



Necessity of the Establishment of a Financial Derivative Market in Bangladesh

Md. Habibur Rahman¹, Bijoy Chandra Das²

Department of Finance and Banking, Jatiya Kabi Kazi Nazrul Islam University, Trishal, Mymensingh-2220

Email (corresponding author): bijoycd2013@gmail.com

Abstract: Derivative instruments have been a feature of modern financial markets for several decades. They play a pivotal role in managing the risk of underlying securities such as bonds, equity, equity indices, currency, and short-term interest rate asset or liability positions. With the development of Bangladesh's market economy, it now becomes very essential to establish a financial derivative market in the country. In our article, it is has been tried to explain in detail the theoretical framework of various types of derivative and their potential usage in strengthening capital market, capital structure of commercial banks, against the fluctuation of major import (petroleum) and export (RMG) sectors, and thus turning Bangladesh economy into a strong global one. In the last part of our study, some recommendations were given suggesting phase by phase establishment of financial derivative market are included.

Keywords: Financial derivative market, Forward contract, Future contract, Option contract, Swap contract

1. Introduction

Financial derivative have a long history. Early trading started at Venice in the 12th century. Credit derivative dealt at that period took the form of loans to fund a ship expedition. The ships were insured considering the fact that it wouldn't not return. Later in the 16th century, derivative contracts on commodities emerged. Merchants then used derivative contracts to allow farmers to lock in the price of a standardized grade of their produces at a later delivery date. A number of fundamental changes in global financial markets have contributed to the strong growth in derivative markets since the 1970s. The collapse of the Bretton Woods system of fixed exchange rates in 1971 increased the demand for hedging against exchange rate risk. The Chicago Mercantile Exchange allowed trading in currency futures in the following year. Financial derivative market has recently attained the highest growth of all financial market segments. Due to innate characteristics of risk-shifting, the derivative such as financial forwards, futures, options and swaps are trading all over the world through formal Exchange Traded Markets as well as Over-the-Counter (OTC) markets. The use of such derivative instruments is getting a rapid momentum all over the world, because of the technological advancement, communication facilities, and hence, globalization of financial markets and engagement of emerging economies with this flow. The trade volume of OTC derivative is more than the exchange traded for customization of contracts according to personal needs and some other facilities.

Derivatives are the most actively traded financial instruments for ensuring efficiency and depth of capital market. Establishment of a financial derivative market improves the capital structure and profit making ability of commercial banks. Hedgers can easily use derivative as safeguard against the risks associated with their assets. Derivative market can play a pivotal role to strengthen the effect of monetary policy and absorb the foreign capital into a country as it helps bring stability in the overall financial markets. After the catastrophic fall of capital market of Bangladesh in 2010, it hasn't yet recovered yet; causing rapid decline of FDI and scarcity of innovative and versatile financial products. As derivative securities are prevailing in Bangladesh, the establishment of financial derivative market may be a proper decision for the country. At the very first part of our study, we provided the general description of derivative types and

the major participants of derivative market. In the second part, we tried to explain the importance of derivative in detail and make a theoretical framework for the potential use of such instruments to bring the market efficiency and stability, and thus attracting the foreign capital to turn Bangladesh economy into a global economy. In last part, we explained how establishment of financial derivative market in Bangladesh can reduce volatility in capital market, and bring benefit for the major exporting and importing areas. The general objective of this research is to analyze the potential benefits of the establishment of a financial derivative market in Bangladesh. On the other hand, the specific objective is to find out the major contribution of potential derivative instruments in Bangladesh.

This research is basically qualitative in nature and it is based on secondary data mostly collected from various books, journals and other publications. In addition, few quantitative and hypothetical data was used in tabular and graphic forms to visually explain theories.

2. Literature review

The derivative instruments have the innate characteristics of risk-shifting. In the development of market economy, the objective laws require the establishment of more and more financial derivative markets. Derivative markets all over the world are getting a rapid momentum. Establishment of derivative market is the objective requirement of bringing the financial stability in an economy. "Establishing derivative market will improve the capital structure and profit-making ability of commercial banks, strengthen the effect of monetary policies and absorb more international capital into a country, thus accelerating economy's future growth" (Li Tian, 2005). In a study by Michael Chui named "Derivative markets, products and participants: An overview", it has been showed some basic issues relating to the conceptual framework of derivative, their main functions, major participants as well as a simple historical background of using derivative in hedging and other purposes. In a study named "The role of financial derivative in the recent capital market condition of Bangladesh" by Md. Nazmul Hasan et al., the importance of derivative market explained as "Bangladesh has still a long way to go for ensuring a favorable condition for introduction of derivative. Derivative market should be in our long-term plan and the short-term plan should include removal of existing problems of the capital market and the commencement of liquid bond market. Some experts said that without derivative, investors walk in investment market barefooted". In remarks presented at the SDI-Bloomberg Seminar held in Buenos Aires, Argentina, it has been explained that "The driving force behind the recent growth of derivative was radical technological advancements in computer science". Here, it has been also described the main functions of derivative- "Derivative provide three important economic functions: (1) risk management, (2) price discovery, and (3) transactional efficiency".

