

## **Management of Stock Market Risk - Implication for Regulators and Stock Exchanges**

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### **Abstracts**

*Risk is an integral part of the stock market. All parties in the stock market are associated with different categories of risks which are basically systematic in nature. Risk taking is essential to an active market and legitimate risk taking should not be unnecessarily or unduly stifled. Regulators cannot be expected to prevent nor can it prevent absolutely failure of market intermediaries but the risk of failure can be and ought to be minimized. And, the Regulator should seek to mitigate the impact of any failure, if and when it occurs. The present study has been undertaken aiming at critically evaluate the existing risk management system in stock market of Bangladesh. The study has critically evaluated the existing risk management system and tested the effectiveness of different risk management measures by employing chi-square test. It has found that some of the measures such as automated trading system, prudential limit, circuit breaker, demutualization, and changes in regulation have been found very effective in managing stock market risk at 5% level of significance. The remaining measures- dematerialization, existing corporate governance practice, financial reporting, IPO process and role of depository participant, have been found ineffective at 5% level of significance*

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*to some extent. The study has finally suggested some important measures-standardization of IPO process, revising depository act, effective practice of corporate governance etc. for making the risk management system in stock market of Bangladesh most effective.*

**Key Words:** *Stock Market, Risk, Regulators, Regulation, and Effectiveness.*

### **1.1 Introduction**

Risk and return are important criteria of making investment decision. Investors irrespective of individual and institutional should make a trade off between risk and return while making both short and long term investment decisions in any area of businesses. They are also required to make a compromise between these two in managing investment in different outlet in practice. Failure to manage between these two gives birth to either higher risk or low profitability. Investors or Portfolio managers are to expose to risk arising out of failure to make a trade off between risk and return. Risk taking is essential to an active market and legitimate risk taking should not be unnecessarily or unduly stifled. Regulators cannot be expected to prevent nor can it prevent absolutely failure of market intermediaries but the risk of failure can be and ought to be minimized.<sup>1</sup> And, the Regulator should seek to mitigate the impact of any failure, if and when it occurs. For this purpose, what is required is effective Risk Management system, continually monitored and up graded as warranted. The size and complexity of the market will dictate the imperative the kind and the level of sophistication of the system.

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<sup>1</sup> John C. Hull, Risk Management and Financial Institutions, Dorling Kindersley Pvt. Limited, Delhi, 2007, P.31

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In security market, every one involved is subject to risk. It not only facilitates trading of shares and securities, but also enables parties in making trade off between risk and return in the process. Parties to the stock market are stock exchange, brokers, dealers, Securities and Exchange Commission, investors-individual and institutional-merchant bankers, central depository system etc. Investors are required either to diversify risk or to hedge risk or to reduce risk through the application of risk management tools and techniques. On the other hand, Regulator-SEC and Stock exchanges-DSE and CSE have to play important role for creating a level playing field in the stock market environment for all categories of investors by imposing either direct administrative and regulatory measures or punitive (financial) measures. This is how, stock market can bring the confidence of investors back in the stock market. The present paper is an attempt to look into risk management in stock market and implications for stock exchange and SEC.

### **1.2 Objectives of the Study**

The principal objective of the study is to critically evaluate the risk management system in stock market in practice. To accomplish this objective, following specific objectives have been covered:

- a) To highlight the different bases of stock market in Bangladesh;
- b) To examine the different measures such as administrative, technological and legal for management of risk in the stock market in Bangladesh;
- c) To evaluate the effectiveness of present risk management system in stock market of Bangladesh; and
- d) To suggest some important policy measures for making the risk management system in Bangladesh effective.

### 1.3 Hypothesis of the Study

The following hypothesis has been tested against the objective-C set forth above:

Ho: Existing risk management system in the stock market of Bangladesh is not effective in managing risk.

Ha: Existing risk management system in the stock market of Bangladesh is effective in managing risk.

