

REVIEW:

Economic liberalization reforms may explain the impressive GDP growth in Bangladesh

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Abstract

This paper seeks to untangle the link between economic liberalization reforms and GDP growth in Bangladesh. To do so, a time series analysis is done on a data set ranging from 1980 to 2009 using the Cointegration and Ordinary Least Square (OLS) methods. After a review of recent growth and development data in the Bangladesh economy, three reform variables as proxies for trade liberalization, financial reform, and capital market liberalization are analyzed against the level of per capita GDP. Empirical findings of this study support a positive relationship between long run economic growth and the proxies picked to represent liberalization reforms in Bangladesh. A granger causality Wald test indicates a strong unidirectional long-term causal flow stemming from the reform indicators to per capita GDP. The results carry the implication that Bangladesh must get rid of major economic and political impediments in order to fully reap the benefits of various reform programs.

Keywords: Bangladesh, Economic development, Economic growth, Economic reforms, Gross domestic product (GDP).

Introduction

Bangladesh has gained rapid economic growth plus significant improvements in major social development indicators, as demonstrated in data published by the IMF World Economic Outlook and World Development Indicators, World Bank (2011). In the 1970s, many impediments including desperate initial conditions, political instability, widespread corruption, and systematic governance failure hindered the country's growth performance (Mahmud, Ahmed, and Mahajan, 2008). Extensively state-controlled economic policies until 1979 had resulted in too little investment, limited export gain, a stagnated financial sector and a low level of per capita GDP. However, Bangladesh adopted a series of reform policies in the 1980s particularly in areas of trade, finance, and capital account towards a liberal economic regime. Bangladesh moved from an uncertain economic future in 1971, the year of independence, to become one of the best performers in the 'Least Developed Country' category by 2010 (Rahman and Yusuf, 2010). What can explain such a growth nexus in Bangladesh?

Rahman and Yusuf (2010) suggest that GDP growth in Bangladesh is an outcome of productivity growth as a result of capital deepening or labor inputs in the production process and input in 'Total Factor Productivity' (TFP). Others claim that in addition to capital, labor and TFP, effective reforms towards economic liberalization and financial integration explain the positive shifts (Bashar and Khan, 2007; Hossain, 2011). In the case of Bangladesh, the relationship between economic liberalization reforms and the growth performance achieved during the last three decades could be significant. This paper focuses on that relationship by first documenting the recent growth performance in the economy, and then a time series analysis using Cointegration and Ordinary Least Square (OLS) methods. Empirical tests are based on a 30 years' data set ranging from 1980 to 2009.

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Background: Bangladesh gained independence from Pakistan in 1971, as a reflection of the ethnic division and the desire for self-expression by Bengalis (Vaughn, 2010). The roots for the passion of the Bengalis included economic and political factors, and a strong secular identity with the Bengali language at its core (Pattanaik, 2005). After independence, Bangladesh was lagging behind every other nation in South Asia. During the liberation war of 1971, 20% of the economy was destroyed and following the war, the country stayed on a trajectory of low economic growth (Rahman and Yusuf, 2010).

According to a World Bank document in 1981, the economy of Bangladesh was characterized by a set of fundamental constraints which had persisted for years and in some cases for decades or more. The underdeveloped physical and social infrastructure was coupled with limited natural resources and poor institutional capabilities. At the micro level, extreme poverty (70% of the population lived under \$1 a day) caused by high unemployment, underemployment and landlessness had resulted in widespread malnutrition. Most of the rural population (above 90%) lived below the subsistence level, and infant malnutrition caused extremely high child mortality (about 240 deaths for every 1,000 children) with extremely poor people living in deplorable conditions in urban slums. These problems inhibited savings and capital formation in the economy. Furthermore, in the industrial sector a severe dearth of skilled manpower and very low productivity of the labor force, especially in the manufacturing sector, limited the country's managerial and entrepreneurial capabilities. Dissemination of knowledge and improved technology was limited because of widespread illiteracy. Above all, unrestrained population growth restricted economic growth and absorbed much of the benefit of whatever growth that was achieved (World Bank, 1981).

However, Bangladesh has been transforming itself from a symbol of famine to a symbol of hope (Todaro and Smith, 2010). Comparing the weak initial conditions and the surrounding pessimism with the economic and social progresses made, Bangladesh has achieved a remarkably positive record (World Bank, 2005). Recent data show that overall life expectancy at birth has risen to 68 years (higher than in Pakistan and comparable to neighboring India), population growth rate has dropped to 1.5% (with a reduction in the fertility rate from 7 children in 1972 to 2 in 2009), literacy has more than doubled (net primary school enrollment rate of 49% in 1972 grew to 92% in 2009), child mortality has been cut by 70%, unemployment is down to 4%, and poverty incidence with the \$1 a day measure has fallen to 40%.

Bangladesh is the only nation in South Asia to be on track in meeting the Millennium Development Goals (MDG) on gender parity, having already achieved the goal in primary and secondary schooling. As such, within a short period of time Bangladesh has performed relatively better than many of its neighbors, and confounded the skeptics who acclaimed the 'test case for development' as "if development could happen in Bangladesh, it could happen anywhere" (Todaro and Smith, p.91). The Nobel Laureate Dr. Amartya Sen addressed Bangladesh as a model of development (2011) and evaluated that the people who once branded Bangladesh as a bottomless basket, now consider it as a model for progress. Sen (2011) also claimed that doubts and doubters were proven to be wrong. Khan (2011) concludes that the 'test case for development' hypothesis was no more valid for Bangladesh.