Considering the present situation, for the country like Bangladesh, the establishment of a financial derivative market is essential in many ways. In a detailed study by Saif Rahman and M. Kabir Hassan (2011), it has been shown how and why financial derivative market in Bangladesh is necessary. They described the necessity of derivative market: "Due to the recent catastrophic fall of capital market, rapid decline in FDI and scarcity of investment opportunities in an equity centric economy, investors of Bangladesh is crying out for an innovative and versatile financial product such as derivative securities for hedging and market expansion".

3. Theoretical analysis

3.1. What is a derivative?

The Oxford dictionary defines a derivative as something derived or obtained from another, coming from a source; not original. In the field of financial economics, a derivative security is generally referred to a financial contract whose value is derived from the value of an underlying asset. A derivative derives its value from the value of some other financial asset or variable. For example, a stock option is a derivative that derives its value from the value of a stock. An interest rate swap is a derivative because it derives its value from an interest rate index. The asset from which a derivative derives its value is referred as the underlying asset. The price of a derivative rises and falls in accordance with the value of the underlying asset. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indexes. Like other contracts, derivative represents an agreement between two parties; the terms of the agreement are highly flexible and the contract has a fixed beginning and ending date. Derivative transactions are now common among a wide range of entities, including commercial banks, investment banks, central banks, fund managers, insurance companies and other non-financial corporations. Key points to remember about derivative:

- Derivatives are contracts between buyers and sellers.
- They are referred as "wasting" assets because they have a defined and limited life with a set initiation and expiration date. The value of a derivative decreases as it gets closer to the expiration date.
- Generally, payoff is determined or made at the expiration date, although this is not true in all cases.
- Sometimes no money is exchanged at the beginning of the contract.

3.2. What is the main function of derivative?

Derivatives are generally used to hedge risk, but it can also be used for speculative purposes. They allow users to meet the demand for cost-effective protection against risks associated with movements in the prices of the underlying assets. In other words, users of derivative can hedge against fluctuations in exchange and interest rates, equity and commodity prices, as well as credit worthiness. Specifically, derivative transactions involve transferring those risks from entities less willing or able to manage them to those more willing or able to do so. For example, an Asian investor who uses U.S. dollars to buy shares in a U.S. company (traded on a U.S. exchange) would be exposed to exchange-rate risk when he sells the shares and converts dollars back to her home currency. To hedge this risk, the investor could purchase derivative - currency futures - to lock in a favorable exchange rate. However, hedging and speculating are not the only motivations for trading derivative. Some firms use derivative to obtain better financing terms. For example, banks often offer more favorable financing terms to those firms that have reduced their market risks with hedging activities than to those without. Fund managers sometimes use derivative to achieve specific asset allocation of their portfolios.³

3.3 Major Types of Derivative

There are basically four types of derivative contracts. They are forwards, futures, options and swaps.

Forward Contract

The forward contract is relatively simple derivative - it is an agreement between two parties to buy or sell an asset at a certain future time at a certain price. The party that has agreed to buy has a long position while the party that has agreed to sell has a short position. The forward contracts are normally traded Over-the-Counter (OTC). This agreement puts an obligation to both counterparts to fulfill their contracts at the specified time. This is basically a contract between two (or more) parties who agree to engage in a transaction at a later date and at a specific price, which is given at the start of the contract. It is a customized, privately negotiated agreement to exchange an asset or cash flows at a specified future date at a price agreed on the trade date. It is a trade that is agreed at one point of time but will take place later time. For example, two parties might agree today to exchange 500,000 barrels of crude oil for \$42.08 per barrel three months later the day of agreement. Entering a forward contract typically does not require the payment of a fee. Generally a forward contract is an agreement made between a corporation and a commercial bank to exchange a specified amount of a currency (in the case of currency forward) at a specified exchange rate (called the forward rate) on a specified date in the future. When the corporations anticipate a future need or future receipt of a foreign currency, they can set up forward contracts to lock in the rate at which they can purchase or sell a particular foreign currency. Virtually all large MNCs use forward contracts. These contracts normally are not used by consumers or small firms. In cases when a bank does not know a corporation well or fully trust it, the bank may request that the corporation make an initial deposit to assure that it will fulfill its obligation. Such a deposit is called a compensating balance and typically does not pay interest. The most common forward contracts are for 30, 60, 90, 180, and 360 days.

Payoffs from Forward Contracts

In general, the payoff from a long position in a forward contract on one unit of an asset is

$$=S_t - K$$

Where (S_t) is the spot price of the asset at maturity of the contract and (K) is the delivery price.

Future Contract

Like a forward contract, a futures contract is an agreement to buy or sell an asset at a certain time in the future for a certain price. However, unlike forward contracts, Future contracts are normally traded on an exchange. To make trading possible, the exchange specifies certain standardized features of the contract. As the two parties do not necessarily know each other, the exchange also provides a mechanism that gives the two parties a guarantee that the contract will be honored (Hull, 2006). The largest exchanges on which futures are traded include the Chicago Board of