### 1.4 Scope of the Study

The Study has covered the whole stock market in Bangladesh. It has covered all structural measures used in managing stock market risk in Bangladesh.

### 1.5 Methodology of the Study

The Study has been both theoretical and empirical one. Both primary and secondary data have been used in this study.

1.5.1 *Selection of Sample*: The Study has selected samples from all the parties involved in stock market conveniently. It has selected 104 sample respondents– 4 regulators, 10 executives from two stock exchanges, 20 members of brokerage houses, 10 executives of merchant banking, 50 investors, and 10 researchers in the field of capital market.

1.5.2 *Collection of Primary Data*: For collection of primary data, a structured questionnaire has been prepared. Researchers have collected primary data following both direct and indirect approaches with the help of structured interview guide. It may mentioned that the opinion collected from the sample respondents on five point likert scale such as Most Effective-5, Effective-4, Neutral-3, Less Effective-2, and Least Effective-1. Finally, they have received usable questionnaires from 83 respondents such as- 2 regulators, 10 executives from stock exchanges, 14 members of brokerage houses, 6 executives of merchant banking, 44 investors, and 7 researchers in the field of capital market.

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**1.5.3 Collection of Secondary Data:** The study has consulted relevant literature, existing guidelines, booklets, laws and regulations of SEC as well as of Stock Exchanges, news papers, websites, remarks of speakers in the different seminars and workshops substantially for collection of secondary data.

**1.5.4 Analysis of Data:** The data thus collected has been tabulated first. Then, all administrative and regulatory measures have been critically analyzed with reference to available literature and the consultation made with the respondents while conducting interviews. The opinion collected from the respondents on effectiveness of risk management measures in managing risk has been analyzed by employing chi-square test.

## **2.0 Analysis of Findings**

Risk is an integral part of the stock market. All parties irrespective of kinds, categories, positions and organizations involved into the stock market are associated with the risk. Of course, the level of risk may vary from class to class. So, every party should be aware of the risk. In this case, the regulator and the regulated agencies are to play forward looking role in order to ensure the discipline in the market as well as to restore the confidence of investors both individual and institutional by adopting sound and effective legal and administrative measures at an appropriate time. Effective administrative and legal measures are said to be two important pillars of sound risk management system of stock market. The analysis has been carried out in the following paragraphs in line with this direction:

### **2.1 Stock Market in Bangladesh**

Stock Market in Bangladesh has been developing over the passage of time with respect to the base, scope, products, members and

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investors. This has two stock exchanges, a good number of brokers, 273 listed companies, 1 depository institution, 200 depository participants, 34 merchant bankers, underwriters, Debenture trustees, 16 portfolio managers, Bankers to issues, 2 credit rating agencies, and Venture capitalist firms. There are 2.4 million beneficiary owner accountholders who can apply for IPOs in the primary market and also trade in the secondary market. Present government has an intention to increase the base of B/O accountholders in the future. Number of investors in the stock market has also been increasing.

The market is experiencing increased number of IPOs in the primary market and record volume of transaction of securities in the organized stock exchanges. Corporate firms are becoming aware of opportunities for raising capital from the stock market. Besides, they are also coming to know the different alternatives to the collection of funds from the stock market. The opportunity of stock market is attracting huge number institutional investors and individual investors. Apart from this, this has invited other parties-existing and potential to the stock market for exploiting emerging opportunities. This expansion of stock market in Bangladesh poses both risk and opportunities for the parties involved. Stock market in Bangladesh experienced many ups and downs in the past. Investors lost capital to the market and consequently, lost confidence in the stock market. Under this circumstance, adequate and effective risk management system in the stock market is essential in order to protect the interest of all parties involved and thereby ensuring the integrity of the stock market in Bangladesh. Securities and Exchange Commission and stock exchanges have already taken both regulatory and administrative measures for establishing effective risk management system.

