

The Role and Importance of the Options as a Unstandardized Financial Derivatives

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Abstract - The financial derivatives are financial instruments, that are recently created, and whose main application is to be used as a tool for managing financial derivatives. The most significant financial derivatives are options, that are mostly used for their flexible and non-standard character. Options, and the other financial derivatives, as well, are instruments that are derived from some other financial instruments, that makes them more complicated from one hand, and more risky, from the other hand. Their role is very important for the developing the financial system, and generating economic growth. The subject of research in this paper is the options as a unstandardized financial derivatives, and their basic characteristics and usage in developed, and developing countries. The prime goal is to research the importance of these derivatives in developing countries, with basic focus in the Republic of Macedonia. The results from these paper should suggest if the options are crucial for the developing the Macedonian financial markets.

Keywords: Financial derivatives, options, hedging, call option, put option, short position, long position.

1. Introduction

Options are financial instruments that primarily are used in developed countries and are applied for reducing unnecessary risk, that exist. The process of using a financial instrument in order to reduce the risk in financial theory is known as hedging. The options are specific form of financial derivatives because of its popularity and unstandardised form, that are used in developed and developing countries, as well. Options, as a financial derivatives, are financial instruments that have been derived from another financial instrument's value.

Options and all financial instruments have their value derived from the value of another financial instrument. These instruments have a price of execution, maturity date, period of validity, cost of conversion and other basic elements that together with the price of the underlying asset, affect the value of the option. The option is a financial derivative that gives the holder the right to realize the same option over specific time. It's up to the user to decide, if he wants to execute the option or not, and when. So, as a

result, this financial derivative doesn't have to be executed from the buyer, but when is, the seller, always have to pay the contracted sum of money, or other financial assets. The value of the options is derived from the value of stocks, stock indexes, foreign currencies and futures. These financial instruments are known as "basic assets". The options are used for:

- To protect certain position or to reduce risk [1].
- In the case of buying options - for requiring or selling the underlying assets at favorable price in the future.
- In case of options selling - to making additional income.

The second and the third purposes are from speculative nature, but the first purpose is actually the basic purpose of financial derivatives such as options, risk reduction and hedging.

The main difference between the options and some other financial derivatives is that the holder of the option has the right to decide whether it will be used, ie realized, or not, while the futures, swaps and forwards doesn't give that right. The other financial derivatives, both parties are obliged to fulfill the obligations arising from the contract. Although the option holder (buyer) has the right to leave unrealized option, with signing the contract, he has to pay a certain amount called the premium. Unlike the buyer of the option, the seller of the option has no exclusive right. By the signing of the contract the buyer receives the same premium as the price of the sold option, but is obliged, in the future, to pay certain amount of money if the option buyer realize (execute) the option. So we can conclude that the seller and buyer of the optional agreement are not in equal condition. This asymmetry is result to the optional contract. Despite the options, buyers and sellers of futures, forwards and swaps are placed in a symmetrical position with equal rights and obligations.

Options are contracts through which a seller gives a buyer the right, but not the obligation, to buy or sell a specified number of shares at a predetermined price within a set time period. [2] From the definition, we can determinate the basic elements of an option agreement:

- The basic assets are financial instruments underlying the optional contract. Some basic assets can be considered stocks, stock indexes, foreign currencies and futures.
 - Buyer has to pay the the option seller certain amount of funds, known as an option premium, which can be regarded as the price of the option. Within paying the premium, the buyer has bought the option and can execute in the future, when he decides, while the issuer or seller of the option gives the buyer the right, in that period or earlier (depending on the type of option) to sell or buy the asset that is subject of the option contract , ie to buy or sell the underlying (basic) asset at a fixed price.
 - The option that gives the buyer the right to buy any financial assets in future is known as call option, while the option that gives the buyer the right, or the owner the option to sell the basic asset (as currency or action) is known as the put option.
 - The options have a period of execution that differ according to the type of the option. In European type of options, the execution is done in exactly certain day in the future, so it is predetermined and can't be changed. While the American type of options, although there is specific day for execution of the option, it is also to be executed earlier, in a shorter time interval.
 - The cost of executing is a predetermined value ie price at which the option will be executed in future. The buyer will execute the option, only if the price of the underlying asset decreases and drops below the price of the option. At that point, the option would worth more than the underlying assets and the buyer would realize (execute) the option. If the price of the underlying assets should remain equal or increase further, it wouldn't be valuable to execute the option, and the buyer would left it unexecuted.
 - All the features of a particular type (put or call), derived from a particular action are called specific class options, and all options of a given class with the same price and the same execution date of realization are known as a specific series of options.
- Call option, or option that gives right to buy the underlying asset at the cost of execution in future time.
 - Put option, or option that gives right to sell the underlying asset at the specified price within a specified time in the future.