Trade (CBOT), the Chicago Mercantile Exchange (CME) and the South Africa Futures Exchange (SAFEX). Future contracts on currency are contracts specifying a standard volume of a particular currency to be exchanged on a specific settlement date. Thus, currency future contracts are similar to forward contracts in terms of their obligation, but differ from forward contracts in the way they are traded. They are commonly used by MNCs to hedge their foreign currency positions. In addition, they are traded by speculators who hope to capitalize on their expectations of exchange rate movements. A buyer of a currency futures contract locks in the exchange rate to be paid for a foreign currency at a future point in time. Alternatively, a seller of a currency futures contract locks in the exchange rate at which a foreign currency can be exchanged for the home currency (Jeff Madura). The fundamental difference between futures and forwards is that futures are traded on exchanges and forwards trade OTC (Over-the-Counter) market. Beside that followings are the notable differences of the two instruments:

- Futures are standardized instruments transacted through brokerage firms. The terms of a futures contract - including delivery places and dates, volume, technical specifications, and trading and credit procedures - are standardized for each type of contract. Like an ordinary stock trade, two parties will work through their respective brokers, to transact a futures trade. An investor can only trade in the Future contracts that are supported by each exchange. In contrast, forwards are entirely customized and all the terms of the contract are privately negotiated between parties. They can be keyed to almost any conceivable underlying asset or measure. The settlement date, notional amount of the contract and settlement form (cash or physical) are entirely up to the parties to the contract. That means in the case of forward contracts all the terms and conditions are privately negotiated but in the case of future contracts we can't do that. For example if a company needs the delivery of certain specified amount of currency after 33 days later, if mayn't find exactly such contract in an organized exchange. In such a case it should make a forward contract instead of buying a future contract.
- Forwards are more risky than futures. Forwards entail both market risk and credit risk. Those who engage in futures transactions assume exposure to default by the exchange's clearing house. For OTC derivative, the exposure is to default by the counterparty who may fail to perform on a forward. The profit or loss on a forward contract is only realized at the time of settlement, so the credit exposure can keep increasing.
- With futures, credit risk mitigation measures, such as regular mark-to-market and margining, are automatically required. The exchanges employ a system whereby counterparties exchange daily payments of profits or losses on the days they occur. Through these margin payments, a futures contract's market value is effectively reset to zero at the end of each trading day. This system effectively eliminates credit risk.
- Futures are settled at the settlement price fixed on the last trading date of the contract (i.e. at the end). Forwards are settled at the forward price agreed on at the trade date (i.e. at the start).
- In case of physical delivery, the forward contract specifies to whom the delivery should be made. The counterparty on a futures contract is chosen randomly by the exchange.
- In a forward there are no cash flows until delivery, whereas in futures there are margin requirements for marking to market and periodic margin calls.

Options Contracts

Options are traded both on an organized exchange and in the OTC market. There are two basic types of options such as; call options and put options. Actually the basic difference among the options and the two other derivative explained above is that, in case of options the holders have rights to exercise but in case of forwards and futures they have obligations to do that. A call option gives the holder the right to buy the underlying asset at a certain date for a certain price, specified on the date of making the contract. The party with the long position (buyer) has the ability to exercise the contract or not. A put option gives the holder the right to sell the underlying asset by a certain date for a certain price, also specified on the date of making the contract. The party with the short position (seller) has the obligation to exercise the contract if asked to do so. The date specified in the contract is known as the expiration date or the maturity date. The price specified in the contract is the exercise price or the strike price. Options are either American or European, a distinction that has nothing to do with geographical location. American options can be exercised at any time to the expiration date, whereas European options can be exercised only on the expiration date itself (Hull, 2006).

Swap Contracts

A swap is an agreement between two parties to exchange cash flows in the future. The agreement defines the dates when the cash flows will be paid. The cash flows are calculated over a notional principal amount, which is not usually exchanged between counterparties (Hull, 2006). Examples of swaps are currency swaps, interest rate swaps and

commodity swaps. An interest rate swap is an agreement between two parties to exchange interest obligations or receipts in the same currency on an agreed amount of notional principal for an agreed period of time. A currency swap is an agreement between two parties to exchange payments or receipts in one currency for payments in another. Commodity swaps are hedging instruments; one party (commodity user/buyer) agrees to pay a fixed price for a designated quantity of a commodity to the counter party (commodity producer/seller), who in turn pays the first party a price based on the prevailing market price for the same quantity (Daniel Ekerumeh,2010).

On the other hand the derivative markets can be divided into two that for exchange traded derivative and that for over-the-counter derivative. The legal nature of these products is very different as well as the way they are traded. Some common examples of these derivatives are the followings:

Table 1: Contract Types

Underlying	Exchange-traded futures	Exchange-traded options	OTC swap	OTC forward	OTC option
Equity	DJIA Index future Single-stock future	Option on DJIA Index future Single-share option	Equity swap	Back-to-back Repurchase agreement	Stock option Warrant Turbo warrant
Interest rate	Eurodollar future Euribor future	Option on Eurodollar future Option on Euribor future	Interest rate swap	Forward rate agreement	Interest rate cap and floor Swaption Basis swap Bond option
Credit	Bond future	Option on Bond future	Credit default swap Total return swap	Repurchase agreement	Credit default option
Foreign exchange	Currency future	Option on currency future	Currency swap	Currency forward	Currency option
Commodity	WTI crude oil futures	Weather derivative	Commodity swap	Iron ore forward contract	Gold option

Source: Common derivative contract types, Wikipedia

3.4. Participants in Derivative Markets

Derivative market is a market where derivative securities are traded. The largest exchanges on which derivative are traded include the Chicago Board of Trade (CBOT), the Chicago Mercantile Exchange (CME), The Chicago Board of Options Exchange (CBOE), The South Africa Futures Exchange (SAFEX). Beside that the exchanges of Australia, Singapore, Hong Kong, Korea and some other countries trade the derivative contracts. There are three broad categories of traders can be identified who participate in derivative markets: hedgers, speculators, and arbitrageurs (Hull, 2006). The three major participants in the derivative market are in it for varying reasons as discussed below; however their participation is crucial for the liquidity and volatility necessary for the operation of a derivative market (Daniel Ekerumeh, 2010).

