# A CRITICAL EVALUATION OF DERIVATIVES: (FINANCIAL FUTURES, FORWARDS, OPTIONS, SWAPS, CAPS AND FLOORS)

***Habib Ahmad Karimi***

*Department of Finance and Banking, Kabul University, Kabul, Afghanistan*

**Abstract**

***Derivatives are those instruments that derive their value from other financial instruments. Globalization had brought some great changes in financial institutions and markets. Also, creation of financial derivatives facilitated the function of financial markets and institutions, and they are important instruments for hedging (market participants) and liquidity escalation. In this paper, we will evaluate derivatives (futures, forwards, options, swaps, caps and floors) because almost all of financial derivatives have defects beside privileges.***

***Keyword: Derivatives, Financial Futures, Forwards, Options, Swaps, Caps, Floors, Interest Rate***

## 1.INTRODUCTION

Derivatives markets are a part of financial markets, and those instruments referred to financial markets for financial instruments. Financial derivatives markets have four kind of participants: hedgers, speculators, arbitrageurs and margin traders. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

Different types of derivatives exist. For example, Futures, Forwards, Options, Swaps, Caps, Floors and Credit Derivatives. Among these types of derivatives, Futures, Forwards, Swaps and Options are common in transactions, and market participants use these four types of contracts more than Caps, Floors and Credit Derivatives.

Futures contracts created for hedging against adverse price movements. As we know better, in financial markets, prices of derivatives and other instruments are not constant, and they fluctuate sometimes, so the purpose of Financial Futures is to minimize risk of market participants against adverse future price movements. In a Future contract two party (buyer and seller) agree to buy and sell the underlying asset on a specific date in the future, so the price at which the transaction (buying and selling) will take place is agreed price. When parties agree to buy and sell an asset at an agreed price on a specific date in the future, they can't settle the contract earlier or later, but they should settle their Future contract on the specific date (a predetermined date).

Forward contracts are similar to Future contracts. Like Future contract, in a Forward contract two party agree to buy and sell an underlying asset on a specific date at an agreed price in the future. Unlike Future contracts, Forward contracts are not standardized agreements because there is no clearing house for Forward contracts.

In Option market also two party exist (buyer and seller or writer). In Option markets, instead of using the specific price, we have strike price. We have two specific Options base to exercising: American Options and European Options. In American Options, we can exercise the Option at any time but earlier than the expiry date. In European Options, we can exercise Options only on the expiration date, and we are not allowed to exercise it earlier. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

In Swap contract, we have two party in which, they exchange periodic interest payments. Among different types of Swaps, interest rate Swaps are the most common contracts, and investors use it a lot. As we said that almost all of the Swap transactions are of interest rate Swaps. With the fluctuation of market interest rates, value of an interest rate Swap will change.

## 2.ADVANTAGES AND DEFECTS OF FUTURE CONTRACTS

Future contract is an agreement between a buyer and a seller. In future contracts, the buyer agrees to buy something at a specified price on a specific date. Furthermore, the seller agrees to sell the asset at a specified price on a specific date. In the Future contracts, when buyer and seller enter into the contract, they do not buy or sell the asset immediately, but they agree to buy and sell asset at a specified price on a specific date. Future contract is an obligation in which two parties commit themselves to. Now we discuss the elements of Future contracts: Future price is the price in which two Parties specify it and agree to buy and sell something at that price. Settlement date or delivery date is the date in which parties transact. Underlying stands for something that the parties exchange or pay for it.

To illustrate, assume that we have a Future contract between Ali and Ahmad. We denominate the underlying asset AB. The settlement date for this contract is 2 months. Consider that Ali buys this Future contract, and Ahmad sells it. Furthermore, the transaction price in which Ali and Ahmad agreed is the Future price 50$. When the contract matures on the settlement date, Ahmad will deliver this underlying asset which we named AB to Ali. Similar to this, Ali will Pay 50$, the price of future contract. Different investors take different positions in the Future markets. When an investor is taking a position by buying a Future contract, the investor is in a long position. Similar to this, when an investor agrees to sell something in the future, the investor will be in a short position. If the Future price increases, the buyer of the Future contract will gain a profit. In spite of this, if the Future price decreases, the seller of the Future contract will gain a profit. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

We keep up the previous example. Suppose that 15 days after Ali and Ahmad clarify their position by buying and selling AB asset in the contract, the future price of this underlying asset increase to 70$. Ali the buyer of future contract, would gain a profit of 20$ by buying the Future contract, and Ahmad seller of the Future contract, would realize 20$ loss. It is clear that every financial transaction has its own advantages and disadvantages. Financial Future contracts also have advantages and drawbacks. First, we will discuss merits of financial futures, then we will have a critical evaluation of financial future contracts.

