The Impulsive Stock Market of Bangladesh and the Great Recession

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ABSTRACT

The paper investigates whether the stock market of Bangladesh can be related with the last world recession. The Pearson's correlation analysis model was used to find the correlation between the Dhaka Stock Exchange General index and real GDP growth rate of the world. The findings show that no statistically significant correlation exists between the two variables inferring that the stock market of Bangladesh was not significantly affected by 'the great recession' (2007-2009). The findings of this study are inconsistent with the results of previous studies which claimed that the Bangladesh stock market shares a common stochastic trend with the capital market of USA. The results of this study may be explained mainly by domestic factors such as low market capitalization, market inefficiency, strict monitoring and control by the Security and Exchange Commission and low international participation in the stock market of Bangladesh. All these factors, along with the inconsistency with past results, instigate further investigation.

Keywords: Dhaka Stock Exchange (DSE), great recession, economic growth, capital market, Bangladesh.

Introduction

"Everyone drinks more during a recession; they want to forget" (Fisher, 2009). The global recession of 2007-2009 was generated by a brutal financial crisis in the developed economies that resulted in the fall of global financial markets and global trade flows (Claessens, Kose & Terrones, 2010, p.247). The economy and the stock market are interrelated as claimed by Moffatt (2010). Many people observe the stock market to assess the performance of the economy and it is a common presumption that if the stock market is declining, the economy is also about to decline (Moffatt, 2010, p. 1). On the other hand, the condition of the economy also has an effect on investments and this is based on the idea that changes in the economy have a significant effect on interest rates and inflation, which in turn have a direct influence on the stock and bond markets (Faerber, 2000, p. 49). Most importantly, it is well established in the field of corporate finance that the prices of shares depend on future expectations and earnings of the firms. During economic downturn, the earnings of the average companies decline resulting in the stock market index to fall (Duca, 2007, p. 1). This study is aimed towards assessing the extent to which the recent world recession, which began in 2007 and lasted till the mid of 2009 (Murse, 2011), affected the share market of Bangladesh.

The Great Recession and the Stock Market of Bangladesh

"Reports from various formal bodies also suggested that Bangladesh was likely to be equally affected by the global turmoil in the short run as well as in the long run" (Raihan, 2010). However the story of Bangladesh's stock market is a little different. The stock market of Bangladesh has experienced remarkable growth since 2007 (Siddiqi, 2010). Nevertheless, the trend was a bit slow between July 2008 and February 2009 as mentioned by Rahman et al. (2009, p.14) who claimed that this was mainly because of domestic factors and is not extensively related with the world recession as the role played by foreign capital in the stock market of Bangladesh is very insignificant. The DSE indices did not move likewise the global indices. The global indices fell drastically in the outcome of the global financial meltdown (Emerging Markets Monitor, 2008c, p. 9). However, it should be stated that all the indices in the DSE incurred negative growth during the first few months of the fiscal year 2008-09 (Rahman et al. 2009, p.14). But after that there was an impressive increase in the stock market index and the condition of the market seemed unusual and unexpected at times of global recession (Siddiqi, 2010). Thus the relationship between the stock market of Bangladesh and world recession and the factors that contributed towards the development of such relationship are matters of investigation. Additionally, when a financial market behaves unexpectedly, it is a serious issue. Thus investigation is required to exterminate or minimize any serious future consequences.

The primary objective of this study is to develop a correlation between the Bangladesh's stock market index and the world recession.

LITERATURE REVIEW

Recession, GDP and the Stock Market

It is generally accepted that when the related macroeconomic factors turn favourable, stock prices usually rise and so do the market indices and when the same factors turn unfavourable, the market as a whole suffers. Brealey et al. (2001, p.333) stated that *"the movements of the stock market sum up the net effects of all relevant macroeconomic uncertainties. If the market portfolio of all traded stocks is up in a particular month, we conclude that the net effect of macroeconomic news is positive."* It is important to analyse the relationship between stock market index and real GDP if one seeks to explain the relationship between stock market index and recession. This is because, recession is commonly defined as:

> "A period where real GDP declines for two or more consecutive quarters. It is usually accompanied by rising unemployment and falling output. When fewer goods and services are produced, fewer inputs are used, there is some idle capacity, less capital stock is being used and fewer people are employed. Because the measure is real GDP, a recession also means that the standard of living has declined because there are fewer goods and services produced than before. A decline in real output also means a decline in real income" (Kroon, 2007, p. 88).

Duca (2007, p.1) stated that an informal assessment of stock market indices and GDP in developed economies disclose that these have a tendency to move together. Economies having sound real GDP are likely to experience better stock market performances. He added that two of the lengthiest periods of economic downturn, experienced during the twentieth century in the industrialized world, namely, the Great Depression in the US and the 'lost decade' of the 1990s in Japan, are often recognized with the stock market ruin that headed them. Both the cases encountered speedy fall in prices at the beginning of devastatingly long periods of economic impediment.