- Arbitrageurs if placed on a risk spectrum are the risk averse participants who take positions in two or more instruments to lock in a profit. For example if the price of the same product is different in two markets, the arbitrageur will simultaneously buy in the lower priced market and sell in the higher priced one. They always try to find out the gap of prices between the two markets, if find then take the benefit from trading. Thus they actually help to make such markets more efficient.
- Speculators are positioned at the risk taking end of the risk spectrum; they bet on movements in the market and try to lock in a profit by using the leverage created by derivative contracts.
- Hedgers are risk neutral participants who use derivative to reduce their exposure to risk from future price movement in a commodity, financial security or currency market. This is done by undertaking in forward or futures contract or purchases of the commodity security or currency in the OTC forward or the organized futures market (ibid,15)

4. The efficiency of markets and derivative

The array of derivative products that has been developed in recent years has enhanced economic efficiency. Derivative have become an integral part of the financial system in the world's leading economies. "Efficient markets lead to tighter bid-ask spreads, higher volumes of trading, and greater market liquidity. In an efficient market, all information relevant for determining the value of a product is reflected in the current market price. Financial derivative represent some of the basic tools necessary in the mechanics of efficient capital markets. The array of derivative products that has been developed in recent years has enhanced economic efficiency".(Remarks presented at the SDI-Bloomberg Seminar, Buenos Aires, Argentina, 1997). It is obviously true that for sustainable economic growth and development, a stable and efficient capital market is inevitable. And for making a capital market more effective, sophisticated, viable and adoptable to the modern rapid changing competitive world, introduction of derivative securities is essential. Because, today's risks in the business arena are more complicated than it was fifty-sixty years ago. It have been may be for the introduction of freely floating exchange rate systems in 1970s and rapid growth in international trade capitalizing the benefit of modern transportation and telecommunication technologies. So if an economy wants to cope with the so much changing competitive world, it should think about the financial stability, risks sharing and market efficiency; here introduction of derivative market may be proven as vital decision. Derivative help to improve market efficiencies in various ways such as by reducing the risk for farmers, oil companies, interest rate risk for banks, etc. They allow users to meet the demand for cost-effective protection against risks associated with movements in the prices of the underlying assets. In other words, users of derivative can hedge against fluctuations in exchange and interest rates, equity and commodity prices. It is such mechanism through which parties easily can transfer their risks associated with their underlings to others. Specifically, derivative transactions involve transferring those risks from entities less willing or able to manage them to those more willing or able to do so. Derivative transactions are now common among a wide range of entities, including commercial banks, investment banks, central banks, fund managers, insurance companies and other non-financial corporations.

Li Tian (2005) in his article named "Research on necessity of the establishment of financial derivative market in China", described some key facts that indicated the crucial need of derivative market for the financial stability and economic growth. Like him, we can also point out some important facts, as followings, that may prove the establishment of financial derivative market in Bangladesh as an imperative decision for the sustainable growth and development.

4.1 Establishment of Financial Derivative Market for Strengthening Financial Market Functions

A deep financial market is considered as a nucleus of an economy. It is a matter of great regret that after more than four decades of our liberation, we are still in the nascent stage regarding the development of an efficient financial market. In Bangladesh the money market is not well developed. Again the there is no separate bond market here. Just very few bonds are traded in the secondary market. On the other hand, the condition of capital market is so volatile in nature. It is sometimes called as one of the worse markets in the world. In this regard, the establishment of a financial derivative market might be helpful in some ways, such as: the risk-shifting mechanism innately owned by the derivative instruments, can enhance the distributing function of the financial market of Bangladesh.

4.2 Establishment of Financial Derivative Market for Eluding Risks of Participators

Hedgers, speculators and arbitrageurs are the key financial market participators. They make financial market more liquid. In the case of investment and trade hedging is very common thing. "No speculations, no hedges. We need hedgers who want to shift their risks to the others. The market needs speculators, and it wants to make profit by taking the risks."(Li Tian, 2005). Many economists believe that, proper speculations can generally decrease the risk of whole market instead of increasing. So for sound development of financial market, contribution of hedgers and speculators are very important. We know the derivative such as: forward, futures, options and swaps inherently own the risk-shifting characteristics. Yet, we haven't such instruments that would provide the participators with proper mechanism of eluding risks. According to the realistic requirements of market and its participators, Bangladesh should set up a financial derivative market as soon as possible to meet the objective rules of market development.