Moreover, in terms of growth and future market potential, Bangladesh was coined in 2005 as a member of Goldman Sachs' 'Next 11 (N11)' country category, a group of eleven most rapidly developing countries with greater economic potential. This group comprises Bangladesh, Egypt, Indonesia, Iran, South Korea, Mexico, Nigeria, Pakistan, the Philippines, Turkey and Vietnam, countries with rapidly growing populations and a significant industrial capacity or potential. The economy of Bangladesh achieved both macroeconomic stability and robust growth from the early 1990s and the country continued to demonstrate satisfactory

performance despite the global economic recession and a series of natural calamities and external shocks (Bhattacharaya, 2004; MOF, 2010). The economy was provisionally estimated to have grown at a rate of 5.83% during FY2009-10, slightly higher than FY2008-09. It was projected to grow 6.7% in FY2011.

As for sectoral contribution, the achievements of the last two decades feature sustained growth in the agriculture sector coupled with moderate growth in industry and service areas (MOF, 2010). Also revenue earnings grew at a satisfactory rate, remittances inflow started to maintain a steady growth rate, foreign exchange reserves turned out to be safe (more than US\$ 10 billion in reserve in FY2009-10), and the current account deficit changed to a surplus of US\$ 3.73 billion. The short, medium and long-term policy interventions of the government to stimulate agricultural and industrial investment, such as increasing disbursement of loans in these two sectors, appear as successful. Private sector credit flow has also increased along with more import expenditures in capital equipment and industrial inputs. These facts indicate that the economy of Bangladesh has got a stronger footing in recent years and moved in a positive direction (MOF, 2011).

However, some symptoms of economic stagnation can also be observed. In the 2000s and the following years, Bangladesh experienced a gradual build-up of inflationary pressures, a rapid drawdown of foreign exchange reserves and a dramatic deficit in government's resource base. The economy also suffered from a deteriorated budgetary balance (Bhattacharaya, 2004). The balance of payments reached a dangerous point making Bangladesh vulnerable to the economic crisis in 1980s. Foreign remittances started to fall as political turmoil in Arab nations deteriorated the labor market for millions of Bangladeshi workers abroad. Bangladesh is a labour abundant country that has sent an estimated 6.7 million to more than 140 countries across the globe since 1970s (Mamun & Nath, 2010), with more than 10.95 billion U.S. dollar in remittances inflow *officially* recorded during the FY2009-2010 (MOF, 2010). Foreign remittances have made significant contribution to the GDP of Bangladesh (about 12%) and helped offset the unfavourable balance of payments. Around 30% of the country's national savings came from foreign remittances (MPI, 2010). Worldwide pressure from severe competition and other external shocks ranging from global economic recession to discriminatory treatment from the U.S. and European markets further aggravated the situation (Bhattacharaya, 2004).

However, a comprehensive program of market-oriented liberalization policy reforms might have facilitated the macroeconomic development in Bangladesh. A record-low rate of inflation until the middle of the last decade, an unprecedented build-up of external reserves after 2001, and an improved resource position of the government suggest those measures have been successful. In the macroeconomic crisis of the 1980s, the Bangladesh government implemented stabilization programs to force the economy to get back on track by the middle of 2000s, following which the economy has maintained strong economic fundamentals including satisfactory growth and a sound fiscal stance.

Economic liberalization in developing countries like Bangladesh refers to both macroeconomic stabilization and micro-structural changes. Following the IMF and World Bank's advice, Bangladesh follows reforms to liberalize her economy, by reallocation in government expenditure, opening of the economy to trade and foreign investment, adjustment of the exchange rate, deregulation in most markets and the removal of restrictions on entry, on exit, on capacity and on pricing (Bhalotra, 2002).

In the early years following the war of liberation, economic management in Bangladesh was primarily aimed at reviving a war-ravaged economy in a framework of extensive state control and with an ideology of socialism (Ahmed, 2005; Mahmud 2008a), and the government followed a socialist path of recovery by nationalizing most of the large manufacturing units. However, during the late 70s and early 80s the newly

elected regime started to reform the economy by embarking on a denationalization program; they reduced agricultural subsidies and adjusted the monetary policy to reduce inflation, and included de-regulatory measures to enhance the role of private enterprises (Islam, 1977). Major economic reform initiatives in Bangladesh in the 1980s and early 1990s resulted in the implementation of a package of Structural Adjustment Policies (SAP) sponsored by the Breton Woods institution under the support of the World Bank and the IMF, for example World Bank's Structural and Sectoral Adjustment Loans (SAL and SECLs) in 1980s. Reform programs included trade liberalization, agricultural reforms, privatization, financial sector reforms, and fiscal reforms (Bashar & Khan, 2007). These policies were implemented in three phases, the first phase (1972-1975), the second phase (1977-1986), and the third phase (1986-Onward).

Trade liberalization: Bangladesh initiated trade liberalization by the relaxation and withdrawal of import quota restrictions along with the unification of the exchange rate and devaluation of the domestic currency. Starting from mid-1980s tariff and non-tariff barriers were reduced substantially; the un-weighted average import duty rate declined from 74% in the early 90s to 24.3% in 2006. However, cuts in custom duties were offset by other protective measures like para-tariffs (World Bank 2004). Bangladesh reduced protection to make import less costly and helped the export sector to improve its performance, and reduced protection policies which had retarded the growth of the domestic economy (MOF, 2008).

