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Does Stock Market Development Affect Economic Growth? Econometric Evidence from Bangladesh

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ABSTRACT

The study aims to evaluate the causality linkage between stock market development (SMD) and growth of the economy in Bangladesh. Using time series data of quarterly frequency through 2000Q1-2017Q4 and employing the Johansen cointegration approach the study reveals that there are long-run co-integrating relationships among the variables, namely, GDP, development of the stock market, net interest spread, real effective exchange rate and financial depth. The Vector Error Correction Model (VECM) confirms the presence of a long-term equilibrium relationship between GDP and other variables such as regressors as the system is found to be stable in the long-run. As revealed by the study, the short run positive impact of SMD on the growth of the Bangladesh economy sustains in the long run, which is also true for financial depth. However, financial deepening has a relatively large contribution to the output growth of Bangladesh than SMD. Granger causality tests assert that the causal association is unidirectional that runs from SMD to output growth.

Keywords: *Stock Market, Market Capitalization, Economic Growth, Granger Causality, Bangladesh*

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INTRODUCTION

The stock market has largely been accepted as an indispensable part of a financial system that spurs economic growth by driving resources from sectors plenty of capital to the sectors in which capital is relatively scarce. Stock market development (SMD) can confirm better allocation of resources at least in two probable ways: primarily, it cuts the cost of unveiling information to investors about participating firms and the investment projects they propose (Boyd & Prescott, 1986; King & Levine, 1993). Secondly, the stock market plays a decisive role in protecting investors' interest by spreading and pooling risks (Greenwood & Jovanovic, (1990). These two together allow investors and firms to undertake investment decisions favorable to them. Consequently, greater efficiency in the allocation of resources is achieved which enhances productivity through improving expertise of financial intermediaries and thereby results in a greater rate of output growth (Montiel , 1995; Levine & Zervos, 1998; Caporale et al., 2004; Enisan & Olufisayo, 2009; Mamun et al., 2013). Taking advantage of the stock market, investors can easily accrue capital at a reasonable cost.

Indeed, a well-organized stock market stimulates financing backed by the market rather than financing backed by banks and thereby eases the vulnerability to a credit crisis considerably which is found to have a growth effect on an economy (Wang & Ajit, 2013; Seven & Yetkiner, 2016; Mamun et al, 2018). It can also be regarded as a supplement instead of a substitute for the development of the banking sector in the growth process of economies and has been supported by many studies (Beck & Levine, 2004; Ehigiamusoe and Lean, 2017; Nyasha & Odhiambo, 2017). Stiglitz (1985) observes that countries having a well-functioning capital market support proper monitoring of management and ensures corporate controls which enhances the adeptness of the corporate sector. However, there are disputes among researchers and many argue that the stock market may falter economic growth. Higher liquidity that a capital market confirms through reducing uncertainty may worsen the output growth of an economy by toning down the desire for precautionary savings (Petros, 2012). Bhide (1994) admonishes for the probable threat related to corporate governance which is likely to affect economic growth gravely because of sudden liquidity in the capital market that restrains investors' willingness in upholding the long-term obligation with corporations whose shares they possess. Using

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annual data of 21 emerging markets for more than 21 years, Mohtadi and Agarwal (2001) examined the association between SMD and output growth and found a positive association between several indicators of the capital market performance and output growth. In a study on seven Sub-Saharan African (SSA) economies, Enisan and Olufisayo (2009) found economic growth of these countries to be influenced positively and significantly by SMD.

Likewise, with more than 60 years of its operation, the capital market of Bangladesh has been performing a decisive character in the development of the economy like most other developing and emerging economies. Capital market liberalization of the economy through the 1990s brought remarkable changes in its different development indicators. The capital market size as measured by the market capitalization ratio (MCR) fell short of 1.5 percent while the value of trade was below 0.05 percent in terms of percent of GDP in the early liberalization periods. However, in 2010, it covered more than 47 percent of the national product of Bangladesh which was a record high. The MRC had an increasing trend till 2010, from which it is apparent that the capital stock had maintained a growing trend. However, the MCR started to fall after the debacle of the stock market in 2010, (see figure 1 below). Regardless of the decline in the MCR, the stock market yet covered nearly 26 percent of the domestic output of Bangladesh which is considerably greater than many other developing economies.

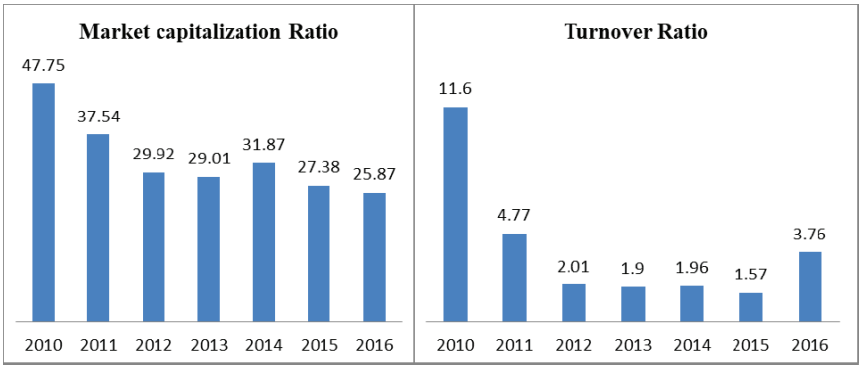

Figure 1: Development of Stock Market in Bangladesh
Source: WDI, World Bank, 2017