Economic theory advocates that there ought to be a dominant association between economic activity and stock prices, *"given that the stock price is the discounted present value of the firm's payout. If this payout is ultimately a function of real activity, such a link should prevail"* (Duca, 2007, p. 3).

According to the standard discounted-cash-flow valuation model, stock prices usually drives the growth rates of economic activity in real terms provided that investors' perceptions about firms' future payouts are accurate on average. This is because the anticipated future payouts of firms should eventually mirror real economic activity which, therefore, can be interpreted as an aggregate proxy of corporate earnings (Binswanger, 2002, p.1). This is one hypothetical argument denoting the causal relationship between stocks prices and economic output.

There are three other theoretical explanations as to how economic output is directly affected by stock prices, reinforcing the connection between the two variables. The first linkage was recommended by Tobin (1969). He focused on how the cost of capital was affected by changes in share prices. He stated that a high share price leads to a high value of the firm in relation to the cost of replacement capital. As a result, this leads to a rise in investment expenditure and thus to a higher total economic output as firms find it easier to finance investment expenditures. This occurs because investment would be simpler as it would require a lesser share offering in a situation of a high share price.

The second suggestion linking stock market performance with GDP was by Modigliani (1971). His proposition works through the effect of wealth on consumption. A lasting increase in share prices brings about an increase in the entity's wealth, and thus resulting in a higher permanent income. By means of the permanent income hypothesis, Modigliani claimed that inter-sequentially, consumers even out their consumption with the intention of maximizing their utility. A rise in permanent income will consequently enable consumers to raise their consumption levels in each period.

The third explanation of how economic output is affected by stock price is referred to as the financial accelerator (Bernanke & Gertler, 1989; Kiyotaki & Moore, 1997). This outlet emphasizes on the effect that stock prices have on firms' balance sheets. Owing to the existence of asymmetric information in borrowing markets, the capability of firms to raise money depends largely on the collateral they can assure. The collateral value firms can bid increases in situations where their stock price value increases. As the security they can put forward increases, higher credit can be acquired on better terms, which sequentially can be utilized for further investments and doing so, causes a growth in economic activity.

Campbell (1998) applied the log-linear asset pricing framework to examine the experimental association between stock prices and GDP. In his study, the log-price dividend ratio was regressed alongside the growth of output. The results were statistically insignificant in France, Germany, Japan, UK, and US. Campbell concluded that stock prices have very minor projecting content in relation to output.

Binswanger (2004) concluded in the different way using the OLS method in his study on the G7 countries. For regression analysis he used industrial production growth rates as the dependent variable and contemporary real stock returns as the independent variables. In cases of all the G7 economies, with the exception of Italy and France, statistically significant relationships were found between the variables.

Stock and Watson (2001) used an analytical regression which included real GDP against lagged independent variables which were theoretically related predictors for each of the seven most industrialised countries (Canada, France, Germany, Italy, Japan, UK and USA). Their results were in favour of the hypothesis that stock prices had a small marginal projecting content for output. Nevertheless the capability of stock prices as predictors varied across economies and over time as well.

Humpe and Macmillan (2005) examined the degree at which macroeconomic variables influenced stock market indices in the US and Japan. Implementing a log-linear model, they discovered that a 1 % increase in industrial production generated a 1.09 % increase in US stock market indices and at the same time a 1 % increase in Japanese industrial production generated a 0.4 % increase in Japanese stock market indices and in both the cases the parameters were statistically significant to a great extent.

Schwert (1989) researched the association between economic activity and stock returns by analysing the correlation between volatility in economic activity and that in stock prices. Schwert found confirmations that stock market volatility is based on the strength of the economy. The model used monthly data and demonstrated that average volatility amplified by a noteworthy 189% during recession. Hence, given these opposing conclusions and results, the argument in the literature on the relationship between stock prices and GDP remains indecisive.

The "Great Recession" and the economy of Bangladesh

The 'Great Recession' acquired its name from the intensity of the fall it brought in world economy (Rampell, 2009). The chaos in the US housing market eventually spread its effect throughout the US economy leading to a full fledge recession within months and owing to globalization and US's domination in world economy, most of the countries of the world got affected adversely either directly or indirectly. The other advanced economies entered into recession by the middle of 2008 and in 2009 the entire globe experienced the phenomenon for the first time since the World War II (Rasmus, 2008). The enormity of the crisis was so extreme that International Monetary Fund (IMF) and World Bank had to revise their growth predictions of 2008 and 2009 (IMF, 2009). The government of both developed and less developed countries soon took aggressive steps to avoid the faults made in the past crises. Huge amount of credit was generated into the financial markets, interest rates were lowered and policies to boost aggregate demand were undertaken. Even though these steps helped evade a disastrous depression in many countries, the effectiveness of the policies varied from country to country depending on the scale of response and the susceptibility of national economy but in spite of these interferences the worldwide financial catastrophe rapidly developed into a universal job crisis, choking the real economy and crumpling trade flows (Verick & Islam, 2010, p. 5). Thus the *"global crisis led to a significant decline in global activity"* (Claessens et al., 2010, p. 2) and the economy of Bangladesh was no exception.

