Original Research Article

Ready-made Garments, FDI, and Total Exports of Bangladesh: A Time Series Analysis

ABSTRACT

This study examines the long-run and short-run causal relationships among readymade garments export, total export earnings, and net foreign direct investment inflows utilizing data from the financial year 1996-97 to 2019-20. The autoregressive distributed lag bounds test discloses the existence of a long-run relationship among the variables. This study also employed the Johansen cointegration test to supplement the results of the ARDL approach. This cointegration test confirms the presence of two cointegration equations. In addition, the Toda-Yamamoto test is performed to demonstrate the existence of short-run and long-run relationships among the variables. The results indicate that there is bidirectional causality between RMG exports and total exports in the short run as well as in the long run. Another important aspect of this study is that there is bidirectional causality between FDI and total export earnings in the short run but there is a unidirectional causality in the long run. The analysis also gives insights like single sector dominance, problems that existed in the RMG sector, and problems and prospects of FDI inflow. Further, keeping in view with these problems, the study urges pragmatic feasible measures for sustainable export growth.

KEYWORDS: Readymade garments; FDI; total exports; time series analysis; Bangladesh

1. Introduction

It is simply assumed that exports play an important role in the developing economy, influencing the level of economic growth, employment, and balance of payments. Probably for this reason the export-led growth hypothesis is one of the most frequently discussed hypotheses in the field of international trade and business. The export-led growth hypothesis put forwards that augmentation of export is one of the main determinants of growth. It maintains that the growth of a country's economy not only depends on increasing amounts of labour and capital within the economy but also on the expansion of exports. According to its supporters, export can perform as an "engine of growth". Several empirical studies have been done to examine this theory by using different types of data sets and econometric techniques for single as well as multi-country cases. A plethora of empirical studies was found to be in support of the export-led growth hypothesis (Emery 1967; Serven 1968; Balassa 1978; Tyler 1981; Feder 1983).

Since its independence, Bangladesh is suffering many problems like mass poverty, jobless growth, growing income inequality, inappropriate working conditions for labour, etc. At the same time, Bangladesh followed a highly restricted trade governance strategy which was characterized by high tariffs and non-tariff barriers. From the view of theoretical perspective as we know that trade liberalization stimulates productivity gain through increased competition, efficiency, innovation, and the advent of new technology. Following this theory, in the early 1990s, a massive trade liberalization policy was implemented setting targets of attracting FDI, higher volume of exports, and boosting economic growth and employment. The outcome of this trade liberalization policy found a positive and significant impact on Bangladesh's economic growth (Rashid 2000; Ahmed 2001; Mamun and Nath 2004; Bashar and Khan 2009). The economic situation has dramatically changed over the last decade and Bangladesh has achieved significant positive changes over many macroeconomic variables along with consistent economic growth. According to the International Monetary Fund (IMF), Bangladesh is an emerging market and a developing economy, as well as the fastest growing economy in the world.

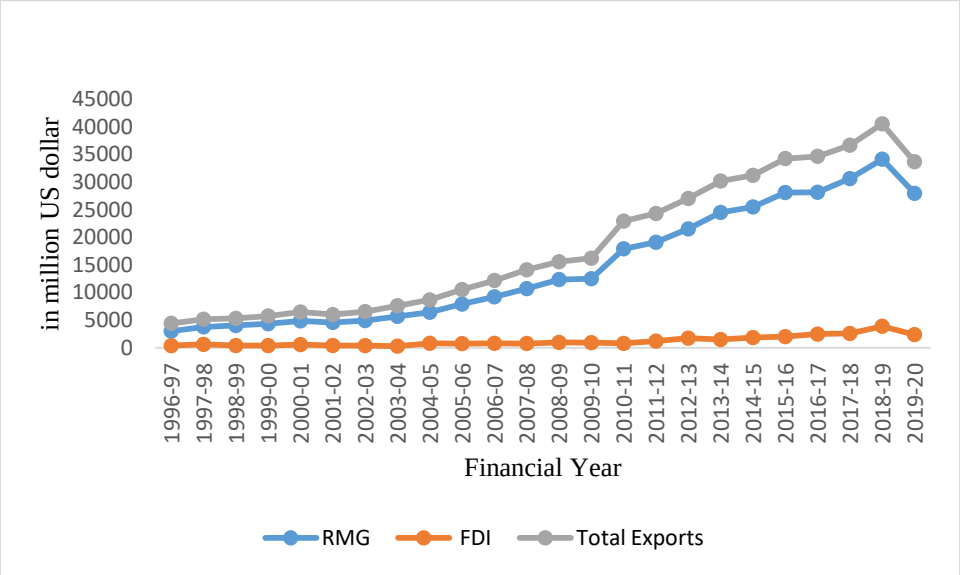
Bangladesh's export earnings and composition have significantly changed over the period. Further, it is also observed that the export performance of primary commodities is relatively poor compared to manufactured commodities. During the 1980s, traditional items e.g., raw jute, jute goods, tea, hides, skins, etc. were in a dominant position overall and constitutes 90 per cent of export earnings. During the same period, such items as readymade garments, shrimp, knitwear, leather and leather products, frozen fish accounted for less than 10 per cent of total exports. Later, these items became significant in the export basket, and finally, led by garments became the predominant exports of Bangladesh.

