

Stock Market and Economic Growth: Bangladesh Perspective

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I. Introduction

Economic development requires a safe and sound financial system to serve as a transmission mechanism that transfers funds from savers to entrepreneurs seeking capital for productive investments (Barth *et al.* 2006). A large body of literature supports the positive influence of the development of a country's financial sector on its economic growth. Empirical findings seem consistent with this argument (Schumpeter 1912; Levine and Sarah Zervos 1998; Arestis *et al.* 2001).

What are the transmission mechanisms of a safe and sound financial system that transfer funds from savers to entrepreneurs? Levine and Zervos (1998), Rajan and Zingales (1998), and Beck and Levine (2004) demonstrate the importance of both banks and equity markets for economic growth. Herring and Chatusripitak (2001) note that the absence of a bond market may render an economy less efficient and significantly more vulnerable to financial crisis. Moreover, Domowitz *et al.* (2001) find that macroeconomic stability is highly and positively correlated with the development of bond markets.

Is there any predicament if financial system of a country is heavily dependent on a single source of finance particularly on bank based finance? The financial turmoil that occurred in East Asia in mid-1997 taught policy makers, academics and practitioners that excessive reliance on banks as the vehicle through which savings are channeled to investment projects significantly exacerbates economic downturn when the banking sector suffers a crisis. Park and Oh (2006) point out that one of the root causes of the financial crisis in 1997-1998 was heavy dependent on banking systems to finance domestic investment. The latest financial crisis in Europe also puts finger on more dependency of economy on bank finance. Europe's economy is more dependent on banks than the capital markets. European banks account for around 75 per cent of corporate financing, compared with about 30 per cent in the US (European Banking Federation 2012). On the other hand, the experience of the United States securities market during financial crises – one resulting from the Latin American debt crisis in the 1980s, the other from the real estate crisis of 1990 and the latest sub-prime crisis that began in December 2007 ending in June 2009 – is a constructive and shining example and it showed how securities markets comprising of equity and debt

securities can provide the corporate sector with alternative sources of financing. During these periods, the US banking sector suffered large losses that reduced its capital base drastically and severely curtailed its ability to lend. The ensuing liquidity crunch substantially reduced the bank credit to US corporations. The US domestic securities markets, to varying degrees, functioned as alternative sources of financing for corporations when the banking sector was under pressure. Greenspan (2000) stresses the importance of having multiple avenues of financial intermediation, which served the US well during the credit crunch of the late 1980s when debt markets substituted for the loss of bank financial intermediation in a banking crisis related to the real estate cycle.

Bangladesh economy distinctly depends on bank dominated financial system. Direct financing¹ through issuing shares is gradually increasing and the other direct financing mechanism through issuing corporate bonds here is almost nonexistent. The amount of industrial term loans disbursed by banks and financial institutions stood at TK.655.4 billion , many fold higher than the amount of TK. 4.3 billion raised by new capital issues through private placements and public offerings in the capital market in 2016 (*BB Annual Report 2015-2016*).

In the bank based financing system of all economies, maturity mismatch between assets and liabilities is an inherent problem. Additionally, lack of expected efficiency of intermediation is also a cause of concern in Bangladesh. This is reflected in relatively high interest rate spread, high concentration of loan on a few sectors in a few geographical areas. Recent scams in a few banks have also augmented this concern. These limitations of the banking sector of Bangladesh, which may be common features in other developing countries, increase the importance of having a sound and organized capital market comprising both equity and debt market for fulfilling the needs of financing business activities.

The capital market encourages specialization as well as acquisition and dissemination of information, thereby reducing the cost of mobilizing savings and facilitating investment

¹ Direct financing here refers to financing mechanisms through issuing shares and bonds only. However, European Union at present permits direct financing with a view to lessening burden on banks under which insurance companies, pension funds authority and other surplus units can lend directly to the corporate sector.

(Greenwood and Smith 1997). But the Bangladesh equity market, to say the least, till today is not broad or deep enough. Of around 3400 public limited companies of the country, only 334 companies are listed with the DSE (BB *Monthly Economic Trend*, June 2017).

Corporate debt market is virtually non-existent in Bangladesh. Only 2 corporate bonds, 8 debentures and 221 Govt. bonds are listed with DSE which are almost non-traded in the market. However, bond markets are a prerequisite for a country to enter into a sustained phase of development driven by market-based capital allocation. At the same time, domestic bond markets markedly increase the resilience of a country's financial system by allowing corporate borrowers to choose from a broader range of financial instruments to finance their operations. In this perspective knowing the pattern of capital market consisting equity and bond market and determining its relationship with economic growth are important to make financial sector more diversified and efficient for facilitating sustainable and balanced economic growth of the country.

As corporate bond market almost nonexistence in Bangladesh, an anatomy of equity market is conducted here only. The objectives of this endeavor is to examine the status and pattern of equity finance in the economy of Bangladesh and investigate the relationship between stock market and economic growth by implementing standard econometric models applicable for time series data.

The remainder of the paper proceeds as follows: Section-II briefly reviews the related literature. Section-III states methodology, data sources and outlines framework for empirical analysis. Section-IV delineates status and patterns of equity finance in Bangladesh. Section-V shows interpretation of empirical evidences. Section-VI briefly discusses investors' role in equity market. Finally, section VII offers conclusions and remarks.

II. Literature Review

Several studies have been conducted to find the role of stock market on economic growth. The study conducted by Levine and Zervos in 1998 is considered as seminal one in this area. They

empirically assess the impact of stock markets and banks on long-run economic growth using an endogenous growth model. After examining data on 47 countries over a period of 1976 to 1993, the results show that both stock markets and banking development are positively and significantly related to economic growth and both are good predictors of economic growth.

Seetanah *et al.* (2012) examine the impact of stock market development on economic growth for a sample of least developed countries. They found an overall insignificant relationship between stock market development and economic growth for least developed countries. However, the results show that banking development and education are the main factors contributing towards growth of these economies. In particular, these results can be explained by the fact that these economies are mostly bank oriented and that their stock markets are relatively young.