By the second criterion, the options are systematized by the possibility to be realized before the end of the specified period:

- **The European type** options doesn't allow conversion before the specified day of delivery (expiration date), the expiration date specified in the optional contract at the time of signing the same. This feature of the European type reduces the market liquidity and makes them less attractive trading instruments.
- Unlike the European type of options, **the American type** allowed the option to be implemented before the expiry date of the contract, which increases flexibility and liquidity of financial instruments and markets as well. American type of options is more attractive instrument from the European types, because if there were some positive trends in the options market, the option value would increase in the future, so the investor wouldn't have to wait for the expiry date of the contract, and can execute the option before the selling the option and could earning money, that can be used for other investments.

According the third criterion the options can be categorized, according to the type of underlying assets:

- Stock options
- Stock index options
- Future options
- Product options

In the proceeding we are going to pay attention to the option payoffs. Buying a call option involves buying the right to buy the underlying asset in the future at a price of execution. The buyer is obliged to pay an optional premium in the hope that the future price of the underlying asset will rise. If the cost of the assets grows over the price plus the option premium paid then the buyer will realize (execute) the option, and gain some profit, but if the price of the asset decreases, then the investor shouldn't exercise option, because it is not profitable action, and then the overall loss for the buyer will be equal to the premium paid.

2. Types and Payment Options

In theory and practice there are several types of options that can be divided according to three categories:

According to first criteria, by selling or buying the underlying assets, there are:

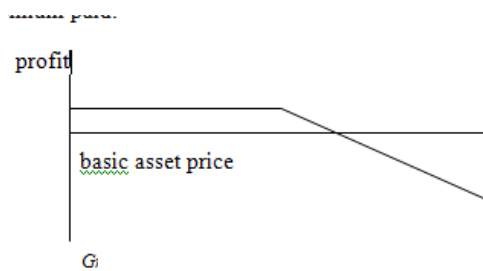


Figure 1. Long call option payoff [3]

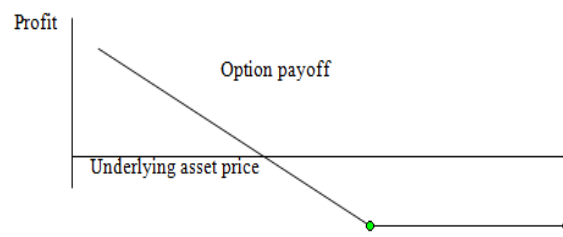


Figure 3. Long put option payoff

Selling the call option involves selling the right to buy the underlying asset in the future. The seller gets the optional premium immediately after signing the contract and it is his only income that can be considered for him. He is obligated to sell the underlying asset to the buyer, or to the end of the period (European option) or before the expiry of the period (an American call option). The basic expectation of the call option seller is that in the future the price of the underlying asset will not change or decrease, so the buyer would not execute the option and the issuer would make a profit. The profits of the issuer equal to the optional premium, but the loss can be large and arises from the difference between the current market price of the asset (which is larger than the optional cost) and the cost of executing the option.

Selling a put option involves selling the right to sell the underlying asset at a price in future. The profit of the seller is the premium which is agreed by contract. As noted, he is obligated to buy the underlying asset in the future at a price agreed in the optional contract. The sellers expect the future price of the asset to increase, or to remain the same, so the buyer would not execute the option, because the price is already high. The loss of the put option seller may be very large if the asset price falls and the option buyer execute the option, i.e. sell the asset at a higher price than the current one. The loss can be expressed as the difference between the execution price and the price of the asset plus the premium.