According to the report of the Export Promotion Bureau (EPB), Bangladesh's export earnings grew by 10.55 per cent in the financial year 2018-19. RMG sector playing a crucial role in this successive achievement in the export sector. BGMEA report shows that the number of garments factories significantly increased over the period of time. In FY 1984-85, the number of listed garments factories was only 384 and it reached 4621 in FY 2018-19. Another recent survey

conducted by the Centre for Policy Dialogue (CPD) found that there are 3596 active RMG factories in Bangladesh and the working population is 3.5 million (approximately) of which 90.8 per cent are female and 39.2 per cent are male. Thus, the RMG industry is playing a crucial role in the case of women's employment. The availability of cheap labour and both domestic and international policies have influenced the rapid growth of the RMG industry (Ahmed 2009). The main export incentives for RMG are Duty drawback, Bonded warehouse facilities (BWF), Cash incentives, and Back-to-back letters of credit (L/C) facilities.

The role of foreign direct investment (FDI) in an economy is inconclusive. However, Bangladesh has been promoting FDI for decades through the implementation of liberal investment policies. The government has established many export processing zones (EPZs) and special economic zones (SEZs) to attract a higher amount of FDI and overall boosting exports. As a result, the net FDI inflows in Bangladesh have increased over time. In 2018-19, the power sector received 1217.84 million US dollars while in the manufacturing sector, food products and textiles received 830.88 million US dollars and 262.66 million US dollars respectively (Source: Bangladesh Bank). However, lower FDI inflow in EPZs as compared to non-EPZs and a recent downward trend in the RMG sector is a matter of concern. According to many trade analysts, to increase the export earnings and sustain the current growth of exports, the RMG sector needs a huge amount of capital and a skilled workforce where FDI can play a crucial role. Figure 1 presents the RMG exports, net FDI inflows, and total exports of Bangladesh from the financial year 1996-97 to 2019-20.

Figure 1. RMG exports, net FDI inflows, and total exports



This study seeks to examine the long-run and short-run causal relationship among RMG exports, net FDI inflows, and total export earnings utilizing data from FY 1996-97 to FY 2019-20. I have used an autoregressive distributed lag (ARDL) approach to investigate the presence of long-run relationships among the variables. Further, we have used the multivariate framework of the Toda

and Yamamoto (1995) (hereafter TY) model to establish a long-run causal relationship and short-run causality.

The remaining parts of the paper are structured as follows: the next section presents a brief review of the literature followed by section 3 which presents details of the data and methodologies. Section 4 presents results and discussions. The final section concludes the major findings of the study and policy recommendations.

2. A brief review of the literature

The RMG sector is a key contributor to the economic growth of Bangladesh and is the country's main export industry. This sector is also the most provider of formal employment in the country, in particular low-skilled, entry-level jobs for young women and men with or without education. Current estimates indicate that the sector directly employs 4.2 million people – of whom approximately 60 per cent are women and indirectly supports as many as 40 million Bangladeshis (about 25 per cent of the population). This industry successfully generated new employments rather than substituting for jobs in other industries (Kabeer and Mahmud 2004).

The emergence of RMG was not in a very bombastic way. The production of garments for export emerged in the mid-1970s with the establishment of a few garment firms under private indigenous capital (Rock 2001). Some entrepreneurs without prior knowledge started export-oriented RMG production and later their achievements inspired others to enter the business (Quddus and Rashid, 2000: chs 3 and 4). Now, ready-made garments (RMG) have become the main export product of Bangladesh. Starting as an obsolete export item in the late 1970s, RMG has achieved this position of top export in a short time (Ahmed 2009). While export earnings from the RMG sector were barely 1 million US dollars in 1978, they reached 34133.27 million US dollars in the financial year 2018-18, comprising 86.20 per cent (Source: Bangladesh Bank). Both domestic and international policies have influenced the rapid growth of the RMG industry. Moreover, the availability of cheap labour stimulated growth. Bangladesh RMG industry paid comparatively low wages to workers, who worked relatively for longer hours at a workplace that remained a prime advantage for this sector (Berg et al. 2011).