4.3 Establishment of a Derivative Market for the Requirement of Financial Market Development

The capital market of Bangladesh is still in primary stage in respect of development. This market is so much volatile in nature. Big traders can easily manipulate the market with forming syndicate. Two major collapses, one in 1996 and another in 2010-2011, according to reports of prove-committee, were the evidence of such syndication and manipulation. The lack of deepening of market, which might be with increasing the substantial number of instruments and participators, is the prime cause of syndication, manipulation and ultimate collapses. So for deepening of financial market of Bangladesh, there is no alternative to increase the number of financial instruments as well as participators in the market. If general investors find the derivative instruments to shift their risk, they will obviously be interested to come in the market with their small amount of savings. Actually people want to come in the market. But Bangladesh hasn't able to make a good platform to motivate the small investors, who can be called as the nucleus of the financial market like ours. So the establishment of a financial derivative market would bring some new instruments in the market such as: forward, futures, options and swaps that innately own the risk-shifting characteristics. In this way, the number of instruments as well as the participators would be increased substantially. That would ultimately deepen the market.

4.4 Establishment of Financial Derivative Market for Deepening Reforms of Financial Business of Bangladesh

The deepening reforms of financial business of Bangladesh require the support of financial derivative market. Establishment of financial derivative market will promote the optimization of commercial banks' capital structure and improve commercial banks' profit-making ability. "One of the projecting problems in the operations in China's commercial banks is irrational capital structure, particularly in the proportion between the bad-loan and total capital and the capital liquidity. If the derivative market had been founded, more bounds instruments and trade-patterns would have been promoted through the effects of derivative means in securitizations, thus the goal of capital structure optimization would have been achieved" (Li Tian, 2005). Bangladesh has also similar problem in respect of capital structure. It has serious problem in the case of bad-loan, total capital and capital liquidity. Especially in state-owned banks, this condition is more serious. This country has experienced two major debacles within three-four years. One is in the case of Hall-mark and another is the case of Basic bank. The unprecedented malpractices were observed in both of the cases. We got information from a recent speech of honorable Finance Minister in the Parliament that the total amount of default loans of 56 banks operating in Bangladesh is over Tk 546.57 billion. Minister said that the state-owned Agrani Bank, Janata Bank, Rupali Bank and Sonali Bank had accumulated bad loans of Tk 226.54 billion. The amount of default loans in 39 private banks is over Tk 227.47 billion.

So only four state-owned banks have about half of the total default loan. This statistics showing the vulnerable condition of the banking sector in the country of Bangladesh. For the deepening reform of market economy, making it modernized and compatible, many economists believe that Bangladesh should grasp the opportunity of its linking with the international normal practice, forming derivative mechanism to promote the healthy development of its commercial banks. However, though still there is no derivative market in Bangladesh, the authority probably thinking slightly on the establishment of such market. BSEC has taken a step forward to establish a commodity exchange by amending the Securities and Exchange Ordinance 1969 in November 2013.

On the other hand, we have a volatile capital market which is still in a recovery phase after the 2010-11 stock market crash. Before the crash, the market experienced an astonishing growth which was not in line with the growth in real sector of the economy. As a result, the market went for a huge correction at that time and many small investors were affected badly. Even after years, investors still lack confidence in the market. Many economists think that, if the country wants to rebuild its market, where participants will come back with their full confidence level, establishment of financial derivative market might be an effective decision. Again, it is believed that, establishing financial derivative market strengthens the effect of monetary policies by providing the central bank with ample and effective information through its scientific pricing mechanism, enough operation instruments and rational expectations about markets. On the other hand, the abundance of derivative variety can effectively improve the conductive accuracy of monetary policies, just like some theory say, the more abundant the financial instruments are, the more effective the monetary policies play.

4.5 Establishment of Financial Derivative Market for the Globalization of Economy

For attracting foreign capital investment, establishment of financial derivative market is essential. Because without the strong financial viability, risk-shifting opportunities and stability in the market (that are considered as main obstacles of an economy to turn into a global one), an economy generally doesn't able to catch the eyes of the foreign investors. Report of Bangladesh bank shows that the total amount of FDIs were \$913.3million (in2010);\$1136.35million(in 2011);\$1292.54million(in 2012); \$1599.14 million(in 2013) and \$1833.87million(in 2015).Though this data showing an upward trend, economists believe that these are very small amount than the expectation. The most important problems for what the capital market of Bangladesh can't able to attract the foreign investors may be the lack of necessary market mechanisms and varieties of instruments for shifting risk. Again, some foreign investors do not think it is O.K. to enter the Bangladesh's market, considering the issues of safety and capital liquidity. Because of the lack of necessary trade-means being as the guarantee, our work is irrational in the structure of currencies, time-period, rate and market in absorbing capital thus it is decreasing the efficiency and effect of absorbing the foreign capital. Thus if Bangladesh can establish a derivative market few advantages it can get. Such as, the risk-shift mechanism in the derivative market may make foreign capital entering Bangladesh's market in the state of low-risk and help to meet its safety requirements. And meanwhile, the abundant varieties of derivative instruments will provide foreign investors with more choice of ways of entering and withdrawal to improve the liquidity and profit. That will help much foreign capital float into Bangladesh. On the other hand, the financial globalization requires ample financial market. However, the present situation in Bangladesh cannot meet such a requirement, and the key to this issue is that we do not have a derivative market with abundant instruments. So, establishing derivative market will not only make Bangladesh possess the basic conditions of financial globalization, but also help this country promote the economy development in the wave of international capital.

