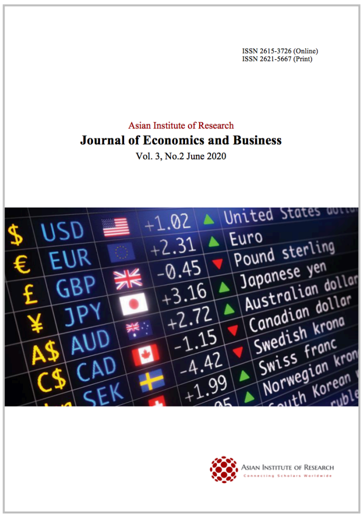


Journal of Economics and Business

Islam, Hasibul, Rana, Masud, Sarker, Nayan Kumar, and Siddique, Md. Abu Bakor. (2020), Does Bangladesh Need to be Established Derivatives Markets? In: *Journal of Economics and Business*, Vol.3, No.2, 625-636.

ISSN 2615-3726

DOI: 10.31014/aior.1992.03.02.226

The online version of this article can be found at:
https://www.asianinstituteofresearch.org/

Published by:
The Asian Institute of Research

The Asian Institute of Research *Journal of Economics and Business* is a peer-reviewed International Journal. The journal covers scholarly articles in the fields of Economics and Business, which includes, but not limited to, Business Economics (Micro and Macro), Finance, Management, Marketing, Business Law, Entrepreneurship, Behavioral and Health Economics, Government Taxation and Regulations, Financial Markets, International Economics, Investment, and Economic Development. As the journal is Open Access, it ensures high visibility and the increase of citations for all research articles published. The *Journal of Economics and Business* aims to facilitate scholarly work on recent theoretical and practical aspects of Economics and Business.

ASIAN INSTITUTE OF RESEARCH
Connecting Scholars Worldwide

The Asian Institute of Research
Journal of Economics and Business
Vol.3, No.2, 2020: 625-636
ISSN 2615-3726

DOI: 10.31014/aior.1992.03.02.226

Does Bangladesh Need to be Established Derivatives Markets?

Hasibul Islam[1], Masud Rana[2], Nayan Kumar Sarker[3], Md. Abu Bakor Siddique[4]

[1] Research Fellow, Department of Business Administration, Pabna University of Science and Technology, Bangladesh. Email: hasibulislamshanto143@gmail.com
[2] Assistant Professor, Department of Business Administration, Pabna University of Science and Technology, Bangladesh. E-mail: masud7648@gmail.com
[3] Research Fellow, Department of Business Administration, Pabna University of Science and Technology, Bangladesh. Email: nayansarker6472@gmail.com
[4] Research Fellow, Department of Business Administration, Pabna University of Science and Technology, Bangladesh. Email: bakor1304@gmail.com

Abstract
Derivatives are very cardinal agreement, not just for the purpose of investors but for the overall economies. They excellently affect the general execution of a nation's economy and along these lines the global economy. The world derivative markets are gigantic and it has developed widely in the last decades in both developed economy and rising economy. Derivative markets protect bonds, currency, equity, and short-term interest rate assets from various risks. Bangladesh is a developing country it has an emerging economy. It is necessary to establish derivative market in Bangladesh. In our article, we discuss about theoretical framework such as different derivative products, benefits, and limitations of derivative markets. We also analyze six countries (Australia, Canada, Hong Kong, India, Japan, and US) derivative annual turnover. We see both exchange-traded derivative turnover and over-the-counter turnover. We find that every countries annual turnover increase in present year as compared to previous year. In the last part of our study, we are recommending some essential requirements sequentially to establish derivative market in Bangladesh.

Keywords: Capital Market, Derivatives Markets, Economic Growth, Financial Instruments

1. Introduction

Derivatives have recently become an essential feature of global financial development. The foundation of financial derivative markets has been significant improvement pattern in financial markets in the course of recent years. Financial advancement and market demand accelerated the growth of derivative trade. Financial derivatives have a long story. In 12th century, early trading started at Venice. At that time, credit derivative arrangements appeared as advances to subsidize transport campaign with some protection on the ship not returning. Later in 16th century derivatives agreements on commodities come out. Since 1970s, various principles changes in global financial markets have added to the strong development in derivative markets. The breakdown of the Bretton Woods system of fixed exchange rates in 1971 expanded the demand for protection against exchange rate risk. The next year Chicago Mercantile Exchange permitted exchanging in currency futures. US Federal Reserve (FED) developed different derivatives markets by changing its monetary policy target instrument. The adoption of a target for money expansion by the FED in 1979 has prompted expanded interest-rate volatility of Treasury bonds. That in turn increased the need of derivative to protection against unfavorable movements in interest rate. The US Federal Open Market Committee moved to straightforward state its target for federal funding rate, a policy that encourages the increase of derivatives in federal fund rates after 1994. There are many financial crises occur in 1990s, which are often conducted by an acute expansion of corporate bankruptcy, greatly expanding the need of worldwide investors for hedging in opposition to credit risk (Rahman and Das, 2015). This paper aims to show the positive scenario of establishing derivative market in Bangladesh. For this, at first we sum up the hypothetical ideas of derivatives markets, types of derivatives, advantages, and limitations of derivatives. At that point, the rationale for building up derivatives market in Bangladesh is presented.

1.1 Research objectives

i. To examine the advancement of different derivative products.
ii. To overview of the average turnover of derivative market in some developing and developed countries.
iii. To examine the consequences of the derivatives markets in Bangladesh.
iv. To propose some recommendation about establishment of derivatives markets in Bangladesh.