Advantages of financial future contracts are as follows:

1. financial futures are created for hedging against the risk of adverse price movements. As we know better, in every financial market, price fluctuates. When prices of a certain future contracts increase or decrease, it causes profit or loss for market participants, so hedgers[1] play a vital role in Future markets.
2. Second merit of Future contracts is low execution cost. When an investor wants to own a Future contract, he has to put up a small fraction (usually 10%) of the value of the future contract as margin. This margin is quite small, and investor can receive huge profits if he had predicted the market movements correctly. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).
3. Another advantage of Future contracts is high liquidity. Because of high amount of contracts, which are traded every day by market participants, liquidity in this market is quite high and Future contracts are quite liquid. Future contracts open the market for investors, and they are useful for risk- tolerant investors. Also, Future pricing is quite easy to understand. These were the minor advantages of Future contracts. Now we evaluate defects of financial future contracts.

Disadvantages of Future contracts are as follows:

1. Participants in Future markets do not have control over future events. As we know better, we can estimate future events, but that is only an estimation. It is possible that our estimation become true, and it is possible that unexpected events occur in the future, so we do not have control over future events in the Future contracts, and this is the major drawback of Financial Future contracts.
2. Second drawback of financial futures is price fluctuation. Like business fluctuations in which we have boom and bust, in price fluctuations prices of

[1] Hedgers are those producers of commodity who come to a future exchange in order to manage the price risk of their underlying asset.

Future contracts fluctuate. They rise and fall, so another major drawback of Financial Futures contracts is price fluctuations. As we told before, if the future prices increase, the buyer will realize a profit, and vice versa if the future prices decrease, the buyer will realize a loss. In spite of this, if the future prices decrease, seller of the future contract will realize a profit, and vice versa if the future prices increase, seller of the future contracts will realize a loss.

3. The other drawback of Future contracts is reduction in the asset prices as the expiration date approaches. This drawback of financial futures brought lots of problems for market participants.

## 3.FORWARD CONTRACTS

Like Future contracts, a Forward contract is an agreement between a buyer and a seller at a specific price on a specified date in the future. A Forward contract is without standard because the term of each contract is negotiated individually between buyer and seller. Also, there is no clearing house for trading Forward contracts, and secondary markets are often nonexistent or extremely thin. Unlike a Future contract which is an exchange traded product, a Forward contract is an over-the-counter[2] instrument. A Forward contract may or may not be marked to market, depending on the wishes of two parties. For a Forward contract that is not marked to market, there are no interim cash flow effects because no additional margin is required. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

In a Forward contract we have two parties: one in a short position, and the other in a long position. When asset is delivered, the one in a long position will pay the one who is in a short position. Also, the transaction settlement is in one of two ways: physical delivery and cash settlement.

Now we consider merits of forwards contracts:

1- Forward contracts are easy to understand. The terms, conditions and contents of Forward contracts are simple, and market participants can understand Forward contracts easily.
2- Forward contracts are flexible. It means that it is possible to adjust Forward contracts to the needs of both parties.
3- In a Forward contract, hedging works very well, and Forward contracts offer a complete hedge for investors against adverse price movements.
4- In a Forward contract, only buyer and seller know the price, and in the over-the-counter contract in which Forward contract is a part of it, the price of contracts is not visible to others, so Forward contracts provide price protection for buyers and sellers.

Like other derivatives, Forward contracts have some demerits, also. Now we analyze drawbacks of forward contracts:

1- In the Forward contract, there is no liquidity, and it is a private contract.
2- The parties in a Forward contract are exposed to credit risk because either party may default on the obligation. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).
3- As we analyzed before, a Forward contract is without standard and the market of Forward contract is unorganized because it is traded as over-the-counter.
4- Because Forward contract is private contract, and there is no liquidity, finding a counterparty to enter into a contract is challenging.