As the crisis deepened, the exports of most of the countries fell drastically. China's declined by 17% in January 2009, those of Singapore by 44% (Rahman et al. 2009, p.6). The export performance of Bangladesh, compared to other economies, was quite extraordinary when it comes to the first few months of the fiscal year 2007-8. Publications by the Export Promotion Bureau (EPB) (2009) show that during the period of July 2007 to January 2008, the growth was 18.2%. However, by the mid of 2008, export performance started to slowdown and experienced negative growth. By December 2008, aggregate export declined by 10.1%. However in January 2009 export started to raise again but overall the growth rate slowed down compared to the past trend as export of many products declined (Rahman 2009). On the other hand, monthly report by Bangladesh Bank (2009a) showed that imports gradually slowed down. For July 2008 to November 2008, import growth was 29.7%, which ultimately declined to 18% by January 2009. This slowdown in growth can be explained by sharp fall in

international market prices of crude and petroleum products and fertilisers as these products formed a significant part of Bangladesh imports (Raihan, 2010, p. 12).

Reports by EPB (2009) show that since 2007, the number of Bangladeshi workers leaving country for jobs abroad reached its peak and the total number of migrant workers stood at around 6.1 million by 2009, representing more than 10% of the total labour force. Their remittances, US$7.9 billion, contributed about 10% of GDP in fiscal year 2007-8. Till 2009 remittance flow had been outstanding, as its earnings increased by 27.1% during the period of July 2008 to February 2009 where a record $865.3 million was remitted only in the month of January 2009. Rahman et al. (2009, p. 11) suggested that the unusual phenomenon of high remittances with the increase in unemployment of Bangladeshi workers abroad, can be explained by the permanent return of workers back to Bangladesh with all their savings.

Rising prices of commodities, particularly the essentials, had been the main concern of the policy makers for the past few years as it was indispensable element of macroeconomic stability as mentioned in the report of Bangladesh Bureau of Statistics (BBS) (2009). However the report also added that by 2009 inflationary pressure eased to some extent due to fall in global commodity prices and devaluation of currency of India, the country which is the major source of consumer product imports as addressed by BBS. The annual average rate of inflation declined from 9.6% in January 2008 to 8.5% in January 2009.

When it comes to interest rate, the rate of lending is significantly high in Bangladesh and was recorded in January 2009 as 13.33% (Bangladesh Bank, 2009a). The central bank mentioned in its report that a vital matter of concern for the policy makers of Bangladesh had been the wide gap between the lending rate and deposit rate. The spread between the lending and borrowing rates was 4.58% in the fiscal year 2007-8 and stood to 5.33% in 2008-9. This had been one of the major disincentives for investment activities (Rahman et al. 2009, p.21). On the other hand, Bangladeshi Taka (BDT) appreciated considerably against other currencies, including euro and Indian rupee during the period covering 2007 to 2009 (Bangladesh Bank, 2009a).

In another of its report Bangladesh Bank (2009a) stated that Bangladesh sustained a strong Balance of Payments (BoP) position, thanks to the growth in export of over 19% and higher remittance flow of about 30% in 2009 despite that fact that many of the world economies were struggling to uphold growth at that point of time. For the first six months of the fiscal year 2008-9, overall BoP obtained a surplus of $489.0 million when compared to the first six months of the previous fiscal year. However, the report addressed that with the steady decelerating of growth in export, increase in loss of jobs abroad, and fall in global demand, necessary steps should be taken by the government to sustain a good BoP through this globally harsh period.

Overall, initially the economy of Bangladesh was not affected significantly from the global recession. However as the global recession worsened, the real economy started to get affected. Although the Bangladesh economy has remained somewhat unaffected from the global recession, significant downside risks remain especially relating to the country's exposure to real economy effects of the financial crisis through exports, remittances, and foreign capital inflow channels. The economy of Bangladesh started to get affected as exports and remittance growth restrained lowering the growth rate of GDP, reported in the Bangladesh's quarterly update by Asian Development Bank (ADB) in 2009. The Financial Express (June 2009), quoted the Economic Advisor of the Bangladesh Bank saying *"the continuing slowdown of global growth, especially growth in advanced economies, may pose a big challenge for our economy if it persists for long."* In May 2009, World Bank estimated the GDP growth of Bangladesh to fall to 4.5%, the lowest in the past seven years and ADB's estimate was 5.6 per cent, the lowest in five years. Ultimately the prediction of ADB came true, the real growth rate of GDP fell from 6% in 2008 to 5.6% in 2009 (CIA - The World Factbook, 2010).