2. Literature Review

Derivatives are the financial instruments whose value depends on underlying variables. Prices of traded assets are the underlying variables. The example of derivative instrument is a stock option. Because the value of the derivative is dependent on the price of a stock. Be that as it may, Derivatives are normally at some points rely on any factors, from the value of swine to the quantity of snow falling at an exact ski resort (John C. Hull, 2009). Sahoo (1997) discussed about the legal framework for derivatives trading. He said derivative markets some time complicated part of its regulatory structure when it is used as derivative trading. The basis of regulatory structure is to persuade the efficiency and competition instead of preventing it. Greenspan (1997) also said the most vital event in finance throughout there are extraordinary development and growth of financial derivative in the past decades. The economic growth of a country is also increasing by the derivative market. In the world everywhere, derivative markets have gotten a speedy momentum so that average derivative turnover growing faster. If we need financial stability in a country, we have to establish derivative market. If one country establishes derivative market, they can improve in many sectors such as capital structure and profit-making ability of banks, and occupy additional international capital into a country. In this way their economic growth increases faster. (Li Tian, 2005).

There is a relationship between the increasing number of the derivatives market and the real economy (Sipko, 2011). He focuses that the trading volume of the derivatives market has accrued considerably in recent decades which this increase contributed significantly to the worldwide financial crisis. The author conjointly compares the growth of nominal and real GDP with the worldwide derivatives market, and specially the over-the-counter market (OTC).

Oliver Fratzscher (2006) discussed about his research paper that, Asian derivative markets return to seventeenth century rice trading in Japan and have increased rapidly over the last decade. Derivative contracts enable the trading of agricultural or financial instruments within the future at planned costs. Those standardized contracts that are traded at an organized exchange are referred to as exchange-traded derivatives (ETD) and those customized contracts that are traded individually are referred to as over-the-counter (OTC) derivatives. He also said that financial sector across region of Asian derivative markets are safe and efficient enough. For example witnessed with cooperation on reserve management, safety credit lines among central banks, and developing second Asian bond fund. Derivative trading increasingly transferring towards some of the worlds largest and most innovative exchanges. This are considering to grow new strategic partnerships Dangers are still hiding in shore side and unregulated markets, especially it occurs in the low transparent credit derivative products.

Sendeniz-Yüncü et al. (2018) mention in their paper that a useful derivatives market makes it possible for company to share risks efficiently and permits them to conduct projects with higher risk and consequently to increase economic growth. At the same time, investors, consumers, and producers, can trust on the derivatives market as an information media that reflects equilibrium prices. Economic growth may occurs by taking right decisions, stimulating the efficiency of resource distribution. They utilized time series information to see the connection between the future markets and economic advancement in both developed and emerging nations. They studied about 29 out of the 32 countries and discovered that the two variables of concern have a long-run relationship. The middle-income or developing countries have a Granger-causality result from the futures market. The high-income or developed countries economic growth is reversed than middle- income countries. The futures market development and economic growth have opposite unidirectional relationship. The authors distinguished this relationship. On the one hand, direction starts with the countries whose per capita GDP is low but economic growth of future market development. On the other hand, Economic growth leads to the development of futures market if that have a relatively high real per capita GDP.

Panel vector autoregressive method and the Granger causality approach are used by Khan et al. (2017), Vo et al. (2019) show that here is a bidirectional Granger causality between the derivatives market and economic growth, although the causal relation differs between high- and middle-income or developing and developed countries.
There are many theoretical and empirical research discussed about there is a link between economic growth and financial development that surely include the derivatives market. (Kim et al. 2010) mention that macroeconomics determinants are used separately.

Vo et al. (2018) discussed their article derivatives market development has played an increasingly significant role in the financial market. The derivatives market serving not only effective hedging instrument but also an essential provider of quick information. The derivatives markets are increasing the efficiency of financial market activities. Some researcher studied that there is a positive effect of economic growth and minimizing uncertainty in the economy using risk-hedging instruments. Economic growth may be occurred by accelerating capital accumulation, creating investment more efficient by offering more diversity in risky projects. They also said that if one country developed derivative market, there economic growth expanding long run.

Turbeville (2013) said that Derivatives were aggressively produced and traded by big financial companies that were influential trading. The participants in this market sometime are not good at efficiency in the tasks required to manage the markets. High technology, analytical abilities, and proper knowledge can able to increase efficiency of the participants. This knowledge are helpful for making profit of an institution.

Gogoncea and Paun (2013) have studied about the advantages and disadvantages of using derivatives. They said derivatives are the protecting instruments that may be found in an investor's portfolio. By their own nature, these contracts meet a lot of specialized needs that arise within the current context of world financial system. Derivatives allow companies and individuals to hedge risks and handle risks in an effective manner. Besides protecting risks, they can also make firm-wide risk, especially if the firm uses derivatives episodic. Risk increase if there has no experience of using derivatives. For the economic environment in general, the collapse of a big derivatives dealer could produce systemic risk. However, the derivatives market assist in building a more efficient economy.

There were many researches are conducted about establishment of derivatives market in Bangladesh. They were discussed about the importance, risks, and advantages of derivative markets. Nazmul Hasan et.al discussed the importance of derivatives. They also said that in this century Bangladesh is far away from the positive effects of derivative markets. Our long-run plan should be derivative market. The short-run plan should embody dismissal of present issues of the capital market and the other important task is initiating liquid bond market. Some specialists aforesaid that while not derivative, investors feel insecure when investing in a market. There are many authors who have discussed about the importance of derivative market they also discussed the establishment of derivative market is necessary in Bangladesh. There are many positive results have found by establishing derivative market including economic growth and financial development. Derivatives can help to protecting risk of emerging country like Bangladesh.