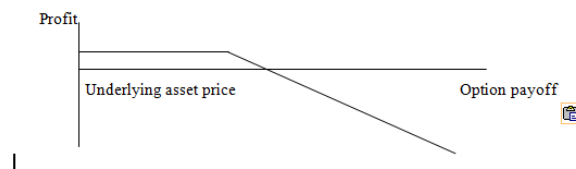


Figure 2. Short call option payoff [4]

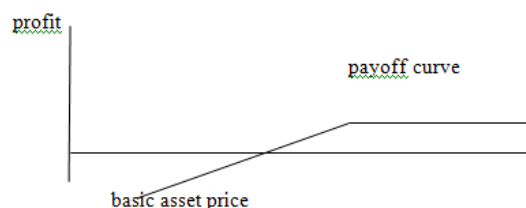


Figure 4 short put option payoff [5]

Buying the put option means buying the right to sell the underlying asset in the future at a certain price. The buyer is obliged to pay an optional premium by signing the agreement in the future is expected to decline in the price of the asset to realize profits. The investor's loss is equal to the optional premium, while profits can be large and represents the difference between the execution price and the current market price of the asset plus the amount of the premium.

Credit spread options, or CSO presents a special type of credit derivatives or an instrument to protect the bank from losses in the value of the approved loan or offsetting the higher cost of borrowing which may occur due to credit rating changes. For example, the bank may enter into an agreement with a options dealer that guarantees payment of the loan in the event of a reduction of its value, or due to dysfunction of the loan. If the credit event occurs, the bank will use the option and the dealer will pay loss to the bank. The process of using this instrument can be seen in the chart below.

These options are used for limiting the loan approval costs in case of a reduction of the credit rating of the bank.

When the bank plans to issue long-term bonds, but is afraid that prior to their issuance, a reduction in the credit rating can happen, which would generate future payment of higher interest rates, the bank can

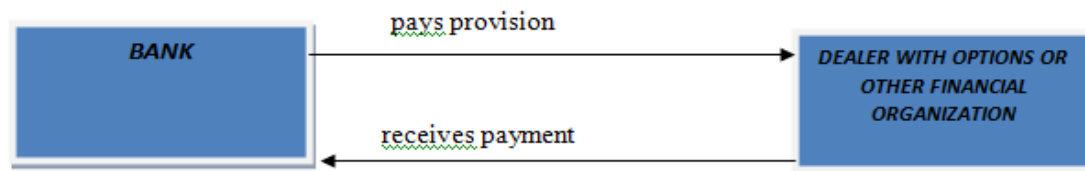


Figure 5. Scheme of credit swap options [6]

buy credit swap option, which would be related to the difference between interest on securities issued by the bank to possibly worsening credit rating and the interest rate that dominates the bond market, similar to those that the bank wants to execute. If the bank credit rating declines the interest rates would increase, then this option will be used by the bank and therefore would receive payment for the value of deteriorating ratings, on the other hand, if the credit rating of the bonds grows, the option is not activated, so the premium would be the only cost for the bank.

3. Factors that Affect the Price of Options

There are several factors that affect the price of the options: [7].

- The stock price
- The execution price
- Time to maturity
- The volatility
- The dividend policy
- The interest rate

All these factors have influence on the option price that is constantly changing through time. The financial managers need to perform detailed analyze and research if they want to qualify the risk from the particular optional strategy.

The stock price is the first and basic factor determining the value of options. The relation between the execution option price and the stock price over some time period presents the option profit, while the total loss is limited for the amount of the premium. If the stock price rises, then the call option would become more valuable, but if the stock price falls, the put options would become more valuable.

The execution price as a factor in determining the value of the options is directly related to the first factor, the stock price. As we know, the intrinsic value of the option is a function between stock prices and option prices. The option price is higher if there is in-the-money zone, and it has more internal valuable asset. If some option enters deep into the

zone “out the money”, it is less likely that in the future would be “in the money”. So, the options that are deep out-of-the-money area have lower value than the options that are not as deep out-of-the-money zone, and price performance is closer to the price action.