Bangladesh and US stock markets correlation

Intensifying globalization and augmented integration of world economies fascinated the interest of researchers and economists to the subject of interrelationships among stock markets across the globe. Countries experienced increase in capital flows owing to '*market deregulation measures, technological improvements and innovations of different financial products*' (Hoque, 2007, p. 810). Moreover the increased integration of economies and stock markets affect macroeconomic policies of governments and financial policies of multinational corporations. For example, exchange rate can be influenced by international portfolio investments which in turn can bring about an appreciation or devaluation of local currency. Various studies of the past provide evidences that the major

stock markets are interdependent in the long run (Arshanapalli & Douklas, 1993; Francis & Leachman, 1998; Kasa, 1992; Malliaris & Urritia, 1992) and so obtaining benefits through diversification between major economies is restricted. However, association among emerging markets and other advanced markets seems to be weak comparatively (Bakaert & Harvey, 1997) and thus considering market segmentation and diversification, potential gains may be reaped from investing in emerging markets (Errunza, 1994; Ben Zion, Choi & Hasuer, 1996).

Hoque (2007) explored the pattern of stock price movements of Bangladesh in relation to that of USA, Japan and India. He used the co-integration model among the time series to inspect the long run equilibrium relationship and found that the variables seem to be correlated. The results reveal that market indices in those economies share a common random trend. Overall, long-term association and short-term underlying forces were detected which affirms that Bangladesh stock market has effectively exposed to the outside world and is thus affected by other markets. Hoque further claimed that, even though correlation with Indian market was weak, blow in the US stock market does influence Bangladesh stock market. However Bangladesh market is not responsive at all to shocks in Japanese market. He supported his findings with that of Francis and Leachman (1998) who pointed out that the influence of US market on other markets is higher than that of Japan. Hoque concluded that the stock market of Bangladesh is significantly affected by that of USA and *'as these markets share a common stochastic trend no diversification benefit is possible from cross-border investments'* (2007, p. 817).

The impulsive behaviour of Dhaka Stock Exchange (DSE)

In spite of the fall of the major stock markets of the world resulting from world financial crisis, including USA, *"the Dhaka Stock Exchange General Index [DGEN Index] was Asia's second-best performing stock market in 2007, after China's Shanghai Composite Index, having almost doubled in value despite considerable political turmoil"* (Emerging Markets Monitor, 2008c). As a matter of fact, gains in DSE seemed so lucrative that the Securities and Exchange Commission (SEC) restricted the purchase of stock by means of loan. Even though the restriction was shortly lifted as per the demand of investors, the SEC slashed the amount of money on hand for lending for stock buying by 50% (Emerging Markets Monitor, 2007a, p. 6). To conclude, Bangladesh stock market showed unusual pattern when the majority of the world stock markets were in declining trend. DSE indices did not move correspondingly with global indices which fell drastically in the outcome of the global financial meltdown (Rahman et al., 2009, p.14). Thus as mentioned earlier, this is a matter of comprehensive investigation.

LITERATURE SUMMARY, RESEARCH AIM & OBJECTIVES

From reviewing the literature, it is realized that the GDP growth rate, which demonstrates the state of recession of a country, directly or indirectly, affect the overall stock market indices. Moreover, it is generally expected that the stock market indices of a country would tend to move in the same direction of the country's GDP growth rate and there are evidences that the recent world recession did have an impact on the major stock markets of the world. Past studies also showed strong relationship between the stock markets of Bangladesh and USA. Considering all these findings, it was expected that at times of global recession, where the major stock markets experienced severe crisis, the Bangladesh stock market was also expected to behave in a similar way. **The research question for this study is whether Bangladesh stock market behaved in consistent with past evidences or not,** i.e. to assess the extent to which the stock market of Bangladesh moved in line with the GDP growth rate at times of the recent world recession. To answer the research question, the objective of the study is to develop and analyse a correlation between the performance of the Bangladesh's stock market and the GDP growth rate of the World.

HYPOTHESIS

The main aim of this study is to test whether stock returns in Bangladesh are explained by the recent world recession or not. To be specific, this study intends to test causality of world GDP growth rate on stock returns. This section deals with the hypothesis and its results.

"It is an experiential question whether principal economic indicators (such as GDP Growth rate) are significant explanatory factors of stock market returns" (Kwon & Shin, Spring, p. 71).