3. Methodology of the Study

This study is mainly based on secondary data. Secondary data is collected from articles, newspapers, magazines and related websites. Various books and articles related to financial derivatives were also the valuable sources. For the aim of the literature of the study, we have studied different types of articles, research papers, journals, bools etc. After collecting of relevant data and information from reliable sources, this information is analyzed, organized through tables and graphs to obtain the best results. To illustrate data Microsoft Office package is exercised here systematically.

4. Theoretical framework

Exchange traded derivatives and over the counter (OTC) derivatives are the two group of derivatives contracts.
Exchange-traded derivatives: Exchange-traded derivatives (ETD) are the instruments that are buying or sell by means of particular derivatives trade or different trades. A derivatives market is a place where people buy and sell standardized contracts known as trading. A derivatives trade performs as a middleman to every single associated exchange and takes the beginning edge from each side of the exchange to perform as an assurance (eduinfomatics).

Over-the-counter: Over-the-counter (OTC) derivatives are instruments that are buy and sell that are also privately negotiated instrument. Buy and sell occur directly in this instrument. Buy and sell occur between 2 parties, while not going through a trading or other intermediary. The OTC derivative market is the biggest market for derivatives. The OTC derivative market is generally not under control with respect to the declaration of information between the parties (Lumen).

Classifications of Derivatives: There are 4 kinds of derivatives contracts: forwards; futures; options, and swaps. Forward contracts- a forward contract may be a non-standardized contract between two parties to buy or sell an asset at a specified future time, at a price agreed upon today. The party agreeing to buy the underlying asset in the future assumes a long position, and therefore the party agreeing to sell the asset in the future assumes a small position. Future contracts- futures contract is a standardized agreement written by a clearinghouse that executes an exchange where the contract can be buy and sell. Options contracts- an options contract is an agreement between a buyer and seller that gives the buyer of the option the right to buy or sell a particular asset at a belated date at an agreed upon price. Swaps contracts- swaps are derivatives in which analogues exchange cash flows of one party's financial tool for those of the other party's financial tool.

4.1 Why Derivatives Markets Are Important?

There are many author discuss about advantages of derivatives markets. That are given below:

Points	Bright Sides
Risk management	Risk management or hedging risk is the foremost necessary objectives of the derivatives market Risk management is the method of identifying how much risk we are expecting, determining the existing level of risk and shifting the risk. Risk can be managed by two ways: hedging and speculation. (Investopedia)
Price discovery	Futures market prices rely upon a continuous flow of information from around the globe and need a high level of clarity. A wide range of elements impact on the supply and demand of assets. These elements are climate changes, political problems, loan default, refugee movement problem, land recovery and environmental health. Thus, the present and future prices of the primary asset on which the derivative agreement is formed have a great impact on demand and supply. This type of information can changes the price of the product. The way people occupy it also constantly changes the price of a commodity. This method is called as price discovery. (Investopedia)
Market efficiency	Derivative market increase the efficiency of financial markets. By using derivative contracts, one can reproduce the reward of the assets. Therefore, the prices of the

	underlying asset and the associated derivative tend to be in equilibrium to avoid arbitrage opportunities. (CFI)
Reduce market transaction costs	Derivatives are the instruments that may help as an insurance or risk manages tools. In this instruments cost of trading may be lower or investor may not find it economically viable to purchase such risk management tools for their conditions.
Access to unavailable assets or markets	Derivatives can help organizations or companies get access to otherwise unavailable assets or markets. By using interest rate swaps, a company may acquire a more beneficial interest rate relative to interest rates available from direct borrowing. (CFI)
Capital intermediation	The capital intermediation function, the core social value afforded by the financial system, permits investment funds to be deployed to productive functions. One part of this method is just matching investors up with capital demand. However, the needs of investors and consumers of capital are often not the same. For instance, investors may want to lend at floating rates of interest whereas a borrower might want to have a fixed rate. A giant part of the services provided by capital intermediaries is to reconcile these differences (Wallace C. Turbeville, 2013)

Beside the benefits there are some limitations involved in financial derivatives that are given below:

4.2 Limitations of Derivatives Markets:

Points	Limitations
High risk	The high volatility of derivatives exposes them to probably huge losses. The sophisticated style of the contracts makes the valuation very difficult or even not possible. Thus, they bear a high inherent risk. (CFI)
Speculative features	Derivatives are widely considered as a tool of speculation. Due to the very risky nature of derivatives and their unpredictable behavior, unreasonable speculation could result in huge losses. (CFI)
Counter-party risk	Derivatives traded on the exchanges typically go through a thorough due diligence method, some of the contracts traded over-the-counter do not embody a benchmark for due diligence. Thus, there is a possibility of counter-party default. (CFI)
Liquidity risk	Liquidity risks are present for investors who want to complete a trade before its maturity. However, doing so presents big bid-ask spreads and should result in inefficient, large costs. (The new savvy)
Interconnection risks	Derivatives rely on its underlying assets' performance. Beside from its assets, it is also affected by external grounds. External factors and all the assets in a derivative are all interconnected. (The new savvy)

4.3 What are the derivative products: There are some derivative products that can be traded. Oliver Fratzscher (2006) discussed about derivative products in Asia in his journal. He said that there are five main derivatives product traded in Asian markets:

- *Foreign Exchange derivatives:* A foreign exchange derivative is a financial derivative whose return rely on the foreign exchange rate(s) of 2 (or more) currencies. These instruments are generally used for currency speculation and arbitrage or for hedging (protecting) foreign exchange risk. Oliver Fratzscher (2006) said that Asian foreign exchange markets are the biggest market within the world. Foreign exchange derivatives covered one third of the worldwide markets
- *Interest rate derivatives:* Interest rate derivative is a financial tool with a value that is linked to the movements of an interest rate or rates. Interest rate derivative include forwards or futures, options, or swaps contracts. Interest rate derivatives protect investors, banks, institutions, and individuals against fluctuation in market interest rates by using hedges; however, they can also be used to increase or refine the holder's risk figure or to speculate on rate moves. According to Oliver Fratzscher (2006), less than 5% of the world markets with a stagnating trend in over-the-counter markets and migration towards exchange traded markets.