## 4. OPTIONS CONTRACTS

Like other two previous derivatives, there are two parties in an Option contract: the buyer and the seller(writer). In an Option contract, the writer of the Option grants the buyer of the Option the right, but not the obligation to purchase from or sell to the writer something at a specified price within a specified period of time. The writer grants this right to the buyer in exchange for a certain sum of money, which is called the Option price or Option premium. The price at which the underlying may be bought or sold is called the strike price. The date after which an Option is void is called the expiration date. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

[2] Over-the-counter refers to the process of how securities are traded via a broker dealer network as opposed to on a centralized exchange.

Now we enumerate advantages of Option contracts:

1- leveraging power of Options contracts are great, and they provide cost–efficiency. It means that option contracts are cost-saving contracts.
2- Option contracts are less risky than other derivatives if market participants use it properly. The reason behind less riskiness of Options is less financial commitment.
3- Returns of Options contracts are considerable. It means that Option contracts grant a higher profit for buyer and seller depending on the market situation.
4- Options offer more investment alternatives than other derivatives. It means that Options are more flexible.

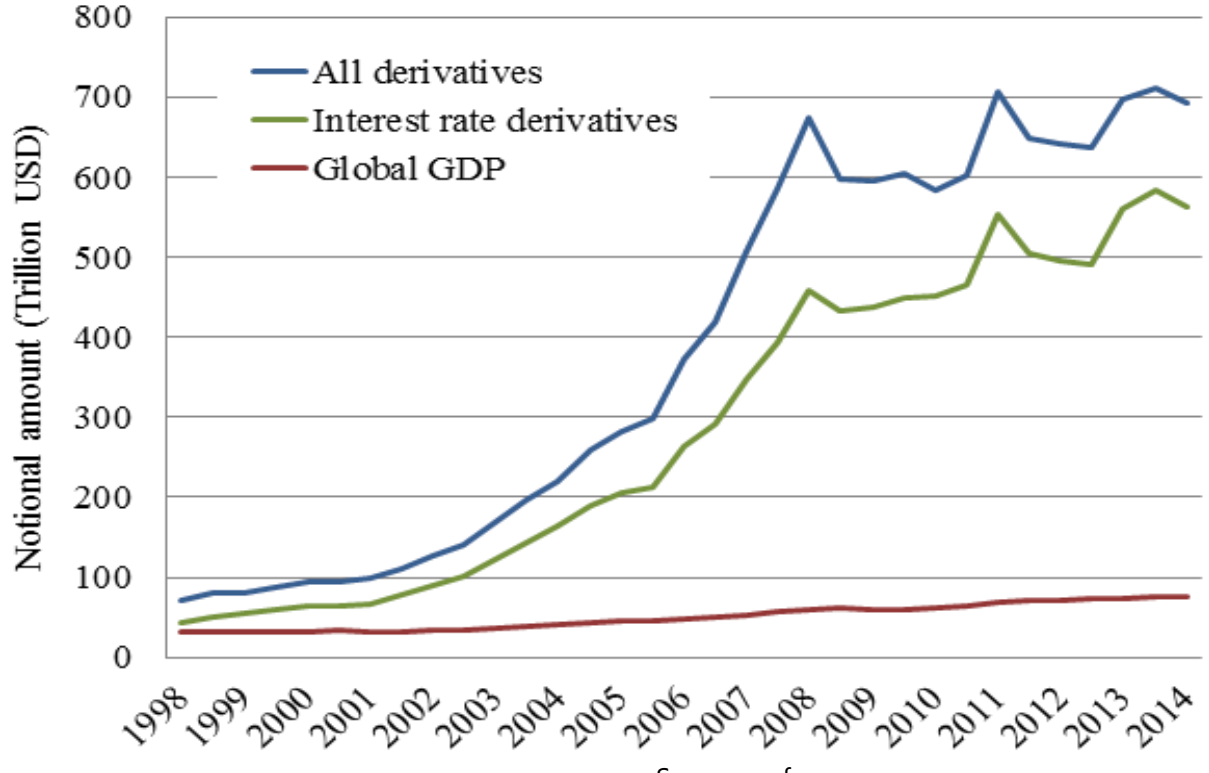
Now we analyze drawbacks of Options:

1- All gains of Options are taxed. This is a major drawback of Options. Options are under effect of income tax.
2- Commission rates for Options are high. Those market brokers and intermediaries which facilitate Option contracts, demand a high commission.
3- Fluctuations in portfolio value of Options are high.
4- Uncertainty of gains is another drawback of Options.