If there is significant relation between real GDP growth rate of the world and stock market indices of Bangladesh, we can conclude that the Bangladesh stock market does signal changes in real world activities, and vice versa. Various studies show that, the economy of Bangladesh is also adversely affected by the recent world recession (Rahman, 2009). Thus it can be held that the recent world recession does have a direct correlation with the stock

market of Bangladesh and therefore the hypothesis for this study is that: **"There is a positive and significant relationship between real GDP Growth rates of the world and DGEN Index of Bangladesh."**

METHODOLOGY

To measure the nature and intensity of the relationship between Bangladesh stock market and world recession, Pearson's correlation model has been used. The two main variables were the DGEN (Dhaka Stock Exchange General Index) and the global economic growth rate. The global economic growth rate is a good measure for global economic downturn (The Economist, 2008). Bangladesh stock market comprises of two secondary markets, i.e. Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE). The indices in DSE and CSE tend to have similar trends over the years (Figure 1). Thus only the index of DSE is considered as the representative sample for the overall stock market performance. The DGEN Index data is taken from the Dhaka Stock Exchange website. Monthly data of DGEN Index are gathered starting from the March 2005 to June 2010. The global economic growth data are gathered from the website of International Monetary Fund (IMF) which is linked with the World Economic Outlook Database. This variable is actually the quarterly percentage change in real GDP of the world. The entire world plunged into global recession by the 4th quarter of 2008 (Mussa, 2009, p.1). However, data of the previous 15 quarters were also considered for the analysis to be more representative, making it a total time period of 22 quarters (1st quarter of 2005 – 2nd quarter of 2010). Furthermore, the quarterly data of both the variables were derived from monthly averages, thus data of these 22 quarters, in a real sense, incorporate and represent the data of 66 months, which are good enough for this study.

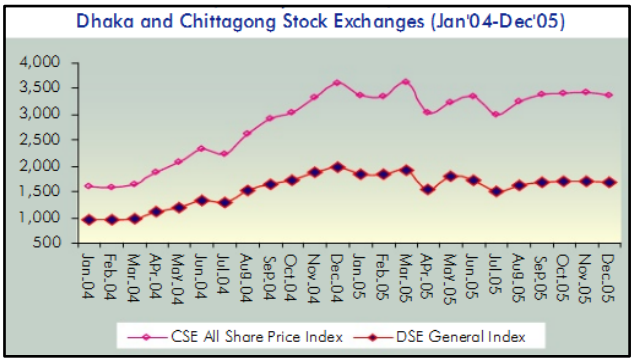

Figure 1: DSE & CSE Indices Trends (Source: DSE & CSE)

Incorporating the Exchange Rate

The world economic growth rates were based on US Dollar, while the DSE Index was based on Bangladeshi Taka (BDT). Thus to get a clearer picture, the foreign exchange rates of the relevant periods were taken into consideration, i.e. the exchange rates of BDT against the US Dollar. The average quarterly exchange rates (BDT/US$) were acquired from the database of OANDA Corporation (2010). Hence the percentage change in exchange rates, over the related consecutive quarters, was computed. At the same time, the rates of changes in the DGEN index over the concerned periods were also computed, and then adjusted with the devaluation or appreciation of BDT. Finally, to support the study, another correlation analysis was conducted using the "Percentage Change in DGEN incorporating changes in Exchange Rate" as one variable and "World's real GDP growth rate" as another variable.

RESULTS

Pearson's Correlation Analysis -1

The results of the Pearson's Correlation Analysis are illustrated in the following table:

Table 1: Pearson's Correlations Analysis - 1

		Real GDP of the World, quarterly percentage change	DSE General Index (of the respective Quarter)
Real GDP of the World, quarterly percentage change	Pearson Correlation	1	-.173
	Sig. (2-tailed)		.443
	N	22	22
DSE General Index (of the respective Quarter)	Pearson Correlation	-.173	1
	Sig. (2-tailed)	.443	
	N	22	22

The Pearson's r for the correlation between real GDP growth rate of the world and DGEN index is -0.173 (Table 5.1). Since the r is close to 0, based on established rules, it can be claimed that the correlation between the two variables is extremely weak. Moreover, the negative sign accompanying the value of r signifies an inverse relationship between the two variables, which means despite a fall in real economic growth rate of the world, the stock market of Bangladesh improved even though a more general intuition and expectation was that the DGEN index has a positive relationship with world economic growth rate. The "Sig. (2-tailed)" value refers to "statistical significance" of the correlation between your two variables and when this value is greater than 0.05 it means that no statistically significant correlation exists between the two variables, and vice versa (Healey & Prus, 2009, p. 272). In this instance, the sig. (2-tailed) value is 0.443 which is way greater than 0.05. Therefore, even though the r is negative, any increase in DGEN cannot be explained by or related to decrease in real GDP growth rates of the world and vice versa. Thus we can conclude that the hypothesis that **"there is a positive and significant relationship between real GDP Growth rates of the world and DGEN Index of Bangladesh"** is not likely to be correct.