Stock market plays an important role in any economy. A mature and sizeable stock market is perceived across the globe as an indicator of the economic health and prospect of a country as well as an index of the confidence of domestic and global investors. A significant correlation does exist between the development of stock markets and economic growth, which has also been documented in a number of studies.

Atje and Jovanic (1993) conclude that stock markets have long-run impacts on economic growth and it is also found that stock markets manipulate economic growth through a number of channels that are liquidity, risk diversifications, acquisition of information about firms, corporate governance and savings mobilization (Levine and Zervos 1993). Carporale *et al.* (2004) examine the causal linkage between stock market development, financial development and economic growth for a sample of seven countries. The result suggests that a well-developed stock market can foster economic growth in the long run. It also provides support to theories according to which well-functioning stock markets can promote economic development by fuelling the engine of growth through faster capital accumulation, and by tuning it through better resource allocation. Osei (2005) observes that stock markets are expected to increase economic growth by increasing the liquidity of financial assets, make global and domestic risk diversification possible, promote wiser investment decisions, and influence corporate governance. Adajaski and

Biekpe (2005) find a considerable positive impact of stock market development on economic growth in countries of upper middle-income economies. Their findings are more strengthened by Bahadur and Neupane (2006), who conclude that stock markets fluctuations help predict the future growth of an economy. Capasso (2006) using a sample of 24 advanced OECD and some emerging economies investigates the linkage between stock market development and economic growth covering the period 1988-2002. The finding shows a strong and positive correlation between stock market development and economic growth and later concludes that stock markets tend to emerge and develop only when economies reach a reasonable size and with high level of capital accumulation.

Antonios (2010) investigates the causal relationship between stock market development and economic growth for Germany for the period 1965-2007 using a Vector Error Correction Model (VECM). The results of the tests indicate that there is a unidirectional causality between stock market development and economic growth with direction from stock market development to economic growth. Shahbaz *et al.* (2008) argue that there is a long-run relationship between stock market development and economic growth in Pakistan. Their results are dynamic and robust and they indicate that stock market development is an important helm for economic growth. Nurudeen (2009) examines the relationship between stock market development and economic growth in Nigeria by employing the error-correction method and his results show that stock market development (market capitalization) contributes positively to economic growth.

Enisan and Olufisayo (2009) examine the long-term and causal relationship between stock market development and economic growth for seven countries in sub-Saharan Africa. Using the Autoregressive Distributed Lag (ARDL) bounds test, the study finds that the stock market development is co-integrated with the economic growth in Egypt and South Africa. Moreover, this test suggests that stock market development has a significantly positive long term impact on economic growth. Tang *et al.* (2007) investigate the relationship between stock markets and economic growth in twelve Asian countries from 1980 to 2004. Their results suggest that there is long run relationship between stock markets and economic growth in four countries namely, China, the Philippines, Singapore and Taiwan. The results of Granger causality test indicate that

there is a bi-directional feedback relationship between stock markets and economic growth in China, Hong Kong, Indonesia, Malaysia and Thailand. Whereas in Japan and Korea, they find that there exists a unidirectional short run causal effect running from stock markets to economic growth. On the contrary, they found short run causal effect running from economic growth to stock markets in the case of India and Singapore. In addition, there is no evidence of causality among the variables under study in Sri Lanka. Above literature supports that stock market plays a significant role in the economic development of a country.

III. Methodology, Data Sources and Framework for Empirical Analysis

a. Methodology and Data Sources

In the present study, as stated previously, we have tried to understand the status and pattern of equity finance in Bangladesh and to find out the empirical relationship between stock market and economic growth. The study has been conducted based on the secondary data.

But, for the first objective, the researchers have utilized data sets spanning five years with some exception depending on availability and suitability. Secondary sources include annual reports of Bangladesh Securities and Exchange Commission (BSEC), and top companies included in DSE 30 index, Economic Trends and www.worldbank.org/indicator/FS.AST.PRVT.GD.ZS. Statistical, financial and accounting tools have been applied in this section where appropriate.

To assess the empirical relationship between economic growth and stock market development in section 5, we first consider GDP at current prices as an indicator of economic growth. Then we consider stock data of market capitalization as an indicator of stock market development. Arestis *et al.* (2001) note that stock data are likely to have more time series property that makes it suitable for cointegration analysis. In addition, as outstanding amount represents rolling amount in the economy while flow data are transaction-based, the former set of data seems more closely linked with the economic growth of a country.

GDP is considered at current prices as the data on market capitalization are available at current prices only. Market capitalization, which equals the value of listed domestic shares on domestic

exchanges, is contemplated here to measure equity market contribution considering the theory that a larger share market contributes more to a growing and large economy. In this regard, a country with a larger stock market tends to have a large and spurring economy. Levine and Zervos (1998) show that market capitalization is not a good predictor of economic growth. However, Beck and Levine (2004), and Tang (2006) subsequently use market capitalization in their studies. In addition, Arestis *et al.* (2001) highly recommend market capitalization for time series analysis.

Annual stock data from 1987-88 through 2015-16 has been used when econometric relationship is examined between economic growth and stock market development. Data are gleaned from the various issues of Annual Report of Bangladesh Bank and Economic Trends published by the Bangladesh Bank.

b. Empirical Design

With a view to estimating the relationship between economic growth and stock market development, the equation is on GDP at current prices and market capitalization of stock exchanges in Bangladesh is followed.

$$\text{Ln}Y_t = \alpha + \psi_1 \text{Ln CAPI}_t + e_t \quad (1)$$

Where Y = GDP of Bangladesh at current prices, and CAPI = Market capitalization in Dhaka Stock exchange². Both variables are converted into natural logs for two causes. First, the coefficients of the cointegrating vector can be interpreted as long-term elasticity's if the variables are in logs. Second, if the variables are in logs, the first difference can be interpreted as growth rates. The expected signs of the parameters are: $\alpha > 0$, and $\psi_1 > 0$. The error-term (e) is assumed to be independently and identically distributed. The additional symbol (t) is used for time-subscript.

² There are two stock exchanges in Bangladesh namely, the Dhaka Stock Exchange (DSE) and the Chittagong Stock Exchange (CSE). Most of the companies listed on the DSE are also listed on the Chittagong stock exchange as a dual listing of companies is allowed in Bangladesh. DSE is the oldest stock exchange in the country. The size of the DSE, in terms of market capitalization and number of listed securities, is much bigger than the Chittagong stock exchange. So, for the purpose of this study, we concentrate on the DSE.