On the contrary, the turnover ratio declined gradually following the crash, which revealed the liquidity crisis in the capital market since the collapse. In fact, the level of liquidity in the capital market is generally gauged by the turnover ratio. The greater the turnover ratio is, the higher the liquidity level in the stock market. Illiquidity hinders the attempts of capital accumulation taken by large domestic corporations and thus impedes growth of an economy (Bekaert & Harvey, 1998). However, it took nearly six years to overcome the crisis and the market became relatively stable owing to different policy measures taken by the regulatory authority which was reflected by the various market indicators. It tempted potential investors to enter into the market that resulted in greater turnover ratio and hence greater liquidity.

The Bangladeshi economy has realized around 6 percent rate of growth on an average through the last 12 years. The stock exchange of Bangladesh has served as the building block of economic development from the early 1990s, nearly four decades after its formal inauguration in 1954. Stock market liberalization initiatives that were pursued in the early 1990s had a noticeable contribution to this development. In 1995, market capitalization was only USD 1930 million which reached USD 51570 million at the end of 2017.

In fact, the rise in market capitalization is mostly owed to the increase in the number of listed companies in the stock exchanges in Bangladesh. The average growth of company listing is more than 4.5 percent per annum and reached 297 in 2017 from 192 in 1995. Consequently, both securities and trading volume have been rising gradually. Therefore, the simultaneous growth of the Bangladeshi economy and its stock market raise the issue to investigate whether there exists any relationship between SMD and the output growth of Bangladesh. The paper, therefore, aims to evaluate the long run relationship and short-run causality between SMD and economic growth in Bangladesh.

The organization of the study is as follows: following introduction in section one, section two offers a review of previous literature in brief. The next section deals with data sources, model specification, and methodology. Section four presents the empirical results and conclusions and policy recommendations are furnished in section five.

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LITERATURE REVIEW

Research on the association between SMD and output growth is substantially rich. While a group of research approves that evolution of the stock market stimulates economic growth, studies opposing the view offering counter and weak evidence are not negligible. Studies on the effect of stock market progress on output growth can broadly be categorized into two major groups: time-series studies and cross-section studies.

In an influential study, while assessing the influence of the development of stock markets and banks on subsequent output growth of 40 countries through the period 1980–1988, Atje and Jovanovic (1993) argue that SMD measured in terms of value traded divided by GDP substantially effect growth while no such evidence is found for bank lending. Holmstrom and Tirole (1993) and Bencivenga et al (1995) and Levine & Zervos (1996) also ascertain that the liquidity of the stock market accelerates long run growth of an economy. Caporale et al (2004) examine the causal linkage between SMD, financial deepening and output growth using the Toda and Yamamoto approach to test for causality in VARs for a sample of seven countries and suggest that a well-developed stock market can stimulate economic growth in the long run. Hondroyiannis et al. (2005) examined the impact of the development of the banking system and stock markets on economic performance of Greece empirically using the VAR models through 1986–1999 and found that, despite insignificant, financing both by banks and stock markets can stimulate long-run economic growth with a larger contribution of bank finance in comparison to the stock markets. Beck and Levine (2004) analyzed the link between the stock market and bank development and economic growth in a panel of 40 countries employing the techniques of generalized-method-of moments constructed for dynamic panels and identified the direct impact of the development of banks and stock markets on growth of the economy through 1976-1998.

Enisan & Olufisayo (2009) examined the long run relationship and short run causality between stock market progress and output growth for seven SSA countries using the autoregressive distributed lag (ARDL) model and found a positive and significant impact of the growth of the stock market on the growth of the economies in the long run. The result is identical to that of the study conducted by Adjasi & Biekpe (2006) for 14

countries in Africa in the dynamic panel data modeling setting. Employing the principal component analysis to construct a suitable measure of financial development with the purpose of examining the relationship between financial development and growth over the period 1991-2011 for 146 economies, Seven and Yetkiner (2016) identified that economic growth in middle- and high-income countries are positively and significantly related to the development of the stock market. Ehigiamusoe and Lean (2017) argue that the stock market is a complement rather than a substitute for banking development in the process of economic development in West African countries. The study examined the impact of SMD on economic growth of selected West African countries, namely Cote D'Ivoire, Ghana, and Nigeria using the Seemingly Unrelated Regression (SUR) approach which revealed that SMD had positive impact on economic growth in all the countries.