- *Equity derivatives:* An equity derivative is a financial tool whose value is depend on equity movements of the rudimentary asset. For example, equity derivative is a stock option; price changes of primary stock have a great impact on its value. An investor hedges risk by using equity derivative that are related to taking big or small positions in stock. The investors also use speculation on the price changes of the primary assets. Equity derivatives have witnessed the most rapid growth, often doubling every two to three years, they are mostly exchange traded derivative markets with US, Canada, and Australia showing the most impressive recent growth.
- *Commodity derivatives:* Commodity derivatives are financial tools whose value depends on rudimentary commodities, like oil, gas, metals, agricultural materials, and minerals. Other assets such as exhalation buy and sell credits, freight rates and even the weather can also be a commodity derivatives. China has a history of commodity derivatives. Asia has third largest derivative contract called as Dalian Commodity Exchange.
- *Credit derivatives:* A credit derivative is a financial instrument that allows parties to handle their exposure to risk. Credit derivative comprising of a personally held, negotiable agreement between two parties in a creditor/debtor relationship. It permits the creditor to transfer the risk of the debtor's default to a third party. 10% of the credit derivative market is found in Asia.

4.4 Benefits of Derivatives in Bangladesh: Derivatives have become very vital tools in the Asia for transferring risks from one entity to another. Derivatives markets are growing faster in many developing countries. Sultana et.al (2014) have discussed their paper about the benefits of derivatives. We are discussed benefits of derivatives earlier in a table. Now we discuss about the possibility, good sides, and overcoming limitations of derivatives in Bangladesh from different viewpoints. SEC (Securities & Exchange Commission) Bangladesh has the power that can establish Derivatives Market. According to SEC‘s view point they told that today the full focus is stock exchange to the individual investors, organizations and companies. However, consciousness and education among investors are important. According to National Stock Exchange of India, they mention that overall amount of trade in derivatives are mostly occurred by the equity derivative product. Like any, one investor who invested in both stock exchange and an indexed market of securities. It is protecting risk hinge on index. Therefore, presently the investor can gain hedging for that product market though they are not making profit. Derivatives Market have different types of investors. Speculators- speculators is that kind of investor who want to take risks. Hedger- Hedger is that kind of investor who want to avoid risks. Arbitragers- arbitragers is that kind of investors who want to utilize short-term fluctuations.

5. Results and discussion

5.1 Results and discussion

In the below table and we discuss about six countries Exchange-traded and OTC derivatives market. In the below we are comparing previous and present situation of derivative market in six country.

Table 1: Exchange-traded futures and options, by currency
Notional principal, in billions of US dollars

	Open interest		Daily average turnover	
Interest rate	Dec-18	Dec-19	Dec-18	Dec-19
Australian Dollar	1352	1572	142	157
Canadian Dollar	753	1041	102	115
Hong Kong Dollar	0	0	0	0
Indian Rupee	0	1	0	0
Yen	203	132	47	48
US Dollar	68093	68216	6186	3970

Source: Bank for International Settlements

According to Bank of International Settlements (BIS) statistics of Dec-2018 and Dec-2019, we see that in the above table open interest of Exchange-traded futures and options, by currency in interest rate. Table 1 shows that

Open interest of the Australian dollar in Dec-18 was 1352 billion dollars and that was increased in Dec-19 at 1572 billion dollars. In Canadian currency, open interest was 753 billion dollars in 2018 and that was increased by 1041 billion dollars in 2019. In Hong Kong dollar there is no change in open interest. In Indian Rupee, there was 0 open interest in 2018 and that was increased 1 billion dollar in 2019. In Japanese yen, open interest was 203 billion dollars and that was decreased by 132 billion dollars. In US Dollar, open interest was 68093 billion dollars in 2018 and that was increased by 68216 billion dollars in 2019.

Table 1 also shows that the daily average turnover in Dec-2018 and Dec-2019. We see that daily average turnover of Australian dollar in Dec-18 was 142 billion dollars and that was increased in Dec-19 at 157 billion dollars. In Canadian currency, daily average turnover was 102 billion dollars in 2018 and that was increased by 115 billion dollars in 2019. In Hong Kong dollar and Indian Rupee there was no change in daily average turnover. In Japanese yen, daily average turnover was 47 billion dollars and that was increased by 48 billion dollars. In US Dollar, daily average turnover was 6186 billion dollars in 2018 and that was decreased by 3970 billion dollars in 2019.

We can see in the above table open interest was increased in 2019 at Australia (220bn), Canada (288bn), India (1bn), and US (123bn). On the other hand, open interest was decreased in Japan (71bn). Again, daily average turnover was increased in 2019 at Australia (15bn), Canada (13bn), and Japan (1bn). On the other hand, daily average turnover was decreased in US (2216bn).