Time-to-maturity. Generally speaking, the longer the time of maturity the valuable the options. If the maturity is longer, it is more likely that the option should enter the “in the money zone” and the value increases. European type options are more valuable as time to maturity increases, because they can be exercised only on a certain predetermined day. Which means that, if the option to enters in-the-money zone before the time to maturity, the European owner, does not have the right to execute it. So the European option may become worthless on the day to maturity, although earlier had been in-the-money zone.

Volatility measures the magnitude of the change in the price of the stock for a certain period of time. Volatility, as a measure is showing the uncertainty of the future movements in the price of the stock. As the volatility increases, the likelihood of price action to change the future, increases, as well, at the same time. If the stock has more volatility, it means that its price should be change in the future, more often it would oscillate a lot. This means, that the option of such action would have a higher probability to enter in-the-money zone in comparison with a options that have low volatility. Also, the option of an oscillating stock, would have a higher intrinsic value of the option of an less oscillating stock, because the price of the stock could easily enter deep in-the-money zone achieving enormous gains for the owner. On the other hand, the loss is limited to the premium paid.

Dividends. When a company pays dividends, it automatically means that the value of the shares is reduced. Thus, if the expected payment of dividends is unannounced by a particular company, it would increase the put premiums and would reduce premiums the call options premiums for shares of that company. But, since most dividends are announced and are familiar with all entities, then the most options traders, have already calculated the

amount of the dividend premium price. In such cases, the dividends do not represent significant role in determining the price of options.

Interest rates. The impact of the interest rates on the price of the option is quite uncertain. Yet interest rates affect the cost of the options, increasing or reducing the present value of the costs of the execution. With the increase in the interest rates in the economy, the value of put option is reducing, so it comes to reducing the present value of the cost of execution ($X - S$) and also increases the value of the call option, as result of the reduced present value of the cost of execution ($S - X$).

All previous elements can be summarized in the following table.

Table 1. Basic factors affecting the price of options [8].

Factor	Call option price	Put option price
Stock price	+	-
Execution price	-	+
Time to maturity	+	+
Volatility	+	+
Dividends	-	+
Interest rates	+	-

4. The Structure of the Option Markets in the Developed Countries

The options market structure includes all institutions, elements and entities who need for the market features to work continuously. As already mentioned, the options are mostly traded on the (Over the counter) OTC markets, however, the trading can take place on a specially organized markets for trading options, as well. The developed countries trade options, primarily via OTC markets.

The basic features of the OTC market are: [9]

- The options, that are traded in this market are tailored to the requirements of users in terms of amounts and maturity,
- The options premiums are higher than those of an organized option markets. This difference is due to the nature of the options that are traded on the OTC market.
- Options traded on the OTC market are mainly from the European type, and they do not have the flexibility characteristics of American type options.
- The absence of a secondary options market.
- The actual trading on the OTC market requires the existence and keeping records of the option

margins for vendors or subscribers. The term margin refers to the collateral, that is required from the debtor, in order to secure the option, as a guarantee for fulfillment of the obligation in the future.

Unlike the OTC market, the organized trading market is typically more standardized, with existence of a special supervisory authorities and compliance with certain rules in the form of:

- Minimal requirements for option trading. The stock exchange determinates the rules and the minimal criteria for every instrument that could be traded in the option exchange market.
- The size of the contract. The standard optional contract contains 100 options. So every purchase of a contract would automatically mean buying 100 shares in the future based on 100 options. There are specific cases, when the stock splits.
- The execution price. This category is standardized and specified by the Exchange itself. The exchange specifies exactly how much can be the exchange price of certain options. The determination of the price is carried out by a professional experts, which among other obligations shall determine the price that will provide continuous, and uninterrupted trading.
- In 1993, CBOE introduces the FLEX (flexible) options, as new, flexible options, which represent a major blow to the standardized stock markets. They may not have any cost of execution, which is not directly determined by the market. Because of the flexibility, this options become commonly used by more common users in the developed markets.
- the date of execution (leakage) of the contract. Unlike the OTC market, where the date of execution is determined as a result of the needs of the buyer and seller, the organized manner of trading, every action is categorized in any particular round of execution. There are three rounds of performance as follows:
 - a. January April, July and October
 - b. Februar May, August and November
 - v. Mart, June, September and December.