Time series studies that identify positive and significant causal link between SMD and economic growth include Ahmed and Ansari (1998), Van Nieuwerburgh et al (2006), Shahbaz et al (2008), Nordin and Nordin (2016), Coşkun et al (2017) and Bist (2017). Ahmed and Ansari (1998) examined the link between development of the financial sector and output growth for Sri Lanka, Pakistan, and India using the Granger causality analysis for the period 1973-1991 which suggests that financial sector development causes output growth of these economies from the Granger sense. Van Nieuwerburgh et al (2006) investigated the long-term relationship between financial market development and economic growth in Belgium using the co-integration analysis and argue that progress in the stock market lead to economic growth in Belgium, particularly for the period 1873-1935. Relying on the same methodology, while studying the impact of SMD on output growth for the Malaysian economy for the period of 1981-2014, Nordin and Nordin (2016) identified a direct influence of the progress of the stock market on economic development. Shahbaz et al (2008) assessed the association between stock market progress and output growth for Pakistan drawing data for 1971-2006 by means of the ARDL model and suggest that there prevails a significantly strong positive link between the SMD and output growth. In two recent time-series studies, Coşkun et al (2017) and Bist (2017) studied the relationship between stock market progress and output growth empirically through 2006-2016 and 1993-2014 for Turkey and Nepal respectively employing the ARDL bounds testing approach. The causality relationship they identified is unidirectional and runs from SMD to output growth with a system stable in the long run.

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As stated before, a remarkable number of studies on the relationship between SMD and output growth suggest negative or mixed results. Drawing annual data from 42 countries between 1976 and 1993, Levine and Zervos (1998) studied the relationship between economic growth and financial system development using both banks and stock market indicators using cross-sectional regressions. Their findings suggest that though the level of liquidity in the stock market has a long-term impact on economic growth, SMD, as measured by market capitalization divided by GDP, has no correlation with indicators of economic growth. Based on the OLS estimation and data from 49 developing economies having official stock markets in 1991, Harris (1997) assessed the impact of the stock market on economic growth from 1980 to 1991 and found that the effect of the SMD on output growth in developing economies is relatively faint. Naceur and Ghazouani (2007) took data from eleven MENA region countries over the period 1979–2003 into account and employed a dynamic panel model with GMM estimation to study the association between the financial sector development and growth. Study results reinforce the idea of no significant relationship between banking and SMD, and growth. Barajas et al (2013) employed a dynamic panel estimation drawing annual data from 1975 to 2005 for 150 countries and found that the effect of financial deepening on output growth is less favorable in oil-rich and low-income countries.

Arestis et al (2001) researched the link between SMD and economic growth resorting to time series econometrics and quarterly data from five developed economies, controlling the volatility effects of the banking system and stock market and argue that the relationship between the progress of the stock market and economic growth is not robust. However, Boubakari (2010) drew annual time series data from 5 Euronext countries for the period 1995-2008 and detected a direct link between SMD and output growth in the Granger sense which is predominantly veritable for countries with a very active and liquid stock market. In a study on the impact of SMD on the growth of 12 Asian countries through 1980-2004, Tang et al. (2007) found that only in one third of economies, output growth is influenced by SMD in the long-run. They are China, Philippines, Singapore and Taiwan. The Granger causality tests result suggested that the causal association between SMD and growth of the economy of Thailand, Malaysia, Indonesia, Hong Kong and China is bidirectional. However, in the short run, a unidirectional causality is evident for Korea, Japan, Singapore and India. But it runs from

SMD to output growth for Korea and Japan and changes its direction for Singapore and India. However, no causality among the variables is found for Sri Lanka alone. Furthermore, a study on China conducted by Wang and Ajit (2013) for the period 1996-2011 identified an adverse impact of SMD on economic growth.

Panel data studies on South Asia are relatively scarce and very few of them include Bangladesh with inconclusive findings. In an empirical investigation on the impact of SMD on growth of four SAARC economies namely India, Bangladesh, Sri Lanka and Pakistan over 1980-2008, Haque and Hossain (2011) did not find any impact of size, activity and liquidity of the stock market on real economic activity in this region. Azam et al (2016) examined the role of SMD in the growth of four Asian economies that included Bangladesh, China, India and Singapore employing data of annual frequency through 1991-2012 drawing the ARDL bound testing method and detected a long-run co-integrating relationship between output growth and SMD. Ullah and Wizarat (2016) examined the impact of SMD towards the growth of four South Asian countries, Sri Lanka India, Pakistan and Bangladesh over the period 1990-2011 drawing panel data based on an index constructed by consolidating different components of the SMD with the help of the Principal Component Analysis. Their results suggest that SMD causes output growth both in the short run and in the long run.

DATA AND METHODOLOGY

Sources of Data

The study takes the MCR as a proxy measure of SMD and evaluates the causality among GDP, SMD, financial depth (FD), net interest spread (NIS) and real-effective-exchange-rate-(REER). It draws quarterly time-series-data from 2000Q1 to 2017Q4. The reason for choosing this timeframe is straightforward. Immediately after the stock market liberalization initiatives in the early 1990s, there was a burst in the stock market in 1996 that kept investors away from the market for an extended period of time. After a long period of relative inactivity, the stock market started to recover from the early 2000s following the establishment of the Central Depository Bangladesh Ltd (CDBL) in 2000. Explanations of the variables with their sources are

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presented in Table 1. To take the real values of the relevant variables, the study considered 2010 as the base year. For some of the years, only annual data are available for stock market capitalization and net interest spread. In this case, the annual data were transformed into quarterly frequency employing linear interpolation. As the study employed quarterly data, seasonal adjustment operation was performed for all the variables to remove the seasonal components from the time series.