## 5.INTEREST RATE SWAPS

An interest rate swap is an agreement whereby two parties (called counterparties) agree to exchange periodic interest payments. The dollar amount of interest payments exchanged is based on some predetermined-dollar principal, which is called the notional principal amount. The only dollars exchanged between the parties are the net interest payments, not the notional principal amount. In the most common type of swap, one party agrees to pay the other party fixed interest payments at designated dates for the life of the contract. This party is referred to as fixed rate payer. The other party, referred to as the floating rate payer, agrees to make interest payments that float with some reference interest rate. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

The following graph indicates growth of Notional Amount of financial derivatives. It shows that financial derivatives increased considerably, and those countries who transact these instruments and participate in financial markets realize an acceptable amount of profit.




Source: weforum.org

Advantages of swaps are as follows:

1- Swaps facilitate borrowings at lower cost.
2- Swap is essential to access to new financial markets.
3- Hedging against risk is another major advantage of Swap.
4- Swaps generate an additional income for financial intermediaries.

Drawbacks of Swaps are as follows:

1- Shortage of domestic products is a major drawback of Swap.
2- Decreasing value of national money and expansion of one side trade are another demerits of Swaps.
3- Swaps cause to the expansion of the selling of raw material in a country.
4- Swaps are under threat of credit risk.

## 6.CAPS AND FLOORS

An interest rate Cap and Floor is an agreement between two parties in which one party, for an upfront premium, agrees to compensate the other if a designated interest rate, called the reference rate, is different from a predetermined level. When one party agrees to pay the other if the reference rate exceeds a predetermined level, the agreement is referred to as an interest rate Cap or Ceiling. The agreement is referred to as an interest rate Floor when one party agrees to pay the other if the reference rate falls below a predetermined level. (J. Fabbozzi, Modigliani, J. Jones, G. Ferri. 2011).

## 7. BRIEF CONCLUDING REMARKS

Derivatives are very important instrument in Financial Markets. Big trade regions for trading securities, bonds, derivatives and other instruments is inside Tokyo, London and New York. Almost all of the developed countries are equipped with financial markets and institutions, and they earn huge amounts of money by trading different sort of financial instruments. Unfortunately, in Afghanistan we do not have a standardized financial market. We have money market called Sara-e –Shahzada, but that is only an exchange rate market. Till now, we do not have a financial market for transacting securities and other financial instruments, and because of this problem our economy is not a developed economy.

## REFERENCES

[1] Amato, J D and Jacob Gyntelberg (2005): "CDS index tranches and the pricing of credit risk correlations", BIS Quarterly Review, March 2005, pp 73-87.
[2] Anderson, R W and K McKay (2008): "Derivatives Markets", in Freixas, X, P Hartmann and C Mayer (eds), Handbook of European financial markets and institutions, Oxford University Press, Oxford, UK.
[3] Ansi, A and O Ben Ouda (2009): "How options markets affect price discover on the spot markets: A survey of the empirical literature and synthesis", International Journal of Business and Management, vol 4, no 8.
[4] Banque de France (2010): Financial Stability Review, July 2010.
[5] Berkshire Hathaway Inc (2002): 2002 Annual Report
[6] Carlson, J B, B Craig, P Higgins and W R Melick (2006): "FOMC communications and the predictability of near term policy decision", Federal Reserve Bank of Cleveland Economics Commentary, June 2006.
[7] Duffie, D and K Singleton (2003): Credit risk, Princeton University Press, Princeton, US.
[8] ISDA (2008): "The ISDA market survey: What the results show and what they do not show?" , ISDA Research Notes, no 1, Autumn 2008.
[9] Jarrow, R and S Turnbull (1999): Derivatives securities, South-Western College Publishing.
*[10]* Nystedt, J (2004): "Derivative market competition: OTC markets versus organized derivative exchanges" , IMF working paper *WP/04/61*
[11] Swan, E (2000): Building the Global Market: A 4000 year history of derivative. Kulwer Law International, London, UK.