First, the time series property of each variable is investigated under a univariate analysis by implementing the ADF (Augmented Dicky–Fuller) for the unit root (nonstationarity) following (Dickey and Fuller 1981; Fuller 1996). The KPSS (Kwiatkowski, Philips, Schmidt and Shin) test for no unit root (stationarity) is applied as a counterpart of ADF following (Kwiatkowski *et al.* 1992). If these tests confirm stationarity in time series data of each variable, Equation-1 can be estimated appropriately by the Ordinary Least Square (OLS) method. Otherwise, its application leads to misleading inferences in presence of spurious correlation (Granger and Newbold 1974).

Second, in the event of nonstationarity of each variable, the co integrating relationship among variables is studied by the Johansen-Juselius procedure (Johansen 1991; Johansen and Juselius 1992, 1990) to overcome the associated problem of spurious correlation and misleading inferences. In this procedure, all the variables must have the same order of integration or depiction of I(d) behavior for cointegration. In the Johansen-Juselius procedure, λ_{\max} test or λ_{trace} test or both may be conducted. The selection of the test is at the discretion of the researchers in view of their trade-offs for bias, inefficiency, local power, and sample size distortions.

Finally, on the evidence of cointegrating relationship, a Vector Error-Correction Model (VECM) is estimated for long-run causality and short-term dynamics. The appropriate lag-lengths are selected with the aid of the FPE (Final Prediction Error) criterion (Akaike 1969) to ensure that errors are white noise. This helps overcome the problem of over/under parameterization that may induce bias and inefficiency in the parametric estimates.

The VECM following Engle and Granger (1987) is specified as follows:

$$\Delta \ln Y_t = \alpha + \lambda ECM_{t-1} + \sum_{i=1}^n b_i \Delta \ln Y_{t-i} + \sum_{i=0}^m h_i \Delta \ln CAPI_{t-i} + U_t \quad (2)$$

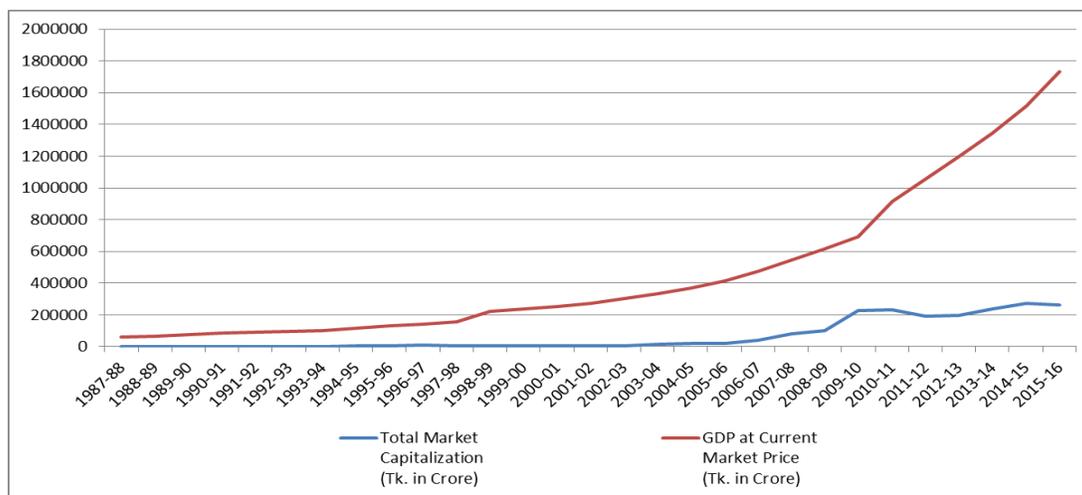
A negative and statistically significant coefficient of ECM_{t-1} supports cointegration among the variables and long-run causality that springs from the independent variables. The short-term effects of the independent variables are inferred by the sizes and signs of b_i s, and h_i s as well as the statistical significance of the overall calculated F-statistic.

IV. Status and Patterns of Equity Finance in Bangladesh

1.1. Market capitalization and Economic Progress

A rational proportion of equity finance in a financial system is always positively and significantly linked with the sustainable economic development of a country. In Bangladesh, it is discernible from Figure 4.1 that our economic growth is positively related with the amount of market capitalization except a few ups and downs. The amount of market capitalization did not show more variation till 2004-2005, afterwards it demonstrated an upward trend. It reached highest amount in 2009-2010 and continued with the increased amount of market capitalization in subsequent years by maintaining relationship with the economic growth.

Figure 4.1: GDP and Market Capitalization



Source: Monthly Economic Trend, Bangladesh Bank.

1.2. Market Capitalization to GDP of Some Asian Countries

The market capitalization to GDP in Bangladesh is lagging behind other Asian countries, as it is only 24.04 per cent in 2014-2015. This relative figure is comparable with only Pakistan (28.46%) and Sri Lanka (28.39%) . The figures of other Asian countries are far ahead of Bangladesh. The Indian amount of market capitalization to GDP with 69.9 per cent is also well ahead of Bangladesh.

Table 4.1: Market Capitalization to GDP of Some Asian Countries

Country	Bangladesh (DSE)	India (BSE)	Pakistan (Karachi 100)	Sri Lanka (Colombo SE)	Indonesia (SE)	Malaysia (Barsa)	Thailand (SE)	Taiwan (Se Corp.)	Phillipine (SE)	Japan (SE)	Hong Kong Exchange	Singapore Exchange
Market Capital to GDP (%)	24.04	69.9	28.46	28.39	44.33	137.61	109.98	174.15	88.19	118.87	1279.07	261.47

Source: BSEC Annual Report 2014-15 and Deloitte (2016), Southeast Asia IPO Market.