Table 1: Variables and their Sources

Variable	Explanation	Source
GDP	Gross Domestic Product	Annual Report, Bangladesh Bureau of Statistics (BBS), Various Issues
SMD	Market capitalization ratio: the ratio of the value of listed shares to GDP	Dhaka Stock Exchange (DSE)
FD	Financial depth: Ratio of Broad money to GDP	Economic Trend, Bangladesh Bank, Various Issues
NIS	Net interest spread: the gap between lending and deposit rates in percent	International Financial Statistics, IMF, 2018
REER	Real-Effective-Exchange-Rate	Bruegel-Datasets, 2017

To identify the order of integration of the variables, the Augmented-Dickey-Fuller (ADF) and Phillips-Perron (PP) Unit Root Tests were executed. Test results are summarized in Table 2. The unit root test results asserted that the order of integration of the variables is 1, that is, they all are I(1) processes as they are stationary at the first difference both for intercept as well as trend with intercept processes. Hence, regression at their levels will be spurious. Therefore, they must pass the test of co-integration so that they do not lose any information in the long-term.

Table 2: Augmented-Dickey-Fuller (ADF) and Phillips-Perron (PP) Unit Root Test

Variables	Test in	Includes	ADF		PP	
			t-statistic	p-value	t-statistic	p-value
lnGDP	Level	Intercept	0.272	0.973	0.185	0.968
		Trend, Intercept	-1.169	0.902	-1.599	0.773
	First Difference	Intercept	-4.174	0.003*	-4.151	0.003*
		Trend, Intercept	-4.123	0.014*	-4.164	0.012*
lnSMD	Level	Intercept	-1.709	0.422	-1.424	0.566
		Trend, Intercept	-2.785	0.208	-2.206	0.479
	First Difference	Intercept	-5.570	0.000*	-5.567	0.000*
		Trend, Intercept	-5.540	0.000*	-5.509	0.000*
lnFD	Level	Intercept	-1.809	0.373	-1.818	0.369
		Trend, Intercept	-1.289	0.883	-1.329	0.873
	First Difference	Intercept	-8.077	0.000*	-8.077	0.000*
		Trend, Intercept	-8.197	0.000*	-8.197	0.000*
lnIRS	Level	Intercept	-1.540	0.507	-1.427	0.565
		Trend, Intercept	-2.856	0.184	-1.878	0.655
	First Difference	Intercept	-2.137	0.231	-2.979	0.042**
		Trend, Intercept	-2.345	0.404	-3.042	0.029**
REER	Level	Intercept	0.429	0.983	0.305	0.977
		Trend, Intercept	-1.219	0.899	-1.201	0.903
	First Difference	Intercept	-8.069	0.000*	-8.102	0.000*
		Trend, Intercept	-8.749	0.000*	-8.749	0.000*

* Significant at 1% level
** Significant at 5% level

MODEL AND METHODOLOGY

The study considered the Johansen cointegration approach to research the possible co-integrating relation among the variables. Johansen and Juselius (1990) examined the long-term relationship between variables following the VAR approach. The VAR equation can be given as:

$$Y_t = \mu + C_1 + Z_2 Y_{t-2} + ... Z_p Y_{t-p} + \varepsilon_t \qquad ..... (1)$$

where Y_t is an (nx1) vector of I(1) and/or I(0) variables, μ is an (nx1) vector of constants and ε_t denotes the white noise process with zero mean. Rearranging Equation 1 as a vector error-correction model (VECM):

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$$Yt = \Gamma_1 \Delta Y_{t-1} + \Gamma_2 \Delta Y_{t-2} + ... \Gamma_{\rho-1} \Delta Y_{t-\rho-1} + \Pi Y_{t-1} + \varepsilon_t \quad ..... (2)$$

where $\Gamma_1 = (I - Z_1 - Z_2 - .... - Z_\rho)$ (i = 1, 2, ... ρ - 1) and $\Pi = -(I - Z_1 - Z_2 - .... - Z_\rho)$

Since ε_t is a white noise process with zero means, the rank r of the long-run matrix Π indicates how many of the linear combinations of Y_t are stationary. The trace test and maximum eigenvalue test statistics determine the number of co-integrating vectors (r). Trace and maximum eigenvalue test statistics can be given as:

$$\lambda_{trace} = -T \sum_{i=r+1}^{n} \text{In}\,(1 - \lambda_i) \qquad r = 0, 1, ..., n-2, n-1$$

$$\lambda_{max}\,(r, r+1) = -T\,\text{In}\,(1 - \lambda_{r+1}) \qquad r = 0, 1, ..., n-2, n-1$$

If the test statistic is greater than the critical value provided by Johansen and Juselies (1990), the null hypothesis that there are r co-integrating vectors in favor of the alternative that there are r+1 (λ_{trace}) or more than r (for λ_{max}) will be rejected.