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### **2.2 Analysis of Existing Measures-Legal and Administrative**

Stock market in Bangladesh has undergone a sea change in technology in order to make the market modern and thereby giving a pace to the risk management system. Technological change in modus operandi of stock market has brought it at par of international stock market community. This change has also caused an unexpected degree of systematic risk which calls for effective regulatory and administrative measures in place. Transparent, vibrant and efficient stock market is necessary to provide avenue for deployment of savings and also to prop up the primary market, to mobilize savings for investments needed for capital formation and economic growth. A number of risk containment measures have been put in place in order to protect the integrity between the stock market participants and thereby rendering stock market functionally efficient.

#### **2.2.1 Automated Trading System**

The trading system has become on-line, fully automated, screen-based. Open outcry is now outmoded and virtually eliminated from the system. It has brought about a revolutionary change in the stock market operations in Bangladesh. It has made the stock market more vibrant and transparent. It has reduced cost, time and risk involved. A large number of participants irrespective of their location, can trade with one another anonymously and simultaneously, providing equal access to every player with orders- big or small, thus improving the depth and liquidity of the market. The system provides perfect audit trail, facilitating dispute resolution. Given the size and complexity of the country, we could click the system and stabilize it successfully across the country.

### **2.2.2 Dematerialization**

Central depository system has already been in place for dematerialization of shares of listed corporate firms.<sup>2</sup> Today, the investing public has been saved from the risk of loss in transit or in custody, misplacement or mutilation, theft or destruction, bad delivery or delayed delivery, forgery or duplicity, and also from irritating headaches of intimation of change of address, watching the receipt of bonus or rights shares, etc. At present, it is compulsory on the part of company issuing IPOs to the investors in the primary market to get the issued shares dematerialized through contract with Depository. It can be found that Stock market is likely to face a huge risk that is expected to arise from mismanagement in handling of shares by the depository participants. Since, there is no clear cut provision to settle the transaction of traded/deposited shares with the depository. A good number of respondents have expressed a sense of doubt that this may pose a severe threat to the stock market.

### **2.2.3 Settlement Cycle**

Gone are the days when the seller had to wait for weeks and perhaps a month for settlement. Not long ago, the trading cycle used to be as long as 14 days for specified scrips and even 30 days for other scrips and settlement took another fortnight! Certain developments in the intervening period between the trade and settlement could tempt the parties to roll back their promises, leading to defaults, disputes and, in short, settlement risks. This risk has been considerably minimized by introduction of compulsory rolling settlement and contraction of the trading cycle. Rolling settlement on T+3 basis, was made compulsory for listed shares/unit certificates belong to A and B categories traded on CSE and DSE. Consequently, it reduced the trading cycle to one day

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<sup>2</sup> Securities and Exchange Commission, The Depositories Act, 1999, Dhaka pp.662-672.

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and settlement period to 3 days. Within short span of time, both CSE and DSE have reduced rolling settlement to minimum number of days for all categories of shares traded on them. Quick settlement of transaction has reduced huge risk exposures of both exchange and other parties involved into it.

### **2.2.4 Prudential limits**

The comprehensive risk management system now in place, which is continually monitored and upgraded, covers capital adequacy, margining, exposure and turnover limits, on-line position monitoring and automatic disablement. Minimum capital requirements have been stipulated at broker levels. Exposure limits, in terms of intra day gross turnover and cumulative net outstanding position in securities at any point of time, are linked to certain number of times the base capital and free base capital respectively.<sup>3</sup> There is a margin. The trading and margin positions are monitored on real time basis and any failure to make good the margin requirement will result in automatic disablement of the terminal of the member.

### **2.2.5 Circuit breaker**

Circuit breaker is applied aiming at controlling the movement of share prices and thereby curbing unhealthy volatility. Since unusual and abnormal price fluctuation of the securities may severely affect investor's interest, CSE as an additional measure of safety, imposes price limit on all categories of securities ('A', 'B', 'G', 'N' & 'Z') as per the following guidelines. A Committee named 'Share Price Movement Regulating Committee' comprised of CSE Secretariat is responsible to regulate the price limit in the market.