2.1. Initial Public Offerings (IPOs): Number

Table-4.2 shows number of IPOs of Bangladesh during 2014-2016 along with number of IPOs in Asian countries . A total number of 17 Bangladeshi companies raised funds through IPOs in 2014 which came down to 11 companies in 2015 and 2016 respectively. However, most of Asian countries except Malaysia and Philippines are ahead of Bangladesh in terms of raising funds through IPOs. For example, Vietnam accommodates 37 IPOs in 2014 followed by 72 and 38 IPOs in 2015 and 2016, respectively. Malaysia and Philippines did not display better picture as compared to Bangladesh.

Table 4.2: Number of IPOs in Asia: 2014-2016

Country	2014	2015	2016
Bangladesh	17	11	11
Indonesia	23	16	15
Malaysia	14	11	10
Philippines	6	4	3
Singapore	29	13	16
Thailand	40	38	24
Vietnam	37	72	38

Source: BSEC Annual Report 2014-15 and Deloitte (2016), *Southeast Asia IPO Market*, p.2.

2.2. Initial Public Offerings (IPOs): Amount and % to GDP

In case of generating funds through IPO, Bangladesh is performing a good job. In 2011-2012, the total amount generated was Tk. 1020.592 crore. This amount increased to Tk. 6464.42 crore in 2013-14 but again decreased to TK. 1407.39 core in 2014-2015 with CAGR of 8.37 per cent during 2011-12 to 2014-15 (Table-4.3). However, in terms of relative figure, it is not as bright as absolute figure. The highest percentage of IPO to GDP was 1.200 in 2012-13 which came down 0.092983 percent in 2014-15. Here, our policy makers are required to be concerned. In terms of CAGR of IPO to GDP, with - 46.27 per cent it seems underperformer. More effective endeavors are, therefore, required to be undertaken to make equity market as an effective source of finance for enterprises.

Table 4.3: Equity Finance to Economy, 2011-12 to 2014-15 (% of GDP)

Year	2011-12	2012-13	2013-14	2014-15	CAGR
IPO (Crore Tk.)	1020.592	1246.017	6464.42	1407.39	8.37
IPO to GDP	1.115664	1.200417	0.47852	0.092983	-46.27

Source: Author's Calculation Based on BSEC Annual Reports, Various Issues

2.3. Initial Public Offerings (IPOs): Amount and % to GDP in Some Asian Countries

In making comparison between Bangladesh and other neighboring Asian countries, it is further restated that we are still behind all selected countries (Table 4.4.). The amount of IPO as percentage to GDP in 2014-2015 was only 0.092983 (Table 4.3). But this percentage is the highest for Thailand with 0.56 followed by China with 0.53 per cent, Malaysia with 0.48 per cent, etc. The lowest percentage held by Philippines of 0.07 percent is only lower than Bangladesh. It indicates, we still need to cross a long way to bring Bangladesh at par with Asian countries.

Table 4.4: Amount of IPOs and % to GDP in Asian Countries

Country	IPO Amount (Million USD)	IPOs to GDP (%)
China	58800	0.53
India	2000	0.12
Indonesia	820.43	0.13
Malaysia	1200.23	0.48
Philippines	110.04	0.07
Singapore	362.12	0.13
Thailand	1474.64	0.56
Vietnam	186.72	0.14

Source: Deloitte (2016), *Southeast Asia IPO Market*.

3. Equity Finance: Sector Wise

Financing a variety of industries of an economy is also an indication of acceptability of any conduit of finance. Sector wise IPOs indicate a well-diversified generation of funds from the market. Among the industries, Textile & Garments, Engineering, Food and Allied, and Power and Fuel sector almost regularly raised funds during 2011 -12 to 2014-15. The pharmaceutical and Chemicals industry also collected a substantial amount of funds in the year 2012-13 and 2013-14. The major raiser of funds was Textile and Garments industry followed by Power and Fuel, and Food and Allied in 2014-2015.

Table 4.5: Equity Finance through IPO: Industry wise

(Taka in Crore)

Name of the Industry	2011-12		2012-13		2013-14		2014-15		CAGR
	Tk.	%	Tk.	%	Tk.	%	Tk.	%	
Textile & Garments	262.75	26	316.227	25	441.24	7	534.48	38	19.43
Pharmaceuticals & Chemicals	0.00	0	329	26	5091.03	79	0	0	293.37
Engineering	90.00	9	134	11	459.5	7	80.46	6	-2.76
Food and Allied	40.00	4	65	5	47	1	290.26	21	64.13
Insurance	30.00	3	30	2	0	0	44.25	3	13.68
Cement	0.00	0	105.45	8	0	0	0	0	
Services & Real Estate		0		0	55.89	1		0	
Travel & Leisure	256.00	25	0	0	113	2	0	0	-33.56
Financial Institutions	47.65	5	160.06	13		0		0	83.29
Telecom	118.51	12		0		0		0	
IT	41.95	4		0		0		0	0.00
Paper & Printing	0.00	0		0	66.4	1		0	0.00
Power and Fuel	51.00	5	106.28	9	126.86	2	329.94	23	59.48
Miscellaneous	82.74	8	0	0	63.5	1	128	9	15.49
Total	1020.59	100	1246.02	100	6464.42	100	1407.39	100	8.37

Source: BSEC, Annual Report 2011

4. Equity Finance: Size of IPOs

In case of equity financing, it is observed that more than 90% of Initial Public Offerings (IPO) was above 100 crore during **2012-13 to 2014-15** indicating that major portion of the finance generated through IPO mostly goes to the large scale industry (Table 4.6). On contrast, only 8.86 per cent IPO was issued for less TK. 100 crore in 2014-2015. It means that IPO is usually issued by large industries only.

Table 4.6: Equity Finance – Size of IPO Wise

(Taka in Crore)

Range of Financing	2011-12	2012-13	2013-14	2014-15	CAGR
Less than 100 Crore	383.33 (37.56)	95 (7.62)	232.79 (3.60)	124.71 (8.86)	-24.48
More than 100 crore	637.26 (62.44)	1151.02 (92.38)	6231.63 (96.40)	1282.68 (91.14)	19.11
Total	1020.59 (100)	1246.017 (100)	6464.42 (100)	1407.39 (100)	8.37

Source: BSEC, *Annual Report***Note:** 1. Figures in parentheses indicate percentage**5. Foreign Investment: Foreign Portfolio Investment**

Table-4.7 shows that ability of equity market of Bangladesh in enticing Foreign Portfolio Investment (FPI) is mix. In several years, flow of FPI is negative meaning outflow from investment is more than inflow in investment. However, amount of FPI is positive in some other years. For example, the figure of FPI in 2015-2016 is Tk. 3977.3 crore which is encouraging.