Identification of the explanatory variables for the study is supported by an extensive survey of the literature. It primarily considers the following explanatory variables: SMD as measured by MCR, turnover ratio, inflation rate, financial depth, net interest spread and REER that are taken in many researches to construct a general framework for the study. The general model specified primarily is kept unchanged together with other specifications letting alternative combinations of regressors to estimate an Error Correction Model (ECM) using the co-integration approach. Statistically_insignificant or uncointegrated_specifications are gradually dispelled, and the following specification was finally conceived for Bangladesh:

$$GDP = f(SMD, FD, NIS, REER)$$

The cointegrating regression model in the long run can then be given as:

$$\text{In}\, GDP_t = \alpha_0 + \alpha_1\, \text{In}\, SMD_t + \alpha_2\, \text{In}\, FD_t + \alpha_3 NIS_t + \alpha_4 REER_t + u_4 \quad ---------- (3)$$

SMD is proxied by the ratio of the Stock market capitalization to GDP, while the ratio of broad money to GDP represents financial depth. SMD, FD and REER theoretically have direct impacts on the growth of GDP while higher NIS disappoints prospective savers and therefore is an obstacle for prospective investors, which hampers output growth. Therefore, the signs theoretically expected for the coefficients in the long-run are $\alpha_1 > 0$, $\alpha_2 > 0$, $\alpha_3 < 0$, $\alpha_4 > 0$

After estimating the long-term relationship using the co-integration approach, a vector error correction model (VECM) was employed to determine the causal relationship among the variables and stability of the system in the long run. The VECM can be presented as:

$$\Delta Y_t = \alpha_1 + \sum_{i=1}^{m} Y_j \Delta Y_{t-1} + \sum_{i=1}^{n} \beta_{1i} \Delta X_{1t-i} + ... + \sum_{i=1}^{n} \beta_{pi} \Delta X_{pt-i} + \mu_1 ECT_{1t-1} + e_t \quad \text{---------- (4)}$$

Here, Y stands for dependent variable, X for explanatory variables, ECT to show "error-correction term", which is the series of OLS residuals obtained for long-run co-integrating regression model (3).

EMPIRICAL RESULTS

The Johansen approach which was mainly developed under the normality assumption of the stochastic error term and the optimum lag length for the VAR system to confirm white noise errors is shown in Table 3. Optimal lag length for the VAR system to perform the co-integration analysis was 3.

Table 3: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-313.8026	NA	0.008125	9.376548	9.539748	9.441213
1	419.6638	1337.498	7.27e-12	-11.46070	-10.48151	-11.07271
2	677.8001	432.7580	7.74e-15	-18.31765	-16.52246	-17.60634
3	882.7157	313.4003	4.02e-17	-23.60929*	-20.99810*	-22.57465*
4	1002.547	165.6496*	2.62e-18*	-21.39845	-20.97127	-22.04050

Note: The notation * indicates lag order selected by the criterion

The next order of business was to examine if there exists any co-integrating relationship between the output and fundamentals chosen for

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the study. The result of the co-integration test is reported in Table 4. The trace and maximum eigenvalue statistics clearly assert that there exist at least three co-integrating relationships among the variables as they both reject the null hypothesis 'number of co-integrating relation ≤3' at 5 percent level of significance.

Table 4: Johansen Cointegration Test Results

Number of Cointegration	Trace Test			Maximum Eigen Test		
	Test Statistics	Critical Value (5%)	P-values	Test Statistics	Critical Value (%5)	P-values
r=0	196.5162*	69.81889	0.0000	114.2404*	33.87687	0.0000
r≤1	82.27580*	47.85613	0.0000	33.84537*	27.58434	0.0069
r≤2	48.43043*	29.79707	0.0001	24.17282*	21.13162	0.0181
r≤3	24.25761*	15.49471	0.0019	21.88264*	14.26460	0.0026
r≤4	2.374965	3.841466	0.1233	2.374965	3.841466	0.1233

Note: * denotes rejection of the null hypothesis of the presence of cointegration relationship at 0.05 level of significance. P-values are Mackinnon –Haug-Michelis (1999) p-values.

The normalized co-integration equation is summarized below:

$$\text{In } GDP_t = 16.018 + 0.016 \text{ In } SMD_t + 0.088 \text{ In } FD_t + 0.012 NIS_t + 0.005\, REER_t + u_t$$

S_e	(0.0065)	(0.0163)	(0.0064)	(0.0003)
t	[2.4790]*	[5.3877]*	[-1.8124]***	[17.1858]*

Note: LM Autocorrelation Test: p-value=0.428 (LM (1)), 0.101 (LM(2)), 0.297 (LM(3))

White Hetaroscedasticity: p-value= 0.3792
* Statistically significant at 1 percent level
** Statistically significant at 5 percent level
*** Statistically significant at 10 percent level

The study finds that all the coefficients of long run model uphold the theoretically desired signs that are statistically significant. The standard errors are shown in brackets and t-ratios are in parentheses. Results reveal that SMD, FD and undervaluation of REER impact the GDP growth of Bangladesh positively, while NIS hinders output growth. Clearly, the

estimated coefficient of FD is greater than that of SMD which implies that financial deepening has a relatively large impact on the economic growth of Bangladesh in the long run.

