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# <sup>1</sup> Stock Market: A Comparative Study between S&P 500 and DSE <sup>2</sup> General Index

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#### 7 Abstract

A healthy financial sector is crucial for economic growth. The stock market to an economy, what a clinical thermometer is to a human body, reflects the health of the economy. Again, the economy of the developed countries always has a great impact on the other economically weak countries. In this study our aim is to compare SP 500 Index and DSE General Index, which may tell about the major similarity and dissimilarity about the compared stock markets. Here, to compare the stock markets we take volatility comparison, different time series models and so on.

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16 Index terms—, DSE general index and volatility.

## 17 **1** Introduction

apital formation is very core of economic development. No economic development is possible without capital
formation. Capital formation indeed plays a decisive role in determining the level and growth of national income,
hence economic development. Thus, in any programme of planned economic development capital formation must
be assigned a significant role on account of a very close connection between economic growth and capital growth.
[see also ??ewett, ??. K.,.
For any country one of the most important sources of capital formation is financial market of that country.

Financial markets also play a crucial role in helping individuals or corporations invest in financial assets. They offer alternative investment opportunities for individuals or corporations with excess funds. The main participants in financial market transactions are households, business (including financial institutions), and governments that purchase or sell financial assets. Financial markets facilitate the flow of funds form surplus units of deficit units. Those financial markets that facilitate the flow of short-term funds (with maturities of less than one year) are known as money markets, while those that facilitate the flow of long-term funds are known as capital markets.

Securities with a maturity of one year or less are called money market securities, whereas securities with a 30 maturity of more than one year are called capital market securities. [see also Madura, J.,(1998)] Three common 31 types of capital market securities are bonds, mortgages, and stocks. The stock market is a pivotal institution 32 in the financial system of a country. Stock market tends to very efficient in the allocation of capital to its 33 highestvalue users. These markets also help increase savings and investment, which are essential for economic 34 35 development. [see also Madura, J., pp. (1998)]. Stock markets are categorized as efficient or inefficient or less 36 efficient market where an efficient market is one which reacts quickly and in an unbiased manner to the release 37 information. Stock market tends to very efficient in the allocation of capital to its highestvalue users. These markets also help increase savings and investment, which are essential for economic development. An equity 38 market, by allowing diversification across a variety of assets, helps reduce the risk the investors must bear, thus 39 reducing the cost of capital, which in turn spurs investment and economic growth. 40

The stock market plays a vital role on financial condition of any country. There is a great impact of the 1987 stock market crash on financial markets all over the world. On October19, 1987, the Dow Jones industrial Average declined to 1798.42 form 2246.74 on the previous trading day. This represents a 22.6 percent decline, 44 significantly exceeding the 12.8 percent oneday decline on October 28, 1929. Various financial markets and 45 institutions were affected by the stock market crash. (See also Madura, J., 1998, pp.266-267).

From the above it is clear that the stock market of the developed countries have some impact on the economy
of lower developed countries. Here, in this study we compare two stock market indices SP500 and DSE General
Index.

# <sup>49</sup> 2 Return Series and Volatility

Returns are defined as the natural logarithm of price relatives; that is, , where is the daily S&P500 or DSE 50 General Index. We obtain the daily volatility simply squaring the return series. To find the volatility period, the 51 monthly volatility will be more friendly then daily volatility. In literature there are a number of ways to obtain 52 monthly volatility series. Here, Merton (1980) and Perry (1982) who calculate the monthly volatility simply as 53 the sum of squared daily returns in that month that is The table-2 shows the descriptive statistics return series 54 of DSE General Index and S&P 500 index. From these we see that maximum occurs at 2008 in S&P500 and its 55 impact may fall on DSE on 2009. Here also we see from the standard deviation of deferent year the S&P 500 56 index is more stable than DSE general index, because the standard deviation of return series fluctuates more in 57 DSE General Index than the S&P 500 index. Which is also reveals from the mean, where also the DSE exhibits 58 same scenario. The DSE General Index shows its leptokurtic pattern three times which are: 2003, 2005 and 2009 59 and the S&P 500 index shows only one time which is in 2008 is slightly over than platykurtic. The S&P 500 60 index return series shows its nature near the symmetricity in most of the year (i.e., closer to zero) than the DSE 61 General Index. 62

## 63 **3** Result and Conclusion

The Stock Market is the main pillar of economy of any country and plays very important role for the economic development of any country. The Stock Market can be a reliable source for investing in industrial sector of any country by the investment of the population. The investors be a partner in the development of country by investing in Stock Market. So, the Stock Market is a important one for any economy and that's why we should make a great concern about stock market to make a healthy economy.

In this study we make a comparison between the S&P 500 index and The DSE General Index which may 69 portrait a small impact of American economy to Bangladeshi economy. From the above we see that the Dhaka 70 stock exchange is not a stable market where the American stock market is a very stable one. In 2009 the DSE 71 shows the maximum return (the maximum volatility) and it also makes the mean, skewnes and kurtosis of return 72 series maximum. In 2008 the S&P 500 index shows its maximum return (the maximum volatility) and the DSE 73 General Index's maximum may be the result of it. If we make a look on the table-2 it can be easily seen the 74 standard deviation of DSE General Index fluctuation is very high among the different year where the S&P 500 75 index shows very smooth fluctuation, which is a sign of very stable economy. And from the skewness it can be 76 easily say, in most of the year the return of series of DSE General Index is very apart from the symmetricity 77 where the S&P 500 index shows closeness to the symmetricity in maximum number of years. 78 Here, the following table-3 shows different model estimate of both S&P 500 index and DSE General Index 79 volatility. Here, we present those models which significantly forecast the volatility of both index and among the 80

six candidate models, GARCH (2,2) is best for DSE General Index, which is very clear from the value of AIC
and BIC and its estimates are highly significant at 0.1% level. But for the S&P 500 index the ARCH(2) model
forecast best according to AIC and BIC. For the ARCH model, in most empirical studies, has to be large. This
motivates Bollerslev (1986) to use the GARCH (p; q) specification which is defined as? ? ARCH q ? ? 1982 ? ?

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Figure 1:



Figure 2: Figure 1 :





Figure 4: Figure 3 :

a) DSE General Index
Bangladesh capital market is one of the
smallest in Asia but the third largest in the south Asia
region. It has two full-fledged automated stock
exchanges namely Dhaka Stock Exchange (DSE) and
Chittagong Stock Exchange (CSE). Both the stock
markets are operated by Security and Exchange
Commission (SEC).
Dhaka Stock Exchange (Generally known as
DSE) is

### Figure 5:

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[Note:  $\bigcirc$  2013 Global Journals Inc. (US)]



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Figure 8:

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Figure 9: Table 3 :

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