The role of FDI in economic development is still a matter of long debate. Empirical analysis, using cross-country data between 1975 and 1995, shows that FDI alone plays an ambiguous role in contributing to economic growth. However, countries with well-developed financial markets gain significantly from FDI (Alfaro et al. 2004). While investing the relationship between FDI and GDP empirically, in many cases it is found that economic growth attracted FDI instead of FDI improved economic growth (Ghali and Al-Mutawa 1999; Levine and Renelt 1992; Barro 1991).

Though empirical evidence on the relationship between FDI and economic growth is often ambiguous. Several empirical studies support a significant relationship between FDI and exports. Prasanna (2010) used variables inward FDI, total manufactured exports, high technology manufactured exports, and manufacturing value-added from a period of 1991-92 to 2006-07 in India and found that FDI significantly influences exports. Martinez-Martin (2010) found that a positive Granger causality runs from FDI to exports in the long run in Spain using the vector

error correction model (VECM). Shahoo (2006) using data from 1975-2003 and the panel-fixed effect method to check the relationship between FDI and exports in five south Asian countries which shows that FDI has a significant positive impact on exports and reason behind that FDI brings in better technology and management skills with international marketing network. The literature on FDI and exports reveals a positive relationship (Aitken 1997; Blomstrom, Kokko and Zejan 1994; De Mello 1999; UNCTAD 1999; Lall 2000; Lipsay 1999).

Hossain and Hosoe (2017) commented the FDI stock increase in the RMG sector would increase both its output and exports and lead to an overall welfare gain along with a GDP increase. However, the output of domestic firms would fall slightly due to the competition between MNEs and domestic firms. In addition, the benefits of FDI-induced growth would not be transmitted to all household groups.

Most of the literature on this topic from the context of Bangladesh discussed issues using descriptive statistics and did not combine the RMG export, FDI, and total export earnings of Bangladesh. The present study tried to overcome these gaps by examining cointegration among total exports, RMG exports, and net FDI inflows in Bangladesh and estimate the short-run as well as long-run causality among the variables.

3. Data and empirical methodology

3.1 Data

Based on the availability of data, our sample includes annual data on total export earnings, RMG exports, and net FDI inflows (in million US dollars) collected from the Bangladesh Bank, Export Promotion Bureau (EPB), and BGMEA for the period FY 1995-96 to FY 2019-20. All the variables are converted into the natural logarithm. Summary statistics of total export, RMG export, and net FDI inflow are denoted by TE, RMG, and FDI respectively are presented in table **1**.

Table 1. RMG exports, FDI inflows, and Total export earnings of Bangladesh, FY 1996-97 to 2019-20

	RMG	FDI	Total Export
Mean	14654.70	1194.837	18330.34
Median	11523.79	798.2600	14837.99
Maximum	34133.27	3888.99	40535.04
Minimum	3001.250	284.16	4418.280
Std. Dev.	10383.81	919.4356	12314.29
Skewness	0.455205	1.2876	0.3942
Kurtosis	1.6821	4.1120	1.6036
Jarque-Bera	2.5656	7.8689	2.5714
Probability	0.2772	0.0195	0.2764
Sum	351712.8	28676	439928
Observations	24	24	24

Source: calculated by the author.

3.2. Econometric methodology

Residual-based tests of cointegration, say for, Engle and Granger (1987), Johansen (1988, 1991), and Johansen and Juselius (1990) are the most frequently used methodologies for testing

cointegration and causality. A fundamental pre-requisite to implementing these tests is that the variables should be integrated of order one and also for equal order. In this study, the ARDL approach has been used to investigate the presence of long-run relationships among total export, RMG export, and FDI. This approach is also known as the ARDL bounds test approach and is preferred over other conventional cointegration tests, as it has several advantages over conventional tests (see Emran, Shilpi, and Alom 2007). One advantage of this approach is that it is applicable irrespective of whether the variables are purely *I (0)* or purely *I (1)* or a combination of the two. Further, this approach also overcomes the problem of spurious regression coefficient due to non-stationary in the time series data (Stock and Watson 2003).

To know the direction of causality among the variables, we apply the Granger non-causality test within the VAR framework and TY approach for short-run and long-run causalities, respectively.