The study performed the Lagrangian multiplier autocorrelation and white heteroskedasticity tests to check the robustness of the analysis. According to the Lagrangian multiplier autocorrelation test, the null hypothesis 'no autocorrelation in the residuals' cannot be rejected at the 5 percent level of significance for any of the orders tested, and hence there is no autocorrelation problem. According to the white heteroskedasticity test, the null hypothesis 'homoskedastic residuals' cannot be rejected and therefore, residuals are homoskedastic. These tests results assert that the model devised for the study is stable and correctly specified.

The ECM analysis yields a statistically meaningful error correction coefficient (in equation 4) (t statistic = -5.504) between zero and one which is negative (-0.003). This result implies that instability in the short-term will be corrected in the long run and there is a long-run causal relationship between explained and explanatory variables, meaning that SMD, FD, NIS and REER cause the output level to change in the long-run.

Table 5: Granger Causality Tests

H_0 (Null Hypothesis)	Chi-square	p-value
SMC ≠> Y	129.638*	0.0000
Y ≠> SMC	4.267226	0.2340
FD ≠> Y	20.11058*	0.0002
IRS ≠> Y	5.138652	0.1619
REER ≠> Y	2.642951	0.4500

Note: The notation ≠> implies non-Granger causality. The notation * shows the statistics are significant at 5% level and thus reject the null hypothesis of the presence of causality relationship.

To examine the short-run causality among the concerned variables, the study performed the short-term Granger causality test on ECM. The Wald-statistics for causality analysis in the short run are displayed in Table 5. The Wald-test statistics imply that the null hypothesis of 'non-Granger causality from SMD to GDP' is not accepted at the 1 percent significance level. Hence, there prevails a unidirectional causal nexus between SMD and economic growth that runs from SMD to GDP. Furthermore, NIS and

REER do not cause GDP as the null hypotheses 'non-Granger causality from NIS to GDP' and 'non-Granger causality from REER to GDP' are not rejected even at the 10 percent level of significance, while FD is found to cause GDP to change as the null hypothesis 'non-Granger causality from FD to GDP' is not accepted as well at the 1 percent level of significance. Thus, both SMD and FD cause the economy of Bangladesh to grow in the short run. Following the growth literature, while a unidirectional causality running from SMD to output growth is necessary to describe the capital market-led growth phenomena (N'Zué, 2006), the second-round effect produced from output growth to SMD, in turn, reinforce economic growth. Hence, a bidirectional causality between SMD and output growth is crucial for realizing salient growth performance of any economy. However, the study also investigated the causality running from GDP to SMD but it turned down the bidirectional causal association between the variables as it failed to reject the null hypothesis 'non-Granger causality from GDP to SMD' at a satisfactory level of significance.

CONCLUSIONS AND POLICY RECOMMENDATION

As revealed by the study, SMD helps the growth of the Bangladeshi economy in the short run as well as in the long run, though it falls short from that of financial deepening. Moreover, the tendency of the system to get back to its equilibrium confirms its long run stability though the adjustment process is rather slow. The short run causality relationship is unidirectional that runs from SMD to GDP.

However, it fails to assert the bidirectional causal relationship between SMD and GDP needed to describe the capital market-led growth phenomena from a broader perspective. The two biggest concerns for such outcomes are: stock market imperfection and two major debacles of the stock market in an interval of fourteen-years. In a series of studies, Mamun and his co-authors (see e.g. Mamun, 2011; Mamun, Hoque & Mamun, 2013; Mamun, Aziz, Uddin & Hoque, 2013; Mamun, 2014) show that the Bangladesh stock market suffers from information inefficiency in response to different events like dividend announcement, earning announcement, stock splits, and to any other investors' information search behavior throughout the sample period which results in a low degree of market efficiency. Apart from the

price manipulation by syndicates and regulatory drawbacks, irresponsible retail investors also contribute to this market imperfection as they are mostly influenced by other large investors rather than using pertinent information in making their investment decision in stocks. The improvements of the stock market in Bangladesh from an operational perspective following the first burst in 1996 appears to be insufficient by the end of 2010 as the market collapsed due to the bubble created by huge involvements of banks and foreign institutional investors that paved the way for the market to appreciate.

Moreover, banks and financial institutions are still the major sources of investment financing in Bangladesh as the banks and financial institutions disburse industrial term loans by the amount of USD 7856.5 million against the amount of USD 5.06 million raised by issuing new capital in the form of public offerings and private placements in the capital market in FY17. Therefore, the stock market in Bangladesh has not yet been recognized as the main source of financing. Consequently, regardless of the high MCR, the study suggests a long period (very low ECT coefficient) to correct the short-run instability of the system in the long run along with no evidence of possible second-round effect from GDP to SMD. The study identifies a larger impact of financial deepening on GDP growth compared to SMD. Future research needs to identify appropriate policies and measures for a sound development of the stock market in Bangladesh to realize its greater contribution to the growth of the economy.