Pearson's Correlation Analysis – 2

Table 2: Pearson's Correlation Analysis – 2

		Real GDP of the World, quarterly percentage change	Percentage change in DSE General Index incorporating changes in Foreign Exchange Rates (of the respective Quarter)
Real GDP of the World, quarterly percentage change	Pearson Correlation	1	.013
	Sig. (2-tailed)		.953
	N	22	22
Percentage change in DSE General Index incorporating changes in Foreign Exchange Rates (of the respective Quarter)	Pearson Correlation	.013	1
	Sig. (2-tailed)	.953	
	N	22	22

Conducting Pearson's Correlation Analysis (table 5.2) between the "percentage change in DGEN Index incorporating changes in Exchange Rate" and World's real GDP growth rate gave a result almost similar to the Pearson's Correlation Analysis – 1. Even in this case the Pearson's r is too close to zero (i.e. 0.013) and sig (2-tailed) value is 0.953 which is way higher than 0.05 (the maximum value for the correlation to have statistical significance). Thus no correlation of statistical significance is present among the two variables. The scatter plot in figure 2 depicts the correlation analysis in an easier way, indicating no statistically significant correlation at all. The results of the Pearson's correlations point towards the rejection of the hypothesis of this study, affirming that there was no statistically significant correlation between the stock market of Bangladesh and real GDP growth rate of the world. In other words, the stock market of Bangladesh was not affected significantly by "the great recession."

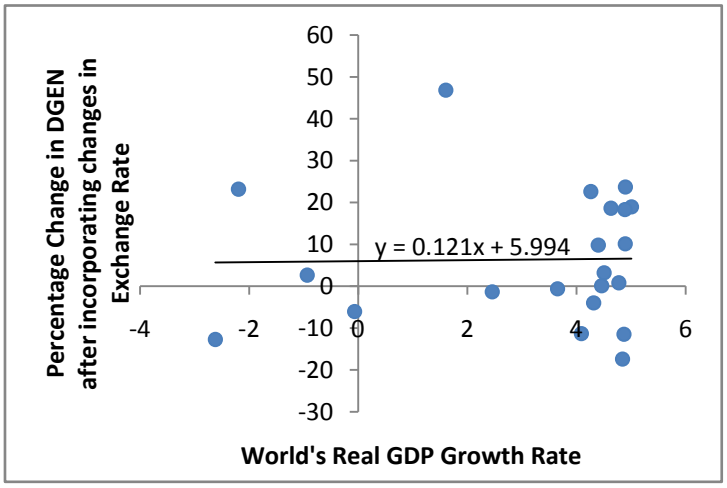

Figure 2: Correlation Scatterplot

ANALYSIS

"IPOs are scarce enough as it is in this gruesome global market. But the largest ever IPO from one of the world's poorest countries, whose previous record deal was in 1994? That's rarer still" (Euromoney, 2008). Emerging Markets Monitor, in February 2008, reported that the DGEN Index, which nearly doubled in value in spite of political unrest, was the second best performing stock market of Asia in 2007 following China's Shanghai Composite Index. Furthermore, DSE became the best performing stock market in Asia for the year 2008 notwithstanding the global financial crisis (Asia Monitor, 2008). This section deals with analysing the reasons for no statistically significant correlation between DGEN Index and World Real GDP Growth Rate.

Extremely Low Market Capitalization

The results of this study can be best explained by the relatively low market capitalization which resulted in too much money chasing relatively less number of quality shares – "the supply side constraints" (Rashid, 2009, p. 14). The total market capitalization of Dhaka Stock Exchange stood to around $42.53 billion (Dhaka Stock Exchange, 2010b), which reached record heights but was still small when compared with the standard Asian stock markets (Asia Monitor, 2008, p. 6). The Economist (2009) reported that *"the market capitalisation of the DSE has more than doubled since August 2007 (turnover has quadrupled), but still amounts to only 16% of Bangladesh's GDP."* On the other hand the market capitalization of Pakistan and India were 40% and 70% of their respective GDP, as of November 2007 (Emerging Markets Monitor, 2007b, p. 9). And thus a lot of shares were overpriced due to the demand for shares exceeding the supply by a great extent (Siddiqi, 2010).