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<sup>3</sup> Nirmalendu Dhar, Laws on Securities and Exchange, Renisi Publishers, Dhaka, 2004, pp143-152.

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### Guidelines :

The following standard upward and downward price limits are applicable for 'A', 'B', 'G', 'N' & 'Z' category companies for each market days:

| Previous day's per share market price | Limits   |
|---------------------------------------|--|
| 01. Upto Tk. 200                      | 20% (Twenty Percent ) but not exceeding Tk.35                |
| 02. Tk.201 to Tk.500                  | 17.5% (Seventeen Point Five Percent ) but not exceedingTk.75 |
| 03. Tk.501 to Tk. 1000                | 15% (Fifteen Percent ) but not exceeding Tk.125              |
| 04. Tk.1001 to Tk. 2000               | 12.5% (Twelve Point Five Percent ) but not exceedingTk.200   |
| 05. Tk.2001 to Tk.5000                | 10% (Ten Percent ) but not exceeding Tk.375                  |
| 06. Tk.5001 and above                 | 7.5% (Seven Point Five Percent ) but not exceeding Tk.600    |

Application of circuit breaker shall block the syndicate's heinous activities of manipulating price, outplaying a company and thereby preventing them from making abnormal profits. It also helps in preventing input of wrong price of stock by the authorized representative(s). This also restores the confidence of small investors by ensuring performance based share price movement and reducing risk of losing capital to the market.

### 2.2.6 Cash Product Market

The stock market is now pursuing on line monitoring of margin and automatic terminal disablement in the case of failure to maintain the margin and to comply with required rules and regulations. This protects the stock exchange from the exposition

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of risk that arises from the failure of stock brokers/dealers to maintain margin and to comply with rules and regulations.

### **2.2.7 Listing of Corporate Firms**

Both CSE and DSE have a good number of requirements for being enlisted with them. Though there are no significant differences in listing requirements between them. Both are ensuring the enlistment of corporate firms with sound financial and operation background. This ensures quality scrips and thereby reducing the risk of investors. Like other developed economy, we should have a central listing authority to enlist of both domestic and foreign companies operating in Bangladesh and thereby ensuring quality scrips.

### **2.2.8 Structural Issues**

The structural issues have also been addressed. The corporate governance standards of the Stock Exchanges have been sought to be refined, though they themselves are Self Regulatory Organizations. Like charity, the propriety too, should begin at home. In order to eliminate conflict of interest situation and ensure alignment of investors' interest with the Exchanges, the process of demutualization and corporatisation of stock exchange should have been initiated.

### **2.2.9 Corporate Governance**

The corporate governance standard is a crucial factor for ensuring investors confidence. The corporate governance framework is designed to manage risk through, inter alia, the accountability mechanism of financial reporting, audit and internal control.<sup>4</sup>

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<sup>4</sup> L. F. Spria and M. Page, "Risk Management- The Reinvention of Internal Control and Changing Role of Internal Audit", Accounting Auditing and Accountability Journal, Vol. 16, No.4, 2003, pp.640-61.

While the Companies Act, 1994 fail to take care of the basic requirement of the form of corporate governance structure. SEC is concerned with the corporate governance practices on-going basis. It has come out with a regulation for implementation corporate governance in listed corporate firms. Corporate governance is essentially ethics-based. No amount of legislation or regulation will serve the purpose fully, unless there is an attitudinal change on the part of the management of the corporate. However, Companies Act 1994 is under the active consideration of government for amendment by including necessary provisions for implementation of corporate governance and coping with changes in accounting, auditing and reporting practices of corporate firms.