REFERENCES

Adjasi, C. K., & Biekpe, N. B. (2006). Stock market development and economic growth: The case of selected African countries. *African Development Review*, *18*(1), 144-161. https://doi.org/10.1111/j.1467-8268.2006.00136.x.

Ahmed, S. M., & Ansari, M. I. (1998). Financial sector development and economic growth: The South-Asian experience. *Journal of Asian Economics*, *9*(3), 503-517. https://doi.org/10.1016/S1049-0078(99)80100-6.

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Arestis, P., Demetriades, P. O., & Luintel, K. B. (2001). Financial development and economic growth: the role of stock markets. *Journal of money, credit and banking*, 33(1), 16-41. https://doi.org/10.2307/2673870.

Azam, M., Haseeb, M., Samsi, A. B., & Raji, J. O. (2016). Stock Market Development and Economic Growth: Evidences from Asia-4 Countries. *International Journal of Economics and Financial Issues*, *6*(3), 1200-1208.

Barajas, M. A., Chami, M. R., & Yousefi, M. R. (2013). The finance and growth nexus re-examined: Do all countries benefit equally? IMF Working Paper No. 13-130, International Monetary Fund. https://doi.org/10.5089/9781484372104.001.

Beck, T., & Levine, R. (2004). Stock markets, banks, and growth: Panel evidence. *Journal of Banking & Finance,* 28(3), 423-442. https://doi.org/10.1016/S0378-4266(02)00408-9.

Bekaert, G., & Harvey, C. R. (1998). Capital markets: An engine for economic growth. *The Brown Journal of World Affairs*, *5*(1), 33-53. https://doi.org/10.2307/24589952.

Bencivenga, V. R., Smith, B. D., & Starr, R. M. (1995). Transaction Costs, Technical Choice and Endogenous Growth, *Journal of Economic Theory, 67*(1), 53-177. https://doi.org/10.1006/jeth.1995.1069.

Bhide, A. (1993). The hidden costs of stock market liquidity. *Journal of financial economics*, *34*(1), 31-51. https://doi.org/10.1016/0304-405X(93)90039-E.

Bist, J. P. (2017). Stock Market Development and Economic Growth in Nepal: An ARDL Representation. *Journal of Finance and Economics*, *5*(4), 164-170. https://doi.org/10.12691/jfe-5-4-2.

Boubakari, A. (2010). The role of stock market development in economic growth: evidence from some Euronext countries. *International Journal of Financial Research,* 1(1), 14-20. https://doi.org/10.5430/ijfr.v1n1p14.

Boyd, J. H., & Prescott, E. C. (1986). Financial intermediary-coalitions. *Journal of Economic theory*, *38*(2), 211-232. https://doi.org/10.1016/0022-0531(86)90115-8.

Caporale, G. M., Howells, P. G., & Soliman, A. M. (2004). Stock market development and economic growth: the causal linkage. *Journal of economic development*, *29*(1), 33-50. Retrived from http://www.jed.or.kr/full-text/29-1/02_J665_.PDF.

Coşkun, Y., Seven, Ü., Ertuğrul, H. M., & Ulussever, T. (2017). Capital market and economic growth nexus: Evidence from Turkey. *Central Bank Review*, *17*(1), 19-29. https://doi.org/10.1016/j.cbrev.2017.02.003.

Ehigiamusoe, K. U., & Lean, H. H. (2017). Do Stock Markets Complement Banks in Promoting Economic Growth? Evidence from West African Countries. *Journal of Applied Economic Sciences,* 12(2), 482-487.

Enisan, A. A., & Olufisayo, A. O. (2009). Stock market development and economic growth: Evidence from seven sub-Sahara African countries. *Journal of Economics and Business*, *61*(2), 162-171. https://doi.org/10.1016/j.jeconbus.2008.05.001.

Greenwood, J., & Jovanovic, B. (1990). Financial development, growth, and the distribution of income. *Journal of political Economy*, *98*(5, Part 1), 1076-1107.

Haque, M. E., & Hossain, M. K. (2011). Impact of stock market development on economic growth: Evidence from SAARC countries. *Eastern University Journal,* 3(3), 1-13. Retrived from http://dspace.easternuni.edu.bd:8080/xmlui/handle/12345/49.

Harris, R. D. (1997). Stock markets and development: A re-assessment. *European Economic Review*, 41(1), 139-146. https://doi.org/10.1016/S0014-2921(96)00021-9.

Holmstrom, B. & Tirole, J. (1993). Market Liquidity and Performance Monitoring, *Journal of Political Economy, 101*(4), 678-709. https://doi.org/10.1086/261893.

MAR Vol 17 No. 1, April 2018.indd 140

Hondroyiannis, G., Lolos, S., & Papapetrou, E. (2005). Financial markets and economic growth in Greece, 1986–1999. *Journal of International Financial Markets, Institutions and Money*, *15*(2), 173-188. https://doi.org/10.1016/j.intfin.2004.03.006.

King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The quarterly journal of economics*, *108*(3), 717-737. https://doi.org/10.2307/2118406.

Levine, R., & Zervos, S. (1996). Stock market development and long-run growth. *The World Bank Economic Review*, *10*(2), 323-339. https://doi.org/10.1093/wber/10.2.323.