The execution of the contracts is specified in the current month, next month or the next month in the second part of the circle of execution since the stock is purchased. For example - a specific stock that is listed in the January round of execution, should have certain options with dates of execution in July, October and January.

- position limits and the limits of performance. Position limits define the maximum number of

options that some investors may keep on one side of the market.

The limits of performance show the maximum number of options that can be executed in any five consecutive days by individuals or group of individuals.

The purpose for using the positional limits of execution is perceived in the prevention from certain entities that have a large market share, and therefore big impact on the price of options. In terms of market structure, we distinguish several participants in the trading of options on organized markets:

- The first type are the market makers. When a subject wants to buy or sell a particular option, and no other is interested to buy or sell the same option, then enter market makers enters and complete the transaction. Market makers ensure and guarantee to the subjects, that their transactions will always be realized and thus they increase the liquidity of the option markets. Market maker is an entrepreneur and as such, to earn, it has to buy options at a lower price and sell at a higher, using it at BID-ASK spread.
- The second type of participants are the brokers, who execute orders on specific subjects in the organized options markets. In the organized trading options market is not allowed for all the interested subjects to attend the trading, because they are obliged to appoint a broker, that should represent them. The brokers work on behalf of clients and as such, earn commission for their work. They have expert knowledge that shares with the subjects and strive to obtain the most favorable price for their clients, as well. There can be found an combined form the previous two types, called DPMs (designated primary market makers) or separated market markers.
- The third type of traders in the organized option market are the officials or OBO (order book officials). They receive all the orders and classify them. Then when a change in the trading situation occur, and the option price falls below the ASK price, it would be logical that the Market makers should exit the trading (no gain). So then the OBO should enter the market, and create liquidity.

5. The Financial Derivatives Market n RM

While in the Republic of Macedonia there is an established legal framework the foundations for the development of the financial derivatives and laid, it is still unexecuted and undeveloped. According to article number 2, paragraph 7 from the securities law,

financial derivative instrument is such an instrument whose price is directly or indirectly depends from the price of the securities, commodities, foreign exchange, stock exchange indices or interest rates that do not verify the deposit, which is derived from. [10]. The Law on Securities defines the futures and options as standard financial derivatives. Standardized instruments are those instruments that are traded in an organized market and which give holders the same rights. The form and structure of standardized instruments is strictly regulated by the Commission for Securities.

Macedonian law, as financial derivatives, defines only the futures and options. According the same law, since 2005, futures are standardized contracts for future sales of pre-determined date of securities, foreign exchange, commodities, indices or interest rates, which one party undertakes to carry out the agreed handover of property and the other party is obliged to pay the pre-agreed price.

According to the same law, article 2, paragraph 9, the options are standardized contracts for future purchase or sale of securities, foreign currencies, commodities, stock exchange indices or interest rates, in which one party has the right but not the obligation to buy or sell the underlying, at a previously agreed price, every day until the end of the agreed period, the other party is obliged, at the request of the first unconditionally surrender or undertake to pay the agreed subject to the option.

Although a legal framework is set, the trading with the financial derivatives is still under development in the country [11]. The introduction of the derivatives in Macedonia would have more effects on the economy as a whole, as well. It would reduce the overall risk in the economy, would further increase the confidence of foreign investors and would modernize the Macedonian financial system, creating economic growth.

In Macedonia, it is necessary the following factors to be fulfilled in order to enable the financial derivatives trading:

- Development of the financial markets,
- European Union entry, and adoption of the European legislation,
- Exchange rate regime change, in order to introduce foreign exchange swaps,
- Development of the principles and mechanisms of the process of risk management ,
- Maintenance of special courses and seminars for the usage of these instruments,
- Establishing an official financial derivatives market,
- Creating an unofficial market for the financial derivatives, over the counter market.

6. Conclusions

The recent global financial crisis, had further increased the uncertainties of the financial markets, which significantly had reduced the trading of these instruments. The argument is supported by the fact that the financial derivatives were the fundamental causes for the crisis.

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