Table 4.7: Foreign Portfolio Investment

Year	Foreign Portfolio Investment (in Crore Tk.)
2001-02	-31.8
2002-03	5.6
2003-04	31.6
2004-05	0.3
2005-06	240.7
2006-07	727.7
2007-08	325.1
2008-09	-702.1
2009-10	-2029.5
2010-11	-6109.2
2011-12	4142.6
2012-13*	742.9
2013-14	-3019.9
2014-15	-4157.5
2015-16	3977.3

Source: BB *Monthly Economic Trend*, August 2017

6. Cost of Generating Funds

A borrower can take loan from banks with minimum costs ranging from 0.25% to 0.5% of the loan amounts mainly for processing fee for banks and consulting fees for preparation of project proposals. On the other hand, cost for generating funds through IPO lies between 3% and 4% depending on the size of IPO (Table-4.8).

Table-4.8: Cost of Generating Funds from Banks and through IPO, 2011

Particulars	Costs as % to Collected Funds
Bank Loan	0.25% -0.50%
IPO	3.98%

Source: Authors' Calculation

7. Costs of Funds

Not surprisingly, the top priority for corporate units is to obtain lowest cost funding. The fact is that equity is much more expensive than debt.³ Nemethy (2013) shows that costs of debt in Central Europe is around 8 per cent whereas the costs of equity is 25 per cent or above. Damodaran (2013) takes 6177 companies across the world and figured out cost of debt, cost of equity and cost of capital at 2.77 per cent, 8.53 per cent and 6.80 per cent, respectively. This type of calculation may not be available in Bangladesh. However, costs of debt here is obviously less than cost of equity like other countries. Additionally, chance of avoiding loan repayment, getting waiver of interest payment and availing of different refinancing schemes in some cases encourages corporate units to become more dependent on banks in place of equity market for generating funds.

8. Formalities Involved

Formalities involved in getting finance are an important determinant for the borrowers/issuers in choosing sources of finance. Table-4.9 shows that less formalities are required in getting finance from banks compared to generating funds from the equity market. In case of bank financing, influential borrowers even may get finance from banks very quickly with minimum formalities. However, in equity finance, stated formalities are required to be completed for generating funds

³ It is based on the principle that higher the risk, the higher the expected return. Moreover, interest expenses/ costs of debt is deducted from earnings before income tax are charged. However, this tax benefits is not applicable for costs of equity / dividend as dividend is paid after the payment of tax according to accounting principle.

irrespective of the clout of the borrowers. These formalities are considered as time consuming by many issuers.

Table-4.9: Bank Finance Vs. Equity Finance: Formalities Involved

Types of Finance	Formalities
Bank Finance	Loan Application, Appraisal, Report for Approval Authority, Verification, Approval/Rejection, Documentations and Disbursement.
Equity Finance	<p>Before Obtaining the Consent from BSEC</p> <p>Selection of Advisors, Completion of Valuation and Restructuring, Selection of Bankers to the Issue and Underwriters, Collection of NOC from Lenders, Audit of Accounts, Credit Rating Report, Agreement with CDBL, Approval from Sponsors, Refund Warrant Guarantee, Draft Prospectus, Application Submission to BSEC and Consent from BSEC.</p> <p>After Obtaining the Consent from BSEC</p> <p>Submission of Prospectus, Announcement for the Investor, Provide full Prospectus, Application to Stock Exchanges for Listing and Approval of Listing.</p>

9. Necessary Documents

Several documents are required to be prepared and submitted in order to get either source of finance (Table-4.10). These requirements are sometimes considered as troublesome by deficit units.

Table-4.10: Bank Finance Vs. Equity Finance: Necessary Documents

Types of Finance	Necessary Documents
Bank Finance	Loan Application Form, Project Profile including Appraisal Report, Bank Statement, Annual Report / Statement of Asset & Liability and Profit & Loss for last 3 years, Projected Income Statement and Balance Sheet, TIN Certificate, Trade License, Land Related Documents ⁴ , Machinery Related ⁵ and Raw Materials Related ⁶ documents.

⁴ Land related documents are : Copy of Title Deed, Mutation Record, Duplicate Carbon Receipt (DCR), Rent Paid Receipt, Khatian, Mouja Map / Site Plan / Layout Plan, Non-Encumbrance Certificate (NEC)

⁵ Machine related documents are : Competitive Quotations / Proforma Invoice with Detailed Terms and Conditions, Terms and Conditions of the After Sale Services of the Machinery.

⁶Raw materials related documents are: Raw Materials Quotations and Proforma Invoices.

Types of Finance	Necessary Documents
Equity	Prospectus, Financial Statements, Memorandum and Articles of Association, Certificate of Incorporation and Commencement, Minutes of Meeting of the Board of Directors for Raising Paid Up Capital, Consent of the Directors to Serve, Land Title, Loan Agreements, (If Any), Confirmation of a Separate Bank Account for Public Issue Purposes, Agreement and Due Diligence Certificate from the Manager to the Issue and from Underwriter(S), Letter of the Bankers' to the Issue, Particulars of Directors ,Bank Statement Showing Deposit of an Amount Equivalent to the Paid Up Capital/ Auditor's Certificate on it, Undertakings of the Issuer, Directors and Shareholders Holding 5 Percent or More Shares in the Paid Up Capital for Obtaining CIB Report from Bangladesh Bank, Valid License, Credit Rating Report and Application Fee.

V. Stock Market and Economic Growth: Empirical Evidence

First, for each variable, the results of the ADF and KPSS tests with orders of integration are reported in Table 5.1. All variables are found to be non-stationary based on both the ADF and KPSS tests. The same order of integration was found on the first differencing i.e. $I(1)$ for LnY and LnCAPI . Same order of integration justifies the implementation of Johansen-Juselius procedure. Accordingly, the study implements Johansen-Juselius procedure for searching co integration among the variables for equations 1.