3.2.1. Cointegration analysis

In this study, the ARDL bounds testing approach is used to investigate the long-run relationship among total export, RMG export, and FDI. The ARDL approach of cointegration may be expressed as follows:

$$\Delta TE_t = C_{01} + \sum_{i=1}^{p} \lambda_{i1}\Delta TE_{t-i} + \sum_{i=0}^{p} \delta_{i1}\Delta RMG_{t-i} + \sum_{i=0}^{p} \theta_{i1}\Delta FDI_{t-i} + \alpha_{11}TE_{t-i} + \alpha_{21}RMG_{t-1} + \alpha_{31}FDI_{t-1} + \varepsilon_{i1}, \quad (1)$$

$$\Delta RMG_t = C_{02} + \sum_{i=0}^{p} \lambda_{i1}\Delta TE_{t-i} + \sum_{i=1}^{p} \delta_{i1}\Delta RMG_{t-i} + \sum_{i=0}^{p} \theta_{i1}\Delta FDI_{t-i} + \alpha_{12}TE_{t-i} + \alpha_{22}RMG_{t-1} + \alpha_{32}FDI_{t-1} + \varepsilon_{i1}, \quad (2)$$

$$\Delta FDI_t = C_{03} + \sum_{i=0}^{p} \lambda_{i1}\Delta TE_{t-i} + \sum_{i=0}^{p} \delta\Delta RMG_{t-i} + \sum_{i=1}^{p} \theta_{i1}\Delta FDI_{t-i} + \alpha_{13}TE_{t-i} + \alpha_{23}RMG_{t-1} + \alpha_{33}FDI_{t-1} + \varepsilon_{i1}, \quad (3)$$

In the above equations TE denotes total export, RMG represents the ready-made garments exports and FDI denotes net FDI inflows. All the variables are measured in logarithms, α_{ij} are the long-run multipliers, C_{0i} are the constants, and ε_{ij} are white noise error terms. For the ARDL bounds testing approach, equations (1)-(3) are estimated by OLS to test the existence of a long-run relationship among variables. The null hypothesis of no cointegration is examined using the F-test. So, the null hypothesis of no cointegration among the variables in equation (1) is $H_0: \alpha_{11} = \alpha_{21} = \alpha_{31} = 0$ against the alternative $H_1: \alpha_{11} \neq \alpha_{21} \neq \alpha_{31} \neq 0$. Similarly, for equations (2) and (3), the null hypotheses of no cointegration are $H_0: \alpha_{12} = \alpha_{22} = \alpha_{32} = 0$ and $\alpha_{13} = \alpha_{23} = \alpha_{33} = 0$ against alternative hypotheses $H_1: \alpha_{12} \neq \alpha_{22} \neq \alpha_{32} \neq 0$ and $H_1: \alpha_{13} \neq \alpha_{23} \neq \alpha_{33} \neq 0$ respectively. The optimal lag length p is determined by information criteria. If the computed F-statistic is greater than the upper bound critical value, we may reject the null hypothesis of no cointegration and conclude that there exists a steady-state equilibrium among the variables. If the computed F-statistic is less than the lower bound critical value, then we

cannot reject the null hypothesis of no cointegration. However, if the computed F-statistic lies between the upper and lower critical values, then the result is said to be inconclusive.

3.2.2. Granger causality

To determine the direction of causality among TE, RMG export, and FDI, we applied the Granger causality test. For the short-run causality, we used the first differenced VAR if the variables are found not to be cointegrated. On the other hand, if the variables are found to be cointegrated the VECM has been used. The Granger causality test can be conducted by estimating the following VECM, assuming that variables are cointegrated.

$$(1-L)\begin{bmatrix} TE_t \\ RMG_t \\ FDI_t \end{bmatrix} = \begin{bmatrix} \alpha_1 \\ \alpha_2 \\ \alpha_3 \end{bmatrix} + \sum_{k=1}^{p}(1-L)\begin{bmatrix} A_{11,k} & A_{12,k} & A_{13,k} \\ A_{21,k} & A_{22,k} & A_{23,k} \\ A_{31,k} & A_{32,k} & A_{33,k} \end{bmatrix} \times \begin{bmatrix} TE_t \\ RMG_t \\ FDI_t \end{bmatrix} + \begin{bmatrix} \lambda_1 \\ \lambda_2 \\ \lambda_3 \end{bmatrix} \times [e_{t-1}] + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \end{bmatrix} \quad (4)$$

Here, $(1-L)$ is the first differenced operator and ε_{it} is the disturbance term. e_{t-1}, is the one period lagged error correction term derived from the cointegration vector. If the variables have not cointegrated this term will vanish.