Financial reform: The financial liberalization theory of McKinnon and Shaw advocating the removal of distortions from the economy imposed by regulatory authorities was the theoretical background of the financial sector reform programs in Bangladesh. The government created a comprehensive Financial Sector Reform Programme (FSRP) in early 1990s and mandated an authority to design policy aimed at liberalizing the economy from government control, bringing indirect control in monetary policy, enhancing efficiency of financial institutions especially the banking sector, and restoring order in the financial sector. To bring all of these policy measures to effect, a 'National Commission on Money, Banking and Credit' was established in 1984 with the assistance of the World Bank (Bahar, 2009). The Financial Sector Adjustment Credit (FSAC) was also contracted simultaneously with the help of World Bank (Bhattacharya & Chowdhury, 2003).

Capital market liberalization: Bangladesh opened its door to foreign entrepreneurs during 1980s in order to reap the benefit of overseas capital investment. The government built up the Board of Investment (BOI), lifted restrictions on capital and profit repatriation, and opened the industrial sector for FDI. Other government reform measures included tax exemptions for investors in the power generation industry, withdrawal of import duties from export oriented machineries, offering tax holiday schemes for investment in priority and less developed sectors, reducing restriction on entry and exit, and lowering bureaucratic barriers in getting approvals for foreign projects (Adhikary, 2011).

Fiscal reform: In the early stage of independence, the majority of the government expenditure was put in reconstruction and rehabilitation works. However, the government initiated a number of fiscal reforms in accordance with IMF's Enhanced Structural Adjustment Facility (ESAF) in early 1990s. 'Value added tax' (VAT) largely replaced the earlier version of differentiated sales tax. On the expenditure side, increased emphasis was given to human resource development and poverty alleviation programs, giving priority to education and provision of health and family planning services and social safety net programs to serve vulnerable people (Bahar, 2009; MOF, 2009).

On the question of whether liberalization is good for Bangladesh, there are mixed answers in the literature. According to Palit (2006) agriculture liberalization had a positive impact on Bangladesh's growth

and such policies rescued the stagnated agriculture sector during the latter part of 1990s. But other authors like Raihan, & Razzaque (2007) made the opposite conclusion and warned that full agricultural liberalization in Bangladesh may lead to a high welfare loss and a significant rise in poverty indices. Ahmed (2001) and Bashar & Khan (2007) conclude that trade has a positive impact on GDP growth in Bangladesh. But some authors find an indirect link between them through expansion of manufacturing growth and export (Rashid, 2000; Mamun & Nath, 2004). On the other hand, Islam (1998) found no links at all between trade liberalization, exports and economic growth in Bangladesh. Siddiki (2002) reported that financial liberalization, along with trade liberalization, enhanced economic growth in Bangladesh. Habib (2002) studied the case of external financial openness in Bangladesh but could not find any evidence it contributed to improvement of productivity and the domestic capital growth. Hossain (2011) concluded that implementation of economic liberalization reforms during the 1980s and 1990s contributed to the lift-off in GDP growth of Bangladesh.

The main purpose of the current paper is to untangle the relationship between liberalization reforms and economic growth in Bangladesh, by empirically testing to see whether the marginal impacts of reform variables are positive or negative and if they are statistically significant or not.

Methodology

The level of per capita real GDP is taken as an indicator of economic growth while three reform variables are assumed to represent liberalization reforms. The empirical model for this study is as follows:

$$\ln PCY_t = \beta_0 + \beta_1 TEXIM_t + \beta_2 R_t + \beta_3 CAPFLOWY_t + U_t$$

PCY_t represents per capita GDP in year t ; the variable $TEXIM_t$ represents trade openness through the total volume of export and import as a share of GDP. According to international trade theories and the Bangladesh Government, expansion of trade is an important objective of economic reforms in the country (MOF, 2010). Hence following Dowling & Hiemenz (1982) and Adhikary (2011), total exports and imports as a share of GDP were assumed to represent ‘trade openness’.

R_t stands for ‘real interest rate’ which is assumed to represent the financial openness indicator; real interest rate as an indicator of financial liberalization was included in the model following Habib (2002). Bangladesh has a factor driven economy where the capital market is yet to be expanded and flourished. Like other developing countries banks and other financial institutions act as key intermediaries to provide necessary funds for businesses. The contribution of financial liberalization reform to the productivity of domestic capital (growth) in Bangladesh is thus a crucial factor (King & Levine, 1993; Hallwood & MacDonald, 1994).

$CAPFLOWY_t$ represents the net foreign capital inflow as a share of GDP; the net amount of foreign capital inflow in Bangladesh is thus taken as an indicator of capital account openness, and as a *proxy* for capital market liberalization reforms. The logic is that reform activities in the capital market influence foreign capital inflow, as indicated in Ahmed and Fahian Tanin (2010). These funds stimulate productivity by supplementing the scarce domestic resources, easing foreign exchange constraints, inviting modern technologies and managerial skills, and facilitating easy access to foreign markets. Therefore, they are a crucial factor in the discussion of economic reforms and per capita GDP growth in developing countries like Bangladesh (Quazi, 2000; Adhikary, 2011)