Table 5.1: Augmented Dickey-Fuller (ADF) and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) Test Results and Order of Integration: Annual Data

Variables	ADF			KPSS	
	Level	1 st Difference	2 nd Difference	Level	1 st Difference
LnY	0.350881	-11.49792*		0.730481*	
LnCAPI	-2.832063	-3.390571*		0.706510*	

Source: Author's Calculation

Note: The Mackinnon (1996) critical values are -3.653730 and -2.957110 at 1% and 5% levels of significance, respectively. The KPSS critical values (Kwiatkowski et al., 1992, Table 1) are 0.73900 and 0.46300 at 1% and 5% levels of significance, respectively. Asterisk (*) indicates stationarity of the variables.

Second, The λ_{trace} AND λ_{max} test results calculated in Johansen and Juselius procedures are reported in Table-5.2. As observed in the table there is an evidence of co integration relationship between LnY and LnCAPI which are captured in equation 1 in terms of both λ_{trace} AND λ_{max} tests. As these variables are co integrated, this indicates a long-run relationship exists between economic growth and stock market development. In this case, the vector error correction model (VECM) as given in equation (2) – is estimated to capture the both short term and long term dynamics.

Table 5.2: Computed Value of λ_{trace} AND λ_{max} STATISTICS^a

Hypotheses	Equation	0.05 Critical Value
	LnY= α + Ln CAPI + Ut	
	Computed Value of λ_{trace} Statistics	
None ($H_0: r = 0$)	17.50207	15.50
At most 1 ($H_0: r \leq 1$)	1.104811	3.84
Computed Value of λ_{max} Statistics		
None ($H_0: r = 0$)	16.39726	14.27
At most 1 ($H_0: r \leq 1$)	1.104811	3.84

Source: Author's Calculation

Note: a. λ_{trace} test indicates cointegrating equations at the 0.05 level and λ_{max} test indicates co integrating equations at the 0.05 level. ^b Both Trace test and Max-eigenvalue test indicate 1 cointegrating eqn(s) at the 0.05 level

As long-run relationship exists between LnY and LnCAPI according to prior estimation of cointegrating relationship between these two variables, VER model is estimated (Table 5.3). The estimated coefficients of error correction term (-0.021299) are negative, but statistically insignificant. It means that long run unidirectional causal flows from stock market development to Bangladesh economic growth have been evident. However, this flow of relationship is weak as t value is less than 2. This evidence could be interpreted to mean that stock market is promoting long term economic growth of the country but this influence is not statistically robust. In terms of short term dynamic effect, subdued net positive effect is noticeable from LnCAPI to LnY as the respective sum of the lagged coefficients of variables is positive. Notably, significant effect on the economy is visible from the fourth lag i.e. fourth year of listing of the companies in the secondary market. In other words, after generating funds through IPOs, it takes four years to

contribute to the economy. The adjusted R^2 (0.317637) discloses a significant explanatory power of the model. The F-statistic is also quite significant. The DW value (2.177231) shows near no-autocorrelation.

Table-5.3: Estimating Equation (7) for Vector Autoregressive Model (2, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.187049	0.044013	4.249893	0.0007
ECM t-1	-0.021299	0.093536	-0.227708	0.8229
$\Delta \text{LnY} (-1)$	-0.333183	0.221628	-1.503344	0.1535
$\Delta \text{LnY} (-2)$	-0.344766	0.209301	-1.647226	0.1203
$\Delta (\text{LnCAPI})$	-0.036694	0.037300	-0.983753	0.3408
$\Delta \text{LnCAPI}(-1)$	-0.054591	0.044751	-1.219886	0.2413
$\Delta \text{LnCAPI} (-2)$	0.057898	0.043707	1.324692	0.2051
$\Delta \text{LnCAPI} (-3)$	0.040421	0.043612	0.926824	0.3687
$\Delta \text{LnCAPI} (-4)$	0.089055	0.042972	2.072396	0.0559
Adjusted R-squared	0.317637	Akaike info criterion		-2.740410
F-statistic	2.338302	Durbin-Watson stat		2.177231
Prob(F-statistic)	0.074328			

Source: Author's Calculation

VI. Equity Market: Investors' Role

Investors' role is sine qua non for equity market development. In a matured share market, multiple investors like retail investors, institutional investors, mutual funds, pension funds, merchant banks and foreign portfolio investors participate actively. Participation of various types investors is necessary for barring unscrupulous investors to take undue benefits from asymmetric market, public and private information. However, smooth operation of primary and secondary market, strong issuer base and multiple financial instruments are necessary to attract various types of investors in a share market.

6.1. Problems Faced in the Primary Market

Oversubscription indicates high demand for new securities in the primary market. Despite this enormous response to initial public offerings, investors feel uncomfortable for several reasons.

These are insufficient and/or reliable information in prospectus, time consuming process and hassle, small size of IPO, excess premium, etc. Authority may take necessary steps to address these problems.

6.2. Problems Faced in the Secondary Market

The secondary market of Bangladesh sometimes experiences unreasonable ups and downs despite neither any change in macro-economic variables nor any earnings forecasts downshift by any leading companies. Investors make decisions based on rumors in most of the cases instead of analyzing company specific fundamentals. Small and new investors are pronouncedly affected by rumors. The BSEC, merchant bankers and brokerage houses can organize regular awareness program for investors to help them make rational investment decisions and to warn them against rumors to mitigate possible stock market overreactions/under-reactions. Additionally, ensuring transparency, minimizing insider trading, strengthening monitoring and supervision, rationalizing margin loan ratio and minimizing price volatility may induce investors to invest in secondary market.

6.3. Expansion of the Issuer Base

The market suffers from a dearth of quality securities. To overcome this problem, quality issuers need to be attracted. Bangladesh has the potential to do so. Profitable state-owned enterprises, multinational corporations and large home grown private enterprises with clean and strong balance sheets should be listed. Issuance of SOE securities will include transparency in their operations besides multifold expansion of the equity market. The government can improve guidelines relating to the capital structure of SOEs making it similar to those for financial institutions and banks.