5. Key reasons for necessity of a derivative market in Bangladesh

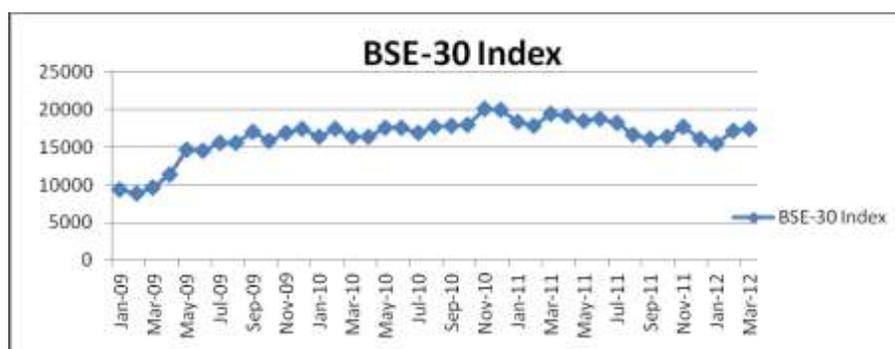
In the article named, "The Potential of Derivative Market in Bangladesh" (Saif Rahman and M.Kabir Rahman,2011), it has been described elaborately the importance of derivative market in Bangladesh. They showed some key reasons, explained in below, for what the derivative market is very essential for Bangladesh.

5.1 Reduction of Volatility in the Capital Market

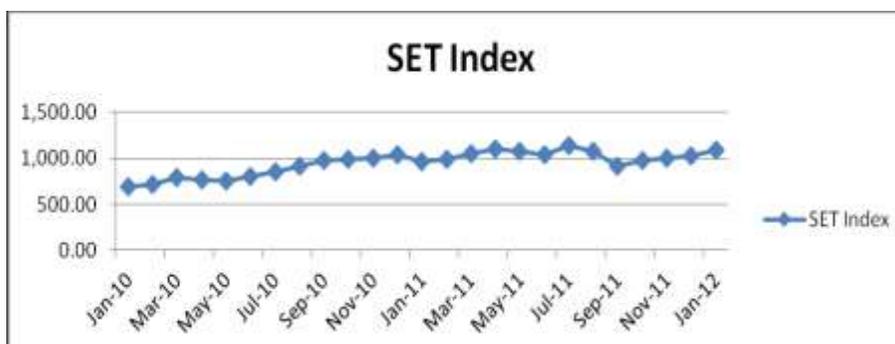
The capital market of Bangladesh is so much volatile in nature. In their study (Syed A. Basher, M. Kabir Hassan, and Anisul M. Islam,2007) empirically examines the time-varying risk return relationship and the impact of institutional factors such as circuit breaker on volatility for the emerging equity market of Bangladesh [namely The Dhaka Stock Exchange (DSE)] using daily and weekly stock returns. The DSE equity returns showed negative skewness, excess kurtosis and deviation from normality. The returns display significant serial correlation suggesting stock market inefficiency. The results also show a significant relationship between conditional volatility and stock returns, but the risk-return parameter is found to be sensitive to choice of samples and frequencies of data. Overall, the coefficient of the risk-return parameter is negative and statistically significant. In a study (Mohammad Nayeem Abdullah, Kamruddin Parvez, Moslehuddin Khaled) studied prices of 17 actively companies in the DSE from 2006 to 2010 and used three valuation ratios with an explicit corporate sector along with overall market index data and found that the Stock Market is overvalued. Syed Golam Shahjarul Alam in his study named "Recent trends in capital market of Bangladesh: critical evaluation of regulation" in 2012 made a comparison of volatility of DSE with other market in the following way and showed that the returns of DSE in comparison with Bombay stock exchange and SET index of Thailand is highly less within the time period (Dec'10-Jan'12), whereas the standard deviation (a measure of volatility) of DSE were very high in that time.

Table 1: Comparison of DSE volatility with other market

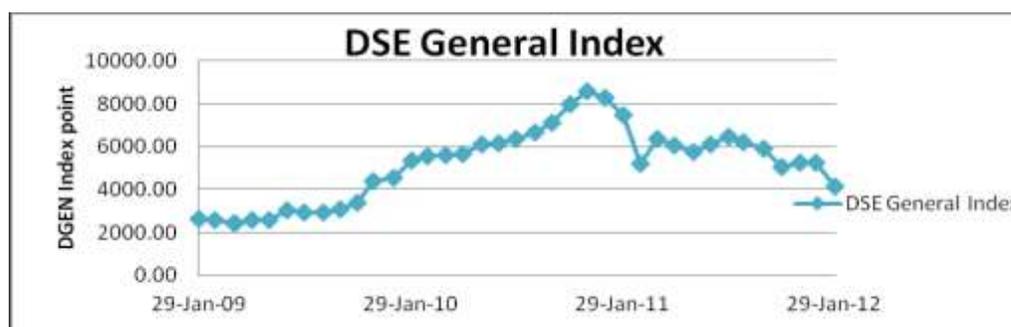
Name of Index	Index Return (Dec'10-Jan'12)	Std. Deviation of Index Return(Dec'10-Jan'12)
DSE	(50%)	11%
BSE-30	(14%)	7.8%
SET	55.62%	5.84%



Graph 1: Trend of Bombay Stock Exchange-30 (BSE-30) index



Graph 2: Trend of SET Index



Graph3: Trend of DSE General (DGEN) index

We can also observe from the above graphs, the nature of volatility of indexes (from Jan'10-Jan'12) of DSE with Bombay stock exchange and SET index of the Thailand. We see that the general index of DSE is more fluctuating than the other two. Besides that, we have seen two major collapses one is in 1996 and another in 2010. The collapse of 2010 was more dangerous. Millions of investors lost their money and came down to the street. They invested their money and finally lost everything when the bubble started to burst in December, 2010 that had started to grow from the year 2009. This time Benchmark index came down to 3616 points in early February 2012 from its highest point 8918 in December 2010.