Levine, R., & Zervos, S. (1998). Stock markets, banks, and economic growth. *American economic review*, 88(3), pp. 537-558. https://doi.org/10.1016/j.ribaf.2006.05.002.

Mamun, A (2011). Informational Efficiency of Chittagong Stock Exchange (CSE), *The Cost and Management,* 39(2), 24-28.

Mamun, A (2014). Evaluation of Stock Market Efficiency: A Case Study of CSE, *IIUC Business Review,* 08(01), 1-14.

Mamun, A., Aziz, M. S. I., Uddin, M. R., & Hoque, N. (2013). The Impact of Investors' Information Search Behavior on Bangladesh Stock Markets. *Middle-East Journal of Scientific Research*, *18*(11), 1625-1631. https://doi.org/10.5829/idosi.mejsr.2013.18.11.12463.

Mamun, A., Hoque, N., & Mamun, A. M. A. (2013). Stock Price Reaction to dividend announcement: the case of Bangladesh Capital market. *Journal of Economics and Sustainable Development*, *4*(8), 89-98.

Mamun, A., Ali, M. H., Hoque, N., Mowla, M. M., & Basher, S. (2018). The Causality between Stock Market Development and Economic Growth: Econometric Evidence from Bangladesh. *International Journal of Economics and Finance,* 10(5), 212. https://doi.org/10.5539/ijef.v10n5p212.

Montiel, P. J. (1995). *Financial Policies and Economic Growth: theory, evidence and country specific experience from Sub-Saharan Africa*. African Economic Research Consortium, Nairobi, KE. Retrived from https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/13595/102422.pdf?sequence=1.

Naceur, S. B., & Ghazouani, S. (2007). Stock markets, banks, and economic growth: Empirical evidence from the MENA region. *Research in International Business and Finance*, *21*(2), pp. 297-315. https://doi.org/10.1016/j.ribaf.2006.05.002.

Nordin, S., & Nordin, N. (2016). The impact of capital market on economic growth: a Malaysian outlook. *International Journal of Economics and Financial Issues*, *6*(7S).

N'Zué, F. F. (2006). Stock market development and economic growth: evidence from Cote D'Ivoire. *African Development Review*, *18*(1), 123-143. https://doi.org/10.1111/j.1467-8268.2006.00135.x.

Nyasha, S., & Odhiambo, N. M. (2017). Are Banks and Stock Markets Complements Or Substitutes? Empirical Evidence from Three Countries. *Managing Global Transitions*, *15*(1), 81-101. https://doi.org/10.26493/1854-6935.15.81-101.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, *16*(3), 289-326. https://doi.org/10.1002/jae.616.

Petros, J. (2012). The effect of the stock exchange on economic growth: a case of the Zimbabwe stock exchange. *Research in Business and Economics Journal*, 6(1), 1-17.

Seven, Ü., & Yetkiner, H. (2016). Financial intermediation and economic growth: Does income matter?. *Economic Systems*, *40*(1), 39-58. https://doi.org/10.1016/j.ecosys.2015.09.004.

Shahbaz, M., Ahmed, N., & Ali, L. (2008). Stock market development and economic growth: ARDL causality in Pakistan. *International Research*

MAR Vol 17 No. 1, April 2018.indd 142

Journal of Finance and Economics, 14(1), 182-195. Retrived from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.453.2757&rep=rep1&type=pdf.

Stiglitz, J.E. (1985). Credit Markets and the Control of Capital. *Journal of Money, Credit and Banking, 7(2), 133-152. http://dx.doi.org/10.2307/1992329.*

Tang, H. P., Habibullah, M. S., & Puah, C. H. (2007). Stock market and economic growth in selected Asian countries. *Journal of Economics, Finance and Administrative Sciences*, 7, 43-52. Retrived from https://mpra.ub.uni-muenchen.de/id/eprint/37649.

Thornton, J. (1996). Financial deepening and economic growth in developing economics. *Applied Economics Letters*, 3(4), 243-246. https://doi.org/10.1080/758520872.

Ullah, Z., & Wizarat, S. (2016). Long term relationship between stock market development and economic growth in south asia: panel data & ardl model estimations. *Pakistan Business Review*, *18*(3), 541-557. Retrieved from http://www.journals.iobmresearch.com/index.php/PBR/article/download/944/194.

Van Nieuwerburgh, S., Buelens, F., & Cuyvers, L. (2006). Stock market development and economic growth in Belgium. *Explorations in Economic History*, *43*(1), 13-38. https://doi.org/10.1016/j.eeh.2005.06.002.

Wang, B., & Ajit, D. (2013). Stock market and economic growth in China. *Economics Bulletin*, *33*(1), pp. 95-103. Retrieved from https://ecomod.net/system/files/StockMarket-wang-ajit-ECOMOD.pdf.

Yartey, C. A., & Adjasi, C. K. (2007). *Stock market development in Sub-Saharan Africa: Critical issues and challenges,* IMF Working Paper No. 7-209, International Monetary Fund. World Development Indictors (WDI), World Bank, 2016.