6.4. Innovative Financial Products

Apart from ordinary shares, preference and seasoned shares might be made available in the market. The introduction of zero-coupon bonds and fixed-coupon bonds merits due consideration. Bonds like treasury inflation – protected securities (TIPS), SUKUK Bond, High – Yield Bonds (HYB) and Deep Discount Bonds may also help to lay out the corporate bond

market architecture in Bangladesh. The government may initially issue these types of bonds targeting their development projects. Corporations from various sectors may be encouraged to step in later.

6.5. Foreign Portfolio Investments

Foreign portfolio investments that are irregular and nearly absent in some years in Bangladesh stock market can be attracted by the creation of a favorable environment. This requires developed information infrastructure, selective deregulations, political stability, etc. Moreover, image building activities through seminars, symposium and fairs at home and abroad deserve due consideration.

VII. Conclusions and Remarks

The financial turmoil that occurred in East Asia in mid-1997 taught the world that excessive reliance on banks as the primary vehicle through which savings are channeled to investment projects significantly exacerbates economic downturn when the banking sector suffers a crisis. This increases the importance of having a sound and organized capital market for fulfilling the needs of financing business activities.

The Bangladesh equity market was extremely depressed due to mass exodus of investors from the stock exchanges after the share market disaster of 1996 and 2011. However, the market regained some of its momentum in the last couple of years. Introduction of automated trading through electronic registration and transfer of securities, guidelines for conversion from close-end mutual funds to open-end mutual funds, promulgation of Bangladesh Securities and Exchange Commission Rules (exchange traded funds) 2016, guideline for issuance of financial derivatives-2016, guidelines on corporate governance on compliance, conducting several financial literacy programs helped to regain such momentum.

In 2016, 11 companies raised funds of Tk. 849.3 with premium through IPOs. The volume of public offerings in 2016 was oversubscribed by more than 16 times indicating shortage new securities in the primary market. The amount of market capitalization in DSE was TK. 3185 billion at the end of 2016. Turnover in value and volume in DSE is TK.1072.5 billion and 29 billion number respectively in 2016. However, performance shown by our equity market is still lagging behind other Asian countries.

Empirical analysis indicates moderate contribution of equity market to economic development. The findings from the empirical analysis indicate that stock market development has long term positive impact on economic growth. But this relationship is not statistically significant. However, a net positive short term effect of stock market development on economic growth is found as sum of lagged coefficients of the independent variable is positive without statistical significance. The interesting findings are that stock market starts to contribute significantly to economic growth from the fourth year of generating funds through IPOs. This is hardly surprising as the share market is now traversing a period of correction and consolidation. It is seen from the number of listed companies of DSE; only 334 companies are listed out of 3400 public limited companies in the country. Moreover, thin issuer and high market investor base, near-absence of solid legal protection for investors, rumor based trading, volatility in market, less margin loan ratio seem to act as barriers to mobilize adequate capital. Additionally, Bangladesh has been unable to entice foreign portfolio investment regularly.

Making equity market as regular sources of finance for the real economy is a must for sustainable economic development. A number of measures are required to be undertaken in this respect. Ensuring smooth operation of primary and secondary market, increasing financial literacy among investors, minimizing volatility of the market, expanding issuer base, creating both individual and institutional investors, enhancing efficiency of the brokerage house, adding innovative financial services, initiating knowledge based trading, rationalizing cost of generating funds and costs of funds, lessening formalities involved and required documents, introducing shelf registration system are suggested here to uplift equity market at expected level.

References

- Adajaski, C.K.D. and N.B. Biekpe (2005), "Stock Market Development and Economic Growth: The Case of Selected African Countries", *Working Paper*, African Development Bank.
- Akaike, H. (1969), "Fitting Autoregression for Prediction", *Annals of the Institute of Mathematical Statistics*, Vol. 21, pp. 243-247.
- Antonios, A. (2010), "Stock Market and Economic Growth: An Empirical Analysis for Germany", *Business and Economics Journal*, Vol. 2010, BEJ-1.
- Arestis, P., P. Demetriades and K.B. Luintel (2001), "Financial Development and Economic Growth: The Role of Stock Markets", *Journal of Money Credit and Banking*, Vol. 33, pp. 16-41.
- Atje, R. and B. Jovanovic (1993), "Stock Markets Development", *European Economic Review*, Vol. 37, pp. 632-640.
- Bahadur, G.C. and S. Neupane (2006), "Stock Market and Economic Development: A Causality Test", *The Journal of Nepalese Business Studies*, Vol. 3, pp. 36-44.
- Bangladesh Bank, *Annual Report 2015-2016*.
- Bangladesh Bank, *Monthly Economic Trend, June, 2017*.
- Barth, James, R., Donald Phumiwasana McCarthy and Gleen Yago (2006), "Opportunities and Challenges in Asian Bond Markets", In *Asia's Debt Capital Markets*, edited by Arner, Douglas, Jae-ha Park, Paul Lejot and Qiao Liu, Milken Institute, USA, pp. 11-32.
- Beck, Thorsten and Ross Levine (2004), "Stock Markets, Banks and Growth: Panel Evidence", *Journal of Banking and Finance*, Vol. 28, pp. 423-442.
- BSEC, *Annual Report*, Various Issues, Bangladesh Stock and Exchange Commission (BSEC).
- Capasso, S. (2006), "Stock Market Development and Economic Growth", *Research Paper no.2006/102*, World Institute for Development Economic Research.
- Caporale, G. M., P. G. A. Howello and A. M. Soliman (2004), "Stock Market Development and Economic Growth: The Causal Linkage", *Journal of Economic Development*, Vol. 29.
- Damodaren, Aswath (2013), *Cost of Capital By Sector*, Available at: www.adamodar.com/New_Home_Page/datafile/wacc.htm.
- Dickey, D.A. and W.A. Fuller (1981), "Likelihood Ratio Statistics for Autoregressive Time Series With A Unit Root", *Econometrica*, Vol. 49, pp. 1057-1072.
- Domowitz, Ian, Jack Glen and Ananth Madhavan (2001), "International Evidence on Aggregate Corporate Financing Decisions", in Asli DEMirguc-Kunt and Ross Levine, editors, "Financial Structure and Economic Growth: A Cross Country Comparison of Banks, Markets, and Development", Cambridge, MA: MIT Press, pp. 263-295.
- Engle, R. and C.W.J. Granger (1987), "Co-integration and Error-Correction: Representation, Estimation, and Testing", *Econometrica*, Vol. 55, pp. 351-388.
- Enisan, A. A. and A. O. Olufisayo (2009), "Stock Market Development and Economic Growth: Evidence from Seven Sub-Sahara African Countries", *Journal of Economics and Business*, Vol. 61(2), pp. 162-171.