Table 2: Exchange-traded futures and options, by currency
Notional principal, in billions of US dollars

	Open interest		Daily average turnover	
Foreign exchange	Dec-18	Dec-19	Dec-18	Dec-19
Australian Dollar	14	17	9	8
Canadian Dollar	18	19	7	7
Hong Kong Dollar	0	0	0	0
Indian Rupee	6	13	12	12
Yen	42	36	18	18
US Dollar	382	374	159	147

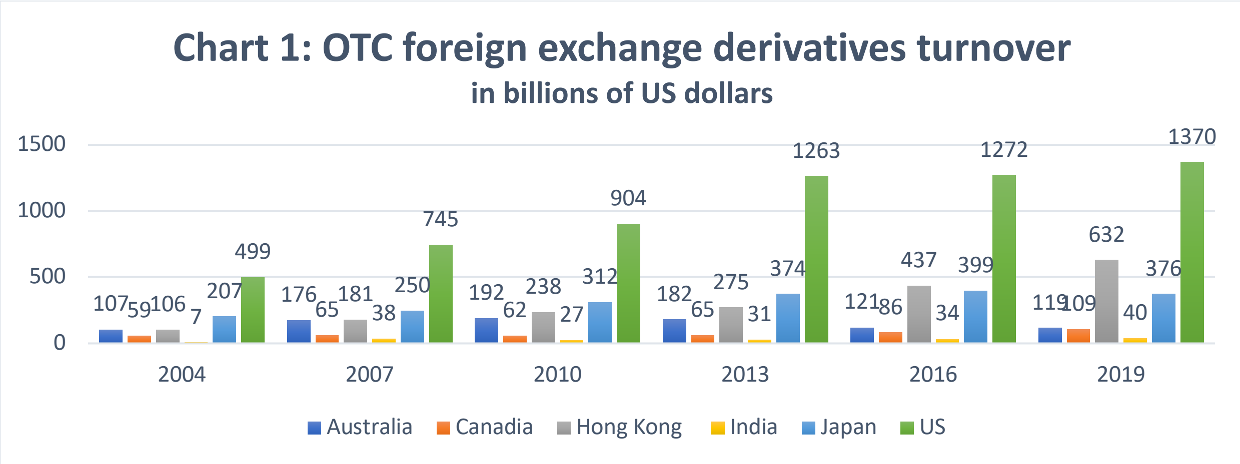
Source: Bank for International Settlements

According to Bank of International Settlements (BIS) statistics of Dec-2018 and Dec-2019, we see that in the above table open interest of Exchange-traded futures and options, by currency in foreign exchange. Table 2 shows that Open interest of the Australian dollar in Dec-18 was 14 billion dollars and that was increased in Dec-19 at 17 billion dollars. In Canadian currency, open interest was 18 billion dollars in 2018 and that was increased by 19 billion dollars in 2019. In Hong Kong dollar there is no change in open interest. In Indian Rupee, open interest was 6 billion dollars in 2018 and that was increased by 13 billion dollars in 2019. In Japanese yen, open interest was 42 billion dollars and that was decreased by 36 billion dollars. In US Dollar, open interest was 382 billion dollars in 2018 and that was decreased by 374 billion dollars in 2019.

Table 2 also shows that the daily average turnover in Dec-2018 and Dec-2019. We see that daily average turnover of Australian dollar in Dec-18 was 9 billion dollars and that was decreased in Dec-19 at 8 billion dollars. In Canadian currency, daily average turnover was constant 7 billion dollars in 2018 and 2019. In Hong Kong dollar there is no change in daily average turnover. In Indian Rupee, daily average turnover was constant 12 billion dollars in 2018 and 2019. In Japanese yen, daily average turnover was constant 18 billion dollars in 2018 and 2019. In US Dollar, daily average turnover was 159 billion dollars in 2018 and that was decreased by 147 billion dollars in 2019.

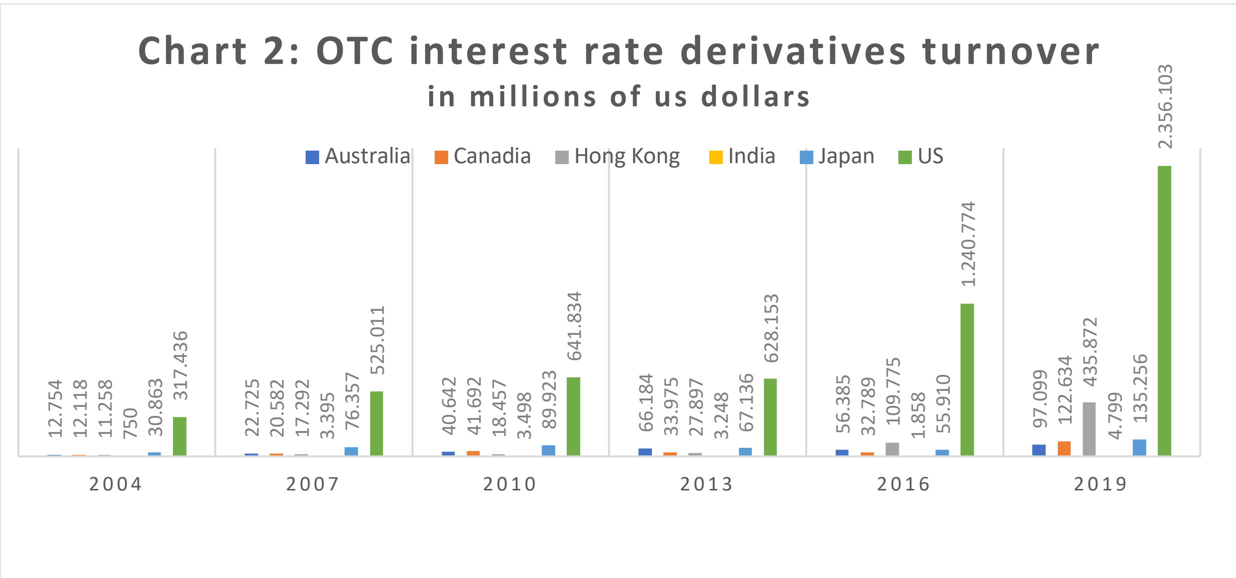
We can see in the above table open interest of foreign exchange was increased in 2019 at Australia (3bn), Canada (1bn), and India (7bn). On the other hand, open interest was decreased in Japan (6bn) and US (8bn). Again, daily average turnover was decreased in 2019 at Australia (1bn). Daily average turnover was constant in