#### **2.2.10 Regulations**

There has been a paradigm shifts in regulatory environment of stock market. Stock market has been experiencing different changes such as technological changes, operational changes, structural changes etc. These changes render the existing regulations outdated and therefore call for either new regulation or deregulation of existing regulations. Under the dynamic conditions of the market, SEC being a regulatory body of stock market have made a breakthrough by promulgating new rules and regulations and amending the existing one and thereby generated a sound regulatory environment in the stock market. Besides, both exchanges prepared necessary by-laws for bringing order in all of their activities. Such a review/amendment would be a continual process, to address the risks of under or over regulation. Codes of Conduct for various intermediaries have also been in place for all the parties involved.

#### **2.2.11 Disclosures**

Over the years, several initiatives have been taken to improve the operational efficiency and transparency in equity market and to

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provide investors with the security issues of high quality and to enable entities to raise resources in cost effective manner. The disclosures prescribed for new issues in Bangladesh are comparable, in terms of contents and stringency, to those obtaining in most of the advanced markets.<sup>5</sup> Entry norms and track record criteria have also been attuned to ensure the quality of new issues and to protect the investors. The continual disclosure requirements for listed companies are not that much far away from international standards. These relate to publication of annual audited results and semiannual results in prescribed format and time frame, consolidated results, segmental reporting, cash flow, auditors qualifications and their impact quantification, and disclosures of certain transactions. A good number of listed companies have been found publishing annual reports through different media including internet. Disclosure of financial information should be made according to international accounting standards and international financial reporting practices so as to make it globally acceptable.

### **2.2.12 IPO Subscription System**

Present IPO subscription system takes four weeks to five weeks.<sup>6</sup> This is because, Banks put different serial number on IPO application which is different from BO account with CDBL. This gives birth to risk of error and omission for the investors on the one hand and takes a longer processing time on the other hand. Longer processing time also increases the opportunity cost of investors.

### **2.2.13 Emerging Concerns**

The market is dynamic and a change in prices of shares is the beauty of stock market. Certain risks would, therefore, keep on

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<sup>5</sup> Ministry of Commerce, The companies Act, 1994, Government of People's Republic of Bangladesh, Dhaka, 1995, pp 3810-3815.

<sup>6</sup> Security and Exchange Commission (Public Issue) Rules, 2006, pp. 166-173.

popping up, in the day to day operations e.g. the behavioral risks – misconduct, manipulation, malpractices, fraud and unfair trade practices – which would undermine the market integrity, erode into investor confidence and jeopardize the interest of hap-less retail investors. These should be the areas of concern for the investors and the Regulator. Normally, one has to take appropriate lessons from the unexpected corporate events. The Bangladeshi investors have been bitten once in the year 1996. To pre-empt any further biting, therefore, the intensity of carefulness must necessarily be high. As a regulator, SEC keeps a constant watch to spot any unusual movement or activities for possible prompt action. This keeps an alert to spot any unusual movements or activities for pre-emptive or punitive action to protect the integrity of the market.

### **2.3 Effectiveness of Risk Management System**

The SEC and Stock Exchanges have been found very concern with the management of risk in stock market. In view of this, SEC keeps on promulgating new laws and regulations and deregulating the existing obsolete laws and regulation in order keep the stock market on the right track. Stock exchanges have also been found very sensitive to the stock market risk. For management of risk, they come out with new guidelines and programs for the stock market participants particularly for investor class. Despite these efforts, stock market experiences risk that arises from ineffective legal and administrative measures. The effectiveness of legal and administrative measures has been tested by employing Chi-square test as non-parametric measure –goodness of fit. In this case, the whole number of sample has been segmented into two- Regulators & Regulated Agencies including researcher and Investors.