U_t is for error terms. For this study all the variables are in real terms and the errors are assumed to be independently and identically distributed. The *a priori* expected signs of the coefficients are hypothesized as

follows: $\beta_1 > 0$; $\beta_2 > 0$ or < 0 ; $\beta_3 > 0$

The amounts of FDI for various years are taken as a proxy for capital market liberalization reforms in the economy. According to neo-classical growth advocates, in a capital shortage economy like Bangladesh, the marginal productivity of investment is increased if additional capital is injected in the form of long-run investment like FDI (Adhikary, 2011). Some economists postulate that more foreign capital investment increases the efficiency of investment as it provides a comparative advantage to a developing economy like Bangladesh (Romer, 1986). FDI and foreign capital in low-income countries are a source of fund that fills up the gap between existing resources and the amount needed for development. Such funds may stimulate productivity through complementing scarce domestic resources, by easing foreign exchange constraints, through inviting modern technologies and managerial skills, and also by facilitating easy access to foreign markets. Therefore, in the discussion of economic reforms and per capita GDP relationship in developing countries like Bangladesh it is also a crucial factor (Quazi, 2000; Adhikary, 2011). Figure 1 depicts the growth trends seen among the collected data.

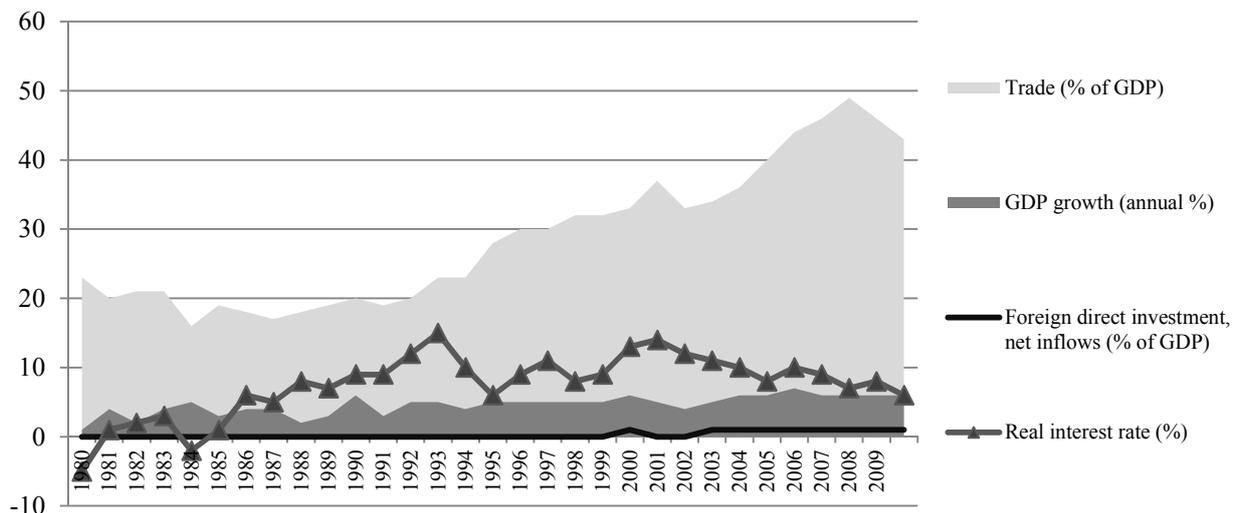


Figure 1: Trade, FDI, Interest rate and GDP growth in Bangladesh.
(Source: *World Development Indicators, World Bank*)

Data sources and estimation: This study covers a set of time series annual data from 1980 to 2009 to estimate the specified model. The computation of some variables relies on the previous year's value as well; however, it was not possible to get data for those variables in the beginning year of 1980; hence the actual data ranges from 1981 to 2009. The World Bank Data Bank is the main source. Other sources that were utilized are the International Financial Statistics (IFS) and the Bangladesh Bank Statistics Department.

The Ordinary Least Square (OLS) regression technique was used to estimate the specified model. Before going to the regression analysis the nature of the data distribution was examined using descriptive or summary statistics and diagnostics tests. One important assumption of the OLS is that residuals behave normally. Therefore, a normality test by the Kernel Density Estimation Technique was followed. Then the time series property (being stationary) of the data was checked with the help of the Augmented Dickey-Fuller (ADF) Unit Root Test following Dickey and Fuller (1981). The following regression was utilized for the ADF test:

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \dots + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t$$

Where α is constant, β is the coefficient on a time trend and p is the lag order of the autoregressive process. Assuming $\alpha=0$ and $\beta=0$ corresponds to modeling with a random walk and the case where $\beta=0$ implies modeling a random walk with a drift.

Cointegration, which is the tendency for variables to move together in the long run, was checked using the EG-ADF test following Engle and Granger (1987). In order to see the associated causality among the variables a Granger Causality Test was performed using a VAR model with the help of Stock and Watson (2007) and Green (2008). We used the following equations:

$$Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \dots + \alpha_p Y_{t-p} + b_1 X_{t-1} + \dots + b_p X_{t-p} + u_t$$

$$X_t = c_0 + c_1 X_{t-1} + \dots + c_p X_{t-p} + d_1 Y_{t-1} + \dots + d_p Y_{t-p} + v_t$$

Where Y and X correspond to dependent and independent variables for the original equation respectively. We tested the null hypothesis $H_0: b_1=b_2=\dots=b_p=0$, against H_A : 'Not H_0 ', to check 'if X does not Granger-cause Y '. Similarly, testing $H_0: d_1=d_2=\dots=d_p=0$, against H_A : 'Not H_0 ', allows us to test if Y does not Granger-cause X . In each case, a *rejection* of the null hypothesis implies that there is Granger causality for the concerned variables.