2019 at Canada (7bn), India (12bn), and Japan (18bn). On the other hand, daily average turnover was decreased in US (12bn).



Source: BIS Triennial Central Bank Survey 2019

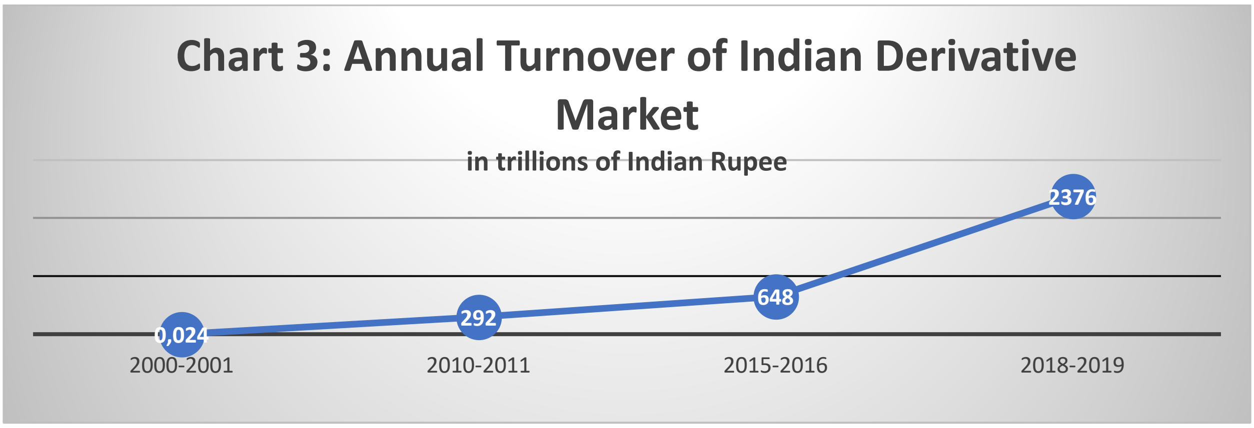
In the above chart, we can see that OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 at Australia, Canada, Hong Kong, India, Japan, and US. In Australia OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 107bn, 176bn, 192bn, 182bn, 121bn, and 121bn dollars respectively. In Canada OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 59bn, 65bn, 62bn, 65bn, 86bn, and 109bn dollars. In Hong Kong OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 106bn, 181bn, 238bn, 275bn, 437bn, and 632bn dollars. In India OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 7bn, 38bn, 27bn, 31bn, 34bn, and 49bn dollars. In Japan OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 207bn, 250bn, 312bn, 374bn, 399bn, and 376bn dollars. In US OTC foreign exchange turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 499bn, 745bn, 904bn, 1263bn, 1272bn, and 1370bn dollars. In the chart, we can also see that in each country, OTC foreign exchange turnover increased by 2019 compared to 2004.



Source: BIS Triennial Central Bank Survey 2019

In the above chart, we can see that OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 at Australia, Canada, Hong Kong, India, Japan, and US. In Australia OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 12754m, 22725m, 40642m, 66184m, 56385m, and 97099m dollars respectively. In Canada OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 12118m, 20582m, 41692m, 33975m, 32789m, and 122634m dollars. In Hong Kong OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 11258m, 17292m, 18457m, 27897m, 109775m, and 435872m dollars. In India OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 750m, 3395m, 3498m, 3248m, 1858m, and 4799m dollars. In Japan OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 30863m, 76357m, 89923m, 67136m, 55910m, and 135256m dollars. In US OTC interest rate turnover in 2004, 2007, 2010, 2013, 2016, and 2019 was 317436m, 525011m, 641834m, 628153m, 1240774m, and 2356103m dollars. In the chart, we can also see that in each country, OTC interest rate turnover increased by 2019 compared to 2004.

In the above table 1 and table 2 have shown that almost every country open interest and daily average turnover of interest rate and foreign exchange are increased in the present years compared to past years. Chart 1 and chart 2 also shows that OTC foreign exchange and OTC interest rate is also increased in the present years compared to past years. On the developing country, Bangladesh needs to establish derivatives markets. Derivative market increase the economic growth of a country. There are many authors have found a positive relationship between the development of the derivative market and economic growth. India is the Bangladesh's neighbor country. According to National Stock Exchange in India there is gradually increasing in annual turnover of derivatives. We can also see in the chart given below.



Source: National Stock Exchange

Chart 3 shows that the annual turnover of derivatives market on NSE was Rs0.024 trillion in 2000-01 that was increased by Rs292 trillion in 2010-2011. Annual turnover of derivative market then increased Rs648 trillion in 2015-2016 compared to 2010-2011. In 2018-2019, Rs2376 was the derivative turnover trillion that is greater than previous years. During this financial year, 75% derivative turnover increased in the NSE as compared to past years.