In addition, we have carried out Granger non-causality test using the TY procedure. This TY procedure could be implemented by estimating an augmented VAR with the lag order $(p+d)$, where p is the optimal lag of level VAR and d is the maximum order of integration of variables in the system. The Granger non-causality is tested by putting restrictions on the parameters of the $VAR(p)$, ignoring the additional lags. On that basis, the linear and non-linear restrictions can be tested using the MWALD statistic. The procedure is valid until, $p \geq d$. To perform the TY version of the Granger non-causality test, we estimate the following system of augmented $VAR(p+d)$:

$$\begin{bmatrix} TE_t \\ RMG_t \\ FDI_t \end{bmatrix} = A_0 + A_1\begin{bmatrix} TE_{t-1} \\ RMG_{t-1} \\ FDI_{t-1} \end{bmatrix} + A_2\begin{bmatrix} TE_{t-2} \\ RMG_{t-2} \\ FDI_{t-2} \end{bmatrix} + \cdots + A_3\begin{bmatrix} TE_{t-3} \\ RMG_{t-3} \\ FDI_{t-3} \end{bmatrix} + A_p\begin{bmatrix} TE_{t-p} \\ RMG_{t-p} \\ FDI_{t-p} \end{bmatrix} + A_{p+1}\begin{bmatrix} TE_{t-p+1} \\ RMG_{t-p+1} \\ FDI_{t-p+1} \end{bmatrix} + \cdots + A_{p+d^{max}}\begin{bmatrix} TE_{t-p+d^{max}} \\ RMG_{t-p+d^{max}} \\ FDI_{t-p+d^{max}} \end{bmatrix} + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \varepsilon_3 \end{bmatrix} \quad (5)$$

The hypothesis that RMG_t does not Granger-cause total export earnings TE_t can be checked with the hypothesis $H_0: a_{12}^1 = a_{12}^2 = a_{12}^3 \ldots = a_{12}^p$, where a_{12}^i are the coefficients of the RMG_t variable. Similarly, we can test the opposite non-causality from total export TE_t to RMG_t in the following hypothesis $H_0: a_{21}^1 = a_{21}^2 = a_{21}^3 \ldots = a_{21}^p$, where a_{21}^i are the coefficients of the total export variable. Similar tests for the testing causality between total export and FDI, RMG export, can also be carried out using similar methods.

4. Empirical results

To assess the univariate properties of the series we used the augmented Dickey and Fuller (1979) and Dickey-Fuller Generalized Least Squires (DF-GLS) (Elliott, Rothenberg, and Stock 1996).

The results of unit root tests are reported in table **2**. ADF and DF-GLS test statistics for all variables in level are non-stationary at 5 per cent and a higher level of significance with and without a trend. But the first difference results of ADF, and DF-GLS tests suggest that variables are stationary. Given the result of unit root tests, we now employ a bounds test for cointegration to observe long-run relationships among total export, RMG, and FDI within the ARDL framework (structure). Table 3 presents the results of the bounds test. Results indicate that there is a long-run relationship between total exports, RMG exports, and inflowing FDI (established by significant F-statistics). It is important to mention that the RMG sector is the main driver of total export earnings and the contribution of this sector has increased significantly. For this reason, it is always observed a strong positive correlation between total exports and RMG exports. This finding is also in line with most studies examining the impact of the RMG sector and FDI on total export earnings. Now proceeding towards analyzing causality, the results indicate the causal relationship in the short-run as well in the long run among RMG, total export, and FDI.

Table 2. Unit root tests.

Test	ADF		DF-GLS	
Variables	I	I+T	I	I+T
LRMG	-1.419	-0.679	-1.206	-1.277
LFDI	-1.104	-2.916	-0.901	-3.745
LTE	-1.236	-0.555	-1.413	-1.130
DRMG	-4.337*	-4.396*	-4.424*	-4.324*
DFDI	-4.131*	-6.776*	-6.593*	-6.280*
DTE	-4.006*	-4.036**	-4.167*	-4.182**

Notes: Prefix L and D denote for level and a first difference of the variables respectively. The statistics are the t-statistics for ADF and DF-GLS. The optimal lags for ADF and DF-GLS tests were selected by the Schwarz information criterion. I and T denote intercept and trend, respectively.

*denotes statistical significance at 1%.

** denotes statistical significance at 5%.

*** denotes statistical significance at 10% and better.

Table 3. Bounds F-test for cointegration analysis.