Findings and Results

The descriptive statistics are shown in Table 1. The variables were found normally distributed in the normality test according to the Kernel Density Estimation Technique. The standardized normal probability plot confirmed normality in the middle range of residuals. Similarly the Quintile-normal plot ensured normality in the extreme of the data. A non-graphical test for normality is the Shapiro-Wilk test which checks the hypothesis that the distribution is normal. In this model the p-value of 0.07715 indicated that the null hypothesis that the distribution of the residuals is normal cannot be rejected (at 90%).

Table 1: Summary statistics

	LnPCY	TEXIM	R	CAPFLOWY
Mean	5.749	28.25	7.52	0.30
Std. Deviation	0.285	9.93	4.62	0.43
Kurtosis	2.546	2.19	3.60	3.24
Variance	0.081	98.62	21.36	0.18
Skewness	0.376	0.62	-0.91	1.25

The white noise Q test as well as the Breusch-Goodfrey and Durbin-Watson test for serial correlation detected serial correlation in the data at 5% significance level. To correct it, we utilized Cochrane-Orcutt regression. The result shows that the Durbin-Watson original static was 1.07025 while the transformed value for the statistic was 1.699318. Both the graphical and the Breusch-Pagan test suggested no possible presence of heteroskedasticity in the model ($\text{prob} > \chi^2 = 0.4340$). As the residuals were homogeneous, we would not expect that the model might have wrong estimates of the standard errors for the coefficients and therefore their t-values. Even so, we followed Stock and Watson (2003) and assumed heteroskedasticity in our model. From the two ways to deal with this problem, using heteroskedasticity robust standard errors and using weighted least squares (WLS), we followed the former (Stock and Watson, 2003).

The model was also checked for an omitted variable bias. Testing for such a bias is important as it tests the assumption that the error term and the independent variables in the model are not correlated; $E(e/X)=0$. The p-value ($p=0.5356$) was higher than the usual threshold with no omitted variable bias in our model.

We also tested the model specification by the Link Test. By this we can check whether we need more variables in our model by running a new regression. The p-value (0.759) was not significant to reject the null hypothesis and we concluded that our model was correctly specified.

Another important assumption for our model is that independent variables are not perfectly multicollinear; in other words, one regressor should not be a linear function of another. The variance inflation factor (VIF) test detected no multicollinearity in our model (Table 2).

Table 2: VIF test for Multicollinearity

Variable	VIF	1/VIF
TEXIM	5.16	0.193753
CAPFLOWY	4.66	0.214811
R	1.24	0.804397
Mean VIF	3.69	

Stationary test: The Augmented Dickey Fuller (ADF) test showed that all the variables were stationary at their first differences (Table 3). The test statistics for all the regressors with and without trend were significant at 1% level clearly rejecting the null hypothesis of having a unit root. Hence, variables *TEXIM*, *R*, and *CAPFLOWY* decisively are confirmed as stationary with an order of $I(1)$. The outcome variable *LnPCY* is also found to be stationary at its first difference level with both trend and no trend and depicts $I(1)$ order of integration.

Table 3: Augmented Dickey Fuller Unit Root test (for being stationary)

	Level		First difference	
	Without trend	With trend	Without trend	With trend
LnPCY	1.542	-1.407	-4.199***	-4.845***
TEXIM	0.572	-2.865	-5.582***	-5.940***
R	-3.222	-2.742	-5.891***	-5.935***
CAPFLOWY	-1.139	-2.547	-5.142***	-5.020***

Cointegration test: The EG-ADF test indicated no cointegration in the data, which implies no long run equilibrium relationship among variables. The Mackinnon approximate p-value for $z(t)$ was 0.6625 and the test statistic appeared to be -1.226 where the critical values are -3.750, -3.000, and -2.630 for 1%, 5%, and 10% significant level, respectively. Therefore, we need not follow a Vector Error Correction Model (VECM).

Granger causality: The null hypothesis in the Granger Causality Wald test for this model (*var1* does not Granger-cause *var2*) cannot be accepted for the three regressors namely *TEXIM*, *R*, and *CAPFLOWY* (p-values: 0.000, 0.011, and 0.002 respectively). *TEXIM*, *R*, and *CAPFLOWY* may granger cause *LnPCY*, however, the test statistic (p-value=0.087, 0.464, 0.146 respectively) for the outcome variable (*LnPCY*) shows that the statistics are not significant at 5% level; so the null hypothesis is not rejected meaning it does not granger cause the explanatory variables. In this model we conclude that a one-way causality runs from 'Total Export and Import', 'Real Interest Rate' and 'Net Capital Flow' to 'Per Capita GDP'.

Structural equations: Some authors represent regression results using tables. But it is also possible to show them in an equation form (Quazi, 2005), as depicted here:

$$\begin{aligned} \text{LnPCY} = & 4.99 + 0.02235\text{TEXIM}^{***} + 0.01389\text{R}^{***} + 0.04732\text{CAPFLOWY} \\ & (0.102) \qquad (0.00501) \qquad (0.00366) \qquad (0.0914) \end{aligned}$$

[Standard errors in parentheses, *** coefficients significant at 1% level of significance]

Discussion

We attempted to investigate the impact of economic liberalization reforms on per capita GDP of Bangladesh with the help of Cointegration and OLS regression techniques. The model was estimated for a series of yearly data from 1980 to 2009 for three variables assumed to represent the reforms. Our findings reveal positive linkages between long run economic growth in Bangladesh and the three selected variables that are associated with liberalization reforms.