5.2 The efficiency of capital markets and derivative markets:

Economic efficiency is increased by the development of derivative products in recent years. Derivatives have become a major part of the financial system in the world's developed economies. "Efficient markets result in tighter bid-ask spreads, higher volumes of trading, and bigger market liquidity. In an efficient market, all information relevant for identifying the value of a product is reflected in the current market value. Financial derivative represents a number of the basic tools necessary in the mechanics of efficient capital markets. The array of derivative products that have been developed in recent years has increased economic efficiency" (Seminar, Buenos Aires, Argentina, 1997). A stable and efficient capital market is necessary for long-term economic expansion and advancement. Derivative markets are essential for many reasons such as it create a capital market more effective, acceptable, and feasible that can help to the economy of a country in this modern competitive world.

Li Tian (2005) in his article discusses some fundamental factor that indicated that financial stability and economic growth could occur by establishing derivative markets. Like him, Rahman and Das (2015) also give some point that they may believe that establishment of derivative market can increase the economic growth and financial development in Bangladesh.

- Strengthening financial market function
- Obviate risks of participators
- Financial market development
- Deepening amelioration of financial business of Bangladesh
- Globalization of the economy

5.3 Why Bangladesh need to establish derivative market?

In the above results, we can see that there is increasing trend of derivative markets of six country (Australia, Canada, Hong Kong, India, Japan, and US). We see that whether it is exchange traded or OTC there annual turnover most of the time increase. We compare previous years and present years we see that there is a growth rate of most of the countries. In our neighbor country India, there derivative market turnover growth rate is higher. There annual turnover of derivative market is gradually increase compare to 2000 to 2019. In our country. In the developing country like Bangladesh, Bangladesh need to establish derivative market for sustainable growth and development. Rahman and Hassan (2011) discuss about their paper that why Bangladesh needs a derivative market. They discuss about some core point.

5.3.1 Increased volatility in the capital markets needs to be monitored: Market volatility is inevitable; it is the nature of the markets to move up and down over the short-term. Bangladeshi capital market is also volatile in nature. There are many researcher said about reduced volatility by derivative market. According to Rahman and Das (2015), there are many researcher believe that derivative market is the risk-shifting tool so that establishment of derivative market in Bangladesh have a greater positive impact on capital market. Reduction of volatility of capital market, monetary market stability are the advantages of derivative markets. There are many advantages of derivatives such as increasing the amount of instruments, increasing number of participants, and advancement of markets. It is difficult to protect the risks when people make those risks.

5.3.2 Implication of perfect portfolio: Financial market of Bangladesh now at the beginning stage of development. Here, subsidiary financial tools are difficult to find. There is no bond market is created in Bangladesh. On the other hand, money market is not familiar enough. When an investor purchase a risky asset, they cannot use any hedging techniques. Because there is no risk-shifting instrument like derivative markets in Bangladesh. Assume, when a buyer buys a stock from a market and at the same time investor buy futures or options from the same market one can protect his/her investment. In this way, the implication of perfect portfolio could be possible.

5.3.3 Protection of major export sector: The readymade garments (RMG) sector in our country is developed and that plays a vital role in our economy. The RMG sector earns billions of dollars by exporting. It also creates jobs for millions of people (especially women) in the country. The readymade garments (RMG) sector is export-oriented in Bangladesh. Its import of raw materials and export of final products both are susceptible to exchange rate fluctuation. When the exchange rate fluctuate, that highly effects on our income of RMG sector and costs of RMG sector. If garments industry some time falls into major difficulties they cannot protect themselves. Because there is no risk-shifting tool are available in Bangladesh like derivatives.

5.3.4 Protection of major import sector: Petroleum is the principal imported product in Bangladesh. Every year a huge amount of money is used to import various product. The price isof the petroleum product highly unyielding. However, the price of the products increase or decreases, the demand for the petroleum products are not change. Futures, options, and swap contracts are used to hedge against such a risky petroleum trend. Bangladesh needs to establish a derivative market to protect both the import and export sector.

6. Recommendations

Bangladesh Capital Market Development Plan (2012-2020) created by the Securities and Exchange Commission (SEC), Bangladesh. In this masterplan, there is also a plan for an initiative to promote the derivative market. SEC said derivative is likely to be successful in Bangladesh. The following recommendations are proposed to establish aa derivative market in Bangladesh.

- Increase education and knowledge among all market pparticipants
- At the beginning of the establishmentof of the f derivative market in Bangladesh, an advisory committee is necessary. This commmakese make ana oflysis the benefits of derivative market in Bangladesh, present and upcoming capital market structure and create a way for prosperous initiation.
- The administrator must find a way to make a monetary market in Bangladesh that is liquid. Liquid financial market is mandatory to create a proficient derivative market.
- Securities and Exchange Commission of Bangladesh already take a master plan. Therefore, Government should monitor this plan and take immediate initiate to establish the derivative market.
- Advisory committee must arrange seminars, workshops, training about the establishment of derivative markets. In addition, make the stakeholder aware to derivative instrument and take opinion from them.
- Extending of capital market is required. Capital market extensions occur by many ways such as increasing number of participants, increasing number of shares, increasing number of investors alluring many individuals within the market, correct rules and regulations, ensured reasonable price, minimize corruption etc.
- Introduce derivatives products that can be used to hedge risks in natural gas industries, petroleum and other commodity-based industries.
- Proper coordination among SEC, secondary and other markets must be ensured.
- Absence of proper infrastructure is the major problem in Bangladesh. Infrastructure is important requirement for using derivative instruments such as options, futures, and swaps. Hence, the development of institutional infrastructure is necessary.