Market Inefficiency

Results of various past studies identified the stock market of Bangladesh as inefficient which infer that price changes in DSE do not reflect all relevant information. Chowdhury et al. (2001) examined the efficiency of the DSE returns by inspecting the pattern of "day-of-the-week, turn-of-the-month and turn-of-the-year effect" and found the existence of noteworthy seasonality and concluded that DSE returns are conventional and the market cannot be labelled as efficient. Hassan et al. (2001), Hassan and Maroney (2004), Hassan and Chowdhury (2008), and Basher, Hassan and Islam (2007), all reported, in their studies, the existence of market inefficiency in DSE whereby changes in share prices do not necessarily reflect all identified and relevant information in the market. For instance, *"in the face of high political drama, turnover at the Dhaka Stock Exchange (DSE) hit a record high of BDT1.587bn (US$23mn) on January 31. The DSE General Index closed at a 22-month high of 1,826.58 on February 1, having surged from below 1,600 at the start of the year, while the All-Share Index closed at a 10-year peak of 1,495.47"* (Emerging Markets Monitor, 2007c, p. 9).

Monitoring and regulation by the Securities and Exchange Commission (SEC)

The SEC did play a part in keeping the DGEN index to remain resilient in the face of the global turmoil which has been noted in various publications. As the DSE started to experience downtrend from 2008, the SEC were prepared to provide short term support if the index fell below 2415 (Emerging Markets Monitor, 2009, p. 9) and merchant banks were approved to lend money to investors, initially at a 1:0.5 ratio (Emerging Markets Monitor, 2008a, p. 5) and then at a ratio of 1:1 (Emerging Markets Monitor, 2008a, p. 5). These boosted the confidence of the investors. By the middle of 2009 DGEN index set off to reach the record high peak (Dhaka Stock Exchange, 2010).

Banks and Financial Institutions: The Major Players in DSE

As the merchant banks were authorized to provide loans to finance share purchases, they provided loans to such an extent that by 2007 the main sources of funds in the DSE market were the banks and brokerage houses (Emerging Markets Monitor, 2007d, p. 13). Banks started *"not only to invest in the capital market but also to operate brokerage and merchant banking wing"* (Islam 2007). As these banks entered the market with their vast liquid asset, it caused the capital market to expand very swiftly. Siddiqi (2010) reported that a big number of new investors, from all over the nation, entered the market and that institutional investors were also playing active roles in the market. Asset management companies increased and their activities were noticeable. Moreover, the revision of the Banking Companies Act 1991, made it possible for banks to gather paid-up capital up to BDT2.0bn (US$29.2mn) from BDT1.0bn previously and this boosted the share performances of banking companies resulting in a strong DGEN index (Emerging Markets Monitor, 2007d, p. 13). By March 2008, out of the 10 largest firms, 6 were in the financial sector (Emerging Markets Monitor, 2008b) and by October 2008, the banking sector alone accounted for 44.23% of the total market capitalization, and banking, investment and insurance companies,

cumulatively accounted for more than 55% of total market capitalization (Dhaka Stock Exchange, 2008). The Bank-Company Act (1991) ensures extensive authority and power to Bangladesh Bank for monitoring, regulating, and controlling the operations of banks and other financial institutions. Thus in another sense, the DSE market was under a greater control as the major players were under the supervision and control of the Bangladesh Bank.

Foreign Investors in the Bangladesh Stock Market

Before the global crisis, foreign portfolio investments in the small capital market of Bangladesh were extremely insignificant it was only $52.8 million before 2007 (Ahmed, 2008). The main reasons for this phenomenon were "political instability and policy discontinuity, bureaucracy, corruption, underdeveloped infrastructure, poor port management and shortcomings in legal system" (Dhaka Stock Exchange, 2007, p. 2). It can be denoted that due to this insignificant participation of international investors and lack of interrelation with major international capital markets, the stock market of Bangladesh was not affected when markets as a whole were experiencing decline throughout the world.

In addition, foreign investors' interest increased in DSE as in 2007, foreign investment in Bangladesh's capital market increased by almost 150% and stood to $132 as investors from developed economies injected the money into the market considering Bangladesh as a safe destination because of a *"stable political atmosphere and uninterrupted trading"* for one year (Ahmed, 2008). This transfer of funds at the time of global financial crisis helped the capital market of Bangladesh to some extent, by boosting the demand for shares. However even this relatively minor amount was being withdrawn by international investors (Bangladesh Country Review, 2010). Zaman (2010) stated that *"$159 million was withdrawn from the market in 2008-09 and in July-November period of the current fiscal, $34 million was repatriated under portfolio investment, according to Bangladesh Bank data. In January-November period of the last calendar year a total of $145 million went back to foreign investors."* He added that this pull-out does not mean foreign investors lost confidence in Bangladesh stock market but rather repatriated it due to global recession. Even after their pulling out of international funds, the DGEN index gained momentum, and hit record heights from 2914.53 in July 2009 to 6153.68 in June 2010 (Dhaka Stock Exchange, 2010a). And this again supports the argument that due to the insignificant amount of foreign investments, the stock market of Bangladesh was not severely affected when it was time for foreign investors to pull money out of the market.