The implications of these findings are simple. First, a positive relationship between trade reform and per capita GDP verifies the credibility of Bangladesh's robust growth in recent years, thanks to the 'export policy' of 1997-2002, designed to maximize export growth and narrow down the gap between import payment and export earnings (Figure 2). Throughout the 2000s, the export growth in Bangladesh was continuously positive and a double digit growth rate was posted until FY2010-11, except for FY2009-10 (MOF, 2010; BBS, 2010).

The export earnings of some major sectors including woven-RMG, knit-RMG, frozen foods, and leather goods have significantly improved in the last two decades. This implies that industry leaders were able to undertake timely measures for production of exportable goods at a competitive price, thanks to an increase in the volume but not the price of export products from Bangladesh. Nevertheless, exports of Bangladesh continue to be dominated by a few commodities in a narrow market and therefore it may be necessary to remove more impediments in order to maintain a sustainable external sector.

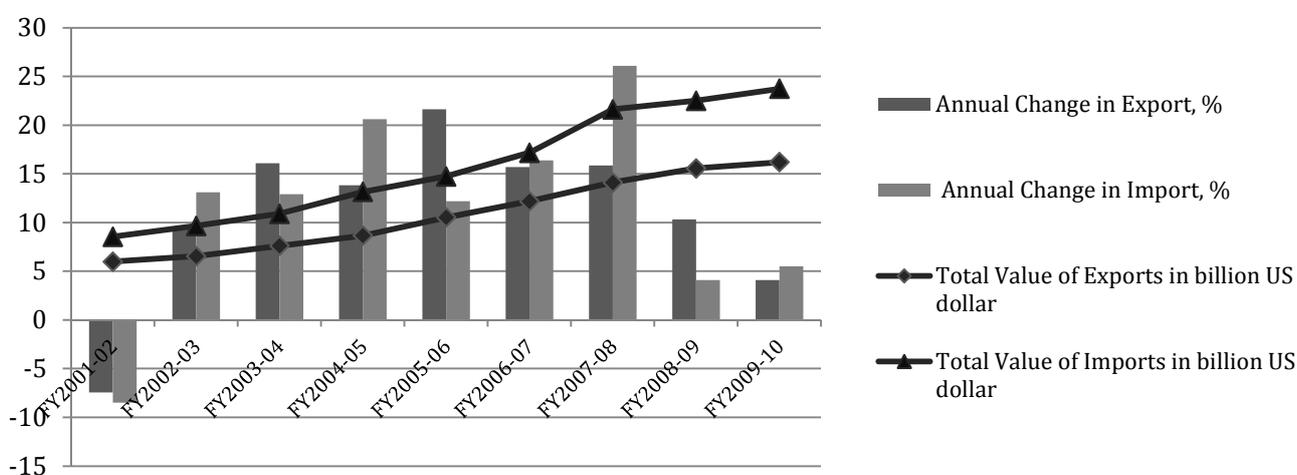


Figure 2: Export and import trends in Bangladesh from 2001 to 2010.

(Source: Bangladesh Bank, Bangladesh Ministry of Finance, Export Promotion Bureau.)

The results of our study also suggest that policy reforms in trade and financial sector, but not in the capital market reform, significantly affect per capita GDP growth. We may conclude that trade reforms and financial liberalization measures in Bangladesh have been effective in promoting economic growth. The Granger causality test provides evidence for a strong unidirectional long-term causal flow stemming from the selected reform indicators to per capita GDP. This finding implies that liberalization reform policies are important in predicting future per capita GDP but per capita GDP may not necessarily demonstrate the level of economic liberalization reforms.

As for the limitations of this paper, one may criticize the appropriateness of the variables selected for regression analyses. Choosing 'total exports plus total imports as a share of GDP' to represent trade openness may be questioned. How can an increase in import contribute to GDP, while in the Keynesian absorption model it may negatively influence the GDP growth? Also the appropriateness of choosing 'real interest rate' as an indicator of openness for financial liberalisation may be questioned. The 'real spread margin' (lending rate minus deposit rate minus rate of inflation) could depict how banks as financial intermediaries might have contributed to GDP growth under financial liberalisation. Even with the real spread margin, the relations among financial deregulation, spread margin and GDP growth would still be complex. Finally, the appropriateness of selecting 'net capital flow as a share of GDP' to represent capital market liberalisation can be questioned. Why the capital market liberalisation can encourage FDI? Capital market liberalisation may encourage securities / portfolio investment, but not always FDI. However, we followed with our assumptions as explained in the methodology section.

The positive influence of financial liberalization reforms toward GDP is less certain. An indirect relation appears to exist between the liberalized financial sector and economic growth in Bangladesh. For instance, economic investment has not been constrained by the high cost of finance (Rahaman & Yusuf, 2010). The investment / GDP ratio in Bangladesh rose to 24.41% in 2011 from 9.48% in 1970s (MOF, 2011), because Bangladesh was able to maintain a particularly reasonable lending interest rate compared to its neighbors in recent years.

On the other hand, the country's finance industry has experienced rapid growth since the end of 1980s. Improvements have been observed in basic sector indicators like the ratio of non-performing to total loans or market capitalization to GDP ratio. According to Islam & Begum (2005), there is a close link between financial development and economic growth in Bangladesh which is attributable to the trend of financial deepening and the ratio of private sector credit to GDP (Ahmed & Islam, 2004).