The researchers strongly believe that because of the internal characteristics of risk-shifting of derivative instruments, establishment of such markets in Bangladesh might be very right decision not only for reduction of volatility of capital market (i.e. by increasing the number of instruments and participants and deepening of markets) in Bangladesh but also for bringing financial market stability. Though, no sophisticated mechanism in this world can be secured against the man-made disaster.

5.2 Implication of perfect portfolio

Actually in Bangladesh's financial market is still in very nascent stage of development. Here, alternative financial instruments are rare to find. There is no separate bond market. Money market is also not well-established. Investors can't apply any hedging strategy through risk-shifting instruments like derivative while they are buying risky assets. Suppose, at the time of buying a stock if a purchaser simultaneously could buy futures or options from the same

marketplace to protect his investment, the perfect implication of portfolio (comprising of risky assets and risk-free assets) could have been possible.

5.3 The possible way of protection using derivative

We have seen that the nature of volatility in DSE is very high than some other comparables. If a derivative market can be established in this country, an investor could easily be protected himself from potential loss. Suppose in December 10 a purchaser has bought 1000 stock of Beximco Ltd. with BDT40 each. The investor is concerned about a possible share price decline in two months from now and wants protection. The investor can buy February 10 put option contracts pricing of each BDT1 on Beximco Ltd. with a strike price BDT43. This would give the investor a right to sell the stocks with the strike price. Now if the price of stock on the maturity date is lower than the strike price the investor can exercise the contract by selling each with BDT43. Net profit would be $(43-40) \times 1000 = 3000 - (\text{contract's buying cost}, 1000 \times 1) = \text{BDT}2000$. But if the market price on the maturity date is higher than the strike price, investor would not exercise the contract. His loss is BDT1000 (contract's buying cost). Like options the investors can use some others derivative instruments to protect themselves against losing their investment occurring from the market volatility.

5.4 Protection in Major Export Sector (Especially RMG) Sector

The readymade garments industry acts as the backbone of our economy and as a catalyst for the development of our country. We take pride in the sector that has been fetching billions of dollars as export earnings and creating jobs for millions of people (especially women) in the country. The country with its limited resources has been maintaining 6% annual average GDP growth rate. This has been possible with the top-most contribution of RMG sector. Now we envision Bangladesh achieving the middle-income country status by 2021. We firmly believe that our dream will come true within the stipulated time and the RMG industry will certainly play a crucial role in materializing the dream. RMG industry is now the single biggest export earner for Bangladesh. The sector accounts for 81% of total export earnings of the country. When the jute industry started losing its golden days, it is the RMG sector that replaced it. The apparel industry of Bangladesh started its journey in the 1980s and has come to the position it is in today. Despite the epic growth of our RMG industry, and its bright prospects, challenges are still there. One of the biggest challenges currently faced by our RMG industry is to ensure workplace safety and better working conditions for the millions of garment workers. Two major accidents, the Tazreen fire and the Rana Plaza collapse, have brought the issue of workplace safety to the fore and led all stakeholders to act accordingly. However, the RMG sector is export oriented in Bangladesh. Its export of final products as well as import of raw materials both are susceptible to exchange rate fluctuation. The incomes and costs of RMG sector changes highly due to the changes in exchange rate. In this context, the owners of garments can't protect themselves through hedging or other such strategy using any instrument like derivative which have innate characteristics of risk-shifting. Though, to mitigate exchange rate risk RMG exporting companies historically using two tools like selling the rights of Letter of Credit (LC) and forward contract over the exchange rate, these have some problems. "The transfer of LCs has its own disadvantage of high processing fees that can amount from 3% to 5% of the total LC amount. Again, forward contract on the foreign exchange often become hassling due to the rigidity of regulation of the central bank". (Saif Rahman and M. Kabir Hassan, 2011). They showed an example of how exporter can use the range forward contract to protect themselves against exchange rate risks.

Table 2: A hypothetical transaction summary

Date	USD Volume	Spot Rate(SR)	Exercised Rate(XR)	BDT@SR	BDT@XR	Actual Inflow
31 Jan,15	100,000	78.25	78.28	7825,000	7828,000	7828,000
28 Feb,15	100,000	78.31	78.36	7831,000	7836,000	7836,000
31 Mar,15	100,000	78.44	78.42	7844,000	7842,000	7844,000
30 Apr,15	100,000	78.45	78.48	7845,000	7848,000	7848,000
31 May,15	100,000	78.52	78.49	7852,000	7849,000	7852,000
			Total:	39197,000	Total:	392,08,000
					Loss Avoided:	13,000

Suppose a Range Forward Booking processed in order to hedge the exchange rate risk during the period January to May 2015 for an amount of USD0.5 million. The amount is a limit and design of the contract allows exercising the right of converting certain amount of US dollar at the floor rate on exercise dates as long as the cumulative amount doesn't exceed 0.5 million. The table shows that the company using Ranged Forward Contract has been able to avoid loss of BDT13000, which could have been much higher depending on the nature of volatility in the rate of exchanges. Hence derivative can act as a protection in any major swing exchange rates.