7. Conclusion

Derivative market provides risk management tools furthermore as various investment opportunities to participants. There are many types of derivative products in Asian markets. Derivative market increase the economic growth of a country. In the developed and developing countries, derivative turnover is increased present year compared to previous years. They gain in both stock market capitalization and trading volume. Bangladesh is a developing country and our economy is developing day by day. It can now compete with any emerging economy. If we want to develop our economy, we need to enter Future and Forward Market. We surely benefited from these markets. For the development of our economy, we have to build Future and Forward market in the country. Our existing institutional setup and regulatory framework is adequate for building sophisticated instrument like derivatives. The necessity of the development of institutional infrastructure and human capital should not be underestimate. Our human capital are strong enough. Nevertheless, we need to create infrastructure for new markets. If the capital market of Bangladesh want to be competitive with other emerging economies of India, Japan, Hong Kong, the process of progressive policy making cannot wait for our market players to catch up with their counterparts in more developed financial markets. So that our policy maker and regulators must initiate to establish derivative market in Bangladesh as soon as possible. We believe that financial innovation such as creating new market may have contributed to favorable conditions in our country and thus to strong economic growth and financial development for Bangladesh. The expansion of derivative turnover in emerging markets are faster than in advance economies. Derivative turnover in emerging market is becoming worldwide.

References

BIS survey: The Bank of International Settlements published statistics report on derivative. Retrieved from BIS website. https://www.bis.org/statistics/extderiv.htm?m=6%7C32%7C616

BIS survey: The Bank of International Settlements published statistics report on derivative. Retrieved from BIS website. https://www.bis.org/statistics/rpfx19.htm?m=6%7C32%7C617

Derivatives. Retrieved from https://www.edinformatics.com/investor_education/derivatives.htm

Derivatives. Retrieved from https://courses.lumenlearning.com/boundless-finance/chapter/derivatives/

Derivatives. Retrieved from https://www.investopedia.com/exam-guide/cfa-level-1/derivatives/purposes-benefits- derivatives.asp#ixzz5OsxT8e00

Derivatives. Retrieved from https://corporatefinanceinstitute.com/resources/knowledge/trading-investing/derivatives/

Derivatives: The risks you need to know about (2017, April 4). Retrieved from the new savvy website https://thenewsavvy.com/invest/derivatives/derivatives-risks-to-know/

Fratzscher, O. (March 2006). "Emerging Derivative Market in Asia". *World Bank*.

Greenspan, J. (1997). Financial Futures and Options in Indian Perspective. *Jaico Publishing House.*

Gogoncea, R. & paun, I., (2013). Pros and cons of using derivatives. *Theoretical and Applied Economics. No. 9*(586), Pp. 87-102

Hull, J. (2009). *Options, futures and other derivatives*. Pearson Prentice Hall.

Hasan, M. N., Rana, M. A., & Nabi, N. The Role of Financial Derivatives in Recent Capital Market Condition of Bangladesh.

Khan, H. H., Kutan, A., Naz, I., & Qureshi, F. (2017). Efficiency, growth and market power in the banking industry: New approach to efficient structure hypothesis. *The North American Journal of Economics and Finance.* Pp 531-545. https://doi.org/10.1016/j.najef.2017.08.004

Kim, D., Lin, S., & Suen, Y. (2010). Dynamic effects of trade openness on financial development. *Economic Modelling 27*. Pp 254–61. https://doi.org/10.1016/j.econmod.2009.09.005

NSE survey: National Stock Exchange of India. Derivative annual turnover report. Retrieved from NSE website. https://www.nseindia.com/resources/publications-indian-securities-ismr

Rahman, M. H., & Das, B. C. (2015). Necessity of the Establishment of a Financial Derivative Market in Bangladesh. *International Journal of Management Science and Business Administration. DOI: 10.18775/ijmsba.1849-5664-5419.2014.21.1002*

Rahman, S., & Hassan, M. K., (2011) The Potential of Derivatives Market in Bangladesh. *Journal of Economic Cooperation and Development, 32*, 4. Pp 97-144

Sahoo, M.S. (1997). "Securities market reforms in a developing country." *Chartered Secretary*. Pp. 1261-1269.

Sipko, J. (2011). Derivatives and the Real Economy, *International Scientific Journal, 1*(1), Pp. 33-43. DOI: 10.2478/v10212-011-0003-7

Sultana, A., Haque, A. S. M. N., & Uddin, M. J. (2014). Benefits, Risks and Opportunities of Financial Derivatives in Bangladesh. *IOSR Journal of Economics and Finance (IOSR- JEF). DOI: 10.9790/5933-0425162*

Tian, Li. (2005). "Necessity of Establishment of Financial Derivative Market in China". *The Journal of American Science, 1(1).*

Turbeville, W. C. (2013).Derivatives Innovation in the era of financial deregulation. *Demos.*

Vo, D. H., Nguyen, P. V., Nguyen, H. M., Vo, A. T., & Nguyen, T. C. (2019. Derivatives market and economic growth nexus: Policy implication for emerging markets. *The North American Journal of Economics and Finance.* https://doi.org/10.1016/j.najef.2018.10.014

Vo, D. H., Huynh, S. V., Vo, A. T., & Ha, D. T. (2019). The Importance of the Financial Derivatives Markets to Economic Development in the World's Four Major Economies. *Journal of Risk and Financial Management*. DOI: 10.3390/jrfm12010035

Yüncü, Akdeniz, L., & Aydo˘gan, K. (2018). Do stock index futures affect economic growth? Evidence from 32 countries. *Emerging Markets Finance and Trade 54*. Pp. 410–29. https://doi.org/10.1080/1540496X.2016.1247348