI 2011 online database