	A	*B*
F_{LTE} (LTE/LRMG,LFDI)	5.647**	5.850**
F_{LRMG} (LRMG/LTE,LFDI)	8.310*	5.524***
F_{LFDI} (LFDI/LTE, LRMG)	1.35	1.295
A= unrestricted constant and no trend B= unrestricted constant and unrestricted trend		
Critical Values (*K*=2, *T*=20) without trend	*I(0)*	*I(1)*
At 1%	5.15	6.36
At 5%	3.79	4.85
At 10%	3.17	4.14
Critical Values (*K*=2, *T*=20) with trend	*I(0)*	*I(1)*
At1%	6.34	7.52
At 5%	4.87	5.85
At 10%	4.19	5.06

Notes: LTE, LRMG, LFDI denote total export earnings, readymade garments export, and net FDI inflows respectively.

* denotes statistical significance at 1%.

** denotes statistical significance at 5%.
*** denotes statistical significance at 10%.

Table **4** presents Johansen cointegration test results to supplement the results of the ARDL approach. The result confirms the presence of two cointegrating equations as indicated by both the trace statistics and maximum eigenvalues at a 5 per cent level of significance. Table **5** presents the estimated results of short-run as well as long-run causality among the variables. The results indicate that there is bidirectional causality between RMG exports and total exports in the short-run as well as in the long-run which is very straightforward because export earnings of Bangladesh solely depend on the RMG sector.

Table 4. Johansen multivariate cointegration test.

Null hypothesis	Optimal lag order	Trace statistic	Max-Eigen statistic	Conclusion
r=0	1	42.923*	26.492*	Cointegrated
r≤1		16.431**	14.278**	
r≤2		2.152	2.152	

Notes: Schwarz Information Criteria (SC) is used to determine the optimal lag order. Results of the model are reported here with intercept and no deterministic trend.
* denotes rejection of null hypothesis at 1% level of significance.
** denotes rejection of null hypothesis at 5% level of significance.
*** denotes rejection of null hypothesis at 5% level of significance.

Table 5. The results of Granger and MWALD tests.

Null hypothesis	Grangers' test (short-run)		MWALD test (long run)	
	F-statistics	*P*-values	χ^2-statistics	*P*-values
LRMG⇒LTE	4.050***	0.057	10.603*	0.001
LTE⇒LRMG	8.477*	0.008	14.058*	0.000
LFDI⇒LTE	3.052***	0.096	3.240***	0.071
LTE⇒LFDI	14.640*	0.001	0.225	0.634
LFDI⇒LRMG	1.477	0.238	2.461	0.116
LRMG⇒LFDI	13.316*	0.001	0.367	0.544

Notes: ⇒ shows null hypothesis does not Granger cause. LTE, LRMG, LFDI denote total export earnings, readymade garments export, and net FDI inflows respectively.
* denotes statistical significance at 1%.
** denotes statistical significance at 5%.
*** denotes statistical significance at 10%.

According to the trade report of Bangladesh, in the financial year 2019-20, the RMG sector contributed 83 per cent of the total export earnings (Source: BGMEA). This implies single sector dominance in the export sector of the economy. Further, the results suggest that there is no causality in the long run between total exports and inflowing FDI, but total exports cause FDI in the short run. One of the most striking results of this study is that there is bidirectional causality between FDI and total export earnings in the short-run but there is a unidirectional causality in the long run. In simple words, FDI does not cause total exports in the long run. In addition, the results suggest that there is no causality either way in the long run between RMG and FDI but

RMG exports cause FDI in the short run. This implies that RMG export does not drive FDI in the long run but it does in the short run.

The findings of this study also revealed a significant positive relationship between total export earnings and RMG exports. On the other hand, there is no significant relationship between FDI and RMG exports but FDI inflows have the potential to improve the export sector of the economy.

5. Conclusion

This study examines the relationship among total export earnings, RMG exports, and foreign direct investment for the period FY 1995-96 to 2019-20. I have employed the ARDL bounds test and two different causality tests to determine the long-run relationship and causality. The results reveal that there exists a long-run relationship among total export earnings, RMG exports, and FDI. The direction of causality was ascertained by Granger's test (short-run) and the MWALD test (long-run). The results exposed that there is bidirectional causality between RMG exports and total exports in the short-run as well as in the long run. Further, there is bidirectional causality between FDI and total exports in the short-run but there is a unidirectional causality in the long run that is FDI causes total exports. The results also indicate that RMG exports do not drive FDI in the long run but it does in the short run. From the analysis, it is easy to draw an inference that RMG exports play a crucial role in total export earnings in Bangladesh whereas inflowing FDI is not sufficient for sustained export growth.