5.5 Protection in Major Import Sector (Import of Petroleum) Sector

Petroleum is a principal commodity for Bangladesh. The national demand of this product is entirely met by import. Bangladesh's petroleum import in mainly consist of the refined oil products and comparatively a very little crude oil is imported as the country doesn't have an established industry of oil refining. Considering the entire national import of any given year, the petroleum product as well as the machinery and equipments are the highest contributors in the whole import amount. Petroleum commodities are highly price inelastic. Its price is so much volatile but demand is not. That's why every country is to bear the consequences of the rapid changes in price of this commodity. To hedge against such a risky trend in petroleum prices globally futures, options and swap contracts are used. Two major exchanges dealing with energy derivative are New York Mercantile Exchange and London International Petroleum Exchange. (Rahman and Hossain, 2011). If Bangladesh could able to establish derivative market, it could have been able to use various customized derivative instruments to hedge import risks.

6. Recommendations

The following recommendations are required to consider:

- As it is the first time to establish a derivative market in Bangladesh, an advisory committee can be formed to conduct a feasibility study. This committee may be represented from all stakeholders and analysts. The committee may further make an analysis about probable benefit of derivative market in Bangladesh, current and required capital market structure, and prepare a comprehensive roadmap for successful introduction;
- For an efficient derivative market, a liquid financial market is required. The government must take necessary steps to make the financial market of Bangladesh highly liquid;
- Restructuring of (BSEC) Bangladesh Security Exchange Commission is required. Comprehensive inspection of the activities of this organization is required;
- The opinion of stakeholders and making them aware of the derivative instruments are essential. Seminars, workshops, training etc. may be arranged to make such awareness of stakeholders - speculators, hedgers, regulators and others;
- Deepening of capital market is required. It can be done by increasing participants, numbers of shares in the market, attracting more people in the market, proper governance, ensured scientific price, low level corruption and manipulation etc;
- Ensuring proper co-ordination between BSEC, secondary and other markets and ensuring strong regulations;
- Upgrade and sophistication of infrastructure are required. Easy movement of capital between different market and currencies is essential to eliminate price discrepancies "Emerging Derivative Market in Asia". These are: (i) a deep liquid cash market supported by market-determined prices, (ii) how much regulation is needed in derivative markets and (iii) what infrastructure is necessary. The authority must analyze these three crucial issues deeply before proceeding.

7. Conclusion

Financial derivative provides risk management tools as well as alternative investment opportunities to market participants. Financial derivative have a long history of use. It started its journey in 12th century in Venice. However, after the inception of freely floating exchange rate in 1971, the usage of such instruments overwhelmingly increased. At present, the growth of derivative market in the world is highest comparing to all of the financial market segments. Derivative market can play a pivotal role to strengthen the effect of monetary policy and absorb the foreign capital into a country as it helps to bring stability to the overall financial markets. It can contribute to make efficient capital structure and increase profit making ability of commercial banks. Derivative market contributes to deepen the capital market by its innate mechanism of risk-shifting and increase the number of participants. After the catastrophic fall of capital market of Bangladesh in 2010, there was rapid decline of FDI and there was also scarcity of innovative and

versatile financial products such as derivative securities are prevailing in Bangladesh, the establishment of financial derivative market may be a proper decision for Bangladesh as soon as possible. If the country can't establish such market, its backward pace comparing to other participants of the world competition may be inevitable. Hence, Bangladesh should take steps now to establish a financial derivative market but it should be done in phase by phase manner.

References

- Tian, Li, 2005, "Necessity of Establishment of Financial Derivative Market in China", The Journal of American Science, 1(1).
- Rahman, Saif and M. Kabir Hassan, 2011, "The Potential of Derivative Market in Bangladesh," Journal of economic co-operation and development, 97-144
- Hull, C., John, 1998, "Introduction to Future and Options Markets (Third Edition)", Prentice Hall.
- Chui, Michael, "Derivative markets, Products and Participants: An Overview," Bulletin No. 35, IFC
- Hasan, Nazmul, M., Arif Rana and Nazia Nabi, "The Role of Financial Derivative in Recent Capital Market Condition of Bangladesh,".
- "The Role of Future & Derivative in an Emerging Economy," Remarks presented at the SDI-Bloomberg Seminar, Buenos Aires, Argentina, October 15, 1997
- Bangladesh bank, (FY 2015), FDI Inflows.
- Aduodeh, Daniel, E., 2010, "Developing a Derivative Securities Market in Ghana: Requisite Conditions," Ashesi University College.
- Easwaran, Salvadi, R., and Ramasundaram, P. "Whether Commodity Futures Market in Agriculture is Efficient in Price Discovery? — An Econometric Analysis," Agricultural Economics Research Review, Vol. 21 (Conference Number), 2008, pp: 337-344