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**Statement Showing the Test on the Effectiveness of Risk Management Measures**

| Risk Management Measures   | $\chi^2$ Value | P. Value | Level of Significance | Degrees of Freedom | Null Hypothesis (Ho) |
|--|----------------|----------|-----------------------|--------------------|----------------------|
| 1. Automated Trading System.   | 4.966          | 3.841    | 0.05                  | 1                  | Rejected             |
| 2. Dematerialization of Shares through CDS.                              | 1.837          | 3.841    | 0.05                  | 1                  | Accepted             |
| 3. Prudential Limits   | 3.987          | 3.841    | 0.05                  | 1                  | Rejected             |
| 4. Circuit Breaker   | 4.533          | 3.841    | 0.05                  | 1                  | Rejected             |
| 5. Initiation of Demutualization and Corporatisation of Stock Exchanges. | 4.226          | 3.841    | 0.05                  | 1                  | Rejected             |
| 6. Present Corporate Governance Practice                                 | 2.926          | 3.841    | 0.05                  | 1                  | Accepted             |
| 7. Changes in Regulations  | 4.837          | 3.841    | 0.05                  | 1                  | Rejected             |
| 8. Financial Reporting Practice  | 2.228          | 3.841    | 0.05                  | 1                  | Accepted             |
| 9. IPO Process   | 1.576          | 3.841    | 0.05                  | 1                  | Accepted             |
| 10. Role of Depository Participants                                      | 2.326          | 3.841    | 0.05                  | 1                  | Accepted             |

It has been found from the perusal of above table that all the measures are not equally effective in managing stock market risk. Some of the measures such as automated trading system, prudential limit, circuit breaker, demutualization, and changes in regulation have been found very effective in managing stock market risk at 5% level of significance. The remaining measures have been found ineffective at 5% level of significance to some extent. This calls for standardization of present risk management system in stock market of Bangladesh.

### **3.0 Summary of the Findings and Policy Implications**

#### ***3.1 Summary of the Findings***

It is evident that a number of measures - on line screen based trading, dematerialized trading, shortening of settlement cycle, risk mitigating prudential norms of capital adequacy and exposure limits, value at risk based margining, real time monitoring of positions and margins, automatic disablement of the terminals, price based circuit breakers, enhancement of Governance standards among corporates and stock exchanges, continual disclosure requirements, registration and regulation of intermediaries - are already in place to manage and mitigate the risks in Securities Market. It has been found from the analysis that some of the measures such as automated trading system, prudential limit, circuit breaker, demutualization, and changes in regulation have been found very effective in managing stock market risk at 5% level of significance. The remaining measures have been found ineffective at 5% level of significance to some extent. Therefore there is no relaxation on the part of both regulators & regulated agencies and investors that stock market risk is well managed.

#### ***3.2 Policy Implications***

The market is still small with respect to the ratio of paid-up capital to GDP- 8.91% and market capital to GDP- 36.33%.<sup>7</sup> This indicates a huge growth potentiality of stock market. The stock market can grow well in all respects through diversification-vertical and horizontal. While the growth should be nourished, the attendant risks need to be contained. By and large, following measures are suggested for managing risk associated with stock market and for protecting the integrity of stock market participants:

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<sup>7</sup> The Financial Express, Dhaka, April 15, 2010.

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- I. SEC and stock exchanges should conduct investor's awareness program at various places across the country in order to protect all investors generally, small investors particularly, from the exposition of risk generated by manipulators. This is because, small investors fall a prey of manipulators. All available tools - Regulations, guidelines, surveillance, inspections and investigations are applied to deal with market misconduct and enforce action against market manipulators.
- II. Circuit breaker can also be applied on stock index basis.
- III. Stock market should introduce financial derivative products in order enable market participants for hedging their position both short and long.
- IV. Central listing authority should be established in order bring a harmonization in the listing requirements, or SEC can be empowered for enlistment of corporate firms.
- V. SEC should make compulsory on the part of all listed corporate firms to disclose their financial information in accordance with IASs and IFRSs so as make them globally accepted and thereby developing the stock market in Bangladesh.
- VI. To reduce the risk in processing and the processing time, the lottery should be conducted on BO account identity basis instead of bank serial basis. This measure is expected to reduce the whole process of subscription, collection and distribution of refunds after lottery phase to four weeks from eight weeks.