It is evident from the above analysis that the export performance of Bangladesh is highly dependent on a single sector. Unfortunately, this industry in Bangladesh is suffering many challenges. Few studies showed that dependency on imported inputs is very high for this sector (Ahmed 2009). In 2002, Bangladesh imported 1.8 billion US dollars of textiles and related inputs, and the trade surplus was 2.8 billion US dollars (Mlachila and Yang, 2004:7). Another big challenge is product and market concentration. The product concentration of RMG exports is comparatively higher than India and China (Islam 2001). In addition, the market for Bangladesh's RMG export is also concentrated. The demand comes from mainly two markets- the EU and the USA. Apart from these two problems the industry also suffers problems like lacking backward linkages, production of low value-adding products, labour compliance, lack of infrastructure, etc. As the lion's share of export earnings comes from this sector, thus, there is an urgent need for appropriate policy measures to solve these problems. Any market fluctuation or shock in this sector would highly affect the exports of Bangladesh.

Further, several empirical studies suggest that FDI helps to promote the export sector of the country. However, FDI in Bangladesh is mostly domestic market-oriented like telecommunications, energy, and financial services. It is important to mention that FDI inflows into EPZs are relatively less when compared to that of non-EPZs. The main obstacles to attracting investment include the country's weak infrastructure, burdensome bureaucracy,

undiversified exports, fragile political stability, and so on. Thus, government and policymakers would need to bring solutions to receive an optimum FDI.

This study empirically supports many existing pieces of literature. Researchers can use more variables and longer periods of data for further study. Finally, this study urges that policymakers should give attention to the problems that are extant considering the RMG sector and FDI and bring out the solutions for sustained export growth.

Disclosure Statement

I have no conflicts of interest to disclose.

References

Ahmed, N., (2009), *Sustaining Ready-made Garment Exports from Bangladesh*, Journal of Contemporary Asia, 39:4, 597-618, https://doi.org/10.1080/00472330903076891.

Aitken, Brian J., and Ann E. Harrison., (1999), *Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela*, American Economic Review, Vol. 89, No. 3 (June), pp. 605–18.

Alfaro, Laura, A. Chanda, S. Kalemli-Ozcan, and S. Sayek., (2004), *FDI and Economic Growth: The Role of Local Financial Markets*, Journal of International Economics, Vol. 64, No. 1 (October), pp. 89–112.

Balassa, B., (1978), *Exports and economic growth: Further evidence*, Journal of Development Economics, 5, 2 (June): 181-89.

Barro, R. J., (1991), *Economic growth in cross-section of countries*. Quarterly Journal of Economics, 106, pp. 407-444. Available at, http://dx.doi.org/10.2307/2937943

Bashar, O. K. M. R., & Khan, H., (2009), *Liberalisation and Growth in Bangladesh: An Empirical Investigation*. The Bangladesh Development Studies, *32*(1), 61–76. http://www.jstor.org/stable/40795710.

Berg, A., Hedrick, S., Kempf, S., & Tochtermann, T., (2011), *Bangladesh's ready-made garments landscape: The challenge of growth*. New York City: McKinsey & Company Inc.

Blomström, Magnus, A. Kokko and M. Zejan., (1994), *Host Country Competition, Labor Skills, and Technology Transfer by Multinationals*, Weltwirtschaftliches Archiv, Vol. 130, pp. 521-33.

De Mello, L., (1999), *Foreign Direct Investment-Led Growth: Evidence from Time Series and Panel Data*, Oxford Economic Papers, Vol. 51, No. 1 (January), pp. 133–51.

Dickey, D. A., and W. A. Fuller., (1979), *Distributions of the Estimators for Autoregressive Time Series with a Unit Root*, Journal of American Statistical Association 74(366a): 427–431.

Elliott, G., T. J. Rothenberg, and J. H. Stock., (1996), *Efficient Tests for an Autoregressive Unit Root*, Econometrica 64 (4): 813–836.

Emery, R. F., (1967), *The relation of exports and economic growth*, Kyklos, 20, 2 (May): 470-86.

Emran, M. S., F. Shilpi, and M. I. Alam., (2007), *Economic Liberalization and Price Response of Aggregate Private Investment: Time Series Evidence from India*, Canadian Journal of Economics/Revue Canadienne D'économique 40 (3): 914–934. doi:10.1111/j.1365-2966.2007.00436.x.

Engle, R. F., and C. W. J. Granger., (1987), *Co-integration and Error Correction: Representation, Estimation, and Testing*, Econometrica 55 (2): 251–276. doi:10.2307/1913236.

EPB (various years) Bangladesh Export Statistics, different issues, Dhaka: Export Promotion Bureau of Bangladesh.