ASSUMPTIONS & LIMITATIONS

First of all, the effects of various other variables had been ignored, such as the degree of participation of Bangladesh in the international market. Moreover the effect of varying rate of inflation of Bangladesh with that of other countries of the world is slacked. Apart from these, the percentage change in real GDP of the world data are quarterly data, while the DGEN index data are monthly data. Thus to synchronize the two variables, the respective quarter end data of DGEN index are computed by finding out the average index of the three months belonging to that quarter. Furthermore, the real GDP growth rate of the world was used instead of that of Bangladesh. This is because *"Bangladesh is as an emerging market, it is in infant stage and also long data set is not available"* (Hoque, 2007, p.881). Moreover GDP in Bangladesh is calculated on a yearly basis by Bangladesh Bureau of Statistics (Ahmed & Islam, 2007, p.6). However, a scatter-plot analysis (figure 3) and a Pearson's correlation analysis, conducted incorporating data of 1991 to 2010, show that there tend to be a positive relationship between the world GDP growth rates and GDP growth rates of Bangladesh. The Pearson correlation between these two variables stood at 0.598, and sig (2-tailed) value was 0.05 inferring quite a strong relationship between these two variables. However, despite all these as assumptions and limitations, the research did generate some valuable findings which can be used for decision making by firms, individuals, government bodies and so on.

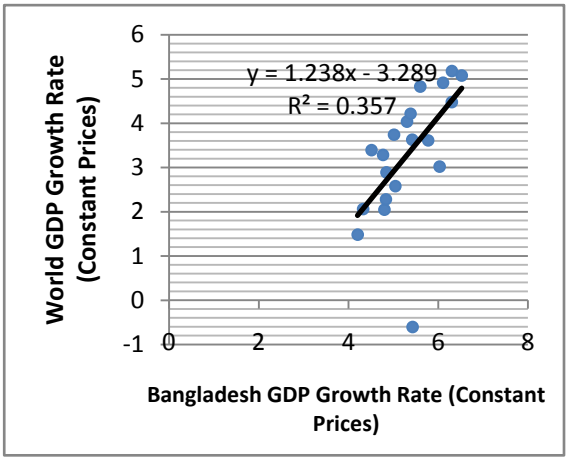

Figure 3: Correlation between GDP Growth Rates of the World & that of Bangladesh

CONCLUSION

The results of this study correspond with the findings of Campbell (1998) who examined the experimental association between stock prices and GDP and discovered that they were statistically insignificant in France, Germany, Japan, UK, and US. He concluded that stock prices have very minor projecting content in relation to output. Moreover, Stock and Watson (2001) in his study on the seven most industrialised countries (Canada, France, Germany, Italy, Japan, UK and USA) concluded that stock prices had a small marginal projecting content for output.

On the other hand, results of some past studies tend to conflict with the findings of this study. For instance, Schwert (1989) researched the association between economic activity and stock returns by analysing the correlation between volatility in economic activity and that in stock prices. He found that stock market volatility is based on the strength of the economy. Moreover Hoque (2007) explored the pattern of stock price movements of Bangladesh in relation to that of USA, Japan and India. He found that market indices in those economies share a common random trend. Bangladesh is significantly affected by that of USA and 'as these markets share a common stochastic trend no diversification benefit is possible from cross-border investments' (2007, p. 817). However, in case of the current world recession, the US capital market was critically affected, while that of Bangladesh remained very strong comparatively.

Hence, given these opposing conclusions and results, further research on the relationship between stock prices of Bangladesh and real GDP growth rate of the world can be undertaken incorporating more aspects and variables using more effective methods and incorporating more data of more similar countries, like Srilanka and Pakistan, to get deeper into this aspect.

To conclude, the impulsive behaviour of the capital market of Bangladesh at times of the global recession can be attributed mostly to domestic factors as movement of Dhaka Stock Exchange (DSE) indices did not correspond to the sharp downward movement of major global indices in the aftermath of the global financial meltdown (Rahman et al., 2009, p.14). Further studies can be conducted to find the extent to which each of those factors (both domestic and international) contributed for such behaviour by the DSE at times of the "Great Recession."

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ACRONYMS

BBS	Bangladesh Bureau of Statistics
BDT	Bangladeshi Taka
BoP	Balance of Payments
CSE	Chittagong Stock Exchange
DGEN Index	Dhaka Stock Exchange General Index
DSE	Dhaka Stock Exchange
EPB	Export Promotion Bureau
SEC	Securities and Exchange Commission