References

- Adhikary, B.K. 2011. FDI, Trade Openness, Capital Formation, and Economic Growth in Bangladesh: A Linkage Analysis. *International Journal of Business and Management* 6(1): 16-28.
- Ahmed, N. 2001. Trade Liberalization in Bangladesh: An Investigation into Trends. Dhaka: The University Press Limited.
- Ahmed, S. 2002. The Political Economy of Poverty Reduction in South Asia: Role of Good Governance. *South Asia Discussion Paper Series No. 183*. World Bank, Washington.
- Ahmed, S. and Islam, M. E. 2004. Interest Rate Responsiveness of Investment Spending in Bangladesh. *The Bangladesh Development Studies*. 30(1 and 2), 65-109.

- Ahmed, A. and Uddin, G. 2009. Export, Imports, Remittance and Growth in Bangladesh: An Empirical Analysis. *Trade and Development Review*, 2(2), 79-92.
- Bahar, H. 2009. Financial Liberalization and Reforms in Bangladesh. Paper Presented in the National Workshop on Strengthening the Response to the Global Financial Crisis in Asia-Pacific: The Role of Monetary, Fiscal and External Debt Policies, Thimphu, Bhutan, December 9-11, 2009.
- Bangladesh Bureau of Statistics. 2010. *2010 Statistical Year Book of Bangladesh*, Dhaka: Government of Bangladesh.
- Bashar, K.M. & Khan, H. 2007. Liberalisation and Growth in Bangladesh: An Empirical Investigation. *The Bangladesh Development Studies*, 32(1), 61-76
- Bhalotra, S. 2002. The Impact of Economic Liberalization on Employment and Wages in India. Geneva: International Labour Office.
- Bhattacharya, D. & Chowdhury, T. A. 2003. Financial Sector Reforms in Bangladesh: The Next Round. *CPD Occasional Paper Series*. Dhaka: Centre for Policy Dialogue.
- Bhattacharya, D. 2004. Bangladesh Economy: Macroeconomic Performance. In Centre for Policy Dialogue. Dhaka: University Press Limited.
- Bhattacharya, D. 2006. State of the Bangladesh Economy in FY06: Early Signals and Immediate Outlook. Dhaka: Centre for Policy Dialogue.
- Dickey, D.A., & Fuller, W. A. 1981. Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root. *Econometrica*, 49(4), 1057-1072.
- Dowling, J. M. and Hiemenz, J. U. 2007. Aid, Savings and Growth in the Asian Region. *The Developing Economies*, 21(1), 3-13. DOI: 10.1111/j.1746-1049.1983.tb00641.x
- Engle, R.F. & Granger, C.W.J. 1987. Co-Integration and Error Correction: Representation, Estimation, and Testing. *Econometrica*, 55(2), 251-276.
- Granger, C.W.J. 1988. Some recent developments in a concept of causality. *Journal of Econometrics*, 39(1-2), 199-211.
- Green, W. H. 2008. *Econometric Analysis*. Upper Saddle River: Prentice Hall
- Gylfason, T. 1998. *Understanding Economic Growth*. Stockholm : Almquist & Wiksell Intl.
- Habib, S. M. A. 2002. Can Bangladesh's External Financial Openness be Linked to the Country's Economic Growth?. *Bank Parikrama*, 27(2 & 3), 5-31.
- Hallwood, P. and MacDonald, R. 1994. The Order of Liberalization in Developing Countries. In *International Money and Finance*, (p.338-350). Malden: Blackwell Publishing.
- Hossain, M. I. 2011. *Impact of Economic Liberalization Reforms in Bangladesh*. Paper presented at the Second Annual Conference of International Association for Asia Pacific Studies (IAAPS), Japan.
- Islam, N. 1977. *Development planning in Bangladesh*, London: G. Hurst
- Islam, M. N. 1998. Export Expansion and Economic Growth: Testing for Cointegration and Causality. *Applied Economics*, 30(3), 415-425.
- Islam, M. E. & Begum, M. N. 2005. Is Investment Demand Sensitive to Interest Rate in Bangladesh: An empirical Analysis. *Bank Parikrama*. 30(1), 69-86).
- Khan, A. A. 2011 (March 17). 'The test case for development' revisited. *The Daily Star*, p.2
- King, R. G. and Levine, R. 1993. Finance and Growth: Schumpeter Might be Right. *Quarterly Journal of Economics*, 108(3), 717-737.