Feder, G., (1983), *On exports and economic growth*, Journal of Development Economics, 12, 2, (February/April): 59-73.

Ghali, K. H., and Al-Mutawa, A., (1999), *The intertemporal causal dynamics between fixed capital formation and economic growth in the group of seven countries*, International Economic Journal, 13(2), pp. 31-37.

Hossain, S. M. and Hosoe N., (2017), *Foreign Direct Investment in the Ready-Made Garments Sector of Bangladesh: Macro and Distributional Implications*, GRIPS Discussion Paper 17-10, National Graduate Institute for Policy Studies 7-22-1 Roppongi, Minato-ku, Tokyo, Japan 106-8677.

Islam, S., (2001), *The Textile and Clothing Industry of Bangladesh in a Changing World Economy*, Dhaka: Centre for Policy Dialogue and the University Press Limited.

Johansen, S., (1988), *Statistical Analysis of Cointegration Vectors*, Journal of Economic Dynamics and Control 12 (2–3):231–254. doi:10.1016/0165-1889(88)90041-3.

Johansen, S., (1991), *Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models*, Econometrica 59 (6): 1551–1580. doi:10.2307/2938278.

Johansen, S., and K. Juselius., (1990), *Maximum Likelihood Estimation and Inference on Cointegration – With Applications to the Demand for Money*, Oxford Bulletin of Economics and Statistics 52 (2): 169–210. doi:10.1111/j.1468-0084.1990.mp52002003.x.

Kabeer, N. and S. Mahmud., (2004), *Globalization, Gender and Poverty: BangladeshiWomen Workers in Export & Local Markets*, Journal of International Development, 16, pp. 93-109.

Lall, S., (2000), *The Technological Structure and Performance of Developing Country Manufactured Exports*, 1985-98. Oxford Development Studies, 28(3), pp. 337-369.

Levine, R., and Renelt, D., (1992), *A sensitivity analysis of cross-country regressions*, The American Economic Review, 82(4), 942-963.

Lipsey, R., E., (1999), *The Role of Foreign Direct Investment in International Capital Flows*, NBER Working Paper 7094. Cambridge, Mass.: National Bureau of Economic Research.

Mamun, K. A., and H. K. Nath., (2004), *Export-led Growth in Bangladesh: A Time Series Analysis*, manuscript, Sam Houston State University.

Martinez-Martin, J., (2010), *On the dynamics of exports and FDI: the Spanish internationalization process*, Working Paper 2010/10, Research Institute of Applied Economics, Barcelona, Spain.

Mlachila, M. and Y. Yang., (2004), *The End of Textile Quotas: A Case Study of the Impact on Bangladesh*, Washington DC: International Monetary Fund, IMF Working Paper, WP/04/108.

N. Prasanna., (2010), *Impact of Foreign Direct Investment on Export Performance in India*, Journal of Social Sciences, 24:1, 65-71, DOI: 10.1080/09718923.2010.11892838.

Quddus, M. and S. Rashid., (2000), *Entrepreneurs and Economic Development*, The Remarkable Story of Garment Export from Bangladesh, Dhaka: The University Press.

Rashid, M. A., (2000), *Impact of Trade Policy Reforms on Industrial Capacity and Employment in Bangladesh*, Structural Adjustment Participatory Review Initiative (SAPRI), Dhaka.

Rock, M., (2001), *Globalisation and Bangladesh:The case of export-oriented garment manufacture*, South Asia: Journal of South Asian Studies, 24:1, 201-225, DOI: 10.1080/00856400108723430.

Sahoo, P., (2006), *Foreign direct investment in South Asia: policy, trends, impact and determinants*, ADB Institute Discussion Paper 56.

Serven, A. K., (1968), *The relation of exports and economic growth: Comment*, Kyklos, 21, 3 (August): 546-48.

Stock, J. H., and M. W. Watson., (2003), *Introduction to Econometrics*, 104 Vols. New York: Addison Wesley.

Tang, C. F., and M. Shahbaz., (2013), *Sectoral Analysis of the Causal Relationship Between Electricity Consumption and Real Output in Pakistan*, Energy Policy 60 (September): 885–891. doi:10.1016/j.enpol.2013.05.077.

Toda, H. Y., and T. Yamamoto., (1995), *Statistical Inference in Vector Autoregressions with Possibly Integrated Processes*, Journal of Econometrics 66 (1): 225–250.

Tyler, W. G., (1981), *Growth and export expansion in developing countries: Some empirical evidence*, Journal of Development Economics, 9, 1 (August): 121-130.