European Banking Federation (2012), *European Banking Sector Facts and Figures October 2012*, Brussels: European Banking Federation.

Fuller, W.A. (1996), *Introduction to Statistical Time Series*, New York: John Wiley and Sons.

Granger, C.W.J. (1988), "Some Recent Developments in a Concept of Causality", *Journal of Econometrics*, Vol. 39, pp. 199-211.

Granger, C.W.J. and P. Newbold (1974), "Spurious Regressions in Econometrics", *Journal of Econometrics*, Vol. 2, pp. 111-120.

Greenspan, A (2000), "Global Challenges", Remarks at the Financial Crisis Conference, Council on Foreign Relations, New York, 12 July.

Greenwood, Jeremy and Bruce Smith (1997), "Financial Markets in Development and the Development of Financial Markets", *Journal of Economic Dynamics and Control*, Vol. 21, pp. 145-182.

Herring, R. and N. Chatusripitak (2001), "The Case of Missing Market: The Bond Market and Why It Matters for Financial Development", *Wharton Financial Institutions Centre working paper*, University of Pennsylvania, pp. 1-61.

Johansen, Soren (1991), "Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Autoregressive Models", *Econometrica*, Vol. 59, pp. 169-210.

Johansen, S. and K. Juselius (1992), "Testing Structural Hypothesis in Multivariate Cointegration Analysis of The PPP and VIP for U.K.", *Journal of Econometrics*, pp. 211-244.

Johansen, S and Juselius K 1990, 'Maximum Likelihood Estimation and Inference on Cointegration with Applications to The Demand for Money', *Oxford Bulletin of Statistics*, pp. 169-210.

Kwiatkowski, D., P.C.B. Phillips, P. Schmidt and Y. Shin (1992), "Testing the Null Hypothesis of Stationarity against the Alternative of a Unit Root", *Journal of Econometrics*, Vol. 54, pp. 159-178.

Levine, R. (2004), "Bank-based or Market-Based Financial Systems: Which is Better?" *Journal of Finance Intermed*, Vol. 11, pp. 398-428.

Levine. R. and S. Zervos (1998), "Stock Market Development and Long-Run Growth", *World Bank Economic Review*, Vol. 10 (2), pp. 323-339.

Levine, R. and S. Zervos (1998), "Stock Markets, Banks, and Economic Growth", *American Economic Review*, Vol. 88, pp. 537-558.

Levine, R. and S. Zervos (1993), "What We Have Learned about Policy and Growth from Cross-Country Regressions?" *American Economic Review*, Vol. 83(2), pp. 426-430.

Mackinnon, J.G. (1996), "Numerical Distribution Functions for Unit Root and Conintegration Tests", *Journal of Applied Econometrics*, Vol. 11, pp. 601-618.

Nemethy, Les (2013), 'Why Equity Can be So Much More Expensive than Debt', *Warsaw Business Journal*, July

Nurudeen, A. (2009), "Does Stock Market Development Raise Economic Growth? Evidence from Nigeria", *The Review of Finance and Banking*, Vol. 01, pp 15-26.

Osei, V. (2005), "Does the Stock Market Matter in Ghana? A Granger-Causality Analysis", Bank of Ghana, *Working Paper WP/BOG-05/13*.

Park, Jae-Ha and Gyutaeg Oh (2006), “Developing Asian Bond Markets Using Securitization and Credit Guarantees”, In *Asia’s Debt Capital Markets*, edited by Arner, Douglas, Park, Jae-ha, Lejot, Paul and Liu, Qiao, Milken Institute, USA, pp. 33-35.

Perron, P. (1989), “The Great Crash, the Oil Price Shock and The Unit Root Hypothesis”, *Econometric*, Vol. LVII, pp. 1361-1402.

Phillips P.C.B. (1986), “Understanding Spurious Regression in Econometrics”, *Journal of Econometrics*, Vol. XXXIII, pp. 311-340.

Phillips, P.C.B. and P. Perron (1988), “Testing for a Unit Root in Time Series Regressions”, *Biometrika*, Vol. LXXV, pp. 335-346.

Rajan, Raghuram, G. and Luigi Zingales (1998), “Financial Dependence and Growth”, *The American Economic Review*, Vol. 88 (3), pp. 559-586.

Rousseau, P.L. and P. Wachtel (2000), “Equity Markets and Growth: Cross Country Evidence on Timing and Outcomes”, *Journal of Banking and Finance*, Vol. 24, pp. 1933–1957.

Schumpeter, Joseph, A. (1912), “Theorie Der Wirtschaftlichen Entwicklung”, *Leipzig*, Germany: Dunker & Humblot.

Shahbaz, M., A. Nadeem and L. Ali (2008), “Stock Market Development and Economic Growth: ARDL Causality in Pakistan”, *International Research Journal of Finance and Economics*, Vol. 14(1), pp. 182-195.

Seetanah, B., U. Subadar, R. V. Sannasee, M. J. Lamport and V. Ajageer (2012), “Stock Market Development and Economic Growth: Evidence from Least Developed Countries”, *Berlin Working Papers on Money, Finance, Trade and Development*, Working Paper No. 05/2012.

Tang, H.P., M.S. Habibullah and C.H. Pua (2007), “Stock Market and Economic Growth in Selected Asian Countries”, *European Journal of Economics, Finance and Administrative Sciences*, Vol. 7, pp. 43-52.

Tang, Donny (2006), “The Effect of Financial Development on Economic Growth: Evidence from the APEC Countries, 1981-2000”, *Applied Economics*, Vol. 38, pp. 1889-1904.

www.worldbank.org/indicator/FS.AST.PRVT.GD.ZS