- Lucas, R. E. 1988. On the Mechanics of Economic Development. *Journal of Monetary Economics*, 22(1), 3-42.
- McKinnon, R. 1973. *Money and Capital in Economic Development* (pp.5-21). Washington: Brookings Inst.
- Mahmud, W. 2008. Pathways of Social Development in Bangladesh: Surprises and Challenges. *Indian Journal of Human Development*, 2 (1), 79–92.
- Mahmud, W., Ahmed, S. and Mahajan, S. 2010. Economic Reforms, Growth, and Governance: The Political Economy Aspects of Bangladesh's Development Surprise. In Bredy, D. & Spence, M. (Ed.), *Leadership and Growth*. Washington: The Commission on Growth and Development.
- Mamun, K. A. & Nath, H. K. 2010. Workers' migration and remittances in Bangladesh. *Journal of Business Strategies*. 27(1), 29-52.
- Ministry of Finance 2008. Bangladesh Economic Review 2008 [In English]. Dhaka: Government of Bangladesh.
- Ministry of Finance. 2009. Bangladesh Economic Review 2009 [In Bengali]. Dhaka: Government of Bangladesh.
- Ministry of Finance. 2010. Bangladesh Economic Review 2010 [In Bengali]. Dhaka: Government of Bangladesh.
- Ministry of Finance. 2011. Bangladesh Economic Review 2011 [In Bengali]. Dhaka: Government of Bangladesh.
- MPI. 2011. Migration Data Hub. Retrieved December 22, 2011, from <http://www.migrationinformation.org/datahub/>
- Nath, H. K. 2009. Trade, Foreign Direct Investment, and Growth: Evidence from Transition Economies. *Comparative Economic Studies*, 51(1), 20-50.
- Palit, S. K. 2006. The impact of socio-economic reforms on governance: The Bangladesh experience. *JOAG*, 1(1), 68-83.
- Pattnaik, S. 2005. Defining the Frontiers of Identity: Balancing Language and Religion in Bangladesh, Working Paper Presented in the 5th Asia Fellow Cohort-V Annual Conference Bangkok, July 25-26, 2005.
- Priyodesk. 2011. (December 31). Amartya wants Dhaka to lead climate battle. *The Priyo International*, p.1.
- Quazi, R. 2000. Macroeconomic Effects of Foreign Aid in Bangladesh Revisited. *Journal of Bangladesh Studies*, 2(2), 7-15.
- Quazi, R.M. 2005. Effects of Foreign Aid on GDP Growth and Fiscal Behavior: An Econometric Case Study of Bangladesh. *The Journal of Developing Areas*, 38(2), 95-117
- Rahman, J. and Yusuf, A. 2010. Economic Growth in Bangladesh: Experience and Policy Priorities. *Journal of Bangladesh Studies*, 12(1).
- Rahman, A. 2011. (April 26). Bangladesh: Growth trends and medium term growth outlook. *The Daily Sun*, p. 6.
- Rahman, N. N. 2005. Policy Reforms and Trade Liberalization in Bangladesh. *Paper presented at Meeting on Adjusting to Trade Reforms: What are the Major Challenges for Developing Countries*. Geneva: UNCTAD.
- Raihan, S. and Razzaque, A. 2007. *Trade and Industrial policy Environment in Bangladesh with Special Reference to Some Non-traditional Export sectors*. Dhaka: Pathak Shamabesh.
- Romer, P. M. 1986. Increasing returns and long-run growth. *Journal of Political Economy*, 95(5), 1002-1037.

- Rashid, M. A. 2000. Impact of Trade Policy Reforms on Industrial Capacity and Employment in Bangladesh, In Structural Adjustment Participatory Review Initiative (SAPRI). Dhaka: Centre for Policy Dialogue.
- Sen, Amartya. (Winner of the 1998 Nobel Prize in Economic Sciences) addressing in the occasion celebrating the 40th anniversary of independence of Bangladesh, "*40th anniversary of Bangladesh's Independence: The Vision and The Journey*".
- Shaw, E. 1973. *Financial Deepening in Economic Development*. New York: Oxford University Press.
- Siddiki, J. 2002. Trade and Financial Liberalisation and Endogenous Growth in Bangladesh. *International Economic Journal*, 16 (3), 23-37.
- Springler, E. 2006. Financial Liberalization, Stock Markets and Growth in Economies with Underdeveloped Financial Markets. *European Political Economy Review*, 3 (2), 53-86.
- Stock, J. H. & Watson, M.W. 2003. *Introduction to econometrics*. Boston : Pearson Addison Wesley.
- Stock, J. H., & Watson, M.W. 2007. *Introduction to econometrics*. Boston :Pearson Addison Wesley.
- Tait,R.W. 2002.Trade Liberalization and Economic Change in Bangladesh. In Rahman, M. (Ed.), *Globalization, Environmental Crisis and Social Change in Banglades*. Manitoba: Matiur Rahman.
- Todaro, M.P. and Smith, S.C. 2010. *Economic Development* (pp.91-117). Harlow: Pearson Education Limited.
- Vaughn, B. 2010. *Bangladesh: Political and Strategic Developments and U.S. Interests*. Congressional Research Service. Retrieved March 5, 2012, from <http://www.fas.org/sgp/crs/row/R41194>.
- World Bank. 1981. *Bangladesh: Current Economic Situation and Review of the Second Plan*. (In Three Volumes). Dhaka, the World Bank Office.
- World Bank, 1981. *Bangladesh: Current Economic Situation and Review of the Second Plan* Volume 1: Main Report and Statistical Appendix, Report No.3309-BD.
- World Bank. 1999. *World Data Bank, Bangladesh: Key Challenges for the Next Millennium*. Working paper no-19808.
- World Bank. 2004.*World Bank Trade Policies in South Asia: an Overview*. Washington, D.C.: The World Bank Office.
- World Bank. 2004. *World Bank Trade Policies in South Asia: An Overview*. Report no 29949, September 7, 2004. Volume 4: Bangladesh's trade policies.
- World Bank. 2005. *Bangladesh PRSP Forum Economic Update. Recent Developments and Future Perspectives*. Dhaka: The World Bank Office.
- World Bank. 2011. *World Data Bank*. Retrieved October 25, 2011, from <http://databank.worldbank.org/ddp/home.do>